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Kachemak Bay

National Estuarine

Research Reserve

Final Environmental Impact Statement

Final Management Plan



Kachemak Bay

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U.S. Department of Commerce
National Oceanic and Atmospheric Administration

State of Alaska
Department of Fish and Game

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TABLE OF CONTENTS

1.0 Introduction.....	1
1.1 The Coastal Zone Management Act.....	1
1.2 National Estuarine Research Reserve System	2
1.2.1 Mission.....	2
1.2.2 Goals of the National Estuarine Research Reserve System.....	2
1.2.3 NERR System Administrative Framework.....	3
1.2.4 Biogeographic Regions.....	3
1.2.5 Reserve Designation and Operation.....	5
1.2.6 Reserve Management Planning.....	5
1.3 NERRS National Programs.....	6
1.3.1 NERRS Research and Monitoring Program	6
1.3.2 NERRS Education, Interpretation and Outreach Program	7
2.0 Purpose of and Need for Action	8
2.1 The Proposed Action and Decision to be Made.....	8
2.2 Documents that Influence the Scope of this EIS.....	9
2.3 The Public Involvement Process.....	11
2.4 Federal Authorizations Necessary to Implement the Action	12
2.5 Structure of the EIS/Plan Components	13
3.0 Alternatives (including the Proposed Action).....	14
3.1 Preferred Alternative: Approval of Kachemak Bay as a National Estuarine Research Reserve	14
3.1.1 <i>Boundary Plan</i>	15
3.1.1.1 Boundary Criteria.....	15
3.1.1.2 Boundary Description and Rationale	16
3.1.1.3 Core and Buffer Areas	23
3.1.1.4 Future Acquisitions/ Boundary Expansion Opportunities	24
3.1.2 <i>Administrative Plan</i>	29
3.1.2.1 Relationship to Federal Government	29
3.1.2.2 Administrative Plan for KBNERR.....	30
3.1.3 <i>Existing Resource Protection</i>	38
3.1.3.1 Introduction: Relationship to Critical Habitat Areas and State Parks.....	38
3.1.3.2 Regulatory Programs and State Policies	38
3.1.3.3 Current Activities in the Kachemak Bay Area	47
3.1.3.4 Description of Uses within KBNERR	48
3.1.3.5 Surveillance and Enforcement within Kachemak Bay	53
3.1.4 <i>Education, Interpretation, and Outreach</i>	55
3.1.4.1 Introduction.....	55
3.1.4.2 Educational Goals, Guiding Principles, and Objectives of the NERR System ..	55
3.1.4.3 Background and Education Priorities of KBNERR.....	56
3.1.4.4 KBNERR Education Goals, Objectives, and Strategies	58
3.1.4.5 Framework of Education, Interpretation, and Outreach Programs	60
3.1.4.6 Types of Programs	62

3.1.4.7	Description of Existing Environmental Education Programs in Kachemak Bay	62
3.1.4.8	Coordination of Educational and Outreach Programs	65
3.1.5	<i>Research and Monitoring Plan</i>	66
3.1.5.1	Introduction	66
3.1.5.2	Research Goals of the NERR System	66
3.1.5.3	NOAA Research-Funding Priorities	66
3.1.5.4	Background and Research Priorities of KBNERR	68
3.1.5.5	Goals, Objectives, and Strategies for the KBNERR Research Program	70
3.1.5.6	Program Development	72
3.1.5.7	Evaluation Procedures: KBNERR Policies and Procedures for Research	73
3.1.5.8	Research Opportunities	73
3.1.5.9	Cooperative Efforts	75
3.1.5.10	Funding Opportunities	76
3.1.5.11	Information and Dissemination of Results	77
3.1.5.12	Reviews/Evaluations	78
3.1.5.13	Monitoring Plan	78
3.1.6	<i>Facilities</i>	80
3.1.6.1	Present & Existing Facilities	80
3.1.6.2	Facility Needs	81
3.1.6.3	Facility Plan	82
3.1.7	<i>Habitat Restoration and Manipulation Plan</i>	87
3.1.7.1	NERRS and Environmental Restoration Work	87
3.1.7.2	Potential Restoration Initiatives	87
3.1.7.3	Research Manipulations	88
3.1.8	<i>Public Access</i>	90
3.1.8.1	National NERRS Priorities for Public Access	90
3.1.8.2	KBNERR Public Access Policy	90
3.1.8.3	Present Public Access	90
3.1.8.4	Access Needs	91
3.1.8.5	Traditional Uses	91
3.2	Other Alternatives Considered	92
3.2.1	No Action/Status Quo	92
3.2.2	Alternative Boundaries	92
3.2.3	Alternative Management Options	94
3.3	Range of Reasonable Alternatives	95
3.4	Summary of Environmental Consequences of Alternatives	95
4.0	The Affected Environment	97
4.1	Biogeographic Regions	97
4.2	Physical Environment	97
4.2.1	General Location and Climate	97
4.2.2	Physiography	97
4.2.3	Geology	100
4.2.4	Oceanography	100
4.2.5	Circulation	101
4.2.6	Water Quality	103

4.3	Biological Environment	104
4.3.1	Flora Factors.....	104
4.3.2	Fauna Factors	105
4.4	Cultural Resources	108
4.5	Land Ownership/Adjacent Lands.....	108
4.6	Existing Human Uses	108
5.0	Environmental Consequences.....	110
5.1	General Impacts.....	110
5.2	Specific Impacts	110
5.2.1	Scientific and Educational.....	110
5.2.2	Public Access	111
5.2.3	State and Federal	111
5.3	Unavoidable Adverse Environmental or Socioeconomic Impacts.....	111
5.4	Cumulative Impacts.....	111
5.5	Relationship Between the Proposed Action on the Environment and the Maintenance and Enhancement of Long-term Productivity	112
5.6	Irreversible and Irretrievable Commitment of Resources	112
5.7	Possible Conflicts Between the Proposed Action and the Objectives of Federal, State, Regional and Local Land Use Plans, Policies and Controls for the Areas Concerned ...	113
5.8	Consequences of the No-Action Alternative.....	113
6.0	Acknowledgments	114
6.1	Staff Contributions	114
6.2	Committee Members	114
6.2.1	Plan Review Group Members	114
6.2.2	Education Subcommittee.....	116
6.2.3	Research Subcommittee	117
7.0	Agencies, Organizations, and Individuals who Received this Document	118
8.0	References	123

Appendices

- A. Institutional Arrangements
 1. MOU between NOAA and the Alaska Department of Fish and Game
 2. MOU between the Alaska Department of Natural Resources and ADF&G
 3. MOU between the U.S. Fish and Wildlife Service and ADF&G
 4. MOU between the City of Homer and ADF&G
- B. The *Exxon Valdez* Oil Spill Area
- C. Policies of the Existing Legislatively Designated Areas
 1. Critical Habitat Areas
 2. Kachemak Bay State Park
- D. Scoping meeting materials:

<ul style="list-style-type: none"> • Announcements • Scoping document • Agenda 	<ul style="list-style-type: none"> • Questionnaire distributed • Meeting summaries • Table of additional scoping comments received
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- E. Inholdings within the Critical Habitat Areas and State Park
- F. 1989 Cooperative Agreement between ADF&G and DNR/DPOR for the Critical Habitat Areas and Kachemak Bay State Park
- G. Organizations and Individuals who have Written Letters of Support for the Proposed KBNERR
- H. Specific Boundaries of Areas Included in the Reserve: the Fox River Flats and Kachemak Bay CHAs, the Kachemak Bay State Park/Wilderness Park, and Parcels owned by the City of Homer
- I. Kachemak Bay Species Lists
- J. Tables of Research and Education Needs
- K. National Estuarine Research Reserve System Program Regulations (15 C.F.R. Part 921)
- L. Section Seven Consultation
- M. Public Process on the DEIS/DMP
 - Cover letter with DEIS/DMP
 - Published Announcements
 - Summary and Response to Comments Received
 - Copies of Written Comments Received

List of Tables

Table 1. Compatible Uses within KBSP.....	44
Table 2. Agency/Organization Education Services	57
Table 3: Kasitsna Bay Lab Equipment	81
Table 4: Example Properties that may Support KBNERR Facility Needs.....	83
Table 5. Terrestrial Mammals of Kachemak Bay Watershed.....	107
Table 6. Marine Mammals of Kachemak Bay	107

List of Figures

Figure 1: National Estuarine Research Reserves	4
Figure 2: Boundaries for Kachemak Bay NERR.....	10
Figure 3: Beluga Slough Parcels.....	18
Figure 4: Homer Spit	19
Figure 5: Seldovia Harbor's excluded city-owned tidelands.....	21
Figure 6: Location of Kasitsna Bay Lab	21
Figure 7: Land Ownership Around Kachemak Bay	26
Figure 8: The Administrative Organization for the Kachemak Bay NERR.	31
Figure 9: NERRS Biogeographic Zones.....	98
Figure 10: Cook Inlet Area Map.....	99
Figure 11: Circulation Patterns of Kachemak Bay	102
+ Map in Appendix B: The <i>Exxon Valdez</i> Oil Spill Area	

ACRONYMS

AAC	Alaska Administrative Code
ACMP	Alaska Coastal Management Program
ADF&G	Alaska Department of Fish and Game
AMNWR	Alaska Maritime National Wildlife Refuge
AS	Alaska Statute
CDMO	Centralized Data Management Office, NERRS
CFR	Code of Federal Regulations
CHA	Critical Habitat Area
CMP	Coastal Management Plan
CZMA	Federal Coastal Zone Management Act
DEC	Alaska Department of Environmental Conservation
DMP	Draft Management Plan
DNR	Alaska Department of Natural Resources
DPOR	Division of Parks and Outdoor Recreation, DNR
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EVOS	<i>Exxon Valdez</i> Oil Spill
GIS	Geographic Information System
H&R	Habitat and Restoration Division, Alaska Department of Fish and Game
KBNERR	Kachemak Bay National Estuarine Research Reserve
KBSP	Kachemak Bay State Park
KPC	Kenai Peninsula College

MLLW	Mean low lower water
MOU	Memorandum of Understanding
NBS	National Biological Service
NERR	National Estuarine Research Reserve
NERRS	National Estuarine Research Reserve System
NOAA	National Oceanic and Atmospheric Administration
OCRM	Office of Ocean and Coastal Resource Management, NOAA
SOP	Standard Operating Procedure
UAF	University of Alaska, Fairbanks
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	U.S. Coast Guard
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service

EXECUTIVE SUMMARY

In 1997, the State of Alaska nominated a site in the Kachemak Bay area for designation as a National Estuarine Research Reserve (NERR). With passage of the Coastal Zone Management Act of 1972, the federal government officially recognized the national significance of coastal resources and authorized the federal coastal zone management program and the National Estuarine Research Reserve System (NERRS). Both programs are administered by the National Oceanic and Atmospheric Administration (NOAA). Since 1972, twenty-two estuaries have been designated as part of this system. The NERRS works with existing federal and state authorities to establish and operate research reserves, and provide for their long term stewardship.

Research and education are the main focus of the NERRS. These goals are to: (1) address the information needs of management and the public identified as significant through coordinated estuarine research within the System; (2) promote federal, state, public, and private use of the reserve for estuarine research; (3) conduct and coordinate estuarine research within the System; (4) gather and make available information necessary for improved understanding, use, and management of estuarine areas; and (5) and provide suitable opportunities for public education and interpretation.

The Kachemak Bay region has high productivity, an abundance and diversity of organisms, and an array of diverse habitats. A great variety of terrestrial, wetland, and aquatic habitats are incorporated within the boundaries of over 365,000 acres. Kachemak Bay exhibits very high primary production in the water column due to upwelling of oceanic water entering Kachemak Bay through Cook Inlet. This nutrient-rich environment provides critical habitat for numerous species during various life phases.

The lands within the Kachemak Bay NERR are entirely in public ownership, currently managed by various local, state and federal entities. Three legislatively designated areas are included within the reserve: Kachemak Bay and Fox River Flats Critical Habitat Areas, and that portion of Kachemak Bay State Park that drains into Kachemak Bay. These existing designations provide the strongest resource protection afforded by the state. Designation of a research reserve will not introduce new regulations and will not alter traditional uses of Kachemak Bay. Current uses include boating, fishing, hunting, shellfish harvesting, mariculture, and various recreational activities (e.g., sight seeing, hiking). Traditional uses permitted by the state and federal agencies will continue, including commercial and recreational fishing and limited grazing of livestock.

The Alaska Department of Fish and Game (ADF&G) will be the lead agency for the Kachemak Bay NERR. ADF&G will operate the reserve in cooperation with the Alaska Department of Natural Resources (DNR), other partners, and land owners. The administrative plan calls for an integrated management approach for the Kachemak Bay NERR among the institutional land-holders within the region. Proposed staff will initially include a reserve manager, research coordinator, education coordinator, and necessary administrative support, all to be employed by ADF&G. The reserve manager will be the principal administrator and will ensure that the policies contained within the reserve management plan are followed. The research coordinator will develop and implement a resource assessment program including long-term monitoring and

research activities. The education coordinator will develop and coordinate activities that respond to community needs and are consistent with the goals and objectives of the reserve and NERRS. Research reserve staff will work with advisory committees representing organizations and agencies with interest in the reserve to implement these programs.

Research and education programs will gather and make available information necessary to improve understanding, appreciation, and management of the reserve site including research with regional and national implications. Proposed activities sponsored through the Kachemak Bay Reserve will augment, not duplicate, the existing activities of public land managers in the region. Facilities will be developed as necessary to aid in research, education, and stewardship.

In addition to the preferred alternative, other alternatives are discussed, including no action/status quo, alternative boundaries, and management options. Under the no action alternative the reserve designation would not be pursued, and there would be no increased attention to research, monitoring, or education in the area. Although the Critical Habitat Areas and State Park would still be in place, there would be no mechanism to coordinate the research and education efforts in the region, no commitment to a long-term estuarine research and monitoring program that would benefit resource uses and management, no access to NERRS funding, and no additional efforts to promote public awareness of Kachemak Bay's ecosystems. Reserve designation would improve access to other federal funding sources as well. Alternative boundaries are considered from a scientific and management perspective. The final alternative considers different administrative options for the reserve.

The environmental consequences of the proposed action are all positive. Physical impacts on the natural environment through the designation of the reserve will be negligible, no resources will be irreversibly or irretrievably lost, and designation will aid in greater protection and understanding of the natural resources in the region.

The Draft Environmental Impact Statement/Draft Management Plan for the proposed reserve was circulated for public and agency review for seven weeks in the spring of 1998. Twenty letters were received, and eight individuals testified at the public hearings. All comments were in support of reserve designation (Appendix M). Specific comments on the contents of the draft document were weighed and addressed before producing this Final Environmental Impact Statement/Final Management Plan.

1.0 INTRODUCTION

1.1 THE COASTAL ZONE MANAGEMENT ACT

In 1972, Congress passed the Coastal Zone Management Act (CZMA). In the CZMA, and in subsequent reauthorizations and amendments, Congress recognized the significance of coastal resources, the importance of these resources to the national, regional, and local economies, and the importance of understanding and managing these uses to maintain the resources and healthy economy. The CZMA further recognized the interrelationships between terrestrial, estuarine, and marine environments. These relationships are reflected in following portions of the 1990 reauthorization of the CZMA:

The habitat areas of the coastal zone, and the fish, shellfish, other living marine resources, and wildlife therein, are ecologically fragile and consequently extremely vulnerable to destruction by man's alteration.

The increasing and competing demands upon the lands and waters of our coastal zone ... have resulted in the loss of living marine resources, wildlife, nutrient-rich areas, permanent and adverse changes to ecological systems, decreasing open space for public use and shoreline erosion.

In recognition of these issues, the CZMA established a national goal:

...to preserve, protect, develop, and where possible, to restore and enhance the resources of the Nation's coastal zone for this and succeeding generations.

The CZMA further recognized that coastal waters are significantly affected by land uses:

Land uses in the coastal zone, and the uses of adjacent lands which drain into the coastal zone, may significantly affect the quality of coastal waters and habitats, and efforts to control coastal water pollution from land use activities must be improved.

Two programs were created under the CZMA, the federal Coastal Management Program and the National Estuarine Research Reserve System, both administered by the National Oceanic and Atmospheric Administration (NOAA). Under the Coastal Management Program, coastal states receive grant money to develop and administer plans for coastal management. The CZMA also authorizes the provision of federal technical assistance to support states' coastal zone management planning and plan implementation. Through the CZMA's federal consistency review provisions, a state with a NOAA-approved state coastal management plan has some control over federal actions affecting the state's coastal zone. The consistency review provisions cover action proposed by a federal agency, actions that require federal approval or permits, and certain actions that receive federal financial assistance. The Alaska Coastal Management Act was approved by the Alaska State Legislature in 1977. Regulations, including standards and guidelines, were subsequently developed by the state and later approved by NOAA. The Alaska

Coastal Management Program was approved by NOAA and went into effect for federal consistency purposes in 1979.

The second program, the National Estuarine Research Reserve System, is described below.

1.2 NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM

Section 315 of the CZMA (16 USC §1461), as amended, establishes the National Estuarine Research Reserve System (NERRS or the System). Pursuant to Section 315 of the CZMA, healthy estuaries which typify different regions and estuarine types of the U.S. are designated as National Estuarine Research Reserves (NERRs or Reserves). Reserves are operated as sites for long-term research and monitoring, estuarine education, and interpretation programs. The System provides a framework to disseminate research results, monitoring information, and techniques for estuarine education and interpretation developed in the reserves.

1.2.1 Mission

As stated in the implementing regulations, the NERR System has the following mission:

the establishment and management, through Federal-state cooperation, of a national system of Estuarine Research Reserves representative of the various regions and estuarine types in the United States. Estuarine Research Reserves are established to provide opportunities for long-term research, education, and interpretation.

Prior to establishment of the System, scientific understanding of estuarine processes increased slowly and without national coordination. There was no ready mechanism for the detection and measurement of local, regional, or national trends in estuarine conditions. Resource managers, governments, and the public did not always have access to information about the significance and ecology of their estuaries, could not assess the full impact of past activities, and could not readily anticipate the damaging effects of proposed management and development policies. Research and education conducted through the System can address these gaps in knowledge to support sustained commercial and recreational fisheries, tourism, aquaculture, and other activities.

1.2.2 Goals of the National Estuarine Research Reserve System

The goals of the NERR System are established by federal regulation, 15 C.F.R. Part 921.1 (b):

- a) Ensure a stable environment for research through long-term protection of National Estuarine Research Reserve resources;
- b) Address coastal management issues identified as significant through coordinated estuarine research within the System;

- c) Enhance public awareness and understanding of estuarine areas and provide suitable opportunities for public education and interpretation;
- d) Promote federal, state, public and private use of one or more reserves within the System when such entities conduct estuarine research; and
- e) Conduct and coordinate estuarine research within the System, gathering and making available information necessary for improved understanding and management of estuarine areas.

1.2.3 NERR System Administrative Framework

Designated reserves receive federal support through the Office of Ocean and Coastal Resource Management (OCRM). OCRM is part of NOAA's National Ocean Service (NOS) (see chart below).

OCRM plays three roles in operating the System. First, it disburses and oversees expenditures of federal funds for research, education, land acquisition, operations, and development of individual reserves. Second, OCRM coordinates and provides policy guidance for the System. Finally, as required by federal law, OCRM periodically evaluates the operation of research reserves for compliance with federal requirements and with the individual reserve's approved management plan. At time of publication, OCRM is reorganizing its existing divisional units to create a new Estuarine Reserves Division (ERD), which will have day-to-day responsibility for implementation of the NERRS. OCRM's Policy Coordination Division (PCD) will continue to have primary responsibility for evaluation.

1.2.4 Biogeographic Regions

NOAA has identified eleven distinct biogeographic regions and 29 subregions (provinces) in the U.S., each of which contains several types of estuarine ecosystems (see 15 C.F.R. Part 921, for NERR typology system). When complete, the NERR System will contain examples of estuarine hydrologic and biological types characteristic of each biogeographic region. Each reserve will be responsible for conducting research and providing educational and interpretive services that are applicable to its region. As of May 1998, the NERR System includes twenty-two reserves, with Kachemak Bay and four others in development (Figure 1).

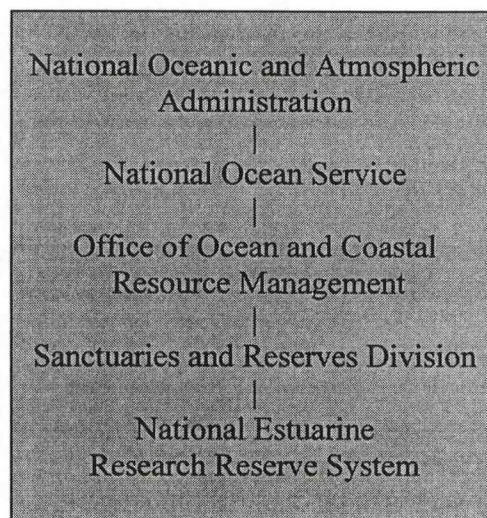
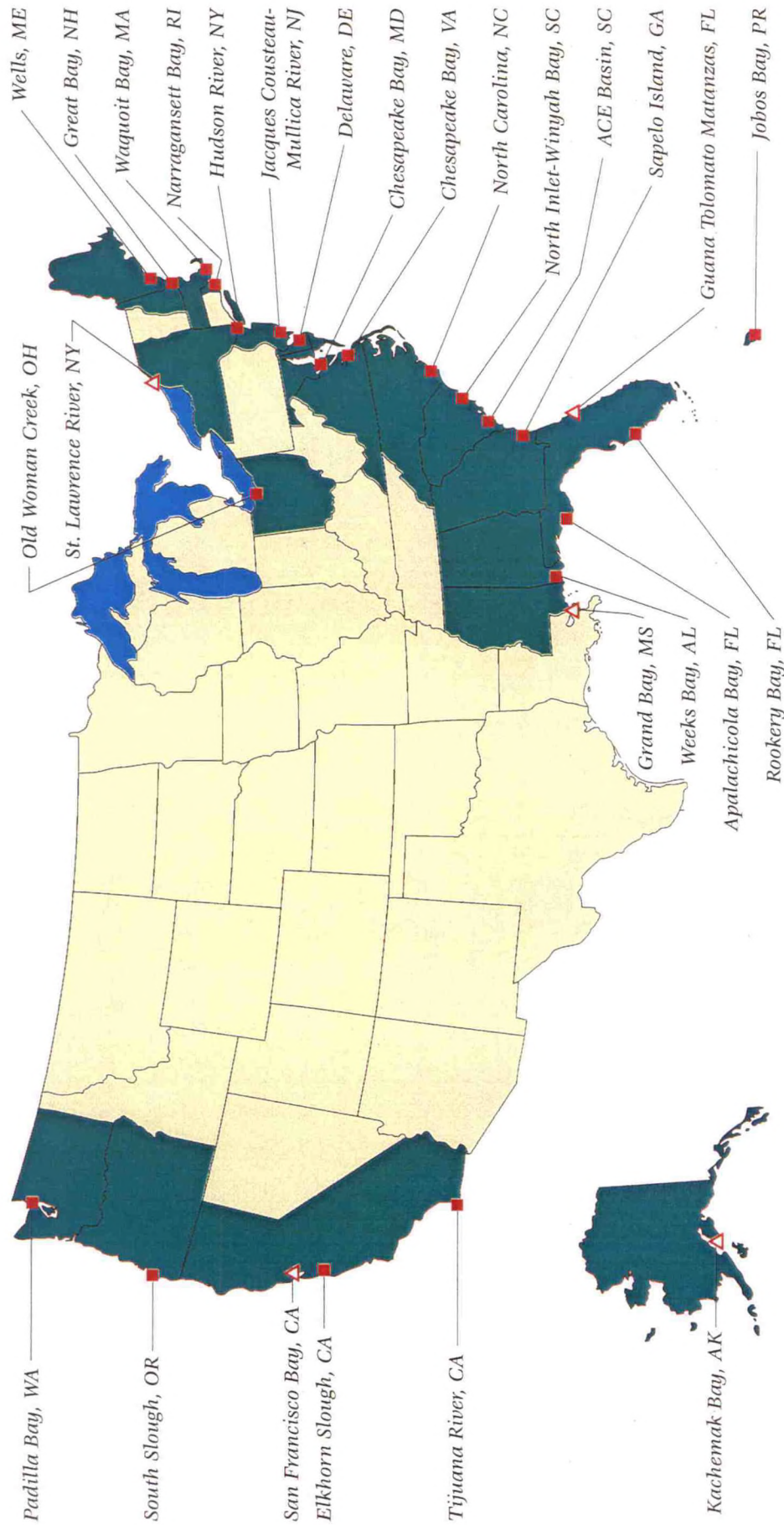


Figure 1.

National Estuarine Research Reserve System

designated
proposed



The Kachemak Bay NERR (KBNERR) is representative of the fjord biogeographic region and is located in the Aleutian Island subregion, as identified in the NERRS implementing regulations. No reserves currently exist in the fjord region, which is situated entirely within the state of Alaska.

1.2.5 Reserve Designation and Operation

Under CZMA Section 315, a state can nominate an estuarine ecosystem for Research Reserve status so long as the site meets the following conditions:

- a) The area is representative of its biogeographic region, is suitable for long-term research and contributes to the biogeographical and typological balance of the System;
- b) The law of the coastal State provides long-term protection for the proposed reserve's resources to ensure a stable environment for research;
- c) Designation of the site as a reserve will enhance public awareness and understanding of estuarine areas, and provide suitable opportunities for public education and interpretation; and
- d) The coastal State has complied with the requirements of any regulations issued by the Secretary [of Commerce].

Reserve boundaries must include an adequate portion of the key land and water areas of the natural system to approximate an ecological unit and to ensure effective conservation. If the proposed site is accepted into the NERR System, it is eligible for NOAA financial assistance on a cost-share basis with the state. The state exercises administrative and management control, consistent with its obligations to NOAA, as outlined in the Memorandum of Understanding (MOU, see Appendix A). A reserve may apply to NOAA for funds to help support operations, research, monitoring, education/interpretation, development projects, facility construction, and acquisition.

1.2.6 Reserve Management Planning

Every reserve is required by federal regulation to have a NOAA-approved management plan. The plan must describe the reserve's intended strategies or actions for research, education/interpretation, public access, construction, acquisition, and resource preservation, restoration and manipulation. Staff roles in each of these areas must also be addressed. A new reserve's initial plan, and any major proposed changes to a plan, are made available for public comment at national and local levels before receiving NOAA's final approval.

Reserve management plans are important for a variety of reasons, which include:

- Providing a framework to evaluate and direct reserve programs,
- Gauging how successfully reserve goals have been met and to determine desired changes in direction; and
- Guiding Section 312 evaluations of the reserve.

To serve these purposes, management plans are currently required by NOAA to be updated every five years. This requirement, however, may be changed in the future to allow states greater flexibility to determine when a management plan must be updated. The management plan in this document has been developed according to NOAA regulations, using information and public involvement. It is consistent with CZMA Section 315, and the provisions of the Alaska Coastal Management Program.

1.3 NERRS NATIONAL PROGRAMS

The two major elements of the NERR System are (1) research and monitoring of estuarine habitats and processes, and (2) education and interpretation of estuarine habitats.

1.3.1 NERRS Research and Monitoring Program

The NERRS research and monitoring programs are designed to facilitate and coordinate scientific understanding of estuarine systems, and to establish and regularly monitor the baseline conditions of estuaries in the System. In creating the NERRS, Congress required that research priorities, objectives, and methodologies should be coordinated nationally for the broadest application of research results and maximum use of the System. The System has developed a strategic plan to address both research and monitoring activities on a national scale. The NERRS research and monitoring programs include the Graduate Research Fellowship program and the three-phased monitoring program that itself includes:

Phase I--environmental characterization, including the studies necessary for inventory and comprehensive site description;

Phase II-- site profile development, including a synthesis of data and information; and

Phase III--monitoring, including implementation of a systematic long-term monitoring program focusing on selected parameters. Phase III incorporates implementation of the new System-wide Monitoring program (SWMP) and its three parameters.

These activities will be presented in more detail later in this document.

The NERRS-funded research and monitoring programs are intended to generate and supply information to state and local governments, such as to fish and wildlife management and land use management/permitting agencies, as well as to various stakeholders and users of coastal resources. Coastal governments, policy-makers, and the public should be able to use research results to make informed land use and management decisions, to gauge the effects of activities,

and to restore estuarine habitat. Researchers should have access to a database that describes estuarine conditions on a variety of geographic and temporal scales.

1.3.2 NERRS Education, Interpretation and Outreach Program

The NERRS Education, Interpretation and Outreach Program is designed to interpret and disseminate information about estuarine processes. Development of new techniques and approaches to estuarine education, interpretation and outreach also receive support. A primary goal of the Education Program is to provide the link between research results and the groups that manage and use coastal resources. Programs and techniques developed by one reserve may be shared with other reserves, educators, and interpreters throughout the System.

Each reserve may develop an education and interpretation plan tailored to its site and its region's educational system. The System provides a national strategic plan to guide program development at individual reserves.

2.0 PURPOSE OF AND NEED FOR ACTION

2.1 THE PROPOSED ACTION AND DECISION TO BE MADE

The purpose of the proposed action is to designate Kachemak Bay, on the Southwestern coast of the Kenai Peninsula in Alaska, as a National Estuarine Research Reserve. The National Oceanic and Atmospheric Administration works with interested coastal states to establish such reserves, thereby fulfilling its mission of establishing and managing a national system of reserves that represent the various biogeographic subregions and estuarine types of the United States.

Although two U.S. biogeographic regions are entirely contained within the State of Alaska—the Fjord and Subarctic regions—no reserves had yet been established in Alaska. In 1994, the National Oceanic and Atmospheric Administration and the State of Alaska began exploring the possibility of designating a reserve in Southcentral Alaska.

In addition to fulfilling its NERRS mission, NOAA was interested in establishing a reserve in the geographic area that was affected by the *Exxon Valdez* Oil Spill (EVOS) in order to support the restoration of resources and services injured by the spill. NOAA is one of three federal trustee agencies responsible for the restoration of the spill affected area; the others are the Department of Agriculture and the Department of the Interior. Under terms of the civil settlement of claims pursuant to the spill, these three federal trustee agencies share the responsibilities of restoration oversight with three state agencies. The three federal agencies also have responsibilities related to the criminal restitution. During site selection, NOAA encouraged the State to examine the spill affected area (see Appendix B), which lies in the Fjord biogeographic region. NOAA provided start-up funding for the research reserve proposal from the federal criminal restitution funds, with the agreement of the other federal trustees. NOAA's aim was to aid in restoration of injured resources and services through creation of a National Estuarine Research Reserve in the spill affected area.

After conducting a search for a suitable site that met federal and state criteria (i.e., the NERR site selection process), Governor Tony Knowles nominated areas in and around Kachemak Bay for designation as a reserve. These areas included Kachemak Bay, the Fox River Flats, various uplands in Kachemak Bay State Park and State Wilderness Park, and a few additional parcels. The Bay and the Flats have previously been designated as State Critical Habitat Areas (CHAs) by the Alaska Legislature.

Designation of the proposed Kachemak Bay NERR (KBNERR) would make the State eligible to receive federal assistance to conduct research and ecological monitoring, develop educational programs, construct facilities, and participate in the programs of the NERR System. Kachemak Bay, which lies in the EVOS affected area, provides valuable opportunities for the State and NOAA to further the restoration efforts of the federal and State trustee agencies.

Before the proposed reserve can be designated, federal law requires the development of an environmental impact statement (EIS) and a reserve management-operation plan; these are

combined in the current document. The focus of the EIS is to examine whether or not NOAA should designate the proposed Kachemak Bay NERR. The draft EIS and draft management-operation plan (DEIS/DMP) for the proposed reserve was circulated for public and agency review for seven weeks in the spring of 1998. Twenty letters were received, and eight individuals testified at the two public hearings (Appendix M). All comments were in support of reserve designation. Specific comments on the contents of the draft document were weighed and addressed before producing this Final Environmental Impact Statement/Final Management Plan (FEIS/FMP). Several adjustments were made to the management plan (Section 3.1 of this document) in response to the comments received.

2.2 DOCUMENTS THAT INFLUENCE THE SCOPE OF THIS EIS

The proposed Kachemak Bay NERR encompasses over 365,000 acres of publicly-owned and almost exclusively state-managed lands and waters. The bulk of the reserve falls within two state Critical Habitat Areas (CHAs) and the Kachemak Bay State Park (KBSP, see Figure 2). Both the CHA and state park designations are conferred by the state legislature. The approved management plans for these areas give the governing state agency (ADF&G for the CHAs, the Alaska Department of Natural Resources for the park) specific regulatory authority, as described in Section 3.1.3 of this document. Policies of the Critical Habitat Areas and KBSP are summarized in Appendix C. The approved resource management policies of these plans apply to the appropriate sections of the proposed reserve. Designation of a reserve will not change these or other land management authorities.

Grazing leases and permits currently are in effect for most of Fox River Flats CHA. Grazing leases and permits are administered by the Department of Natural Resources (DNR). ADF&G has also issued Special Area Permits in the CHA for these same grazing operations. Terms and conditions are applied to make the grazing activities compatible with the goals and policies of the CHA plan. These include seasonal restrictions, riparian buffers, limits on numbers of animals, etc. The establishment of the proposed NERR will not change these authorities. A "Coordinated Resource Management Plan for the Fox River Flats Grazing Area" was drafted in December 1993 by the USDA Soil Conservation Service and the Alaska Department of Natural Resources. This plan provides direction for administering grazing leases and permits.

Shellfish may be cultured in Kachemak Bay by permit or lease. DNR is responsible for authorizing sites suitable for mariculture through Aquatic Farm Site permits and leases. ADF&G authorizes shellfish mariculture within the reserve through Aquatic Farm Operations Permits and Special Areas Permits. Through these authorizations, terms and conditions are applied to make the activities compatible with the goals and policies of the CHA Management Plan. The establishment of the proposed NERR will not change these authorities.

The CHA and KBSP management plans and the existing mariculture and grazing permits cover specific areas within the boundaries of the proposed reserve. In addition, there are more general state and local plans that cover broad areas in which the proposed research reserve lies. These include: 1) The Kenai Peninsula Borough Coastal Management Plan, which forms part of the

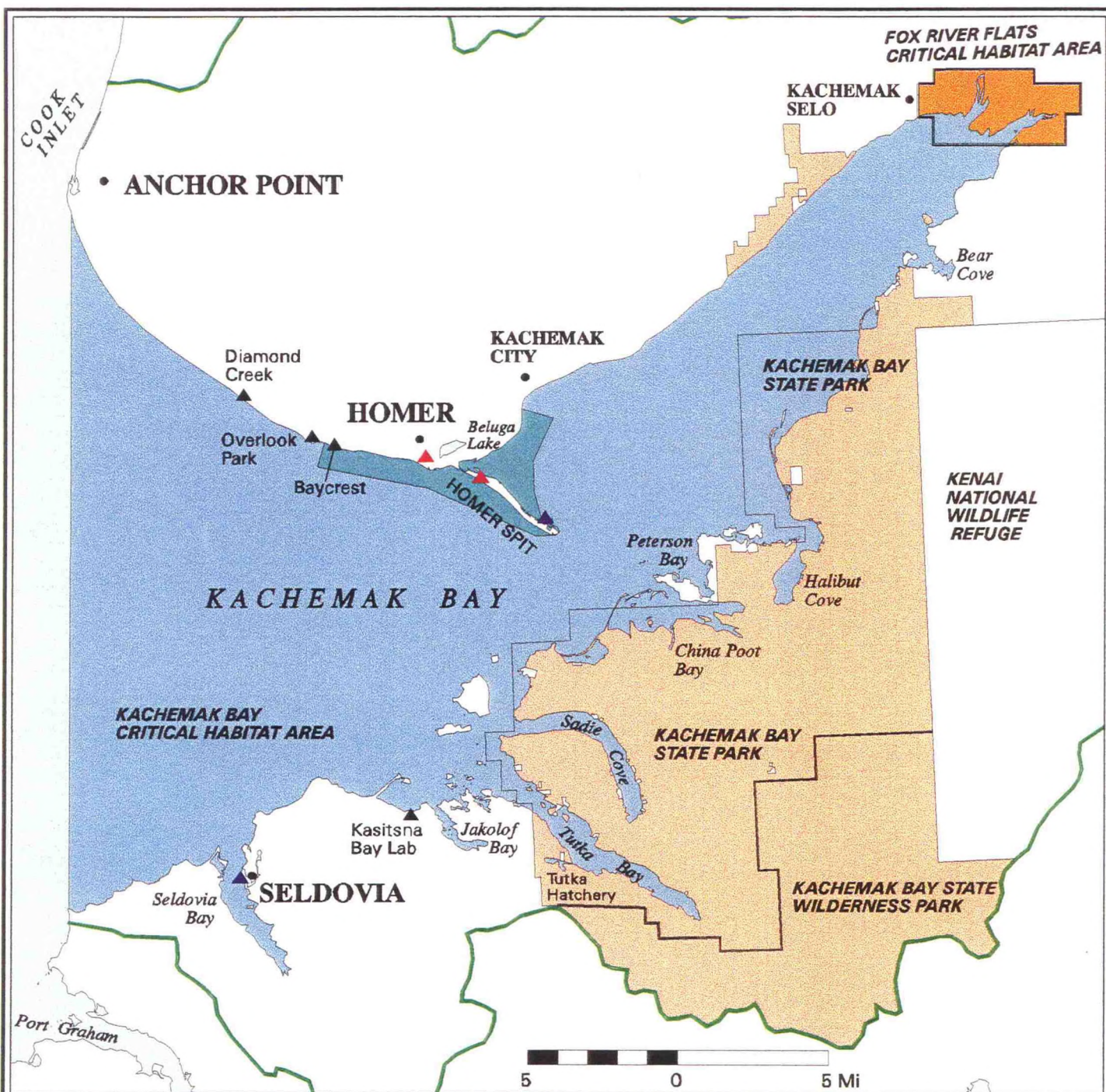


Figure 2. Boundaries For Kachemak Bay NERR

- Core Water Area
- Buffer Tideland Area
- Core Land Area
- Buffer Land Area

N Approximate Kachemak Bay Watershed

- ▲ Buffer includes other publicly-owned land parcels at Beluga Slough and Homer Spit.
- ▲ Potential future additions to NERR Boundary.
- ▲ These two harbors are excluded from the research reserve boundary.

NERR boundary is approximate based on mean high water.

Location Map



Alaska Coastal Management Program; 2) the Kenai Peninsula Borough Comprehensive Plan; and 3) the Kenai Area Plan, to be completed in 1998, which will direct DNR management decisions for the entire Kenai Peninsula, including state lands within the NERR. These plans are discussed further in the Resource Protection chapter of the draft management plan, Section 3.1.3. The establishment of the proposed NERR is compatible with these plans as well.

Several EIS documents have been created for oil and gas lease sales in Cook Inlet which may contain general information relevant to Kachemak Bay, although it should be well understood that the Critical Habitat Area designation prevents any oil and gas leasing from occurring within Kachemak Bay. One of the most comprehensive of these documents is the Final EIS for Oil and Gas Lease Sale 149 (MMS, 1996). Although Kachemak Bay is not included in the "area considered" in the EIS, some general resource information for Cook Inlet may apply (e.g., plankton discussions). Much of the biological resource information specific to Kachemak Bay can be found in the Critical Habitat Management Plan for Kachemak Bay and Fox River Flats (ADF&G 1993). Much of Section 4 of this document came from this source, which in turn derived much of its information from the Alaska Habitat Management Guide for Southcentral Alaska (ADF&G 1985).

2.3 THE PUBLIC INVOLVEMENT PROCESS

The process for designating a reserve has two phases. Phase I is composed of site selection. Site selection for a reserve in Southcentral Alaska lasted from January 1996 to May 1997, when NOAA accepted the governor's nomination of Kachemak Bay. Site selection issues and procedures are discussed in the Kachemak Bay National Estuarine Research Reserve Site Nomination Proposal (ADF&G, 1997). In the second phase of designating a reserve, NOAA and the State jointly develop an EIS concurrent with a management-operations plan for the reserve.

Following the process set forth by the National Environmental Policy Act, NOAA and ADF&G conducted public scoping meetings to identify issues to be addressed in the EIS. Although several public meetings had previously been held in Kachemak Bay communities regarding a proposed NERR (e.g., in April and December, 1996), formal scoping meetings were held in Homer and Seldovia on June 24 and 26, 1997, respectively. The meetings were announced in the Federal Register, advertised twice in each of the two weekly newspapers in the Homer area, once in the Kenai Peninsula Clarion, on the local public radio station, in several area post offices, and on a project Web page. Faxes, letters, and e-mail notices were also sent out to members of the site selection committee and other working groups, native village representatives, state and federal agency representatives, and other individuals who had shown interest in the project. Approximately 20 people attended the June scoping meeting in Homer and eight in Seldovia. Appendix D contains various materials related to the scoping meetings—the announcements, scoping document, agenda, questionnaire distributed, meeting summaries, and a table of scoping comments received.

The comments received ranged from:

- a) Those pertinent to the scoping process for establishing a reserve (e.g., "Include native groups in the discussion and planning of the proposed NERR." "Shouldn't you consider

including the Kasitsna Bay Lab within the proposed reserve boundaries?”). These issues are being addressed in the content and the process for developing this document. (See also responses to public questions in the appendix.)

- b) Suggestions for research topics and concerns about resource issues in Kachemak Bay that might be explored by the NERR once established. These concerns are discussed in the Research and Education chapters of the draft management plan (sections 3.1.4 and 3.1.5) and summarized in the appendices referenced in those chapters.
- c) Comments that do not have much bearing on the proposed establishment of a research reserve in Kachemak Bay. For example, “Has the military ever conducted training maneuvers in upper Kachemak Bay?” Establishing the NERR would have no effect on this issue since any such maneuvers would have to follow the established policies of the state-designated Critical Habitat Area. Such issues were not addressed in the DEIS/DMP.

Public input was used to develop the DEIS/DMP. ADF&G staff reviewed the first drafts of several of the most crucial chapters of the management plan with the various ad hoc committees in the Kachemak Bay area (education, research, and plan review groups listed in section 6.2). Draft chapters were on the project Web page throughout refinement of the DEIS/DMP. Periodic e-mail notices kept current communication with these committee members, agency representatives, and other individuals who had shown interest in the project.

The KBNERR DEIS/DMP was circulated for public and agency review for seven weeks in the spring of 1998. NOAA conducted public hearings in Seldovia and Homer (April 21 and 22, 1998). Again, the meetings were announced in three local papers, the federal register, and email notices. Six people attended in Seldovia and 14 in Homer; a total of eight testified. Hearing transcripts are available from ADF&G. Twenty written comments were received, all of which supported designation of KBNERR. Common themes included enlarging the reserve boundaries to potentially include the entire Kachemak Bay watershed, and encouraging ADF&G to make sure advisory committee input will be seriously considered in operation of the reserve. Comment letters and the response to comments are found in Appendix M. ADF&G met individually with many commentors to review their suggestions. In addition to many minor wording changes, significant revisions were made to the boundary, education, and facilities chapters of the management plan in response to the comments received, as described in Appendix M.

2.4 FEDERAL AUTHORIZATIONS NECESSARY TO IMPLEMENT THE ACTION

Designation of the proposed Kachemak Bay NERR does not require any federal permits or licenses. Designation requires the completion of the EIS process of the National Environmental Policy Act, and the publication of a final EIS. Designation also requires the completion of a reserve management plan and approval of the management plan by the Department of Commerce. Completion of the management plan includes securing the appropriate signatures for all required memoranda of understanding. Following Departmental approval of the management

plan, a record of decision—usually in the form of designation findings by the Undersecretary of Commerce for Oceans and Atmosphere—is made. At that time, the proposed reserve can be officially designated.

Pursuant to Section 7 of the Endangered Species Act, NOAA's National Ocean Service (NOS) must consult with the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) when designation of an estuarine research reserve may affect a listed species or designated critical habitat. Informal consultations were conducted with both FWS and NMFS. Each agency concurred with NOS' assessment that designation of the proposed Kachemak Bay NERR is not likely to adversely affect threatened or endangered species. Copies of correspondence on Section 7 consultations can be found in Appendix L.

Upon designation, each reserve is entitled to federal funding for a combination of operations and management, research, education, construction, and acquisition activities. Funding is limited by federal regulations as found at 15 CFR Part 921.

2.5 STRUCTURE OF THE EIS/PLAN COMPONENTS

In Section 3, the alternatives are described including the proposed action, i.e., establishing a National Estuarine Research Reserve in Kachemak Bay. The management-operations plan for the proposed reserve is included as the preferred alternative. The management-operations plan contains the following: the mission and goals of the reserve; an administrative plan to operate the reserve; a description and maps of the reserve's boundaries; a section which details the existing resource protection authorities; a research and monitoring plan; an education and outreach plan, etc. The remainder of Section 3 discusses the other alternatives considered—the no action alternative, and alternative boundaries and management options. Section 4, the Affected Environment, describes the current resources of Kachemak Bay, including the physical, biological, and cultural features of the area. Section 5 contains a description of the environmental consequences of the alternatives—primarily examining the consequences of establishing the proposed reserve in Kachemak Bay versus the no-action alternative.

3.0 ALTERNATIVES (including the Proposed Action)

The action under consideration by NOAA is a proposal from the State of Alaska to establish a National Estuarine Research Reserve in Southcentral Alaska at Kachemak Bay, within the Kenai Peninsula Borough.

This section considers a number of alternatives. The preferred alternative (Section 3.1) considers approval of Kachemak Bay as a National Estuarine Research Reserve, and lays out the management plan for the proposed reserve. This plan evolved from the draft management plan which the State had previously developed to consider the economic, environmental, regulatory, and traditional use issues raised by local, native, and other parties interested in the proposed KBNERR. The draft plan was circulated for public and agency review for seven weeks in the spring of 1998. Twenty letters were received, and eight individuals testified at the two public hearings (Appendix M). Specific comments on the plan were weighed and addressed before producing the Final Management Plan (FMP, in Section 3.1 below). Public and agency comments resulted in several adjustments to the plan. The "no action" alternative (Section 3.2.1) proposes that Kachemak Bay not be designated as a NERR with no consequent change from the current relationship of land management entities, nor in the existing research and educational programs operated by disparate groups around the Bay. Other alternatives discussed below include alternative boundaries and different management options.

3.1 PREFERRED ALTERNATIVE: APPROVAL OF KACHEMAK BAY AS A NATIONAL ESTUARINE RESEARCH RESERVE

The section that follows forms the "preferred alternative" under consideration and represents the final management plan for the proposed Kachemak Bay NERR. This plan was developed with the input of many parties interested in the Kachemak Bay region, including local officials and citizens, native groups, researchers, educators, and state government officials.

The State, NOAA, and the public have affirmed the following mission and goals for the proposed KBNERR:

Mission: To develop and implement research and educational programs that enhance our understanding of the Kachemak Bay estuary and thus help ensure the Bay remains healthy and productive for Alaskans, the nation, and the diverse species that thrive there.

Operational Goal: To promote and develop non-regulatory approaches to natural resource management in the Kachemak Bay watershed.

Activities in Kachemak Bay's watershed affect the ecology of the bay and surrounding waters, marshes, beaches, and rivers. Inherent in the reserve's mission to develop and implement research and educational programs that enhance our understanding of the bay is the obligation

that such programs provide information that coastal managers and the public can use to guide land use and resource decisions in the bay's watershed.

Research Goals:

1. To increase knowledge of the biological, physical, chemical, geological, cultural and socioeconomic components of the Kachemak Bay ecosystem.
2. To encourage projects in the reserve that will streamline scientific efforts, maximize efficient use of funds, and avoid duplication.
3. To promote informed resource decisions by generating relevant information and providing it to the public and natural resource decision-makers.

Educational Goals:

1. To promote citizen and community awareness, participation and support for the Kachemak Bay National Estuarine Research Reserve.
2. To facilitate and supplement estuarine education, interpretation, and outreach in Kachemak Bay.
3. To promote informed decisions about natural resources and human uses in the region.

The plan for achieving these mission and goals is described in the balance of Section 3.1.

3.1.1 Boundary Plan

3.1.1.1 Boundary Criteria

NOAA boundary requirements are outlined at 15 CFR §921.11(c)(3). NOAA requirements and additional criteria considered by the state are summarized below:

1. *Key Land and Water Areas that Approximate an Ecological Unit:* NOAA regulations require that reserve boundaries “encompass an adequate portion of key land and water areas of the natural system to approximate an ecological unit....” and should encompass resources representative of the total ecosystem. Relevant definitions include:
 - *ecological unit:* A basic component of the ecosystem. Boundaries between units may be based on natural boundaries, such as streams, ponds, waterfalls, and uplands, or on substrate, depth, flora, and factors that contribute to the range in characteristics exhibited by estuarine ecosystems. [NERR Standard Operating Procedures (SOP)]
 - *ecosystem:* The biotic community and its abiotic environment. (NERR SOP)
 - *key land and water areas:* The “core areas” which include a “full range of significant physical, chemical and biological factors contributing to the diversity of fauna, flora and natural processes occurring within the estuary.” (NOAA regulations)
2. *Encompass Areas with Adequate Controls:* The interagency site selection committee, local governments, the State, and the general public did not support designation of a NERR that would require the development of additional land-use regulations and controls. However,

NOAA regulations require that there be a level of control over uses and activities to ensure that the ecological integrity of the site is maintained for sustained research and education. Specifically, the regulations state that "Reserve boundaries must encompass the area within which adequate control has or will be established by the managing entity over human activities occurring within the reserve." Therefore, a major consideration in the selection of a NERR site in Southcentral Alaska was identifying a region with sufficient regulatory controls already in place. The State of Alaska is pursuing the designation of a NERR as a non-regulatory program, and will rely on the existing state land use controls to meet this requirement.

3. *Management Considerations*: The administrative burden and responsibility for operating a research reserve and associated research and educational programs was a significant consideration in the site selection process and in the delineation of the reserve boundaries. The inclusion of the entire Kachemak Bay watershed or ecosystems (which would include all or parts of Cook Inlet) would entail a huge area with complex ownership and increased management responsibilities. Moreover, the inclusion of large tracts of general state land might require the development of additional or revised land management programs. Given the limited funds available to support reserve programs, it is also important to develop a reasonable boundary that will establish a credible reserve without creating an overwhelming administrative burden.
4. *Research/Monitoring and Education Needs and Goals*: The research, monitoring, and educational needs and goals of the proposed NERR are an important consideration in developing a boundary. These needs and goals define the purpose of establishing a reserve, and should play a primary role in defining the boundaries.

3.1.1.2 Boundary Description and Rationale

The boundaries for the Kachemak Bay NERR include the waters of Kachemak Bay east of the line connecting Bluff Point in the north with Point Pogibshi in the south, the Fox River Flats, a large portion of Kachemak Bay State Park/Wilderness Park, the Beluga Slough property in public ownership, and city-owned tidelands and marshlands along the Homer spit (Figures 2 through 4). Privately-owned lands within these boundaries (representing approximately 0.7% of the total area) are, by definition, excluded from the reserve (see Appendix E). The boundary includes the following areas.

- Kachemak Bay and Fox River Flats Critical Habitat Areas (CHAs): State lands within the CHAs are jointly managed by ADF&G and DNR. Under Alaska Statute (AS) 16.20.500, the purpose of CHAs is to "protect and preserve habitat areas especially crucial to the perpetuation of fish and wildlife, and to restrict all other uses not compatible with that primary purpose." ADF&G has land use regulations as well as an approved land use plan (ADF&G 1993) for the two CHAs to guide uses and activities in the area. Any future additions to these CHAs would also be considered within the NERR.

- Kachemak Bay State Park/Wilderness Park (KBSP): All current and future lands and waters within the Kachemak Bay State Park/Wilderness Park flowing into Kachemak Bay are included in the research reserve. Uplands above mean high tide within KBSP are included as a buffer. These state lands are managed by DNR, Division of Parks and Outdoor Recreation (DPOR). Enabling legislation (AS 41.21.131) established the park as a “Scenic Park” to be managed for its scenic values; designated wilderness lands are to be managed for their wilderness values. Under the statewide park system, state parks are managed to “maintain the park’s natural and cultural resources for long-term use and enjoyment.” DPOR also has specific regulations to manage uses and activities within the state park system, as well as an approved management plan for Kachemak Bay State Park (DNR 1995).
- Beluga Slough: The U.S. Fish and Wildlife Service is seeking to establish permanent headquarters for the Alaska Maritime National Wildlife Refuge (AMNWR) on 60 acres acquired in the Beluga Slough area, south of the Sterling Highway By-pass and west of Beluga Lake in Homer. The proposed facility will include an office, Maritime Refuge Center, bunkhouse, warehouse and service facility, and interpretive trails across the tidal marsh. AMNWR anticipates that this permanent facility will make refuge operations more efficient and strengthen public support and understanding for refuge resources and programs. Interestingly, these needs mirror those of the NERR for a facility in the Homer area. Both entities are very interested in exploring a shared facility at this site. In addition, the City of Homer owns marshlands in this area, and is interested in AMNWR’s proposal to construct interpretive trails from their future facility that will cross both the federal and city-owned sections of the slough. Both the National Wildlife Refuge and the City have approved including these properties in the NERR boundary. The boundary therefore includes all the public-owned lands in the Beluga Slough area as identified in Figure 3, excluding the city’s water treatment plant on the uplands. If the proposed joint facility with AMNWR does not come about, only their lower slough areas will be included in the Reserve boundary, not the disturbed uplands next to the highway (the proposed building site).
- Tidelands owned by the City of Homer. Most of the tidelands in the Kachemak Bay area are owned and managed by the State of Alaska. However, the City of Homer has title to tidelands extending roughly from the tip of Homer Spit west to Bidarki Creek, and again from the spit east to Miller’s Landing (see Figure 4), as noted in the Kachemak Bay CHA plan. The state still has authority over activities in this area because these tidelands are below mean high tide level and therefore subject to the controls of the Kachemak Bay CHA (e.g., “Special Area Permits” from ADF&G).

In 1998, the *Exxon Valdez* Oil Spill (EVOS) Trustee Council purchased an additional 68.7 acres of tidelands/marshlands along the spit and transferred them to the City of Homer as conservation lands (Appendix A). These new purchases are largely comprised of intertidal flats and salt marshes on the eastern side of the spit, extending across to include the outer beach berm (Figure 4). These contiguous flats serve as feeding grounds for extraordinary numbers of migrating shorebirds each year. Much of this land is only inundated at higher tides (i.e., above mean high tide), and therefore was not automatically

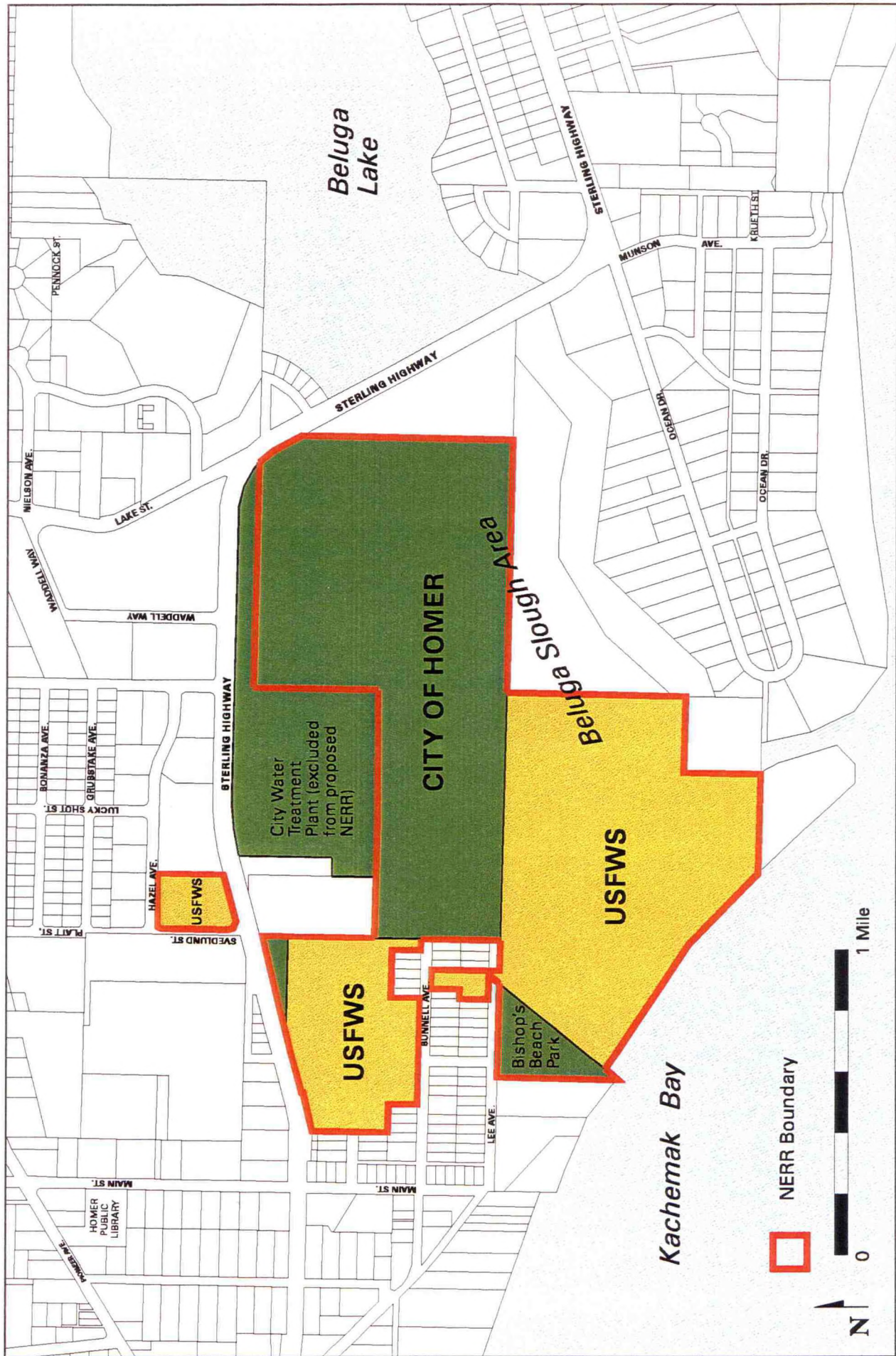


Figure 3. Beluga Slough Parcels. NERR boundary includes the parcels owned by the City of Homer and USFWS, as marked.

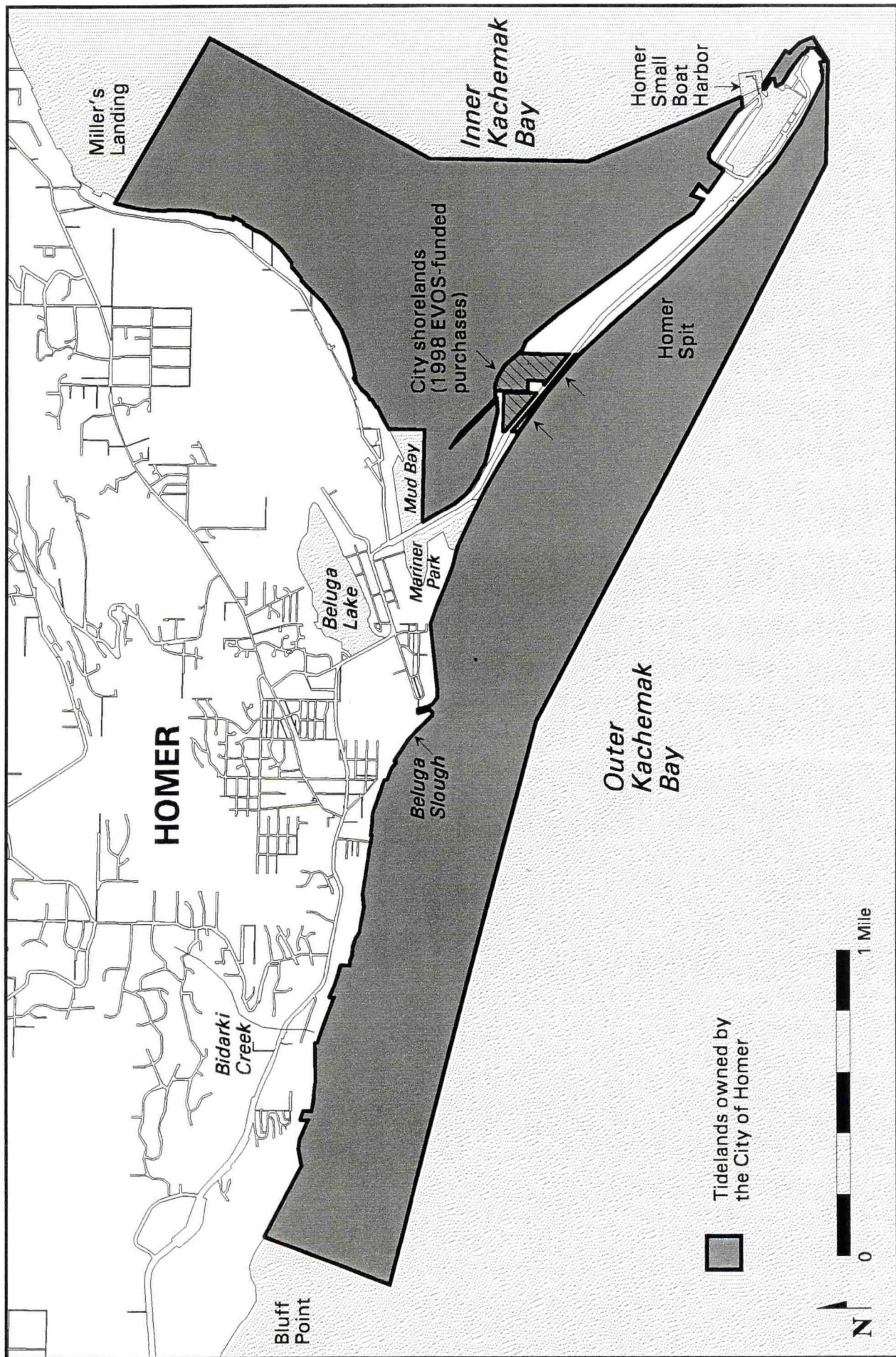


Figure 4. Homer Spit. NERR boundary includes city-owned tidelands and preserved lands on the Spit, as marked.

included within the NERR boundary as part of the Kachemak Bay CHA. However, the Homer City Council approved including both their original tidelands and the new areas within the KBNERR boundary, as marked in Figure 4, to better facilitate research and educational programs in the Homer area.

Similarly, the City of Seldovia has title to tidelands in their harbor area (Figure 5); unlike the Homer-owned tidelands, however, these tidelands are in the small boat harbor and are excluded from the research reserve. However, excluding the busy port areas from the reserve boundary does not preclude the opportunity to conduct research and educational activities in the harbors, nor anywhere else within the Kachemak Bay watershed.

Rationale The boundary represents a viable research reserve. The Kachemak Bay NERR includes over 365,000 acres of lands and waters (approximately 228,000 acres in Kachemak Bay and Fox River Flats CHAs and 137,000 acres in Kachemak Bay State Park). The state believes the boundary meets both the NOAA and state boundary criteria, as described below.

- *Representative Areas and Resources:* Kachemak Bay and Fox River Flats CHAs represent the core area or key land and water area; Kachemak Bay State and Wilderness Park, Homer-owned tidelands, and portions of Beluga Slough represent the buffer area. The core and buffer areas include several unique ecological units including entire watersheds of both glacial and clearwater streams. These units are representative of the Kachemak Bay watershed as well as other estuaries in Southcentral Alaska and the biogeographic province. The boundary will allow study of the relationship of, and transition between, the freshwater, estuarine, wetland, riverine, and upland habitat types, the resources that depend on these habitats, and the relationship between the biotic community and the abiotic environment. Key land and water areas include a full range of physical, chemical, and biological factors supporting the diversity of fauna and natural processes occurring within the Kachemak Bay estuary.
- *Adequate Land Use Controls:* The KBNERR boundaries almost entirely comprise state-owned lands and waters that have been given special protected status by the state legislature. Land use plans have been completed for each of these areas (see Resource Protection, section 3.1.3). The proposed visitor facility at Beluga Slough (0.016% of the total NERR acreage) is owned by a federal resource agency, the U.S. Fish and Wildlife Service, and managed for uses compatible with the NERR. Currently, the city-owned property in Beluga Slough (excluding the water treatment plant) is zoned "open space." Through a 1998 purchase funded by the *Exxon Valdez* Oil Spill (EVOS) Trustee Council, the city acquired another 38 acres in Beluga Slough and 68.7 acres of tideland/marshland areas along the spit that are important to migrating shorebirds (shown as city land on Figures 3 and 4). Conservation easements were placed on these parcels as a condition of the purchase. The City anticipates that its Beluga Slough property (excluding the water treatment plant), the tidelands, and the preserved areas along the spit will be rezoned "conservation district" in the near future, which precludes uses other than boardwalks and wildlife viewing. Meanwhile, the controls established by the CHA pertain to all tidelands up to mean high tide as part of the State's authority over the "water column."



Figure 5. Seldovia Harbor showing excluded city-owned tidelands.

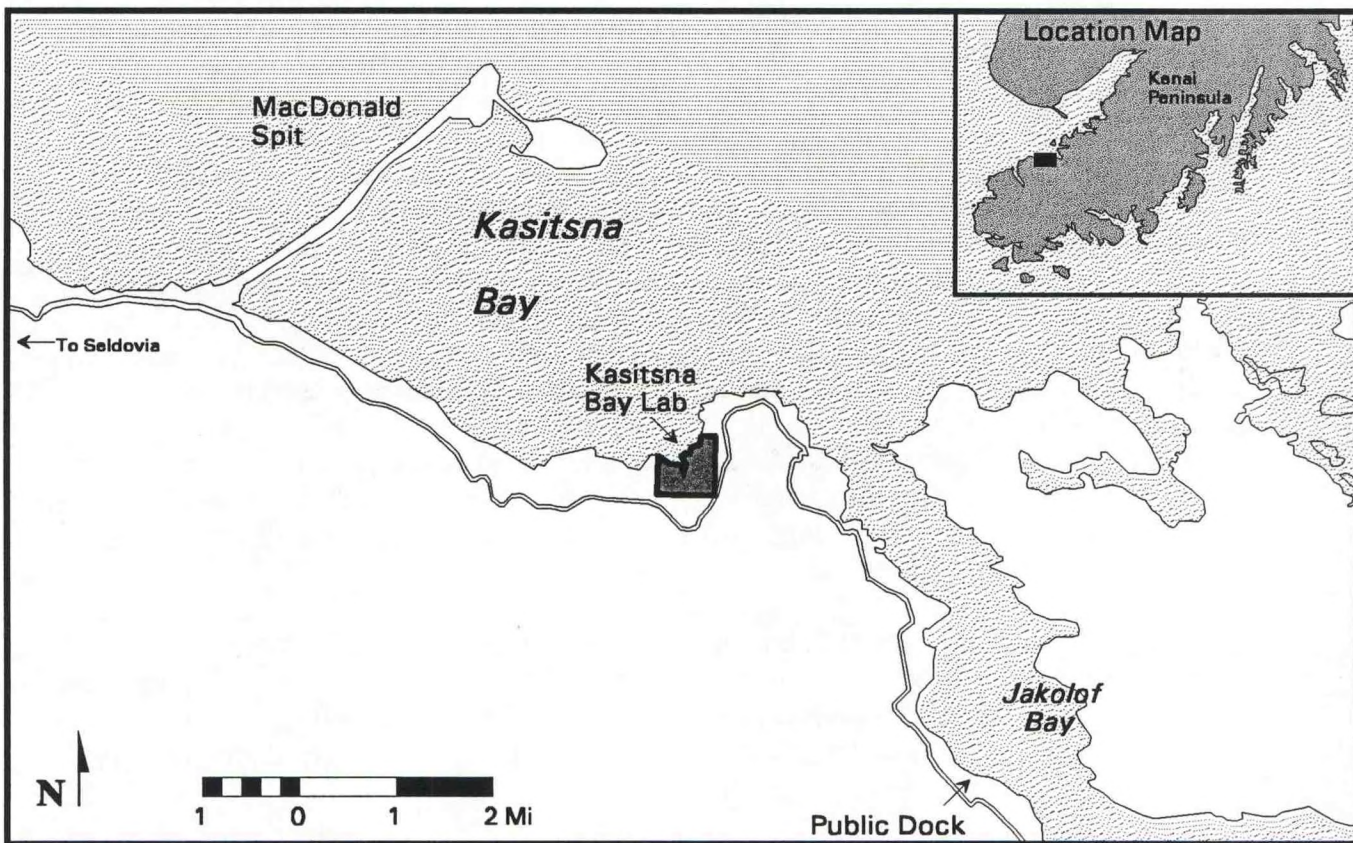


Figure 6. Location of Kasitsna Bay Lab (potential addition to Kachemak Bay NERR).

- *Management Considerations:* Alaska's coastal areas differ from the "Lower 48" states in that large contiguous tracts of relatively pristine state lands and waters remain. The area within the boundary represents over 365,000 acres of publicly-owned and almost exclusively state-managed lands and waters. Once designated, Kachemak Bay would be the largest reserve in the national system (Apalachicola NERR is 193,750 acres, and has recently proposed to add approximately 40,000 acres of land).

Land management responsibilities within the reserve are relatively simple with two principal land managers, ADF&G (Habitat and Restoration Division) and DNR (DPOR and Division of Land). These two state agencies signed a Cooperative Agreement in 1989 to coordinate management of state lands and waters within the CHAs and the State Park (Appendix F). As part of establishing the reserve, ADF&G and DNR (DPOR and Division of Land) again signed a Memorandum of Understanding (MOU) agreeing to include state tidelands and portions of Kachemak Bay State Park within the reserve boundary (Appendix A).

Likewise, agreements with the other agency landholders within the KBNERR boundaries were signed to maintain agency regulatory and management authorities and form partnerships (Appendix A). These include: the U.S. Fish and Wildlife Service (USFWS) concerning the Beluga Slough site that might house shared visitor and headquarter facilities for both the AMNWR and KBNERR; and the City of Homer for inclusion of the city-owned tidelands and sections of Beluga Slough within the reserve boundary. Future institutional agreements may include: 1) NOAA and/or the University of Alaska to facilitate KBNERR use of the Kasitsna Bay Lab; 2) USFWS, should the joint AMNWR-KBNERR facility become a reality; or 3) other organizations to share use of facilities or to further research or educational programs corresponding to KBNERR objectives.

- *Research and Educational Needs and Goals:* An assessment of research and educational needs and goals within the Kachemak Bay area are included in sections 3.1.4 and 3.1.5. Most identified research needs and goals refer to the lands and waters of Kachemak Bay, which are included in the Kachemak Bay and Fox River Flats CHAs. Several comments also noted the need to further understand the relationship among the wetland, riverine, and upland components of the ecosystem, including fish studies and the use of upland areas by upland nesting birds such as marbled murrelet. While the research reserve boundaries do not include the entire bay watershed, they do include several distinct ecological units, representing those in the larger watershed. In addition, it should be noted that NERR research and education initiatives may extend to lands and waters beyond the boundary of the reserve. The public and agencies clearly advocated fostering a better understanding of the larger Kachemak Bay ecosystem, and KBNERR programs will take a watershed approach.

The proposed facility site at Beluga Slough was included in the NERR boundary expressly to accommodate identified research and education needs. The areas purchased by the EVOS Trustee Council and transferred to the City of Homer (Figures 3 and 4) were included in the boundary for two reasons: their estuary and tideland habitat values,

and because the EVOS restoration goal—preserving high value habitat that may aid in the recovery of injured species and resources—is compatible with NERR designation.

Essentially, the NERR boundaries follow those of the two existing Critical Habitat Areas and the State Park except for the following adjustments:

- a) Excluding the Homer and Seldovia small boat harbors from the NERR boundary.

Rationale: Inclusion within the reserve is not appropriate considering the intensity and level of activity in these harbors. Other research reserves have excluded the true port areas of the waterfront. However, this boundary does not preclude research and educational activities in the harbors, nor anywhere else within the watershed.

- b) Including the publicly-owned portions of Beluga Slough as depicted in Figure 3 within the NERR boundary (excluding the water treatment plant). Likewise, include additional parcels should they come into city, state, or federal ownership in this area.

Rationale: It is highly likely that the research reserve will be able to share visitor, lab, bunkhouse, or office facilities on this site with the Alaska Maritime National Wildlife Refuge. The U.S. Fish and Wildlife Service acquired portions of this tidal marsh property because of its good highway location for the visiting public, and because of the potential for interpretive facilities/trails on the estuarine marsh site. Plans for the interpretive trails already encompass the city-owned marshlands in this area. Other parcels at Beluga Slough may be incorporated into the NERR should they come into public ownership at a later date.

- c) Including within the reserve the tidelands owned by the City of Homer and their recently acquired/preserved marshlands along the spit .

Rationale: The Homer City Council supported including these city-owned tidelands/marshlands in the reserve to better facilitate research and educational programs in the Homer area.

3.1.1.3 Core and Buffer Areas

NOAA research reserve boundaries include two subcategories: key land and water areas (called “core areas”) and a buffer. NOAA regulations allow some differences in the levels of protection for the two categories. In the case of KBNERR, however, the buffer area is functionally no different than the core area of the reserve in terms of research and education opportunities, levels of protection, etc. Thus for KBNERR the terms serve only a conceptual purpose.

NOAA defines core areas as those containing critical estuarine ecological units for research purposes, encompassing “a full range of significant physical, biological, and chemical factors contributing to the diversity of fauna, flora, and natural processes occurring within the estuary.” The term “key land and water areas” in the regulations refers to that core area that is so vital to

the function of the estuarine ecosystem that it must be under state control sufficient to ensure the long-term viability of the reserve for research on natural estuarine processes. The determination of which land and water areas are "key" to a particular reserve must be based upon specific scientific knowledge of the area. Key land and water areas also should encompass resources that are representative of the total ecosystem and which, if compromised, could endanger the research objectives of the reserve.

A buffer zone is described as an area adjacent to or surrounding the core and on which the integrity of the core area depends. Buffer zones protect the core and provide additional protection for estuarine-dependent species, including those that are threatened or endangered. Where determined appropriate and approved by the state and NOAA, the buffer zone also may include an area best-suited for facilities required for research and interpretation. Additionally, buffer zones must encompass an area sufficient to accommodate the shift of the core in case of biological, ecological, or geomorphological change.

A. Core Areas

The core area of the Kachemak Bay NERR is composed of the two critical habitat areas, excluding the Homer and Seldovia small boat harbors (Figure 2).

The CHAs contain mostly open water including all the coves and fjords on the south side of Kachemak Bay, as well as the estuarine and intertidal wetlands of the Fox River Flats. These meet the requirements for core areas because they represent minimally to virtually undisturbed lands and waters that span the gradient from upland/freshwater wetland interface through the estuary and out to the near-shore continental shelf.

B. Buffer Areas

The marshes and uplands of Kachemak Bay State and Wilderness Park comprise the main buffer area, as well as the publicly-owned Beluga Slough property and the Homer-owned tidelands. The state park lands capture the full ecological gradient of the fjord ecosystem on the upland end (i.e., from glacial-covered rock to shrubs to forested uplands, freshwater creeks, salt and freshwater marsh areas). Including these wetlands within the buffer allows greater comparative analysis for the core area habitats (e.g., Fox River Flats), and serve as a protective buffer on the south side of the reserve. The site of the potential shared complex with AMNWR at Beluga Slough is included within the buffer due to anticipated levels of human use at the site. Likewise the city-owned tidelands, easily accessed along the spit, sustain a higher degree of public use.

3.1.1.4 Future Acquisitions/ Boundary Expansion Opportunities

Land acquisition within the boundaries of the Kachemak Bay NERR is not a high priority since the boundaries were selected to reflect state and federal ownership for which adequate controls are already in place to ensure future viability of the reserve. The majority of the south shore is owned by the state while the north shore is generally privately owned, except for one section of Kachemak Bay State Park (see Figure 7). The water column of Kachemak Bay is entirely state-

owned and already designated as part of the CHA. Almost all tidal and submerged lands are also owned by the state. The exceptions are: submerged lands in the Homer Small Boat Harbor (owned by U.S. Coast Guard); tidelands owned by the City of Homer (alongside the spit) and the City of Seldovia (at the small boat harbor); and eleven relatively small, privately-owned tideland parcels at scattered sites around the bay (within the Kachemak Bay CHA). Two private inholdings are also found within the Fox River Flats CHA (See Appendix E and the 1993 CHA management plan.)

The highest priority in the early years of the reserve will be to obtain or otherwise secure property to house the KBNERR offices, research and associated lodging facilities, and a visitor facility (See Facilities, Section 3.1.6). Currently, the reserve boundary in the Beluga Slough area includes both marshlands and uplands (Figure 3.) The low-lying Beluga Slough properties were included in the reserve boundary because of their obvious potential for estuarine and intertidal interpretive activities. However, the upland parcels on either side of the Sterling Highway were in the boundary because of the potential partnership with the Alaska Maritime National Wildlife Refuge (AMNWR) to build a joint visitor center, office, laboratory, bunkhouse and warehouse. Should this facility partnership fall through, the reserve may seek to acquire other properties for facility construction. Those properties will be identified in the year following reserve designation as part of the overall facility planning to be conducted by ADF&G. In that case, the NERR boundary may be adjusted to exclude the uplands immediately adjacent to the Sterling Highway that would have been the combined building sites, but the boundary would continue to include the Beluga Slough parcels intended for interpretive activities.

Similar opportunities to share facilities or properties that further NERR research and education goals may develop in the future. One such opportunity lies with the Center for Alaskan Coastal Studies, which hopes to build a wet laboratory and dorm facilities for up to 40 people at their field station located in Peterson Bay. Future partnerships for use of facilities are not dependent on the expansion of the NERR boundary to include the parcels, although that action may be weighed during the formation of any such partnership.

During the course of development and review of this management plan, several possible expansions to the KBNERR boundary were suggested by the public. The most likely boundary expansion opportunities are the following:

- Kasitsna Bay Lab. This waterfront laboratory, on the south side of Kachemak Bay, is a high priority for future acquisition and boundary expansion. The Lab is located on 15 wooded acres overlooking Kasitsna Bay, protected by McDonald Spit (see Figure 6). Facilities include three housing units, wet and dry labs, classrooms, a seawater system, emergency generators, two motor vehicles, and five variously sized boats. Since 1988, the Lab has been operated by the University of Alaska under a no-cost lease from NOAA, the property owner. The Lab is a valuable resource for marine research and teaching because of the region's high productivity, and the abundance and diversity of organisms and habitats. It is an excellent site for remote research and/or educational activities, which correlate with KBNERR goals. For these reasons, the Lab is expected to be an integral part of the KBNERR operations. However, contrary to its presentation within the proposed NERR boundary in the DEIS/DMP, the land itself is not appropriate for inclusion because it is federal land without

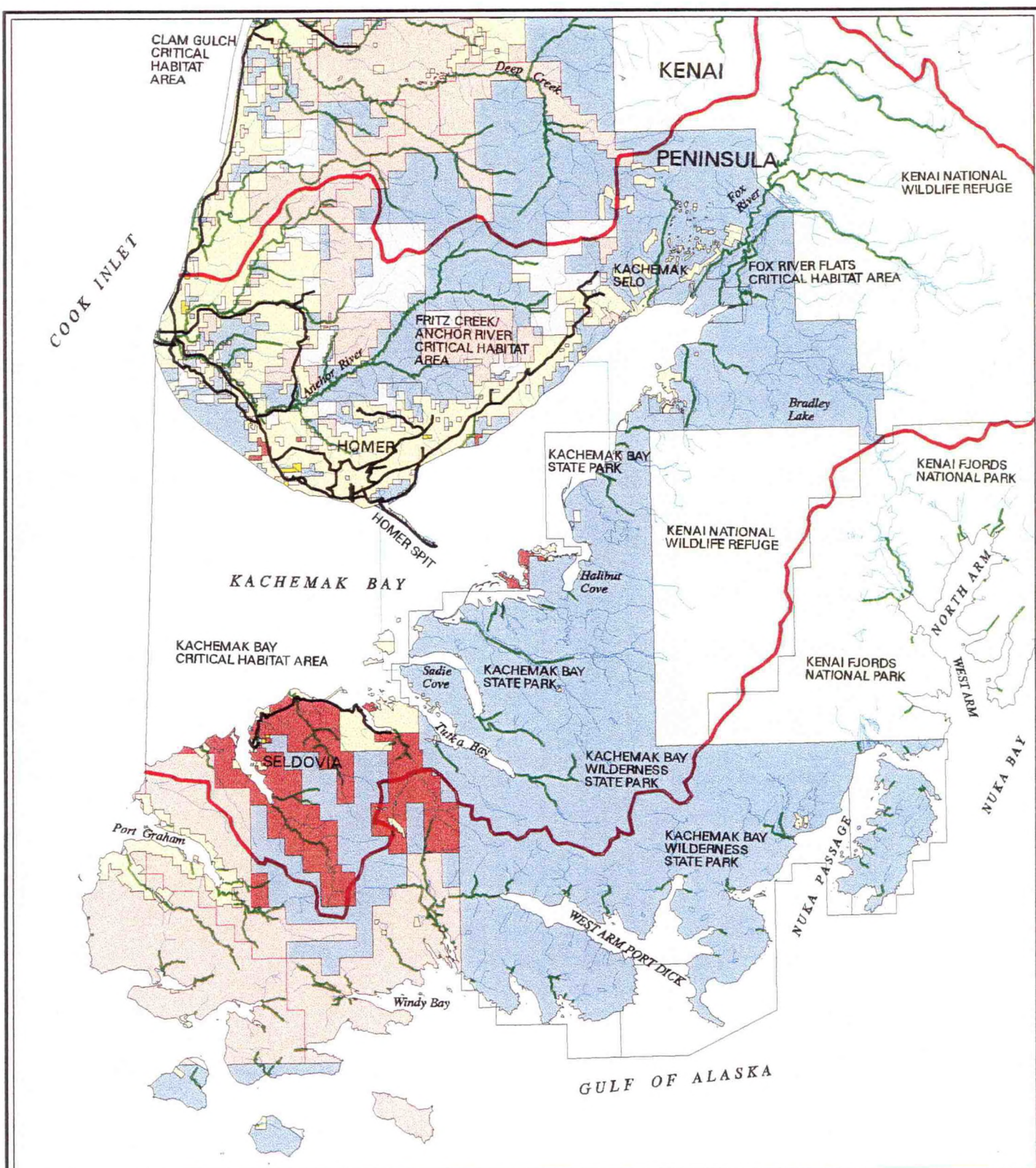


Figure 7.
Land Ownership Around
Kachemak Bay

- | | |
|----------------------------------|--|
| Federal | Private
(Includes Mental Health
and Native Allotments) |
| State | Anadromous Streams |
| Borough & Municipal | Approximate Kachemak
Bay Watershed |
| Seldovia Native Association Inc. | Roads |
| Other Native Corps | |

protected status, as required by the NERR System regulations. At some point in the future, it might be advantageous to NOAA and the State of Alaska if the laboratory and the property ownership were transferred from the federal government to state government. Such a transfer would enable the State to establish long-term control over the land and improve KBNERR's ability to meet its stated goals and objectives.

- Beluga Slough. For the benefit of the KBNERR, the AMNWR, and the general public, it is a priority to add to the property in public ownership in the Beluga Slough area (Figure 3). Should additional parcels in the Beluga Slough come into public ownership (for example, acquired by the City, ADF&G or the U.S. Fish and Wildlife Service), those parcels would be assimilated into the reserve boundaries after an appropriate agreement with the land holder.
- New State Park Parcels. In 1998, the *Exxon Valdez* Trustee Council funded the acquisition of three parcels on the north side of Kachemak Bay with significant natural habitat values. These parcels include: Baycrest (90 acres, sale not yet accepted by seller); Overlook Park (97 acres); and Diamond Creek (220 acres, see Figure 2). These parcels have/will be accepted by Alaska DNR and managed as state park units, but not as part of the legislatively-designated Kachemak Bay State Park. Public comments received on the KBNERR draft plan suggested adding these units to the reserve boundary.

These parcels front over two miles of Kachemak Bay shoreline and reach inland to encompass coastal bluffs and a mixture of upland habitats. Baycrest and Overlook Park lie nearly adjacent to each other and may be merged into one unit when and if the Baycrest sale is finalized. These parcels contain extensive tidal pool systems, exhibiting a high diversity of invertebrates and marine algae within the rocky intertidal zone. The areas are popular with local community groups, including public schools and natural history study groups, for field trips, bird watching, and specimen collecting. Overlook Park has a sequence of ponds below the bluff forming a small estuarine system. Diamond Creek rises from the beach to a large wooded bluff with nesting bald eagles.

These parcels currently have a different level of protection than KBSP and are not covered by the Park's approved management plan. Because their future management is as yet unclear, they were not included in the KBNERR boundary at this time. Should adequate protections be put in place to allow inclusion in the research reserve, and should an agreement be reached with the landholder/manager, these areas may be added to the KBNERR boundary in the future. These properties contain estuarine educational opportunities unique for the north side of the Bay that may serve KBNERR research and education objectives.

- Base of spit—Mud Bay and Mariner Park. The city-owned tidelands up to the mean high water mark surrounding the spit are within the reserve boundary by agreement with the City of Homer. However, a significant portion of the upper spit areas are only inundated during high tides of the month, and are thus above the mean high tide level. These high intertidal flats and salt marshes on either side of the base of the spit have come to be known as the Mud Bay and Mariner Park areas (Figure 4), and are priorities for future boundary expansion.

Mud Bay and Mariner Park serve as feeding grounds for extraordinary numbers of migrating shorebirds and were designated as part of the Western Hemisphere Shorebird Reserve Network. Mud Bay (east of the base of the spit) is a classic northern mud flat site, home to a collection of worms, bivalves, crustaceans and other intertidal life. These organisms are food for birds, crabs, and fish. Before the construction of the Homer Spit Road and airport, Mariner Park (west of the spit) was a continuation of this diverse mud flat community. Since the tidal flow was interrupted, however, Mariner Park has emerged as a sand beach ecosystem, and species diversity has declined. A feasibility study is underway to examine options for restoring the Mariner Park area, including the restoration of tidal action that more closely resembles historic patterns.

The Mud Bay and Mariner Park areas are mostly owned by the Alaska Department of Natural Resources and the City of Homer, with a few acres in private hands. The City plans to rezone much of these state and city tidal areas as "conservation district" in the near future, which precludes uses other than boardwalks and wildlife viewing. During review of the KBNERR draft plan, it was suggested that we include more of these spit areas within the KBNERR boundary. Once the city's rezoning efforts are complete in 1999, these possible additions to the NERR boundary should be revisited.

- Other Protected Habitats on the Spit. In 1998, the EVOS Trustee Council funded purchase of 68.7 acres along the Homer Spit that were then protected by conservation easement and conveyed to the City of Homer. These areas are included within the research reserve boundary (Figure 4) because of their habitat values, and because the EVOS restoration goal—preserving high value habitat that may aid in the recovery of injured species and resources—is compatible with NERR designation. However, as part of the EVOS agreement, the City assented to protecting 59.5 acres of city-owned marshlands/tidelands in the mid-section of the spit, adjacent to the EVOS purchases. The City placed a conservation easement on these city-owned parcels at the time of the 1998 EVOS purchase, and plans to rezone these areas as "conservation district" as well in the near future. When these rezoning efforts are complete, these possible additions to the NERR boundary should be considered.

Over time, new opportunities may cause the reserve to consider boundary additions. Such options would be pursued only if the new areas would aid the reserve in meeting stated goals, and if the additions are under public ownership or some other arrangement that assures long-term control over the property. Options to extend the boundary may include: a simple boundary extension for lands that are or become publicly-owned (pending agreement with the appropriate owner agency); purchase at the estimated fair market value from willing landowners; a less-than-fee-simple purchase (similar to a land trust); or a conservation easement granted by private landowners.

The procedures for extending a reserve boundary are found in 15 CFR §921.33 (Appendix K). Basically, NERR boundary changes: a) require written approval from NOAA; b) may require public notice and an opportunity for public comment (this step is not mandatory if the property in question was listed in the reserve management plan or final EIS); and c) in certain cases, an environmental assessment or EIS may be required.

3.1.2 Administrative Plan

3.1.2.1 Relationship to Federal Government

A state, commonwealth, or territory, and the federal government cooperate in the operation of each NERR. The federal interest is represented primarily by the Office of Ocean and Coastal Resource Management (OCRM), National Ocean Service (NOS), National Oceanic and Atmospheric Administration. NOAA's overall mission includes management of the nation's coastal resources, and promotion of global stewardship of the world's oceans and atmosphere through science and service. OCRM coordinates the NERR System nationally and administers financial awards to individual reserves.

The NERRS operates as a federal/state partnership. Although the management of a reserve, including development of site-specific policies and programs, is a state's responsibility, NOAA provides overall system policies and guidelines, cooperates with and assists the states in selecting, designating, and operating reserves, and reviews state programs regularly. The purpose of the NOAA review is to ensure that a state is complying with federal NERR System goals, approved work plans, and reserve management plans. The primary mechanisms used by NOAA to assist the State, as well as NOAA responsibilities pertaining to reviews, are discussed below.

The site designation process is a primary avenue through which NOAA reviews actions. A State's site nomination must be assessed and endorsed by NOAA before beginning the formal designation process. As part of this preliminary stage, NOAA evaluates the site selection and the public participation process. The draft EIS and the draft management plan (DMP) for the proposed reserve must also be approved by NOAA before the final versions of each document are written. NOAA staff have the responsibility of working with the State to select and designate national estuarine reserve sites.

Upon designation, NOAA staff, in particular the program specialist for the reserve, communicates directly and regularly with the reserve staff. Communication builds a level of trust between federal and state staff, and familiarizes both OCRM and state personnel with reserve management procedures and policies. This cooperative approach is needed for a reserve to be successful. Both oral and written communication are necessary, and site visits are advisable.

Another component of NOAA oversight is its reserve funding program. NOAA provides different categories of grant funding to a reserve, and for each grant, works with reserve staff to ensure that funds are spent on projects and in areas where the most benefit can be achieved. Quarterly grant progress reports and a final grant report are required. NOAA personnel carefully review the grant reports and associated communications to ensure compliance with program policies and specific grant conditions.

Pursuant to the CZMA (Sections 312 and 315), OCRM must conduct performance evaluations of the operation and management of each reserve while federal financial assistance continues. These reviews are a mechanism for identifying, discussing, and resolving concerns with reserve operation.

The State's interest is usually represented through one or more state agencies, typically agencies charged with environmental, wildlife or coastal management responsibilities. States usually administer reserve personnel and day-to-day reserve management.

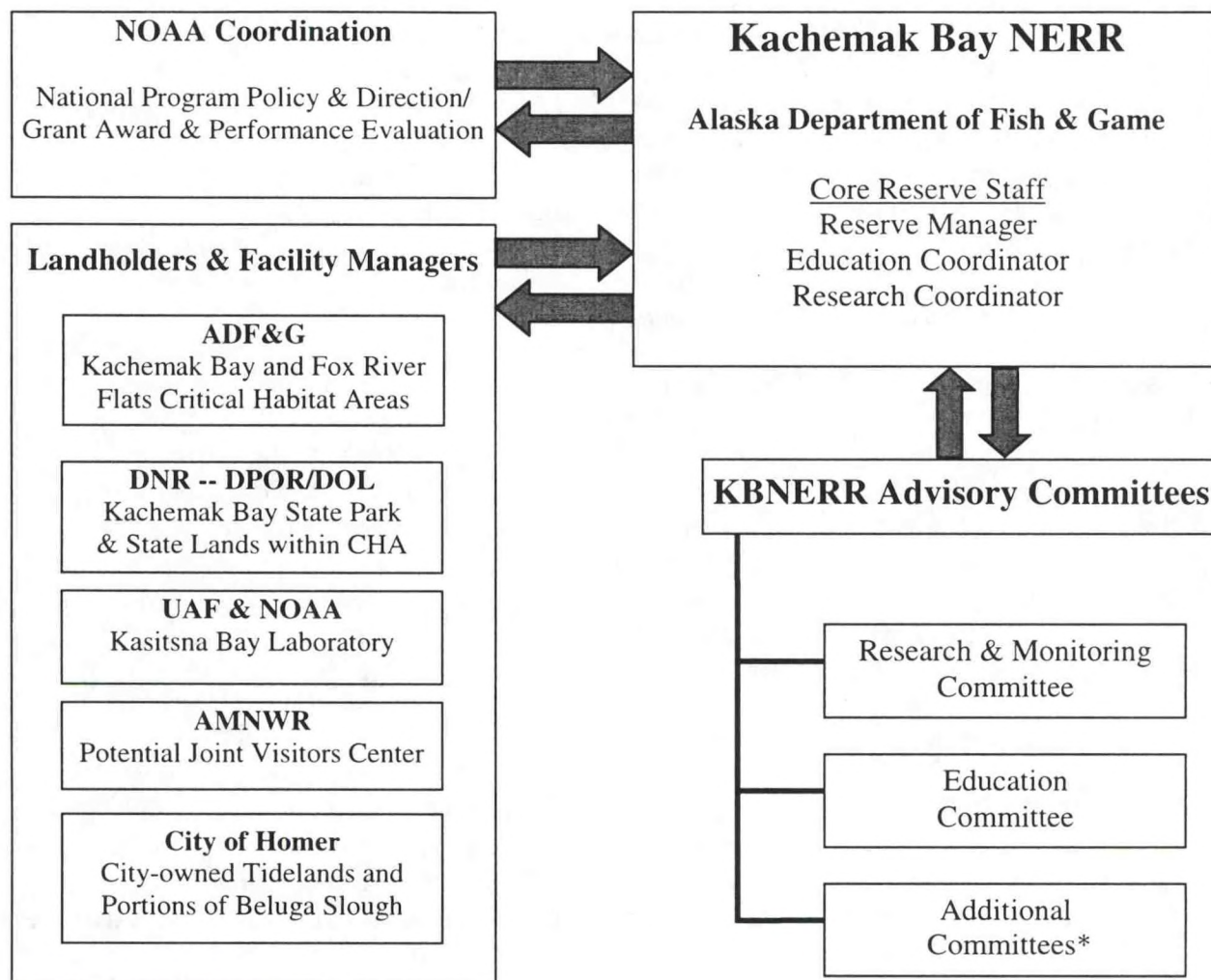
3.1.2.2 Administrative Plan for KBNERR

The Alaska Department of Fish and Game is the state agency responsible for administering the research reserve in conformance with educational, research, and monitoring goals of KBNERR and the NERR System. The KBNERR will be positioned within the Habitat and Restoration Division (H&R) of ADF&G. While H&R has management and regulatory authority under Title 16 of Alaska Statutes, the KBNERR is a non-regulatory program. It will represent a separate unit within the division, organizationally distinct from the H&R regulatory units which are defined by state region. As appropriate, partnerships or other cooperative arrangements will be established with state resource agencies, research and education institutions and organizations, non-profits, local governments, and other agencies to help carry out the goals and objectives of the reserve. Consistent with the state's intent to pursue designation of the reserve as a non-regulatory program, KBNERR will not assume any land use regulation or control, instead relying on the existing local, state, and federal regulatory and management authorities. The reserve will focus on the research, monitoring, and educational programs as outlined in the KBNERR goals and objectives. The administrative plan for KBNERR is detailed in the following sections.

A. *Administrative Framework*

The overall administrative organization for the KBNERR is composed of ADF&G, key land holders, advisory committees, and NOAA as outlined in Figure 8. ADF&G is the lead management agency for the reserve, and will be responsible for coordinating with each land management agency and other partners in the reserve. As part of establishing the reserve, ADF&G signed Memoranda of Understanding with the other landholders within the reserve boundary: Alaska DNR (DPOR and Division of Land), the USFWS/Alaska Maritime National Maritime Refuge in Homer (for tidelands and uplands adjoining Beluga Slough), and the City of Homer (for certain city-owned lands and tidelands, see Appendix A). Future institutional agreements may include: 1) NOAA and/or the University of Alaska to facilitate KBNERR use of the Kasitsna Bay Lab; 2) USFWS, should the joint AMNWR-KBNERR facility become a reality; or 3) other agencies or organizations to share use of facilities or to further research or educational programs corresponding to KBNERR objectives.

Advisory committees will be established to provide local government, non-profit, agency, and other stakeholder input into the continued development and implementation of KBNERR research, monitoring, and educational programs. Advisory groups will include at least two committees: 1) Research and Monitoring and 2) Education. These committees will hold joint



*Other committees may be developed as appropriate

Figure 8: The Administrative Organization for the Kachemak Bay NERR.

meetings to ensure coordination of research, monitoring, and educational programs and address issues of mutual concern. Joint meetings will be held as appropriate, but not less than once a year. Other committees could be formed to assist implementation of reserve programs, such as facility development. Additional information on KBNERR advisory committees is provided later in this section.

The Division of Governmental Coordination (DGC), within the Office of the Governor, administers the Alaska Coastal Management Program (ACMP). Program implementation is networked among three state resource agencies (ADF&G, DNR, and the Alaska Department of Environmental Conservation/DEC) through existing regulatory authorities. DGC will be encouraged to participate in KBNERR implementation through direct interaction and/or input into the Research and Monitoring and the Education committees. DGC will be encouraged to identify resource management and education needs that could be addressed by reserve programs.

ADF&G will be responsible for overall operation, management, and administration of KBNERR programs. ADF&G will receive NOAA fiscal awards for reserve operation and system-wide research, monitoring, and educational programs. As described in the Research & Monitoring and the Education chapters, KBNERR will also assume a significant role in coordinating reserve-related research, monitoring, and education programs. As appropriate, reserve staff will assist participating agencies, research and educational institutions, and other participating organizations in developing projects and programs that address KBNERR goals and objectives.

B. Relationship of Existing Public Landholders

KBNERR is composed almost entirely of state lands and waters, with management authority shared by ADF&G/Habitat and Restoration Division, DNR/Division of Land and DNR/Division Parks and Outdoor Recreation. Exceptions include the Kasitsna Bay Laboratory (owned by NOAA and managed by UAF), the site of the potential joint AMNWR/KBNERR visitors center and administrative complex, and city-owned tidelands and portions of Beluga Slough. These government agencies will work cooperatively with the reserve manager to ensure that the long-term objectives of the NERRS are met for this site. Coordinating meetings of the landholders will be the key focus of the first year agenda that includes the development of partnership and coordination agreements (e.g., MOUs) with key state and federal agencies.

C. Staff Requirements

The success of KBNERR will be built largely in the concept of networking and establishing partnerships with the agencies, local governments, organizations, interest groups, and stakeholders in the region. However, certain core staff are necessary to sustain a functioning reserve. One of the first priorities will be to establish the basic NERR staff: the reserve manager, research coordinator, education coordinator, and necessary administrative support. Reserve staff will be employed by or under contract to ADF&G. The functions and responsibilities of the primary staff positions are described below.

The full-time reserve manager will be the principle administrator of the reserve, and will be the lead person responsible for ensuring compliance with Reserve Management/Operation Plan. The reserve manager's responsibilities will likely include:

- Managing the reserve operations on a day-to-day basis, prepare grant applications, proposals, budgets, reports and maintain necessary records;
- Facilitating joint Research/Monitoring and Education Committee meetings;
- Representing the reserve and its policies at public meetings and hearings;
- Coordinating all special studies and research activities within or related to the reserve, and interpreting and applying research results to produce benefits;
- Overseeing the research and education programs for the reserve;
- Coordinating with other program managers on activities that might affect the reserve;
- Monitoring day-to-day operation of the reserve program and progress of research and education plans;
- Supervising reserve staff members;
- Overseeing facilities planning and development and changes in the reserve boundaries;

- Preparing required quarterly, semi-annual, annual reports, and work plans for NOAA and other possible sources of funding;
- Directing and coordinating with NOAA on any changes in the management plan;
- Working with NOAA in the development of national policy for the System; and
- Performing additional duties as required.

The research coordinator will report to the reserve manager. This position's principle task is to implement and coordinate all research and monitoring activities for the reserve with the advice of the Research and Monitoring Committee. The research coordinator will maintain regular and direct communication with the research community. In addition, the research coordinator will maintain close contact with and inform OCRM of the progress of NOAA-funded research.

Tasks and responsibilities may include the following:

- Providing staff support for the Research/Monitoring Committee;
- Coordinating all special studies and research activities within or related to the reserve;
- Interpreting and applying research results;
- Assisting the reserve manager and other participating agencies and entities in preparing and updating an annual list of priorities for research and monitoring at KBNERR;
- Coordinating the review of research and monitoring priorities with the Research Committee;
- Preparing requests for NERR-funded research and monitoring projects and conducting a peer review process for proposals when needed;
- Evaluating the results of the peer review of proposals and making recommendations to the reserve manager and research and monitoring committee;
- Implementing the research program for the reserve;
- Serving as a liaison with the scientific community, promoting data utilization, and acting as primary contact for scientists performing research within the reserve;
- Assisting in the training of volunteers, research assistants, and interns and monitoring/evaluating their performance;
- Recommending locations for research and monitoring stations within the reserve and providing technical advice and assistance to scientists conducting research and monitoring as available;
- Keeping a field journal and photographic records of on-going research activities;
- Representing the reserve at public meetings;
- Overseeing the development of a site profile and ecological characterization of the Kachemak Bay Watershed;
- Working with the education coordinator to develop suitable methods to disseminate reserve-related information;
- Working with NOAA on System-funded research;
- Participating in the NERR System-wide and site monitoring programs;
- Working with NOAA to develop national research and monitoring policy for the System;
- Developing additional research guidelines and policy statements as new issues arise; and
- Coordinating with the reserve manager in the performance of these responsibilities.

The education coordinator will be responsible for implementing and coordinating the education and interpretation aspects of the management plan. The education coordinator will report to the reserve manager. Responsibilities may include:

- Providing staff support for the Education Committee;
- Preparing and updating an annual list of reserve priorities for education, interpretation, and visitor use programs in coordination with the Education Committee;
- Generating/soliciting ideas to develop KBNERR education, interpretation, and visitor use programs/projects, and review options with peers;
- Coordinating KBNERR education, interpretation, and visitor use activities within the reserve and communicating with other reserves, especially relating to education and volunteer programs;
- Facilitating other estuarine and coastal education activities within the reserve;
- Upon request, advising and coordinating government agencies on particular issues, questions, or projects, and their impacts on or relationship to the reserve;
- Serving as a liaison with the academic community and acting as primary contact for educators bringing groups to the research reserve;
- Providing technical advice and assistance, as available, for education and interpretation programs;
- Assisting with training volunteers in education programs and monitoring/evaluating their performance;
- Keeping a photographic record of on-going education, interpretation, and visitor use activities for use in slide presentations and exhibits;
- Representing the reserve at public meetings, civic groups, professional society meetings, etc.;
- Working with the research coordinator to develop suitable methods to disseminate reserve-related information to various audiences;
- Providing public outreach to area schools, colleges, universities, civic groups, professional societies, and other environmental education organizations upon request, as available;
- Working with NOAA to develop national education policy for the System; and
- Coordinating with the reserve manager in the performance of these responsibilities.

Future staff additions will be based upon reserve functional needs and will only be added as funding and time permit. For the Kachemak Bay reserve, a computer mapping technician may prove instrumental. In addition, NOAA has found that reserves that have operated for several years derive particular benefit from two other staff functions. The first function, sometimes referred to as "information translation," is necessary for a reserve to present its products and services (research and monitoring findings, educational program development) to various audiences in appropriate formats, and may require hiring or contracting with a skilled writer/editor. The second function, which fosters improved ecosystem understanding, may require hiring or otherwise securing the services of an estuarine ecologist. Although not a priority for KBNERR at this time, these functions may need to be supported in the future. College or graduate interns may also strengthen reserve programs to better fulfill the goals and objectives.

D. Five Year Activities/Staffing Plan

Implementation of the major program development activities will officially begin following reserve designation. This includes hiring staff and designing/implementing research, monitoring, education, and volunteer programs and developing facilities. The availability of federal funds, state matching funds, and grants will determine the timing and level of reserve staff.

The first priority will be to establish core reserve staff: the reserve manager, education coordinator, research coordinator, and necessary administrative support. The basic core staff are necessary to run an effective research reserve program and begin to implement the management plan for the reserve. Once established, the core reserve staff will explore partnerships with other agencies and organizations and work with the advisory committees to further establish the research, monitoring, and educational programs.

Research reserves must be managed by the state. ADF&G will manage the Kachemak Bay NERR, and reserve staff will be employees of, or on contract to, the department. State of Alaska laws, regulations, and administrative procedures on state employee hire will guide the staff selection process. Within these constraints, ADF&G is committed to the development and implementation of a selection process that will result in the best reserve staff. Staff must have both the technical abilities to perform the job and the skills to interface well with the diversity of interests in the reserve, including the local community, government agencies, research and educational organizations, and other stakeholders in Kachemak Bay. ADF&G must make the ultimate staff selection. However, within state legal constraints, the department will strive to provide for public input into the process. One model to consider is the Kenai Peninsula Borough School District's hiring practices, in which the public participates in determining desired qualifications.

E. Advisory Committee Roles and Responsibilities

Advisory committees will be established after reserve designation to provide effective coordination and cooperation among key interests involved with the reserve. At least two committees will be established: 1) a Research and Monitoring Committee and 2) an Education Committee. These advisory committees will advise the respective coordinators on reserve issues related to research, monitoring, and education. Advisory groups will include significant representation from the local region and, because Kachemak Bay is a state resource, will also involve other state interests. The Director of ADF&G's Habitat and Restoration Division will appoint members of the advisory committees from nominations solicited from the representative groups.

Each committee will include representation from the research and education community, agencies, user groups, environmental groups, adjacent landowners, industry, and other groups as appropriate. Representatives from NOAA, DGC, ADF&G, DNR, and DEC will be included as ex-officio, non-voting members. Some cross membership is anticipated. The two committees will also meet together periodically, as appropriate, to ensure the most efficient use of available resources and to integrate the research and educational goals. The proposed roles of these committees are outlined below.

1. Research and Monitoring Committee:

- Annually review, evaluate, and recommend priorities for the reserve research and monitoring projects;
- Monitor and provide advice on reserve issues and opportunities for cooperative research and monitoring;
- Identify appropriate research and monitoring program proposals that are responsive to management needs;
- Evaluate effectiveness in achieving research and monitoring goals.
- Review and advise on research and monitoring facilities;
- Foster scientific research programs within the reserve that support a better understanding and management of coastal resources;
- Represent the interests of users of the reserve and its neighbors;
- Review research and monitoring materials generated by the reserve; and
- Review and advise on specific program activities to ensure they are consistent with the goals and objectives set forth in the management plan.

2. Education Committee:

- Annually review, evaluate, and recommend priorities for education and interpretive activities for the reserve;
- Monitor and provide advice on reserve issues and opportunities for cooperative education programs;
- Evaluate progress towards achieving priorities for education and interpretation;
- Review proposals for educational and interpretative facilities, displays, media curriculum, training programs, etc., and monitor progress of specific activities;
- Identify appropriate education/interpretation approaches that respond to management information needs;
- Provide guidance for establishing priorities for research and education efforts in the reserve;
- Review and advise on education facilities;
- Serve as a liaison with the general public on reserve education activities;
- Foster education and interpretive programs within the reserve that support a better understanding and management of coastal resources;
- Represent the interests of users of the reserve and its neighbors;
- Review information and education materials generated by the reserve; and
- Review and advise on specific program activities to ensure they are consistent with the goals and objectives set forth in the management plan.

F. *Volunteer Program*

A Volunteer Program will be used to enhance delivery of services and conduct programs at a minimal cost. Volunteers will augment paid KBNERR staff and permit expansion of services that would not otherwise be possible. A volunteer program also can be used to effectively transfer information on the value of estuaries to the general public.

The staff education coordinator will be initially responsible for organizing and overseeing the volunteer program. An important aspect of this program will involve training and organizing a core of docents to deliver the educational messages. As discussed in the education chapter (Section 3.1.4), there are a number of active environmental educational programs in the Kachemak Bay community, many of which use volunteers. The education coordinator will coordinate use of volunteers with other organizations. In the future, a volunteer coordinator position may be established to oversee the implementation and operation of the program. This education coordinator or volunteer coordinator will coordinate with and assist other organizations in:

- Preparation and planning for volunteer programs in coordination with the reserve staff and other KBNERR partners;
- Recruitment of volunteers;
- Training and supervising volunteers;
- Evaluating volunteer programs; and
- Developing an incentive/recognition program for volunteers

Many reserves have "Friends Groups," or independent non-profit foundations, that assist in raising funds for education, research, and stewardship activities in the reserve. If such an independent organization is formed for Kachemak Bay, it would be an advocate for the reserve and would help implement KBNERR programs. A complete list of groups currently supporting the reserve can be found in Appendix G.

3.1.3 Existing Resource Protection

3.1.3.1 Introduction: Relationship to Critical Habitat Areas and State Parks

Alaska's coastal areas differ from the contiguous 48 states in that there remain large tracts of relatively pristine lands and waters in state ownership. The boundaries of the Kachemak Bay NERR represent over 365,000 acres of publicly owned and almost exclusively state managed lands and waters. The state contends that existing management plans and regulatory authorities in Critical Habitat Areas (CHA) and State Parks (SP) provide adequate controls over human activities occurring within the reserve, and that activities occurring within these areas are compatible with the designation of a reserve (ADF&G 1993, DNR 1995, Appendix C). The state legislature applied special designation these areas to provide a level of protection and control exceeding the requirements for general state lands. Including these legislatively-designated areas in the reserve ensures long-term management stability and is consistent with the state's intent to pursue the reserve as a non-regulatory program. The existing policies and regulations of the CHA and SP provide the management framework necessary to allow designation of the reserve. KBNERR research and educational programs will be compatible with the goals and policies of the CHA and SP plans.

Oversight of the land and water resources comprising the Kachemak Bay NERR, specifically the Kachemak Bay and Fox River Flats Critical Habitat Areas, will be undertaken primarily by ADF&G. Certain sections of the Kachemak Bay CHA and KBSP overlap, and these areas will continue to be managed jointly by ADF&G and DNR. The KBSP will be managed by the DNR. Designation of a research reserve does not change these or other land management authorities.

As stated above, management and activities within KBNERR are directed by management plans for the Kachemak Bay and Fox River Flats CHAs and KBSP. These plans were developed with public participation—the KBSP plan was first completed in 1989 and revised in 1995; the CHA plan in 1993. Most low impact uses, such as camping or hiking, are allowed in CHA and SP areas without a permit. CHAs require a "Special Area Permit" and State Parks require a park permit for activities that may alter habitat, such as construction, improvement, and continuing use of real property within the area, destruction of vegetation, shoreline altering activity, or camping for longer than the specified period. Activities not specifically allowed or prohibited by either plan can be permitted by an exception after review by the managing entity. KBNERR staff will not be responsible for administering these existing regulatory programs, which will remain unchanged by reserve designation.

3.1.3.2 Regulatory Programs and State Policies

Existing state authority over uses and activities in the area will ensure that the resources are protected within the reserve. These include:

- Title 16: Fish and Game
- Title 38: Public Land

Title 41: Public Resources

Title 46: Water, Air, Energy and Environmental Conservation.

Alaska state statutes may be accessed via the Internet at:

<http://www.legis.state.ak.us/cgi-bin/folioisa.dll/stattx97>.

The vast majority of KBNERR lies within two types of state legislatively designated areas—the CHAs and the State Park. After designation of the reserve, these existing regulatory programs will continue to be administered by the same state agency staff as at present, not KBNERR staff. The protection awarded by the CHA and SP policies are described below.

A. *Kachemak Bay and Fox River Flats Critical Habitat Areas*

The core area of the Kachemak Bay NERR is encompassed within the lands and waters of the Kachemak Bay Critical Habitat Area and the Fox River Flats Critical Habitat Area (Figure 2), managed by the ADF&G. Joint CHA and SP areas are managed by ADF&G and DNR under a pre-existing Cooperative Agreement (Appendix F). Under Alaska Statute 16.20.500, the purpose of critical habitat areas is “to protect and preserve habitat areas crucial to the perpetuation of fish and wildlife, and to restrict all other uses not compatible with that primary purpose.” The management plan for the Kachemak Bay and Fox River Flats CHAs (ADF&G 1993) was developed in a public process and adopted as regulation, thus carrying the full weight of state law. The CHA goals and policies guide the activities and uses that may occur on both state and private lands and waters within the boundaries. The specific boundaries of the Fox River Flats and Kachemak Bay CHAs (township and range references) are found at AS 16.20.580 and AS 16.20.590 (Appendix H).

Other DNR divisions (Land, Agriculture, Mining and Water Management) also have permitting authorities within the CHA (see section C). Management decisions by these DNR divisions will be consistent with the Kenai Area Plan, to be completed in 1998.

1. Critical Habitat Area Goals

The following goals are summarized from the management plan for the Kachemak Bay and Fox River Flats Critical Habitat Areas (ADF&G 1993):

a) Fish and Wildlife and Their Habitat

Manage the critical habitat areas to maintain and enhance wildlife populations and their habitat.

- Minimize the degradation and loss of habitat values due to habitat fragmentation.
- Recognize cumulative impacts when considering small incremental developments and actions affecting critical habitat area resources.
- Protect important wildlife habitat including water quality.
- Minimize harmful disturbance to wildlife, especially to marine mammals and nesting, rearing, staging and wintering waterfowl, shorebirds, and seabirds.
- Maintain, protect, and if appropriate, enhance the quality and quantity of nesting,

rearing, feeding, staging and wintering habitat for resident and migrant waterfowl, shorebirds, and seabirds.

- Protect bald eagle nesting, perching, roosting, and feeding habitat.
- Protect natural substrate, aquatic vegetation, water quality and circulation patterns to maintain aquatic habitats
- Maintain water quality sufficient for the growth and propagation of fish, shellfish, and other aquatic life fresh, estuarine, and marine waters.
- Maintain water quality at the level that would allow for harvest of raw mollusks or other raw aquatic life for human consumption.

b) Public Use

Manage the critical habitat areas to maintain and enhance public use of fish, wildlife and critical habitat area lands and waters consistent with the other goals of this management plan.

- Maintain or improve public access to and within the critical habitat areas.
- Maintain or improve opportunities for hunting and fishing within the critical habitat areas.
- Maintain or improve opportunities to recreate in the critical habitat areas.
- Maintain or improve opportunities for viewing, photography, education, and study of fish and wildlife.
- Provide information about the critical habitat area to the public.

2. Policies for Critical Habitat Areas

The policies of the Kachemak Bay and Fox River Flats Critical Habitat Areas are found in Appendix C. Regulated uses include: public access; off-road use of motorized vehicles; information/education; fish and wildlife habitat and population enhancement and rehabilitation; water quality; mooring buoys and navigational aids; harbors, docks, piers, boat ramps, and piling supported structures; long-term anchorage, float structures, boat maintenance, and derelict or abandoned boats; shoreline alteration; land acquisition; pot and gear storage; shore fishery leases; aquatic farming; grazing; in-water log storage and transfer facilities; pipelines and utility lines; mining; material extraction; oil and gas; oil drilling rig storage; hazardous materials; and other uses.

An interagency planning team developed these policies to address the issues identified at public meetings held in Homer, Seldovia, and Anchorage. The policies were developed to meet the plan's management goals, and in consideration of other applicable laws and the Public Trust Doctrine. The Department used the comments received during public review of the draft plan to develop the final management plan. The goals and policies were then adopted as state regulation.

3. Permitting Regulations for Critical Habitat Areas

The designation of a Critical Habitat Area creates a restrictive threshold for activities on both state and private land and waters that may affect the fish and wildlife resources of the area.

5 AAC 95.610 provides the regulatory authority for the CHAs:

The [Kachemak Bay and Fox River Flats Critical Habitat Areas Management] Plan presents management goals and policies for the critical habitat areas and their resources which the department will use in determining whether proposed activities in the critical habitat areas are compatible with the protection of fish and wildlife, their habitats, and public use of the critical habitat areas.... The department will review each special area permit application for consistency with the goals and policies of the management plan.... A special area permit... will be approved, conditioned, or denied based on the criteria set out in the goals and policies in the management plan and on the standards contained elsewhere in 5 AAC 95.

Under state statute any person or governmental agency who desires to conduct an activity within the boundaries of the CHA is required to submit plans and specifications to the Department of Fish and Game and receive authorization before proceeding. As authorized by 5 AAC 95, ADF&G requires a Special Area Permit for the following activities:

(1) construction, placement, and continuing use of any improvement, structure, or real property within the special area; (2) destruction of vegetation; (3) detonation of an explosive other than a firearm; (4) excavation, surface or shoreline altering activity, dredging, filling, draining, or flooding; (5) natural resource or energy exploration, development, production, or associated activities; (6) water diversion or withdrawal; (7) off-road use of wheeled or tracked equipment; (8) waste disposal, placement or use of a toxic substance; (9) grazing or animal husbandry; and (10) any other activity that is likely to have a significant effect on vegetation, drainage, water quality, soil stability, fish, wildlife, or their habitat, or which disturbs fish or wildlife other than lawful hunting, trapping, fishing, viewing, and photography. Permits issued are contingent upon compliance with other sections of the regulations and the approved CHA management plan. Permits or approvals from other regulatory agencies are also required for many of the listed activities.

The Special Area Permit regulations lay out both the process and standards for authorization of activities within a CHA. The regulations specify that ADF&G will approve, condition, or deny a Special Area Permit based on the criteria set out in the goals and policies in the CHA management plan. The plan states the overall policy for issuing permits:

To protect fish and wildlife populations and their habitats in the critical habitat areas, the department may allow by permit only those activities compatible with the purposes for which the critical habitat areas were established, terms and standards of 5 AAC 95, and the goals and policies of the plan. Any activity that is not compatible with the purposes for which the critical habitat areas were established, terms and standards of 5 AAC 95, and the goals and policies of this plan will not be allowed.

The standards for conditioning, approving or denying Special Area Permits state that ADF&G will permit the uses listed above only if it meets or can be conditioned to meet the following standards (5 AAC 95.430):

1. The use or activity is consistent with the protection of fish and wildlife and their use, protection of fish and wildlife habitat, and the purpose for which the special area was established; and
2. The use or activity does not unduly restrict or interfere with the public use and enjoyment of the resource values for which the special area was established; and
3. Any adverse effect upon fish and wildlife, and their habitats and any restriction or interference with public use, is mitigated in accordance with 5AAC 95.900.

The CHA designation is one of the highest levels of protection that the State may afford to lands and waters. Examples of prohibited activities include: storing or transporting logs, mining, exploring for oil and gas, and storing or depositing hazardous materials. Violation of the CHA policies and permits is a criminal offense, a Class A misdemeanor. These regulations ensure that any activities allowed within the CHAs will be compatible with the establishment of the research reserve.

B. Kachemak Bay State Park

All land and waters within the Kachemak Bay State Park/Wilderness Area that are within the Kachemak Bay watershed are included in the research reserve; uplands above mean high tide are included in the buffer area, and tidal and submerged lands are in the core area (Figure 2). State parklands are managed by DNR, Division of Parks and Outdoor Recreation (DPOR). Enabling legislation (AS 41.21.131) designates lands as either scenic parks, to be managed for scenic value, or wilderness parks, which are managed for their wilderness values. As the name implies, Kachemak Bay State Park/Wilderness Area has components of each. The Wilderness Park is more restrictive in terms of allowable uses and development.

State of Alaska statute AS 41.21.990 defines “scenic park” as:

Relatively spacious areas of outstanding natural significance where major values are in their natural geological, faunal or floral characteristics, the purpose of which is directed primarily toward the preservation of its outstanding natural features and where development is minimal and only for the purpose of making the areas available for public enjoyment in a manner consistent with the preservation of natural values such as camping, picnicking, sightseeing, nature study, hiking, riding and related activities which include no major modification of the land, forests, or water development that is primarily of urban character.

State of Alaska statute AS 41.21.990 defines “wilderness park” as:

An area whose predominant character is the result of the interplay of natural processes, large enough and so situated as to be unaffected, except in minor ways, by what takes place in the non-wilderness around it, a physical condition which activates the innermost emotions of the observer and where development of man-

made objects will be strictly limited and depend entirely on good taste and judgement so that the wilderness values are not lost.

The statewide park system aims to maintain the park's natural and cultural resources for long-term use and enjoyment. The Kachemak Bay State Park and Wilderness Area management plan (DNR 1989, revised in 1995) was developed in a public process and adopted as state policy. The plan lists compatible and non-compatible public uses within the park (Table 1). The specific boundaries of Kachemak Bay State Park and State Wilderness Park (township and range references) are found at AS 41.21.131 and AS 41.21.140 (Appendix H). Both the regulations that apply to all state parks and those specific to KBSP assist DPOR in managing activities within the park.

1. KBSP Goals

The following goals are listed in the KBSP management plan (1995):

- Preserve and protect the park's natural and cultural resources, and scenic and wilderness values, for long-term use and enjoyment.
- Efficiently and effectively provide for the outdoor recreation needs of park visitors, with consideration to public preferences, resource values and legislative intent.
- Assist in the development of regional and statewide tourism.

In addition, park staff intend to make the plan's first "Guideline" concerning research and management studies into a goal statement in the next revision. The current plan states that the park encourages "collection of data necessary for park management decisions or to further science.... Priority will be given to studies that contribute to the use and management of native fish and wildlife populations and their habitats." The park encourages research on all aspects of resource management, including human use and commercial development impacts.

2. KBSP Policies

Appendix C summarizes the policies of the Kachemak Bay State Park and Wilderness Area that are most likely to apply to KBNERR activities. These policies address research, monitoring, and management studies; fire management; insect infestation; visitor use management; trails; and facility development. The KBSP policies were developed with the input of the public, the Kachemak Bay State Park Citizen's Advisory Board, and state and federal agencies. They were adopted after public review and comment.

3. Park System Permitting Regulations

DNR was authorized to create special park use permit regulations under 11 AAC 18. Under this authority, DNR requires a permit for the following activities: (1) assembly of more than 20 persons; (2) any promotional or entertainment event; (3) camping in a developed campground for longer than 15 consecutive days; (4) construction or placement of an improvement, structure, or property within the park; (5) discharging explosives;

Table 1. Compatible Uses within KBSP.

Compatible Public Uses	Non-compatible Public Uses
<ul style="list-style-type: none"> • Aircraft operation* • Pack animals – Llamas • Pack animals other than llamas* • Recreational gold panning* • Wildlife observation • Dog sledding • Camping* • Walking, skiing, & mountaineering • Fishing* • Non-motorized boating • Hunting* • Trapping* • Motorized equipment (non-vehicular)* 	<ul style="list-style-type: none"> • Land-based motorized vehicles • Firearm discharge with ½ mile of developed facilities • Airboats, hovercraft or jetskis

Compatible Management Uses	Non-compatible Management Uses
<ul style="list-style-type: none"> • Ecological monitoring • Research and management studies • Fish and wildlife inventories* • Fire suppression* • Wildlife stocking* • Fisheries enhancement/restoration* 	<ul style="list-style-type: none"> • Removal of timber, gravel, rock, sand, minerals, plants or other park resources • Pest and disease control • Relocation or removal of predators to favor other wildlife species or population, and the protection of re-introduced species • Wildlife introduction • Wildlife habitat manipulation

* conditions apply depending on wilderness designation, which is more restrictive.

(6) conducting exploration, scientific research, or information collection activities requiring authorization under 11 AAC 12; (7) commercial activities described in 11 AAC 12; (8) recurring or permanent motorized access to land not controlled or owned by the state; (9) occupying a campsite with more than allowed number of vehicles; (10) uses limited to or prohibited by the director under 11 AAC 12 or 11 AAC 20; and (11) any other incompatible use as defined by statute and regulation, or which does not otherwise have lawful recreation as its primary purpose. Permits issued are contingent upon compliance with other sections of the regulations and the approved management plan.

DPOR reviews the applications for park use permits and may issue a permit for the activities listed above if it is determined that (11 AAC 18.025):

- (1) park facilities and natural and cultural resources will not be adversely affected;
- (2) the state park is protected from pollution;
- (3) public use values of the state park will be maintained and protected;
- (4) the public safety, health, and welfare will not be adversely affected; and
- (5) the activity is consistent with the Alaska Coastal Management Program (AS 46.40), if applicable.

The permit may contain conditions which are reasonably consistent with protection and use of the park area for the purposes for which it was established. It may also contain reasonable limitations on the equipment used and the time and area within which the activity is allowed. A permit may be revoked by the director or a local park officer for failure to abide by any permit condition or limitation (11 AAC 18.025).

Activities prohibited within KBSP include: construction or placement of structures other than those developed and maintained by DPOR; tideland leases; mariculture; livestock grazing; use of bicycles and motorized vehicles; and removal of any natural resource including plants and minerals.

C. Alaska Department of Natural Resources/Division of Land

In addition to the authorities described in the previous section for the state park, DNR also has responsibilities for authorizing activities elsewhere in the NERR. DNR's Division of Land issues permits, leases, easements and rights-of-way for activities as diverse as mariculture operations, large docks, and utility lines. The division also administers material sales. The DNR Division of Agriculture has responsibilities for administering grazing leases and permits. The DNR Division of Mining and Water Management is responsible for issuing permits and certificates to appropriate water.

D. Alaska Department of Fish and Game

In addition to the management authority for the CHAs (described above), ADF&G has statewide responsibilities that apply to Kachemak Bay. ADF&G manages all fishing and hunting according to harvest limits and terms established by the Alaska Board of Fish and the Board of Game. ADF&G/Habitat and Restoration Division has permitting authority for activities that affect anadromous fish streams and that may obstruct fish passage. This division also reviews timber harvest operations, and comments on permits administered by the Army Corp of Engineers for fill in wetlands and navigable waters under the 401 certification process. The ADF&G/Commercial Fisheries Management and Development Division authorizes permits for mariculture operations.

E. Alaska Department of Environmental Conservation

DEC has the delegated responsibility from the Environmental Protection Agency (EPA) for Air and Water Quality Standards and nonpoint source pollution control activities. The water quality standards are for physical and chemical properties and enforced through permitting, field evaluations and voluntary monitoring activities by public organizations. DEC comments on

permits administered by the Army Corp of Engineers for fill in wetlands and navigable waters under a 401 certification process.

Regulatory oversight for oil and gas exploration, municipal wastewater, and seafood processing discharge is administered through the National Pollutant Discharge Elimination System (NPDES) by both DEC and EPA under permit systems. Air emissions are regulated under delegated permitting responsibility from EPA.

Oil Pollution Prevention planning for facilities and vessels is conducted by DEC under regulation 18 AAC 75 which requires a plan review every three years. Cook Inlet Spill Prevention and Response (CISPRI) and Chadux currently hold the contingency plans for Cook Inlet and Kachemak Bay.

DEC also certifies water quality for aquatic farming sites and beaches for shellfish harvest. Some small residential wastewater treatment systems discharge to the marine environment under DEC plan review.

F. Other Regulatory Entities

The United States Army Corps of Engineers (USACE) evaluates applications for discharging dredged and fill material in waters of the United States including wetlands. Federal and state agencies, including the USFWS, National Marine Fisheries Service, and EPA, along with local governments such as the Kenai Peninsula Borough and the City of Homer, review proposals for USACE permits, pursuant to the Fish and Wildlife Coordination Act (16 USC 661-666 et. seq.). United States Coast Guard approval is required for certain kinds of work in navigable waters. The Kenai Peninsula Borough may review and comment on all state and federal permit proposals within the coastal zone, including the Kachemak Bay CHAs and State Park.

G. Other Planning Entities

A number of other state and municipal plans that apply to the area and with which the reserve is consistent include:

1. Alaska Coastal Management Act (1977):

The Federal Coastal Zone Management Act (CZMA) and the Alaska Coastal Management Act were enacted in 1972 and 1977, respectively. Through these acts, development and land use in coastal areas are managed to provide a balance between the use of coastal areas and the protection of valuable coastal resources. Local coastal districts can develop coastal management programs (CMPs) and tailor the Statewide standards to reflect the local situations. These CMPs are incorporated into the Alaska Coastal Management Program (ACMP) after they are approved by the Alaska Coastal Policy Council and the Secretary of the Department of Commerce through the Office of Ocean and Coastal Resource Management. According to the ACMP, local, state, and federal actions will be consistent with local district plans and state coastal management standards.

2. Kenai Peninsula Borough Coastal Management Plan (1990):

The Kenai Peninsula Borough CMP was fully incorporated into the ACMP in 1990. Boroughwide policies are general and not intended to create a substantial change from the existing Statewide standards.

3. Kenai Peninsula Borough Comprehensive Plan (1992):

The Borough's Comprehensive Plan provides general planning guidance.

4. Kenai Area Plan, draft (DNR 1993, expected completion in 1998):

This plan applies to areas both inside and outside of the research reserve. CHA regulations will be the primary regulation and policy standards within the Kachemak Bay CHA and Fox River Flats CHA. The department will work with DNR to make the plan compatible with the CHA plan and the NERR plan.

Additional agreements and partnerships could be established to maintain agency regulatory and management authorities, thereby simplifying the operation of NERR research and educational programs. Other partners could include: the U.S. Fish and Wildlife Service (USFWS), Cities of Homer & Seldovia, UAF/Kasitsna Bay Lab, NOAA, and the Kachemak Bay Campus of Kenai Peninsula College.

3.1.3.3 Current Activities in the Kachemak Bay Area

There are many coastal uses occurring within and around Kachemak Bay that are common to Southcentral Alaska. Some of these uses include: timber harvest and barge transport; cattle grazing; fish processing plants; small boat docks; maintenance dredging; underwater utility lines; quarry rock sites; gravel mining; layover of empty oil tankers; barge docks; mariculture; sea kayaking; camping; plant gathering; recreational and commercial boating; trapping; sport and subsistence hunting; sport, personal use, subsistence and commercial fishing (including crabbing and clam digging); commercial recreation, shoreline lodges, and residences; and marine invertebrate gathering. Not all of the coastal uses that occur within the watershed of Kachemak Bay occur within the boundaries of the research reserve.

Many of these activities, such as all types of fishing and hunting, depend on the abundance produced by the Bay's natural environment. As stated in Article 8 of the State Constitution, the state manages fishing and hunting activities on a sustained yield basis:

Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle...

NOAA and the state believe that the uses listed below are compatible with reserve designation since they are governed by the numerous state regulations and adopted management plans described in the previous sections.

3.1.3.4 Description of Uses within KBNERR

Kachemak Bay is a maritime community. The principal activities involve fishing, marine transport, recreation/tourism, and living off the natural bounty that the region provides. In the discussions below, common names are used for species; their scientific names are found in Appendix I.

A. *Commercial Fishing*

Fishing and its related support structure (boatyards, marinas, welding shops, etc.) comprise a major component of the local economy.

Gillnetters began commercially harvesting herring in Kachemak Bay in 1914. In the 1920's during its peak, the fishery supported eight salteries in and around Halibut Cove. A sac roe market was developed in the late 1960's and the Kachemak Bay herring fishery peaked again in 1970 before closing in 1979 due to poor stock conditions. A commercial harvest was once again allowed in 1989, but due to poor stock conditions was closed shortly thereafter. Since that time, herring abundance has been insufficient to allow a commercial harvest.

The vast majority of lower Cook Inlet commercial salmon fishing occurs in the Kachemak Bay region. Both set gillnets and purse seines are used; purse seines comprise the major gear type. There are only four beach areas along the southern shore of Kachemak Bay (within KBNERR) where set gillnets are allowed. The limited area provides only enough productive fishing sites to accommodate approximately 20 permits. Within the proposed research reserve, Kachemak Bay is divided into seven separate fishing subdistricts; purse seining has occurred in five of these subdistricts. A privately-operated hatchery in Tutka Bay produces pink salmon primarily for harvest in the commercial purse seine fishery. The enhanced sockeye runs in China Poot Bay and Neptune Bay are extremely important to Kachemak Bay seiners.

Pacific cod, halibut, sablefish, pollock, rockfish, and lingcod are commercially caught using jigs, longlines, and pot gear.

Large commercial pot fisheries for king, Dungeness, and Tanner crabs occurred historically in Kachemak Bay. However, the king, Dungeness, and Tanner crab fisheries were closed in 1982, 1990, and 1994, respectively, due to depressed populations.

Historically, the commercial trawl shrimp fishery in Kachemak Bay has harvested primarily pink shrimp with sidestripe and humpy shrimp making up a significant portion of the catch. Due to depressed stocks, the commercial trawl shrimp fishery has been closed since 1987.

Commercial pot shrimp fishing in Kachemak Bay was primarily undertaken by small vessel fishermen. The target species was coonstripe shrimp, the most abundant pot shrimp species in Kachemak Bay. Spot shrimp was also taken. This fishery is currently closed due to severely depressed stocks.

Currently, a small commercial harvest of hard-shell clams and mussels occurs along the southeast side of the bay. Miscellaneous shellfish, including green sea urchin, sea cucumber, and octopus, have sustained generally small commercial harvests. These directed fisheries are now closed and are not expected to open in the near future.

B. Sport Fishing & Hunting

All five species of Pacific salmon are caught by sport fishermen in Kachemak Bay. Halibut Cove Lagoon, located on the south side of the bay is a favorite king salmon fishing spot. The "Fishing Hole," located on the east side of the Homer Spit, is another popular king and silver salmon sport fishing spot. Both the Halibut Cove Lagoon and the "Fishing Hole" are the result of fishery enhancement projects of the Department of Fish and Game. King salmon enhancement in Seldovia Bay has resulted in a significant sport fishery. Pink salmon caught in Tutka Lagoon are the result of Tutka Bay hatchery's enhancement efforts; this hatchery is run by a private non-profit organization.

From March through late September, Pacific halibut support a popular sport fishery in Kachemak Bay, with most fishing occurring between Anchor Point and the end of Homer Spit.

The sport/personal use pot shrimp fishery has recently been closed due to severely depressed stocks.

Waterfowl hunting is popular throughout Kachemak Bay. The Fox River Flats are a common destination for fall waterfowl hunts. Mallards, scoters, goldeneyes, and buffleheads are frequently harvested. The uplands around Kachemak Bay also provide opportunity for big game hunting: moose, black bear, and mountain goat. Hunters use motorboats (most often), horses or float planes to access these areas.

C. Personal Use and Subsistence Fishing & Hunting

Two personal use salmon and several personal use shellfish fisheries operate in Kachemak Bay. Personal use salmon fisheries include a set gill net fishery for coho salmon along the north side of the bay, and the China Poot dipnet fishery for sockeye salmon. Personal use shellfish fisheries target tanner and Dungeness crab as well as littleneck, butter, razor, and other clams. These fisheries provide a means for individuals to harvest fin and shellfish for personal use.

A subsistence set gillnet fishery operates in Seldovia Bay for king salmon in April and May, and coho salmon in early August. These fisheries allow Alaska residents to harvest larger quantities of salmon for subsistence purposes.

Alaska Native residents from Port Graham, Nanwalek, Seldovia, Homer, Anchorage, and other Southcentral Alaska communities utilize the entire Kachemak Bay for the subsistence harvest of seals, sea lions, and sea otter. Primary harvest locations include the heads of the bays, island and reef haulouts, and near the mouth of Fox River. The occasional harvest of beluga whale also occurs in the bay. Several species of ducks and geese are taken by subsistence hunters primarily

in the vicinity of Seldovia Bay, China Poot Bay, McKeon Flats, Tutka Bay and Fox River Flats. They also harvest several species of marine birds, including gulls and puffins and their eggs. The latter are most often harvested at McKeon and China Poot Flats. Black bear, moose, and mountain goats are commonly hunted along the shoreline.

Residents also collect marine invertebrates such as clams (littleneck, cockle, razor, horse, surf, macoma, mya and butter), limpets, blue and horse mussels, scallops, black katy chiton, gum boot chiton, octopus, nucella snails, hairy triton snails, and sea urchins (Stanek 1985, Reed 1985).

D. Plant Gathering

A variety of plants are taken from the shoreline and intertidal areas around the bay. Bulb kelp, rockweed, and brown sea weeds are harvested from intertidal areas, whereas seaside plantain (goosetongue), beach rye-grass, beach pea, sour dock, beach lovage, wild parsley, and cow parsnip are collected from shoreline areas (Russell 1991).

E. Trapping

Trapping of fur-bearing animals occurs throughout the Kachemak Bay watershed by area residents, subject to ADF&G regulations.

F. Shellfish Mariculture

Blue mussels, Pacific oysters, scallops, clams, sea urchins, sea cucumbers, and kelp are species which have been authorized to be cultured in Kachemak Bay by permit. Sites suitable for aquatic farming are limited by wind, waves, water depth, ice conditions, water quality, and technological constraints. DNR is responsible for leasing sites suitable for mariculture. In addition, two authorizations are required from ADF&G for shellfish mariculture within the reserve (an aquatic farm operations permit and a Special Areas Permit).

G. Livestock Grazing

Grazing is currently allowed on a large portion of Fox River Flats under two grazing authorizations originally issued in the 1950s. A 16,406-acre lease allowing up to 500 cattle/year was expired in 1994. Since 1994, grazing permits have been issued (the current permit expires in 2002). There is also an authorization for 675 acres (80 acres of which is in the CHA) that allows 8-10 animal units over a five-month season. This lease expires in 1998. Grazing leases and permits are administered by the Department of Natural Resources. The Alaska Department of Fish and Game also has issued Special Area Permits for these operations.

Cattle do not reside on the flats year-round. In mid-October the cattle are moved off for the winter, and in late spring the cattle are moved back to the flats. Initially the cattle tend to graze in the northwest corner of the flats. Depending on the snow melt and weather conditions, however, they soon move onto the flats. Most of the cattle forage on the west side of the Fox River and most heavily in the zone between the brush line and the tide line.

H. Transportation & Moorage

Two small boat harbors, located along the northeastern edge of the Homer Spit and in Seldovia, provide both private and commercial transportation use including the state ferry, large cargo transport of wood products, commercial fishing fleets and small sport fishing vessels, and a U.S. Coast Guard (USCG) port. The Homer Harbor contains approximately 760 boat slips and supports a deepwater dock which handles ships up to 700 feet. The area behind the Homer Spit on the inside of the bay is also used as an anchorage for large ocean-going vessels and has potential use as a safe harbor by the USCG for removal of stricken vessels. In addition, oil tankers utilize the outer bay to pick up and drop off marine pilots and occasionally use the inner bay for staging. There are two other public docks in the Bay--at Halibut Cove and Jakolof Bay. Numerous other commercial and private docks and piers, both floating and pile-driven, are present in the bay.

I. Recreation/Tourism

The Kachemak Bay area receives approximately 100,000 tourists/visitors annually and an increase is expected in the current year. The main water-based recreational activities include: halibut and salmon charter fishing, wildlife viewing, sea kayaking, scuba diving, tidepooling, recreational boating, and sight-seeing charters. The Homer Spit is a home to over 700 charter and commercial boat operators year round, growing to 1,500 in the summer months. Upland recreational activities include picnicking, hiking, mountain biking, camping, mountaineering, and skiing.

J. Educational Uses

Peterson, China Poot, Jakolof, and Kasitsna bays are used for coastal educational programs, most intensively from May through August. Some of these groups are hosted at local educational facilities such as the Center for Alaskan Coastal Studies (CACS) or the Kasitsna Bay Lab, often for overnight stays, while other school groups arrive by boat for a day trip of tidepooling and shore walks.

CACS teaches educational programs out of their facilities in Peterson Bay. They host public (all ages) day tours from Memorial Day to Labor Day, which totaled about 900 in 1997. School groups (ages kindergarten – twelfth grade) are a large focus of CACS efforts, offering both residential and day programs at Peterson Bay. CACS anticipates guiding intertidal hikes for 650 school children and chaperones in 1998. Approximately 300 children and adults will participate in CACS-related oceanography cruises on Kachemak Bay as well.

In addition to hosting individual marine researchers, the Kasitsna Bay Lab serves as field teaching station for numerous classes. In the last couple of years, non-college groups staying at the Lab included sixth grade, high school and college-bound Upward Bound classes. The University of Alaska (both Anchorage and Fairbanks campuses) uses the field station in teaching several courses, including: Ecology; Invertebrate Zoology; Ecosystem Ecology; Ecology of Intertidal Communities; and Biology of Marine Organisms. For the summer course Biology and Ecology of Marine Invertebrates, UAF students and instructors reside at the Lab for over a

month. Also, "Marine Science for Science Teachers" is taught at the Lab annually, which satisfies continuing education credits for high school and some college teachers.

School groups that are not associated with local educational facilities most often choose the intertidal areas in Jakolof Bay as a destination. In recent years, use of these areas for spring educational outings has escalated, with school groups coming from as far away as Fairbanks (584 miles). Elementary and high schools in the Kachemak Bay area also bring hundreds of children and adults to the south shores for educational programs each year.

K. Shoreline Lodges & Residences

Commercial lodges and private residences and cabins are allowed on private lands within KBSP and CHAs. These parcels were in private ownership preceding SP and CHA designation and have not been annexed. The highest densities occur in Halibut Cove and Bear Cove (Appendix E).

L. Pipelines and Utility Lines

Major wastewater sewage disposal sites are located in Kachemak Bay waters near Homer and Seldovia. The system serving the City of Homer and Kachemak City has a secondary treatment plant for sewage, the outfall of which is located 2200 feet offshore of Beluga Slough. Sewage in Seldovia is collected and discharged directly into outer Seldovia Bay just north of Wade Point with primary treatment achieved through a community septic tank. Seafood waste processing outfalls are found off of the Homer Spit.

There are numerous individual wastewater/sewage disposal systems around the perimeter of Kachemak Bay. The Alaska Department of Environmental Conservation (DEC) requires a permit to allow the discharge of treated sewage wastewater into the marine environment from DEC-approved systems.

Underwater electrical transmission lines cross Kachemak Bay between the Homer Spit and China Poot Bay, and Seldovia Bay. Overhead electrical transmission lines cross Halibut Cove, China Poot Bay, Tutka Bay, and Jakolof Bay.

M. Mineral Resource Extraction

There are no current mining claims or leases within the Kachemak Bay or Fox River Flats CHAs.

No material extraction is currently occurring or proposed for either the Kachemak Bay or Fox River Flats CHAs. Tide and submerged lands within the KBSP have been withdrawn from the public domain and are not available for mineral or material extraction.

N. Shoreline Alteration

Over 70 shoreline stabilization projects have occurred around Kachemak Bay. These projects have generally been in response to shoreline erosion and subsidence caused by the 1964 earthquake. Any shoreline alterations must be permitted by the managing agencies.

O. Oil and Gas Activities

In 1976, the Alaska State Legislature closed Kachemak Bay to leases for the purposes of oil and gas exploration or development due to its “extraordinary abundance and diversity of marine life” and the hazard posed by oil spills in the marine environment (AS 38.05.184). Oil and gas drilling is currently prohibited in the boundaries of the Kachemak Bay NERR. The CHA plan for Kachemak Bay also prohibits storage of offshore oil and gas drilling rigs in this area. However, laden and unladen oil tankers and petroleum-related product vessels utilize Kachemak Bay for pilot transfer operations, anchorage and staging before entering upper Cook Inlet, and occasional repairs. Additionally, marine fuels and other marine related products are transported to and dispensed from storage facilities located on the southern tip of the Homer Spit.

P. Maintenance Dredging

The U.S. Coast Guard owns the lands under the Homer small boat harbor; the U.S. Army Corps of Engineers performs annual maintenance dredging at the entrance. Various permits are required. However, the small boat harbor has been excluded from the research reserve boundary.

Q. Logging/Timber

The KBNERR boundaries do not include forested areas subject to logging. The Kachemak Bay and Fox River Flats CHAs do not contain uplands with timber resources. Moreover, the CHA management plan precludes in-water transport or storage of logs in Kachemak Bay, should any logging occur outside the reserve on private uplands surrounding the Bay. Within the Kachemak Bay State Park, the management plan states that the park resources will be left to natural environmental processes. The director has taken the stance that no logging of any type will take place in the State Park. Park policies do provide that if a dead or dying tree also constitutes a hazard (such as to public use facilities), it may be removed (Appendix C).

3.1.3.5 Surveillance and Enforcement within Kachemak Bay

In addition to statewide regulations, the most stringent regulations on activities in the Kachemak Bay region (including the reserve) come from the CHA and State Park. Many activities are prohibited in these areas (see sections 3.1.3.2-A3 and-B3). State Park and CHA designations are the highest levels of protection that the State affords to lands and waters. In many cases, State Park lands and waters will have more restrictive policies and regulations than the CHA.

In the reserve area, the main mechanism to enforce state laws and regulations is through permit review (see section above). The managing entities (ADF&G and DNR) also conduct

surveillance and enforcement within these areas with assistance from Alaska Department of Public Safety (State Troopers and Fish & Wildlife Protection) officers in Homer. Collectively, these state officials have considerable field presence in the Kachemak Bay area. Some ADF&G and DPOR (DNR) employees are deputized officials with the authority to enforce their respective department's regulations and issue notices of violation and citations. Officials with the Alaska Department of Public Safety are commissioned to enforce all laws of the State of Alaska. Therefore, they have the authority to make arrests or take other appropriate action for violation of state laws and regulations. Many uses and activities within KBNERR must be authorized by permits issued by ADF&G (e.g., Special Area Permits for CHAs) or DNR (e.g., state tideland leases or state park permits). Project inspections are performed to ensure that permitted activities are carried out properly. Enforcement actions, including issuance of notices of violation, citations or civil litigation may be taken for unauthorized activities or for failure to comply with permit conditions. Violations of Special Area regulations are Class A misdemeanors and are punishable by fines and up to one year in jail. Violations of state park policies and regulations is a criminal offense punishable by fine or court action.

3.1.4 Education, Interpretation, and Outreach

3.1.4.1 Introduction

The National Estuarine Research Reserve System (NERRS) was created in 1972, as a part of the CZMA, to increase our ability to manage estuarine ecosystems responsibly. A critical aspect of this mandate is the education, interpretation, and outreach component. In part, a reserve must "...serve to enhance public awareness and understanding of estuarine areas, and provide suitable opportunities for public education and interpretation" (CZMA 315 (b)(2)(C)). Although each educational program functions independently, they share common goals and assist each other's programs within the system. Each reserve educational program also tailors itself to the specific organizational and geographic needs of the region.

3.1.4.2 Educational Goals, Guiding Principles, and Objectives of the NERR System

In 1993, NOAA and state NERR representatives worked collaboratively to develop the first integrated, system-wide education plan. Completed in 1994, the education component of the strategic plan envisions the NERRS as a national system of resource centers specializing in estuarine and watershed education. The goal is to design and implement a comprehensive program of education and interpretation based on established scientific principles to strengthen the understanding, appreciation, and stewardship of estuaries and associated coastal habitats. This goal capitalizes on the NERR System's unique ability to link education, research, stewardship, resource management, and restoration activities. Within the NERRS, each reserve is responsible for developing and implementing a program that links education to scientific research.

The NERRS Strategic Plan defined guiding principles for designing and implementing individual educational programs. These principles are to:

- Develop education programs that will further the goals of the System;
- Target a culturally diverse audience of educators and students, environmental professionals, coastal resource decision-makers, and resource users;
- Function as a "system of sites" to nationally coordinate estuarine education efforts;
- Develop NERRS as resource centers specializing in estuarine and watershed education -- taking into account the diversity of differences of each reserve site;
- Capitalize on NERRs ability to directly link education, research, stewardship, resource management, and restoration;

- Ensure education priorities are based on program evaluation results; continually assess education programs and implement changes as necessary;
- Encourage NERR education coordinators to be active participants in the education community.

Another guideline document, "NERR Education: A Field Perspective," lists the following more specific education objectives for reserves:

- Develop and operate as a system of sites;
- Link education programs with research, management, and stewardship;
- Develop programs that encourage citizen stewardship of estuaries;
- Develop reserves as resource centers that address coastal issues of global, national, regional, state and local significance;
- Maintain a cadre of professional environmental educators in NERRS; and
- Evaluate program quality and program cost effectiveness. (Program effectiveness is measured as it relates to education objectives and resource management goals).

3.1.4.3 Background and Education Priorities of KBNERR

The Kachemak Bay area has a long history of environmental education and science programs dating back to the early 1980's (Table 2). Included are organizations that focus on natural history (Pratt Museum), outdoor education and exploration (Center for Alaskan Coastal Studies), citizen monitoring (Cook Inlet Keeper), academic courses (Kachemak Bay Campus/University of Alaska, UAF, and Homer High School), land conservation and preservation (Kachemak Heritage Land Trust and Alaska Maritime National Wildlife Refuge), and recreation/tourism (State Parks). Many of these programs already address specified priorities of the NERR system. Partnering with complementary educational programs may allow KBNERR staff to "fill in the gaps" by developing innovative programs to address local resource issues not otherwise addressed.

An initial survey of educational interests in Kachemak Bay (Appendix J) identified several general priorities for the reserve: support and coordination of local educational entities, obtaining facilities, and the use of education as a non-regulatory management tool. These general priorities helped shape the education component of the KBNERR management plan. Following reserve designation, the education coordinator and reserve manager will work with the Education Committee to translate national, regional, and local priorities into specific priorities for the reserve on an annual basis. Staff will design KBNERR programs following these priorities, which will likely include cooperative educational programs with other organizations.

Examples of educational programs and activities utilized by other reserves are available in "NERRS Education: A Field Perspective," and "The NERRS Handbook for Educators." These NOAA publications may be used as models for programs in Kachemak Bay when applicable.

Table 2. Agency/Organization Education Services

	AMNWR	Area Schools	ASP	CACS	Coble	HCC	KBC/UAA	KBCS	KHLT	CIK	KSMA	MAP	Pratt	UAA	UAF
Historical / Cultural			Y	Y					Y				Y		Y
Lectures or Presentations	Y	Y	Y	Y	Y		Y	Y	Y	Y	Y	Y	Y		
Coastwalk		Y	Y	Y					Y						Y
Internet Site	Y	Y	Y	Y			Y			Y		Y			Y
Vessel			Y							Y		Y			Y
# Users (x 100)/ yr	14	20	4	20			1.3	1				3	35	2	
School Age Children			Y	Y											
Publications	Y		Y	Y				Y	Y			Y	Y		Y
Oceanography Studies		Y		Y	Y		Y					Y	Y*	Y	Y
Interpretive Trails	Y		Y	Y					Y				Y		
Interpretative Signs		Y	Y			Y							Y		
Interpretative Exhibits	Y	Y	Y			Y							Y		
Buildings	Y	Y	Y	Y		Y	Y						Y		Y
Classrooms	Y	Y		Y			Y					Y	Y*		
Exchange Programs		Y		Y			Y						Y*		Y
Marine Aquaria		Y		Y									Y*		
Curriculum	Y	Y	Y	Y			Y						Y*		Y
School Programs	Y	Y	Y	Y			Y						Y*		

*Interagency and group cooperative effort

AMNWR – Alaska Maritime National Wildlife Refuge
 CACS – Center for Alaskan Coastal Studies
 HCC – Homer Chamber of Commerce
 KBCS – Kachemak Bay Conservation Society
 CIK – Cook Inlet Keeper
 MAP – Marine Advisory Program
 UAA – University of Alaska Anchorage

ASP – Alaska State Parks
 Coble – Coble Geophysical Services;
 KBC/UAA – Kachemak Bay Campus/UAA
 KHLT – Kachemak Heritage Land Trust
 KSMA – Kachemak Shellfish Mariculture Association
 Pratt – Pratt Museum
 UAF – University of Alaska Fairbanks

3.1.4.4 KBNERR Education Goals, Objectives, and Strategies

The mission statement of the Kachemak Bay National Estuarine Research Reserve education program is to “utilize the reserve to enhance public awareness and understanding of estuarine ecosystems, including human impacts on such systems, and the interrelationships of the ecosystems within Kachemak Bay.” Implementing this mission will require specific programming strategies. As a start, the following goals, objectives, and strategies were developed through the planning process to both reflect the needs of the local community and state, and to meet the national standards for establishing a NERR education program (listed above). These goals, objectives, and strategies are intended to guide the development of KBNERR educational efforts, but are not mandates or requirements. The desired actions may be implemented solely by reserve staff, by cooperating educational organizations in Kachemak Bay, or through collaborative efforts.

After designation, the education coordinator will work with reserve staff and the Education Committee to determine the specific priorities of the reserve on an annual basis.

Goal 1: To promote citizen and community awareness, participation and support for the Kachemak Bay National Estuarine Research Reserve.

Objective 1: Increase the visibility and participation of the Kachemak Bay NERR and the entire NERR system in the local community.

Strategy: Construct/obtain/coordinate facilities, including a lecture hall or auditorium, interpretive displays, trail system, learning center, and laboratory.

Strategy: Conduct public presentations, workshops, and conferences.

Strategy: Promote use of the reserve as an outdoor classroom in educational programs that increase public awareness and understanding of estuarine systems.

Strategy: Participate in local and national estuarine education events such as the Kachemak Bay Shorebird Festival, Coastwalk, Junior Ranger Program, and Sea Week.

Strategy: Organize a KBNERR volunteer program and participate in volunteer training for other educational organizations to more effectively transfer information on the value of estuaries to the general public.

Goal 2: To facilitate and supplement estuarine education, interpretation, and outreach in Kachemak Bay.

Objective 1: Coordinate with other educational efforts in Kachemak Bay to increase efficiency and issue coverage, and decrease duplication of effort.

Strategy: Collect local, regional, and national estuarine and coastal educational curricula; make them accessible to educators and staff at a centralized location.

Strategy: Review current educational programs in Kachemak Bay and identify gaps for the purpose of creating a more comprehensive environmental education program.

Strategy: Conduct periodic meetings between the education coordinator and Education Committee to share information about ongoing programs and discuss local issues and needs.

Strategy: Integrate science and research with education to increase understanding about the value of estuarine ecosystems.

Objective 2: Develop educational programs to fulfill specific needs in Kachemak Bay.

Strategy: Utilize input from the Education Committee to annually develop new strategies.

Strategy: Aid Kachemak Bay educational organizations in creating a comprehensive environmental education curriculum that reflects local issues and needs.

Strategy: Create/Assist/Facilitate a training program for volunteers, docents, and teachers to disseminate scientific information and discuss estuarine values.

Strategy: Develop materials that aid educational efforts, such as audio-video materials, pamphlets, newsletters, or publications.

Strategy: Create a KBNERR intern program focusing on interpretive activities and/or coordinate with existing similar internship programs.

Objective 3: Promote stewardship of Kachemak Bay resources through educational programs.

Strategy: Foster understanding and awareness of the estuary as an ecosystem and stress the interdependence of upland, estuarine, and ocean habitats.

Strategy: Increase cooperation, understanding, and tolerance among user groups in areas where conflict is occurring or is likely to occur over time.

Strategy: Utilize volunteers in interpretive and other reserve activities.

Goal 3: To promote informed decisions about natural resources and human uses in the region.

Objective 1: Provide relevant information to natural resource managers, resource users, and the general public to assist in making sound decisions.

Strategy: Create a forum for the discussion of natural resource information needs and issues.

Strategy: Develop and maintain a comprehensive library and database of research and resource information relevant to Kachemak Bay.

Strategy: Develop and present programs to disseminate reserve research results/information.

Objective 2: Increase awareness of human impacts on resources and the resulting management issues.

Strategy: Identify human actions related to stresses on natural resources, assess target audiences, and develop appropriate educational programs.

3.1.4.5 Framework of Education, Interpretation, and Outreach Programs

A. Site Design and Needs

Numerous environmental education programs currently exist in Homer. KBNERR educational activities will coordinate with existing programs to identify gaps, streamline efforts, and avoid duplication. KBNERR educational activities will include general estuarine education associated with the proposed visitors center (See Facilities, section 3.1.6) as well as need-based education on identified natural resource problems. While much of the general education could be accomplished on-site at the visitor's center, there is also a need to provide off-site extension opportunities to user groups which would not tend to visit the center. An interpretative facility in Seldovia/Kasitsna Bay has been identified as an important vehicle to promote stewardship of intertidal resources. A multi-disciplinary approach will include ecological, economic, historical, social, and cultural aspects of the local area.

The visitor's center designed and proposed by AMNWR is intended to support marine field trips for schools and college groups, Elderhostel, youth groups and other organized educational groups. A large wet laboratory capable of being separated into two spaces could provide opportunities for "wet and mess" learning activities. The multi-purpose room will also support the education program during the school year by providing space for up to 66 people for gatherings, talks and indoor activities. During the summer it will house travelling exhibits. The trail system will offer activity areas in each habitat type. Activities will be developed utilizing the outdoor environment, exhibits, wet lab, film and multi-purpose room to provide a comprehensive learning experience. The labs, multi-purpose room and theater could be accessible in the evening for use by college classes and other educational groups.

B. Audience

Environmental education programs in the Kachemak Bay area serve four potential audiences: the general public, coastal resource decision-makers and agency personnel, educators and students, and resource users. Based on the needs assessment process, the KBNERR educational programs will be designed to present the most effective message to specific user groups.

1. General Public

The region should serve as a center for estuarine education for local, in-state, and out of state visitors. Due to the seasonal nature of tourism in Kachemak Bay, programs will be created which will provide relevant information to the target audience at appropriate times of the year.

Non-Alaskans are estimated to be the largest group of visitors to the Kenai Peninsula. A 1990 Kenai Fjords National Park study in nearby Seward found that 76% of their visitors in midsummer were non-Alaskans. Division of Tourism data showed that 99,000 non-Alaskans visited Homer in 1989. Over 47% of visitors to Southcentral Alaska were over 55 years old while only 6% were children.

Most visitors to Homer are independent travelers arriving by vehicle. No estimates are available as to how many arrive in RVs but Fox (1991) estimates that 40,000 non-Alaskans come to the peninsula in their own vehicles having driven the highway or come by ferry.

Kachemak Bay is also a very important vacation spot for Alaskans, but information on this group is harder to come by. The following information is taken from a 1991 study of Anchorage visitors to the Kenai Peninsula. Approximately 80% of Anchorage residents, or 180,000 people, made an average of 4.34 trips per year to the Kenai Peninsula for a total of 780,000 visits per year. Twenty-five percent of these visitors said they most often visit Homer. Sightseeing (83%) was followed by fishing (75%) as the most common activity, and most visitors arrive by car (86%) or RV (6%).

The Kachemak Bay area, including Homer, Anchor Point, Halibut Cove, Port Graham, Nanwalek, and Seldovia, had about 11,000 permanent residents in 1996, approximately 4,100 of those in Homer. Less than half of the population has been resident for more than five years and the median age is 28 years. AMNWR estimated that local residents would account for approximately 3,000 visitors to their proposed visitor center the first year of operation and 5,000 by the year 2005.

2. Coastal Resource Decision-Makers and Agency Personnel

There are numerous agencies and government entities that have regulatory and programmatic responsibilities in the Kachemak Bay area. Local and regional staffs should have access to the resources of research reserve to aid in decision-making.

3. Educators and Students

Kachemak Bay area schools had an enrollment of approximately 2,000 in 1995 and are expanding, with the opening of a new Homer elementary school in 1997. Kenai Peninsula schools had an enrollment of over 10,000 in 1996. The Kachemak Bay Campus of the Kenai Peninsula College enrolls about 625 students per semester. The Center for Alaskan Coastal Studies and the Pratt Museum serve about 8,000 school age children per year from around Alaska.

4. Resource Users

Kachemak Bay is utilized for subsistence, industry and recreation, creating diverse range of interests and impacts. Fishermen, boaters, campers, hikers, and bird-watchers are common visitors to the area, while the most substantial groups of users are local people. Program design must take these factors into consideration.

3.1.4.6 Types of Programs

The reserve will offer a variety of activities, workshops/conferences, exhibits, and other educational opportunities according to assessed needs. Designing educational activities that would aid managers with identified natural resource issues should be a high priority. Examples of these issues in Kachemak Bay are localized water quality problems associated with gray water discharge in Halibut Cove and Bear Cove, visitor impacts on intertidal areas in Jakolof Bay and Kasitsna Bay, and oil/waste management in industrial areas such as the Homer Harbor. Concerns that were expressed during the site development process can be found in Appendix J. The "NERRS Handbook for Educators" provides examples of educational programs from reserves in the systems and could be used as a tool in program design. Types of educational tools that have been mentioned and should receive initial consideration are:

- exhibits and interpretive displays
- printed materials
- planned public events and activities
- tours, demonstrations, and seminars
- audio-visual materials
- teacher workshops
- summer projects for undergraduates
- development of an activities guide/curriculum enrichment guide
- workshops with local and regional government officials and town planners

Descriptions of these activities can be found in the Facilities chapter of this document (Section 3.1.6) and in the Alaska Maritime National Wildlife Refuge's Visitors Center Guide.

3.1.4.7 Description of Existing Environmental Education Programs in Kachemak Bay

A. *Kachemak Bay Shorebird Festival/ Western Hemisphere Shorebird Reserve Network*

The annual Shorebird Festival takes place the second week of May. Festival activities include receptions, workshops, field trips, invited speakers, and special events such as a photo contest. Most of the educational institutions listed below are active sponsors and participants in the festival, which is guided by a local steering committee.

In 1996, Kachemak Bay became part of the Western Hemisphere Shorebird Reserve Network. This program is a voluntary international partnership of governments and private landowners extending from South America to Alaska that strives to keep the chain of critically important staging sites unbroken for shorebird migration. Kachemak Bay schools may participate in the Shorebird Sister Schools Program, linking them to other schools across the migratory path of shorebirds. The program provides curricula centered around field trips to view migratory birds, and has a Web page (hosted by the U.S. Fish and Wildlife Service) where students post their field notes. Dozens of schools participate in the program in the U.S. and Canada.

B. Alaska Maritime National Wildlife Refuge

The Alaska Maritime National Wildlife Refuge provides educational programs focusing on seabirds and shorebirds, marine mammals, marine pollution, wetlands, and the Alaska Maritime Refuge. Programs are offered in the field, in the visitor center, and in the classroom. They include: beach and bird walks; films, lectures; participating in the Kachemak Bay Shorebird Festival; naturalists on the state ferry; a birding hotline; and the Shorebird Sister School Program (flyway education). The Refuge is also planning to develop a joint visitors center with the reserve and an environmental education curriculum which will focus on the refuge.

C. Alaska State Parks

The Homer Ranger Station manages the southern district of the Kenai Area, which includes Kachemak Bay State Park. Alaska State Parks' primary mission is the enhancement of safe, quality recreational opportunities for Alaskans and tourists, and the protection and management of the State Park system. Activities include the Junior Ranger Program (outdoor education) and interpretative programs for families and adults in campgrounds.

D. Center for Alaskan Coastal Studies

The Center for Alaskan Coastal Studies conducts a number of educational programs designed to develop a holistic understanding of Kachemak Bay ecosystems. Spring school programs include a 3-day outdoor education program featuring forest and marine ecology and prehistoric cultures. A 6-hour oceanography program features the marine ecosystem, resource management and monitoring techniques. Curriculum is under development. During the summer tourist season, guided walks are held at Peterson Bay and Wynn Nature Center in Homer. Other activities include a winter lecture series, a community wide coastwalk, Shorebird Festival activities and training programs for natural history interpreters.

E. Cook Inlet Keeper

The Cook Inlet Keeper is an environmental advocacy group that is coordinating a pilot study to involve citizens in water quality monitoring and sediment sampling. CIK conducts education and training workshops for volunteer water quality monitors, and houses a significant resource library on Kachemak Bay research.

F. Homer Community Schools

Homer Community Schools promotes community involvement in life-long learning through educational and recreational opportunities for people of all ages. This is accomplished by using community facilities and resources, and uniting local business and school resources and expertise. The program is designed to recognize cultural diversity and to address social and community concerns.

G. Homer High School

Homer High School currently conducts the largest marine biology program in Alaska. Classes focus on both lecture and intensive project-based lab work emphasizing hands-on contemporary issues. Fall & spring field trips, participation in the "blue water program" in Hawaii through a spring trip, and the sperm whale project with the Pratt Museum are among other activities conducted for students.

H. Kachemak Bay Campus, Kenai Peninsula College

The Kachemak Bay Campus of the Kenai Peninsula College (KPC) is a campus of the University of Alaska, which offers a variety of programs to meet the academic, vocational, and continuing education needs of the community and its visitors. Environmental, natural and cultural history workshops are among KPC's offerings. Past courses have included: The Natural and Cultural History of Kachemak Bay; Alaska Coastal Edibles; Biota of Alaska Classes on Cetaceans, Forestry, and Mycology; Introduction to Marine Biology; Principles of Ecology; and various biology and fishery classes.

I. Kachemak Bay State Park

The State Park offers interpretative materials at its South District Office, Halibut Cove Lagoon facility, and at trail head bulletin boards. Park staff are also available upon request to visit schools for interpretative activities.

J. Kachemak Heritage Land Trust

The Kachemak Heritage Land Trust works to preserve, for public benefit, land with significant natural, recreational or cultural values by working with willing land-owners. Summer programs consist of guided nature hikes or garden tours with emphasis on visits to established trails. Shoreline geology, storytelling, edible plant forays, slide presentations occur weekly throughout the summer. Trail guides and lecture schedules are available.

K. Marine Advisory Program

The Kenai Peninsula Marine Advisory Program (MAP) is a public outreach division of the UAF School of Fisheries and Ocean Sciences. The MAP provides educational and technical workshops, seminars, programs and publications related to the development and conservation of marine resources throughout the Kenai Peninsula. Illustrated posters, publications, and

educational videos are available. UAF and the MAP also offer a rural fisheries internship program available to teachers, counselors, and students who are interested in a career in fisheries.

L. Pratt Museum

The Pratt Museum and offers natural and cultural history exhibits, an outdoor nature/forest ecology trail, botanical garden, student internships, education kits for school age children, and sperm whale project exhibit. The Pratt Museum is also a partner with the Center for Alaskan Coastal Studies in the Seaweed program.

3.1.4.8 Coordination of Educational and Outreach Programs

As described in the section above, there are numerous environmental education activities occurring in Kachemak Bay. Both public and agency participants in our planning process expressed a strong desire to improve the coordination of these programs in order to share resources and increase overall effectiveness. These participants encouraged the reserve to assist in this role. For example, they felt that the reserve could be instrumental in developing a Kachemak Bay-specific environmental education curriculum. This curriculum would be a compilation of current local education materials, supplemented by information gathered by reserve staff. Environmental educators could then count on this curriculum to address basic coastal themes and relevant scientific information for the area, before speaking to their group's special interests.

KBNERR intends to work closely with and through existing educational programs that complement the priorities of the NERR system. Staff will seek opportunities to collaborate on area programs, such as participating in the joint training sessions for volunteers. The education coordinator will also regularly seek input from the Education Committee as he/she directs the KBNERR education program. This committee, composed of local and regional education interests, will share information about ongoing programs, provide advice and guidance to the reserve and education coordinator, and alert them to issues and topics of local importance. The proposed duties of the education coordinator and the Education Committee are described in the administrative chapter (section 3.1.2).

3.1.5 Research and Monitoring Plan

3.1.5.1 Introduction

The National Estuarine Research Reserve System (NERRS) was created in 1972 to increase our ability to responsibly manage estuarine ecosystems through additional research and education. The NERR System provides a mechanism for addressing scientific and technical aspects of coastal management problems through a comprehensive, interdisciplinary, and coordinated approach. Research and monitoring programs, including the development of baseline information, form the basis of this approach. NERR research and monitoring activities are guided in part by national plans that identify goals, priorities, and implementation strategies for these programs. This approach, when effectively integrated with the education and outreach programs, will help ensure the availability of scientific information that has long-term, system-wide consistency and utility for managers and members of the public to use in protecting or improving natural processes in their estuaries.

3.1.5.2 Research Goals of the NERR System

Research policy at KBNERR is designed in part to fulfill the NERR System goals as defined in the NERR program regulations. NERR System research and monitoring goals include:

- Addressing information needs of coastal management issues identified as significant through coordinated estuarine research within the System;
- Promoting federal, state, public and private use of one or more reserves within the System when such entities conduct estuarine research; and
- Conducting and coordinating estuarine research within the System, gathering and making available information necessary for improved understanding, use, and management of estuarine areas.

3.1.5.3 NOAA Research-Funding Priorities

A. *Purpose of NOAA Funds*

NOAA is a significant source of research funding for both independent and NERR staff researchers. NERRS regulations (15 C.F.R. Part 921.50 (a), Appendix K to this document) specify the purposes for which research funds are to be used:

- Support research that will both enhance scientific understanding of the reserve ecosystem and help meet the information needs of managers;

- Provide information needed by reserve managers and coastal ecosystem policy-makers; and
- Improve public awareness and understanding of estuarine ecosystems and estuarine management issues.

NOAA encourages coordinated research among reserves and other scientists by preferentially funding research proposals on specific estuarine topics that it has identified as national priorities. This unified approach promotes the exchange of research findings among reserves, state and federal agencies, and members of the academic research community.

B. *NERRS Research Funding Priorities*

Research funding priorities for the NERR System were first established in 1984, when a group of leading scientists convened to evaluate the status of estuarine knowledge. The group identified a diverse set of estuarine issues that were to receive top priority for research funding. These included: (a) sediment management, (b) nutrients and chemical inputs, (c) coupling primary and secondary productivity, and (d) fishery habitat requirements. The NERRS research program was reevaluated in 1991, in 1994, and again in 1996.

NERRS research funds are used to support projects that will enhance scientific understanding of reserve environments, provide information needed by reserve managers and coastal decision makers, and improve public awareness and understanding of estuaries and estuarine management issues. Research projects must be oriented to specific reserves. The primary research objective for the NERRS is the study of the causes and effects of natural and human-induced change in the ecology of estuarine and estuarine-like ecosystems. All research funded through NOAA should be designed to provide information of significant value to the development and implementation of resource management policy governing the U.S. coastal waters.

NOAA has identified four aspects of estuarine ecological change which are to receive particular emphasis from 1997 - 2000:

- Non-point source pollution
- Habitat restoration
- Biodiversity and invasive species
- Sustaining resources within estuarine ecosystems.

C. *NERRS Graduate Research Fellowship Program*

Beginning in FY97, NOAA began funding a competitive Graduate Research Fellowship program in the NERRS. The fellowship program is intended to produce high quality research in the reserves focused on improving coastal zone management while providing graduate students with hands-on experience in conducting ecological monitoring. This fellowship will provide graduate students with funding for 1-3 years to conduct their own research projects and provides training in ecological monitoring. Research projects must address coastal management issues identified

as having regional or national significance; relate them to the NERRS Research Priorities; and be conducted at least partially within one or more designated NERRS sites.

As part of the ecological monitoring education program, students are asked to provide up to 15 hours per week of assistance to the reserve. This program will be designed with the on-site staff and may include on-site monitoring or research assistance or performing additional sampling or analyses for the reserve; this training may take place throughout the school year or may be concentrated during a specific season. Students are encouraged, but not required, to incorporate these training activities into their own research programs.

3.1.5.4 Background and Research Priorities of KBNERR

Development of a coordinated research program in Kachemak Bay is a high priority for KBNERR. Various entities have been conducting biological (e.g., fisheries), physical, geological, and chemical research in Kachemak Bay and lower Cook Inlet for over 40 years. During that time, much of the information that has been collected remains unpublished or is available only as in-house publications, often resulting in a lack of data sharing and similar experiments. Avoiding duplicative research will be a function of a coordinated research system. Making pertinent information available in a useful form to coastal resource decision-makers and managers at the local, state and national level will aid in the wise management and sustainability of Kachemak Bay resources.

Kachemak Bay remains a pristine example of the fjord biogeographic region, and the preferred alternative of the reserve boundary (over 365,000 acres) should allow comprehensive, watershed-based research and monitoring to be conducted. The reserve and the activities occurring therein are representative of many of the systems in Southcentral Alaska. The reserve will therefore provide a benchmark for comparison with similar coastal areas where human activities are occurring. Likewise, experiments conducted within Kachemak Bay should have application to a broad range of like environments.

Initial research priorities and concerns were identified in a user survey distributed to interested citizens, research entities, and agencies in 1996. Local, regional, and national interests were represented, and responses could generally be categorized in one of three categories; inventory and monitoring, basic research, and applied research. Examples listed below are no particular rank or order, nor is this list intended to be comprehensive. It merely provides a reference for further discussion and development of research priorities of the reserve. A more complete listing of comments received during this process is available in Appendix J.

A. Inventory & Monitoring.

To establish an efficient resource monitoring program, it is essential to understand and inventory important resources and the issues and problems that affect them. Although a substantial number of survey, research, and monitoring activities have occurred in Kachemak Bay, this information has not been centralized into a single source. Long-term data are needed to determine the impacts of proposed alterations to the system, and components of a long-term comprehensive

monitoring program should include: hydrological, meteorological, water quality, sediment characterization, habitat, and biological data. For instance, an emerging shellfish aquaculture industry is dependent on the maintenance of high water quality standards in the bay. Concurrent with maintaining water quality is the need to know and understand pollution sources (both non-point and point discharges). In a multi-use area such as Kachemak Bay these inputs can change very rapidly.

Although a few of the needs listed below may be addressed by periodic inventory, citizens and researchers alike emphasized the need and importance of year-round monitoring for:

- sea water temperatures;
- water quality;
- salinity;
- sedimentation rates;
- population changes in marine birds;
- abundance and distribution of marine bird forage species;
- shorebird staging use and trends in area;
- marine mammal inventories;
- select wildlife indicator species;
- intertidal algae and invertebrates distributions for long-term change; and
- plankton and invertebrates, which are potentially sensitive to environmental perturbations/degradations
- complete detailed vegetative mapping project of Kachemak Bay watershed based on remote sensing imagery;
- habitat classification and mapping (e.g., the extent of intertidal and subtidal habitat types; deepwater and shallow water zones); and
- surveys of freshwater streams flowing into the Bay to determine the distribution of anadromous fish.

B. *Research.*

Comment was solicited from interested parties and agencies and two areas of research were identified, basic and applied.

1. *Basic:* Basic research in this context may include:

- compiling basic life history information on many species, such as sea cucumber; octopus; green sea urchin; coonstripe shrimp; King, Dungeness and Tanner crab; pink salmon; cod; pollock; herring; halibut; Kittlitz's murrelet; and several local bivalves;
- gathering comprehensive data on oceanographic and coastal processes (e.g., erosion and deposition), and water and air quality parameters; and
- conducting basic ecological component characterization.

2. *Applied:* Research data gathered during basic studies can be used to answer specific questions about various effects on resources. Some questions raised during the scoping meetings and the mail surveys were the effects of:

- marine mammals, particularly sea otters, on coastal marine communities;
- winter hunting on sea duck populations;
- marine mammals on fisheries;
- subsistence use of marine mammals and fish;
- variety and extent of human impacts (e.g., gray water discharge, intertidal trampling);
- impacts of harvest on shellfish population level;
- management of development activities in the uplands;
- livestock grazing on waterfowl production and plant communities;
- tourism/recreation on seabird colonies (e.g., Gull Island) during nesting/rearing seasons;
- large numbers of aquatic farmsites within a confined area;
- rock armoring on the circulation/sedimentation processes around the Homer Spit; and
- spruce beetle infestation on fish and wildlife resources, such as marbled murrelet breeding habitat.

3.1.5.5 Goals, Objectives, and Strategies for the KBNERR Research Program

The mission statement of the KBNERR research and monitoring program is “to utilize the reserve for long-term studies to gain a better scientific understanding of natural and human processes occurring within the Kachemak Bay watershed and estuarine ecosystem for use in coastal decision-making.” This mission will be expanded into more specific goals and objectives that will, with input from the Research and Monitoring Committee, guide reserve activities in the future.

The research and monitoring goals, objectives, and strategies for the Kachemak Bay NERR were designed to meet national, state, and local requirements and concerns in the Kachemak Bay area.

Goal 1: To increase knowledge of the biological, physical, chemical, geological, cultural and socioeconomic components of the Kachemak Bay ecosystem.

Objective 1: Focus attention on research and monitoring issues of local and regional importance while ensuring that national NERR priorities are met.

Strategy: Assess Kachemak Bay-specific priorities and needs on an annual basis with assistance from the Research Committee.

Strategy: Actively pursue and solicit opportunities for Kachemak Bay research based on stated priorities.

Strategy: Develop a monitoring program for Kachemak Bay that carries out the NERR System-wide Monitoring Program while addressing local and regional issues.

Objective 2: Develop an ecological characterization of the Kachemak Bay watershed to summarize available data, provide baseline information, and disseminate information to agencies, resource users, and the general public.

Strategy: Synthesize available information on biological, physical, and human uses in the Kachemak Bay watershed and maintain this information over time.

Strategy: Develop access to this information in an interactive format suitable for both novice and technically sophisticated audiences.

Strategy: Develop and maintain a centralized Geographic Information System (GIS) for the Kachemak Bay watershed to address the needs of managers and educators.

Strategy: Provide training on the use of these products for users/educators.

Goal 2: To encourage projects in the reserve that will streamline scientific efforts, maximize efficient use of funds, and avoid duplication.

Objective 1: Coordinate and enhance long-term environmental monitoring in Kachemak Bay (biotic, abiotic, water quality) to assess change.

Strategy: Integrate NERRS monitoring efforts in Kachemak Bay with existing research and monitoring programs.

Objective 2: Develop appropriate support facilities to expedite research and monitoring activities in Kachemak Bay.

Strategy: Assess current support facilities and compare with the needs of the research community.

Strategy: Obtain identified facilities as necessary and practicable; examples are a centralized database and library, research facility with a laboratory and bunkhouse, and research support vessel.

Objective 3: Develop cooperative agreements with other research and monitoring entities to coordinate and enhance local efforts.

Strategy: Develop Memoranda of Understanding and other coordination tools as necessary.

Objective 4: Make existing information more accessible to researchers and the public.

Strategy: Collect and identify existing information about the Kachemak Bay watershed and other similar areas and integrate it into a centralized database.

Strategy: Compare priorities of the reserve with existing information and solicit proposals and research accordingly.

Objective 5: Promote research and monitoring information that is transferable and valuable outside Kachemak Bay.

Strategy: Collect monitoring data in a manner consistent with the NERR System-wide Monitoring Program.

Strategy: Encourage research on ecological relationships that may be applicable both inside and outside of Kachemak Bay.

Strategy: Encourage applied research that addresses potential impacts common to other estuaries within the geographic region or Alaska's coastal zone.

Strategy: Encourage research that addresses ecological issues of regional or national concern, such as ocean warming trends.

Goal 3: To promote informed resource decisions by generating relevant information and providing it to the public and natural resource decision-makers.

Objective 1: Develop methods to effectively transfer information to the public.

Strategy: Use lecture series, conferences, informal seminars, Web page, and/or newsletters to increase the ability of the reserve to disseminate information.

Strategy: Consult the education coordinator/committee in determining the most effective methods to reach specific audiences.

Objective 2: Provide a clearinghouse of data, information, and related research that will enable informed decision-making.

Strategy: Provide a reference library and a database of information on the Kachemak Bay watershed.

3.1.5.6 Program Development

A. Site Design and Needs

Through the scoping process and initial surveys, a number of needs were identified for the proposed KBNERR. Among them were the need for:

- **Baseline research:** Conduct baseline research to build a database for use in long-term and interdisciplinary studies.
- **Resource library:** Create a collection facility for reserve research and data. Related research information as well as publications from other reserves will be included.

- **Water quality monitoring program:** Implement the NERR System-wide water quality monitoring program to aid in assessing change in the reserve.
- **Public involvement:** Involve the public by utilizing volunteers to achieve research and monitoring goals.
- **Integrated resource database/GIS:** Create an integrated research database encompassing biotic and abiotic factors of Kachemak Bay and its watershed. This data will be incorporated into a GIS and will be utilized to create an ecological characterization of Kachemak Bay. Information will also be used for the component of the System-wide monitoring program that examines land use changes.
- **Support Facilities:** Provide facilities to support and encourage research activities within the reserve. A laboratory and associated equipment, a dormitory or bunkhouse for visiting researchers, and vehicles and vessels for transportation to and from sites are among the suggested needs.
- **Cooperative agreements:** Establish and maintain cooperative agreements with local, state, and federal research entities to facilitate and augment research within the reserve.

B. *Researchers and Audience*

KBNER research opportunities will be available to: qualified scientists and students affiliated with a college, university or school; non-profit, non-academic research institutions; profit organizations; and local, state, or federal government agencies. The creation of a NERR site in Kachemak Bay should increase coordination and collaboration between researchers and aid in leveraging funding from outside sources. The potential audience for this research includes the Kachemak Bay community itself, educators and researchers here and elsewhere, natural resource managers, and the NOAA programs.

3.1.5.7 Evaluation Procedures: KBNERR Policies and Procedures for Research

The review and evaluation of reserve research is important for credibility. The research coordinator will develop evaluation procedures with input from the Research/Monitoring Committee and other suitable sources.

3.1.5.8 Research Opportunities

A. *Research Topics and Priorities in the Kachemak Bay NERR*

Research priorities for the reserve will be developed by the research and monitoring committee in conjunction with the reserve staff (i.e. the reserve manager and research coordinator) and will be evaluated and updated as appropriate. Initial surveys have been conducted through the nomination and designation process and have been compiled in Appendix J. These research

needs are summarized above under "Background and Research Priorities." The prioritization of these research topics will continue through the assessment of local, regional, and national needs.

B. Cultural Resources in Kachemak Bay

Kachemak Bay has a rich cultural tradition dating back over thousands of years and continues to be an extremely important component of the area. The reserve will work with native groups and other local entities to define the role the reserve can play in incorporating traditional knowledge into the research and management of the Kachemak Bay watershed.

C. Current Research in Kachemak Bay

The Alaska Department of Fish and Game and the University of Alaska – Fairbanks are the two major entities conducting research, monitoring, and survey activities in Kachemak Bay at the present time. ADF&G studies are generally for the purpose of stock assessment, and UAF research is conducted out of the UAF facility at Kasitsna Bay.

Alaska Department of Fish and Game

- Shrimp trawl surveys, annually 1970 to present
- Annual crab and groundfish trawl survey
- Annual Dungeness crab pot survey
- Annual monitoring (air and ground) of natural and enhanced salmon runs
- Monitoring of halibut and groundfish sport or recreational catch
- Population assessment trawl surveys of groundfish and shellfish
- Clam surveys (commercial and non-commercial)
- Lake enhancement work on China Poot Lake
- Annual crab carapace survey
- limnological sampling and lake enhancement at China Poot and Hazel Lakes
- Annual monitoring (by aerial survey) and sampling of pacific herring during spring spawning migration

University of Alaska Fairbanks

- Seasonal distribution of juvenile flatfish in Kachemak Bay, Alaska
- Microbial degradation of aromatic hydrocarbons in marine sediments
- A study of the adsorption and biodegradation of aromatic hydrocarbons by marine sediments
- Baseline studies of Cook Inlet intertidal dynamics
- Kachemak Bay studies of recruitment and succession in intertidal zone
- Harpacticoid copepods: determination of food sources for estuarine meiobenthos
- Biology and ecology of sponge populations in semi-exposed and protected habitats
- The ecology and reproductive biology of the sand dollar *Echinarachnius parma*
- Ecological effects of UV-b radiation
- Intertidal and subtidal effects of pollution: assessment of top trophic level predators as

bioindicators

Miscellaneous

- Forage fish study (National Biological Service, or NBS)
- Whale research supported by \$25,000 grant to Pratt Museum and Homer High School through the Sperm Whale Project
- Archaeological Site Stewardship (DNR)
- Marbled murrelet productivity study (USFWS)
- Water quality monitoring (Cook Inlet Keeper)
- Marine bird studies (USFWS & NBS)
- Prey fish abundance, availability and species composition (USFWS & NBS)
- Sediment quality study (Cook Inlet RCAC)
- The village of Nanwalek is conducting comprehensive limnological sampling and smolt/adult salmon enumeration of the English Bay River drainage in conjunction with their ongoing sockeye salmon enhancement project.
- Pacific Cod abundance and aging project (Homer High School)

3.1.5.9 Cooperative Efforts

A. Attracting Research to KBNERR.

Recruiting researchers to Kachemak Bay is vital to building the KBNERR database and establishing the reserve as a long-term natural field laboratory. The research coordinator will be responsible for recruiting researchers with interests compatible with the goals and objectives of the reserve. Recruitment strategies include:

- Coordinating research priorities through the research committee;
- Utilizing intern programs for graduate and undergraduate students;
- Enabling reserve staff to participate in research conferences and workshops pertaining to estuarine and related topics;
- Providing information to researchers about research opportunities and sources of funding applicable to Kachemak Bay and the reserve system; and
- Providing support facilities for researchers in the reserve.

B. Coordination of Research Efforts

Another potential research benefit of the reserve is coordination of research efforts. The reserve site offers long-term study sites where various research institutions can coordinate efforts and compare results. Inter-agency or complementary research projects can be conducted more easily at long-term research sites in the reserve. Data will be compiled and made available in an appropriate form for use by other researchers, coastal managers and the public. The format of dissemination will be dependent on the target audience. Research coordination through the

reserve network creates a model for other research efforts, reduces unnecessary duplication, and effectively decreases the cost of publicly supported research.

C. Coordination with the NERR System

The reserve will work closely with NOAA staff, especially with the Technical Projects Branch, to develop and assess national research priorities. NOAA also is involved with the reserve through research funding and proposal evaluation. The reserve Manager will communicate with NERR Managers in other states, and will work with NOAA and other reserve Managers to establish a national network to exchange information.

Data from the reserve will contribute to the reserve network's long-term study to monitor the status and trends of estuarine ecosystems. Data from existing reserves will contribute to the understanding of the long-term ecological effects of human and natural factors on estuaries and will be useful to predict trend analysis of ecological stresses. This information will be stored in the Centralized Data Management Office (CDMO) and will be available for interested individuals or organizations. The coordinated research network aids greatly in understanding the theoretical and practical aspects of conservation and coastal resource management.

Maintaining contact with other research and estuarine policy entities is important, particularly in an area as spatially separated from other reserves as Alaska. KBNERR staff will continue to communicate with other reserves, NOAA, the Alaska Sea Grant/Marine Advisory Program and other programs in the marine and estuarine science community. Reserve staff also will coordinate with NOAA's Office of Ocean and Coastal Resource Management, Status and Trends Program, and the Environmental Protection Agency, where possible.

3.1.5.10 Funding Opportunities

A. Procedures for NOAA-Funded KBNERR Research.

Graduate students may apply for research support from the NERRS program to conduct their own research projects in one or more reserve sites. Fellowships are available to graduate students with funds (\$15,000 per annum) to conduct their own research projects while receiving hands-on management-related training in ecological monitoring. Funding is intended to provide any combination of research support, tuition, or supplies as needed. As part of the ecological monitoring education program, students will provide 15 hours a week of assistance to the reserve. For more information on the funding priorities of NOAA, see section 3.1.5.3 above.

The KBNERR research coordinator is responsible for coordinating all research and monitoring activities for the reserve with input from the Research/Monitoring Committee (see Section 3.1.2.2 for more detail). NOAA will maintain close contact with the research coordinator and will keep him/her informed of the progress of NOAA-funded research. The research coordinator also will maintain regular and direct communication with the research community. He/she will coordinate research activities in the reserve and, where appropriate, assist in meeting the needs of reserve investigators.

To achieve the primary NERRS goals (i.e., making information available for improved understanding and management of estuarine areas, and enhancing public awareness and understanding of the estuarine environment) KBNERR will encourage researchers to provide the research coordinator with a mid-term progress report, a final report and one copy of any publications resulting from research at the reserve. The final report should include an abstract, introduction, methods, results, and a conclusion, and a summary of the gathered data and a list of the analysis completed. The raw data also should be included with the report as data appendices. Records, data, reports, publications, and other relevant materials will be kept at the KBNERR central repository. Research information also will be forwarded to NOAA, which will act as a central clearinghouse and link to the NERR information network. After completion of the final report, the researcher or group is encouraged to provide a presentation at the reserve headquarters or other appropriate location on the project findings at a time mutually agreed upon between the research coordinator and the researcher. These presentations will help to achieve the reserve goals and objectives with regard to providing pertinent information to target audiences.

B. Procedures for KBNERR Research (funded by sources other than NOAA and the State)

A primary responsibility of the KBNERR is to identify and prioritize research needs within Kachemak Bay in order to guide research to meet these needs. If a research proposal addresses a clearly identified management need, funding chances are often improved. Reserve staff may identify appropriate funding sources. It is anticipated that researchers will seek funding from organizations such as: the National Science Foundation, Alaska Science and Technology Foundation, *Exxon Valdez* Oil Spill Trustee Council, EPA, USGS/Biological Resources Division, U.S. Department of the Interior, other state and federal agencies, foundations, and the private sector. The KBNERR staff and Research Committee will consult the models from other research reserves to work out important considerations such as: the peer review process, responsibilities of the researchers to the reserve, promoting joint utilization of resources whenever possible, and report documentation.

3.1.5.11 Information and Dissemination of Results

Information gathered during research and monitoring activities in the research reserve, as well as the management implications of this information, will be made available to the public by the reserve staff. Interpretation of this information needs to be specific to the selected target audience. Both NOAA and KBNERR will encourage the dissemination of research results. Methods include:

- Journal articles in the peer-reviewed literature;
- Research summaries maintained at reserve facilities;
- Interpretation by interns;
- Presentations at professional societies;
- Special symposia arranged by NOAA or reserves, often in association with other meetings such as the biennial meetings of the Estuarine Research Federation or Coastal

State Organization; and

- Annual reports to NOAA, ADF&G, and the State of Alaska.
- Workshops, conferences and teach-ins at the reserve;
- KBNERR brochures, distributed with the annual call for proposals and at appropriate conferences and other events;
- Press releases to local media;
- Articles in journals of local organizations;
- A Web page;
- Direct mailings to state and local governments and interested organizations; and
- Regular contact with representatives of local, state, and federal entities.

3.1.5.12 Reviews/Evaluations

KBNERR will submit an annual report on research and education activities to NOAA. The report will include a description of the overall program successes, accomplishments, and work plans for the coming years. The first report will cover the 12-month period following receipt of acquisition/development funds, and will be submitted within three months after the end of that period. In addition, KBNERR will arrange for the periodic NOAA evaluation visits and public meetings as required by NOAA programmatic requirements.

3.1.5.13 Monitoring Plan

A. *NERR System Guidelines: Phased Monitoring Plan*

It is the policy of KBNERR to follow the monitoring plan initiated by NERRS in 1989 and as outlined in the NERRS Regulations and Strategic Plan:

- Environmental Characterization, including studies necessary for inventory and comprehensive site descriptions;
- Site Profile, to include a synthesis of data and information; and
- Implementation of a systematic long-term monitoring program to focus on selected parameters.

B. *System-wide Monitoring Program (SWMP)*

NOAA and the existing reserves have recently developed a system-wide monitoring program that over time will simultaneously provide critically needed, standardized information on national estuarine environmental trends while allowing the flexibility to assess coastal management issues of regional or local concern. This program is designed to enhance the value and vision of the reserves as a system of national reference sites. Where possible, existing data collected by other agencies will be incorporated. The program has three components that will be implemented in phases, depending on funding:

- *Abiotic Parameters:* Each reserve will monitor a uniform suite of physical and chemical processes that either impact or reflect the health of estuarine ecosystems. These will include: basic water quality indicators, atmospheric conditions, and specific processes such as tidal and ground water flow and contaminants.
- *Biodiversity:* Across the NERR System, each site will monitor two fundamental features of their respective estuarine ecosystems: (i) basic community structure in major estuarine habitat types (e.g. uplands, emergent wetlands, benthos, etc.); and (ii) population trends of important "target species" including those of commercial, recreational, or conservation significance (e.g. submerged aquatic vegetation, marsh plants, wading birds, endangered species, etc.).
- *Land Use Patterns:* In recognition of the profound influence of land and water use on estuarine resources, the NERRS monitoring program will compile existing and new data on major patterns of habitat classification and use within NERRS watersheds. Data will be gathered from a variety of state and federal sources, including NOAA. Data will be updated periodically and used to detect and track significant changes in watershed use and its impacts on reserve resources.

Information generated by the NERRS monitoring system will be compiled electronically at a central data management "hub", and will be available to all reserves, CZM programs, OCRM and other users. Each reserve will have constant electronic access to all system-wide data and summary statistics on environmental trends at the national, regional or site-specific levels.

3.1.6 Facilities

The NERR program has a responsibility to provide accessible facilities necessary to fulfill the reserve's mission as established in federal and state laws, administrative rules, interagency agreements, and the reserve's management plan. Acquiring suitable facilities will allow KBNERR to fulfill the educational and research goals of the system and provide a quality experience for visitors. All facilities will be designed to: comply with the Americans with Disabilities Act; create minimum visual or environmental impacts; satisfy local, regional, and national priorities by soliciting input from user groups; and allow for future expansion to meet long range needs.

3.1.6.1 Present & Existing Facilities

Currently there are no facilities dedicated to KBNERR in Homer. There are limited temporary solutions to meet facility needs, and the state must seek long-term solutions as soon as possible to establish a functional reserve research and educational programs. At this point, facilities suitable for hosting the NERR in the interim will be identified, and existing local entities with facilities similar to those that would aid in accomplishing the purpose of NERRS will be described and evaluated for possible partnerships.

The *Kasitsna Bay Laboratory*, owned by NOAA and leased by the University of Alaska-Fairbanks, is located on 15 acres in Kasitsna Bay on the south side of Kachemak Bay. The Bureau of Commercial Fisheries (now NOAA's National Marine Fisheries Service) created the Kasitsna Bay Lab in the 1950's for the purpose of commercial fisheries research. In the early 1980's, the lab was transferred to NOAA and its association with UAF was initiated. The laboratory conducts marine research in conjunction with many different agencies and universities, and could be used as a remote field research station for KBNERR. Facilities include: two 400 sq. ft laboratories, each with approximately 56 ft of counter space and two 9x40 ft trailers equipped as laboratories; a main laboratory containing small freezers and refrigerators, gas chromatograph, sinks, temperature control baths, balances, and microscopes; living accommodations housing a maximum of 18 people; 120 sq. ft unheated storage building and some limited heated storage below house; a seawater system that provides up to 70 gal of seawater per minute; two 21-ft. Boston Whalers; one 28-ft. Munson boat; and aluminum and rubber skiffs. A more complete description of Kasitsna Bay facilities is listed in Table 3.

The *Alaska Department of Fish and Game* maintains a small office, library, conference room, and maintenance shop in Homer. Along with professional fisheries journals and texts, the library contains department reports and original manuscripts from pre-statehood that are difficult or impossible to obtain elsewhere. The department also maintains a 65 foot steel-hulled research vessel (*Pandalus*) and crew that is well suited for pot, trawl, and hydro-acoustic surveys; this vessel is available for contract work when not engaged in other department activities.

The *Center for Alaskan Coastal Studies* (CACS) currently maintains a field station, located in Peterson Bay on the south side of Kachemak Bay, and the Wynn Nature Center in Homer. These

facilities are utilized to conduct environmental education and research activities on coastal ecology and oceanography. The CACS has also expressed interest in building a wet laboratory and dorm facilities for up to 40 people.

The *Cook Inlet Keeper* (CIK) supports facilities for their citizens-based water quality monitoring programs, a Windows NT-based GIS workstation, and is in the process of designing and purchasing a vessel for its monitoring and educational programs. CIK completed a search of published literature related to Kachemak Bay, and established a library of that literature.

The *Kachemak Bay Campus of the Kenai Peninsula College* has classroom and meeting facilities as well as audio-video equipment and standard university education facilities. Classes include marine science, biology, and natural history.

The *Pratt Museum* is a natural history museum (9,300 ft²) that offers natural and cultural history exhibits, an outdoor nature/forest ecology trail, botanical garden, education kits for school age children, a library, historic homestead cabin, outdoor theater, and sperm whale project exhibit.

Table 3: Kasitsna Bay Lab Equipment

<u>Quantity</u>	<u>Equipment Items</u>
2	21' Boston Whalers
1	28' Aluminum Bowpicker with hydraulics and winch
2	13' Zodiacs with 25hp motors
3	Crew cab trucks (2 4x4)
1	9 person housing unit
1	8 person housing unit
1	2 person housing unit
2	20x30 wet labs/classrooms
2	15x10 wet labs
3	15x10 dry labs/storage
1	Saltwater system
1	10x8 walk in freezer
2	Household freezers
3	Household refrigerators
	Misc. lab equipment
1	Emergency generator
1	20x15 repair shop
1	10x10 repair shop
1,500 gallons of fuel storage	

3.1.6.2 Facility Needs

Facility and equipment needs at the Kachemak Bay reserve are similar to the standard items necessary at the 22 existing reserves. Facility needs can be separated into three basic categories: administrative, research, and education/interpretation.

A. Administrative

KBNERR headquarters will be situated in Homer. Administrative space should include, but is not limited to: offices for staff and visiting researchers and educators, a conference room, library, reception area, and storage space.

B. Research

An effective reserve requires facilities for research and education, including laboratory space, housing, and associated research facilities. Once designated, the Kachemak Bay reserve will be the largest reserve in the system. KBNERR contains a diverse array of habitat and ecosystem units. While much of the north side of Kachemak Bay is accessible by road, the south side of the bay is remote and accessible only by boat or aircraft. Because of this diversity and remoteness, the reserve should have research facilities both on the north and south side of Kachemak Bay. Facilities on the south side of the bay will be the field research center for the more pristine and remote areas. Research facilities should include laboratory facilities, storage space, meeting space, a seawater system, cold experiment rooms, docks, office space for visiting scientists, and other research space. Because of the remoteness of the reserve and virtual non-existence of living space in the Kachemak Bay area in the summer, research facilities must include a bunkhouse or other living facilities. This is particularly true for facilities on south side of the bay; due to transportation constraints, day use of the facility is not practical or cost effective, and weather often limits travel between Homer and the south side of the bay.

C. Education/Interpretation

Education and interpretive facilities are key to both the educational mission of NERRS and KBNERR. Educational facilities should include, but are not limited to: interactive exhibits, an auditorium, environmental education lab/classrooms, multipurpose room, a bookstore, workrooms and storage, a library, storage, trails, and appropriate maintenance facilities. In lieu of developing all new facilities strictly for KBNERR, partnerships with existing organizations and agencies in the region will be instrumental in meeting these needs. Partnership possibilities include: shared use of existing facilities, or developing new joint facilities with kindred organizations.

3.1.6.3 Facility Plan

Short and long terms needs are discussed below. For reference, the non-water areas that may support KBNERR's facility needs are listed in Table 4.

A. Short-term Needs

Administrative Offices – Homer will be the administrative base for the reserve. Rental space is very limited in the City of Homer, and long-term needs must be met with additional facilities.

Commercial office space will be rented to house staff in the short term until permanent facilities are available.

Research Facilities – The Kasitsna Bay Lab, operated by the University of Alaska Fairbanks, is identified as the primary field research facility for KBNERR (see Table 3). At present, it is the main research facility available to the reserve. The reserve will encourage its use for research in Kachemak Bay and Lower Cook Inlet.

Education Facilities – Since there are many environmental education programs in the Kachemak Bay area (see section 3.1.4.7), educational activities in which KBNERR participates are likely to be cooperative programs at existing facilities that serve the identified audiences.

Table 4: Example Properties that may Support KBNERR Facility Needs

PROPERTY	RELATED FACILITY/OTHER USE
Tidelands and Select Parcels on the Spit Owned by City of Homer (Figure 4)	Research and Education Uses
City of Homer-Owned Beluga Slough Parcels, Including Bishop's Beach Park (Figure 3)	Proposed Interpretive Trails
Federally-Owned (USFWS) Beluga Slough Parcels (Figure 3)	Proposed Joint Facility with Alaska Maritime National Wildlife Refuge (AMNWR)
Federally-Owned (NOAA) Kasitsna Bay Parcel (Figure 6)	Kasitsna Bay Laboratory (pre-existing)
Additional Beluga Slough Property as Available (Figure 3)	Research and Education Uses

B. Long-term Needs

Facility Planning. During the first year or two of operation, KBNERR will devote considerable effort toward facility planning. The preliminary planning process includes the following steps:

- Complete a needs analysis to determine what types of functions and activities must be supported on the north and south side of the bay to operate an effective research reserve.
- Conduct a broad-scale analysis of land and partnership options for building or sharing facilities to meet the identified needs.
- Perform background research and use planning exercises to specify the types, sizes, and capabilities of facility spaces needed.

- Analyze alternatives, recommend the preferred option or combination of options, and establish a budget.
- Engage professional services to design any new construction or refurbishment.
- Develop institutional agreements with prospective facility partners (owners/managers) to guide future shared use.

Factors that will guide selection of facility options include, but are not limited to: cost efficiency; maintenance responsibilities; administrative considerations; the capacity of the site to support the facilities and functions; and the ability for the NERR to retain an individual identity in the eye of the public.

Homer Administrative, Education, and Research Facilities. There are several options to secure the interpretive facility, office complex, and support facilities in Homer; three options are outlined below. Any one or a combination of these may be selected to meet the identified needs. The first involves participating in a joint facility with the Alaska Maritime National Wildlife Refuge (AMNWR) on an existing site in Homer. A second option would be to pursue partnerships with other organizations or agencies for facilities in the area. A third option would consist of constructing new research, educational, interpretive, and administrative facilities in Homer for the reserve. KBNERR will explore the full range of options for these facilities, make selections, and follow through by developing or revising facility designs.

1. Joint Facility with AMNWR

A joint AMNWR/KBNERR complex in Homer offering a visitors center, offices, and support facilities could play a major role in fulfilling the education and research/monitoring goals of KBNERR. In 1992, AMNWR acquired 60.5 acres of land along the Sterling Highway (Figure 3), also known in this area as the Homer Bypass. AMNWR has proposed to build a headquarters complex there, which is currently in the 10% design stage. They have recently proposed amending the project to include facilities for the Kachemak Bay NERR. Components of the proposed 27,800 ft² center could include: staff and administrative offices; reception and meeting areas; permanent and temporary educational exhibits; classrooms and an auditorium; an information/sales area; outdoor trails; and research facilities including laboratory, housing, and storage space; and a centralized library with local research and educational curricula. A 27,000 ft² support facility has also been planned and includes a maintenance shop, dry and wet labs, fuel storage, bunkhouse for approximately 40 people, and kitchen and laundry facilities. More information can be found in the Environmental Assessment for the proposed AMNWR headquarters complex (USFWS, 1994).

The 60.5 acre AMNWR property at Beluga Slough offers many features which make it an attractive site for Homer-based NERR facilities. Its location both on the main highway into Homer and on Beluga Slough combines several favorable site attributes—it offers a high profile location, easy highway access, and the possibility of estuarine interpretive activities on one site. The property's habitats include tide flats, salt grass wetland, willow scrub-shrub wetland, an intertidal beach, and uplands which overlook the area. With recent additions, the City of Homer now owns nearly an equal amount of adjacent land in the Beluga Slough area (Figure 3). Proposed interpretive trails and small restoration projects straddle both federal

and city properties on the marsh. Adjacent to the current AMNWR site, there may be opportunities for land purchase which would improve the potential of a joint facility. Thus, if an agreement may be reached with AMNWR, and the respective funds are secured in time, this location is a preferred option for KBNERR's Homer-based educational, interpretive, and/or administrative facilities.

2. Partner With Other Organizations In The Kachemak Bay Area

Partnerships with other organizations in the Kachemak Bay community may also help meet the facility needs of the research reserve. These options could be pursued in addition to or in lieu of the joint facility with AMNWR described in #1 above. For example, the Kachemak Bay Campus of the University of Alaska owns 4.5 acres in the center of Homer on which they plan to build a new classroom facility. The campus suggested that we consider locating KBNERR administrative, research, and/or educational facilities on this site in order to promote collaborative efforts and reduce duplication of services and facilities. Since Kachemak Bay has many organizations and institutions involved in environmental education and stewardship (Section 3.1.4.7) which have compatible missions, the potential for KBNERR to successfully share education and interpretive facilities is high. Several groups plan to expand their programs. Consistent with the reserve's intent to complement, coordinate, and not duplicate, KBNERR will consider partnerships in facility use or expansion in order to achieve its objectives.

3. Separate KBNERR Facilities

KBNERR must consider the option of constructing some or all facility components to meet its needs. In the Homer area, these might include a separate office complex, visitor space, research lab, and/or associated support facilities. In the course of KBNERR facility planning, it may turn out that a potential partnership cannot be achieved due to institutional/administrative reasons, or that sharing some facility components is not the best alternative. Individual construction efforts for KBNERR are likely to be limited, since this option This option may incur additional costs, and would fail to realize the cost efficiencies and other benefits of shared facilities.

Remote Research and Education Facilities. The Kasitsna Bay Lab is the preferred alternative for a remote research facility in Kachemak Bay. The lab may also help address the need for remote education facilities, since local educational groups (e.g., the Kachemak Bay Campus, nonprofit organizations) have expressed interest in expanding its use for educational purposes.

To make the reserve an attractive site for research, there is an urgent need to upgrade and expand the facilities at the Kasitsna Bay Lab. Moreover, the lab is not currently designed for use for educational purposes: any future design and improvements to the facility should take these educational uses into consideration. Construction needs for the facility include, but are not limited to: housing for researchers and visitors, classroom and meeting space, improved and expanded lab space, equipment storage and workshop space, a backup seawater system, a cold experiment room, telecommunication upgrades, and an on-site dock. Of these, the most pressing

needs to make the site a viable research and educational facility (i.e., the deficiencies most noted by the users of the lab) is lack of adequate housing, office space, and meeting/classroom spaces. There are no commercial housing facilities available, and existing housing facilities are overcrowded, in poor condition, and have exceeded their expected life. Several offices will be needed for lab staff, researchers, and reserve staff while at the facility. Day use of the facility is not a practical or cost effective alternative, and weather often limits travel between the lab and Homer.

Even with expansion, the Kasitsna Bay Lab will not likely meet all the anticipated research needs in the Kachemak Bay area, especially in the event of large or multiple projects occurring simultaneously. The reserve should seek partnerships with organizations both in and outside of the Kachemak Bay area for use of research related facilities.

Likewise, the reserve should consider partnerships for use of remote education facilities such as the CACS field station at Peterson Bay as needed to meet program priorities.

3.1.7 Habitat Restoration and Manipulation Plan

3.1.7.1 NERRS and Environmental Restoration Work

The NERR System, under 15 CFR Section 921.1 (e), recognizes the need and desirability to allow restoration "to improve the representative character and integrity of a reserve."

Manipulative techniques may be required to restore degraded areas or systems that have undergone a physical or ecological alteration. Restoration goals and objectives should focus on the restoration of environmentally degraded areas to their prior environmental status in terms of either the original ecological structures or their functional equivalents.

3.1.7.2 Potential Restoration Initiatives

The majority of the area included within KBNERR boundaries is relatively pristine and has not been significantly impacted by human activity. However, there are a few locations within the reserve that have been "disturbed" or impacted and would be candidates for some level of restoration or enhancement activity. The establishment of the reserve would provide an excellent opportunity to develop a restoration plan for Kachemak Bay that would include both long and short-term projects. A comprehensive restoration plan might encompass both large-scale initiatives and single-species resource management practices.

The following is a preliminary list of potential sites and projects that may be considered as part of the habitat restoration plan for the reserve. Although a more comprehensive list will be developed by the reserve staff and the Research/Monitoring Committee as part of the long-term management strategy, this list represents a preliminary inventory of sites and projects that have been suggested during the planning process. These should be considered examples of the types of restoration efforts that the reserve may pursue in the future.

A. Intertidal areas on the south side of Kachemak Bay.

In recent years, the intertidal areas in Jakolof Bay have become a favorite destination for school groups on spring educational outings from around the state. The mass influx of fairly unsupervised groups on a finite area have caused great concern among local observers. Sea life has been trampled on the rocky substrate, and intertidal creatures have been indiscriminately removed/collected (without the permits required under the Critical Habitat Area), leading to declines in biodiversity in localized areas.

Community groups working with the NERR intend to address these issues primarily through educational efforts (see Education Chapter, section 3.1.4). Possibilities include: erecting informational bulletin boards or kiosks which inform visitors that a permit is required for removal of any live specimens from the beach or rocks, outlining a proper protocol for digging clams, and/or educating the boat operators or providing docents for these large groups. However, there may be opportunities to employ other restoration methods in the

hardest hit areas such as Jakolof Bay. The reserve staff and the Research/Monitoring Committee would examine what restoration strategy may or may not be appropriate for these areas. Shorelines along the north shore of Kachemak Bay (e.g., Bluff Point) sustained many of these same impacts some 20 years ago. A longer-term restoration strategy for Kachemak Bay might explore similar restoration strategies for these north shoreline areas.

B. *Mud Bay.*

On the northeast side of the base of the Homer spit (opposite from Mariner Park), Mud Bay has exhibited declines in intertidal life due to human impacts from four-wheel drive traffic, harvesting of sea life for food, and possibly industrial impacts from adjacent private lands. This area used to boast an abundance of clams, sea stars and urchins. Restoration options might include: reducing human impacts (through education), studying the rates and causes of sedimentation in these areas, and other habitat adjustments.

C. *Mariner Park.*

Before the construction of the Homer Spit Road and airport, Mariner Park (west of the base of the spit) was a continuation of the Mud Bay tidal flat community. Since the tidal flow was interrupted, however, Mariner Park has emerged as a sand beach ecosystem, and species diversity has declined. The *Exxon Valdez* Trustee Council is currently funding a feasibility study to restore the Mariner Park area, including the restoration of tidal action that more closely resembles historic patterns (City of Homer, 1998). The restored tidal action would make Mariner Park less susceptible to inappropriate human uses such as off-road vehicles. The intent of the habitat restoration and enhancement plan is to increase and diversify the intertidal fauna, which in turn will benefit migrating shorebirds, and promote recreationally compatible use of the area by residents and tourists. Thus far, only the feasibility study has been funded.

D. *Beluga Slough.*

AMNWR has entertained preliminary ideas for small restoration projects in this area, including:

- Restoring the natural beach berm, which protects Beluga Slough from the ocean. This area once supported nesting eider ducks, but has been damaged by vehicles driving off road;
- Restoring any forest edge vegetation disturbed by facilities construction;
- Restoring the depleted winter moose browse in the willow scrub.

3.1.7.3 Research Manipulations

Habitat manipulation for research purposes are allowed within the reserve according to the following guidelines (§921.1 (d)): 1) the activity must be consistent with the mission and goals of the NERRS; 2) be limited in nature and extent to the minimum manipulative activity

necessary to accomplish the stated research objective; and 3) be specified in or be compatible with research objectives specified in the management plan.

For the purposes of environmental research, activities may be allowed which alter or impact conditions in the reserve. Such experimental manipulations are usually small-scale or have only temporary effects. These activities will be consistent with existing CHA or State Park plans, as relevant. Examples of potential habitat manipulations for research include, but are not limited to:

1. Taking soil cores, boring soil holes, excavating observation wells or profile pits, etc.
2. Placement of sampling apparatus (and supporting structures) for aquatic biotic surveys, such as drop nets or fyke nets.
3. Construction and operation of hydrological monitoring stations, involving devices such as tide gauges and stillwells, current meters, pumps, or electrical probes and sensors.
4. Installing and anchoring pumps to supply a flowthrough seawater system, such as at the Kasitsna Bay Lab.
5. Marking study plots, boundaries, sampling stations, transects, etc. with stakes, flags, tape, signs, twine, etc.
6. Clip and harvest of aboveground vegetation plots.
7. In fixed plots, removal of fauna or algae down to bare substrate for studies such as invertebrate or algae recruitment.
8. Placement of animal exclosure or inclosure cages.
9. Reseeding native aquatic species on an experimental level.
10. Construction and use of wildlife observation blinds.
11. Placement of small footbridges or boardwalks to allow access to research areas.
12. Installation of small water control structures for hydrological studies, such as weirs, flumes, canal-checks, riserboards, etc.
13. Additions of chemical fertilizers, injections of radioactive tracers, release of tracking dyes, spraying experimental pesticides, etc.

For the parts of the reserve covered by the CHA or State Park plans, any manipulative activities must be consistent with the policies contained in those plans (See Appendix C). These policies were written to ensure that activities are conducted in an environmentally sensitive manner.

3.1.8 Public Access

3.1.8.1 National NERRS Priorities for Public Access

Section 921.13(a) (5) of the NERRS regulations requires a plan for public access as part of the overall reserve management plan. Public access can be defined as the ability of all members of the community to pass physically and visually to, from and along the ocean shore, other waterfronts and over public lands. The ability to enjoy the oceans, bays, and rivers is directly related to the ability to reach them from the uplands. A public access plan must try to allow for long-term public use and enjoyment of the water and shoreline while minimizing damage to the resources themselves.

3.1.8.2 KBNERR Public Access Policy

The KBNERR access plan will encourage the continuation of traditional uses in Kachemak Bay while maintaining biological integrity for the reserve's research, monitoring, and education goals. The Critical Habitat Areas and the State Park have already considered public access and the preservation of existing uses in their management plans. Objectives in the Kachemak Bay and Fox River Flats CHA plan mandate maintained or increased opportunity to hunt, fish, and recreate within those areas, consistent with CHA goals (ADF&G 1993). The Kachemak Bay State Park plan lists objectives for assessing public needs and providing recreational opportunities. This plan also discusses various access issues in this region (DNR 1995).

There are currently no plans for expansion of access in Kachemak Bay. Access will be improved when necessary, consistent with the goals and objectives of CHAs, the SP, and the NERR program. One example would be the construction of interpretative trails at the proposed joint Visitor's Center with the Alaska Maritime National Wildlife Refuge, allowing improved access to estuarine areas for educational purposes (USFWS 1994).

3.1.8.3 Present Public Access

The main access points to Kachemak Bay and Fox River Flats Critical Habitat Areas are accessible via Kachemak Bay itself. There are approximately forty boat ramps, launches and vehicle access points located around Kachemak Bay, with the Homer Spit accounting for the main access point. Access can also be gained through Seldovia Harbor, although transportation to Seldovia is possible only by air and water. Several major public access points can be found along the Homer Spit, Homer Airport beach, Sterling Highway, and East End Road. Public Access to the beach off of the Sterling Highway is available at Anchor River State Recreation Area (Anchor Point) and Bishop's Beach, near Beluga Slough in Homer. Beluga Slough is easily accessed through several major roads and beaches. Off of East End Road, access can be found at East End Trail at the end of the road where a switchback trail, authorized by the state for pedestrian, horse, and ATV access only, leads down to the beach. Foot trail access will probably

be developed at Cottonwood Creek and/or Eastland Creek through State Park lands in the future. Fox River Flats trail runs from the head of the bay up the valley on the west side of Fox River Flats, providing the main access to the flats. Public docks are located on the Homer Spit, Seldovia Harbor, Jakolof Bay, and Halibut Cove. A barge dock located at the Bradley Lake Hydropower Project also provides public access, though only at high water. A state park dock is found at the head of Halibut Cove Lagoon. DPOR maintains several mooring buoys--one off Glacier Spit at Right Beach, three off Saddle Trailhead; one in Tutka Bay, and two in Halibut Cove Lagoon. Five state park trailheads are found in Halibut Cove and Halibut Cove Lagoon, and state park cabins and campsites available to the public are found in Halibut Cove and Tutka Bay Lagoon. A trail from Tutka Lagoon accesses the Rocky River Road. The road from Seldovia to Jakolof Bay also provides access to Kachemak Bay at Outside Beach and at Jakolof Bay.

A list of uses associated with access in Kachemak Bay can be found in the Resource Protection chapter (Section 3.1.3).

3.1.8.4 Access Needs

Most visitors to the Kachemak Bay region arrive in Homer by motor vehicle on the Sterling Highway, or by plane to the Homer airport. Establishing a Visitor Center on the main highway at Beluga Slough would increase the visibility of the NERRS program and provide low-cost, easy access to representative estuarine habitats in Homer.

Because the south side of the Bay is not accessible by road, it has experienced fewer human impacts over the years. This area retains the more pristine inlets and a wealth of intertidal life which are of great interest for research and educational opportunities. Travel to these areas from Homer requires a boat or small plane. School groups either take the ferry to Seldovia or charter a boat. In summer, hundreds of boats currently cross the Bay from Homer to pursue recreational activities. During public meetings, some community members suggested targeting the charter boats as a means to distribute educational materials to influence visitor behavior and reduce impacts on the southern inlets. Any proposal to increase access levels in these areas would require extremely careful consideration of the environmental consequences.

3.1.8.5 Traditional Uses

Recreational and subsistence hunting and fishing, commercial fishing, clamming, hiking, camping, and boating are all traditional uses within the boundaries of KBNERR. Several of these activities are subject to state regulation and require licenses and permits. Access for these activities generally takes the form of a boat or small plane. Traditional use access will continue according to local and state laws and will not be affected by establishing the reserve.

3.2 OTHER ALTERNATIVES CONSIDERED

In addition to the preferred alternative, other alternatives are discussed including no action, alternate boundaries, and alternate management strategies. These strategies are discussed below.

3.2.1 No Action/Status Quo

Under the no action alternative, the designation of Kachemak Bay as a NERR would not be pursued. The Kachemak Bay and Fox River Flats Critical Habitat Area designations would remain, as would the Kachemak Bay State Park. However, this would ignore a need repeatedly voiced by the community at meetings and in the letters of support for NERR designation—the NERR is seen as a means to better understand the Kachemak Bay system as a whole by conducting and coordinating long-term research of the ecosystem, and bolstering the fledgling local educational programs. The NERR designation could open the door to resources and provide leadership to weave the existing piecemeal research and educational programs into a much stronger fabric. The NERR would answer a need in Kachemak Bay for an entity that will foster increased communication and collaboration between the community, local resource users, policy makers, researchers and educators.

As population and development expands on the Lower Kenai Peninsula, it is increasingly important to understand coastal resources, interactions within coastal ecosystems and the effects of human disturbance on these systems. Already, the historic shrimp and crab fisheries in the bay have declined for reasons poorly understood. Through the research and education/interpretive programs proposed for the KBNERR, our understanding of Kachemak Bay and related coastal ecosystems will increase, leading to improved coastal planning and decision making.

A no action alternative would result in a lack of coordination and long-term cooperation in the management of the Kachemak Bay ecosystem. Research and educational organizations would not be eligible to compete for NOAA funding for activities in the proposed reserve, impeding the improved understanding and management of the Kachemak Bay system. Reserve designation would improve access to other federal funding sources as well. Finally, taking no action on this proposed reserve would have negative consequences for NOAA's ability to complete its mission of establishing a complete NERR System, and for NOAA's mission to assist in the restoration of injured resources and services resultant from the EVOS. The No Action/ Status Quo alternative is not a logical choice because it runs counter to federal, state and local goals for studying, protecting, and managing coastal ecosystems.

3.2.2 Alternative Boundaries

According to NOAA regulations, research reserves should include land and water masses constituting a natural ecological unit. The pre-existence of the two state-designated Critical Habitat Areas in the estuary/bay as well as the shoreline state park made satisfying this basic

requirement relatively easy, since these areas already encompass entire watersheds of both glacial and clearwater streams. The CHAs and state park lands are representative of the Kachemak Bay watershed as well as other estuaries in Southcentral Alaska, and the resulting land management responsibilities are relatively simple with two main land managers, ADF&G (Habitat and Restoration Division) and DNR (DPOR and Division of Land). Thus, these areas formed the heart of the proposed KBNERR boundaries from the start. However, other boundaries were discussed, including:

A. Including more large tracts of publicly-owned lands within the Kachemak Bay watershed.

As shown in Figure 7, the head of the bay adjacent to the Fox River Flats includes a large amount of general state lands which are not in special protected status. Likewise, parts of the Kenai National Wildlife Refuge fall within the greater watershed that drains into Kachemak Bay, but does not actually come into contact with the Bay. These alternatives were not pursued at this time because:

- The state exercises significantly less control over general state lands and waters than on legislatively-designated areas. In order to develop the NERR as a non-regulatory program, it was decided to include only the legislatively-designated state lands in the proposed boundaries.
- The benefits of adding these tracts of land did not clearly outweigh the more cumbersome administrative agreements that ADF&G would have to pursue to accommodate the different types of state lands and the federal refuge.
- The inclusion of large tracts of general state lands or protected federal lands was not necessary to create complete ecological units or meet the research and educational needs and goals of the proposed reserve.
- NOAA has repeatedly assured the State that the placement of the NERR boundaries does not preclude NERR-related research and education efforts from occurring anywhere in the watershed.

B. Making the boundaries exactly coincident with those of the Kachemak Bay and Fox River Flats CHAs and Kachemak Bay State Park.

This was the NERR boundary as proposed in the site nomination proposal. For the reasons given above (i.e., adequate management controls already in place, and keeping the NERR administrative responsibilities to a controllable number of entities), it was deemed advantageous to stick with the boundaries of the CHAs and state park as much as possible. However, there were a few small cases where it seemed appropriate to adjust the CHA boundaries for the NERR, as follows: (1) excluding the Homer and Seldovia boat harbors due to their high level of activity; (2) adding the upland parcels of the Kasitsna Bay lab and the federally-owned portions of Beluga Slough due to anticipated use of these sites as bases for NERR education and research functions, and (3) adding the tidelands owned by the City of Homer as well as their portion of Beluga Slough, at their request, to facilitate the use of these areas for NERR educational activities. It is also important to note that although a few scattered parcels of privately-owned tidelands are included within the CHAs (Appendix E), no private lands occurring within the proposed reserve boundaries will be part of the reserve.

C. Including portions of Yukon Island.

Much of Yukon Island is part of the Alaska Maritime National Wildlife Refuge (AMNWR), owned by the U.S. Fish and Wildlife Service. This is the same federal owner as the potential joint facility site at Beluga Slough in Homer. It was suggested that the NERR might include much of Yukon Island within the boundary since it sits in the midst of southern Kachemak Bay, and an agreement or MOU between the KBNERR and AMNWR was already needed for the Beluga Slough property. Upon checking, staff at USFWS indicated that there were native selections on that island and that not all the land ownership issues had yet been resolved there, so for the time being it seems prudent not to pursue this addition to the NERR boundary.

D. Excluding the mariculture areas and Halibut Cove from "core" area, keeping them in the NERR buffer.

Mariculture facilities are currently in place in parts of Halibut Cove, Bear Cove, Peterson Bay, and Jakolof Bay on the south side of Kachemak Bay. The supposition for excluding them from the core was that these areas may have higher levels of human activity and impact than other parts of the proposed reserve. However, the Alaska Department of Environmental Conservation exercises a very tough water quality standard for certifying mariculture in this region. Furthermore, delineating buffer zones around the various mariculture operations and pens would appear unnecessarily complex on a map. Given the good water quality, the relatively low levels of activity, their nature as "floating" rather than fixed facilities, and the fact that the distinction of core and buffer areas has no functional consequence in the future operation of this reserve, dissecting out the mariculture areas from the core area of the reserve does not seem warranted.

3.2.3 Alternative Management Options

Since the entire proposed reserve is comprised of public lands, and the existing programs of the agencies who manage these public lands are adequate, there is no need to develop a new or separate regulatory program.

One alternative to the existing regulatory framework would be to have the reserve staff exercise exclusive management authority for all the lands within the reserve. This would require all landholders to cede this responsibility to the reserve. This is not only unlikely but undesirable. Adequate management programs are in place with seasoned professionals to carry out prescribed regulatory mandates. In addition, this does not appear in keeping with the basic intent of the NERR program.

Another alternative is to create a separate authority to govern use of the reserve. For example, Florida has created a separate agency within its environmental authority to govern its National Marine Sanctuary and Research Reserve programs in the state. Enforcement and resource

management officers have been assigned to individual sanctuary or reserve sites at various times since designation. With the entire land and water areas within the proposed KBNERR already in public ownership and already managed by state and federal agencies, an attempt to create a special management authority for the area seems redundant.

In the proposed reserve, the two main agency authorities are ADF&G (Habitat and Restoration Division) and DNR (the Division of Parks and Outdoor Recreation, and Division of Land). One option would be to have DNR rather than ADF&G serve as lead administrative agency for the reserve. However, DNR is primarily a land management agency and, as pursued by the state, the NERR is not a land management entity. The model of research reserve proposed for Kachemak Bay is that of a network of protected areas to provide opportunities for long-term estuarine research and education. The core areas of the proposed KBNERR are water, not land, and ADF&G rather than DNR routinely deals with research and educational efforts concerning aquatic life. Thus, the preferred alternative, with ADF&G as the lead administrative agency for the proposed reserve, appears more appropriate. As discussed in the Administrative chapter (section 3.1.2), however, there will be ample coordination between the two state agencies. A new Cooperative Agreement between ADF&G and DNR, or a revision of the existing one, will allow coordination of KBNERR research and education programs with DNR management programs.

3.3 RANGE OF REASONABLE ALTERNATIVES

This chapter has presented a range of alternatives, from the no-action alternative, to the establishment of a research reserve with various alternate boundaries and management options. NOAA and ADF&G feel this discussion adequately represents a range of alternatives that could accomplish the proposed action.

3.4 SUMMARY OF ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

The following is a summary of the information contained in section 5.0 of this document. The overall impact of establishing the Kachemak Bay NERR would be environmentally beneficial. Educational, scientific and coordinated management activities within the reserve would override any adverse impacts. Designation of the reserve would entail minimal development or construction within the Kachemak Bay region. As described in the Facilities Plan (section 3.1.6), efforts will be made to utilize existing structures (e.g., the Kasitsna Bay lab) and to share building space with other public entities within the reserve (e.g., joint visitors center). There would be little or no physical alteration of the present environmental conditions in the reserve, except for basic scientific activities mentioned in the Habitat Restoration and Manipulation Plan (section 3.1.7).

Reserve status will encourage a holistic approach for managing Kachemak Bay ecosystems. Impacts of the education and research programs will be positive because they will supply information which will lead to better management of estuarine resources.

Traditional uses of the area will not be changed (see Public Access Plan, section 3.1.8). Hunting, fishing, and shellfishing will continue to be administered by the appropriate agency. Access to the area for recreation and education will be enhanced through a visitors center and other facilities (see section 3.1.6).

4.0 THE AFFECTED ENVIRONMENT

4.1 BIOGEOGRAPHIC REGIONS

NOAA has identified eleven distinct biogeographic regions and 29 subregions in the U.S., each of which contains several types of estuarine ecosystems (see 15 C.F.R. Part 921, Appendix II for NERR typology system). When complete, the NERR System will contain examples of estuarine hydrologic and biological types characteristic of each biogeographic region. Each reserve will be responsible for conducting research and providing educational and interpretive services that are applicable to its region. As of May 1998, the NERR System includes twenty-two reserves, with five others in development (Figure 1). Proposed sites include: New York - St. Lawrence River Basin (Acadian biogeographic region), Florida - Guana Tolomato Matanzas Rivers complex (Louisianan); Alaska - Kachemak Bay (Fjord); Mississippi - Great Bay (Carolinian) and California - San Francisco Bay (Californian). Figure 1 shows the location of each of the designated reserves and proposed sites. Figure 9 outlines the biogeographic classification scheme.

The Kachemak Bay NERR is representative of the Aleutian Island subregion of the Fjord biogeographic region. No reserves currently exist in the Fjord region, which is situated entirely within the state of Alaska.

4.2 PHYSICAL ENVIRONMENT

4.2.1 General Location and Climate

Kachemak Bay is an elongated embayment contiguous to the southeastern entrance to Cook Inlet (Figure 10). The bay is 39 miles long and 24 miles wide at its entrance between Anchor Point and Point Pogibshi. The Homer spit projects 4 miles out into the bay, dividing it into an "inner" and "outer" Bay. The inner bay is east of the Homer Spit to the head of the bay, and the outer bay is west of the Homer Spit to the mouth of the bay. Kachemak Bay is bordered on the north by the rolling hills and bluffs of the Kenai lowlands and on the south by the Kenai Mountains. The bay has a maritime climate influenced by the North Gulf of Alaska waters. Cool summers, mild winters, moderate precipitation and frequent storms characterize the area. Average winter temperatures in Homer range from 11E F to 42E F, while summer temperatures average 42E F to 59E F. The annual precipitation in Homer is 28", including 101" of snow.

4.2.2 Physiography

The head of Kachemak Bay is characterized by extensive tidal flats, braided drainages, and marshlands. The northern shore consists of cliffs composed mostly of sand and clay leading

Figure 9.
Biogeographic Regions of the NERRS

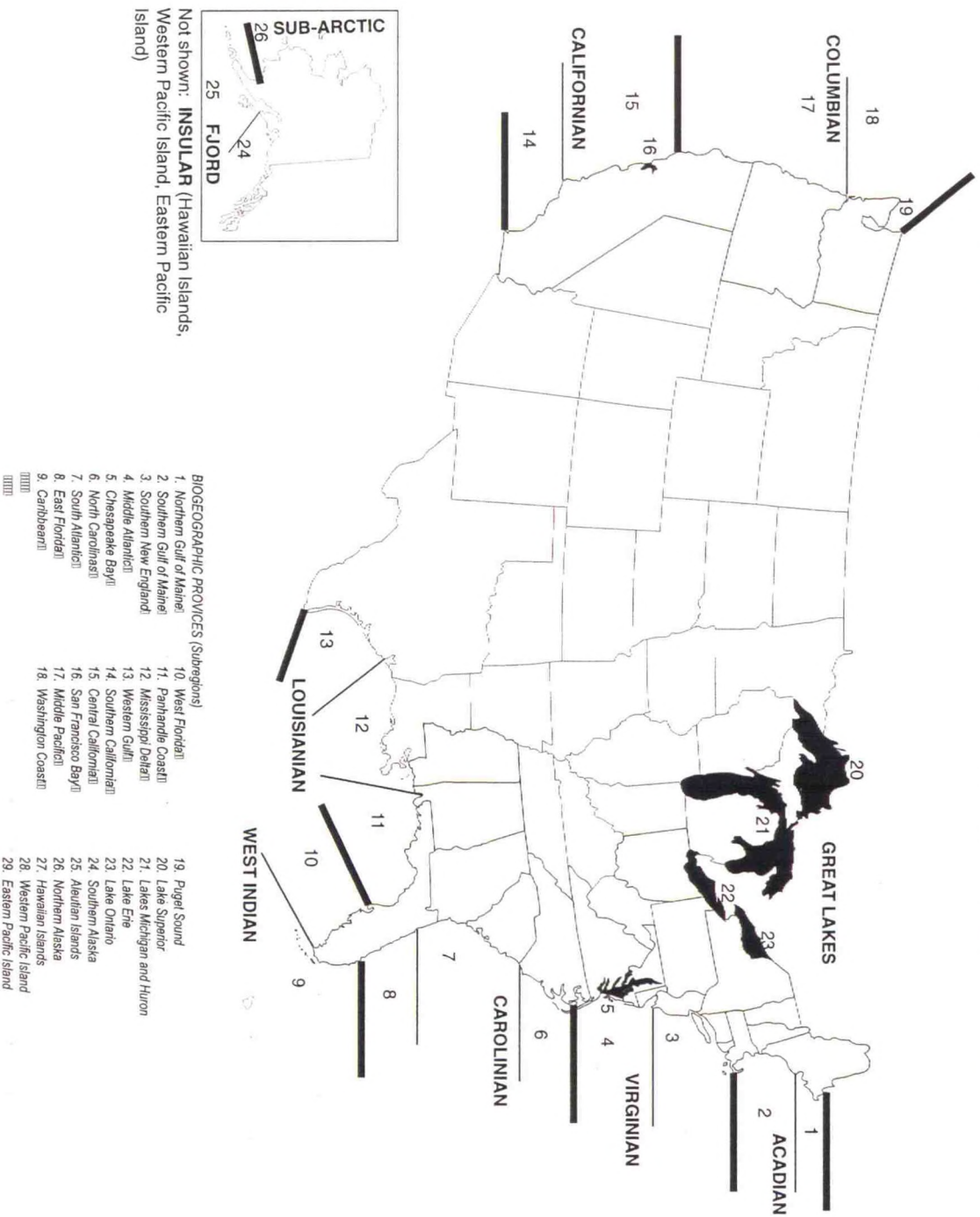
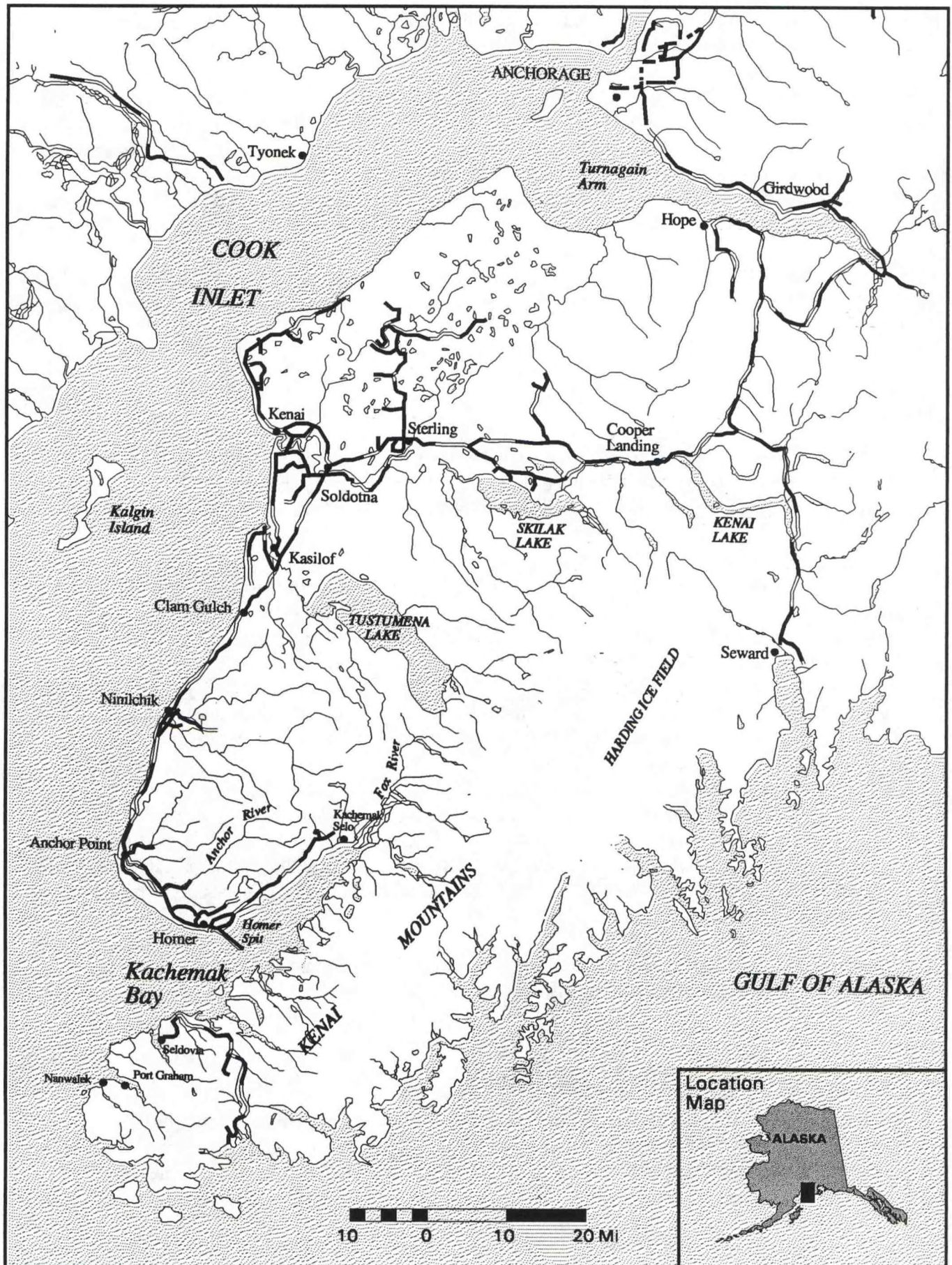


Figure 10. Cook Inlet Area Map



down to shallow mud flats. The southern shoreline consists of hardrock cliffs and deep bays. Several islands are found along the south shore.

Several major glacial streams discharge into inner Kachemak Bay: Fox, Martin, Wosnesenski, and Bradley rivers; and Sheep, Battle, Halibut, Portlock, and Grewingk creeks. Humpy and China Poot creeks are large but relatively clear water. In addition, ten minor nonglacial streams discharge into Kachemak Bay along the southern shore. The northern coast is drier, and only eight small nonglacial streams of limited drainage enter the inner Bay from that side (Trasky et al. 1977).

The rolling terrain behind the northwest shore suggests that river flow is controlled by precipitation. About ninety percent of the area north of the bay is drained by the Anchor River, which discharges directly into Lower Cook Inlet (Knull 1975).

4.2.3 Geology

Both glacial and diastrophic (earth shaping) forces have been active in shaping the present features of Kachemak Bay. Remnants of huge Pleistocene glaciers are still present in the form of Grewingk, Dixon, Portlock, Wosnesenski and Doroshin glaciers and the Harding Icefield.

Though glacial valleys and outwash plains dominate the morphology of the bay, three significant fault zones have contributed. Two of these zones, identified as the "Tutka Fault Zone" and the "Doroshin Fault Zone" are roughly perpendicular to the axis of the Kenai Mountains. One zone, identified as the "Halibut Cove Lagoon Zone", is nearly parallel to the axis of the Kenai Mountains. (DNR 1995)

The most notable seismic event in recent history was the 1964 Good Friday earthquake of March 27, 1964. The primary effects were 2 to 6 foot subsidence of the entire area, earth flows, landslides, and minor fissuring.

The Homer Spit is an unusual geologic feature. Karlstrom (1964) suggested that Homer Spit sits atop a subaqueous end morainal accumulation, and that the wide Archimandritof shoals (offshore of Homer Spit) are the subaqueous outwash counterpart. Therefore, the spit is possibly the result of reworking of the primary morainal deposits and the addition of gravel transported by water from the mainland till cliffs.

The Fox River delta at the head of Kachemak Bay is a typical deltaic plain created by sedimentary deposition from the Fox, Sheep and Bradley rivers.

4.2.4 Oceanography

Kachemak Bay averages 150 feet in depth with the bottom being relatively flat with the exception of a 180 - 240 foot trench that runs along the southern edge. The deepest part of the bay is a 576 foot depression located north of Cohen Island at the entrance to the inner bay.

The dominant water movement in Kachemak Bay is the oscillatory flood and ebb of the tide. The net circulation (independent of, but largely driven by, the tidal currents) in the outer bay is characterized by an influx of clear ocean water from the Gulf of Alaska on the south side of the bay and a corresponding outflow of water on the north side of the bay. This general northward flow is interrupted in the central region of the outer bay by two semipermanent gyres (Trasky et al. 1977).

Studies of inner Kachemak Bay (Bright et al. 1960) found an average fresh water layer depth during summer of 12 feet and a salinity ranging from nearly zero near stream mouths to 32.5 ppt at the entrance to the inner bay. Immediately below the fresh water layer they observed a rapid increase in salinity followed by a more gradual increase in salinity toward the bottom. A significant reduction in bottom salinity indicated vertical mixing extends to the bottom of the inner bay.

Tides in Kachemak Bay and Lower Cook Inlet are semi-diurnal with a significant inequality between successive low waters. This means there are two high tides within a lunar (24 hour 50 minute) day, one of which will generally exceed the other by several feet. The same is true for low tides. The mean diurnal range in Kachemak Bay is 15.4 feet at Seldovia. Highest tides exceed 22.5 feet and the lowest tides are about -6.0 feet (Trasky et al. 1977).

Although fed in part by glacial streams, water in the outer bay is generally quite clear with only a very low suspended sediment load. Suspended sediment concentrations in the inner bay are normally higher than in the outer bay, particularly in spring and summer, due to glacial and river runoff near the head of the bay. Eroding bluffs along the north side of the inner and outer bay contribute additional sediments.

Surface water temperatures in the bay range between a high of 55E F in the summer and a low of 28E F in the winter.

4.2.5 Circulation

Circulation in outer Kachemak Bay is dominated by two large gyres, a counterclockwise rotating gyre in the eastern half and a clockwise rotating gyre in the western half. The two-gyre system appears relatively stable unless altered by strong winds. Net transport in outer Kachemak Bay is generally northward whether or not the gyres are present (Figure 11).

Surface waters in outer Kachemak Bay are apparently derived largely from coastal upwelling (divergence) northwest of the Chugach Islands. This may significantly increase available nutrient concentrations and greatly enhance biological productivity in outer Kachemak Bay.

Inner Kachemak Bay is a positive estuary wherein precipitation and runoff exceed evaporation. Since tidal mixing is significant, it is also a partially mixed estuary characterized by vertical mixing of the fresh surface waters with underlying saline waters. The horizontal circulation is characterized by counterclockwise rotating gyres.

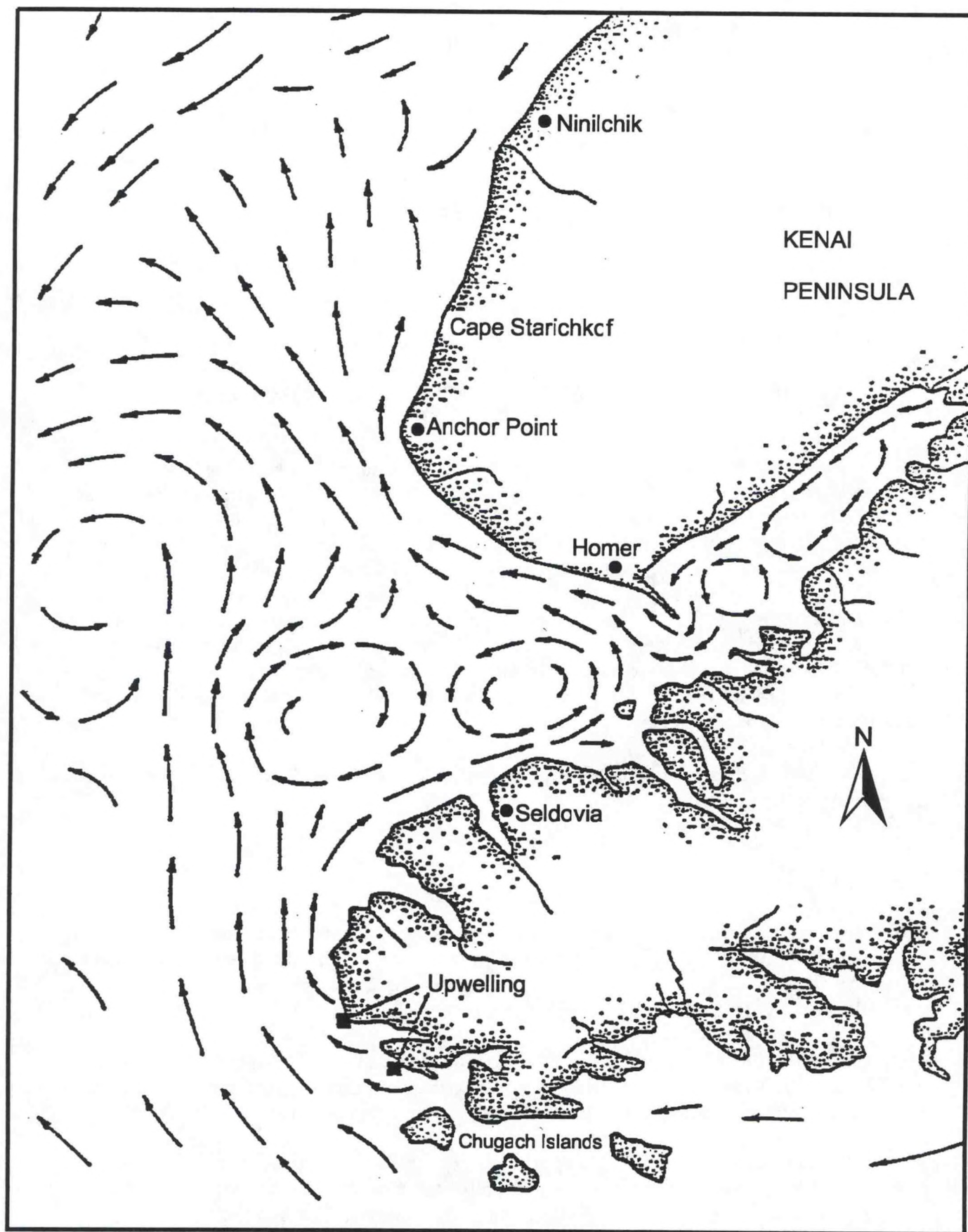


Figure 11. Circulation Patterns of Kachemak Bay.
 Taken from Trasky et al., 1977. "Environmental Studies of Kachemak Bay and Lower Cook Inlet",
 Volume II, Circulation Studies in Kachemak Bay and Lower Cook Inlet.

Fresh water, introduced primarily by the Fox, Bradley, and Martin rivers and Sheep Creek at the head of the bay, flows out of the bay along the northwest shore. A significant amount of this outflow is diverted offshore in the region where the two gyres meet. The gyre movements and horizontal mixing processes tend to distribute the fresh water layer throughout the inner bay.

Vertical and horizontal mixing processes increase the salinity of the surface water outflow near the mouth of the bay and greatly increase the volume of the surface water outflow from the inner bay.

In general, vertical circulation within inner Kachemak Bay appears typical for a positive, partially mixed estuary, consisting of a strong outflow of relatively fresh surface water and influx of more saline waters at depth. Circulation is strongly influenced, if not controlled, by fresh water runoff during the spring and summer, however, tides provide an integral and very significant driving force in the circulation of the inner bay and fall and winter circulation may be largely tidally driven.

4.2.6 Water Quality

Water quality standards within Kachemak Bay must meet state water quality standards set out in 18 AAC 70. One factor affecting the overall water quality of the bay is the silt and glacial flour from those streams originating at glaciers.

Studies indicate Kachemak Bay is a site of significant sediment accumulation. Atlas et al (1983) analyzed water and sediment samples from Kachemak Bay and found significant correlation between rates of sediment accumulation and percent organic carbon in the sediments. They also found very high hydrocarbon concentrations and extremely high phytoplankton productivity.

Studies of the Fox River by the Alaska Power Authority (1984) revealed the river contains relatively high levels of fecal coliform bacteria, at times exceeding the limits considered safe for drinking water. The source of this bacteria is likely cattle that graze in the watershed. During the year when the cattle are not inhabiting the flats, the water quality of the Fox River is typical of glacial streams and is considered generally good.

Major wastewater sewage disposal sites are located near Homer and Seldovia. The secondary treatment plant sewage outfall for the City of Homer and Kachemak City is located at minus 10.8 foot tide level, mean low lower water (MLLW), near the outlet of Beluga Lake and extending 2200 feet offshore. Sewage in Seldovia is collected and discharged directly into outer Seldovia Bay just north of Wade Point with primary treatment achieved through a community septic tank. The outfall pipeline extends 700 feet from shore to minus 11 MLLW. Seafood waste processing outfalls are found in the Homer small boat harbor.

Pollution source surveys are performed annually, at five different times, along the southern shoreline of Kachemak Bay (Martin River to Barabara Point) by DEC. These surveys satisfy requirements of the National Shellfish Sanitation Program for classification of growing areas for interstate commerce.

The Kachemak Bay East Shellfish Growing Report (Ostasz and Thomas 1996) revealed that bacteriological water sampling test results were found to be within acceptable limits of the water quality standards for the bay. The report also showed that Halibut Cove and Bear Cove are two areas on the southern shore that have major gray water discharge problems with private systems. Both areas are highly impacted by private residences.

4.3 BIOLOGICAL ENVIRONMENT

4.3.1 Flora Factors

Aquatic plants are the food upon which all other aquatic organisms feed, directly or indirectly. Kachemak Bay has been shown to have high phytoplankton productivity (Atlas et al. 1983). Besides forming the anchor of the food chain, aquatic plants also provide habitat structure for a wide variety of organisms. In the rocky substrates of Kachemak Bay, plant communities are the most diverse. Algae are well-developed and moderately productive from the mid-intertidal zone to a depth of about 66 feet. Rockweed is most abundant at upper intertidal levels. Red algae (*Rhodomenia* spp., *Palmeri* spp.) is most abundant in disturbed or stressed areas, usually from medium to low intertidal levels. Kelps predominate at low intertidal levels. The largest kelp bed in the bay lies between Seldovia Point and Barabara Point. In contrast, on sand and mud substrates macrophytes are uncommon or absent.

Fox River Flats represents the largest coastal wetland in Kachemak Bay, encompassing approximately 7,100 acres of wetlands and tideflats at the head of the Bay. The flats are composed mostly of saltwater herbaceous sedges and unvegetated mud flats. Two sedges dominate the upper intertidal zone: Ramenski sedge and Lyngbye sedge. Large and small ponds are numerous near the upper edge of the intertidal zone. Pond water is silty and fresh, although salinities up to 5‰ have been measured (Batten et al. 1978). Aquatic vegetation in the ponds is primarily *Potamogeton* spp., *Zannichellia*, and *Hippuris*. The coastal marsh grades into grassland dominated by *Calamagrostis canadensis* or an inner marsh in which *Carex pluriflora* and other sedges, grasses, and forbs are common (Batten et al. 1978).

The second largest salt marsh is found in China Poot Bay on the southern shoreline, with over 600 acres. Twenty one species of flowering plants have been identified in the bay, a relatively low diversity compared to other salt marshes (Crow 1978). An alkali grass, along with several succulent species, and arrowgrass dominate plant communities in most of the marsh. These communities depend on frequent, if not daily, tidal inundation. Much of the litter and detritus from these marsh communities is flushed into the bay, which contributes to the productivity of the marine environment (ADF&G 1993).

The region northeast of Kachemak Bay is primarily rolling terrain and broad, flat valleys. Deep ravines cut by tributaries intersect the bluffs bordering the bay and the Fox River Valley. Sitka spruce, black spruce, and birch are found in the forested areas. On the steeper hillsides, tall shrub stands containing alder, elderberry, and devil's club are found. On the more exposed

slopes, above the tall shrubs is alpine tundra characterized by low bearberry, blueberry, and a variety of other low-growing vegetation.

Fox River Valley lies at the head of the bay. The vegetation of the area graduates from salt-tolerant forbs on the waters edge to meadows and freshwater ponds in the middle of the valley. Cottonwood groves and alder thickets transition into coniferous forests at higher elevations.

Habitat of the Kenai Mountains is segmented by deep ravines, rock walls, glaciers, and icefields. Lower slope vegetation is dominated by mature stands of Sitka spruce and smaller stands of mixed spruce-deciduous forest. Cottonwoods and willows cover the flood plains and lower river valleys of the region. At the upper extent of the forest and on the steeper or wetter slopes below the treeline, tall shrubs (primarily alder, mixed with raspberry, elderberry, and devil's club) are the main vegetation type. The higher elevations are composed of grassy meadows, alpine tundra, bare rock, and snowfields (USACE 1982).

Soil permeability, groundwater, surface water levels, and tidal action are major abiotic factors determining the successional stages of vegetation in particular areas of the bay. Grazing cattle determine habitat succession in parts of the Fox River Valley and may determine the density, height, and abundance of forbs and grasses in some areas (USACE 1982).

4.3.2 Fauna Factors

Species composition and community structure in the Kachemak Bay marine environment are determined largely by three prevalent sea bottom types: rocks, sand, and mud.

Fauna in Rocky Substrates - Rocky habitats support the most diverse communities. In rocky habitats, invertebrates are most abundant and diverse where currents are high and below the seaweed zone, and least abundant and diverse in slow currents. Jakolof Bay supports the most robust subtidal macro-invertebrate communities known in Southcentral Alaska (Lees et al. 1980). Most of the macro invertebrates are sedentary filter feeders, such as clams. Grazers such as *Tonicella* and the sea urchin are abundant. Overgrazing by sea urchins may contribute to the poorly developed algal stocks in this area. Abundant predatory macro invertebrates on this shelf are mostly sea stars, snails, and hermit crabs.

Fauna in Sand and Mud Substrates - Because macrophytes are largely absent, detritus forms the base of the food web in the sand and mud regions of outer Kachemak Bay. The detritus is mostly plant material carried by currents from rocky habitats in Kennedy Entrance and southern Kachemak Bay (Lees et al. 1980). Invertebrate predators are scarce, so much of the invertebrate biomass is consumed by fish, birds, and marine mammals.

Invertebrate abundance in sand and mud substrates is strongly influenced by seasonal conditions, and dominance patterns are influenced by tidal exposure. Most invertebrates in sand and mud substrates are deposit or suspension feeders. Many species are more abundant at lower tidal levels; however, species composition does not appear to be affected by tide stage (Dames & Moore 1978).

Mud flats have greater species richness, biomass, and diversity of perennial species than sand beaches and, consequently, attract the most shorebirds and ducks (Dames & Moore 1978). Eelgrass beds occur in Seldovia, Jakolof, Kasitsna, and Mud Bays (Lees 1977). Patches of eelgrass are found along the northern shoreline.

Fish and Shellfish - The historical abundance and diversity of fish and shellfish in Kachemak Bay are the product of a nutrient rich environment which provides critical habitat for numerous species during various life phases.

Salmon - There are twenty-five documented anadromous fish streams flowing into Kachemak Bay. Eight of these are considered to be major salmon producers. Five species of Pacific salmon are found in the marine environment: king, sockeye, silver, pink, and chum. Adult salmon are found in marine waters from late April to late September and in fresh waters from late May to late November. Pink salmon are the most abundant followed by chum, sockeye, silver, and king salmon.

Marine Fish - Adult Pacific herring are known to winter in offshore feeding grounds and in the spring move into sheltered bays to spawn. Major herring spawning areas in the bay are Mud Bay, Bear Cove, Mallard Bay and Tutka Bay. Pacific halibut are found throughout the bay. Flounders, walleye pollock, and Pacific cod are also found in the bay but their distributions are not well documented. Kelp beds along the outer southern shores of Kachemak Bay near Seldovia are home to significant numbers of rockfish.

Crab - Three species of crab were commonly found in the bay: king, Dungeness, and Tanner. Dungeness crab inhabit the bay from the intertidal zone to depths of 45 fathoms. Adults are found in the shallow, nearshore waters along the north shore. Younger, smaller crabs are found in the shallow intertidal areas along the southern shore. Although population numbers are currently depressed, king crab have historically been common south of Anchor Point. Tanner crab usually are found in deeper water in the fall and winter, and in shallow water for mating and spawning in spring and summer.

Clams - Kachemak Bay has a substantial populations of both hard and soft-shelled clams. Hard-shelled clams can be found in the lower intertidal region on protected gravel-sand-mud beaches down to several fathoms. Soft-shelled clams are usually found in areas of mixed sand and mud or mud and gravel where salinity is reduced by an influx of fresh water.

Birds - Two hundred thirty-one species of birds have been identified on and around Kachemak Bay (Erikson and West 1992) (Appendix I). Kachemak Bay is the most important marine bird habitat in Lower Cook Inlet (Erikson 1977), and there are no comparable areas in Upper Cook Inlet. During winter months over 90% of the marine birds in Lower Cook Inlet are found in Kachemak Bay (Erikson 1977). Kachemak Bay is also important for feeding, nesting, rearing, and migratory staging throughout the year. The inner bay coastline has an estimated total year-round density of 679 birds/mile² (Arneson 1980), and Lees et. al. (1981) believed Homer Spit to be a major feeding area for wintering bald eagles in Kachemak Bay. About 60% of the wintering

eagles are adults (Bain 1991). Eagles are attracted to the spit from as far away as Kodiak, Kenai, and Prince William Sound (Bain 1990).

In 1996, Kachemak Bay was dedicated as an international site of the Western Hemisphere Shorebird Reserve Network. An international site designation indicates that the site hosts greater than 100,000 shorebirds or 10% of a flyway population.

Terrestrial Mammals - At least 20 species of terrestrial mammals inhabit Fox River Flats and the region around Kachemak Bay (Table 5). Big game species that occur around the area include moose, mountain goat, Dall sheep, black bear, and brown bear. Fox and wolf are also found in the region.

Table 5. Terrestrial Mammals of Kachemak Bay Watershed ¹

Common Name	Scientific Name	Common Name	Scientific Name
Masked shrew	<i>Sorex cinereus</i>	Mink	<i>Mustela vison</i>
Pygmy shrew	<i>Microsorex hoyi</i>	River otter	<i>Lutra canadensis</i>
Little brown bat	<i>Myotis lucifugus</i>	Wolverine	<i>Gulo gulo</i>
Black bear	<i>Ursus americanus</i>	Coyote	<i>Canis lupus</i>
Brown Bear	<i>Ursus arctos</i>	Grey wolf	<i>Canis latrans</i>
Marten	<i>Martes americanus</i>	Red fox	<i>Vulpes vulpes</i>
Ermine	<i>Mustela erminea</i>	Lynx	<i>Felix lynx</i>
Red squirrel	<i>Tamiasciurus hudsonicus</i>	Snowshoe hare	<i>Lepus americanus</i>
Beaver	<i>Castor canadensis</i>	Moose	<i>Alces alces</i>
Northern red-backed vole	<i>Clethrionomys rutilus</i>	Dall sheep	<i>Ovis dalli</i>
Meadow vole	<i>Microtus pennsylvanicus</i>	Mountain goat	<i>Oreamnos americanus</i>

From Lensink 1980, Woodward-Clyde Consultants 1984, ADF&G 1973.

¹ Other probable species include: northern flying squirrel (*Glaucomys sabrinus*), muskrat (*Ondatra zibethicus*), meadow jumping mouse (*Zapus hudsonius*), and porcupine (*Erethizon dorsatum*).

Table 6. Marine Mammals of Kachemak Bay (ADF&G 1993)

Common Name	Scientific Name	Common Name	Scientific Name
Harbor seal	<i>Phoca vitulina</i>	Beluga whale	<i>Delphinapterus leucas</i>
Sea otter	<i>Enhydra lutris</i>	Killer whale	<i>Orcinus orca</i>
Steller's sea lion	<i>Eumetopius jubatus</i>	Harbor porpoise	<i>Phocoena phocoena</i>
Gray whale	<i>Eschrichtius robustus</i>	Dall porpoise	<i>Phocoenoides dalli</i>
Minke whale	<i>Balaenoptera acutorostrata</i>	Humpback whale	<i>Megaptera novaeangliae</i>

4.4 CULTURAL RESOURCES

Kachemak Bay and the surrounding area has a rich history of human settlement. The Pacific Eskimo and the Dena'ina Indian originally settled the region. Archaeological evidence has been found primarily along the southern shore of Kachemak Bay, where there is easy access to hunting, fishing, gathering grounds, and sheltered coves.

The Kachemak Bay Dena'ina were a highly adaptable people who established a unique maritime culture, hunting harbor seals, porpoises, and even belugas from skin kayaks, gathering clams and mussels from the beaches, and hooking halibut from the tidal flats (Klein 1987).

Active prospecting of coal started in the early 1890's on the northern shore of Kachemak Bay. In 1897, coal mining operations shut down and the gold miners departed the area with news of the Klondike strike. In 1899, the Cook Inlet Coal Fields Company built the first town of Homer on the spit and started mining operations in the area. In 1902 the coal company shut down and the town became virtually deserted once again. It wasn't until the 1920's that fishermen and homesteaders moved into the area and started building what is now present day Homer.

With the arrival of coal and gold miners to the region in the 1890's, Seldovia became the major shipping and service center for Kachemak Bay and Cook Inlet. The economic development of Seldovia after 1900 concentrated on fishing and fish processing.

4.5 LAND OWNERSHIP/ADJACENT LANDS

Kachemak Bay is bordered mostly by state lands along the southern shoreline and private lands along the northern shoreline. Tide and submerged lands are state owned, with the exception of the submerged lands under the Homer Small Boat Harbor, which are owned by the U.S. Coast Guard. The City of Homer has title to tidelands extending roughly from Bidarki Creek to the tip of Homer Spit and from Miller's Landing to the tip of Homer Spit (Figure 4). The City of Seldovia has title to some tidelands in Seldovia Bay (Figure 5). However, the water column of Kachemak Bay is entirely state owned. Eleven privately owned tideland parcels are found around the bay (Appendix E). The Alaska Department of Transportation and Public Facilities has several management agreements and a tidelands lease for navigational corridors near the Homer and Seldovia airports. Kachemak Bay State Park boundaries extend out into the Bay along portions of the southern shore. Kenai National Wildlife Refuge and Kenai Fjords National Park are the major landowners along the eastern boundaries of Kachemak Bay State Park. The community of Halibut Cove lies adjacent to a portion of the northern boundary of the park. The Seldovia and Port Graham Native Associations are the primary landowners to the west and south of the park (Figure 7).

4.6 EXISTING HUMAN USES

Existing human uses in the reserve include commercial fishing; sport fishing; hunting; personal use and subsistence harvesting of fish, wildlife and plants; livestock grazing; marine

transportation and moorage; periodic maintenance dredging; shellfish mariculture; recreation/tourism; shoreline lodges and residences; pipeline and utility lines; and shoreline stabilization activities. These uses and the regulations in place over such activities are detailed in the Existing Resource Protection section of the draft management-operations plan (Section 3.1.3).

5.0 ENVIRONMENTAL CONSEQUENCES

5.1 GENERAL IMPACTS

The overall impact of establishing the KBNERR would be environmentally beneficial. Educational, scientific and coordinated management activities within the reserve would override any adverse impacts. Designation of the reserve would entail minimal development or construction within the Kachemak Bay region. As described in the Facilities Plan (section 3.1.6), efforts will be made to utilize existing structures (e.g., the Kasitsna Bay lab) and to share building space with other public entities within the reserve (e.g., joint visitors center). There would be little or no physical alteration of the present environmental conditions in the reserve, except for scientific activities mentioned in general in the Habitat Restoration and Manipulation Plan (section 3.1.7).

Reserve status will encourage a holistic approach for managing Kachemak Bay ecosystems. Impacts of the education and research programs will be positive because they will supply information which will lead to better management and use of estuarine resources.

Traditional uses of the area will not be changed (see Public Access Plan, section 3.1.8). Hunting, fishing, and shellfishing will continue to be administered by the appropriate agency. Access to the area for recreation and education will be enhanced through the proposed joint visitors center (see section 3.1.6).

5.2 SPECIFIC IMPACTS

5.2.1 Scientific and Educational

1. Natural Environment. Physical impacts on the natural environment through the designation of the Kachemak Bay NERR would be negligible. No extensive habitat manipulations are planned. As a result of the reserve designation, the strength of the research programs would lead to a better understanding of the estuary and the organisms living there. This will aid in greater understanding of the life cycles of commercially important species within the ecosystem and provide more information leading to better management decisions.

2. Human Environment. The research and educational activities outlined in the management plan will help address current management issues through a better understanding of estuarine processes. This reserve provides a unique opportunity for continued long-term observation. With a substantial amount of background data, current studies can address the spatial and temporal scales essential to support informed management practices.

Developing educational programs that bring this wealth of scientific research into the public sector will be a strong component of this reserve. As our society becomes more aware of the

need to protect the environment, is it important to involve teachers and their students in the process of scientific research. The reserve will serve as an outdoor classroom for direct experiences with science.

5.2.2 Public Access

Designation of the reserve will enhance public access in the area, within the stipulations of other agency regulations. Educational programming also will be used to provide access to environments of the reserve, and lead to greater appreciation of the resource and its wise use. Increased public awareness also may have a positive economic benefit for the region, leading to new opportunities for ecotourism and other activities compatible with reserve goals. A goal of reserve staff will be to bring more need-based research into the area, and those researchers will also need to procure lodging, supplies, and transportation.

5.2.3 State and Federal

1. Tax Revenue Loss. No change in the tax status of the lands will result from designation of the site as a NERR. Hence, no taxes will be lost.

2. Traffic Impacts. Reserve visitor traffic will be directed to the proposed joint visitor center located on the Sterling Highway above Beluga Slough. This location will serve as the main contact point for visitors to receive introductory information about the reserve. Trails in this area are planned to limit foot traffic through core areas. Reserve staff will coordinate with other educational groups to minimize traffic impacts.

5.3 UNAVOIDABLE ADVERSE ENVIRONMENTAL OR SOCIOECONOMIC IMPACTS

Because there will be no change in land ownership, there will be no loss of tax revenue with the designation of the KBNERR. No resources will be irreversibly or irretrievably lost with the designation. The reserve management plan does not attempt to change existing local, state, or federal laws/regulations relating to current and traditional uses. The plan can only be rewritten or the boundaries changed with a complete public review process using NOAA guidelines.

Traffic impacts will be minimized by placing the proposed joint visitor center on the Sterling Highway in Homer. Field trips and site visits will continue on the south side of the bay (e.g., Jakolof Bay) but the reserve will seek to reduce the current levels of visitor impacts in these areas through better education and coordination of access.

5.4 CUMULATIVE IMPACTS

As opposed to many EIS project analyses, the preferred alternative in this document does not propose any actions that would significantly disrupt the landscape. There will be no change in

land ownership, and current uses of the bay will continue under present regulatory authorities. Reserve designation is largely an administrative action.

The new reserve will increase attention to research and educational uses of the bay. There are already several educational programs in the area (Section 3.1.4.7). On field outings, large numbers of visitors could have detrimental effects on fragile habitats. Rather than adding to the impacts of these groups, the reserve will seek to reduce the cumulative impacts by promoting guide/teacher training and coordinating access.

A major focus of the KBNERR research program will be to monitor biological and physical parameters of the bay. These parameters will provide the long-term baseline data against which the reserve may assess environmental changes over time, be they human-induced or natural trends in the ecosystem. Enhancing our understanding of the spatial and temporal processes in the bay will support informed management practices and improve stewardship of bay resources in the future. These cumulative impacts from reserve designation are beneficial.

Regionally, adding the NERR designation to a protected estuarine area that already has active educational organizations will make Kachemak Bay a center for estuarine research and education in Southcentral Alaska, serving resource users, coastal decision-makers, educators, and visitors. NOAA was also interested in creating a NERR in this region because any studies conducted through KBNERR will cumulatively benefit the restoration of species and services injured in the *Exxon Valdez* Oil Spill.

Nationally, the cumulative impact of KBNERR designation is to further NOAA's mission of establishing a complete system of reserves in all biogeographic subregions and estuarine types in the United States.

5.5 RELATIONSHIP BETWEEN THE PROPOSED ACTION ON THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The stated purpose of the NERR program is to guarantee the long-term stability of the natural resources for research and education. All traditional uses of the area will continue under present regulations. There will be no negative consequences on the Bay's resources from establishment of the reserve. In fact, by providing education and support for applied research, establishing the reserve has the potential to foster ecosystem productivity through improved resource stewardship and informed decision-making. •

5.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

No irreversible or irretrievable commitments of resources have been identified in the assessment or are expected from this designation. No other adverse or unavoidable environmental impacts are known. No significant construction is anticipated, except for that mentioned in the Facilities Plan. No extraction of resources will occur from designation. Sport and commercial fishing,

shellfishing, game harvesting and other traditional uses will continue under current regulatory authorities.

5.7 POSSIBLE CONFLICTS BETWEEN THE PROPOSED ACTION AND THE OBJECTIVES OF FEDERAL, STATE, REGIONAL AND LOCAL LAND USE PLANS, POLICIES AND CONTROLS FOR THE AREAS CONCERNED

It is not anticipated that establishment of the reserve will conflict with the objectives of federal, state, regional or local land use plans, policies or controls for the areas concerned. However, as depicted in the administrative structure of the reserve (section 3.1.2, Figure 8), staff will continually coordinate with the landholders to address any and all issues that may arise after the reserve is designated. It is possible that the reserve will want to set up periodic meetings with the various institutional landholders to share ideas, promote efficiency, and resolve conflicts.

5.8 CONSEQUENCES OF THE NO-ACTION ALTERNATIVE

A no action alternative would result in a lack of coordination and long-term cooperation in the management of the Kachemak Bay ecosystem. Research and educational organizations would not be eligible to compete for NOAA funding for activities in the proposed reserve, impeding the improved understanding and management of the Kachemak Bay system. Finally, taking no action on this proposed reserve would have negative consequences for NOAA's ability to complete its mission of establishing a complete NERR System, and for NOAA's mission to aid in the restoration of injured resources and services resultant from the EVOS.

6.0 ACKNOWLEDGMENTS

6.1 STAFF CONTRIBUTIONS

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- Bruce Talbot, Alaska Department of Natural Resources, Division of Land
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Much of the material describing the National Estuarine Research Reserve System was prepared by the Sanctuaries and Reserves Division of NOAA.

6.2 COMMITTEE MEMBERS

Members of the KBNERR Plan Review Group and the Education and Research Committees were actively involved in the planning and development of this document. Their input, review and commentary on each section was invaluable.

6.2.1 Plan Review Group Members

The thirteen members of the Operation Plan/EIS Review Group represented the following interests:

A. *Education Representative*

Jane Middleton, Center for Alaska Coastal Studies

Alternate: Stan Eller (Homer High) or Carol Swartz (Kenai Peninsula College)

Represent all educational institutions.

B. *Research Representative*

Doug Coughenower, Marine Advisory Program, Sea Grant/UAF

Alternate: Geoff Coble, Coble Geophysical

Represent all research interests and organizations.

- C. *Local Government Representative*
Jack Cushing, Mayor of Homer
Represent Homer, Seldovia, Kenai Peninsula Borough, and Kachemak City interests.
- D. *Mariculture Industry Representative*
Bob Halpin, President of Kachemak Shellfish Mariculture Association
Alternate: Bob & Diane Hartley, President of Alaska Shellfish Growers Association.
Represent mariculture interests, commercial shellfish harvesting interests, etc.
- E. *Commercial Fishing Industry Representative*
Paul Seaton, Fisherman and member of fishing organizations
Represent commercial fishing organizations, seiner groups, gillnetters groups, etc.
- F. *Recreation and Tourism Industry Representative*
Ed Murphy, Alaska Maritime Tours
Represent sport fishing industry, tourism operators, and recreational outfits.
- G. *Local Business Representative*
Derotha Ferraro, Homer Chamber of Commerce
Represent general business community in Kachemak Bay.
- H. *Non-profit Organizations Representative*
Mike O'Meara, Pratt Museum Alternate: Carol Harding, Pratt Museum
Represent all non-profit organizations.
- I. *Environmental Groups Representative*
Bob Shavelson, Cook Inlet Keeper
Represent environmental organizations, groups, and other environmental interests.
- J. *Native Culture and Corporation Representative (Invited, Did Not Attend)*
Fred Elvsaas, Seldovia Native Corporation
Represent all native organizations and issues.
- K. *Personal Use/Subsistence Use Representative*
Karl Pulliam
Represent those who rely upon the Bay's resources for personal and subsistence use.
- L. *Cook Inlet Regional Citizens Advisory Council*
Susan Saupe, CIRCAC

Represent the interest of the Citizen's Advisory Council in ensuring safe oil industry operations and tanker transport in Cook Inlet.
- M. *Large Industry Representative*
Mark Major, AOGA
Represent petroleum and other large industries in lower Cook Inlet.

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Susan Mumma
Seldovia

Mike Geagel
Kasitsna Bay Lab
Seldovia

Mike O'Meara
Pratt Museum
Homer

Steve Hackett
Cook Inlet Keeper
Homer

Gail Parsons
Pratt Museum
Homer

Dr. Ray Highsmith
Institute of Marine Science
UAF School of Fisheries & Ocean Sciences
Fairbanks

Lloyd Schade
Homer

Carol Swartz
Kachemak Bay Campus,
Kenai Peninsula College
Homer

Mark Major
ARCO Alaska, Inc.
Anchorage

6.2.3 Research Subcommittee

Wayne Biessel
Kachemak Bay State Park
Homer

Alice Bullington
Unocal
Anchorage

Geoff Coble
Coble Geophysical Services
Homer

Doug Coughenower
UAF/Marine Advisory Program
Homer

Jeff Davis
DGC
Anchorage

David Erikson
Dames & Moore
Homer

Mike Geagel
Kasitna Bay Lab
Seldovia

Dr. Ray Highsmith
Institute of Marine Science
UAF School of Fisheries & Ocean Sciences
Fairbanks

Mark Major
ARCO Alaska, Inc.
Anchorage

Jere Murray
Seldovia

Ted Otis
ADF&G - Comm. Fish
Homer

Janetta Pritchard
DNR
Anchorage

Susan Saupe
Cook Inlet RCAC
Kenai

Paul Seaton
Commercial Fisherman
Homer

Bob Shavelson
Cook Inlet Keeper
Homer

7.0 AGENCIES, ORGANIZATIONS, AND INDIVIDUALS WHO RECEIVED THIS DOCUMENT

7.1 AGENCIES

7.1.1 United States Government

U.S. Senate

U.S. House of Representatives

U.S. Environmental Protection Agency

U.S. Council on Environmental Quality

U.S. Federal Emergency Management Agency

U.S. Federal Energy Regulatory Commission

U.S. General Services Administration

U.S. National Aeronautics and Space Administration

U.S. Nuclear Regulatory Commission

U.S. Department of Agriculture

Forest Service

Natural Resources Conservation Service

U.S. Department of Commerce

National Oceanic and Atmospheric Administration

Coastal Services Center

Hazardous Materials

National Environmental Satellite, Data, and Information Service

National Marine Fisheries Service

National Ocean Service

Coastal Services Center

National Weather Service

Oceanic and Atmospheric Research

U.S. Department of Defense

Department of the Air Force

Department of the Army

Corps of Engineers

Department of the Navy

Office of Chief of Naval Operations

Commandant of the Marine Corps

U.S. Department of Energy

U.S. Department of Health and Human Services

U.S. Department of Housing and Urban Development

U.S. Department of the Interior

Fish and Wildlife Service

Alaska Maritime National Wildlife Refuge

Kenai National Wildlife Refuge

Geological Survey

Biological Resources Division

Minerals Management Service

National Parks Service

U. S. Department of Justice

U.S. Department of Transportation

Federal Aviation Administration

Maritime Administration

Coast Guard

Federal Highway Administration

7.1.2 Alaska State Government

Alaska State Legislature

Alaska Office of the Governor

Division of Governmental Coordination

Washington D.C. Office

Alaska Department of Environmental Conservation

Alaska Department of Fish & Game

Administration

Commercial Fisheries Management and Development Division

Habitat & Restoration Division

Sport Fish Division

Subsistence Division

Wildlife Conservation Division

Alaska Department of Natural Resources

Division of Lands

Division of Parks & Outdoor Recreation

Kachemak Bay State Park

Trust Land Office

Alaska Department of Transportation & Public Facilities

Exxon Valdez Oil Spill Restoration Office

University of Alaska/Anchorage
Alaska Natural Heritage Program
Kachemak Bay Campus

University of Alaska/Fairbanks
Institute of Marine Sciences
School of Fisheries & Ocean Sciences
Marine Advisory Program
Kasitsna Bay Lab

7.1.3 Local Governments

City of Homer
City of Kachemak
City of Seldovia
Kenai Peninsula Borough
Area Schools

7.2 ORGANIZATIONS

Alaska Center for the Environment
Alaska Chadux Corporation
Alaska Coastal Journeys
Alaska Marine Conservation Council
Alaska Maritime Tours
Alaska Oil & Gas Association
Alaska Pacific University
Alaska SeaLife Center
American Farm Bureau Federation
American Oceans Campaign
American Planning Association
American Sport Fishing Association
Center for Marine Conser
American Planning Association
American Sport Fishing Association
ARCO Alaska Inc.
Center for Alaskan Coastal Studies
Center for Marine Conservation
Chugachmuit, Environmental Health/Protection
Clean Water Network
Coast Alliance

Coastal States Organization
Coble Geophysical Services
Cook Inlet Aquaculture Association
Cook Inlet Keeper Program
Cook Inlet Regional Citizens Advisory Council
Dames & Moore
English Bay Corporation
Environmental Defense Fund, Inc.
Environmental Law Institute
Environmental Policy Center
Fox River Cattleman's Association
Friends of the Earth
Homer Chamber of Commerce
Homer Daily News
Homer Society of Natural History
Homer Tribune
Kachemak Bay Conservation Society
Kachemak Bay Wilderness Lodge
Kachemak Heritage Land Trust
Kachemak Shellfish Growers Assn.
KBBI Public Radio Station (Homer, Alaska)
Kachemak Bay State Park Citizen Advisory Board
Kenai River Sportfishing, Inc.
MT2C "Mountain to Sea"
Nanwalek Traditional Council
National Association of Counties
National Audubon Society
National Parks and Conservation
National Recreation & Park Association
National Resource Defense Council
National Wildlife Federation
National Wildlife Federation – Alaska Office
Native Village of Nanwalek
Northwest Aquatic & Marine Educators
Port Graham Corporation
Port Graham Village Council
Pratt Museum
Red Mountain
Seldovia Chamber of Commerce
Seldovia Native Association, Inc.
Sierra Club Legal Defense Fund
Seldovia Oil Spill (SOS) Response Team
The Nature Conservancy
The Nature Conservancy of Alaska
Unocal
World Wildlife Fund

7.3 INDIVIDUALS

Bitter, Daisy Lee – Homer, Alaska
DeGino, Robert – Homer Alaska
Faust, Nina – Homer Alaska
Files, Will – Homer, Alaska
Hemming, James & Nancy – Corvallis, Oregon and Homer, Alaska
Klinka, Carla – Homer, Alaska
Middleton, Jane – Homer, Alaska
Mumma, Susan – Seldovia, Alaska
Murray, Jere & Sandy – Seldovia, Alaska
Newby, Angie – Homer, Alaska
Otis, Emilie – Homer, Alaska
Pulliam, Karl – Seldovia, Alaska
Schade, Lloyd – Homer, Alaska
Seaton, Paul – Homer, Alaska
Shirley, Thomas – Juneau, Alaska
Whitmore, Joni – Homer, Alaska

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APPENDIX A

Institutional Arrangements:

1. MOU between NOAA and the Alaska Department of Fish and Game
2. MOU between the Alaska Department of Natural Resources and ADF&G
3. MOU between ADF&G and the U.S. Fish and Wildlife Service
4. MOU between ADF&G and City of Homer

Memorandum of Understanding
Between the
National Oceanic and Atmospheric Administration
and the
Alaska Department of Fish and Game
Detailing the State-Federal Roles in the
Kachemak Bay National Estuarine Research Reserve

This Memorandum of Understanding (MOU) serves to establish the framework for coordination, cooperation and communication regarding the Kachemak Bay National Estuarine Research Reserve (KBNERR). This agreement concerns the Office of Ocean and Coastal Resource Management (OCRM), National Ocean Service, National Oceanic and Atmospheric Administration (NOAA), whose address is 1305 East-West Highway N/ORM, Silver Spring, Maryland, 20910, and the Alaska Department of Fish and Game (ADF&G), Division of Habitat and Restoration, whose address is 1255 West 8th Street, P.O. Box 25526, Juneau, Alaska 99802-5526.

WHEREAS, the State of Alaska has determined that the waters and coastal habitats of the Kachemak Bay system provide representative opportunities to study natural estuarine and human processes occurring within an estuarine ecosystem; and

WHEREAS, the State of Alaska finds that the resources of Kachemak Bay and its value to the citizens of Alaska and the United States will benefit from the management of this site as part of the National Estuarine Research Reserve System; and

WHEREAS, NOAA has concurred with that finding, and may designate Kachemak Bay as a National Estuarine Research Reserve in Alaska pursuant to its authority under Section 315 of the Coastal Zone Management Act of 1972, as amended, (CZMA, P.L. 92-583, 16 U.S.C. 1461) and in accordance with implementing regulations at 15 CFR 921.30; and

WHEREAS, ADF&G is designated by the State of Alaska and in the Kachemak Bay National Estuarine Research Reserve Management Plan ("Plan") as the agency responsible for managing the Reserve, as defined in the Plan; and

WHEREAS, the Plan describes the goals, objectives, plans, administrative structure, and institutional arrangements for the Reserve, including this MOU and others; and

WHEREAS, ADF&G acknowledges the need and requirement for continuing State-Federal cooperation in the long term management of the Reserve in a manner consistent with the purposes sought through its designation.

NOW THEREFORE, in consideration of the mutual agreements contained herein it is agreed by and between ADF&G and NOAA as follows:

ARTICLE 1: STATE-FEDERAL ROLES IN RESERVE MANAGEMENT

The following section describes the roles and responsibilities of the reserve partners. The obligations described for each Reserve partner are subject to available funding.

A. State Role in Reserve Management

ADF&G, as the principal contact for the State of Alaska in all matters concerning the Reserve, will be responsible for ensuring that the Reserve complies with management objectives of the Plan, the Alaska Coastal Management Program, other applicable provisions of Alaska law, Section 315 of the Federal Coastal Zone Management Act (CZMA), and the federal regulations of the National Estuarine Research Reserve System (NERRS). ADF&G will be the grant receiving office for the KBNERR under Section 315 of the CZMA. Subject to available and authorized appropriations, ADF&G's responsibilities for plan implementation include the following:

1. Annually apply for, budget, and allocate funds received for KBNERR operations, (e.g., education, research and monitoring programs), as well as for acquisition and facilities;
2. Conduct active research and monitoring programs that draw scientists from various institutions to work together on understanding coastal issues;
3. Conduct and maintain programs that provide materials, activities, workshops, and conferences that translate the research results to the resource users, regulators, and the public;
4. Provide staff and volunteers to monitor, protect, educate and translate research results;
5. Secure facilities that will, among other things, include research laboratory, classroom, library, office, meeting, field equipment storage and interpretive display space;
6. Secure equipment to facilitate research and outreach activities that, among other things, will include boats, laboratory and field equipment, audiovisual, curriculum, reference materials and databases;

7. Maintain effective liaison with local, regional and state policy makers, regulators and the general public;
8. Serve as principal negotiator on issues involving proposed boundary changes and/or amendments to the Plan;
9. Respond to NOAA's requests for information and respond to evaluation findings made pursuant to Section 312 of the CZMA;
10. Expend funds in accordance with federal and state laws, the KBNERR management plan, and annual appropriations; and
11. Ensure enforcement of the applicable provisions of Alaska law, including the rules and regulations of the Alaska Coastal Management Program, to protect the Research Reserve.

B. Federal Role in Reserve Operation

The Office of Ocean and Coastal Resource Management will serve to administer the provisions of Section 315 of the CZMA to ensure that the Reserve operates in accordance with the goals of the NERRS and the Plan. These responsibilities are subject to the availability of appropriated funds. In carrying out its responsibilities, OCRM will:

1. Review and process applications for financial assistance from ADF&G, consistent with 15 CFR Part 921 for acquisition, development, management, and operation of the Reserve;
2. Review and process applications for financial assistance from ADF&G and other eligible entities consistent with 15 CFR Part 921 for education, research and monitoring programs for the benefit of the Reserve;
3. This agreement does not create any obligation on the part of OCRM to award financial assistance.
4. Make periodic evaluations in accordance with Section 312 of the CZMA to measure ADF&G's performance in Plan implementation;
5. Advise ADF&G of existing and emerging national and regional issues; and
6. Establish an information exchange network cataloging all available research data and educational material developed on each Reserve included within the NERRS.

C. General Provisions

1. Nothing in this agreement or subsequent financial assistance awards shall obligate any party in the expenditure of funds, or for future payments of money, in excess of appropriations authorized by law.
2. Both parties agree to comply with all applicable federal or State laws regulating ethical conduct of public officers and employees.
3. Each party will comply with all applicable laws, regulations, and executive orders relative to Equal Employment Opportunity.
4. Upon termination of this agreement or any subsequent financial assistance awards, any equipment purchased for studies initiated in furtherance of this agreement will be returned to the agency of initial purchase.
5. A free exchange of research and assessment data among agencies is encouraged and is necessary to insure the success of these cooperative studies.

D. Other Provisions

Nothing in this MOU diminishes the independent authority or coordination responsibility of each agency in administering its statutory obligations. Nothing herein is intended to conflict with current agency directives. If the terms of this MOU are inconsistent with existing directives of any agency entering into this agreement, then those portions which are determined to be inconsistent shall be invalid; but the remaining terms not affected by the inconsistency shall remain in full force and effect. At the first opportunity for review of this agreement, all necessary changes will be made by either an amendment to this MOU or by entering into a new MOU, which ever is deemed expedient to the interest of all Parties. Should disagreement arise on the interpretation of the provisions of this MOU, or amendments and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated in writing by each party and presented to the other parties for consideration.

ARTICLE II: REAL PROPERTY ACQUIRED FOR THE PURPOSE OF THE RESERVE

As well as agreeing to adhere to the rest of the provisions set forth at 15 CFR Part 921, the State of Alaska agrees to the conditions set forth at 15 CFR 921.21(e), which specify the legal documentation requirements concerning the use and disposition of real property acquired for Reserve purposes with Federal funds under Section 315 of the CZMA.

ARTICLE III. PROGRAM EVALUATION

OCRM will schedule periodic evaluations of the State's performance in meeting the terms of financial assistance awards, in implementing the Management Plan and in meeting the provisions of this MOU. Where findings of deficiency occur, NOAA may initiate action in accordance with the designation withdrawal procedures established by the CZMA and applicable regulations.

ARTICLE IV. EFFECTIVE DATE, REVIEW, AMENDMENT AND TERMINATION

This MOU is effective on the date of designation of the Reserve. The MOU will be reviewed periodically. This MOU may be amended by the mutual consent of the parties. This MOU may be terminated by mutual consent of the Parties, or by NOAA if it withdraws designation of the area as a National Estuarine Research Reserve, pursuant to applicable provisions of the CZMA and its implementing regulations as described under 15 CFR Part 923 Subpart L. Should this MOU be terminated, reimbursement of unexpended funds shall be determined on a pro rata basis according to the amount of work done by the Parties at the time of termination.

IN WITNESS THEREOF, the Parties hereto have caused this MOU to be executed.

Jeffrey R. Benoit
Director
Office of Ocean and Coastal
Resource Management
National Ocean Service
National Oceanic and
Atmospheric Administration
U.S. Department of Commerce

Date

Frank Rue
Commissioner
Department of Fish and Game
State of Alaska

Date

Kevin Brooks
Director
Division of Administration
Department of Fish and Game
State of Alaska

Date

Janet Kowalski
Director
Division of Habitat and Restoration
Department of Fish and Game
State of Alaska

Date

MEMORANDUM OF UNDERSTANDING
between the
ALASKA DEPARTMENT OF FISH AND GAME,
Habitat and Restoration Division, and the
ALASKA DEPARTMENT OF NATURAL RESOURCES,
Division of Land, and
Division of Parks and Outdoor Recreation
concerning the
KACHEMAK BAY NATIONAL ESTUARINE RESEARCH RESERVE

This Memorandum of Understanding (MOU) is designed to assist the agencies in cooperatively managing the areas within the boundaries of the Kachemak Bay National Estuarine Research Reserve (KBNERR). The agreement pertains to the responsibilities of: 1) the Alaska Department of Fish and Game (ADF&G), Habitat and Restoration Division, whose address is 1255 West 8th Street, P.O. Box 25526, Juneau, Alaska 99802-5526, and 2) the Alaska Department of Natural Resources (DNR), whose address is 400 Willoughby Avenue, Juneau 99801, including its Division of Land (DOL) and the Division of Parks and Outdoor Recreation (DPOR). In no way does this agreement alter existing authorities and responsibilities either between or within the agencies.

WHEREAS, the State of Alaska has determined that the designation of the KBNERR under the National Estuarine Research Reserve System (NERRS) would provide for beneficial long-term research and public education to improve coastal management capabilities in the state; and

WHEREAS, the National Oceanic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resource Management, is in the process of designating the KBNERR, which includes portions of the Kachemak Bay State Park and state tidelands, submerged lands, and waters; and

WHEREAS, ADF&G has been designated in the KBNERR Management Plan, to which this Agreement is attached, and by the State of Alaska as the agency responsible for managing the Reserve; and

WHEREAS, DOL have partial management responsibilities for state waters, tidelands, and submerged lands and DPOR administers the Kachemak Bay State Park, which form important components of the Reserve; and

WHEREAS, DNR recognizes that the more complete information on the region's resources and current uses assembled by the Reserve will provide real benefits to their programs; and

WHEREAS, a coordinated effort between ADF&G and DNR to provide and promote research and educational uses of these areas will benefit all parties;

NOW THEREFORE, it is agreed by and between ADF&G and DNR as follows:

1. The purpose of the KBNERR is to provide a natural field laboratory and living classroom which, in addition to current uses, will be used to gather data and educate people of the state and nation on the natural and human processes occurring within coastal watersheds and estuaries. The Reserve will serve to increase public awareness and understanding of the complex nature of estuarine systems, their values and benefits to humans and the natural world, and the problems that confront them, as stated in the NERRS goals.
2. A management plan for the KBNERR was finalized by ADF&G with critical input and review from DOL and DPOR. The management plan provides a framework for conducting research and educational programs in the Reserve. Activities using DNR funding and activities that require DNR's authorizations in the Reserve will be conducted in a manner consistent with the management plans for Kachemak Bay State Park and the Kenai Area Plan. DNR will use the ADFG management plans for the Reserve and the Kachemak Bay and Fox River Flats Critical Habitat Areas for additional guidance in implementing its authorities in the Reserve. DNR will also implement its authorities in these areas consistent with the statutes that establish the State Park and Critical Habitat Areas.
3. DOL and DPOR shall be fully and regularly consulted by ADF&G regarding research and education needs, opportunities, and information as well as management policies pertaining to the Reserve. These divisions will also be consulted about proposed research projects that may require authorization from DNR.
4. DNR and ADF&G agree to share geographic information system (GIS), research findings and other data for the region, and are interested in developing new uses and applications for such information.
5. The Signatories will coordinate and cooperate to ensure that research and educational activities do not adversely affect the lands, waters, fish, wildlife, natural and scenic values in these areas, or each other's management plans.
6. Nothing in this agreement shall obligate any party in the expenditure of funds, or for future payments of money, in excess of appropriations authorized by law.
7. Nothing herein is intended to conflict with federal, state, or local laws or regulations. If there are conflicts, this agreement will be amended at the first opportunity to bring it into conformance with conflicting laws or regulations.
8. A free exchange of research and assessment data among agencies is encouraged and is necessary to insure the success of these cooperative studies.

This MOU will become effective upon the date of designation of the KBNERR. The termination date of this agreement shall be indefinite, however, either party may terminate its participation in this agreement by providing written notice to the other party sixty days before termination. This agreement may be amended by mutual written consent of the parties.

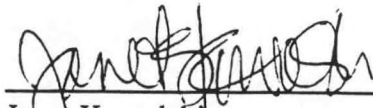
IN WITNESS THEREOF, the Parties hereto have caused this MOU to be executed:



Frank Rue
Commissioner
Alaska Department of Fish and Game

7.21.98


Date



Janet Kowalski
Director, Habitat and Restoration Division
Alaska Department of Fish and Game

7/17/98

Date



Kevin Brooks
Director, Administration Division
Alaska Department of Fish and Game

7.20.98

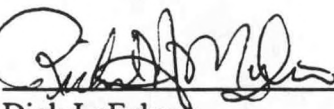
Date



John T. Shively
Commissioner
Alaska Department of Natural Resources

7/10/98

Date



Dick LeFebvre
Acting Director, Division of Land
Alaska Department of Natural Resources

7/9/98

Date



James Stratton
Director, Division of Parks and Outdoor Recreation
Alaska Department of Natural Resources

8.5.98

Date

MEMORANDUM OF UNDERSTANDING
between the
ALASKA DEPARTMENT OF FISH AND GAME,
Habitat and Restoration Division,
and the
U.S. Fish and Wildlife Service
concerning portions of the
Kachemak Bay National Estuarine Research Reserve

This Memorandum of Understanding (MOU) is designed to assist the agencies in cooperatively managing the areas within the boundaries of the Kachemak Bay National Estuarine Research Reserve (KBNERR). The agreement pertains to the responsibilities of: 1) the Alaska Department of Fish and Game (ADF&G), Habitat and Restoration Division, 1255 West 8th Street, PO Box 25526, Juneau, Alaska 99802-5526, who enters into this agreement by authority of AS 16.05.050 (13), and 2) the United States Fish and Wildlife Service (USFWS), Alaska Maritime National Wildlife Refuge (AMNWR), 1011 East Tudor Road, Anchorage, AK 99503, who enters this agreement under the terms of 16 U.S.C. 661. In no way does this MOU alter existing authorities and responsibilities either between or within the agencies.

WHEREAS, the State of Alaska has determined that the designation of the KBNERR under the National Estuarine Research Reserve System (NERRS) would provide for beneficial long-term research and public education to improve coastal management capabilities in the state; and

WHEREAS, the National Oceanic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resource Management, is in the process of designating the KBNERR, which includes portions of Beluga Slough; and

WHEREAS, ADF&G is designated by the State of Alaska and in the KBNERR Management Plan, to which this MOU is attached, as the agency responsible for managing the Reserve; and

WHEREAS, USFWS owns the Alaska Maritime National Wildlife Refuge (AMNWR) administrative site, made up of several parcels of land in the Beluga Slough area (see attached map), which form an important component of the Reserve; and

WHEREAS, KBNERR and USFWS have similar goals for conserving, studying, and educating the public about estuarine and marine resources, and both are federally funded programs; and

WHEREAS, a coordinated effort between ADF&G and USFWS to provide and promote research and educational uses of these areas will benefit all parties; and

WHEREAS, USFWS and ADF&G are interested in cooperating on a joint facility at the AMNWR Beluga Slough administrative site, pending other issues;

NOW THEREFORE, it is agreed by and between ADF&G and USFWS as follows:

1. The purpose of the KBNERR is to provide a natural field laboratory and living classroom which, in addition to current uses, will be used to gather data and educate people of the state and nation on the natural and human processes occurring within coastal watersheds and estuaries. The Reserve will serve to increase public awareness and understanding of the complex nature of estuarine systems, their values and benefits to humans and the natural world, and the problems that confront them, as stated in the NERRS goals.
2. A management plan for the KBNERR was finalized by ADF&G with critical input and review from USFWS. The management plan provides a framework for conducting research and educational programs in the Reserve. Activities within the USFWS lands will be conducted in a manner which is consistent with the management plans for the Alaska Maritime National Wildlife Refuge administrative site and the KBNERR. The USFWS will continue to manage and administer its lands, facilities, and programs pursuant to its mandate in these areas.
3. USFWS shall be fully and regularly consulted by ADF&G regarding research and education needs, opportunities, and information pertaining to Reserve areas.
4. USFWS and ADF&G will coordinate and cooperate to ensure that research and educational activities do not adversely affect the lands, waters, fish, wildlife, natural and scenic values in these areas, or each other's management plans.
5. Nothing in this agreement shall obligate any party in the expenditure of funds, or for future payments of money, in excess of appropriations authorized by law.
6. The Parties accept responsibility for any property damage, injury, or death caused by the acts or omissions of their respective employees acting within the scope of their employment, to the fullest extent permitted by law.
7. Both parties agree to comply with all applicable federal or State laws regulating ethical conduct of public officers and employees.
8. All activities pursuant to this MOU and the provisions of Exec. Order No. 11246, 30 FR 12319 (1965), as amended by Exec. Order No. 11375, 32 FR 14303 (1967) shall be in compliance with the requirements of title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. 2000d et seq.); title V, Section 504 of the rehabilitation Act of 1973 (87 Stat. 394; 29 U.S.C. 794); the Age Discrimination Act of 1975 (89 Stat. 728; 42 U.S.C. 6101 et seq.) and all other Federal laws and regulations prohibiting discrimination on grounds of race, color, national origin, handicap, religion, or sex, in providing for facilities and serve to the public.
9. Nothing herein is intended to conflict with federal, state, or local laws or regulations. If either party notices a conflict, they shall amend this agreement with a 30-day written notice to bring it into conformance with conflicting laws or regulations.
10. A free exchange of management, research, and assessment data among agencies is encouraged and is necessary to insure the success of these cooperative efforts.
11. No member of, Delegate to, or Resident Commissioner, in Congress shall be admitted to any share or part of this MOU or to any benefit to arise therefrom, unless the share or part or benefit is for the general benefit of a corporation or company.

This MOU will become effective on the date of designation of KBNERR. Either party may terminate its participation in this agreement by providing written notice to the other party thirty days before termination. Unless earlier extended or terminated, this MOU shall expire five years from its effective date. This agreement may be amended by mutual written consent of the parties.

IN WITNESS THEREOF, the Parties hereto have caused this MOU to be executed.

Frank Rue
Commissioner
Alaska Department of Fish and Game

Date

Janet Kowalski
Director, Habitat and Restoration Division
Alaska Department of Fish and Game

Date

Kevin Brooks
Director, Administration Division
Alaska Department of Fish and Game

Date

David Allen
Regional Director
U.S. Fish and Wildlife Service

Date

Nettie Gorder
Contracting Officer
U.S. Fish and Wildlife Service

Date

MEMORANDUM OF UNDERSTANDING
between the
ALASKA DEPARTMENT OF FISH AND GAME,
Habitat and Restoration Division,
and the
CITY OF HOMER
concerning portions of the
KACHEMAK BAY NATIONAL ESTUARINE RESEARCH RESERVE

This Memorandum of Understanding (MOU) is designed to assist the governmental agencies in cooperatively managing the areas within the boundaries of the Kachemak Bay National Estuarine Research Reserve (KBNERR). The agreement pertains to the responsibilities of: 1) the Alaska Department of Fish and Game (ADF&G), Habitat and Restoration Division, whose address is 1255 West 8th Street, PO Box 25526, Juneau, Alaska 99802-5526, and 2) the City of Homer ("City"), whose address is 491 E. Pioneer Ave., Homer, AK 99603. In no way does this MOU alter existing authorities and responsibilities either between or within the agencies.

WHEREAS, the State of Alaska has determined that the designation of the KBNERR under the National Estuarine Research Reserve System (NERRS) would provide for beneficial long-term research and improve public understanding of our coastal resources; and

WHEREAS, the National Oceanic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resource Management, is in the process of designating the KBNERR, which includes areas along the Homer spit and portions of Beluga Slough; and

WHEREAS, ADF&G is designated by the State of Alaska and in the KBNERR Management Plan, to which this MOU is attached, as the agency responsible for managing the Reserve; and

WHEREAS, the City of Homer has passed resolutions (e.g., Res. 98-14, 96-106) supporting the establishment of KBNERR; and

WHEREAS, the City of Homer has title to lands which form important components of the Reserve, including several acres of tidelands and salt marshes alongside the Homer Spit, and marshland and park parcels in the Beluga Slough area (see attached maps); and

WHEREAS, including these areas in the reserve may better facilitate estuarine research and education programs in the Homer area;

NOW THEREFORE, it is agreed by and between the City and ADF&G as follows:

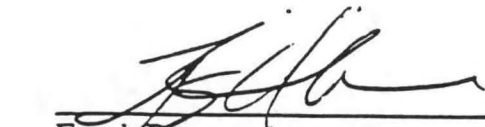
1. The purpose of the KBNERR is to provide a natural field laboratory and living classroom which, in addition to current uses, will be used to gather data and educate people of the state and nation on the natural and human processes occurring within coastal watersheds and

estuaries. As stated in the NERRS goals, the Reserve will serve to increase public awareness and understanding of the complex nature of estuarine systems, their values and benefits to humans and the natural world, and the problems that confront them.

2. A management plan for the KBNERR was finalized by ADF&G after public review with critical input from the City of Homer. The management plan provides a framework for conducting research and educational programs in the Reserve. Activities within the City lands will be conducted in a manner which is consistent with the management plans for City lands and the KBNERR. Under terms of this agreement, the City of Homer will continue to manage and administer its lands and programs in these areas. This MOU shall not limit City authority to carry out such activities so long as they do not adversely affect implementation of the KBNERR management plan.
3. The City shall be fully and regularly consulted by ADF&G regarding research and education needs, opportunities, and information pertaining to Reserve areas.
4. The Signatories will coordinate and cooperate to ensure that research and educational activities do not adversely affect the lands, waters, fish, wildlife, natural and scenic values in these areas, or each other's management plans.
5. Nothing in this agreement shall obligate any party in the expenditure of funds, or for future payments of money, in excess of appropriations authorized by law.
6. Each party agrees that it will be responsible for its own acts and omissions including those of its officers, agents, and employees, and each party shall indemnify, defend and hold harmless the other, to the maximum extent allowed by law, from any claim of, or liability for error, omission or negligent act of whatever kind, including attorney fees, for damages to property or injury to persons occasioned by each party's own acts or omissions in connection with the terms of this agreement.
7. Nothing herein is intended to conflict with federal, state, or local laws or regulations. If there are conflicts, this agreement will be amended at the first opportunity to bring it into conformance with conflicting laws or regulations.
8. A free exchange of management, research, and assessment data among agencies is encouraged and is necessary to insure the success of these cooperative efforts.

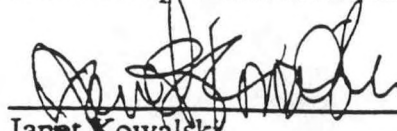
This MOU will become effective on the date of designation of the Reserve. The termination date of this agreement shall be indefinite; however, either party may terminate its participation by providing written notice to the other party ninety days before termination. This agreement may be amended by mutual written consent of the Parties.

IN WITNESS THEREOF, the Parties hereto have caused this MOU to be executed.



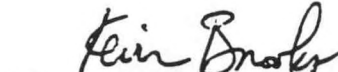
Frank Rue
Commissioner
Alaska Department of Fish and Game

8.4.98
Date



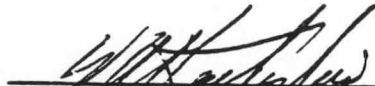
Janet Kowalski
Director, Habitat and Restoration Division
Alaska Department of Fish and Game

8/3/98
Date



Kevin Brooks
Director, Administration Division
Alaska Department of Fish and Game

8.4.98
Date



Val Koebenein
City Manager
City of Homer

7-28-98
Date

Maps referenced as attachments are found at
Figures 3 and 4 of the Kachemak Bay NERR FEIS/FMP

APPENDIX B

The *Exxon Valdez* Oil Spill Area

Alaska

Index Map of Oil Spill Area

THE EXXON VALDEZ OIL SPILL AREA GENERAL LAND STATUS SOUTHCENTRAL ALASKA

LEGEND

Oil Spill Area Boundary

FEDERAL LANDS

- National Forest
- National Parks, Monuments or Preserves
- National Wildlife Refugees
- Bureau of Land Management

STATE OR MUNICIPAL LANDS

- State or Municipal Lands
- State Parks, Critical Habitat Areas and Game Refuges
- Offshore State Parks and Critical Habitat Areas
- State Marine Parks Areas

OTHER LANDS

- Native or Other Private Lands
- Native Selected

The Exxon Valdez Oil Spill Area includes the area enclosed by the maximum extent of oiled shorelines, severely affected communities and their immediate human-use areas, and adjacent uplands to the watershed divide.

Produced by:
Alaska Department of Natural Resources
Land Records Administration Section

APPENDIX C

Policies of the Existing Legislatively Designated Areas

APPENDIX C:

Policies Of The Existing Legislatively Designated Areas

1. KACHEMAK BAY AND FOX RIVER FLATS CRITICAL HABITAT AREAS

All of the following are taken from the Kachemak Bay and Fox River Flats Critical Habitat Areas Management Plan (ADF&G 1993). Where CHA lands and waters overlap with the Kachemak Bay State Park, the Division of Parks and Outdoor Recreation may have more restrictive policies and regulations. Separate park permits may be required (see section 2).

A. Overall policy on activities within the critical habitat areas (CHAs):

To protect fish and wildlife populations and their habitats in the critical habitat areas, the department may allow by permit only those activities compatible with the purposes for which the critical habitat areas were established, terms and standards of 5 AAC 95, and the goals and policies of the plan. Any activity that is not compatible with the purposes for which the critical habitat areas were established, terms and standards of 5 AAC 95, and the goals and policies of this plan, will not be allowed.

B. Specific policies:

Access - Maintain existing public access into Kachemak Bay and Fox River Flats critical habitat areas. Improve public access within Kachemak Bay Critical Habitat Area consistent with the goals of the management plan. Fox River Flats Trail should continue to be used as an all weather trail with appropriate terms and conditions, including weight restrictions, placed on use of motorized vehicles.

Off-Road Use of Motorized Vehicles - To ensure the protection of important habitat, avoid harmful disturbance of fish and wildlife, and accommodate a variety of critical habitat area users, the department will, as appropriate, establish motorized vehicle use corridors and seasonal and vehicle use restrictions under a general permit for individual personal and recreational transportation. Organized group events involving 20 or more individuals or use of industrial or construction type vehicles may, in the commissioner's discretion, be authorized under an individual Special Area Permit under 5 AAC 95.420(a)(7) if the use is consistent with the goals and policies of this management plan. Traversing areas with rooted vegetation in airboats or hovercraft is prohibited.

Information And Education - Inform the public about resource values, recreational opportunities (including high value viewing areas) and rules in Kachemak Bay and Fox River Flats critical habitat areas. Encourage compatible educational programs and research and monitoring of fish, wildlife, and habitat resources and their uses.

Fish And Wildlife Habitat And Population Enhancement And Rehabilitation - As appropriate, allow enhancement and rehabilitation of habitat of indigenous wildlife or fish species and enhancement of fish and wildlife populations where it furthers the management goals of Kachemak Bay and Fox River Flats critical habitat areas, is not at the expense of existing resource values (including diversity and abundance) and doesn't interfere with public use and enjoyment. Priority should be given to encouraging rehabilitation of depleted indigenous fish and wildlife populations.

Water Quality - Water quality standards applied to estuarine, marine, and freshwater environments in the critical habitat areas shall be state water quality standards set out in 18 AAC 70 (as amended as of January 7, 1987). Cumulative effects of waste discharge shall be a primary concern when determining appropriate activities in the critical habitat areas and must meet the above specified standards. Discharge of treated waste products may only be allowed within the critical habitat areas when there is a demonstrable need for which there is no feasible alternative.

Mooring Buoys, Running Lines, And Navigational Aids - Mooring buoys and running lines will be allowed under the terms of a general permit where adjacent upland landowners require public or private access to their property. Public mooring buoys may also be allowed under the terms of a general permit. Mooring buoys and running lines will be sited and used in a manner which does not interfere with navigation for the purpose of public use and enjoyment of the critical habitat areas, existing fisheries, or other authorized uses. In areas where a proliferation of buoys would have the potential to interfere with navigation for the purpose of public use and enjoyment of the critical habitat areas, or public uses of the critical habitat area, an area or areas may be identified for the location of public and private mooring facilities. Navigational aids will be allowed by general permit.

Harbors, Docks, Piers, Boat Ramps And Piling Supported Structures - Harbors, docks, piers, boat ramps and associated structures may be allowed for the purpose of maintaining or improving public access to Kachemak Bay or where adjacent upland landowners require access to their property in a manner consistent with critical habitat area statutes and regulations and the goals and policies of this management plan. Siting, design, construction, and maintenance of these facilities will to the maximum extent possible avoid impacts to habitat, fish, wildlife, navigation for the purpose of public use and enjoyment of the critical habitat areas and existing fisheries. Community dock development, seasonal docks, mooring buoys, and running lines will be encouraged over individual private permanent docks whenever possible. Solid fill docks will be avoided to the maximum extent possible if the facility will impact productive habitat; interfere with natural coastal processes including tidal action, circulation, erosion, and deposition patterns; or interfere with public use of one or both of the critical habitat areas. Piling or floating docks will be used whenever possible. The size of a structure will be kept to the minimum necessary to accommodate the proposed activity.

Longterm Anchorage, Floatstructures, Boat Maintenance, And Derelict Or Abandoned Boats - Anchorage or placement of a vessel or structure for longer than 14 days in the Fox River Flats or Kachemak Bay critical habitat areas requires authorization under a Special Area Permit and may be allowed if consistent with the purpose for which the critical habitat area was established and the goals and policies of this management plan. A general permit may be issued under the appropriate terms and conditions for the anchoring of vessels in the vicinity of the Homer and Seldovia small boat harbors. Floatstructures, except when specifically allowed by other policies in this plan, will not be allowed on public lands and waters in the critical habitat areas. Derelict or abandoned boats may not be left on public lands or waters in the critical habitat areas outside of the Homer or Seldovia small boat harbors. Intertidal boat maintenance outside of established community boat harbors may be authorized on private tidelands, or on public tidelands when there is no feasible alternative, under terms and conditions consistent with the goals and policies of this management plan and the purposes for which the critical habitat areas were established. The sinking of derelict boats in Kachemak Bay may be allowed only for the purpose of artificial reef enhancement undertaken by a local, state, or federal agency if it will not impact fish and wildlife habitat, fish and wildlife populations, or public use of the critical habitat areas.

Shoreline Alteration - Except as provided in the Harbors, Docks, Piers, Boat Ramps, and Piling Supported Structures policy, no alteration will be allowed of the natural shoreline of Kachemak Bay except when it will provide an overwhelming public benefit and there is no feasible upland alternative, or in the case where the proposed project is entirely on privately owned tidelands for the purpose of private property protection. Shoreline alteration of public tidelands to protect private property will not be allowed. Shoreline alteration will, to the maximum extent practicable, follow the natural configuration of the shoreline and avoid impact to fish and wildlife populations, their habitat, and public use and enjoyment of the critical habitat areas. Maintenance and clean-up of shore retention structures will be required of any shoreline alteration project.

Land Acquisition - The department may acquire private or municipal uplands, tidelands, or conservation easements within the critical habitat areas from willing sellers as time and funding permit through purchase or trade. Donation of lands for addition to the critical habitat areas will also be considered.

Pot and Gear Storage - The storage of fishing pots or other fishing gear within Kachemak Bay or Fox River Flats critical habitat areas requires a special Area Permit. A Special Area Permit may be issued for the storage of fishing pots and other gear where storage will not impact fish and wildlife habitat, fish and wildlife populations, public use of the critical habitat areas, or navigation for the purpose of public use and enjoyment of one or both of the critical habitat areas. Whenever possible upland storage is preferred.

Shore Fishery Leases - Use of shore fishery leases may be authorized under the terms of a general permit if the leases are consistent with the goals and policies of this management plan, the purpose for which the critical habitat area was established, salmon harvest

regulations, and if the leases are not in conflict with use of pre-existing shore fishery leases, aquatic farm permits or leases, or other disposals of interest in state property.

Aquatic Farming - In a manner compatible with the maintenance of high water quality in Kachemak Bay, aquatic farming activities, including floatstructures essential to the farm operation, may be permitted in Kachemak Bay on a case by case basis under terms and conditions consistent with the protection of fish and wildlife populations and their habitats, continued use of fish and wildlife, and public use and enjoyment of the critical habitat areas if compatible with other existing uses. Within the constraints provided by law, Jakolof Bay is recognized as a physically suitable area for aquatic farming activity because of good site conditions and an absence of use conflicts with fisheries. Aquatic farming will not be authorized in China Poot Bay due to its shallow character and conflict with existing navigational channels and fisheries. Additional aquatic farms of any configuration in Peterson Bay or additional floating aquatic farms in Kasitsna Bay will not be authorized due to an absence of suitable sites free from conflict with existing fisheries and public use. In order to avoid conflict with existing setnet fisheries, aquatic farms will not be sited within a 1000 foot radius offshore (from mean low water) of commercial set gillnet sites in Seldovia Bay, Kasitsna Bay and McDonald Spit, and Halibut Cove. In order to provide time for observation of the effect of existing aquatic farms, a moratorium on both the authorization of the expansion of the boundaries of existing farms and the authorization of new aquatic farms (excluding aquatic farms applied for prior to December 31, 1992 and experimental projects conducted in cooperation with the department) in Kachemak Bay will extend through December 31, 1995. Authorization of aquatic farms after that date may occur if authorization is not specifically prohibited by this policy or other state law. The effects of existing aquatic farms will be utilized to determine, in part, decisions to permit, deny, or modify new aquatic farm proposals submitted after the expiration of the moratorium.

Grazing - A new grazing lease or permit, or renewal of an existing grazing lease may be allowed only for cattle or horses in Fox River Flats Critical Habitat Area under terms and conditions compatible with critical habitat area statutes and the goals and policies of this management plan using guidelines established in consultation with other involved parties during the development of a range management plan. Introduction of species other than cattle and horses will not be allowed. Terms and conditions under which grazing may be allowed will include seasonal restrictions necessary to avoid impact to critical waterfowl and moose habitat, riparian buffers necessary to avoid damage to fish streams, limits on number of animals, requirements for marking animals, responsibility for removing feral animals, application of active management techniques including moveable fences where appropriate, and requirements to maintain public access on public lands.

Inwater Log Storage And Transfer Facilities - To prevent the destruction of benthic marine habitats and interference with public use, including navigation for the purpose of public use and enjoyment of the critical habitat areas and fishing, the in-water storage or transfer of logs is not allowed in Kachemak Bay, except that logs intended for personal use may be transported in Kachemak Bay under the terms of an individual Special Area

Permit under which in-water time does not exceed 14 days. It is not the intent of this policy to preclude logging on the south side of Kachemak Bay.

Pipelines And Utility Lines - A new utility or pipeline may be allowed to cross Kachemak Bay Critical Habitat Area if there is no feasible alternative, using an existing corridor whenever possible, consistent with critical habitat area statutes and the goals and policies of this management plan, and will avoid impacts to critical habitat area values to the maximum extent possible. Utility lines and pipelines will not be allowed in wetlands in the Fox River Flats Critical Habitat Area. Any easement issued within the critical habitat areas will be non-exclusive use only. Easements for sewer outfalls may only be allowed within Kachemak Bay Critical Habitat Area when there is a demonstrable need for which there is no feasible alternative and must be consistent with the goals and policies of this management plan. Except for authorized fuel docks, fuel lines and oil pipelines will not be allowed to cross either Kachemak Bay or Fox River Flats critical habitat areas.

Mining - Mineral or coal leasing is not allowed in the critical habitat areas. Close the critical habitat areas to new locatable mineral entry and close tide and submerged lands within the critical habitat areas to issuance of offshore prospecting permits. Incidental gathering of loose coal for personal use on Kachemak Bay beaches will continue to be allowed.

Material Extraction - Material extraction on public lands will not be allowed within the critical habitat areas unless for purposes of maintenance, enhancement or restoration of critical habitat area habitat. All material extraction activities within the critical habitat areas, including activities on private lands, must be consistent with critical habitat area statutes and the goals and policies of this management plan.

Oil And Gas - To avoid damage to fish and wildlife habitats, disturbance to fish and wildlife populations, and displacement of public use, surface entry for oil and gas exploration or development will not be allowed on Kachemak Bay or Fox River Flats critical habitat areas, except that geophysical surveys may be permitted if there is no surface impact and appropriate stipulations, including seasonal restrictions, preclude impact to fish and wildlife habitat, fish and wildlife populations, and public use of critical habitat areas.

Oil Drilling Rig Storage - To avoid damage to fish & wildlife habitats, disturbance to fish & wildlife populations, and displacement of public use of Kachemak Bay Critical Habitat Area, drilling rig storage will not be allowed in the Kachemak Bay Critical Habitat Area.

Hazardous Materials - Hazardous materials may not be stored or deposited in the critical habitat areas.

Other Uses - To protect fish and wildlife populations and their habitats in the critical habitat areas, the department may allow by permit only those activities compatible with the purposes for which the critical habitat areas were established, terms and standards of

5 AAC 95, and the goals and policies of the plan. Any activity that is not compatible with the purposes for which the critical habitat areas were established, terms and standards of 5 AAC 95, and the goals and policies of this plan will not be allowed.

2. SUMMARY: RELEVANT POLICIES OF KACHEMAK BAY STATE PARK

The full set of policies appears in the 1995 Management Plan for Kachemak Bay State Park and Kachemak Bay State Wilderness Area (ADNR 1995). Policies appear in two sections of the plan—the matrix table called “Guidelines for Appropriate Activities and Facilities within Land-Use Zones” (pp. 47-61), and Chapter 7, “Recommendations/ Park-Wide Policies.” Once the management plan was signed, both of these sections became enforceable park policy. These policies cover several categories, such as Resource Management, Visitor Use Management, Private Lands, Commercial Activities, Facility Development, and Trail Development.

The KBSP policies most likely to pertain to possible NERR operations are summarized below from the two policy sections of the park management plan. The compatibility of certain uses is sometimes dependent on where in park the activity would occur (i.e., either Natural, Wilderness, Cultural, or Recreational “zones”.) Note that most of the park is zoned Wilderness, including everything above 1,000 ft elevation, which implies the more restrictive management policies.

A. Excerpts from “Guidelines For Appropriate Activities” table:

- Research and management studies – Collection of data necessary for park management decision or to further science. Priority will be given to studies that contribute to the use and management of native fish and wildlife populations and their habitats. Will be encouraged when consistent with purposes of the park, under DPOR permit.
- Ecological monitoring – Activities or studies that address how fish and wildlife and their habitats are changing due to either human or natural causes. Compatible.
- Fish and wildlife inventories – Using acceptable inventory techniques to obtain information on species distribution, harvests, abundance, habitats, and population dynamics, to meet park management objectives. Compatible.
- Fisheries enhancement/restoration – Action taken to increase fishery stocks such as artificially incubating fish in streams, fertilizing lakes, and restoring fish access to spawning and rearing habitat. This type of activity is conditionally compatible, under DPOR permit. Structures may or may not be compatible depending on the designated zones (natural/wilderness/cultural/recreational) of the park.
- Wildlife habitat manipulation – Modification of habitat to increase target wildlife population. Includes both enhancement and restoration activities, such as prescribed burning and mechanical manipulation. This activity is **not** compatible, except when restoring habitat damaged by human impact.
- Wildlife introduction – introduction of non-indigenous or exotic species is **not** compatible.

- Wildlife stocking – Used to re-establish native species within their original breeding ranges. Compatible after adequate research and public hearings, to insure there will be no detrimental impact on other species or uses.
- Predator control – Relocation or removal of predators to favor other wildlife species or populations, and the protection of re-introduced species. **Not** compatible.
- Pest and disease control – The use of poisons or chemicals to control or eradicate insect pests and/or diseases to indigenous animals, plants or forests. Not compatible, except to control species not indigenous to the area, or for public safety reasons. Applies to herbicides as well.
- Fire suppression – Actions taken to suppress wildfire. May or may not be compatible, depending on park zone.
- Resource extraction – Removal of timber, gravel, rock, sand, minerals, plants or other park resources for commercial or personal use is **not** compatible.
- Commercial Uses – Many are not compatible, such as resource extraction, hydroelectric power, grazing, and commercial lodges (severely restricted). Others, such as aircraft operation, guiding, and utility crossings are allowed in specified park zones, managed through a park commercial use permit system. Commercial fishing is managed by ADF&G.

B. Excerpts From “Recommendations/ Park-Wide Policies” (Chapter 7):

Resource Management

- Research will generally be encouraged within the park. Proposals for associated facilities or developments such as research camps shall be reviewed by Alaska State Parks staff for approval. Issuance of applicable permits will be based on expected levels of impact within the zone in which the activity will occur.
- The park is included in the State Division of Forestry’s fire management plan, which recommends minimal wildland fire control efforts within the park, except where human life or development is at risk.
- The introduction of exotic species of plants or animals (those not indigenous to the area) should not be allowed. Proposals of this type will be reviewed by both the Kachemak Bay State Park Citizen’s Advisory Board and by the public.
- Activities that are incompatible with the park’s enabling legislation, regulations, and this management plan will be prohibited. Examples of compatible and incompatible uses are found in the “guidelines for activities within land use zones” in this plan.
- Because of fragile soil types, horses and other stock animals (except llamas), should not be allowed on foot trails.
- No animals should be tethered within 100 yards of freshwater streams or lakes.

- The parks will generally be left to natural environmental processes. Efforts to address insect infestation will focus on public safety and prevention. Campsites and other public use facilities will be periodically inspected for dead or dying trees. If spruce bark beetle infestation is detected in a dead or dying tree that also constitutes a hazard, it will be cut for firewood or felled, debarked, and removed for other uses. Standing or fallen trees that have been dead for two or more years that have **not** already been infested by spruce bark beetle, are not at risk of infestation. These trees have value to wildlife and will not be cut unless they are hazards. Trees cut for use during trail and facility construction projects, and green blowdown, should be debarked. Slash (waste) will be cut into two-foot long sections and scattered, to increase exposure to the sun.

Visitor Use Management

- Use of motor vehicles within Kachemak Bay State Park and Kachemak Bay State Wilderness Park, other than boats and aircraft, is prohibited. Although current state law allows aircraft use in Kachemak Bay State Park, aircraft use within Kachemak Bay State Wilderness Park is allowed only on saltwater and on saltwater beaches. Exceptions to these regulations may be allowed by the Director. If exceptions are made, specific landing sites will be designated, and use controlled by either park use or commercial activities permit. Permits will be routinely reviewed. If park values are threatened or conflict has developed between user groups, the permit may be revoked. Landing sites will be established by the Director in consultation with the Kachemak Bay State Park Citizens' Advisory Board.
- Hunting, trapping, and fishing are allowed in the park, subject to Alaska Department of Fish and Game regulations. Because of concern for public safety, the discharge of firearms is prohibited within one half mile of developed facilities.

Facility Development

- Recreational development and activities which provide access to or enhance enjoyment of the natural environment of state parks are encouraged, but the development of a state park must not diminish the value of park resources. Manipulations of the natural environment shall be limited to the immediate vicinity of development. Facilities must be carefully sited to avoid diminishing scenic values.
- All park facilities shall be sited, designed and constructed to minimize impact of the natural environment, and on the scenic or wilderness values of the area. Sensitive habitats such as goat kidding areas, and pristine viewsheds will be avoided. No facilities will be developed within 300 feet of raptor nests, or animal den sites.

APPENDIX D

Scoping Meeting Materials:

Meeting Announcements

Scoping Document

Agenda

Questionnaire Distributed

Meeting Summaries

Table of Additional Scoping Comments Received

Notice of Public Meeting

Proposed National Estuarine Research Reserve in Kachemak Bay

The Alaska Department of Fish and Game (ADF&G) and the National Oceanic and Atmospheric Administration (NOAA) will host two public meetings concerning the proposed National Estuarine Research Reserve in Kachemak Bay:

Tuesday, June 24, 1997, 6:30- 8:30 p.m.

Homer City Council Chambers
491 E. Pioneer Ave.
Homer, AK 99603

Thursday, June 26, 1997, 6:30- 8:30 p.m.

Seldovia Community Center
260 Seldovia Street
Seldovia, AK 99663

BACKGROUND: In May, 1997, NOAA officially accepted the State's nomination proposal to include Kachemak Bay as part of the National Estuarine Research Reserve System. Before the site becomes designated as part of the national system, however, the State must develop an Environmental Impact Statement (EIS) and an operations plan for the proposed reserve. These public scoping meetings are held early in that process.

PURPOSE OF THESE MEETINGS: 1) To solicit comments on significant issues relating to the preparation of an Environmental Impact Statement (EIS) for the proposed Kachemak Bay National Estuarine Research Reserve; and 2) to present an outline of the draft operations plan, which will address the research, monitoring, and education needs for the proposed reserve.

The meetings will include:

- An overview of the NERR program on a national level;
- A description of the process for developing these documents, present community involvement, and opportunities for future public input;
- Comments from the audience as described above under "Purpose."

Any interested person or group is encouraged to attend. For more information, contact Betsy Parry, ADF&G, 333 Raspberry Road, Anchorage, AK 99518, (907) 267-2341. Written comments on the scope or content of the EIS or operations plan may be sent in by July 15, 1997.

Notice of Public Meeting

Proposed National Estuarine Research Reserve in Kachemak Bay

The Alaska Department of Fish and Game (ADF&G) and the National Oceanic and Atmospheric Administration (NOAA) will host two public meetings concerning the proposed National Estuarine Research Reserve in Kachemak Bay:

Tuesday, June 24, 1997, 6:30-8:30 p.m.

Homer City Council Chambers
491 E. Pioneer Ave.
Homer, AK 99603

6/12/97
Homer NEWS

Thursday, June 26, 1997, 6:30-8:30 p.m.

Seldovia Community Center
260 Seldovia St.
Seldovia, AK 99663

BACKGROUND: In May, 1997, NOAA officially accepted the State's nomination proposal to include Kachemak Bay as part of the National Estuarine Research Reserve System. Before the site becomes designated, however, the State must develop an Environmental Impact Statement (EIS) and an operations plan for the proposed reserve. These public scoping meetings are held early in that process.

PURPOSE OF THESE MEETINGS: 1) To solicit comments on significant issues relating to the preparing of an Environmental Impact Statement (EIS) for the proposed Kachemak Bay National Estuarine Research Reserve; and 2) to present an outline of the draft operations plan, which will address the research, monitoring and education needs for the proposed reserve.

The meetings will include:

- An overview of the NERR program on a national level;
- A description of the process for developing these documents, present community involvement, and opportunities for future public input;
- Comments from the audience as described above under "Purpose."

Any interested person or group is encouraged to attend. For more information, contact Betsy Parry, ADF&G, 333 Raspberry Rd., Anchorage, AK 99518, (907) 267-2341. Written comments on the scope or content of the EIS or operations plan may be sent in by July 15, 1997.

June 12, 1997

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

National Estuarine Research Reserve System

AGENCY: Office of Ocean and Coastal Resource Management (OCRM),
National Ocean Service (NOS), National Oceanic and Atmospheric
Administration, Department of Commerce.

ACTION: Notice of public meetings and intent to prepare a draft
environmental impact statement

SUMMARY: In accordance with the National Environmental Policy Act and
with section 315 of the Coastal Zone Management Act of 1972, as
amended, the State of Alaska and the National Oceanic and Atmospheric
Administration (NOAA) intend to conduct public scoping meetings on the
proposed Kachemak Bay National Estuarine Research Reserve (NERR) to
solicit comments on significant issues related to the preparation of a
Draft Environmental Impact Statement (DEIS) and Draft Management Plan
(DMP). The DEIS and DMP will address research, monitoring, education
and resource protection needs for the reserve.

DATE AND TIME: Tuesday, June 24, 1997 at 6:30 p.m.

ADDRESSES: Homer City Hall, City Council Chambers, 491 East Pioneer
Avenue, Homer, Alaska 99663.

DATE AND TIME: Thursday, June 26, 1997 at 6:30 p.m.

ADDRESSES: Seldovia Community Center, Seldovia, Alaska 99603.

FOR FURTHER INFORMATION CONTACT: Glenn Seaman, Alaska Department of
Fish and Game, at (907) 267-2331, or Matt Menashes, Sanctuaries and
Reserves Division, Office of Ocean and Coastal Resources Management,
NOAA, at (301) 713-3132, ext. 165.

SUPPLEMENTARY INFORMATION: In May 1997, NOAA approved the nomination of
Kachemak Bay in Alaska as a proposed National Estuarine Research
Reserve. Research reserves provide natural coastal habitats as field
laboratories for baseline ecological studies and education programs.
Research and monitoring programs are designed to enhance scientific
understanding of the coastal environment and aid in resource management
decision making.

The Kachemak Bay NERR is proposed to be managed by the Alaska
Department of Fish and Game (ADFG), in cooperation with the Alaska
Department of Natural Resources (ADNR). The ADFG has statutory
authority to manage the state's critical habitat areas system, in which
Kachemak Bay is included. The ADNR has management authority over the
Kachemak Bay State Park, which is included in the proposed boundaries
for the Kachemak Bay NERR.

The ADFG has developed a preliminary draft management plan outline
for the NERR which identifies specific needs and priorities related to
research, monitoring, education, and resource protection at the
proposed site. It also outlines an administrative plan, volunteer
program and facilities development needs, public access, and visitor

use policies.

At the public meetings, ADFG and NOAA will provide a synopsis of the process for developing a DMP and will solicit comments on significant environmental issues that will be incorporated into a DEIS.

The public meetings will be held in Homer, Alaska, at the City Council Chambers, 491 West Pioneer Avenue, on June 24, 1997, from 6:30 p.m. to 8:30 p.m., and in Seldovia, Alaska, at the Seldovia Community Center, on June 26, 1997 from 6:30 p.m. to 8:30 p.m.

Interested parties who wish to submit suggestions, comments or substantive information regarding the scope or content of the proposed DEIS/DMP are invited to attend either of the above meetings. Parties who wish to respond in writing should do so by July 9, 1997, to Glenn Seaman, Habitat and Restoration Division, Alaska Department of Fish and Game, 333 Raspberry Road, Anchorage, AK 99518-1599, or Matthew Menashes, Sanctuaries and Reserves Division, NOAA, 1305 East-West Highway N/ORM2, Silver Spring, MD 20910.

Federal Domestic Assistance Catalog Number 11.420 (Coastal Zone Management) **Research Reserves**

Dated: June 3, 1997.

Nancy Foster,
Assistant Administrator, for Ocean Services and Coastal Zone
Management.

[FR Doc. 97-15000 Filed 6-6-97; 8:45 am]
BILLING CODE 3510-08-P

NOAA - ADFG

ENVIRONMENTAL REVIEW OF THE PROPOSED KACHEMAK BAY NATIONAL ESTUARINE RESEARCH RESERVE



The Proposed Action

The State of Alaska has nominated Kachemak Bay, the Fox River Flats, and uplands in Kachemak Bay State Park and State Wilderness Park for designation as a National Estuarine Research Reserve. The Bay and the Flats have previously been designated as State Critical Habitat Areas by the Alaska Legislature.

Designation of the proposed Kachemak Bay National Estuarine Research Reserve (NERR) would make the State eligible to receive Federal assistance to conduct research and ecological monitoring, develop educational programs, construct facilities, and participate in the programs of the National Estuarine Research Reserve System (NERRS) administered by the National Oceanic and Atmospheric Administration (NOAA).

Before the proposed Reserve can be designated, Federal law requires the development of an environmental impact statement (EIS) and a Reserve management-operation plan. The management-operation plan will contain a description of Kachemak Bay and its resources; the mission and goals of the Reserve; an administrative plan to operate the Reserve; a section which details existing resource protection authorities; a plan for habitat restoration, if applicable; a description and maps of the Reserve's boundaries; a plan to ensure public access to the Reserve; a plan for facility construction; a research and monitoring plan; an education, interpretation, and outreach plan; a volunteer plan; and the necessary Memoranda of Understanding to ensure the management-operation plan is adhered to.

Decision to be Made

The decision to be made by NOAA is whether or not to designate the proposed Kachemak Bay NERR. In addition, the Alaska Department of Fish and Game (ADF&G) and NOAA will work with the public, Federal, state, local and tribal governments, and other organizations to determine what the boundaries of the Reserve will be, how the Reserve will be managed, and the policies of the proposed Reserve. These decisions will be made through the analysis process and spelled out in the Reserve management-operation plan.

History of the Project

In October 1994, the State of Alaska expressed an interest in possible designation of a NERR. Governor Walter Hickel sent a letter to NOAA Assistant Administrator Stanley Wilson expressing the State's interest in the NERRS and requesting additional information and funding. In May 1995, Governor Tony Knowles reaffirmed the State's interest in a letter to NOAA Administrator D. James Baker, and identified ADF&G as the state agency responsible for coordinating the site selection and National Environmental Policy Act (NEPA) compliance processes.

ADF&G established a site selection committee which was comprised of scientists, coastal managers, and the University of Alaska, educational groups, and Federal and State agencies. In January 1996, ADF&G began an extensive public outreach process to notify the general public of the project and initiate a proposal process for the nomination of sites to be considered by the SSC. The ADF&G distributed a site proposal packet to all interested individuals and organizations. The packet informed the public, state and Federal agencies, and local governments that ADF&G was seeking proposals for sites to be considered for designation as a NERR. The packet included an information booklet on the NERRS, an explanation of the site selection process, and a proposal form. Open house meetings to explain the NERRS and the site selection process were held in Anchorage, Valdez, Cordova, Seward, Kenai, Kodiak, and Homer.

Two site nomination proposals were received from the public: the Copper River Delta and Kachemak Bay. The Copper River Delta proposal was later withdrawn. ADF&G prepared a profile of Kachemak Bay which was used by the site selection committee to rate the Kachemak Bay proposal against pre-established criteria. The Kachemak Bay proposal received 75 percent of the possible points. The SSC considered this a high rating, given the fact that not all the criteria are mutually exclusive and that a score of 100 percent is not possible.

On April 2, 1997, Governor Tony Knowles nominated the Kachemak Bay site to NOAA for possible designation as a NERR. NOAA reviewed the nomination proposal and approved the nomination on May 19, 1997, allowing the State and NOAA to proceed to develop the required EIS and Reserve management-operation plan.

Status

NOAA has issued a Notice of Intent to prepare a Draft Environmental Impact Statement (DEIS) for the proposed Kachemak Bay National Estuarine Research Reserve. NOAA and ADF&G have begun to examine the issues that will be considered in the DEIS and the draft management-operation plan (DMP) for the proposed Reserve. The DEIS/DMP will provide the necessary information for NOAA to make an informed decision on whether or not to designate the proposed Reserve, and for both NOAA and ADF&G to determine the appropriate direction on how the Reserve will be managed.

Process

ADF&G will collect data and analyze the potential positive and negative impacts of designating the proposed Kachemak Bay NERR on the natural and human components of the environment.

Three tentative alternatives have been identified by NOAA and ADF&G for consideration. These alternatives are not considered final, but a "starting block" for the public to provide their views and comments. The alternatives currently identified are:

1. Do not designate the proposed Kachemak Bay NERR. This is considered the "no action" alternative.
2. Designate the proposed Kachemak Bay NERR. The State of Alaska maintains that designation of the proposed Kachemak Bay NERR would have no effect on current management authorities because existing plans provide adequate controls of land and water use activities occurring within the proposed NERR. The State, believes, however, that designation would bring additional research, monitoring, and educational programs to the Kachemak Bay area that will assist the State in effectively managing these areas.
3. Designate the Kachemak Bay NERR with different boundaries, possibly including additional or fewer areas.

Issues

Many comments have been generated while discussing the proposed Kachemak Bay NERR. As expected, comments have reflected a wide variety of issues. To date, the issues identified include:

1. What are the specific environmental problems in the Kachemak Bay area?
2. What are the boundaries of the Reserve?
3. Will Federal funds be available?
4. What is the operating budget of a typical NERR?
5. Will the Reserve be co-managed by the Federal government?
6. Have changes in any State's resource regulations ever come about because of the results of research conducted in a NERR?
7. Could the Reserve's research program identify the cause or factors contributing to the decline of certain commercially viable species?
8. If the Reserve is designated, are there certain types of activities that might be restricted?
9. What is the significance of the boundaries of the Reserve?
10. How flexible are the boundaries once the Reserve is designated?
11. How will priorities be established for certain research projects relative to others?
12. To what extent will the Reserve benefit the local community?
13. How will the local community be involved in the administration of the Reserve?

You are vital to the NEPA process!
Please visit the proposed Kachemak Bay
NERR Web page at:
[http://www.state.ak.us/local/akpages/
FISH.GAME/habitat/geninfo/nerr](http://www.state.ak.us/local/akpages/FISH.GAME/habitat/geninfo/nerr)

Tentative Outline of the Draft Environmental Impact Statement and Draft Management Plan

The outline below provides a starting point for discussions on what issues and items should or should not be addressed in the DEIS/DMP. The sections which meet DEIS requirements are noted as "DEIS," and the sections which meet DMP requirements are noted as "DMP."

Cover Sheet	DEIS	3.5.4 Restoration plan.	DMP
Summary		3.5.5 Resource manipulation plan.	DMP
Table of Contents		3.5.6 Public access plan.	DMP
1.0 Introduction	DMP	3.5.7 Facilities/construction plan.	DMP
1.1 The National Estuarine Research Reserve System		3.5.8 Research and monitoring plan.	DMP
1.2 Proposed mission and goals of the Reserve		3.5.9 Education/interpretation/outreach plan.	DMP
2.0 Purpose of and Need for Action	DEIS	3.5.10 Volunteer plan.	DMP
2.1 Explain who wants to do what; where how and when they want to do it; and why.		4.0 The Affected Environment.	DEIS
2.2 Explain any other documents that influence the scope of this EIS.		The current Kachemak Bay resources. This is the baseline environment for analytical purposes.	
2.3 Explain the decision to be made and identify any other agencies involved in this analysis.		4.1 Biogeographic zone analysis.	DMP
2.4 Summarize the scoping and explain the significant issues.		4.2 Physical aspects.	DEIS
2.5 List Federal permits, licenses, and entitlements necessary to implement the project.		4.2.1 Geology.	DEIS
2.6 Preview the remaining chapters of your DEIS/DMP.		4.2.2 Biology and habitats (ecology).	DEIS
3.0 Alternatives Including the Proposed Action	DEIS	4.2.3 Human environment/impact.	DEIS
3.1 Explain that this chapter describes the alternatives (potential actions) and summarizes the environmental consequences of the alternatives.		4.2.4 Cultural aspects.	DEIS
3.2 Describe the alternatives, including the proposed action and no action.		[Note 1: Resources include all physical, biological, social, and economic features of the human environment.]	
3.3 Explanation of how these alternatives represent a range of reasonable alternatives.		[Note 2: Significant issues (resources) should receive more extensive discussion than nonsignificant issues.]	
3.4 Comparison of alternatives by summarizing their environmental consequences.		5.0 Environmental Consequences.	DEIS
3.5 Identify the preferred alternative.	DEIS	5.1 General impacts.	DEIS
3.5.1 Administration plan.	DMP	5.2 Specific impacts.	DEIS
3.5.2 Existing resource protection.	DMP	5.3 Unavoidable adverse environmental or socio-economic impacts.	DEIS
3.5.3 Boundaries/acquisition plan (if applicable)	DMP	5.4 Relationship between the proposed action on the environment and the maintenance and enhancement of long-term productivity.	DEIS
		5.5 Irreversible and irretrievable commitment of resources.	DEIS
		5.6 Possible conflicts between the proposed action and the objectives of Federal, State, regional, local, and native land use plans, policies and controls for the areas concerned.	DEIS
		6.0 List of Preparers.	DEIS
		References.	
		Appendices.	

Public Input

The NEPA process for the proposed Kachemak Bay National Estuarine Research Reserve is now underway. Public input in the NEPA process is emphasized early on in the scoping phase and during public comment periods. Your input strengthens the NEPA process. Issues raised during public scoping help shape the issues in the EIS. Comments received during comment periods are responded to and included in the final document. Watch the Federal Register, the proposed KBNERR Web Page (see below), and area newspapers for availability of the draft EIS as well as announcements of future public hearings.

To be most helpful, you should provide your comments on the issues to be addressed in the DEIS by July 15, 1997. Send any written comments on the available comment card to:

Sanctuaries and Reserves Division
Attn: Proposed Kachemak Bay NERR
National Oceanic and Atmospheric Administration
1305 East-West Highway N/ORM2
Silver Spring, Maryland 20910

or

Habitat and Restoration Division
Attn: Proposed Kachemak Bay NERR
Alaska Department of Fish and Game
333 Raspberry Road
Anchorage, Alaska 99518-1599

Additional opportunities for public input will be announced, but please do not hesitate to contact ADFG or NOAA at any time. We are very interested in learning if there are issues that we have not identified that should be addressed.

EIS Timeline

Public Scoping Meetings
June 24 and 26

Release of Published DEIS
Target Date: Mid-October

45 Day Comment Period

Formal Public Hearing

Release of Published FEIS

30 Day Comment Period

Record of Decision
whether or not to
designate the proposed Reserve

ADF&G's proposed Kachemak Bay NERR Web Page is located at:
<http://www.state.ak.us/local/akpages/FISH.GAME/habitat/geninfo/nerr>

For more information on the
National Estuarine Research Reserve System, write:
Estuarine Reserve Branch
NOAA Sanctuaries and Reserves Division
1305 East-West Highway N/ORM2
Silver Spring, Maryland 20910



Kachemak Bay National Estuarine Research Reserve (KBNERR) Public Scoping Meetings
June 24 & 26, 1997

Purpose of the Meeting: To determine the scope of issues to be addressed in an environmental impact statement (EIS) and for identifying significant issues related to the proposed Kachemak Bay NERR management-operation plan.

1. Introductions
2. Description of the National Estuarine Research Reserve System
3. Review of site selection process up to this point
4. Proposal for KBNERR, Overall parameters:
 - Promote **research** and **education** about estuary functions and resources
 - Non-regulatory
 - Maintain existing uses
 - Open process
 - State-owned lands, no private lands.
5. Process from site "nomination" to "designation" as a NERR:
 - A. NEPA compliance process
 - "Scoping" allows for public input on Draft EIS.
 - Tentative completion of Draft EIS is September 1997.
 - Public hearings to follow.
 - Decision to proceed to Final EIS after public review period.
 - B. Draft management-operations plan
 - Input-gathering meetings with local groups to determine research and education priorities for the proposed reserve.
 - The public may review drafts of the plan chapters as they are developed this summer by checking our Web Site (<http://www.state.ak.us/local/akpages/FISH.GAME/habitat/geninfo/nerr>).
 - Draft management-operations plan will be **published together** with the DEIS this fall; same public review period.
 - Revisions based on review comments.
 - Final EIS and management-operation plan produced; tentative completion date September 1998.
 - If final document accepted by NOAA, site designated as "KBNERR."
6. Overview of Draft EIS/operation plan outline contained in the scoping document
7. Public Comments on issues to be considered

ATTENDANCE AT PUBLIC SCOPING MEETINGS

June 24, 1997, Homer City Council Chambers, 6:30 – 8:30 pm

Attendees that signed in include:

Lloyd Shade
Carmen Field
Carla Klinka
Lois R. Irvin
Stan Eller
Randi Somers
Ray Highsmith
Ted Otis
Jim and Nancy Hemming
Bruce Willard
Glenn Green
Marla McPherson
Joel Cooper
Susan Saupe
Emilie Otis
Cleve Cowles

June 26, 1997, Seldovia Community Center, 6:30 – 8:30 pm

Attendees:

Susan Mumma
Susan Saupe
Sandy and Jere Murray
Mike Geagel
Ray Highsmith
Steve Hackett
Karl Pulliam

**PUBLIC SCOPING COMMENTS FOR THE PROPOSED KACHEMAK BAY
NATIONAL ESTUARINE RESEARCH RESERVE**

*Please use this form or a similar format/attachment to provide us with your input for the draft
Environmental Impact Statement (EIS) or draft Management-Operation Plan.
(PLEASE PRINT CLEARLY).*

NAME:

MAILING ADDRESS:

WHAT IS THE BEST WAY TO CONTACT YOU? GIVE PHONE AND/OR E-MAIL
ADDRESS, AS APPROPRIATE (FYI: You can keep abreast of updated NERR information at
the Web Site noted below):

HOW DO YOU USE KACHEMAK BAY OR AREAS SURROUNDING THE BAY?

IS THERE A PARTICULAR AREA IN OR AROUND THE BAY THAT YOU ARE MOST
INTERESTED IN?

WHAT ARE YOUR CONCERNS?

RATIONALE (YOUR REASONS FOR MAKING THE ABOVE COMMENTS):

WHAT ELSE WOULD YOU LIKE US TO STUDY OR CONSIDER IN THE DRAFT EIS OR
MANAGEMENT-OPERATION PLAN?

Please submit your comments to the address on the reverse or via e-mail to
betsyp@fishgame.state.ak.us by July 15, 1997. Updated information on meeting times and draft
documents for the proposed Kachemak Bay NERR may now be found under ADF&G's Web Site
at <http://www.state.ak.us/local/akpages/FISH.GAME/habitat/geninfo/nerr>.

Meeting Summaries for Kachemak Bay National Estuarine Research Reserve (KBNERR)
Public Scoping Meetings

Homer, AK June 24, 1997
Seldovia, AK June 26, 1997

Staff included: Glenn Seaman, Betsy Parry, and John Olson of the Alaska Department of Fish and Game (ADF&G), and Matt Menashes and Randy Schneider (Randy attended the Homer meeting only) of the National Oceanic and Atmospheric Administration (NOAA). Approximately 20 members of the public attended the Homer meeting; eight in Seldovia.

The meeting began with introductions and description of the national system, and a history of the site selection up to this point (See meeting agenda elsewhere in this Appendix). ADF&G reiterated that the state's parameters for the proposal are: to promote research and education about estuary functions resources and uses; that the Reserve be non-regulatory; existing uses will be maintained; that there be an open process in developing the plans; and that no private lands are proposed for inclusion in the Reserve. Matt Menashes then went over the scoping phase of the EIS process, for which these meetings are being held. The ultimate decision for the EIS process is whether or not to designate a research reserve in Kachemak Bay. At present ADF&G is beginning to draft the EIS and management-operations plan for the proposed reserve. Staff then reviewed the proposed timeline and outline for this document. Public involvement up to this point was described (e.g., the local subcommittees with research and education interests), as well as opportunities for continued participation in developing the plans, for instance by reviewing the draft materials posted on our Web page.

The following is a summary of the questions and comments raised by the public during these meetings. Please see also the Site Nomination Proposal (ADF&G, March 1997) for a similar listing of questions from the public meetings held in Homer and Seldovia on December 10 and 11, 1996.

HOMER MEETING:

Question: What is the continued funding source for this program?

Response: The base funding is Federal money with 30% state match. Various other funding sources are normally pursued beyond this (e.g., in Alaska, another possible funding source is the *Exxon Valdez* Trustees Council).

Question: Will there be a research library?

Response: Yes, making research information accessible to everyone is part of the overall plan.

Question: Isn't this just duplication of existing programs?

Response: No, the reserve will serve a coordination role. University of Alaska-Fairbanks professor Ray Highsmith explained that, for instance, ADF&G does stock assessments, but not basic research on the ecosystem. We need overall research. Also, this program would set up a monitoring program that no one group can do on its own. Establishing a NERR will help bring in funding; give longevity to research interests; coordinate research operations.

Comment: There's new interest in mining at Red Mountain, which might use Jakolof Bay as a staging area (although the stream from this area drains into Windy Bay, on the opposite side of the mountains from the proposed Reserve).

Response: We'll look into it, although any operations in Jakolof Bay would have to follow the policies of the Kachemak Bay Critical Habitat Area, already in effect.

Question: When did NERRS start?

Response: 25 years ago, South Slough Oregon was first NERR designated. Now at 22 reserves, the system has evolved to a more education/research focus since that time.

Question: Can other reserves help us that may have faced the same issues?

Response: Yes, in regards to organizing volunteers, finding funding, etc.

Question: Will there be a centralized database?

Response: Yes, we want to identify and consolidate the existing data on Kachemak Bay. Recently, the GIS ecological characterization/database project was funded for Kachemak Bay. Also, NERRS has established a national monitoring program for all the units of the National Estuarine Research Reserve System; an established program of abiotic and biotic measurements will be taken at all reserves; this monitoring information will be housed at the NERRS Central Data Management Office in Georgetown, SC., in addition to the local area.

Question: What does this mean where it says the areas "are protected?"

Response: NOAA makes sure that proper protections are in place so that long term research is possible. In the case of the proposed KBNERR, existing authorities are already in place (e.g., Critical Habitat Area and the state park), so they already "are protected."

Concern: There is a limited source of volunteers in the Homer area for educational purposes. We may already be "overvolunteered."

Response: The NERR does not propose to replace what is already being done; we hope to make the use of volunteers more efficient by identifying and networking the pool of volunteers in various educational capacities.

Question: Has a state ever withdrawn a site from the NERR system?

Response: Yes, in Hawaii. The reserve there was so remote that no education or research was really being done. When the reserve ceases to meet the needs of the area, maybe it should end.

Question: How do NERR groups secure funding?

Response: Some reserves bring in anywhere from 2 to 5 times as much funding as they receive from NOAA. "Friends" groups aid in raising money, as well as the National Sanctuaries and Reserves Foundation. Reserves often receive their own research and educational grants. Also, once you start collecting data, you attract more research interest. There is starting to be some national/international interest in using the NERR system of sites.

Question: Will you rank types of research?

Response: Yes, research priorities will be established by the reserve staff and advisory groups once the reserve is designated.

Question: How might you incorporate newly available parcels in Beluga Slough into the Reserve?

Response: You can either identify the process for including new areas in the management plan now, or (the harder way) expand the boundary by amending the management plan later. We aim to do the former.

Comment: You mentioned that the Reserve would seek to establish a method for communicating current research to the public (e.g., newsletter, public lecture series). Be aware that there are good and bad examples of research. You would want a filter to make sure that only valid information is distributed to the public—perhaps only that research published in refereed journals?

Response: Good point. That issue will probably be worked out by the education and research committees. We can ask how other reserves handle that issue.

SELDOVIA MEETING:

Question: Why isn't more of the Kachemak Bay watershed included in the reserve boundary? For instance, general state lands? Native lands? Federal lands?

Response: The state supported nomination of this site as proposed—including only publicly owned lands, no private lands. Yes, there are general state lands at the head of the Bay, but this area was not included in the proposed reserve because the state exercises significantly less control over general state lands and waters than on legislatively-designated areas. In order to develop the NERR as a non-regulatory program, it was decided to include only the legislatively-designated state lands in the proposed boundaries.

Other considerations included: (1) A research reserve is limited in the percentage of federal land within its borders. (2) The benefits of adding these large tracts of land did not clearly outweigh the more cumbersome administrative agreements that ADF&G would have to pursue to accommodate the different types of state lands and the Federal Wildlife Refuge. (3) NOAA assures us that the placement of the NERR boundaries does not preclude NERR-related research and education efforts from taking place anywhere in the watershed.

Question: Will a private party or agency be able to add land to the Reserve in the future if they so desire?

Response: Yes, there are possibilities for this, but there is no need to explore them in detail at this time since they are not essential to the reserve as proposed.

Question: How can we establish a partnership with universities? For instance, the Kasitsna Bay Lab (of University of Alaska-Fairbanks, UAF) is already here. Should we include the lands of the Lab within the boundaries of the Reserve? Would it be advantageous to both the Lab and the reserve to put it in the plan now?

Response: Yes, that may be a good idea. The Lab lands are owned by NOAA, the same agency that administers the NERR program. We will look into this idea.

Question: Are you including input from all populations that depend on personal/subsistence use of Kachemak Bay's resources, i.e. both native and non-native users?

Response: We have sought the participation of native groups in developing our draft management-operations plan, and will expand this representation to include a non-native personal use representative as well.

Concern: We need public outreach with the stewardship message--aimed at both tourists and residents, e.g., how they use or abuse their intertidal life.

Response: We will aim to disseminate a common educational message on multiple levels.

Question: What educational facilities could we have in Seldovia? For example, a little station with slides/video? A tide pool map? Kiosks? Could we tie educational messages in with the Otterbahn trail or public tours of the Kasitsna Bay lab?

Response: Establishing a reserve can help you make these things happen.

Comment: The Kasitsna Bay lab should be listed from the beginning as a "field station" partnership with the NERR. But there may be opportunities in other towns and villages around the Bay. Need to go into these communities to facilitate matching up the right people and facilities. We have 8000 residents around the Bay, but we need both to target and learn from visitors from elsewhere as well.

Scoping Comments received (Other than oral questions and comments at the public meetings)

Who submitted	What concerns	How submitted	Date
Stephanie Thornton, NOAA office of Ocean and Coastal Resource Management	Spill response strategies and contingency planning—include coordinating mechanism between ADF&G and Anchorage NOAA HAZMAT	letter to Anchorage NOAA Hazmat Chief	2/6/97
Gary Cadd, staff person to Rep. Mark Hodgins (Kenai)	He thinks Navy Seals did maneuvers in upper K. Bay 2 years ago with day craft and perhaps explosions. Did it harm area? Is there a public safety issue with unexploded mines (as there was in Kenai)?	Telephone	6/30/97
Joan Dunn, Seldovia resident	That access to locals will be limited by NERR; that certain areas are being over-harvested (e.g., Jakolof Bay)	Questionnaire	7/7/97
US Minerals Management Service, Anchorage	They want to cooperate on marine environmental studies of mutual interest; consider the MMS OCS leasing program in our cumulative effects assessment.	Letter	7/9/97
Marla McPherson, Homer resident	1) Be compatible with subsistence values; involve native villages. 2) Build facilities that “fill the gaps” or answer needs not met by other research and education facilities. 3) What role do gyres play in the productivity of the Bay and distribution of pollutants? 4) Impact of the development and use of Homer spit on the entire watershed; develop recommendations for reducing impacts.	Questionnaire	6/24/97
Steve Hackett, Seldovia and Homer, Cook Inlet Keeper.	Conflicting uses of a variety of limited natural resources in and around the Bay. Develop creative ways to use all potential players around K. Bay in operating the NERR.	Questionnaire	6/26/97
Susan Mumma, Seldovia resident	Need studies about: over-use by local groups at low tides; non-regulation of some species by native and other groups; examine subsistence use by natives and others; need education at a local level for Seldovia population and tourist trade. We need a local station for education so that attitudes can change and improve.	Questionnaire	6/26/97

Scoping Comments received (Other than oral questions and comments at the public meetings)

Who submitted	What concerns	How submitted	Date
Nina Faust, Homer resident	<p>Concerned about the health of the Bay as a whole—important to approach research and education of Kachemak Bay as an ecosystem. Water quality: what is the effect of activities such as bails from log piles on the spit, boat repair yards as in Mud Bay or Russian villages; logging; bilge pumping; dumping of sewage from recreational boats; effects of oil and gas in Upper Inlet; road building; mining. Global warming & El Niño. Centralize Kachemak Bay data on research and education. The productivity of well-used tide pool areas to obtain baseline data to see if educational use is affecting them. Volunteers: consider joint training of volunteers for all groups doing educational programs to form a “pool” to be drawn on by educational groups. Consider using student conservation corps for summer internships (could get grants to cover costs).</p>	Questionnaire	6/24/97
Robert Halpin, Halibut Cove aquatic farmer	<p>Assess the benefit of farm sites as “artificial reefs” that enhance habitat. Completely analyze the impact of farm sites in Jakolof Bay—very concerned about the biological threshold or carrying capacity; it’s very crowded with aquaculture. Other: water quality baseline studies; plankton assessments; user impacts.</p>	Questionnaire	6/19/97

APPENDIX E

Inholdings within the Critical Habitat Areas and State Park

Table E-1: Summary of Non-State Inholdings within the Proposed NERR Portion of Kachemak Bay State Park/Wilderness Park (i.e., within the bay watershed on Figure 2).

General Location	Number of Non-State Parcels	Total Acreage
Cottonwood Creek (park unit on N. shore of Bay)	7	101.5
Bear Cove	47	173.3
Glacier Spit/Grewingk	1	34.9
Halibut Cove through Peterson Peninsula	222	683.5
Islands	36	234.8
Shore from China Poot to Sadie	27	668.9
Sadie Cove	26	190.0
Hazel Lake	3	23.2
Tutka Bay	15	570.0
Total	384	2680.1

Source: Kenai Peninsula Borough and Alaska Department of Natural Resources

Table E-2. Kachemak Bay/Fox River Flats Critical Habitat Area Leases/Inholdings¹

	<u>Location</u>	<u>Type</u>	<u>ADL#</u>	<u>Party</u>	<u>Acreage</u>
1.	T4S/R10W/S20+	Grazing Lease	24501	Fox R. Cattlemen Assoc.	~400 in CHA
2.	T4S/R10W/S20+	Grazing Lease	17484	Kachemak Selo	~80 in CHA
3.	T4S/R10W/S29	Private Land	USS3358	Kachemak Selo	
4.	T4S/R10W/S21	Private Land	USS3003	John Nazarian	
5.	T4S/R10W/S21-22	Private Land	USS4725	John Nazarian	
6.	T4S/R10W/S35	Tidelands Lease	222657	Alaska Power Authority	512
7.	T5S/R10W/S20	Tidelands Sale	17552	Douglas B. Baily	0.1
8.	T5S/R10W/S29	Tidelands Sale	23985	Theodore Pedersen	5
9.	T5S/R15W/S8+	Offsh. Prosp. Pmt. Appln.	323349	Bob Moorman	
	T5S/R15W+	Offsh. Prosp. Pmt. Appln.	330480-83	Aspen Exp. Corp.	
10.	T6S/R13W/S11	Tidelands Lease	32058	Lee A. Cole	10
11.	T6S/R13W/S11	Tidelands Lease	209326	Northern Enterprises	1
12.	T6S/R13W/S21&22	Management Right	220606-7	ADOT/PF	15
13.	T6S/R13W/S36	Tdld. Lease (Exp. 7/2/44)	224560	Homer, City of	11.9
14.	T7S/R13W/S1	Class 1 Pref. Right	19361	Mary Jane Hillstrand	1.7
15.	T7S/R11W/S5	Tidelands Sale	18455	John Bingham Mitchell	0.5
16.	T7S/R11W+	Public Easement	25909	Homer Elec. Assoc., Inc.	
17.	T7S/R11W/S6	Mngmnt. Agreement (ILMA)	32063	ADOT/PF	3
18.	T7S/R11W/S6&7	Shore Fishery Lease	201311	Alvin Taeschner	0.1
19.	T7S/R11W/S6	Tidelands Lease Appln.	214964	Stephen H. Nathanson	0.5
20.	T7S/R11W/S6	Tidelands Lease Appln.	218228	Theodore A. Richards	0.3
21.	T7S/R11W/S6	Shore Fishery Lease Appln.	224059	D. L. Veerhusen-Shapiro	
22.	T7S/R11W/S6&7	Shore Fishery Lease Appln.	225022	Lynn D. Bennett	
23.	T7S/R11W/S6&7	Private Easement Appln.	225482	Lee M. Ricketts	
24.	T7S/R11W/S6	Tdlds. Dis./Pref. Rights	2461	Francis A. Panchott	1.1
25.	T7S/R12W/S11	Tidelands Permit Appln.	225516	Seldovia Native Assoc.	2.8
26.	T7S/R11W/S6	Tdlds. Dis./Pref. Rights	22648	Warren H. Sherwood	0.4
27.	T7S/R11W/S6	Tdlds. Dis./Pref. Rights	3298	Alvin Taeschner	0.9
28.	T7S/R11W/S6	Tdlds. Dis./Pref. Rights	18012	Ted Richards	0.7
29.	T7S/R11W/S6	Tidelands Disposal	22466	D. K. & J. A. Rutzebeck	0.5
30.	T7S/R11W/S6	Tidelands Disposal	21327	Lee M. Ricketts	0.5
31.	T7S/R12W/S15	Private Easement Appln.	211154	Michael Peter McBride	0.001
32.	T7S/R12W/S1	Public Easement Appln.	218554	Marian Beck	
33.	T7S/R12W/S1	Tidelands Lease Appln.	221470	Vivian MacInnes	
34.	T7S/R12W/S1	Tidelands Permit	224724	Gary P. Mandzik	1
35.	T7S/R12W/S1	Cl. 1 Pref. Right (4 lots)	17578	Clement Tillion	
36.	T7S/R13W+	Public Easement	43341	Homer Elec. Assoc., Inc.	3.1
37.	T8S/R13W/S21	Tdlds Lease (Exp. 11/2/35)	73331	Luther L. Paine	0.09
38.	T8S/R13W/S21	Tdlds Lease (Exp. 11/2/35)	73332	Robert P. Pfeil	0.3
39.	T8S/R13W/S36	Mngmnt. Agreement (ILMA)	200098	ADF&G	6.8
40.	T8S/R13W/S22	Tidelands Lease Appln.	216321	Jon L. Osgood	0.5
41.	T8S/R13W/S22	Tidelands Lease Appln.	224666	E. W. & R. E. Kianich	1
42.	T8S/R13W/S22	Tidelands Lease Appln.	224692	John P. Vaughan	1
43.	T8S/R13W/S33	Tidelands Lease Appln.	224702	Ernest & Janice Suoja	<1
44.	T8S/R13W/S20	Shore Fishery Lease Appln.	225083	Sera Baxter	
45.	T8S/R14W+	Public Easement	61867	Homer Elec. Assoc., Inc.	
46.	T8S/R14W/S29&32	Mngmnt. Agreement (ILMA)	63789	ADOT/PF	32.7
47.	T8S/R14W/S24	Public Easement	222315	Jack A. Hepworth	0.23
48.	T8S/R14W/S31	Public Easement Appln.	224683	Seldovia, City of	2
49.	T8S/R14W/S1	Shore Fishery Lease Appl.	225141	Warren R. Brown	
50.	T9S/R14W/S6	Public Easement	65751	Homer Elec. Assoc., Inc.	1.1
51.	T9S/R14W/S6	Cl. 1 Pref. Right	22406	Claire Pease, et. al.	1
52.	T9S/R15W/S1	Shore Fishery Lease Appln.	225420	Alexandra B. Chartier	

¹ Reproduced from the Kachemak Bay and Fox River Flats Critical Habitat Areas Management Plan, ADF&G, 1993.

APPENDIX F

1989 Cooperative Agreement between ADF&G and DNR/DPOR for the Critical Habitat Areas and Kachemak Bay State Park

COOPERATIVE AGREEMENT
between the
Alaska Department of Fish and Game,
Habitat Division
and the
Alaska Department of Natural Resources,
Division of Parks and Outdoor Recreation

This cooperative agreement is designed to assist the agencies in cooperatively managing the area of overlap of the Kachemak Bay State Park and the Kachemak Bay Critical Habitat Area. The agreement pertains to the responsibilities of the Alaska Department of Fish and Game, Habitat Division and the Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation within Kachemak Bay and in no way alters existing authorities and responsibilities either between or within the agencies.

WHEREAS, the Alaska Department of Fish and Game (ADF&G) has a legislatively mandated responsibility to manage the Kachemak Bay Critical Habitat Area (AS 16.20.590); and

WHEREAS, the Alaska Department of Natural Resources (ADNR) has a legislatively mandated responsibility to manage the Kachemak Bay State Park (AS 41.21.130-143); and

WHEREAS, portions of Kachemak Bay are designated as both state critical habitat area and state park; and

WHEREAS, it is desirable to have maximum consistency between state park and state critical habitat area regulation and administration; and

WHEREAS, it is the intention of the ADNR/Division of Parks and Outdoor Recreation (DPOR) and the ADF&G/Habitat Division to coordinate administrative efforts in managing overlapping portions of the state park and state critical habitat area;

NOW, THEREFORE, the parties hereto agree as follows:

THE DEPARTMENT OF NATURAL RESOURCES, DIVISION OF PARKS AND OUTDOOR RECREATION AGREES:

1. To consult with ADF&G, through the Habitat Division, in the development of a management plan for Kachemak Bay State Park.
2. To seek the advice of ADF&G, through the Habitat Division, on regulations and major park policies or decisions which apply to the portions of Kachemak Bay which are designated both state park and state critical

habitat area. These include the management of mariculture, sport fishing charters or other commercial operations, and the development of park facilities when habitat values or use conflicts can reasonably be anticipated to be affected.

3. To monitor tideland and water use activities, to report any special area permit violations or other resource management problems within the area covered by this agreement promptly to the Habitat Division, and to coordinate compliance operations where appropriate.
4. To review and comment on state critical habitat area management plans, regulations, major policies, or decisions and permits for that portion of the critical habitat area which is in the state park.
5. Comply with the notice and, if applicable, ADF&G special area permit requirements of AS 16.20.520-530 and 5 AAC 95 for park developments, uses, and activities in the critical habitat area.

THE DEPARTMENT OF FISH AND GAME, THROUGH ITS HABITAT DIVISION, AGREES:

1. To consult with DPOR in the development of a management plan for the state critical habitat area.
2. To monitor multiple use activities, to report state park permit violations or other resource management problems in the portion of Kachemak Bay which is a state park to DPOR, and to coordinate compliance operations where appropriate.
3. To review and comment on state park management plans, regulations, major policies or decisions, and permits for the portion of the state park which is in the critical habitat area.
4. To seek the advice of DPOR on regulations and major policies or decisions which apply to the portion of the critical habitat area that is in the state park (such as mariculture, habitat enhancement activities, introduction of non-native species or placement of structures or facilities).
5. To apply for a park use permit when required under 11 AAC 18.010 for developments or uses and activities in the state park.

THE DEPARTMENT OF NATURAL RESOURCES AND DEPARTMENT OF FISH
AND GAME MUTUALLY AGREE:

1. Nothing in this cooperative agreement alters the obligation of DPOR and the ADF&G resource management divisions (Wildlife Conservation; Sport Fish; Commercial Fisheries; Fisheries Rehabilitation, Enhancement, and Development; and Subsistence) to work with each other on issues regarding management of fish and wildlife populations and harvest.
2. Nothing in the cooperative agreement shall obligate any party in the expenditure of funds or for future payments of money in excess of appropriations authorized by law.
3. Each party agrees that it will be responsible for its own acts and the results thereof, and each party shall not be responsible for the acts of the other party, and each party agrees it will assume to itself risk and liability resulting in any manner under this agreement.
4. Each party will comply with all applicable laws, regulations, and executive orders relative to equal employment opportunity.
5. Nothing herein is intended to conflict with federal, state, or local laws or regulations. If there are conflicts, the laws and regulations shall prevail; this agreement will be amended at the first opportunity to bring it into conformance with conflicting laws or regulations.
6. Either the ADNR or the ADF&G may terminate its participation in this cooperative agreement by providing to the other party notice in writing 60 days in advance of the date on which its termination becomes effective.
7. A free exchange of research and information between agencies is encouraged and is necessary to attain the management goals of the state.
8. To follow permit consultation procedures that are in compliance with state regulations governing notice and review periods.
9. Amendments to this agreement may be proposed by either agency and shall become effective upon approval of both agencies.

10. The effective date of this agreement shall be from the date of final signature.

Don W. Collinsworth

Don W. Collinsworth
Commissioner
Alaska Department of Fish and Game

1-11-89

Date

Lennie Gonsuch

Lennie Gonsuch
Commissioner
Alaska Department of Natural Resources

7/24/89

Date

APPENDIX G

Organizations and Individuals who have Written Letters of Support for the Proposed KBNERR

**APPENDIX G:
Organizations & Individuals Who Have Written
Letters of Support for the Proposed KBNERR**

A. DRAFT ENVIRONMENTAL IMPACT STATEMENT/DRAFT MANAGEMENT PLAN

The following list includes all letters received on the Draft Environmental Impact Statement/Draft Management Plan for the proposed research reserve since the start of the March 1998 review period. All comments are in support of reserve designation.

City of Homer, Letter and Resolution 98-14

Jack Cushing, Mayor

Kenai Peninsula Borough

Mike Navarre, Mayor

Homer Chamber of Commerce

Ann Koskovich, President

Seldovia Native Association

Michael Beal, CEO

Alaska Association of Oil and Gas

Marilyn Crockett, Asst. Executive Director

Cook Inlet Regional Citizens Advisory Council

Captain Glen Glenzer, President

Alaska Department of Natural Resources

Jane Angvik, Director, Division of Land

Jim Stratton, Director, Division of Parks and Outdoor Recreation

Kachemak Bay Conservation Society

Joel Cooper, President

National Audubon Society, Alaska Office

John W. Schoen, Executive Director

Kachemak Bay Campus of the University of Alaska

Carol Swartz, Director

Cook Inlet Keeper

Bob Shavelson, Executive Director

University of Alaska Fairbanks

Thomas C. Shirley, Ph.D, School of Fisheries and Oceans

Center for Alaskan Coastal Studies

Jon Peterson, President

U.S. Department of the Interior, Office of Environmental Policy and Compliance

Willie R. Taylor, Director

Environmental Protection Agency

Richard B. Parkin, Manager, Geographic Implementation Unit

Minerals Management Service

John Goll, Regional Director

U.S. Department of Commerce, National Oceanic and Atmospheric Administration

Steven Pennoyer, Administrator, Alaska Region

Additional Letters from Individuals

Ms. Nina Faust

Ms. Sandy Murray

Public Hearing Testimony in Support of Designation: Mr. Jere Murray, Mr. Karl Pulliam, Ms. Caren Graupe, Mr. Will Files, Mr. Jon Peterson, Mr. Bob Shavelson, Mr. Mike O'Meara (testimony not enclosed).

B. PRE-DEIS/DMP LETTERS IN SUPPORT OF RESERVE DESIGNATION

The list below includes all letters in support of establishing a NERR in Kachemak Bay *before* Governor Knowles' April 1997 nomination of Kachemak Bay to NOAA.

2/4/97-NERR AD-HOC WORKING GROUP JOINT LETTER OF SUPPORT

Alaska Coastal Journeys

Conrad & Carmen Field, Co-owners

Homer Chamber of Commerce

Dennis Novak, President

Alaska Kayak Adventures

Kevin Bell, President

Kachemak Bay Campus, UAA

Carol Swartz, Director

Alaska Maritime National Wildlife Refuge

John Martin, Refuge Manager

Kachemak Bay Conservation Society

Nina Faust, Co-President

Alaska Shellfish Growers Association

Roger Painter, President

Kachemak Heritage Land Trust

Barbara Seaman, Director

Center for Alaskan Coastal Studies

Jane Middleton, Director

Kachemak Shellfish Growers Association

Robert Halpin, President

Coble Geophysical Services

Geoff Coble, President

Pratt Museum

Vicki Shirado, Director

Cook Inlet Keeper

Bob Shavelson, Director

Tech Connect, Inc.

Will Files, President

1/3/97-JOINT LETTER OF SUPPORT:

Alaska Center for the Environment
Kevin Harun, Executive Director

Alaska Clean Water Alliance
Gershon Cohen, Executive Director

Alaska Wildlife Alliance
Cindy Lowry, Executive Director

Friends of Glacier Bay
Bill Brown, Staff

Tongass Conservation Society
Wayne Weihing, Staff

Sierra Club Legal Defense Fund
Eric Jorgenson, Managing Attorney

Northern Alaska Environmental Center
Sylvia Ward, Executive Director

Sitka Conservation Society
Anita Lange, Staff

Southeast Alaska Conservation Council
Buck Lindekugel, Staff Attorney

GENERAL LETTERS OF SUPPORT, 1996

USDOI – FWS Alaska Maritime National Wildlife Refuge
John L. Martin, Refuge Manager

USDOI - Kenai National Wildlife Refuge
Robin L. West, Refuge Manager

USDOC – NOAA - National Weather Service
Alaska River Forecast Center
Gerald J. Nibler, Hydrologist-in-Charge

Sea Grant Marine Advisory Program
D. Doug Coughenower, Professor, Fisheries

Homer Chamber of Commerce
Mary Ann Rowe, President

City of Homer Resolution 96-106
Mayor Jack Cushing

Kenai Peninsula Borough
Mike Navarre, Mayor

Kenai Peninsula Borough and Resolution 96-046
Gaye J. Vaughn, CMC/AAE

Kachemak City and Resolution 96-03
C. Neil McArthur, Mayor

Kachemak Bay State Park Citizens Advisory Board
Willy Dunne, Chair

Alaska Wilderness Recreation & Tourism Association
Steven Behnke, Executive Director

Tanaina Elementary School
Barbara A. Johnson, Teacher

The Peterson Bay Company
Robert G. and Diane M. Hartley

Alaska Marine Conservation Council
Dorothy Childers, Executive Director

Kachemak Shellfish Growers Association
Robert R. Halpin, President, KSMA

Coble Geophysical Services
Geoff Coble, Manager

Kachemak Bay Campus Advisory Board
Maggie Corbisier, President

Kachemak Bay Conservation Society
Nina Faust, President

Center for Alaskan Coastal Studies
Will Files, President, Board of Directors

Homer High School
Richard F. Patton, Principal

Mr. Mike Gratz

Mr. William Dunne

Mr. Glenn Akins

Mr. Scott Thomas

Mr. Mike Alexis

APPENDIX H

Specific Boundaries of Areas Included in the Reserve:

- **Fox River Flats and Kachemak Bay CHAs,**
- **Kachemak Bay State Park/Wilderness Park**
- **Parcels Owned by the City of Homer**

Alaska Statutes: Excerpts from Titles 16 and 41

Sec. 16.20.580. Fox River Flats Critical Habitat Area established. The following described area is established as the Fox River Flats Critical Habitat Area:

(1) Township 4 South, Range 10 West, Seward Meridian:

Section 20 SE 1/4 (not tide or submerged land)

Section 21 S 1/2 (not tide or submerged land)

Section 22 S 1/2

Section 23 S 1/2 (not tide or submerged land)

Sections 25 - 29

Sections 33 - 36;

(2) Township 4 South, Range 9 West, Seward Meridian:

Section 30 W 1/2 (not tide or submerged land).

Sec. 16.20.590. Kachemak Bay Critical Habitat Area established. The following described area is established as the Kachemak Bay Critical Habitat Area:

- (1) Township 4 South, Range 10 West, Seward Meridian (only tide and submerged land and waters);
- (2) Township 5 South, Range 10 West, Seward Meridian (only tide and submerged land and waters);
- (3) Township 5 South, Range 11 West, Seward Meridian (only tide and submerged land and waters);
- (4) Township 5 South, Range 12 West, Seward Meridian (only tide and submerged land and waters);
- (5) Township 6 South, Range 11 West, Seward Meridian (only tide and submerged land and waters);
- (6) Township 6 South, Range 12 West, Seward Meridian (only tide and submerged land and waters);
- (7) Township 6 South, Range 13 West, Seward Meridian (only tide and submerged land and waters);
- (8) Township 6 South, Range 14 West, Seward Meridian (only tide and submerged land and waters);
- (9) Township 7 South, Range 11 West, Seward Meridian (only tide and submerged land and waters);
- (10) Township 7 South, Range 12 West, Seward Meridian (only tide and submerged land and waters);
- (11) Township 7 South, Range 13 West, Seward Meridian (only tide and submerged land and waters);
- (12) Township 7 South, Range 14 West, Seward Meridian (only tide and submerged land and waters);
- (13) Township 8 South, Range 12 West, Seward Meridian (only tide and submerged land and waters);
- (14) Township 8 South, Range 13 West, Seward Meridian (only tide and submerged land and waters);
- (15) Township 8 South, Range 14 West, Seward Meridian (only tide and submerged land and waters);
- (16) Township 9 South, Range 14 West, Seward Meridian (only tide and submerged land and waters);
- (17) Township 9 South, Range 15 West, Seward Meridian (only tide and submerged land and waters east of a line from Anchor Point to Point Pogibshi);
- (18) Township 5 South, Range 15 West, Seward Meridian (including all tide and submerged land and waters east of a line from Anchor Point to Point Pogibshi);
- (19) Township 6 South, Range 15 West, Seward Meridian (including all tide and submerged land and waters east of a line from Anchor Point to Point Pogibshi);
- (20) Township 7 South, Range 15 West, Seward Meridian (including all tide and submerged land and waters east of a line from Anchor Point to Point Pogibshi);
- (21) Township 8 South, Range 15 West, Seward Meridian (including all tide and submerged land and waters east of a line from Anchor Point to Point Pogibshi);
- (22) Township 9 South, Range 12 West, Seward Meridian (only tide and submerged land and waters).

Sec. 41.21.131. Kachemak Bay State Park established.

(a) The presently state-owned land and water, and all that acquired in the future by the state, lying within the parcels described in this section are designated as the Kachemak Bay State Park. In order to protect and preserve this land and water for its unique and exceptional scenic value, the park is established and shall be managed as a scenic park. The land and water lying within the following described parcels is reserved from all uses incompatible with its primary function as a scenic park and is assigned to the department for control, development, and maintenance:

- (1) Township 5 South, Range 10 West, Seward Meridian:
Chugachik Island Sections 31 - 32;
- (2) Township 5 South, Range 11 West, Seward Meridian
Section 2: Lot 1, excluding Tract A
Section 3: Lots 1 - 8, SW1/4NE1/4, S1/2NW1/4, N1/2SW1/4
Section 4: Lots 1 - 4, S1/2N1/2, SE1/4, E1/2SW1/4
Section 8: E1/2NE1/4, SE1/4
Section 9: Lots 1 and 2, NW1/4NE1/4, NE1/4NW1/4, W1/2NW1/4, N1/2NE1/4SW1/4, SW1/4NE1/4SW1/4, excluding Lot 6
Section 10: Lot 1
Section 16: Lot 1
Section 17: Lots 1, 3, 4, NW1/4SW1/4, S1/2NW1/4
Section 18: Lot 4, SE1/4, E1/2NE1/4
Section 19: Lots 1 - 6, NW1/4NE1/4, NE1/4NW1/4
Section 20: Lot 1
Sections 24 - 25, excluding tide and submerged land within the Kachemak Bay Critical Habitat Area
Section 26: SE1/4, excluding tide and submerged land within the Kachemak Bay Critical Habitat Area
Section 35, excluding tide and submerged land within the Kachemak Bay Critical Habitat Area
Section 36;
- (3) Township 6 South, Range 11 West, Seward Meridian;
- (4) Township 7 South, Range 11 West, Seward Meridian
Sections 1 - 4
Section 5: N1/2
Sections 7 - 36;
- (5) Township 7 South, Range 12 West, Seward Meridian
Section 12, except N1/2NE1/4
Section 13
Sections 19 - 36;
- (6) Township 7 South, Range 13 West, Seward Meridian
Sections 25 - 26
Sections 35 - 36;
- (7) Township 8 South, Range 11 West, Seward Meridian
Sections 1 - 8
Section 9: N1/2
Section 10: N1/2
Section 11: N1/2

- Section 12: N1/2
- Sections 17 - 18;
- (8) Township 8 South, Range 12 West, Seward Meridian;
- (9) Township 8 South, Range 13 West, Seward Meridian
 - Sections 1 - 2
 - Sections 10 - 14
 - Section 15: E1/2
 - Section 23: N1/2 and SE1/4
 - Sections 24 - 25
 - Section 26: E1/2
 - Section 35: E1/2
 - Section 36;
- (10) Township 9 South, Range 8 West, Seward Meridian
 - Section 2: W1/2
 - Section 3 - 10
 - Sections 15 - 22
 - Sections 27 - 34;
- (11) Township 9 South, Range 9 West, Seward Meridian;
- (12) Township 9 South, Range 10 West, Seward Meridian
 - Sections 10 - 15
 - Sections 22 - 27
 - Sections 34 - 36;
- (13) Township 9 South, Range 12 West, Seward Meridian
 - Sections 1 - 6
 - Section 8: NE1/4
 - Sections 9 - 12
 - Section 13: N1/2
 - Section 14: N1/2;
- (14) Township 9 South, Range 13 West, Seward Meridian
 - Sections 1 - 2;
- (15) Township 10 South, Range 8 West, Seward Meridian
 - Sections 4 - 8
 - Sections 17 - 19;
- (16) Township 10 South, Range 9 West, Seward Meridian
 - Sections 1 - 4
 - Sections 10 - 15
 - Sections 22 - 24.
- (b) The following public domain land shall be selected by the state, and classified as scenic park land and designated as part of Kachemak Bay State Park immediately upon receipt of management authority by the state:
 - (1) Township 6 South, Range 10 West, Seward Meridian: W1/2;
 - (2) Township 7 South, Range 10 West, Seward Meridian: W1/2;
 - (3) Township 8 South, Range 10 West, Seward Meridian
 - Section 6
 - Section 7: N1/2.

(c) Land lying within the parcels described in (a) and (b) of this section upon which there are valid entries or upon which there are valid applications for lease filed under AS 38.05 before May 9, 1970, is excepted from (a) and (b) of this section. However, if any land excepted under this subsection is subsequently relinquished to the state, it shall be included as part of Kachemak Bay State Park.

Sec. 41.21.132. Incompatible uses. The commissioner shall designate by regulation incompatible uses within the boundaries of the Kachemak Bay State Park in accordance with the requirements of AS 41.21.130 - 41.21.142, and those incompatible uses designated shall be prohibited or restricted, as provided by regulation.

Sec. 41.21.133. Discharge of firearms. [Repealed, sec. 2 ch 126 SLA 1984]. Repealed or Renumbered

Sec. 41.21.134. Purchase authorized; eminent domain prohibited. The commissioner may acquire, by purchase in the name of the state, title to or interest in real property lying within the boundaries of the Kachemak Bay State Park. The state may not acquire by eminent domain privately owned land for inclusion in the Kachemak Bay State Park.

Sec. 41.21.140. Kachemak Bay State Wilderness Park established. (a) The presently state-owned land and water, and all that acquired in the future by the state, lying within the parcels described in this section are designated as the Kachemak Bay State Wilderness Park. In order to protect and preserve this land and water for its unique and exceptional wilderness value, the park is established and shall be managed as a wilderness park. The land and water lying within the following described parcels is reserved from all uses incompatible with its primary function as a wilderness park and is assigned to the department for control and maintenance:

- (1) Township 8 South, Range 11 West, Seward Meridian
 - Section 9: S1/2
 - Section 10: S1/2
 - Section 11: S1/2
 - Section 12: S1/2
 - Sections 13 - 16
 - Sections 19 - 36;
- (2) Township 9 South, Range 10 West, Seward Meridian
 - Sections 1 - 3;
- (3) Township 9 South, Range 12 West, Seward Meridian
 - Section 7
 - Section 8: S1/2 and NW1/4
 - Section 13: S1/2
 - Section 14: S1/2
 - Sections 15 - 36;
- (4) Township 9 South, Range 13 West, Seward Meridian
 - Section 11: NE1/4
 - Sections 12 - 13;
- (5) Township 10 South, Range 9 West, Seward Meridian
 - Sections 5 - 7;

- (6) Township 10 South, Range 10 West, Seward Meridian;
- (7) Township 10 South, Range 11 West, Seward Meridian;
- (8) Township 10 South, Range 12 West, Seward Meridian;
- (9) Township 11 South, Range 10 West, Seward Meridian;
- (10) Township 11 South, Range 11 West, Seward Meridian;
- (11) Township 11 South, Range 12 West, Seward Meridian

Sections 1 - 10

Section 11: W1/2 and E1/2

Sections 12 - 17

Sections 21 - 24.

(b) The following public domain land shall be selected by the state, and classified as wilderness park land and designated as part of Kachemak Bay State Park immediately upon receipt of management authority by the state:

- (1) Township 8 South, Range 10 West, Seward Meridian

Sections 4 - 5

Section 7: S1/2

Sections 8 - 9

Sections 16 - 21

Sections 28 - 33;

- (2) Township 9 South, Range 10 West, Seward Meridian: W1/2;

- (3) Township 9 South, Range 11 West, Seward Meridian.

Sec. 41.21.141. Certain land excepted. Land lying within the parcels described in AS 41.21.140 upon which there are valid entries or upon which there are valid applications for leases filed under AS 38.05 before March 9, 1972 or that is withdrawn for or selected by Native village or regional corporations under 43 U.S.C. 1610, 1611 and 1613 (P.L. 92-203, sec. 11, 12 and 14 of the Alaska Native Claims Settlement Act), is excepted from AS 41.21.140 . However, if any land excepted under this subsection is subsequently relinquished to the state, it shall be included as part of Kachemak Bay State Wilderness Park.

**City of Homer parcels that are included within the KBNERR boundary,
corresponding to Figures 3 and 4 in the FEIS/FMP:**

Region	Kenai Peninsula Borough Parcel #	Also Known As
EVOS-purchased parcels on the spit (shown on Figure 4)	181-020-03	Walter Dufour Sub Lot 1
	181-020-04	Walter Dufour Sub Tract A
	181-020-05	Gov. Lot 3, north of Homer Spit Road
	181-020-06	Gov. Lot 3, south of Homer Spit Road
	181-020-09	Gov. Lot 5, north of Homer Spit Road
	181-020-10	Gov. Lot 5, south of Homer Spit Hwy
	181-020-14	Walter Dufour Sub Tract B
Tidelands from Bidarki Creek around the spit to Miller's Landing (Fig. 4)	181-070-01	Tidelands around both sides of the spit itself
	177-280-01	Tidelands along coastline, NW of spit
	175-280-01	Remaining tidelands along coastline NW to Bidarki Creek
Beluga Slough parcels (Figure 3)	177-140-06	38 acres purchased with EVOS funding (NW ¼ SE ¼ exc. Homer Bypass Rd.)
	177-140-10	Bishop's Beach Park (POR N1/2 SW ¼ SW ¼)
	177-140-16	S ½ NE ¼ SW ¼, excluding wastewater treatment plant

APPENDIX I

Kachemak Bay Species Lists:

1. Fish, Invertebrate, Mammal and Plant List for Kachemak Bay
2. Birds of Kachemak Bay

Table I-2. Species List of Fish, Invertebrates, Mammals and Plants for Kachemak Bay
(derived from Stanek, 1985, with input from Jere Murray and others)

Finfish

Black Rockfish	<i>Sabastes melanops</i>
Capelin	<i>Mallotus villosus</i>
Chinook (King) Salmon	<i>Oncorhynchus tshawytscha</i>
Chum (Dog) Salmon	<i>Oncorhynchus keta</i>
Coho (Silver) Salmon	<i>Oncorhynchus kisutch</i>
Dolly Varden	<i>Salvelinus malma</i>
Giant Wrymouth	<i>Delolepis gigantea</i>
Halibut	<i>Hippoglossus stenolepis</i>
Kelp Greenling (Sea bass)	<i>Hexagrammos decagrammus</i>
Lingcod	<i>Ophiodon elongatus</i>
Pacific Cod	<i>Gadus macrocephalus</i>
Pacific Herring	<i>Clupea harengus</i>
Pacific Tomcod	<i>Microgadus proximus</i>
Pink (Humpback) Salmon	<i>Oncorhynchus gorbuscha</i>
Rainbow Trout (Steelhead)	<i>Oncorhynchus mykiss</i>
Red Irish Lord	<i>Hemilepidotus hemilepidotus</i>
Rock Flounder	<i>Lepidopsetta bilineata</i>
Sand Lance	<i>Ammodytes hexapterus</i>
Sockeye (Red) Salmon	<i>Oncorhynchus nerka</i>
Spiny Dogfish	<i>Squalus acanthias</i>
Starry Flounder	<i>Platichthys stellatus</i>
Unidentified Rockfishes	<i>Scorpaenidae</i> spp.
Unidentified Sculpins	<i>Cottidae</i> spp.
Walleye Pollock (Whiting)	<i>Theragra chalcogramma</i>
Wolf-eel	<i>Anarrhichthys ocellatus</i>
Yellow-bellied Irish Lord	<i>Hemilepidotus jordani</i>
Yelloweye (Red Snapper)	<i>Sebastes ruberrimus</i>

Invertebrates

Clams	
Butter Clam	<i>Saxidomus giganteus</i>
Surf Clam	<i>Spisula</i> sp.
Horse Clam	<i>Tresus capax</i>
Littleneck Clam	<i>Protothaca staminea</i>
Eastern soft-shelled Clam	<i>Mya arenaria</i>
Razor Clam	<i>Siliqua patula</i>
Other clams	<i>Macoma</i> sp., <i>Humilaria</i> sp., <i>Entodesma</i> sp.
Weathervane Scallop	<i>Pecten caurinus</i>
Nuttall's Cockle	<i>Clinocardium nuttallii</i>
Blue Mussel	<i>Mytilus edulis</i>
Horse Mussel	<i>Modiolus modiolus</i>

Black Mussel	<i>Musculus niger</i>
Limpets	<i>Acmaea</i> spp., <i>Notoacmaea</i> spp., <i>Collisella</i> spp.
Octopus	<i>Octopus dofleini</i>
Snail	
Dogwinkle	<i>Nucella emarginata</i> ; <i>N. lamellosa</i>
Hairy Triton	<i>Fusitriton oregonensis</i>
Periwinkle	<i>Littorina sitkensis</i>
Other	<i>Siphonaria</i> sp., <i>Neptunea</i> sp., <i>Voluptharpa</i> sp.
Nudibranch	<i>Hermisenda crassicornis</i>
Chiton	
Hairy	<i>Mopalia ciliata</i>
Black Katy	<i>Katharina tunicata</i>
Giant Chiton (Gumboot)	<i>Cryptochiton stelleri</i>
Other	<i>Schizoplax</i> spp., <i>Tonicella</i> spp.
Crabs	
Hermit	<i>Pagurus</i> spp., <i>Elassochirus</i> spp.
Horse	<i>Telemessus cheirsgonus</i>
Decorator	<i>Oregonia gracilis</i>
Dungeness	<i>Cancer magister</i>
King	<i>Paralithodes camtschatica</i>
Pigmy Cancer	<i>Cancer oregonensis</i>
Tanner	<i>Chioncetes bairdi</i>
Other	<i>Hyas</i> spp., <i>Pugettia</i> spp.
Sea stars	
Broad six-rayed	<i>Lepasterias hexactis</i>
Troschel's	<i>Evasterias troschelii</i>
Ochre	<i>Pisaster ochraceus</i>
Sunflower	<i>Pycnopodia helianthoides</i>
Spiny sun	<i>Crossaster papposus</i>
Pacific henricia	<i>Henricia leviuscula</i>
Daisy brittle star	<i>Ophiopholis aculeata</i>
Basket star	<i>Gorgonocephalus caryi</i>
Other	<i>Orthasterias</i> sp., <i>Dermasterias imbricata</i>
Sea Cucumbers	<i>Holothuroidea</i> spp., <i>Cucumaria</i> spp.
Green Sea Urchins	<i>Strongylocentrotus droebachlensis</i>
Red urchin	<i>Strongylocentrotus franciscanus</i>
Green-spined sand dollar	<i>Echinarachnius parma</i>
Barnacles	
Acorn	<i>Balanus glandula</i>
Thatched	<i>Balanus cariosus</i>
Other	<i>Balanus</i> spp., <i>Chthamalus dalli</i>
Shrimp	<i>Pandalidae</i> spp.
Non-pandalid shrimp	<i>Crangon</i> sp., <i>Spandalopsis</i> sp., etc.
Sponges	<i>Halichondria panicea</i> , <i>Esperiopsis rigida</i> , <i>Mycale</i> sp.

Moon Jellyfish
 Lion's Mane Jellyfish
 Anenomes
 Giant Green
 Northern Red
 Other
 Other
 Other
 Corals
 Sea Pen
 Tunicates/Sea Squirts
 Polychaete worms
 Other worms
 Bryozoans
 Amphipods

Marine Mammals

Beluga Whale
 Dall's Porpoise
 Gray Whale
 Harbor Porpoise
 Harbor Seal
 Humpback Whale
 Killer Whale
 Minke Whale
 Sea Otter
 Steller's Sea Lion

Land Mammals

Beaver
 Black Bear
 Brown Bear
 Coyote
 Dall Sheep
 Grey Wolf
 Little Brown Bat
 Lynx
 Marmot
 Marten
 Masked Shrew
 Meadow Vole
 Mink
 Moose
 Mountain Goat
 Northern red-backed Vole

Aurelia labiata
Cyanea capillata

Anthropluera xanthogrammica
Tealia crassicornis
Metridium senile
Cribrinopsis similis
Anthropleura spp.

Ptilosarcus gurneyi
Halocynthia aurantium, *Distalpia occidentalis*
Scolecopsis sp. and others

Delphinapterus leucas
Phocoenoides dalli
Eschrichtius robustus
Phocoena phocoena
Phoca vitulina
Megaptera novaeangliae
Orcinus orca
Balaenoptera acutorostrata
Enhydra lutris
Eumetopias jubatus

Castor canadensis
Ursus americanus
Ursus arctos
Canis latrans
Ovis dalli
Canis lupus
Myotis lucifugus
Felix lynx
Marmota caligata
Martes americana
Sorex cinereus
Microtus pennsylvanicus
Mustela vison
Alces alces
Oreamnos americanus
Clethrionomys rutilus

Porcupine
Pygmy Shrew
Red Fox
Red Squirrel
River Otter
Snowshoe Hare
Weasel (Ermine)
Wolverine

Erethizon dorsatum
Microsorex hoyi
Vulpes vulpes
Tamiasciurus hudsonicus
Lutra canadensis
Lepus americanus
Mustela erminea
Gulo gulo

Plants

Arrowgrass
Beach Ryegrass (roots)
Bethlehem Star
Blueberries
Chamomile
Cow Parsnip
Crowberry
Currents
Devil's Club
Elderberry
Ferns (various)
Fireweed
High-bush Cranberry
Indian Paintbrush
Indian Rice
Lavender Daisy
Low-bush Cranberry
Lupine
Marsh marigold
Mountain Ash
Monkshood
Nagoonberry
Nettle
Plantain (Goose Tongue)
Pond lily
Roses
Salmonberry
Sedges
Serviceberry
Sitka Spruce
Sourdock
Sweet Coltsfoot
Trailing Raspberry
Tundra Rose
Wild Chive (Onion)

Triglochin maritimum
Elymus arenarius
Moneses uniflora
Vaccinium ovalifolium
Matricaria matricarioides
Heracleum lanatum
Empetrum nigrum
Ribes spp.
Echinopanax horridum
Sambucus spp.

Epilobium angustifolium
Viburnum edule
Castilleja spp.
Fritillaria camschatcensis
Aster subspicatus
Vaccinium spp. or *Oxycoccus* spp.
Lupinus spp.
Caltha palustris
Sorbus sitchensis
Aconitum delphinifolium
Rubus chamaemorus
Urtica gracilis
Plantago maritima
Nuphar polysepalum
Rosa spp.
Rubus spectabilis
Carex spp.
Amelanchier sp.
Picea sitchensis
Rumex arcticus
Petasites hyperboreus
Rubus pedatus
Potentilla fruticosa
Allium schoenoprasum

Wild Parsley
Yarrow

Lingusticum scoticum
Achillea borealis

Seaweed

Black Seaweed
Rockweed
Bull Kelp
Red Algae
Kelp

Porphyra perforata
Fucus gardneri
Nereocystis leutkeana
Rhodomenia , *Palmeri* spp.
Laminaria, *Alaria*, *Nereocystis*, *Agarum* spp.

Trees

Alder
Balsam Poplar/Cottonwood
Paper Birch
Sitka Spruce
Willows
Western Hemlock

Alnus crispa
Populus balsamifera
Betula papyrifera
Picea sitchensis
Salix spp.
Tsuga heterophylla

Table I-2. Birds of Kachemak Bay, Alaska (Point Pogibshi to Anchor River)
(from Erikson & West, 1992)

Species	Latin Name	Spring	Summer	Fall	Winter	Status
Red-throated Loon	<i>Gavia stellata</i>	C	U	C	U	r/m b
Pacific Loon	<i>Gavia pacifica</i>	C	U	C	C	wr/m
Common Loon	<i>Gavia immer</i>	C	C	C	C	r B
Yellow-billed Loon	<i>Gavia adamii</i>	R	R	R	R	wr
Horned Grebe	<i>Podiceps auritus</i>	C	U	C	C	r/m b
Red-necked Grebe	<i>Podiceps grisegena</i>	C	C	C	C	r/m B
Northern Fulmar	<i>Fulmarus glacialis</i>	U	C	C		sr
Pink-footed Shearwater			R			v
Flesh-footed Shearwater				R		v
Sooty Shearwater	<i>Puffinus griseus</i>	U	C	C		v
Short-tailed Shearwater	<i>Puffinus tenuirostris</i>	C	AC	C		v
Forked-tailed Storm-petrel	<i>Oceanodroma furcata</i>	R	U	U		sr
Leach's Storm-petrel	<i>Oceanodroma leucorhoa</i>			R		sr
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	U	U	U	R	r b
Brandt's Cormorant	<i>Phalacrocorax penicillatus</i>		R			v
Pelagic Cormorant	<i>Phalacrocorax pelagicus</i>	C	C	C	C	r B
Red-faced Cormorant	<i>Phalacrocorax urile</i>	C	C	C	R	r B
Great Blue Heron	<i>Ardea herodias</i>	R	R	R	R	v
Tundra Swan	<i>Cygnus columbianus</i>	U		U		m
Trumpeter Swan	<i>Cygnus buccinator</i>	U	R	U		sr/m B
Greater White-fronted Goose	<i>Anser albifrons</i>	U	U	U		m
Snow Goose	<i>Chen caerulescens</i>	R		U		m
Emperor Goose	<i>Chen canagica</i>				AC	v
Brant	<i>Branta bernicla</i>	U		R		m
Canada Goose	<i>Branta canadensis</i>	C	U	C		m
Green-winged Teal	<i>Anas crecca</i>	C	C	C	R	sr B
Mallard	<i>Anas platyrhynchos</i>	C	C	C	C	r/m B
Northern Pintail	<i>Anas acuta</i>	C	U	C		sr/m B
Blue-winged Teal	<i>Anas discors</i>	R		R		m
Northern Shoveler	<i>Anas chlypeata</i>	C	U	U	R	m
Gadwall	<i>Anas strepera</i>	U	R	R		m
Eurasian Wigeon	<i>Anas penelope</i>	U				v
American Wigeon	<i>Anas americana</i>	C	C	C		sr/m B
Common Pochard	<i>Aythya ferina</i>	AC				v
Canvasback	<i>Aythya valisineria</i>	U		AC		m
Redhead	<i>Aythya americana</i>	U		R		m
Ring-necked Duck	<i>Aythya collaris</i>	R				m
Tufted Duck	<i>Aythya fuligula</i>	AC				v
Greater Scaup	<i>Aythya marila</i>	C	C	C	C	r/m B
Lesser Scaup	<i>Aythya affinis</i>	R				m
Common Eider	<i>Somateria mollissima</i>	C	C	C	C	r B
King Eider	<i>Somateria spectabilis</i>	U		R	R	wr
Steller's Eider	<i>Polysticta stelleri</i>	R		C	C	wr
Spectacled Eider	<i>Somateria fischeri</i>				AC	v
Harlequin Duck	<i>Histrionicus histrionicus</i>	C	C	C	C	r B

Species	Latin Name	Spring	Summer	Fall	Winter	Status
Oldsquaw	<i>Clangula hyemalis</i>	C	R	C	C	wr
Black Scoter	<i>Melanitta nigra</i>	C	C	C	C	r/m B
Surf Scoter	<i>Melanitta perspicillata</i>	C	C	C	C	r/m
White-winged Scoter	<i>Melanitta fusca</i>	C	C	C	A	r/m
Common Goldeneye	<i>Bucephala clangula</i>	C	C	C	C	r B
Barrow's Goldeneye	<i>Bucephala islandica</i>	C	C	C	C	r/m B
Bufflehead	<i>Bucephala albeola</i>	C	R	C	C	r/m b
Common Merganser	<i>Mergus merganser</i>	C	C	C	C	r B
Red-breasted Merganser	<i>Mergus serrator</i>	U	U	U	U	r B
Osprey	<i>Pandion haliaetus</i>	R	R	R		m
Bald Eagle	<i>Haliaeetus leucocephalus</i>	C	C	C	A	r B
Northern Harrier	<i>Circus cyaneus</i>	U	U	U	R	sr B
Sharp-shinned Hawk	<i>Accipiter striatus</i>	C	C	C	C	r B
Northern Goshawk	<i>Accipiter gentilis</i>	C	C	C	C	r B
Swainson's Hawk	<i>Buteo swainsoni</i>	R		R		m
Red-tailed Hawk	<i>Buteo jamaicensis</i>	U	U	U		sr B
Rough-legged Hawk	<i>Buteo lagopus</i>	U	U	U		sr B
Golden Eagle	<i>Aquila chrysaetos</i>	R	R	R		sr b
American Kestrel	<i>Falco sparverius</i>	R	R	R		m
Merlin	<i>Falco columbarius</i>	R	R	R	R	m
Peregrin Falcon	<i>Falco subbuteo</i>	U	R	R	R	m
Gyr Falcon	<i>Falco rusticolus</i>	R	R	R	R	wr
Ring-necked Pheasant		R	R	R	R	r B
Spruce Grouse	<i>Dendragapus canadensis</i>	C	C	C	C	r B
Willow Ptarmigan	<i>Lagopus lagopus</i>	C	C	C	C	r B
Rock Ptarmigan	<i>Lagopus mutus</i>	C	C	C	C	r B
White-tailed Ptarmigan	<i>Lagopus leucurus</i>	U	U	U	U	r b
American Coot	<i>Fulica americana</i>			AC		v
Sandhill Crane	<i>Grus canadensis</i>	C	C	C		sr/m B
Black-bellied Plover	<i>Pluvialis squatarola</i>	C	C	C		m
Lesser Golden Plover	<i>Pluvialis dominica</i>	C	C	C		m
Semipalmated Plover	<i>Charadrius semipalmatus</i>	C	C	C		sr/m B
Killdeer	<i>Charadrius vociferus</i>		R	R		v
Black Oystercatcher	<i>Haematopus bachmani</i>	R				sr
Greater Yellowlegs	<i>Tringa melanoleuca</i>	C	C	C		sr B
Lesser Yellowlegs	<i>Tringa flavipes</i>	U	U	U		sr b
Solitary Sandpiper	<i>Tringa solitaria</i>	R	R	R		m
Wandering Tattler	<i>Heteroscelus incanus</i>	C	C	C		sr
Spotted Sandpiper	<i>Actitis macularia</i>	C	C	C		sr B
Whimbrel	<i>Numenius phaeopus</i>	C	C	C		sr/m
Bristle-thighed Curlew	<i>Numenius tahitiensis</i>	R	R			v
Hudsonian Godwit	<i>Limosa haemastica</i>	R				m
Bar-tailed Godwit	<i>Limosa lapponica</i>	U				m
Marbled Godwit	<i>Limosa fedoa</i>	AC				m
Ruddy Turnstone	<i>Arenaria interpres</i>	C	R	R		m
Black Turnstone	<i>Arenaria melanocephala</i>	C	U	U		m
Surfbird	<i>Aphriza virgata</i>	C	C	C		sr/m
Red Knot	<i>Calidris canutus</i>	R	R	R		m
Sanderling	<i>Calidris alba</i>	U	U	U	AC	m
Semipalmated Sandpiper	<i>Calidris pusilla</i>	C	C	C		m

Species	Latin Name	Spring	Summer	Fall	Winter	Status
Western Sandpiper	<i>Calidris mauri</i>	A	A	C		m
Rufous-necked Stint	<i>Calidris ruficollis</i>		AC			v
Least Sandpiper	<i>Calidris minutilla</i>	C	U	U		sr/m b
Baird's Sandpiper	<i>Calidris bairdii</i>	R	R	R		m
Pectoral Sandpiper	<i>Calidris melanotos</i>	U	U	C		m
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>			U		m
Rock Sandpiper	<i>Calidris pilocnemis</i>	U		U	C	wr
Dunlin	<i>Calidris alpina</i>	C	U	U	R	m
Stilt Sandpiper	<i>Calidris himantopus</i>			AC		m
Short-billed Dowitcher	<i>Limnodromus griseus</i>	U	U	U		m
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>	C	C	C		sr/m
Common Snipe	<i>Gallinago gallinago</i>	C	C	C	R	sr B
Red-necked Phalarope	<i>Phalaropus lobatus</i>	C	C	C		sr B
Red Phalarope	<i>Phalaropus fulicaria</i>	R	R	R		v
Pomarine Jaeger	<i>Stercorarius pomarinus</i>	U	U	R		m
Parasitic Jaeger	<i>Stercorarius parasiticus</i>	R	R	R		m
Long-tailed Jaeger	<i>Stercorarius longicaudus</i>	R	R	R		v
Common Black-headed Gull	<i>Larus ridibundus</i>		AC			v
Bonaparte's Gull	<i>Larus philadelphia</i>	C	C	C		sr b
Mew Gull	<i>Larus canus</i>	C	C	C		r B
Ring-billed Gull	<i>Larus delawarensis</i>	R	R	R	R	v
Herring Gull	<i>Larus argentatus</i>	C	U	C	C	r
Thayer's Gull				AC	AC	v
Slaty-backed Gull	<i>Larus schistisagus</i>				AC	v
Western Gull	<i>Larus occidentalis</i>		AC			v
Glaucous-winged Gull	<i>Larus glaucescens</i>	A	A	A	A	r B
Glaucous Gull	<i>Larus hyperboreus</i>	U	R	U	C	wr
Black-legged Kittiwake	<i>Rissa tridactyla</i>	C	C	C	U	sr B
Red-legged Kittiwake	<i>Rissa brevirostris</i>		AC			v
Ross' Gull	<i>Rhodostethia rosea</i>		AC			v
Sabine's Gull	<i>Xema sabini</i>			R		v
Ivory Gull	<i>Pagophila eburnea</i>				AC	v
Caspian Tern	<i>Sterna caspia</i>		AC			v
Royal Tern			AC			v
Arctic Tern	<i>Sterna paradisaea</i>	C	C	R		sr B
Aleutian Tern	<i>Sterna aleutica</i>	C	C	R		sr B
White-winged Tern	<i>Chlidonias leucopterus</i>			AC		v
Common Murre	<i>Uria aalge</i>	A	A	C	C	r B
Thick-billed Murre	<i>Uria lomvia</i>			AC	R	wr
Pigeon Guillemot	<i>Cepphus columba</i>	C	C	C	C	r B
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	C	C	C	C	r b
Kittlitz's Murrelet	<i>Brachyramphus brevirostris</i>	C	C	C	R	r b
Ancient Murrelet	<i>Synthliboramphus antiquus</i>	R	R	R	R	sr b
Cassin's Auklet	<i>Ptychoramphus aleuticus</i>		R	R		v
Parakeet Auklet	<i>Cyclorhynchus psittacula</i>		R			v
Crested Auklet	<i>Aethia cristatella</i>			R	R	v
Rhinoceros Auklet	<i>Cerorhinca monocerata</i>		R			v
Tufted Puffin	<i>Fratercula cirrhata</i>	C	C	C		sr B
Horned Puffin	<i>Fratercula corniculata</i>	C	C	C	R	sr B
Mourning Dove	<i>Zenaida macroura</i>			AC	AC	v
Great Horned Owl	<i>Bubo virginianus</i>	C	C	C	C	r B
Snowy Owl	<i>Nyctea scandiaca</i>				R	wr

Species	Latin Name	Spring	Summer	Fall	Winter	Status
Northern Hawk-Owl	<i>Surnia ulula</i>	R	R	R	R	sr b
Great Grey Owl	<i>Strix nebulosa</i>	R	R	R	R	r b
Short-eared Owl	<i>Asio flammeus</i>	U	U	R	R	sr B
Boreal Owl	<i>Aegolius funereus</i>	U	U	U	U	r b
Northern Saw-whet Owl	<i>Aegolius acadicus</i>	U	U	U	R	r B
Common Nighthawk	<i>Chordeiles minor</i>	R	R			v
Rufous Hummingbird	<i>Selasphorus rufus</i>		R	U		v
Belted Kingfisher	<i>Ceryle alcyon</i>	C	C	C	C	r B
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>				R	v
Downy Woodpecker	<i>Picoides pubescens</i>	U	U	U	U	r B
Hairy Woodpecker	<i>Picoides vellosus</i>	R	R	R	R	r b
Three-toed Woodpecker	<i>Picoides tridactylus</i>	U	U	U	U	r b
Black-backed Woodpecker	<i>Picoides arcticus</i>				R	r
Northern Flicker	<i>Colaptes auratus</i>	R	R	U	U	r
Olive-sided Flycatcher	<i>Contopus borealis</i>	R	U	U		sr B
Alder Flycatcher	<i>Empidonax alnorum</i>	U	C	C		sr B
Say's Phoebe	<i>Sayornis saya</i>	R	R	R		m
Horned Lark	<i>Eremophila alpestris</i>	R	U	U	R	sr b
Tree Swallow	<i>Tachycineta bicolor</i>	C	C	C		sr B
Violet-green Swallow	<i>Tachycineta thalassina</i>	C	C	C		sr B
Bank Swallow	<i>Riparia riparia</i>	C	C	C		sr B
Cliff Swallow	<i>Hirundo pyrrhonota</i>	C	C	C		sr B
Gray Jay	<i>Perisoreus canadensis</i>	C	C	C	C	sr B
Steller's Jay	<i>Cyanocitta stelleri</i>	C	C	C	C	r B
Black-billed Magpie	<i>Pica pica</i>	C	C	C	C	r B
Northwestern Crow	<i>Corvus caurinus</i>	C	C	C	C	r B
Common Raven	<i>Corvus corax</i>	C	C	C	C	r B
Black-capped Chickadee	<i>Parus atricapillus</i>	C	C	C	C	r B
Boreal Chickadee	<i>Parus hudsonicus</i>	C	C	C	C	r B
Chestnut-backed Chickadee	<i>Parus rufescens</i>				R	v
Red-breasted Nuthatch	<i>Sitta canadensis</i>	C	C	C	C	r b
Brown Creeper	<i>Certhia americana</i>	C	C	C	C	r b
Winter Wren	<i>Troglodytes troglodytes</i>	C	C	C	C	r B
American Dipper	<i>Cinclus mexicanus</i>	C	C	C	C	r B
Golden-crowned Kinglet	<i>Regulus satrapa</i>	C	C	C	C	r B
Ruby-crowned Kinglet	<i>Regulus calendula</i>	C	C	C	R	r B
Northern Wheatear	<i>Oenanthe oenanthe</i>	R	R	R		m
Gray-cheeked Thrush	<i>Catharus minimus</i>	U	U	U		sr B
Swainson's Thrush	<i>Catharus ustulatus</i>	C	C	C		sr B
Hermit Thrush	<i>Catharus guttatus</i>	C	C	C		sr B
American Robin	<i>Turdus migratorius</i>	C	A	A	U	sr B
Varied Thrush	<i>Ixoreus naevius</i>	C	A	C	U	sr B
Yellow Wagtail	<i>Motacilla flava</i>		R			v
Water Pipit		C	C	C	R	sr b
Bohemian Waxwing	<i>Bombycilla garrulus</i>		R	C	C	m
Northern Shrike	<i>Lanius excubitor</i>	U	U	U	U	r B
European Starling	<i>Sturnus vulgaris</i>				R	v
Orange-crowned Warbler	<i>Vermivora celata</i>	C	C	C		sr B

Species	Latin Name	Spring	Summer	Fall	Winter	Status
Yellow Warbler	<i>Dendroica petechia</i>	C	C	C		sr B
Yellow-rumped Warbler	<i>Dendroica coronata</i>	C	C	C		sr B
Townsend's Warbler	<i>Dendroica townsendi</i>	C	C	C		sr B
Blackpoll Warbler	<i>Dendroica straita</i>	U	U	U		sr b
Northern Waterthrush	<i>Seiurus noveboracensis</i>	U	U	U		sr b
Wilson's Warbler	<i>Wilsonia pusilla</i>	C	C	U	R	sr B
Western Tanager	<i>Piranga ludoviciana</i>	AC				v
American Tree Sparrow	<i>Spizella arborea</i>	U	R	U	U	wr
Savannah Sparrow	<i>Passerculus sandwichensis</i>	A	A	C		sr B
Fox Sparrow	<i>Passerella iliaca</i>	C	C	C	R	sr B
Song Sparrow	<i>Melospiza melodia</i>	C	C	C	C	r B
Lincoln's Sparrow	<i>Melospiza lincolni</i>	C	C	C	R	sr B
White-throated Sparrow	<i>Zonotrichia albicollis</i>				AC	v
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	C	C	C	C	r/m B
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	C	C	C	C	r/m B
Harris' Sparrow	<i>Zonotrichia querula</i>				AC	v
Dark-eyed Junco	<i>Junco hyemalis</i>	C	C	C	C	r/m B
Lapland Longspur	<i>Calcarius lapponicus</i>	C	R	C	R	m
Rustic Bunting	<i>Emberiza rustica</i>	AC				v
Snow Bunting	<i>Plectrophenax nivalis</i>	U			U	wr
McKay's Bunting	<i>Plectrophenax hyperboreus</i>				AC	v
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	R	R			v
Rusty Blackbird	<i>Euphagus carolinus</i>	C	C	C	R	sr B
Brown-headed Cowbird	<i>Molothrus ater</i>				R	v
Rosy Finch	<i>Leucosticte arctoa</i>	C		C	C	wr
Pine Grosbeak	<i>Pinicola enucleator</i>	C	C	C	C	r B
Purple Finch	<i>Carpodacus purpureus</i>	R			R	v
Cassin's Finch	<i>Carpodacus cassinii</i>	AC				v
Red Crossbill	<i>Loxia curvirostra</i>	R	R	R	R	n b
White-winged Crossbill	<i>Loxia leucoptera</i>	C	C	C	C-A	n b
Common Redpoll	<i>Carduelis flammea</i>	C-A	C	C	C-A	r/n B
Hoary Redpoll	<i>Carduelis hornemanni</i>	R	R	R	R	wr
Pine Siskin	<i>Carduelis pinus</i>	C	C	C	C-A	r/n B

Legend

- A Abundant-species occurs consistently in proper habitat, with available habitat densely occupied, and/or the region regularly hosts great numbers of the species.
- C Common-species occurs in all or nearly all proper habitats, but some areas of presumed suitable habitat are occupied sparsely or not at all, and/or the region regularly hosts large numbers of the species.
- U Uncommon-species occurs regularly, but utilizes only some or very little of the suitable habitat, and/or the region regularly hosts relatively small numbers; species not observed regularly, even in proper habitat.
- R Rare-species occurs, or probably occurs, regularly in the region, but in very small numbers.
- AC Accidental-species has been recorded no more than a few times, but irregular observations are likely over a period of years.

Status

- | | |
|--|---------------------------------|
| r - resident | sr - summer resident |
| wr - winter resident | m - migrant |
| B - confirmed breeder | n - nomadic |
| b - probable breeder | |
| v - visitant: non-breeding species, also a species not directly
en route between breeding and winter range. | |
| Sp - spring: March - May | F - fall: September - November |
| Su - summer: June - August | W - winter: December - February |

APPENDIX J

Tables of Research and Education Needs

This appendix contains two sets of tables listing research and education needs identified for Kachemak Bay. These charts represent just an itemization of needs suggested; no evaluation or prioritization of these concerns is implied.

Table J.1: Preliminary Research/Monitoring Needs by Source

Table J.2: Preliminary Education/Interpretation Needs by Source

March 1997. These preliminary tables evolved by soliciting comments and opinions from any and all interested citizens concerning the needs for Kachemak Bay and its watershed. Contact was established through mail-in forms, phone surveys, and meetings. This information has not been summarized—it represents the “raw data,” listed by sources and category of need.

Table J.3: Summary of Research Needs

Table J.4: Summary of Education Needs

September 1997. The listing of research and education needs were summarized to remove duplication, which eliminated sources as well. The contents were also updated and expanded after additional meetings with the research and education subcommittees and the public scoping meetings.

Table J-1. PRELIMINARY RESEARCH/MONITORING NEEDS*

SOURCE	AFFECTED FLORA/FAUNA	CATEGORY	DESCRIPTION OF NEED
DEC	shellfish	<ul style="list-style-type: none"> water quality 	(1) adequate sewage/water treatment system or program; (2) effect of log storage areas on mariculture facilities
		<ul style="list-style-type: none"> industrial development 	investigate tidal and current circulation patterns to predict oil trajectory
	macro-invertebrates	<ul style="list-style-type: none"> environmental monitoring 	(1) establish indicator studies for intertidal zones; (2) establish sampling stations and protocols for macro-invertebrates
	marine mammals, fish, shellfish	<ul style="list-style-type: none"> industrial development water quality 	(1) knowledge of the effects of oil and gas development on subsistence, pollutants in sediments, pollutants in water column, marine mammal behavior, fisheries, and native culture; (2) ability of Jakolof Bay to sustain existing/additional mariculture facilities
ADF&G SF	fish, shellfish, coonstripe shrimp, clams, mussels, Dungeness and Tanner crab, salmon	<ul style="list-style-type: none"> stock assessment and baseline research 	(1) seasonal and spatial variation in temperature, salinity, and other physical oceanographic factors affecting fish and shellfish production; (2) life history investigations on non-utilized fish species; (3) life history research on factors affecting fish and shellfish year-class strength; (4) coonstripe shrimp life history; (5) inventory of clam and mussel habitat in the bay; (6) seasonal Dungeness and Tanner crab movements; and (7) investigation of salmon entry/migration patterns
ADF&G CFMD	green sea urchin, sea cucumber, octopus, parasitic fauna infesting finfish/shellfish	<ul style="list-style-type: none"> stock assessment and baseline research GIS 	(1) green sea urchin and sea cucumber life histories; (2) baseline studies documenting the parasitic fauna currently infesting wild and hatchery reared K-Bay finfish and shellfish populations; (3) compilation of an integrated research database on GIS encompassing all the physical and biological components of K-Bay and its watershed; (4) stock assessment of green sea urchin populations in China Poot Bay; and (5) stock assessment of sea cucumber and octopus populations in K-Bay

SOURCE	AFFECTED FLORA/FAUNA	CATEGORY	DESCRIPTION OF NEED
ADF&G CFMD (continued)	salmonids (specifically pink salmon), juvenile cod and pollock	<ul style="list-style-type: none"> • habitat/species interactions • water quality 	<p>(1) research focusing on near-shore estuarine carrying capacity for salmonids, specifically pink salmon; (2) distribution and specific habits of juvenile salmonids as they relate to the estuarine carrying capacity; (3) predator/prey research should be considered extremely important (significant predation by juvenile cod and pollock on juvenile salmonids, specifically pink salmon)-- it seems apparent these predators would also significantly prey on larval forms of already declining shellfish stocks; (4) monitor K-Bay area logging, road construction, and other related operations in terms of potential impacts (+ or -) on the freshwater lakes and rivers, as well as "receiving waters" of the estuarine ecosystem; and (5) support and supplement the current "Cook Inlet Keeper's" efforts on developing water quality baseline data in the K-Bay area</p> <p>Existing and potential development impacts on water quality include: logging, timber, transport, oil related activities, etc.</p>
	herring, cod, pollock	<ul style="list-style-type: none"> • stock assessment and baseline research • commercial uses • GIS 	<p>(1) seasonal abundance and distribution of herring, pollock, and cod-- answer questions about residence time and the importance of K-Bay for spawning, feeding/rearing; and (2) are herring observed in K-Bay a unique stock, a segment of Upper Inlet stocks, or a small component of Kamishak stock? Perhaps employ GIS to help answer these questions.</p>
	anadromous fish	<ul style="list-style-type: none"> • water quality 	<p>(1) research on cumulative impacts of marine wastewater outfall around the bay, also address alternatives that are cost effective and have less potential impacts; (2) conduct freshwater stream surveys flowing into the bay to determine the distribution of anadromous fish; and (3) investigate the importance of the estuary areas located at the mouth of each anadromous fish stream</p>
ADF&G H&R	general fish and wildlife resources	<ul style="list-style-type: none"> • GIS • general 	<p>(1) detailed vegetative mapping project of Kachemak Bay watershed based on remote sensing imagery; and (2) investigate the effects of spruce beetle infestation on fish and wildlife resources</p>
	waterfowl, plant communities, seabird colonies	<ul style="list-style-type: none"> • water quality • general • mariculture 	<p>(1) conduct water quality studies around the bay, particularly the Homer boat harbor area, sewage outfall areas of Homer and Seldovia, and smaller bays impacted by private residences; (2) effects of grazing on waterfowl production; (3) effects of grazing on plant communities; (4) effects of tourism/recreationists on the seabird colonies of Gull Island during nesting/rearing seasons; and (5) assess biological impacts of large number of aquatic farm sites within a confined area</p>

SOURCE	AFFECTED FLORA/FAUNA	CATEGORY	DESCRIPTION OF NEED
DNR	shellfish, indicator species	<ul style="list-style-type: none"> • general commercial/industrial development • coordination • water quality • environmental monitoring 	<p>(1) conduct surveys to facilitate mapping of the distribution of key species (commercial and non-commercial) and their habitats (especially key spawning and nursery areas);</p> <p>(2) ascertain population level impacts of shellfish harvest by commercial, subsistence and recreation users; (3) collect information to facilitate management of development activities in the uplands (these include timber harvest, oil and gas development, transmission lines, grazing, recreation, residential and commercial land development); (4) conduct efforts toward providing information for facilitating and enhancing public use in a manner consistent with traditional uses and protection of sensitive habitat and wildlife populations;</p> <p>(5) program should be coordinated with other programs to avoid duplication of effort; (6) strategy should reflect the needs of the resources, users, and services; (7) variables should be selected that focus on providing information useful for management of resources, habitats, and services and on their statistical capability to reflect change; (8) water quality measurements should be included to provide a basis for the assessment of potential effects of petroleum hydrocarbons on animals and plants living in the water column and in the intertidal zone; and (9) select wildlife species should be monitored because they are indicator species of potential environmental problems, are of special interest to the public, are important to tourism, or have special status</p>
DGC	shellfish	<ul style="list-style-type: none"> • industrial development • habitat/species interactions 	<p>(1) investigate the effects of oil and gas development on subsistence, pollutants in sediments, pollutants in water column, marine mammal behavior, fisheries, and native culture; and (2) ability of Jakolof Bay to sustain existing/additional mariculture facilities</p>
NMFS		<ul style="list-style-type: none"> • coordination 	complete literature search to create a database of findings
UAF	birds, fish, shellfish, mammals	<ul style="list-style-type: none"> • ecosystem studies 	<p>(1) fundamental aspects of the ocean climate and lower trophic level production need to be monitored on appropriate time/space scales so that changes at higher levels can be understood as departures from the "generalized picture;" and (2) gain an understanding of the "connections" between oceanography and bird, fish, mammal, and shellfish recruitment</p>
USFWS	Marbled murrelet	<ul style="list-style-type: none"> • baseline research • water quality monitoring 	<p>(1) baseline data that will monitor potential changes following changes in uplands due to spruce-beetle kill; (2) monitor near-shore fish relative to chronic low levels of pollution; and (3) monitor changes in Marbled murrelet distribution, upland use and productivity due to spread of beetle-kill</p>
	fish, shellfish	<ul style="list-style-type: none"> • baseline research • coordination 	<p>(1) gather baseline data on fish, shellfish, and water quality; (2) integrate existing studies; and (3) create a portrait of the bay, including health</p>

SOURCE	AFFECTED FLORA/FAUNA	CATEGORY	DESCRIPTION OF NEED
NBS	phytoplankton and zooplankton	<ul style="list-style-type: none"> • general water quality monitoring 	(1) phytoplankton and zooplankton sampling on a regular basis within the bay; and (2) water chemistry monitoring
Coble Geophysical	marine invertebrates	<ul style="list-style-type: none"> • ecosystem studies 	(1) marine invertebrate ecosystem research; and (2) a physical estuarine numerical model of the NERR
Cook Inlet Keeper		<ul style="list-style-type: none"> • general coordination 	(1) long-range plans with defined goals and identified participants; and (2) focus must be to fill information gaps, relying on existing data where relevant
Pratt Museum		<ul style="list-style-type: none"> • coordination facilities 	(1) comprehensive database; (2) wet lab; and (3) several vessels or funds to hire vessels
		<ul style="list-style-type: none"> • baseline research facilities • coordination • water quality monitoring 	(1) adequate baseline data; (2) centralized resource library; and (3) on-going water quality monitoring
Center for Alaskan Coastal Studies	general biota	<ul style="list-style-type: none"> • habitat/human interactions • general GIS 	(1) human impact on intertidal zone; (2) assess pollution, particularly heavily used areas and from large vessel traffic; (3) mapping of area resources; (4) look at fluctuations in species populations and reasons involved; and (5) tidal effects, particularly gyres at mouth
	e-coli, crab, shrimp, general marine organisms	<ul style="list-style-type: none"> • general water quality monitoring • ecosystem studies 	(1) e-coli; (2) toxins from boat yards; (3) drainage from chip piles on spit; (4) fate of sediment load coming from dredging activities on spit; and (5) what happened to the ecosystem (where are the crab & shrimp)?
Homer Soil & Water Cons. District	general biota	<ul style="list-style-type: none"> • ecosystem studies 	(1) biological inventory; (2) identification of habitats; (3) identification of nutrient sources; and (4) development of food chain models
Homer Chamber of Commerce	microorganisms, marine biota	<ul style="list-style-type: none"> • water quality • general facilities • coordination 	(1) baseline data on water quality and microorganisms that provide nutrients for marine life; (2) define role of estuaries; (3) provide research facility; and (4) provide a clearinghouse for information and ideas

SOURCE	AFFECTED FLORA/FAUNA	CATEGORY	DESCRIPTION OF NEED
Kachemak Shellfish Mariculture Assoc.	shellfish, plankton, marine biota	<ul style="list-style-type: none"> water quality monitoring baseline research 	(1) assess biological impacts of large numbers of aquatic farmsites within a confined area; (2) establish baseline water quality monitoring program; (3) planktonic identification and enumeration; (4) identification and observation of paralytic shellfish poisoning organisms; and (5) fecal coliform quantitative analysis
Greenpeace	key species	<ul style="list-style-type: none"> baseline research commercial/industrial development habitat/human interactions 	(1) environmental baseline information on contaminants including metals, PAH's, and organochlorides; (2) population dynamics of key species, distribution, and CHA's; and (3) assess impacts from human activities such as oil production and transportation, logging, commercial fishing, boat-related pollution, etc.
Homer High School		<ul style="list-style-type: none"> general 	give serious consideration to which studies would be most appropriate and rewarding to health of the bay
Cook Inlet Aquaculture	general biota	<ul style="list-style-type: none"> ecosystem studies 	gain an understanding of the dynamics of natural populations within the area
Private Individuals		<ul style="list-style-type: none"> baseline research 	need history to establish baseline data to see what is happening in the bay
	general biota	<ul style="list-style-type: none"> baseline research 	(1) baseline studies on species populations; (2) study interactions between users
	fish, clams, marine biota	<ul style="list-style-type: none"> water quality commercial uses 	(1) water quality data; (2) evaluation of commercial fishing and clamming; and (3) effects of the increase use of boat traffic and of area on water quality and land use
	general biota	<ul style="list-style-type: none"> ecosystem studies water quality monitoring baseline research 	(1) gain an understanding of the food chain and geophysical dynamics of ecosystem; (2) establishing baseline parameters of water and ecosystem health; and (3) develop a monitoring system to evaluate over time and manage according to outcome
		<ul style="list-style-type: none"> industrial development 	oil pollution research
	shellfish	<ul style="list-style-type: none"> water quality ecosystem studies 	(1) establishing water quality standards; (2) maintenance of species diversity; and (3) additional research on farming of certain species
	introduced species	<ul style="list-style-type: none"> baseline research general industrial development coordination 	(1) comprehensive baseline data of multiple sites (2-3 years); (2) population studies; (3) research on effects of introduced species (salmon enhancement); (4) document all spills in the bay; and (5) collate existing information and deliver in an understandable form to the public

SOURCE	AFFECTED FLORA/FAUNA	CATEGORY	DESCRIPTION OF NEED
Private Individuals (continued)	crab, shrimp, fish	<ul style="list-style-type: none"> • general 	(1) why are species like crab and shrimp gone?; and (2) are hatchery and enhancement fish pushing out wild stock?
		<ul style="list-style-type: none"> • baseline research • coordination • GIS 	(1) comprehensive water temperature fluctuation records; (2) comparative air temperature and weather data from stations around the bay; (3) central repository for data; and (4) boundary, at a minimum, must include all of the bay and Fox River Critical Habitat Area
	general biota	<ul style="list-style-type: none"> • ecosystem studies • general 	basic knowledge of many life histories and ecological interactions among organisms, specifically sediment deposition/transport processes. This will provide a magnet for funding of good, basic research, provide a centralized repository of knowledge, and access to current research ideas
	general biota	<ul style="list-style-type: none"> • water quality • general 	(1) water quality data; and (2) life history information
	general biota, introduced species	<ul style="list-style-type: none"> • ecosystem studies • general 	(1) compare historical and present research for species population trends (especially those species used for subsistence); and (2) gain an understanding of how introduced species affect the bay's natural systems
		<ul style="list-style-type: none"> • coordination • baseline research 	(1) coordinate current research efforts; and (2) compliment monitoring efforts to establish baseline data on the physical and biological parameters of the bay area

* These are the opinions of individuals within the agencies/organizations listed and not necessarily the official views of the agencies/organizations.

ADF&G = Alaska Department of Fish and Game

SF = Sport Fish Division

CFMD = Commercial Fisheries Management & Development Division

H&R = Habitat and Restoration Division

DEC = Alaska Department of Environmental Conservation

DNR = Alaska Department of Natural Resources

DGC = Division of Governmental Coordination

NMFS = National Marine Fisheries Service

UAF = University of Alaska Fairbanks

USFWS = U.S. Fish and Wildlife Service

NBS = National Biological Service

Table J-2. PRELIMINARY EDUCATION/INTERPRETATION NEEDS*

SOURCE	CATEGORY	DESCRIPTION OF NEED
DEC	• public education	educate recreationists on water quality issues
	• public education	educate the public on the gray water discharge within the bay
ADF&G H&R	• public education • logistical support	(1) educate the public on the gray water discharge within the bay; and (2) ensure that adequate signs and displays are present to explain the purpose of the reserve
	• curriculum • coordination • facilities	(1) curriculum needs include the following: intertidal zone on north side of the bay, forestry, geology (particularly volcanoes), oceanography, winter wildlife use of habitat, land use planning, and watershed and stream dynamics; (2) coordination of educational programs; and (3) facilities on north side of the bay
USFWS	• primary/secondary education • curriculum	(1) more help is needed with students, focusing specifically on elementary and middle school; and (2) development of a local curriculum
	• curriculum	use materials that have already been developed by the Service on wetlands and wildlife curriculum
NMFS	• coordination	coordinate educational efforts
UAF	• public education	move "ecosystem understanding" into the realm of public education
Center for Alaskan Coastal Studies	• primary/secondary/post- secondary education • curriculum • logistical support • facilities	(1) have professionals/experts target groups of school children that are not necessarily interested in marine science; (2) do more in marine biology at the college level; (3) lower costs for south side trips; and (4) develop a learning center
	• public education • stewardship	provide education for citizens on becoming good stewards of our natural resources
Homer High School	• coordination • primary/secondary education • logistical support	(1) coordination between different education levels; (2) encourage researchers to work with students; and (3) boat on northern side of the bay, to lower costs for south side trips
Homer Intermediate School	• primary education • curriculum	(1) research connection with available experts willing to work closely with school groups at the elementary level; and (2) develop 5 th and 6 th grade curriculum

SOURCE	CATEGORY	DESCRIPTION OF NEED
Chapman School	<ul style="list-style-type: none"> • coordination/curriculum • primary/secondary education 	(1) coordination on curriculum for the bay; and (2) more help for teachers and students
Cook Inlet Keeper	<ul style="list-style-type: none"> • curriculum • coordination • primary/secondary/post-secondary education • public education 	<p>(1) develop an environmental curriculum with the inclusion of water quality issues; (2) reinforce K-12 science curriculum; and (3) coordination between different education levels and the community</p> <p>communicate the importance of water quality, knowledge of pollution sources, resource uses, and the ecological dynamics of fish and shellfish within the micro- and macro-benthic communities to the public and school groups through workshops, multi-media displays and interpretive signs</p>
Pratt Museum	<ul style="list-style-type: none"> • coordination • primary/secondary/post-secondary & public education 	(1) collaboration of science projects and information; (2) a centralized resource library; and (3) take advantage of visiting scientists
Homer Chmbr. of Commerce	<ul style="list-style-type: none"> • coordination 	(1) develop and maintain a database about our marine ecosystem; (2) wet lab; (3) bunk house; (4) 150 seat auditorium; and (5) a suitable boat for transporting school groups
Kenai Penn. Fisherman Association	<ul style="list-style-type: none"> • facilities/curriculum 	coordinate local educational efforts
Greenpeace	<ul style="list-style-type: none"> • public education • stewardship 	create infrastructure for various school levels (especially elementary)
Cook Inlet Aquiculture	<ul style="list-style-type: none"> • public education • stewardship 	(1) foster understanding and awareness concerning our interdependence with the marine ecosystem; and (2) facilitate dialogue between subsistence-based users about subsistence and the importance of protecting water quality
Private Individuals	<ul style="list-style-type: none"> • public education • coordination • public education • coordination 	<p>(1) need to demonstrate how people can use our natural resources with minimal impact to all use groups; and (2) emphasize the protection of the environment while allowing for use of the natural resources present</p> <p>information on how mariculture affects habitat</p> <p>centralized resource library</p> <p>to learn about the ecosystem in a low-impact manner</p> <p>bridge gap between researchers and educators; centralized resource library</p>

SOURCE	CATEGORY	DESCRIPTION OF NEED
(continued)	• coordination/facilities	centralized meeting and lab facilities
	• public education	to explain to all ages the importance of the bay
	• public education	better explanation of science to the public
	• public education	(1) coordinate current educational efforts pertaining to the bay; and (2) communicate with the local community

* These are the opinions of individuals within the agencies/organizations listed and not necessarily the official views of the agencies/organizations.

DEC = Alaska Department of Environmental Conservation
ADF&G/H&R = Alaska Department of Fish and Game/
Habitat and Restoration Division

USFWS = U.S. Fish and Wildlife Service
NMFS = National Marine Fisheries Service
UAF = University of Alaska Fairbanks

Table J-3: Summary of Research Needs.

These needs were submitted over the course of months from the initial mail survey, community meetings, meetings of the research subcommittee, agency staff suggestions, and the public scoping meetings. The “#” column displays the number of submissions that reflected that category of need/concern, if more than one.

CATEGORY	DESCRIPTION OF NEED	#
Baseline Research	baseline data: fish, shellfish, water quality; microorganisms; species populations; contaminate; air temperature and weather data; ecosystem health; water temperature; nutrients; multiple sites; the parasitic fauna currently infesting wild and hatchery reared K-Bay finfish and shellfish populations; biological inventory; planktonic identification and enumeration; fecal coliform quantitative analysis; identification and observation of paralytic shellfish poisoning organisms; intertidal habitat/primary productivity; trophic level studies; benthic communities/composition; population dynamics of key species and distribution; development of food chain models; understanding of the dynamics of natural populations within the area; predator/prey research should be considered extremely important; key species populations and habitat; marine invertebrate ecosystem research; interrelationships of Kachemak Bay’s aquatic and other resources;	28
Biological Research <i>General</i>	investigate the effects of spruce beetle infestation on fish and wildlife resources	
	studies on species that have declined (shrimp, crab)	3
	additional research on farming of certain species	
Biological Research <i>Carrying Capacity</i>	research focusing on near-shore estuarine carrying capacity for salmonids, specifically pink salmon; distribution and specific habits of juvenile salmonids as they relate to the estuarine carrying capacity;	2
Biological Research <i>Distribution</i>	seasonal abundance and distribution of herring, pollock, and cod—residence time, spawning, feeding/rearing; seasonal and spatial variation in temperature, salinity, and other physical oceanographic factors affecting fish and shellfish production; conduct surveys to facilitate mapping of the distribution of key species (commercial and non-commercial) and their habitats (especially key spawning and nursery areas); inventory of clam and mussel habitat in the bay; seasonal Dungeness and Tanner crab movements; investigation of salmon entry/migration patterns;	3
Biological Research <i>Stock Assessment</i>	stock assessment of green sea urchin populations in China Poot Bay; stock assessment of sea cucumber and octopus populations in K-Bay; are herring observed in K-Bay a unique stock, a segment of Upper Inlet stocks, or a small component of Kamishak stock; population study of forage fish;	4
Biological Research <i>Life Histories</i>	green sea urchin and sea cucumber life histories; non-utilized fish species; life history research on factors affecting fish and shellfish year-class strength; coonstripe shrimp life history; basic knowledge of many life histories and ecological interactions among organisms;	6
Coordination	“most bang for the buck” with limited funds	2
	community identified needs and perceptions	
	long-range plans with defined goals and identified participants	
	comprehensive database	9
	provide information for facilitating and enhancing public use in a manner consistent with traditional uses and protection of sensitive habitat and wildlife populations	
	program (both research and monitoring) should be coordinated with other programs to avoid duplication of effort	6
	link research with educational programs	

CATEGORY	DESCRIPTION OF NEED	#
Coordination (continued)	consider past/existing research data, and choose projects to fill in the gaps in existing/past research data	3
	research projects crafted in a way that makes the information transferable to other estuaries (common format)	
Ecosystem Studies	utilize holistic watershed approach (i.e. uplands, wetlands, and bay)	3
	fundamental aspects of the ocean climate and lower trophic level production need to be monitored on appropriate time/space scales	
	gain an understanding of the "connections" between oceanography and bird, fish, mammal, and shellfish recruitment	
	compare historical and present research for species population trends (especially those species used for subsistence)	
Facilities	provide research facility, equipment	2
General	boundary, at a minimum, must include all of the bay and Fox River Critical Habitat Area	
	define role of estuaries	
GIS	compilation of an integrated research database on GIS encompassing all the physical and biological components of K-Bay and its watershed	3
Human Impacts	ability of Jakolof Bay to sustain existing/additional mariculture facilities	
	investigate tidal and current circulation patterns to predict oil trajectory	
	effects of e-coli; toxins from boat yards; drainage from chip piles on spit; fate of sediment load coming from dredging activities on spit: aquatic farmsites; sewage/water treatment system; log storage areas on mariculture facilities; marine wastewater outfall; cumulative impacts; oil spills; tourism/recreationists on the seabird colonies of Gull Island; interactions between users; oil and gas development on subsistence, fisheries, and native culture; increased boat traffic; grazing on plant communities, waterfowl production; visitors in tidal areas; shellfish harvest; pollution, particularly heavily used areas and from large vessel traffic; commercial fishing; effect of log-transfer facilities and bark deposition on biota; effects of hatchery and enhancement fish on wild stock?; research on effects of introduced species (salmon enhancement);	28
Management	based on resource problems/issues; collect information to facilitate management of development activities in the uplands (timber harvest, oil and gas, transmission lines, grazing, recreation, residential/commercial; applied research on sustainability of Kachemak Bay resources	3
Monitoring	Biological monitoring (phytoplankton, zooplankton, Marbled murrelet/ beetle-kill, near-shore fish, organisms/hydrocarbons, indicator species, macro-invertebrates)	7
	establishing water quality standards & monitoring program	7
	monitoring should be long-term, measure baseline and long-term data, at fixed and random sampling stations	3
	monitor impacts of human use on water quality (: logging, timber, transport, oil related activities)	2
	variables should be selected that focus on providing information useful for management of resources, habitats, and services and on their statistical capability to reflect change; strategy should reflect the needs of the resources, users, and services;	2
	GIS for monitoring	
	monitoring activities and programs should have applicability beyond Kachemak Bay	
Physical Research	basic physical oceanographic parameters	5

Table J-4: Summary of Education Needs.

These needs were submitted over the course of months from the initial mail survey, community meetings, meetings of the education subcommittee, agency staff suggestions, and the public scoping meetings. The “#” column displays the number of submissions that reflected that category of need/concern, if more than one.

CATEGORY	NEED	#
Coordination	bridge gap between researchers and educators	2
	centralized resource library/database	3
	coordinate local educational efforts	7
	educational facility - look into sharing with Alaska National Maritime Refuge	
	identify gaps in programs (equipment, facilities, curriculum)	
Curriculum	development of a local curriculum; needs include the following: intertidal zone on north side of the bay, forestry, geology (particularly volcanoes), oceanography, winter wildlife use of habitat, land use planning, and watershed and stream dynamics; do more in marine biology at the college level	8
Facilities	wet lab, bunk house, 150 seat auditorium, learning center, meeting and lab facilities, facilities on north side of the bay, classrooms, interpretive signs, visitor center	5
Logistical Support	ensure that adequate signs and displays are present to explain the purpose of the reserve	
	consider transportation issues in educational facility located on either side of bay (need boat, vehicle, etc.)	3
Managing Impacts	provide/train local docents, teachers, interns	3
	coordinate/teach hydrocarbon management in the bay (used oil, bilge, etc.)	
	Coordinate with AOGA, Keeper	
	public outreach - regular reports on current research in the reserve	
	provide boat/charter operators with conservation/use information to distribute in route to Seldovia, Kasitsna Bay.	
	obtain brochures from around country, Kodiak state parks, CACS to inform on how to minimize impacts	
Public Education	assist fund-raising for organizations that are trying to address these needs.	
	encourage researchers to work with students	3
	more help is needed with students, focusing specifically on elementary and middle school	
	develop interpretive aids (slides, video programs, interpretive facilities and displays, workshops, multimedia displays and interpretive signs)	2
	have professionals/experts target groups of school children that are not necessarily interested in marine science	
	educate the public on the gray water discharge within the bay, human impacts on intertidal resources, how mariculture affects habitat, ecosystem understanding, our interdependence with the marine ecosystem,	9
	provide education for citizens on becoming good stewards of our natural resources	
Stewardship	better explanation of science to the public (newspaper articles, publications, speakers, annual forum, newsletter, web page)	3
	emphasize the protection of the environment while allowing for use of the natural resources present	2
	facilitate dialogue between subsistence-based users about subsistence and the importance of protecting water quality	

APPENDIX K

15 C.F.R. Part 921:

**National Estuarine Research Reserve System Program Regulations
as listed in the Federal Register**

SUBCHAPTER B—OCEAN AND COASTAL RESOURCE MANAGEMENT

PART 921—NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM REGULATIONS

Subpart A—General

Sec. 921.10 Mission, goals and general provisions.
921.11 Designation of National Estuarine Research Reserves.
921.12 National Estuarine Research Reserve System biogeographic classification scheme and estuarine typologies.
921.13 Management plan and environmental impact statement development.

Subpart B—Site Selection, Post Site Selection and Management Plan Development

921.20 General.
921.21 Initial acquisition and development research.
921.22 Operation and management plan development.
921.23 Management plan and environmental impact statement development.

Subpart C—Acquisition, Development and Preparation of the Final Management Plan

921.30 General.
921.31 Initial acquisition and development research.

Subpart D—Reserve Designation and Subsequent Operation

921.32 Designation of National Estuarine Research Reserves.
921.33 Supplemental acquisition and development awards.
921.34 Operation and management plan development.
921.35 Management plan and environmental impact statement development.

Subpart E—Ongoing Oversight, Periodic Re-evaluation and Withdrawal of Designation

921.40 Ongoing oversight and evaluations of designated National Estuarine Research Reserves.
921.41 Withdrawal of designation.

Subpart F—Special Research Projects

921.50 General.
921.51 Estuarine research guidelines.

921.52 Promotion and coordination of estuarine research.

Subpart G—Special Monitoring Projects

921.60 General.

Subpart H—Special Interpretation and Education Projects

921.70 General.

Subpart I—General Financial Assistance Provisions

921.80 Application Information.
921.81 Allowable costs.
921.82 Commitments to financial assistance awards.

APPENDIX 1 TO PART 921—BIOGEOGRAPHIC CLASSIFICATION SCHEME

APPENDIX 2 TO PART 921—TYPOLOGY OF NATIONAL ESTUARINE RESEARCH RESERVES

AUTHORITY: Section 315 of the Coastal Zone Management Act, as amended (16 U.S.C. 1401).

SOURCE: 58 FR 38215, July 15, 1993, unless otherwise noted.

Subpart A—General

921.1.1 Mission, goals and general provisions.

(e) The mission of the National Estuarine Research Reserve Program is the establishment and management, through Federal-state cooperation, of a national system (National Estuarine Research Reserve System or System) of estuarine research reserves (National Estuarine Research Reserves or Reserves) representative of the various regions and estuarine types in the United States. National Estuarine Research Reserves are established to provide opportunities for long-term research, education, and interpretation.

(f) The goals of the Program are to:

- (1) Ensure a stable environment for research through long-term protection of the National Estuarine Research Reserve resources;
- (2) Address coastal management issues identified as significant through coordinated estuarine research within the System;

§ 921.1

(3) Enhance public awareness and understanding of estuarine areas and provide suitable opportunities for public participation in research and management.

(4) Promote Federal, state, public and private use of one or more Reserves within the System when such activities are consistent with the purposes of the System and when such activities conduct estuarine research; and

(5) Conduct and coordinate estuarine research within the System, gathering and making available information necessary for improved understanding and management of the System.

(c) National Estuarine Research Reserves shall be open to the public to the extent permitted under state and Federal law. Multiple uses are allowed to the degree compatible with each Reserve's overall purpose as provided in the management plan (see § 921.13) and consistent with paragraphs (a) and (b) of this section. The Reserves are located in the state within the Reserve is located and analyzed in the management plan. The Reserve management plan shall describe the uses and establish priorities among these uses. The plan shall identify uses requiring a state permit, as well as areas where uses are encouraged or prohibited. Consistent with resource protection and research objectives, the Reserve shall be restricted to certain areas or components within a Reserve.

(d) Habitat manipulation for research purposes is allowed consistent with the following limitations. Manipulative research activities must be specified in the management plan, be consistent with the mission and goals of the program (see paragraphs (a) and (b) of this section), and be approved by the Reserve's management plan, and be limited in nature and extent to the minimum manipulative activity necessary to accomplish stated research objectives. Manipulative research activities with a significant or long-term impact on Reserve resources require the prior approval of the state and the National Oceanic and Atmospheric Administration (NOAA). Manipulative research activities which can reasonably be expected to have a significant adverse impact on the estuarine resources and habitat of a Reserve, such that the activities themselves or their resulting short- and

15 CFR Ch. IX (1-1-97 Edition)

long-term consequences compromise the representative character and integrity of a Reserve, are prohibited. Manipulation for resource management purposes is prohibited except as specifically approved by NOAA as: (1) A restoration activity consistent with paragraph (e) of this section; or (2) an activity necessary for the protection of public health or the preservation of other sensitive resources which have been listed or are eligible for protection under relevant Federal, state, and local laws (including those defining endangered species or significant historical or cultural resources) or if the manipulative activity is a long-term pre-existing use (i.e., has occurred prior to designation) occurring in a buffer area. If habitat manipulation is determined to be necessary for the protection of public health, the preservation of sensitive resources, or the preservation of a long-term pre-existing use in a buffer area, then these activities shall be specified in the Reserve management plan in accordance with § 921.13(a)(10) and shall be limited to the least adverse alternative which has the least adverse and shortest term impact on the representative and ecological integrity of the Reserve.

(e) Under the Act an area may be designated as an estuarine Reserve only if the area is a representative estuarine ecosystem that is suitable for long-term research. Many estuarine areas have undergone some ecological change as a result of human activities (e.g., hydrological changes, intentional/unintentional species composition changes—introductions and extirpations)—in those areas proposed or designated as National Estuarine Research Reserves, such changes may have diminished the representative character and integrity of the site. Although restoration of degraded areas is not a primary purpose of the System, such activities may be permitted to improve the representative character and integrity of Reserves. Research activities must be carefully planned and approved by NOAA through the Reserve management plan. Historical research may be necessary to determine the "natural" representative state of an estuarine area (i.e., an estuarine ecosystem minimally affected by

human activity or influence). Frequently, restoration of a degraded estuarine area will provide an excellent opportunity for management oriented research.

(c) NOAA may provide financial assistance to coastal states, not to exceed, per Reserve, 50 percent of all actual costs or \$5 million whichever amount is less, to assist in the acquisition of land and waters, or interests therein. NOAA may provide financial assistance to coastal states not to exceed 70 percent of all actual costs for the management and operation of, the development and construction of, and the interpretation and monitoring of, interpretive activities concerning Reserves (see subpart 1). NOAA may provide financial assistance to any coastal state or public or private person, not to exceed 70 percent of all actual costs, to support research and monitoring within a Reserve. Predesignation, acquisition and development, operation and monitoring, and special education and interpretation awards are available under the National Estuarine Reserve Program. Predesignation awards are for site selection/feasibility, draft management plan preparation and conduct of basic characterization studies. Acquisition and development awards are for interests in land, facility construction and to develop and/or upgrade research, monitoring and management programs. Operation and management awards provide funds to assist in implementing, operating and managing the administrative, and basic research, monitoring and education programs, including the Reserve's management plan. Special research and monitoring awards provide funds to conduct estuarine research and monitoring projects with the System. Special educational and interpretive awards provide funds to conduct estuarine educational and interpretive projects within the System.

(d) Lands already in protected status managed by other Federal agencies, state or local governments, or private organizations may be included within National Estuarine Research Reserves only if the managing entity commits to long-term management consistent

with paragraphs (d) and (e) of this section in the Reserve management plan. Federal lands already in protected status may not comprise a majority of the key land and water areas of a Reserve.

(e) To assist the states in carrying out the Program's goals in an effective manner, NOAA will coordinate a research and education information exchange throughout the National Estuarine Research Reserve System. As part of this role, NOAA will ensure that information and ideas from one Reserve are made available to others in the System. NOAA will encourage the states to exchange information and research data with each other, with universities engaged in estuarine research, and with Federal, state, and local agencies. NOAA's objective is a system-wide program of research and monitoring capable of addressing the management issues that affect long-term productivity of our Nation's estuaries.

§ 921.3 Definitions.

(a) Act means the Coastal Zone Management Act of 1972, as amended, 16 U.S.C. 1451 et seq.

(b) Assistant Administrator means the Assistant Administrator for Ocean Services and Coastal Zone Management or designee.

(c) State means a state of the United States, in or bordering on, the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes. For the purposes of these regulations the term also includes Puerto Rico, the Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, the Trust Territories of the Pacific Islands, and American Samoa (see 16 U.S.C. 1453(f)).

(d) State agency means an instrumentality of a coastal state to whom the coastal state has delegated the authority and responsibility for the creation and/or management/operation of a National Estuarine Research Reserve. Federal, state, or local government, may include the power to receive and expend funds on behalf of the Reserve, acquire and sell or convey real and personal property interests, adopt rules for the protection of the Reserve, enforce rules applicable to the Reserve,

§ 921.3

or develop and implement research and education programs for the Reserve. For the purposes of these regulations, the terms "coastal state" and "State agency" shall be synonymous.

(e) Estuary means that part of a river, bay, or other body of water having a continuous connection with the open sea, where the sea water is measurably diluted with fresh water derived from land drainage. The term also includes estuary-type areas with measurable freshwater influence and having unimpaired connections with the open sea, and estuary-type areas of the Great Lakes. (16 U.S.C. 1453(f)).

(f) National Estuarine Research Reserve means an area that is a representative estuarine ecosystem suitable for long-term research, which may include all of the key land and water portion of an estuary, and adjacent transitional areas and uplands constituting to the extent feasible a natural unit, and which is designated as a National Estuarine Research Reserve pursuant to the Act prior to enactment of the National Estuarine Research Reserve Act of 1992 and each area subsequently designated as a National Estuarine Research Reserve.

§ 921.5 National Estuarine Research Reserve System Classification Scheme and Estuarine Typologies.

(a) National Estuarine Research Reserves are chosen to reflect regional differences and to include a variety of ecosystem types. A biogeographic classification scheme based on regional variations in the nation's coastal zone has been developed. The biogeographic classification scheme is used to ensure that the National Estuarine Research Reserve System includes at least one site from each region. The estuarine typology system is utilized to ensure that sites in the System reflect the wide range of estuarine types within the United States.

15 CFR Ch. IX (1-1-97 Edition)

(b) The biogeographic classification scheme, presented in appendix I, contains 28 regions. Figure 1 graphically depicts the biogeographic regions of the United States.

(c) The typology system is presented in appendix II.

§ 921.4 Relationship to other provisions of the Coastal Zone Management Act, and to the Marine Protection, Research and Sanctuaries Act.

(a) The National Estuarine Research Reserve System is intended to provide information to state agencies and other entities regarding estuarine coastal management issues. Any coastal state, including those that do not have approved coastal management programs under section 306 of the Act, is eligible for an award under the National Estuarine Research Reserve Program (see § 921.2(c)).

(b) For purposes of consistency with the Act, states with federally approved coastal management programs are eligible for the designation of a National Estuarine Research Reserve is deemed to be a Federal activity, which, if directly affecting the state's coastal zone, must be undertaken in a manner consistent to the maximum extent practicable with the approved state coastal management program as provided by section 306 of the Act and the implementing regulations at 15 CFR part 306, subpart C. In accordance with section 1456(c)(1) of the Act and the applicable regulations NOAA will be responsible for certifying that designation of the Reserve is consistent with the state's approved coastal management program. The state must concur in or object to the certification. It is recommended that the lead state agency for Reserve designation consult, at the earliest practicable time, with the appropriate state officials concerning the consistency of a proposed National Estuarine Research Reserve.

(c) The National Estuarine Research Reserve Program will be administered in accordance with the provisions of the Marine Sanctuaries Program (Title III) of the Marine Protection, Research and Sanctuaries Act, as amended, 16 U.S.C. 1431-1445, also administered by NOAA. Title III authorizes the Secretary of Commerce to designate discrete areas

of the marine environment as National Marine Sanctuaries to protect or restore such areas for their conservation, recreational, ecological, historical, research, educational or esthetic values. National Marine Sanctuaries and Estuarine Research Reserves may not overlap, but may be adjacent.

Subpart B—Site Selection, Post Site Selection, and Management Plan Development

§ 921.10 General.

(a) A coastal state may apply for Federal financial assistance for the purpose of site selection, preparation of documents specified in § 921.13 (draft management plan (DMP) and environmental impact statement (EIS)), and the conduct of limited basic characterization studies. The total Federal share of this assistance may not exceed \$100,000. Federal financial assistance for preacquisition activities under § 921.11 and § 921.12 is subject to the total \$5 million for which each Reserve is eligible for land acquisition. In the case of a biogeographic region (see appendix I) shared by two or more coastal States, the total Federal share of the financial assistance to establish Reserves within their respective portion of the shared biogeographic region. Each separate National Estuarine Research Reserve is eligible for the full complement of funding. Financial assistance application procedures are specified in appendix II.

(b) In developing a Reserve program, a state may choose to develop a multiple-site Reserve reflecting a diversity of habitats in a single biogeographic region. A multiple-site Reserve allows the state to develop complementary research and educational programs within individual components of its multiple-site Reserve. Reserves are treated as one Reserve in terms of financial assistance and development of an overall management framework and plan. Each individual site of a proposed multiple-site Reserve shall be evaluated both separately under § 921.11(c) and collectively as part of the site selection process. A coastal State may also develop a multiple-site Reserve at the time of the

initial site selection, or at any point in the development of the Reserve. If the state decides to develop a multiple-site National Estuarine Research Reserve after the initial acquisition and development award is made for a single site, the proposal is subject to the requirements set forth in § 921.13(b). However, a state may not propose to add one or more sites to an already designated Reserve. The proposal for development of such Reserves has been found deficient and uncorrected or the research conducted is not consistent with the Estuarine Research Guidelines referenced in § 921.13. In addition, Federal funds for the acquisition of a multiple-site Reserve remain limited to \$5,000,000 (see § 921.20). The funding for preparation of a multiple-site Reserve is limited to the amount allowed for any one Reserve per year (see § 921.21(c)) and preacquisition funds are limited to \$100,000 per Reserve.

§ 921.11 Site selection and feasibility.

(a) A coastal state may use Federal funds to establish and implement a site selection process which is approved by NOAA.

(b) In addition to the requirements set forth in subpart I, a request for Federal funds for site selection must contain the following programmatic information:

(1) A description of the proposed site selection process and how it will be implemented in conformance with the biogeographic classification scheme and § 921.13.

(2) An identification of the site selection agency and the potential management agency; and

(3) A description of how public participation will be incorporated into the process (see § 921.11(d)).

(c) As part of the site selection process, the state and NOAA shall evaluate the proposed site selection. NOAA shall have final authority in approving such sites. Site selection shall be guided by the following principles:

(1) The site's contribution to the biogeographical and typological balance of the National Estuarine Research Reserve System. NOAA will give priority consideration to proposals to establish Reserves in underserved biogeographic subregions or incorporating types that

are not represented in the system. (see the biogeographic classification scheme and appendix I set forth in § 921.13 (2) and (3)).

(2) The site's ecological characteristics, including its biological productivity, diversity of flora and fauna, and capacity to attract a broad range of research and educational interests. The proposed site must be a representative estuarine ecosystem and should, to the maximum extent possible, be an estuarine ecosystem that is not dominated by human activity or influence (see § 921.10(b)).

(3) Assurance that the site's boundaries encompass an adequate portion of the key land and water areas of the natural system to approximate an ecological unit and to ensure effective coastal zone management. The boundary size will vary considerably depending on the size of the ecosystem. Reserve boundaries must encompass the area within which adequate control has or will be established by the managing entity over human activities occurring within the Reserve. Generally, Reserve boundaries will encompass two areas: key land and water areas (or "core area") and a buffer area (or "buffer zone"). The buffer zone will likely require significantly different levels of control (see § 921.13(e)(7)). The term "key land and water areas" refers to that core area within the Reserve that is so vital to the functioning of the estuarine ecosystem that it must be under a level of control sufficient to ensure the long-term viability of the Reserve for research and education purposes. Key land and water areas, which comprise the core area, are those ecological units of a natural estuarine system which provide, for research purposes, a full range of significant physical, chemical and biological factors contributing to the diversity of fauna, flora and natural processes occurring within the estuarine ecosystem. The management of land and water areas are "key" to a particular Reserve must be based on specific scientific knowledge of the area. A basic principle to follow when deciding upon key land and water areas is that they should encompass resources representative of the total ecosystem, and which if compromised could endanger the research objectives of the Reserve.

The term "buffer zone" refers to an area adjacent to or surrounding key land and water areas and essential to their integrity. Buffer zones provide protection for estuarine-dependent species, including those that are rare or endangered. When determined appropriate by the state and approved by NOAA, the buffer zone may also include an area necessary for facilities required for research and interpretation. Buffer zones should be established sufficient to ensure a shift of the core area as a result of biological, ecological or geomorphological change which reasonably could be expected to occur. National Estuarine Research Reserves may include existing Federal or state lands already in a protected status and may include lands that can be enhanced. However, NOAA will not accept sites for potential National Estuarine Research Reserve status that is dependent primarily upon the inclusion of currently protected Federal lands in order to meet the requirements for Reserve status (such as key land and water areas). Such lands generally will be included within a Reserve to serve the purposes of the Reserve and not to serve as a buffer or to meet the purposes and may be included, subject to NOAA approval, as a limited portion of the core area.

(4) The site's suitability for long-term estuarine research, including ecological factors and proximity to existing research facilities and educational institutions.

(5) The site's compatibility with existing and potential land and water uses in contiguous areas as well as approved coastal and estuarine management plans; and

(6) The site's importance to education and interpretive efforts, consistent with the need for continued protection of the natural system.

(d) Early in the site selection process, the state shall consult with interested landowners, local governments, other parties who are interested in the area(s) being considered for selection as a potential National Estuarine Research Reserve. After the local government(s) and affected landowner(s) have been contacted, at least one public

meeting shall be held in the vicinity of the proposed site. Notice of such a meeting, including the time, place, and relevant subject matter, shall be announced by the state through the designated principal newspaper at least 15 days prior to the meeting and shall be posted by NOAA in the FEDERAL REGISTER.

(c) A state request for NOAA approval of a proposed site (or sites in the case of a multi-site Reserve) must contain a description of the proposed site(s) in relationship to each of the site selection principles (§ 921.11(c)) and to the relevant goals and objectives set forth in § 921.11(c) through (h).

(1) An analysis of the proposed site(s) based on the biogeographical scheme forth in § 921.13(a) and set forth in appendices I and II;

(2) A description of the proposed site(s) and its (their) major resources, including location, proposed boundaries, and adjacent land uses. Maps are required to show the location of the proposed site(s) and the boundaries of the public participation process used by the state to solicit the views of interested parties, a summary of comments, and, if inter-state issues are involved, documentation that the Governor(s) of the affected state(s) has been contacted. Copies of all correspondence, including comments received from interested landowners, must be appended.

(f) A list of all sites considered and a brief statement of the reasons why a site was not preferred; and

(g) A nomination of a National Estuarine Research Reserve by the Governor of the coastal state in which the state is located.

(h) A state proposing to reactivate an inactive site, previously approved by NOAA for development as an Estuarine Sanctuary or Reserve, may apply for those funds remaining, if any, provided for site selection and feasibility (§ 921.11a) to determine the feasibility of reactivating the site. The state must comply with the requirements set forth in § 921.11(c) through (h).

§ 921.13 Post site selection.

(a) At the time of the coastal state's request for NOAA approval of a proposed site, the state may submit a request for funds to develop the draft

management plan and for preparation of the EIS. At this time, the state may also submit a request for the remainder of the predesignation funds to perform a limited basic characterization of the physical, chemical and biological characteristics of the site approved by NOAA necessary for providing EIS information to NOAA. The state's request for these post-selection funds must be accompanied by the information specified in subpart I and, for draft management plan development and EIS information collection, the following programmatic information:

(1) A draft management plan outline (see § 921.13(a) below); and

(2) An outline of a draft memorandum of understanding (MOU) between the state and NOAA detailing the Federal-state role in Reserve management during the initial period of Federal funding and expressing the state's long-term commitment to operate and manage the Reserve.

(b) The state is eligible to use the funds provided in § 921.13(a) after the proposed site is approved by NOAA under the terms of § 921.11.

§ 921.13 Management plan and environmental impact statement development.

(a) After NOAA approves the state's proposed site and application for funds submitted pursuant to § 921.12, the state may begin draft management plan development and the collection of information necessary for the preparation by NOAA of an EIS. The state shall develop a draft management plan, including an MOU. The plan shall set out in detail:

(1) Reserve goals and objectives, management issues, and strategies or actions for meeting the goals and objectives;

(2) An administrative plan including staff roles in administration, research, education/interpretation, and surveillance and enforcement;

(3) A research plan, including a monitoring design;

(4) An education/interpretation plan;

(5) A plan for public access to the Reserve.

(b) A construction plan, including a proposed construction schedule, general descriptions of proposed developments and general cost estimates. Information should be provided for project cost estimates and project management sufficient detail to allow these projects to begin in the initial phase of acquisition and development. A categorical exclusion, environmental assessment, or EIS may be required prior to construction.

(7)(i) An acquisition plan identifying the ecologically key land and water areas of the Reserve, ranking these areas according to their relative importance, and including a strategy for establishing adequate long-term state control over these areas sufficient to provide protection for Reserve resources to ensure a stable environment for research. This plan must include an identification of ownership within the proposed Reserve boundaries, including landowners and public owners; the state proposes to use acquisition (including less-than-fee simple options) to establish adequate long-term state control; an estimate of the fair market value of any property interest which is proposed for acquisition; a schedule estimating the time required to complete acquisition; and a discussion of any anticipated problems. In selecting a preferred method(s) for establishing adequate state control over areas within the proposed boundaries of the Reserve, the state shall perform the following: (a) The state shall determine the areas of the Reserve which are deemed to be part of the key land and water areas (control over which is necessary to protect the integrity of the Reserve for research purposes), and for those parcels required for research and interpretative support facilities or buffer purposes.

(A) Determine, with appropriate justification, the minimum control method(s) required (e.g., management agreement, regulation, less-than-fee simple property interest (e.g., conservation easement), fee simple property acquisition, or a combination of these approaches). This does not preclude the future necessity of increasing the level of state control;

(B) Identify the level of existing state control(s);

(C) Identify the level of additional state control(s), if any, necessary to meet the minimum requirements identified in paragraph (b)(7)(i)(A) of this section;

(D) Examine all reasonable alternatives for attaining the level of control identified in paragraph (b)(7)(i)(C) of this section, and perform a cost analysis of each; and

(E) Rank, in order of cost, the methods (including acquisition) identified in paragraph (b)(7)(i)(C) of this section. (i) Acquisition of land and water for cost-effectiveness of control alternatives shall include a reasonable estimate of both short-term costs (e.g., acquisition of property interests, regulatory program development, including associated enforcement costs, negotiation, adjudication, etc.) and long-term costs (e.g., monitoring, enforcement, administration, management and coordination). (ii) The state shall develop a plan (or plans) for establishing adequate state control over each parcel examined under the process described above, the state shall give priority consideration to the least costly method(s) of attaining the minimum level of long-term control required. Generally, with the exception of the areas of the Reserve required for support facilities, the level of control(s) required for buffer areas will be considerably less than that required for key land and water areas. This acquisition plan, after receiving the approval of NOAA, shall serve as a guide for negotiations with landowners. A final management plan shall be developed as a part of the final management plan.

(8) A resource protection plan detailing applicable authorities, including allowable uses, uses requiring a permit and permit requirements, any restrictions on use of the research reserve, and a strategy for research reserve surveillance and monitoring. The plan shall use restrictions, including appropriate government enforcement agencies.

(9) If applicable, a restoration plan describing those portions of the site that may require habitat modification to restore natural conditions.

(10) If applicable, a resource manipulation plan, describing those portions

of the Reserve buffer in which long-term pre-existing (prior to designation) manipulation for reasons not related to research or restoration is occurring. The plan shall activities in detail the nature of such activities shall justify the plan and shall be submitted to continue within the reserve buffer; and shall describe possible effects of this manipulation on key land and water areas and their resources;

(11) A proposed memorandum of understanding (MOU) between the state and NOAA regarding the Federal-state relationship during the establishment and development of the National Estuarine Research Reserve shall include a long-term commitment by the state to maintain and manage the Reserve in accordance with section 315 of the Act, 16 U.S.C. 1461, and applicable regulations, in conjunction with the MOU, and where possible taking appropriate administrative or legislative action to ensure the Reserve is under the operation of the National Estuarine Research Reserve. If other MOUs are necessary (such as with a Federal agency, another state agency or private organization), drafts of such MOUs must be included in the plan. All necessary MOUs shall be signed prior to Reserve designation; and

(12) If the state has a federally approved coastal management program, a certification that the National Estuarine Research Reserve is consistent with the maximum extent practicable with that program. See § 921.4(b) and § 921.30(b).

(b) Regarding the preparation of an EIS under the National Environmental Policy Act on a National Estuarine Research Reserve, the state and NOAA shall collect all necessary information concerning the socioeconomic and environmental impacts associated with implementing the draft management plan and feasible alternatives to the plan. Based on this information, the state will draft and provide NOAA with a preliminary EIS, consistent with the requirements of the National EIS, the state and NOAA shall hold a scoping meeting (pursuant to NEPA) in the area or areas most affected to solicit public and government comments

on the significant issues related to the proposed action. NOAA will publish a notice of the meeting in the FEDERAL REGISTER at least 15 days prior to the meeting. The state shall be responsible for publishing a similar notice in the local media.

(d) NOAA will publish a FEDERAL REGISTER notice of intent to prepare a draft EIS. After the draft EIS is prepared and filed with the Environmental Protection Agency (EPA), a Notice of Availability of the draft EIS will appear in the FEDERAL REGISTER. Not less than 45 days after publication of the notice, NOAA will hold at least one public hearing in the area or areas most affected by the proposed national estuarine research reserve. The hearing will be held no sooner than 15 days after appropriate notice of the meeting has been given in the principal news daily newspaper of the state and the FEDERAL REGISTER by NOAA. After a 45-day comment period, a final EIS will be prepared by the state and NOAA.

Subpart C—Acquisition, Development and Preparation of the Final Management Plan

§ 921.30 General.

The acquisition and development period is separated into two major phases. After NOAA approval of the final management plan, the state will acquire the land and water areas of the MOU and completion of the final EIS, a coastal state is eligible for an initial acquisition and development award(s).

In this initial phase, the state should work to meet the criteria required for formal research reserve designation; e.g., establishing adequate state control over the land and water areas and certified that the state has a management plan and preparing the final management plan. These requirements are specified in § 921.30. Minor construction in accordance with the draft management plan may also be conducted during this initial phase. The initial acquisition and development phase is expected to last no longer than three years. If the state and NOAA agree, the period may be negotiated between the state and NOAA. After Reserve designation, a state is eligible for a supplemental acquisition and development award(s) in accordance with § 921.31. In

§ 921.21

this post-designation acquisition and development phase, funds may be used in accordance with the final management plan to construct research and educational facilities, complete any remaining land acquisition, for program development, and for restorative activities. Funds for the final management plan, in any case, the amount of Federal financial assistance provided to a coastal state with respect to the acquisition of lands and waters, or interests therein, for any one National Estuarine Research Reserve may not exceed an amount equal to 50 per cent of the costs of the lands, waters, and interests acquired, or \$5,000,000, whichever amount is less.

§ 921.31 Initial acquisition and development awards.

(a) Assistance is provided to aid the recipient prior to designation in:

(1) Acquiring a fee simple or less-than-fee simple real property interest in lands and waters areas to be included in the Reserve boundaries (see § 921.13(e)(7); § 921.30(d));

(2) Minor construction, as provided in paragraphs (b) and (c) of this section;

(3) Preparing the final management plan; and

(4) Initial management costs, e.g., for implementing the NOAA approved draft management plan, hiring a Research Reserve manager, conducting necessary and for other management-related activities. Application procedures are specified in subpart I.

(b) The expenditure of Federal and state funds on major construction activities is not allowed during the initial acquisition and development phase. The preparation of architectural plans, engineering plans, and specifications for proposed construction, or for proposed restorative activities, is permitted. In addition, minor construction activities, consistent with paragraph (c) of this section also are allowed. The NOAA-approved draft management plan must, however, include a construction plan and a public plan for construction awards can be issued for construction activities.

(c) Only minor construction activities that aid in implementing portions of the management plan (such as boat ramps and nature trails) are permitted

15 CFR Ch. IX (1-1-97 Edition)

during the initial acquisition and development phase. No more than five (5) percent of the initial acquisition and development award may be expended on such activities. NOAA must make a specific determination, based on the final EIS, that the construction activity will not be detrimental to the environment.

(d) Except as specifically provided in paragraph (c), construction (of the acquisition, construction projects, to be funded in whole or in part under an acquisition and development award(s), may not be initiated until the Reserve receives formal designation (see § 921.30). This requirement has been adopted to ensure that substantial progress in establishing adequate state control over key land and water areas has been made and that a final management plan is completed before major sums are spent on construction. Once substantial progress in establishing adequate state control/acquisition has been made, as defined by the state in the management plan, other activities guided by the final management plan may begin with NOAA's approval.

(e) For any real property acquired in whole or part with Federal funds (for which the Reserve must submit suitable title documents to include substantially the following provisions, or otherwise append the following provisions in a manner acceptable under applicable state law to the official land record(s):

(1) Title to the property conveyed by this deed shall vest in the recipient of the award granted pursuant to section 315 of the Act, 16 U.S.C. 1461, that NOAA approved state(s) subject to the condition that the designation of the name of National Estuarine Reserve is not withdrawn and the property remains part of the federally designated name of National Estuarine Research Reserve; and

(2) In the event that the property is no longer included as part of the Reserve, or if the designation of the Reserve is withdrawn, the property shall be withdrawn, then NOAA or its designees, after full and reasonable consultation with the State, may exercise the following rights regarding the disposition of the property:

(i) The recipient may retain title after paying the Federal Government an amount computed by applying the Federal fair market value to the cost of the original project to the current fair market value of the property;

(ii) If the recipient does not elect to retain title, the Federal Government may either direct the recipient to sell the property and pay the Federal Government an amount computed by applying the Federal fair market value to the cost of the original project to the current fair market value of the property, or direct the recipient to transfer title to the Federal Government. If directed to transfer title to the Federal Government, the recipient shall be entitled to the recipient's percentage of participating in the cost of the original project to the current fair market value of the property; and

(iii) Fair market value of the property must be determined by an independent appraiser and certified by a responsible official of the state, as provided by the laws of the state, in accordance with 15 CFR part 24, and Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally assisted programs at 15 CFR part 11.

(f) Upon instruction by NOAA, provisions analogous to those of § 921.21(e) shall be included in the deed of conveyance for the property, and the property shall be acquired in whole or part with Federal funds.

(g) Federal funds or non-Federal matching share funds shall not be spent to acquire a real property interest in which the state will own the land concurrently with another entity unless the property interest is an acquisition identified part of an acquisition strategy pursuant to § 921.13(f) which has been approved by NOAA prior to the effective date of these regulations. (h) Prior to submitting the final management plan to NOAA for review and approval, the state shall hold a public meeting to receive comment on the plan in the area affected by the estuarine research reserve. NOAA will

publish a notice of the meeting in the Federal REGISTER at least 15 days prior to the public meeting. NOAA will also be responsible for having a similar notice published in the local newspaper(s).

Subpart D—Reserve Designation and Subsequent Operation

§ 921.30 Designation of National Estuarine Research Reserves.

(a) The Under Secretary may designate an area proposed for designation as a National Estuarine Research Reserve. It is located as a National Estuarine Research Reserve if the Under Secretary finds:

(1) The area is a representative estuarine ecosystem that is suitable for long-term research and contributes to the biogeographical and typological balance of the System;

(2) Key land and water areas of the proposed Reserve, as identified in the management plan, are under adequate state control sufficient to provide long-term protection for reserve resources to ensure a stable environment for research;

(3) Designation of the area as a Reserve will serve to enhance public understanding and appreciation of estuarine areas, and provide suitable opportunities for public education and interpretation;

(4) A final management plan has been approved by NOAA;

(5) An MOU has been signed between the state and NOAA, insuring a long-term commitment by the state to the effective operation and implementation of the area as a National Estuarine Research Reserve;

(6) All MOUs necessary for reserve management (i.e., with relevant Federal, state, and local agencies and/or private organizations) have been signed;

(7) The coastal state in which the area is located has complied with the requirements of subpart B.

(b) NOAA will determine whether the designation of a National Estuarine Research Reserve in a state with a Federally approved coastal zone management program directly affects the coastal zone. If the Reserve is found to directly affect the coastal

§ 921.31

zone, NOAA will make a consistency determination pursuant to § 921.31(f) of the Federal REGISTER. NOAA will publish a notice of the meeting in the Federal REGISTER at least 15 days prior to the public meeting. NOAA will also be responsible for having a similar notice published in the local newspaper(s).

(c) NOAA will publish the notice of designation of a National Estuarine Research Reserve in the Federal REGISTER. The state shall be responsible for publishing similar notices published in the local media.

(d) The term "state control" in § 921.30(a)(3) does not necessarily require that key land and water areas be owned by the state in fee simple. Acquisition of less-than-fee simple interests (e.g., conservation easements) and utilization of existing state regulatory authority may be used to ensure that the state can demonstrate that these interests and measures assure adequate long-term state control consistent with the purposes of the research reserve (see also § 921.13(e)(7), § 921.21(g)). Should the state later elect to purchase an interest in such lands using NOAA funds, adequate justification as to why the acquisition must be provided to NOAA.

§ 921.31 Supplemental acquisition and development awards.

After National Estuarine Research Reserve designation, and as specified in the approved management plan, a coastal state may request supplemental acquisition and/or development award(s) for acquiring additional property interests identified in the management plan as necessary to strengthen protection of key land and water areas and to enhance long-term protection of the area for research and education, for facility and scientific construction, for management and monitoring, and for administrative purposes related to acquisition and/or facility construction and to develop and/or upgrade research, monitoring and education/interpretive programs. Federal financial assistance provided to a National Estuarine Research Reserve for supplemental development activities associated with facility construction (i.e., major construction activities) may not exceed 70

15 CFR Ch. IX (1-1-97 Edition)

percent of the total project cost. NOAA must make a specific determination that the supplemental acquisition will be beneficial to the environment. Acquisition awards for the acquisition of lands or waters, or interests therein, for any one reserve may not exceed an amount equal to 50 per centum of the cost of the lands, waters, and interests therein or \$5,000,000, whichever amount is less. In the case of a biogeographic region (see Appendix I) shared by two or more states, each state is eligible independently for Federal financial assistance to establish a separate National Estuarine Research Reserve within their respective portions of the shared biogeographic region. Application procedures are specified in subpart I. Land acquisition must follow the procedures specified in § 921.13(e)(7), § 921.21(e) and (f) and § 921.81.

§ 921.32 Operation and management plan.

(a) After the Reserve is formally designated, a coastal state is eligible to receive Federal funds to assist the state in the development and management of the Reserve including the management of research, monitoring, education, and interpretive programs. The purpose of this Federally funded operation and management phase is to implement the approved final management plan and to take the necessary steps to ensure the continued effective operation of the Reserve.

(b) State operation and management of the Reserve shall continue in the National Estuarine Research Reserve program (see § 921.1).

(c) Federal funds are available for the operation and management of the Reserve. Federal funds provided pursuant to this section may not exceed 70% of the total cost of operating and managing the Reserve for any one year. In the case of a biogeographic region (see Appendix I) shared by two or more States, each state is eligible for Federal financial assistance to establish a separate Reserve within their respective portions of the shared biogeographic region (see § 921.10).

(d) Operation and management funds are subject to the following limitations: (1) Eligible coastal state agencies may apply for up to the maximum share available per Reserve for that fiscal year. Share amounts will be announced annually by letter from the Secretary and Reserves Division to all participating states. This letter will be provided as soon as practicable following approval of the Federal budget for the fiscal year; (2) No more than ten percent of the total amount (State and Federal share) of each operation and management award may be used for construction-type activities.

§ 921.33 Boundary changes, amendments, and additions of multiple-site components.

(a) Changes in the boundary of a Reserve and/or changes to the final management plan, including state laws or regulations promulgated specifically for the Reserve, may be made only after written approval by NOAA. NOAA may require public notice, including notices in the Federal Register and an opportunity for public comment and approval, a boundary or management plan change. Changes in the boundary of a Reserve involving the acquisition of properties not listed in the management plan or final EIS require public notice and the opportunity for comment; in certain cases, a categorical exclusion, an environmental assessment, and possibly a full environmental impact statement may be required. NOAA will place a notice in the FEDERAL REGISTER of any proposed changes in Reserve boundaries or proposed major changes to the final management plan. The state shall be responsible for publishing an equivalent notice in the local media. See also regulation 15 CFR 921.40(b) and (c).

(b) As discussed in § 921.10(b), a state may choose to develop a multiple-site National Estuarine Research Reserve after the initial acquisition and development award for a single site has been made. NOAA will publish notice of the proposed new site including an invitation for comments from the public in

the FEDERAL REGISTER. The state shall be responsible for publishing an equivalent notice in the local media. An EIS, if required, shall be prepared in accordance with section 921.13 and shall include an administrative framework for the multiple-site Reserve and a description of the complementary research and educational programs within the Reserve. If NOAA determines, based on the scope of the project and the assessment of the environmental impacts of the multiple-site Reserve, that an environmental assessment is sufficient to establish a multiple-site Reserve, then the state shall develop a revised management plan which, concerning the additional component, incorporates each of the elements described in § 921.13(a). The revised management plan shall include the same goals and objectives for all components of the multiple-site Reserve and the additional component's relationship to the original site(s).

(c) The state shall revise the management plan for a Reserve at least every five years, or more often if necessary. Management plan revisions are subject to NOAA approval. NOAA will approve boundary changes, amendments to management plans, or the addition of multiple-site components, by notice in the FEDERAL REGISTER. If necessary NOAA will revise the designation document (findings) for the site.

Subpart E—Ongoing Oversight, Performance Evaluation and Withdrawal of Designation

§ 921.40 Ongoing oversight and evaluation of designated National Estuarine Research Reserves.

(a) The Sanctuaries and Reserve Division shall conduct, in accordance with section 312 of the Act and procedures set forth in 15 CFR part 921, ongoing oversight and evaluations of Reserves. Interim sanctions may be imposed in accordance with regulations promulgated under 15 CFR part 921.

(b) The Assistant Administrator may consider the following indicators of non-adherence in determining whether to invoke interim sanctions: (1) Inadequate implementation of required staff roles in administration, research, education/interpretation, and

surveillance and enforcement. Indicators of inadequate implementation could include: insufficient staff to carry out the required functions.

(2) Inadequate implementation of the required research plan, including the monitoring design. Indicators of inadequate implementation could include: Not carrying out research or monitoring that is required by the plan, or carrying out research or monitoring that is not consistent with the plan.

(3) Inadequate implementation of the required education/interpretation plan. Indicators of inadequate implementation could include: Not carrying out education or interpretation that is required by the plan, or carrying out education/interpretation that is inconsistent with the plan.

(4) Inadequate implementation of public access to the Reserve. Indicators of inadequate implementation of public access could include: Not providing necessary access, giving full consideration to the need to keep some areas off limits to the public in order to protect fragile resources.

(5) Inadequate implementation of facility development plans. Indicators of inadequate implementation could include: Not taking action to propose and budget for necessary facilities, or not undertaking necessary construction in a timely manner when funds are available.

(6) Inadequate implementation of acquisition plan. Indicators of inadequate implementation could include: Not pursuing aggressive acquisition programs, not requesting promptly additional funds when necessary, and evidence that adequate long-term state control has not been established over some core or buffer areas, thus jeopardizing the ability to protect the Reserve and resources from offsite impacts.

(7) Inadequate implementation of Reserve management. Indicators of inadequate implementation could include: Reserve restrictions, insufficient surveillance and enforcement to assure that restrictions on use of the Reserve are adhered to, or evidence that Reserve resources are being damaged or destroyed as a result of the above.

(8) Failure to carry out the terms of the signed Memorandum of Understanding (MOU) between the State and NOAA which establishes a long-term state commitment to maintain and manage the Reserve in accordance with section 315 of the Act. Indicators of failure could include: State action to allow incompatible uses of state-controlled lands or waters in the Reserve, failure of the state to bear its fair share of the costs associated with the term operation and management of the Reserve, or failure to initiate timely updates of the MOU when necessary.

§ 921.41 Withdrawal of designation.

The Assistant Administrator may withdraw designation of an estuarine area as a National Estuarine Research Reserve if the Reserve is not consistent with the procedures of section 312 and 315 of the Act and regulations promulgated thereunder.

Subpart F—Special Research Projects

§ 921.50 General.

(a) To stimulate high quality research within designated National Estuarine Research Reserves, NOAA may provide financial support for research projects within designated Reserves with research guidelines with research areas enclosed in § 921.51. Research awards may be awarded under this subpart to only those designated Reserves with approved final management plans. Although research may be conducted within the immediate watershed of the Reserve, the majority of research project activities of any single research project funded under this subpart may be conducted within Reserve boundaries.

Funds provided under this subpart are primarily used to support management-related research projects that will enhance scientific understanding of the Reserve ecosystem, provide information needed by Reserve management and coastal management decision-makers, and improve public awareness and understanding of estuarine ecosystems and estuarine management issues. Special research projects may be oriented to specific Reserves; however, research projects that would benefit more than one Reserve in the

National Estuarine Research System are encouraged.

(b) Funds provided under this subpart are available on a competitive basis to any coastal state or qualified public or private person. A notice of available funds will be published in the FEDERAL REGISTER. Special research projects and other funds available to a coastal state under the Act. Federal funds provided under this subpart may not exceed 70% of the total cost of the project, consistent with § 921.81(e)(4) ("allowable costs").

§ 921.81. Estuarine research guidelines. (a) Research within the National Estuarine Research Reserve System shall be conducted in a manner consistent with Estuarine Research Guidelines developed by NOAA.

(b) A summary of the Estuarine Research Guidelines is published in the FEDERAL REGISTER as a part of the notice of available funds discussed in § 921.80(c).

(c) The Estuarine Research Guidelines are reviewed annually by NOAA. This review will include an opportunity for comment by the estuarine research community.

§ 921.83. Promotion and coordination of estuarine research.

(a) NOAA will promote and coordinate the use of the National Estuarine Research Reserve System for research purposes.

(b) NOAA will, in conducting or supporting estuarine research other than that authorized under section 315 of the Act, must demonstrate that the research that makes use of the National Estuarine Research Reserve System.

(c) NOAA will consult with other Federal and state agencies to promote use of one or more research reserves within the National Estuarine Research Reserve System when such agencies conduct estuarine research.

Subpart G—Special Monitoring Projects

§ 921.80. General.

(a) To provide a systematic basis for developing a high quality estuarine resource and ecosystem information base

for National Estuarine Research System and, as a result, for the System, NOAA may provide financial support for basic monitoring programs as part of operations and management under § 921.32. Monitoring funds are used to support three major phases of a monitoring program: (1) Studies necessary to develop a baseline understanding of the description/characterization; (2) development of a site profile; and (3) formulation and implementation of a monitoring program.

(b) Additional monitoring funds may be available on a competitive basis to the state agency responsible for Reserve management or a qualified public or private person. If the funding source, the applicant is other than the managing entity of a Reserve that applicant must submit as a part of the application a letter from the Reserve manager indicating formal support of the application. Funds provided under this subpart may not exceed 70% of the total cost of the project, consistent with § 921.81(e)(4) ("allowable costs").

(c) Monitoring projects funded under this subpart must focus on the Reserve and must be consistent with the applicable sections of the Estuarine Research Guidelines, referenced in § 921.81. Portions of the project may occur within the immediate watershed of the Reserve beyond the site boundary. However, the monitoring project must demonstrate that it is necessary for the success of the project.

Subpart H—Special Interpretation and Education Projects

§ 921.70. General.

(a) To stimulate the development of innovative or creative interpretation and educational projects and materials to enhance public awareness and understanding of estuarine research and fund special interpretive and educational projects in addition to those activities provided for in operations and management under § 921.32. Special

interpretive and educational awards may be awarded under this subpart only those designated Reserves with approved final management plans.

(b) Funds provided under this subpart may be available on a competitive basis to any state agency. However, if the applicant is other than the managing entity of a Reserve, that applicant must submit as a part of the application a letter from the Reserve manager indicating formal support of the application. Funds provided under this subpart may not exceed 70% of the total cost of the project, consistent with § 921.81(e)(4) ("allowable costs").

(c) Applicants for education/interpretive projects that NOAA determines benefit the entire National Estuarine Research Reserve System may receive Federal assistance of up to 100% of project costs.

Subpart I—General Financial Assistance Provisions

§ 921.80. Application Information.

(a) Only a coastal state may apply for Federal financial assistance awards for preacquisition, acquisition and development, operation and management, special education and interpretation projects, under subpart H. A person may apply for Federal financial assistance awards for special estuarine research or monitoring projects under subpart G. The announcement of opportunities to conduct research in the System appears on an annual basis in the FEDERAL REGISTER. If a state is participating in the National Coastal Program, it may apply for assistance under an award under section 315 of the Act shall notify the state coastal management agency regarding the application.

(b) An original and two copies of the formal application must be submitted at least 120 working days prior to the proposed beginning of the project to the appropriate NOAA office: National Reserves Division Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration, during the award period.

1825 Connecticut Avenue, NW, suite 714, Washington, DC 20235. Application for Federal Assistance Standard Form 424 (Non-construction Program) constitutes the formal application for site selection, post-site selection, operation and management, research, and education and interpretive awards. The Application for Federal Financial Assistance Standard Form 424 (Construction Program) constitutes the formal application for land acquisition and development awards. The application must be accompanied by the information required in subpart B (predesignation), subpart C and § 921.31 (acquisition and development), and § 921.32 (operation and management) as applicable. Applications for development awards for construction projects, or construction projects including construction, must include a preliminary engineering report, a detailed construction plan, a site plan, a budget and categorical exclusion check list or environmental assessment. All applications must contain back up data for budget estimates (Federal and non-Federal shares), and evidence that the applicant has the financial capability to match the Federal share. The application must contain the following information: (1) State Historic Preservation Office comments; (2) Written approval from NOAA of the management plan for initial acquisition and development award(s); (3) A preliminary engineering report for construction activities.

(a) Allowable costs will be determined in accordance with applicable OMB Circular and guidance for Federal financial assistance. The management and other Department of Commerce and NOAA directives. The term "costs" applies to both the Federal and non-Federal shares.

(b) Costs claimed as charges to the award must be reasonable, beneficial and necessary for the proper and efficient administration of the award. Federal assistance award and must be incurred during the award period.

(c) Costs must not be allocable to or included as a cost of any other Federally-financed program in either the current or a prior award period.

(d) General guidelines for the non-Federal share are contained in Department of Commerce Regulations at 15 CFR part 24 and OMB Circular A-110. Copies of Circular A-110 can be obtained from the Sanctuaries and Reserves Division; 1225 Connecticut Avenue, NW, suite 714; Washington, DC 20004-6202. The following may be used in satisfying the matching requirement:

(1) *Site selection and post site selection*

(2) *Acquisition and development awards.* Cash and in-kind contributions are allowable. In general, the fair market value of lands to be included within the Reserve boundaries and acquired pursuant to the Act, with other than

However, the fair market value of real property allowable as match is limited to the fair market value of a real property interest equivalent to, or required to attain, the level of control over such area(s) identified by the state and approved by the Federal Government as that necessary for the protection and management of the National Estuarine

Research Reserve. Appraisals must be performed according to Federal appraisal standards as detailed in Department of Commerce regulations at 15 CFR part 24 and the Uniform Relocation Assistance and Real Property Acquisition for Federal land Federally as-

The listed programs in 15 CFR part 11, may be used as match, Land, including submerged lands already in the state's possession, may be used as match to establish a National Estuarine Research Reserve. The value of match for these state lands will be calculated by determining the value of the benefits foregone by the state, in the use of the lands, as a result of new restrictions that may be imposed by Reserve des-

ignation. The appraisal of the benefits foregone must be made by an independent appraiser in accordance with Federal appraisal standards set forth in 35 CFR part 24 and 15 CFR part 11. A state may initially use as match land valued at greater than the Federal share of the acquisition and development award. The value in excess of the amount required as match for the initial award may be used to match subsequent supplemental acquisition and development awards for the National Estuarine Research Reserve (see also 15 CFR 120). Other types of acquisition, such as appraisals, land and surveys, may also be used as match.

(3) *Operation and management awards.* Generally, cash and in-kind contributions (directly benefiting and specifically identifiable to operations and management), except land, are allowable.

(4) *Research, monitoring, education and public information awards.* In-kind contributions (directly benefiting and specifically identifiable to the scope of work), except land, are allowable.

1921.82 Amendments to financial assistance awards.

Actions requiring an amendment to the financial assistance award, such as a request for additional Federal funds, revisions of the approved project budget or original scope of work, or extension of the performance period must be submitted to NOAA on Standard Form 124 and approved in writing.

APPENDIX I TO PART 921—
BIOGEOGRAPHIC CLASSIFICATION SCHEME

1. Northern of Maine (Eastport to the Sheepscot River.)
2. Southern Gulf of Maine (Sheepscot River to Cape Cod.)

Virginia

3. Southern New England (Cape Cod to Sandy Hook.)
4. Middle Atlantic (Sandy Hook to Cape Hatteras.)
5. Chesapeake Bay.

Carolinian

8. East Florida (St. John's River to Cape Canaveral.)

West Indian

9. Caribbees (Cape Canaveral to Ft. Jefferson and south.)
10. West Florida (Ft. Jefferson to Cedar Key.)

Louisiana

11. Panhandle Coast (Cedar Key to Mobile Bay.)
12. Mississippi Delta (Mobile Bay to Galveston.)
13. Western Gulf (Galveston to Mexican border.)

•

14. Southern California (Mexican border to Point Conception.)
15. Central California (Point Conception to Cape Mendocino.)

to Bay.

Columbian

19. Puget Sound.

East Lakes

21. Lakes Michigan and Huron (including
traits of Mackinac, St. Clair River, and
the St. Marys River.)

Concluding De

Fjord
Iagara Falls.)
23. Lake Ontario (including St. Lawrence
River.)

ska (Princ

25. Aleutian Island (Cook Inlet Bristol Bay.)

Alaska (Br

27. Hawaiian Islands.
28. Western Pacific Island.
29. Eastern Pacific Island.

FIGURE 1

National Estuarine Research Reserve System
Biogeographic Regions of the United States



APPENDIX II TO PART 921—TYPOLOGY OF
NATIONAL ESTUARINE RESEARCH RE-
SERVES

This typology system reflects significant differences in estuarine characteristics that are not necessarily related to regional location. The purpose of this typology system is to maintain ecosystem variety in the selection of national estuarine reserves. Priority will be given to important ecosystem types as yet unrepresented in the reserve system. Characteristics of the ecosystem may represent several ecosystem types or physical characteristics.

Class I—Ecosystem Types

Group 1—Shorelands

A. *Mediterranean Forest Woodland*. That have developed under the influence of salt spray can be found on coastal uplands or recent features such as barrier islands and beaches, and may be divided into the following biogeographic regions:

1. *Western coniferous forest biome*. This is an area of predominantly evergreens such as the Sitka spruce (Picea), grand fir (Abies), western white pine (Pinus), and Douglas fir (Pseudotsuga). The area has high rainfall, high productivity, and pronounced seasonal periodicity.

2. *Moist temperate (Mesothermal) coniferous forest biome*. Found along the west coast of North America from California to Alaska, this area is dominated by Sitka spruce (Picea), which has a high rainfall, high humidity with rainfall ranging from 30 to 150 inches, and a well-developed understory of shrubs and ferns. The area has high rainfall, high productivity, and pronounced seasonal periodicity.

3. *Temperate deciduous forest biome*. This biome is characterized by abundant, evenly distributed rainfall, moderate temperatures (40° to 60°F), and a well-developed understory of shrubs and ferns. The area has high rainfall, high humidity with rainfall ranging from 30 to 150 inches, and a well-developed understory of shrubs and ferns. The area has high rainfall, high productivity, and pronounced seasonal periodicity.

4. *Broad-leaved evergreen subtropical forest biome*. This biome is characterized by high rainfall, high humidity with rainfall ranging from 30 to 150 inches, and a well-developed understory of shrubs and ferns. The area has high rainfall, high productivity, and pronounced seasonal periodicity.

species with multiple stems and a few centimeters in diameter are common. The area is developing under the influence of salt spray and occasional sand burial. This includes thickets, scrub, scrub savanna, heathlands, and coastal chaparral. There is a great variety of plant species and the vegetation exhibits regional specificity.

1. *Northern areas*: Characterized by thickets of Myrica, prunus, and Rosa. 2. *Southeastern areas*: Characterized by thickets of Myrica, Baccharis, and live oak (Quercus).

3. *Western areas*: Adenostoma, arctostaphylos, and acaulypus are the dominant forest species. 4. *Central areas*: This area, which possesses sand dunes and coastal flats, has low rainfall (10 to 30 inches per year) and large amounts of humus in the soil. Ecological succession is slow, resulting in the persistence of low, dense, and diverse vegetation. Dominant vegetation includes mid-grasses (5 to 8 feet tall), such as Spartina, and trees such as willow (Salix).

5. *Eastern areas*: Characterized by thickets of Myrica, prunus, and Rosa. (Populus deltoides). This area is divided into four regions with the following typical strand vegetation:

1. *Arctic tundra*: Elymus. 2. *Northwestern tundra*: Elymus. 3. *Southeast Gulf*: Uniola, and 4. *Mid-Atlantic/Gulf*: Spartina patens.

5. *Coastal tundra*. This ecosystem, which is found along the coast of Alaska and North America, is characterized by low temperatures, a short growing season, and some permafrost, producing a low, treeless mat community made up of mosses, lichens, and herbaceous and dwarf woody plants. Common species include arctic alpine plants such as Empetrum nigrum and Betula nana, the lichen, and the dwarf shrub, Rubus chamaemorus. Common species on the coastal beach ridges of the high arctic are Empetrum nigrum and Betula nana, the lichen, and the dwarf shrub, Rubus chamaemorus.

6. *Coastal cliffs*. This ecosystem is an important nesting site for many sea and shore birds. It consists of communities of herbaceous plants, shrubs, and trees (forbs, grasses, etc.) on the top or along rocky faces exposed to salt spray. There is a diversity of plant species including mosses, lichens, liverworts, and "higher" plant representatives.

100 million

Group 11—Transition Area

A. Coastal marshes. These are wetland areas dominated by grasses (Poaceae), sedges (Cyperaceae), rushes (Juncaceae), cattails (Typhaceae), and other graminoid species (Liliaceae), and other graminoid species (Liliaceae) and is subject to periodic flooding by either salt or brackish water. The ecosystem may be subdivided into (a) Tidal marshes with periodically flooded by either salt or brackish water; (b) nontidal (freshwater); or (c) tidal freshwater. These are the most important habitats for many important estuarine species of fish and wildlife. Marshes are important for water purification, sedimentation, and nutrient transport and storage. Marshes also support many birds and shrubs together with large trees such as cypresses or gum.

B. Coastal mangroves. This ecosystem appears seasonally or monthly, but low waves or tides, and is dominated by a variety of salt-tolerant trees, such as the red mangrove (*Rhizophora mangle*), black mangrove (*Sonneratia alba*), and white mangrove (*Laguncularia racemosa*). It is also an important habitat for large populations of fish, invertebrates, and birds. This type of ecosystem can be found from central Florida to the Gulf of Mexico and to the Atlantic of the western Pacific.

Group III—Submerged Bottoms

A. Subtidal hardbottom. This system is characterized by a consolidated, rocky or shell-rich or laterally continuous bed of local origin and is found in association with geomorphological features such as sub-marine canyons and fjords and is usually covered with assemblages of sponges, sea fans, bivalves, hard corals, tunicates, and other sessile organisms. A typical example is the oyster reef, a type of subtidal hardbottom. Composed of assemblages of organisms (usually bivalves), it is usually found near an estuary's mouth in a zone of moderate wave action, salt content, and turbidity. Light levels are sufficient, a cover of algae is present, and the water is oxygenated. Such areas may also be frequented by large, mobile, nektonic organisms.

Global softbottoms. Major characteris-

tica of this ecosystem are an unconsolidated layer of fine particles of silt, sand, clay, and gravel, high hydrogen sulfide levels, and anoxic conditions often existing below the surface. Macrophytes are either sparse or absent, although a layer of benthic microalgae may be present if light levels are sufficient. The faunal community is dominated by a diverse population of deposit feeders including polychaetes, bivalves, and burrowing crustaceans.

Pt. 921, App. II

100 million

the plesioscepter, the Quagbog Mercenaria, the schuldard worm Urechis, the mud snail Nassarius, and the sea cucumber Thyone. The intertidal zone is the most diverse of the strata along the marine edge that are dominated by macroscopic algae, usually thalloid, but also filamentous or unicellular algae. The intertidal zone is the most diverse of the coastal diophants that fall within the particle zone. Dominant fauna of these areas are barnacles, mussels, periwinkles, anemones, and sea urchins. The intertidal zone is the most diverse of the coastal diophants that fall within the particle zone. Dominant fauna of these areas are barnacles, mussels, periwinkles, anemones, and sea urchins.

1. Northern latitude subregion. It is in this region that the community structure is best developed. The dominant algal species are the green alga Ulva, the red alga Gelidium, and Acroporium, at the mid-latitude zone. Laminaria and other kelp-like algae just beyond the intertidal, although they can be very deep tidals, are commonly low tides or found in deep tidal areas.

2. Southern latitudes. The communities in this region are reduced in comparison to those in the northern latitudes and possess less diversity. The dominant algal species are filamentous green, blue-green, and red algae, and small thalloid brown algae. The intertidal zone is the most diverse of the strata along the marine edge that are dominated by macroscopic algae, usually thalloid, but also filamentous or unicellular algae. The intertidal zone is the most diverse of the coastal diophants that fall within the particle zone. Dominant fauna of these areas are barnacles, mussels, periwinkles, anemones, and sea urchins.

3. Polar latitudes. The communities in this region are reduced in comparison to those in the northern latitudes and possess less diversity. The dominant algal species are filamentous green, blue-green, and red algae, and small thalloid brown algae. The intertidal zone is the most diverse of the strata along the marine edge that are dominated by macroscopic algae, usually thalloid, but also filamentous or unicellular algae. The intertidal zone is the most diverse of the coastal diophants that fall within the particle zone. Dominant fauna of these areas are barnacles, mussels, periwinkles, anemones, and sea urchins.

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C. Excluded information

c. shallow plankton. This system is found in relatively shallow water (less than 8 to 10 meters) below mean low tide. It is an area of primary production that provides a feeding ground for a diversity of larval and juvenile marine and adult fish, mollusks, crustaceans, and other animals. Along the North Atlantic and Pacific coasts, the seaweed *Zostera marina* predominates. In the South Atlantic and Gulf coasts, *Thalassia* and *Diplanthera* predominate. The grasses in both areas support a number of epiphytic organisms.

Class 11—Physical Characteristics

Scoring!—Centos

A. Basin type. Coastal water basins occur in a variety of shapes, sizes, depths, and appearances. The eight basic types discussed below will cover most of the cases:

1. Exposed coast: Solid rock formations or heavy sand deposits characterize exposed coastal fronts which are subject to the full force of the ocean. These fronts are very resilient, although the dunes lying just behind the beaches are fragile and easily damaged. The dunes serve as a sand storage area and as windbreakers and stabilizers of the ocean shoreline.
2. Sheltered coast: Sand or coral barriers, built up by natural forces, provide sheltered areas inside a bar or reef where the ocean is calmer. These areas are usually composed of shellfish, and juvenile fish. Marine grasses, halibut, and waterbirds flourish in these sheltered areas.
3. Bay: Bays are larger confined bodies of water that are open to the sea and receive a strong tidal flow. When stratification is produced, the water is layered and is subject to a slow discharge. Bays vary in tidal range from 1/2 to 10 feet.
4. Embayment: A confined coastal water body with narrow, restricted inlets and with a small tidal range. These can be classified as an embayment. These coastal fronts have restricted inlets than bays, are usually smaller and shallower, have low tidal action, and are subject to sedimentation.
5. Coastal river: A river that flows into the ocean. The river is referred to as a tidal river. The coastal water segment extends from the sea estuary into which the river discharges to a point as far upstream as there is a significant front. A combination of tidal action and freshwater outflow makes tidal rivers well-suited for navigation. Tidal rivers may be a significant source of sediment, silt, debris, and other associated environmental pollutants, and a variety of others.
6. Lagoon: Lagoons are confined coastal bodies of water with restricted inlets to the ocean. They are usually associated with coral reefs and are subject to a small tidal range.

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Flow, water circulation is limited, resulting in a poorly flushed, relatively stagnant body of water. Sedimentation is rapid with a great potential for basin shoaling. Shores are often gently sloping and marshy.

2. Fringing coastal wetlands. Unique to Pacific Islands, this wetland type found above sea level in volcanic crater remnants forms a barrier as a result of poor drainage characteristics of the crater rather than from sedimentation. Floral assemblages exhibit distinct zonation while the faunal constituents may include waterwren, brackish, and/or marine species. **EXAMPLE:** Aunui Island, American

Offline systems: These small costal

exposures of brackish water form in lava de-
pressions or elevated fossil reefs have de-
stroyed the subsurface connection in the ocean, but show
little fluctuations. Differing from true estu-
aries, the brackish water in the coastal plain
streams or ocean, this system is character-
ized by a distinct biotic community domi-
nated by benthic algae such as
Zostera, Thalassia, and the mineral encrusting
organisms of the shallow plain (supra-
littoral zone). Characteristic of this system is
to have a high degree of endemicity. Include
in this system are the mangroves, which can
inhibit a high degree of endemicity. Include
the mollusks Theosophs neglectus and
the caracaras. Although found throughout the
world, the high islands of the Pacific are the
most diverse within the U.S. where this system
can be found.

B. Basin structures. Estuary basins may re-
sult from the drowning of a river valley
(coastal plains estuary), the drowning of an
alluvial valley (fjord), the drowning of an
alluvial barrier (bar-bounded estuary), some
combination of the above (supra-bounded estuary), or
volcanic activity (volcanic estuary).

1. Coastal plains estuary: Where a drowned valley consists mainly of a single channel, the form of the basin fairly regularly forming a funnel shape. The main river or channel is flooded with numerous tributaries in regular, undisturbed states. Many estuaries in this type are found in the coastal plain of the United States.
2. Flooded estuary: This is of two types
- a. Deep valleys resulting from glacial scouring headlands that alternate with deep U-shaped valleys resulting from glacial nourishment. They generally consist of a wide flood plain at the mouth of the estuary, with deposition generally being restricted to the head where the main river enters. Compared to Bar-bound estuaries, they have a more irregularly shaped cross-section, with some of the bottom filled up by deposits of silt and sand.
- b. Shallow, wide, flat-floored basins with truncated sides, reaching at their mouths due to the fact that fine movement of water often occurs through the narrow channels, rather than the tidal prism. The deepest portions are in the outer reaches, where maximum depths are usually less than 6 m (20 ft). The sill depth usually ranges from 0.9m to 180cm.
3. Bar-bound estuary: These result from development of an offshore barrier such as

reef formations a line of moraine debris, or the subsiding remnants of a deltaic lobe. The latter is a broad, flat, low-lying area, the substrates of the estuary are sandy. The bottom sediments in this area are usually coarser, with a gradation toward finer particles in the head region and other zones of deposition. Sand deposition occurs only in wider or deeper regions where velocity is reduced.

2. Mud: At the base level of a stream near its mouth, the bottom is typically composed of loose mud, silt, and organic detritus as well as sand. The mud is deposited in the upper stream reaches and organic decomposition. Just inside the estuary entrance, the bottom contains considerable quantities of sand and mud, which supports a rich flora. The mud is deposited in the lower reaches of the estuary, where the bottom is composed of loose, coarse, and fine mud and sand, often dividing the original channel.

3. Rocks: Rocks usually occur in areas where the stream runs rapidly in a deep channel. The rocks are usually deposited in the stream from the higher elevations where the stream slope is greater. The larger fragments are usually found in shallow areas near the stream mouth. Throughout a major portion of the world, the oyster reef is one of the most significant features of estuaries, usually being found near the mouth of the estuary in a zone of moderate wave action, where the oysters are deposited by the major factor in modifying estuarine current systems and sedimentation, and may occur as an elongated island or peninsula oriented across the main current, or may develop parallel to the direction of the current.

Group II—Hydrographic

A. Circulation: Circulation patterns are the result of combined influences of freshwater inflow, tidal action, wind and oceanic forces, and the estuary's topography. The estuary's port, plankton dispersal, ecosystem flushing, salinity control, water mixing, and more.

1. Stratified: This is typical of estuaries with a strong freshwater inflow and is common to river valleys, fjords, and other deep basins. There is a net movement of freshwater outward at the top layer and saltwater at the bottom layer, resulting in a net outward transport of bottom organisms.

2. Non-stratified: Estuaries of this type are found where water movement is sluggish and flushing rate is low, although there may be a high carrying capacity. This is common to shallow embayments and bays lacking a good supply of freshwater from land drainage.

Pt. 921, App. II

1. Lagoonal: An estuary of this type is characterized by a low-lying, flat, and somewhat resulting from a lack of significant freshwater inflow and a lack of strong tidal force connecting the lagoon to the sea. Circulation is primarily determined by the tidal force, which is the major limiting factor in biological productivity within lagoons.

B. Tides: This is the most important ecological factor in an estuary as it affects the exchange of water between the estuary and the ocean. Tides may be exposed and submerged with each tidal cycle. Tidal action against the volume of river water discharged into an estuary results in a water level that is higher than the ocean level, according to estuary structure as well as the magnitude of river flow and tidal range. Tides are usually described in terms of the cycle and their relative heights. In the United States, the tidal cycle is referred to as a diurnal tide, which is referred to as a diurnal tide, which is referred to as a diurnal tide.

1. Diurnal: This refers to a daily change in water level, which is referred to as a diurnal tide. There is one high tide and one low tide per day.

2. Semidiurnal: This refers to a twice daily rise and fall in water that can be observed in the estuary. There are two high tides and two low tides per day.

3. Windstorm tides: This refers to fluctuations in water elevation to wind and storm events, where influence of lunar tides is less. C. Freshwater: According to nearly all the definitions of an estuary, it is a body of water that is partially enclosed by land and measurably diluted seawater to create a brackish condition. Freshwater enters an estuary as runoff from the land, either from a surface and/or subsurface source.

1. Surface water: This is water flowing over the ground in the form of streams. Local variation in runoff is dependent on the nature of the terrain and the distribution of precipitation. Surface water enters an estuary through a variety of means, including surface runoff, precipitation, and local climatic conditions, and volume and intensity of precipitation.

2. Groundwater: This is water contained in the rocks below the water table, is usually of more uniform volume than surface water, and generally follows the topographic relief of the land.

the land being high hills and sloping into valleys.

Group III—Chemical

A. Salinity: This reflects a complex mixture of salts, the most abundant being sodium chloride, and is a very critical factor in the distribution of organisms. Based on salinity, there are two basic estuarine types and eight different salinity zones (expressed in parts per thousand).

1. Positive estuary: This is an estuary in which the freshwater inflow is sufficient to maintain mixing, resulting in a pattern of increasing salinity toward the estuary mouth. It is characterized by low oxygen concentrations in the deeper, more restricted areas.

2. Negative estuary: This is found in particularly arid regions, where estuary evaporation may exceed freshwater inflow, resulting in increased salinity in the upper part of the basin, especially if the estuary mouth is restricted so that tidal flow is inhibited. These are typically very salty (hypersaline), and are subject to the deposition of considerable amounts of salts in the bottom sediments that are poor in organic content.

3. Salinity zones (expressed in ppt): a. Hypersaline—greater than 40 ppt. b. Hyperhaline—30 ppt to 40 ppt. c. Microhaline—30 ppt to 0.5 ppt.

(1) Microhaline—greater than 30 ppt but less than the adjacent saline sea. (2) Polyhaline—30 ppt to 18 ppt. (3) Oligohaline—18 ppt to 0.5 ppt. (4) Oligohaline—less than 0.5 ppt.

B. pH Regime: This is indicative of the mineral content of estuarine waters and falls into three categories:

1. Acid: Waters with a pH of less than 5.5. 2. Circumneutral: A condition where the pH ranges from 5.5 to 7.4. 3. Alkaline: Waters with a pH greater than 7.4.

Pt. 922—NATIONAL MARINE SANCTUARY PROGRAM REGULATIONS

Subpart A—General

922.1 Applicability of regulations. 922.2 Mission, goals, and special policies. 922.3 Definitions. 922.4 Effect of National Marine Sanctuary designation.

Subpart B—Site Evaluation List (SEL)

922.10 General.

Regulatory Evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

Adoption of the Amendment

In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 71 as follows:

PART 71—[AMENDED]

1. The authority citation for 14 part 71 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389; 14 CFR 11.69.

§ 71.1 [Amended]

2. The incorporation by reference in 14 CFR 71.1 of the Federal Aviation Administration Order 7400.9D, Airspace Designations and Reporting Points, dated September 4, 1996, and effective September 16, 1996, is amended as follows:

Paragraph 6005 Class E airspace areas extending upward from 700 feet or more above the surface of the earth.

* * * * *

AGL SD E5 Gregory, SD [New]

Gregory Municipal Airport, SD
(Lat. 43°13'18" N, long. 99°24'12" W)

That airspace extending upward from 700 feet above the surface within a 6.4-mile radius of the Gregory Municipal Airport, and that airspace extending upward from 1,200 feet above the surface beginning at lat. 43°41'00" N, long. 99°29'00" W, southeastbound to lat. 43°00'00" N, long. 99°00'00" W, westbound to V71, northwestbound to lat. 43°29'30" N, long. 99°39'00" W, to the point of beginning, and that airspace extending upward from 1,200 feet above the surface bounded on the north by lat. 43°20'00" N, on the east by V71, on the south by lat. 43°00'00" N, and on the west by long. 100°05'00" W, excluding that airspace within the Winner, SD, E5 airspace.

* * * * *

Issued in Des Plaines, Illinois on February 27, 1997.

Maureen Woods,

Manager, Air Traffic Division.

[FR Doc. 97-6621 Filed 3-14-97; 8:45 am]

BILLING CODE 4910-13-M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

15 CFR Parts 921, 923 and 930

RIN 0648-AJ24

Coastal Zone Management Program Regulations and National Estuarine Research Reserve System Regulations

AGENCY: Office of Ocean and Coastal Resource Management (OCRM), National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: The National Oceanic and Atmospheric Administration (NOAA) is amending its ocean and coastal resource management regulations concerning the National Estuarine Research Reserve System, Coastal Zone Management Program, and Secretarial review procedures. The Coastal Zone Protection Act of 1996 amended the Coastal Zone Management Act (the Act) and reauthorized NOAA's Coastal Zone Management Program and National Estuarine Research Reserve System under the Act. Among the amendments to the Act were changes to the use of Coastal zone enhancement grants, the formula for financial assistance to the states for National Estuarine Research Reserve (NERR) activities, and the timing for the appeals process under the consistency provisions. NOAA issues this final rule to amend the existing regulations to conform with the statutory amendments.

EFFECTIVE DATE: March 17, 1997.

FOR FURTHER INFORMATION CONTACT: Vickie A. Allin, Policy Coordination Division, Office of Ocean and Coastal Resource Management, 1305 East-West Highway, N/ORM4, Silver Spring, Maryland 20910. Telephone: 301-713-3086 ext. 126.

SUPPLEMENTARY INFORMATION:

I. Authority

This final rule is issued under the authority of the Coastal Zone Management Act (CZMA), 16 U.S.C. 1451 et seq., as amended by the Coastal Zone Protection Act of 1996 (CZPA), Pub. L. 104-150.

II. Background

The CZMA was enacted to encourage and assist coastal states and territories to develop and implement management programs to preserve, protect, develop and, where possible, restore or enhance the resources of the Nation's coasts. Prior to the 1996 amendments:

- Section 309 of the CZMA identified eight national coastal zone enhancement objectives and authorized grants to states for development and submission of program changes that support attainment of those objectives. Section 309 did not authorize grants for implementation of those changes.

- Section 315 of the CZMA authorized grants to states for the designations, management and use of NERRs. However, section 315 limited, in most cases, the amount of Federal financial assistance that could be used for a NERR activity to a specified percentage of the cost of that activity.

- Section 307 of the CZMA established the Federal consistency requirement, which requires Federal agencies, applicants for Federal licenses, permits or other approvals and state or local government agencies applying for Federal financial assistance to conduct their activities consistent with federally-approved state coastal management programs if an activity is reasonably likely to affect any land or water use or natural resource of a state's coastal zone. Section 307 also provided for an appeal, referred to as a consistency appeal, to the Secretary of Commerce (Secretary) for a Secretarial override of state objections to Federal license or permit or financial assistance activities.

NOAA's regulations at 15 CFR Parts 921, 923 and 930 implement these provisions.

III. Coastal Zone Protection Act of 1996

The Coastal Zone Protection Act of 1996 (CZPA) contains the following amendments to the CZMA.

- Section 7 of the CZPA amends section 309 to add, as a ninth coastal zone enhancement objective, the adoption of procedures and policies to evaluate and facilitate the siting of aquaculture in the coastal zone.

- Section 3 of the CZPA amends section 309 to authorize limited use of coastal zone enhancement grants to states for implementation as well as for development and submission of program changes.

- Section 6 of the CZPA amends section 315 to provide that Federal financial assistance provided from amounts recovered as a result of damage to natural resources in the coastal zone may be used to pay for 100% of the cost of a NERR activity.

- Section 8 of the CZPA adds a new section 319 which requires that the Secretary publish a notice in the **Federal Register** stating when the record in a consistency appeal has closed. Within 90 days after publication of this notice, the Secretary shall issue a final decision

in the appeal or publish another notice detailing why the decision cannot be issued. In the latter case, the Secretary shall issue a final decision within 45 days after the publication of the latter notice.

IV. Discussion of Changes

Because of the statutory amendments, some of NOAA's current CZM Program and NERRS regulations no longer conform to the law. The purpose of this rule is to amend certain regulations so that they are consistent with the statute and to incorporate requirements that are effective immediately. These changes are non-controversial and are merely codifying statutory changes.

The following is a brief explanation of changes made to each of the sections of the regulations to reflect the statutory amendments.

A. National Coastal Zone Management Program

NOAA is amending regulations for the Coastal Zone Enhancement Grant Program at 15 CFR 923.121(a) and (g) to include limited use of section 309 enhancement grants for implementation of program changes. NOAA is also adding a new subsection, 15 CFR 923.122(b)(9), allowing use of section 309 grants for attainment of the new aquaculture coastal zone enhancement objective.

B. National Estuarine Research Reserve System

Several subsections of 15 CFR Part 921 limit the amount of section 315 Federal financial assistance that a state or other qualified entity or individual may receive to fund a NERR activity to a specific percentage of the cost of that activity. For each of these subsections, NOAA is adding the provision that 100% of the cost of the NERR activity may be funded with Federal financial assistance, when that assistance comes from amounts recovered as a result of damage to natural resources in the coastal zone.

C. Federal Consistency With Approved Coastal Management Programs

NOAA is deleting 15 CFR 930.130(b), which provided that the Secretary shall make all reasonable efforts to complete consideration of consistency appeals within 90 days. This section is superseded by section 8 of the CZPA.

V. Rulemaking Requirements

A. This rule was determined to be "not significant" for purposes of Executive Order 12866.

B. This rule relates to public property, loans, grants, benefits, and contracts,

and therefore, it is exempt from every requirement of section 553 of the Administrative Procedure Act (5 U.S.C. 553), including notice and comment and delayed effective date.

C. Because a notice of proposed rulemaking is not required by 5 U.S.C. 553, or any other law, a Regulatory Flexibility Analysis is not required and was not prepared for purposes of the Regulatory Flexibility Act.

D. This rule involves collections of information subject to the Paperwork Reduction Act and cleared by the Office of Management and Budget under Control number 0648-0119. The estimated response times for these requirements are 480 hours for management program approval and 8 hours for program amendments and routine program changes. The response estimates shown include the time for reviewing instruction, searching existing data sources, gathering and maintaining data needed, and completing and reviewing the collection of information. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to penalty for failure to comply with a collection of information, subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

E. National Environmental Policy Act. NOAA has concluded that this regulatory action does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, an environmental impact statement is not required.

F. This rule contains no Federal mandates (under the regulatory provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 104-4) for State, local, and tribal governments or the private sector. Thus, this rule is not subject to the requirements of sections 202 and 205 of the UMRA.

G. NOAA has concluded that this regulatory action does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment under Executive Order 12612.

List of Subjects in 15 CFR Parts 921, 923, and 930

Administrative practice and procedure, Coastal zone, Grant programs—Natural resources, Reporting and recordkeeping requirements.

Dated: March 7, 1997.

David L. Evans,
Deputy Assistant Administrator for Ocean Services and Coastal Zone Management.

For the reasons set out in the Preamble, 15 CFR parts 921, 923, and 930 are amended as follows:

PART 921—NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM REGULATIONS

1. The authority citation for part 921 continues to read as follows:

Authority: Section 315 of the Coastal Zone Management Act, as amended (16 U.S.C. 1461)

2. Paragraph (f) of § 921.1 is amended by adding a sentence after the third sentence to read as follows:

§ 921.1 Mission, goals and general provisions.

* * * * *

(f) * * * Notwithstanding the above provisions for financial assistance, financial assistance provided from amounts recovered as a result of damage to natural resources located in the coastal zone may be used to pay 100 percent of the costs of activities carried out with the assistance. * * *

* * * * *

3. Section 921.20 is amended by revising the last sentence to read as follows:

§ 921.20 General.

* * * In any case, the amount of Federal financial assistance provided to a coastal state with respect to the acquisition of lands and waters, or interests therein, for any one National Estuarine Research Reserve may not exceed an amount equal to 50 percent of the costs of the lands, waters, and interests therein or \$5,000,000, whichever amount is less, except when the financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, in which case the assistance may be used to pay 100 percent of the costs.

4. Section 921.31 is amended by revising the second and fourth sentences to read as follows:

§ 921.31 Supplemental acquisition and development awards.

* * * Federal financial assistance provided to a National Estuarine Research Reserve for supplemental development costs directly associated with facility construction (i.e., major construction activities) may not exceed 70 percent of the total project cost, except when the financial assistance is provided from amounts recovered as a

result of damage to natural resources located in the coastal zone, in which case the assistance may be used to pay 100 percent of the costs. * * *

Acquisition awards for the acquisition of lands or waters, or interest therein, for any one Reserve may not exceed an amount equal to 50 percent of the cost of the lands, waters, and interests therein or \$5,000,000, whichever amount is less, except when the financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, in which case the assistance may be used to pay 100 percent of the costs. * * *

5. Paragraph (c) of § 921.32 is amended by revising the second sentence to read as follows:

§ 921.32 Operation and management: Implementation of the management plan.

(c) * * * Federal funds provided pursuant to this section may not exceed 70 percent of the total cost of operating and managing the Reserve for any one year, except when the financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, in which case the assistance may be used to pay 100 percent of the costs. * * *

6. Paragraph (b) of § 921.50 is amended by revising the last sentence to read as follows:

§ 921.50 General.

(b) * * * Federal funds provided under this subpart may not exceed 70 percent of the total cost of the project, consistent with § 921.81(e)(4) ("allowable costs"), except when the financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, in which case the assistance may be used to pay 100 percent of the costs.

7. Paragraph (b) of § 921.60 is amended by revising the last sentence to read as follows:

§ 921.60 General.

(b) * * * Federal funds provided under this subpart may not exceed 70 percent of the total cost of the project, consistent with § 921.81(e)(4) ("allowable costs"), except when the financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, in which case the

assistance may be used to pay 100 percent of the costs.

8. Paragraph (b) of § 921.70 is amended by revising the last sentence to read as follows:

§ 921.70 General.

(b) * * * Federal funds provided under this subpart may not exceed 70 percent of the total cost of the project, consistent with § 921.81(e)(4) ("allowable costs"), except when the financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, in which case the assistance may be used to pay 100 percent of the costs.

PART 923—COASTAL ZONE MANAGEMENT PROGRAM REGULATIONS

9. The authority citation for part 923 is revised to read as follows:

Authority: 16 U.S.C. 1451 et seq.; 31 U.S.C. 6506; 42 U.S.C. 3334; Sections 923.92 and 923.94 are also issued under E.O. 12372, July 14, 1982, 3 CFR 1982 Comp. p. 197, as amended by E.O. 12416, April 8, 1983, 3 CFR 1983 Comp. p. 186.

10. Section 923.121 is amended by adding a sentence at the end of paragraph (a) and revising paragraph (g) to read as follows:

§ 923.121 General.

(a) * * * This subpart also allows use of section 309 funds for implementation of program changes for up to two fiscal years following the fiscal year in which a program change was approved.

(g) Grants awarded under section 309 may be used:

(1) To support up to 100 percent of the allowable costs of approved projects under section 309 of the CZMA, as amended; or

(2) To implement program changes approved by the Secretary for up to two fiscal years following the fiscal year in which a program change was approved.

11. Section 923.122 is amended by adding paragraph (b)(9) to read as follows:

§ 923.122 Objectives.

(b) * * *

(9) Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable States to formulate, administer,

and implement strategic plans for marine aquaculture.

PART 930—FEDERAL CONSISTENCY WITH APPROVED COASTAL MANAGEMENT PROGRAMS

12. The authority citation for part 930 is revised to read as follows:

Authority: 16 U.S.C. 1451 et seq.

§ 930.130 [Amended]

13. Section 930.130 is amended by removing paragraph (b) and redesignating paragraphs (c) and (d) as paragraphs (b) and (c) respectively.

[FR Doc. 97-6581 Filed 3-14-97; 8:45 am]

BILLING CODE 3510-08-M

DEPARTMENT OF THE TREASURY

Internal Revenue Service

26 CFR Part 1

[TD 8677]

RIN 1545-AU35

Consolidated Returns—Limitations on the Use of Certain Losses and Deductions; Correction

AGENCY: Internal Revenue Service (IRS), Treasury.

ACTION: Correction to final and temporary regulations.

SUMMARY: This document contains a correction to final and temporary regulations [TD 8677] which were published in the *Federal Register* on Thursday, June 27, 1996 (61 FR 33321). The final and temporary regulations relate to the deductions and losses of members and also to the carryover and carryback of losses to consolidated and separate return years and to the built-in deduction rules.

EFFECTIVE DATE: June 27, 1996.

FOR FURTHER INFORMATION CONTACT: Diana Fulton at (202) 622-7550 (not a toll-free number).

SUPPLEMENTARY INFORMATION:

Background

The final and temporary regulations that are the subject of this correction are under section 1502 of the Internal Revenue Code.

Need for Correction

As published, the final and temporary regulations contain an error which may prove to be misleading and is in need of clarification.

Correction of Publication

Accordingly, the publication of the final and temporary regulations [TD

Harness Kit, part number 101-3208-1, as referenced in Raytheon Mandatory Service Bulletin No. 2701, Issued: May, 1997. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Raytheon Aircraft Company, P.O. Box 85, Wichita, Kansas 67201-0085. Copies may be inspected at the FAA, Central Region, Office of the Regional Counsel, Room 1558, 601 E. 12th Street, Kansas City, Missouri, or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(e) This amendment becomes effective on June 27, 1998.

Issued in Kansas City, Missouri, on April 30, 1998.

Michael Gallagher,

Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 98-12507 Filed 5-13-98; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

15 CFR Part 921

[Docket #980427108-8108-01]

RIN 0694-AL16

National Estuarine Research Reserve System Regulations

AGENCY: Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration, Commerce.

ACTION: Final rule.

SUMMARY: The National Oceanic and Atmospheric Administration (NOAA) is making a correction to its regulations concerning the National Estuarine Research Reserve System (NERRS) to clarify that certain types of financial assistance awards are not subject to specified limits on amounts. The Coastal Zone Protection Act of 1996 amended the Coastal Zone Management Act (CZMA) by, among other things, eliminating the state match requirement in cases where financial assistance was coming from proceeds of a natural resource damage action. In 1997, NOAA issued a rule to amend the NERRS regulations to conform to the statutory amendments. That rule specified that the state match requirement was eliminated in cases where natural resource damage proceeds were being used to fund NERRS activities. However, the rule did not address what the effects of other limits on financial assistance (caps on funding, rather than

state match) would be in these cases. This final rule clarifies that, in cases where financial assistance is coming from natural resource damage funds, the caps on financial assistance to not apply.

EFFECTIVE DATE: May 14, 1998.

FOR FURTHER INFORMATION CONTACT: Mary O'Brien, Attorney-Adviser, Office of General Counsel, 1305 East-West Highway, Silver Spring, Maryland 20910. Telephone: 301-713-2967.

SUPPLEMENTARY INFORMATION:

I. Authority

This final rule is issued under the authority of the Coastal Zone Management Act, CZMA, 16 U.S.C. 1451 *et seq.*, as amended.

II. Background

Section 315 of the CZMA authorizes grants to states for the selection, designation, management, and use of National Estuarine Research Reserves. However, section 315 of the CZMA limits, in most cases, the proportion of federal financial assistance that may be provided to states for program activities. The 1996 amendments to the CZMA provided that notwithstanding these statutory limits, financial assistance provided from amounts recovered as a result of damage to natural resources located in the coastal zone may be used to pay 100 percent of the costs of activities carried out with the assistance. In 1997, NOAA issued a rule, the intent of which was to bring the program regulations into conformity with the statutory change.

Following NOAA's 1997 rule, questions arose as to the effects of the amendment on certain statutory and regulatory limits on amounts. While it was clear the amendments eliminated the match requirement in cases where financial assistance is coming from natural resource damage funds, questions remained as to the appropriate interpretation, in these cases, of provisions limiting the amount of financial assistance that may be granted to any one reserve for certain activities. Specifically, the statute provides a \$5,000,000 cap on federal financial assistance for acquisition activities at any one reserve. The regulations contain not only that cap, but also a \$100,000 cap on federal financial assistance for certain pre-designation activities (site selection, draft management plan and environmental impact statement preparation, and basic characterization studies).

The NERRS was established by Congress to provide for a system of

representative estuarine ecosystems, with each site contributing to the biogeographical and typological balance of the system. It was envisioned that the completed system would ultimately contain 25-35 sites. Throughout the course of the program, there has been a need to ensure that limited appropriations are distributed equitably among reserve sites. Hence, the statute and the regulations provided caps to restrict the amount of funds that could be granted to any one site.

In the case of reserve activities being funded with amounts recovered as a result of natural resource damages, the concern that gave rise to the establishment of the caps does not exist. Natural resource damage funds do not come out of the NERRS appropriation. When such funds are used to establish a reserve or pay for reserve activities, there is no reduction in the appropriation and thus no effect, financial speaking, on other reserves in the system or on states wishing to advance reserve proposals. For this reason, it is not appropriate to apply the NERRS limits on federal financial assistance when activities are being funded from natural resource damage proceeds.

Congress recognized as much in the 1996 amendments to the CZMA. New section 315(e)(3)(C) explicitly stated that notwithstanding the 50 percent/\$5,000,000 cap, financial assistance provided from natural resource damage funds could be used to pay 100 percent of the costs of such activities. Congress did not address the \$100,000 pre-designation cap, because that cap was established by regulation rather than by statute.

III. Discussion of Change

The purpose of this rule is to amend the regulations to clarify that, consistent with the changes made to the CZMA in 1996, the \$5,000,000 and \$100,000 limits on federal financial assistance for certain activities are not applicable with the funding for these activities is being provided from amounts recovered as a result of damage to natural resources.

IV. Rulemaking Requirements

A. This rule was determined to be "not significant" for purposes of Executive Order 12866.

B. This rule relates to public property, loans, grants, benefits, and contracts, and therefore, it is exempt from every requirement of section 553 of the Administrative Procedure Act, 5 U.S.C. 553, including notice and comment and delayed effective date.

C. Because a notice of proposed rulemaking is not required by 5 U.S.C.

553, or by any other law, a Regulatory Flexibility Analysis under the Regulatory Flexibility Act is not required and was not prepared.

D. This rule involves collections of information subject to the Paperwork Reduction Act and cleared by the Office of Management and Budget under control number 0648-0119. The estimated response times for these requirements are 480 hours for management program approval and 8 hours for program amendment and routine program changes. The response estimates shown include the time for reviewing instructions, searching existing data sources, gathering and maintaining needed data, and completing and reviewing the collection of information. Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to penalty for failure to comply with, a collection of information, subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB control number.

E. NOAA has concluded that this regulatory action does not constitute a major federal action significantly affecting the quality of the environment. Therefore, an environmental impact statement under the National Environmental Policy Act, 43 U.S.C. 4321 *et seq.* is not required.

F. This rule contains no mandates, under the provisions of Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, for state, local, or tribal governments or the private sector. Thus, this rule is not subject to the requirements of sections 202 and 205 of the UMRA.

G. NOAA has concluded that this regulatory action does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment under Executive Order 12612.

List of Subjects in 15 CFR Part 921

Administrative practice and procedure, Coastal zone, Grant programs—Natural resources, Reporting and recordkeeping requirements.

Dated: May 11, 1998.

Nancy Foster,

Assistant Administrator for Ocean Services and Coastal Zone Management.

For the reasons set forth in the Preamble, 15 CFR part 921 is amended as follows:

PART 921—NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM REGULATIONS

1. The authority citation for part 921 continues to read as follows:

Authority: Section 315 of the Coastal Zone Management Act, as amended (16 U.S.C. 1461).

2. Paragraph (f) of § 921.1 is amended by revising the fourth sentence to read as follows:

§ 921.1 Mission, goals and general provisions.

(f) * * * Notwithstanding any financial assistance limits established by this Part, when financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, such assistance may be used to pay 100 percent of all actual costs of activities carried out with this assistance, as long as such funds are available. * * *

3. Paragraph (a) of § 921.10 is amended by adding a new sentence, after the third sentence, to read as follows:

§ 921.10 General.

(a) * * * Notwithstanding the above, when financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, such assistance may be used to pay 100 percent of all actual costs of activities carried out with this assistance, as long as such funds are available. * * *

4. Paragraph (b) of § 921.10 is amended by adding a new sentence, after the last sentence, to read as follows:

§ 921.10 General.

(b) * * * Notwithstanding the above, when financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, such assistance may be used to pay 100 percent of all actual costs of activities carried out with this assistance, as long as such funds are available.

5. Section 921.20 is amended by revising the last sentence to read as follows:

§ 921.20 General

* * * In any case, the amount of Federal financial assistance provided to a coastal state with respect to the acquisition of lands and waters, or interests therein, for any one National Estuarine Research Reserve may not exceed an amount equal to 50 percent

of the costs of the lands, waters, and interests therein or \$5,000,000, whichever amount is less, except when the financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, in which case the assistance may be used to pay 100 percent of all actual costs of activities carried out with this assistance, as long as such funds are available.

6. Section 921.31 is amended by revising the fourth sentence to read as follows:

§ 921.31 Supplemental acquisition and development awards.

* * * Acquisition awards for the acquisition of lands or waters, or interests therein, for any one reserve may not exceed an amount equal to 50 percent of the costs of the lands, waters, and interests therein of \$5,000,000, whichever amount is less, except when the financial assistance is provided from amounts recovered as a result of damage to natural resources located in the coastal zone, in which case the assistance may be used to pay 100 percent of all actual costs of activities carried out with this assistance, as long as such funds are available. * * *

[FR Doc. 98-12880 Filed 5-13-98; 8:45 am]

BILLING CODE 3510-08-M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 101

[Docket No. 98N-0274]

Food Labeling; Petitions for Nutrient Content and Health Claims, General Provisions

AGENCY: Food and Drug Administration, HHS.

ACTION: Final rule.

SUMMARY: The Food and Drug Administration (FDA) is amending its regulations to define the conditions under which certain petitions for nutrient content and health claims shall be deemed to be denied and to codify the statutory timeframe within which the agency will complete rulemakings on such petitions. FDA is taking this action in response to the Food and Drug Administration Modernization Act of 1997 (FDAMA).

DATES: This regulation is effective May 14, 1998. Submit written comments by June 15, 1998.

ADDRESSES: Submit written comments to the Dockets Management Branch

APPENDIX L

Section Seven Consultation



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Silver Spring, Maryland 20910
Sanctuaries and Reserves Division

Steven Pennoyer, Director
Alaska Region
Attn: Brad Smith
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

MAY 23 1997

Dear Mr. Pennoyer:

The National Ocean Service's Sanctuaries and Reserves Division is responsible for administering the National Estuarine Research Reserve System (NERRS), under authority of the Coastal Zone Management Act. Through a Federal-state partnership, estuaries that represent the various regions and estuarine types of the nation are designated and managed as estuarine research reserves to provide a stable environment for long-term research and monitoring.

Reserves, through stewardship and education programs, actively use scientific information to improve the public's understanding of issues facing estuaries and their potential solutions. The System presently consists of 21 Reserves protecting nearly 450,000 acres of estuarine lands, wetlands and waters and 6 proposed sites (see enclosed map).

The State of Alaska has proposed Kachemak Bay, in the southcentral region of the State, as a National Estuarine Research Reserve. Kachemak Bay is already established as a State Critical Habitat Area. Designation of the Reserve will increase protection for important estuarine resources, and improve the ability of local communities to make informed coastal management decisions.

Inasmuch as Alaska has a Coastal Zone Management Program, and lands within the proposed Reserve are entirely in public ownership by the state government, there is a significant level of resource protection already in place. However, designation of the Reserve will provide a mechanism for more coordinated ecosystem-level management of the region. In doing so, designation of the Kachemak Bay NERR will support the missions of the NMFS, the U.S. Fish and Wildlife Service, the Alaska Department of Fish and Game, and the Alaska Department of Natural Resources to protect estuarine habitat and associated fish and wildlife resources. Traditional uses of the proposed Reserve permitted by state and Federal agencies will continue to be allowed, including boating and commercial and recreational fishing.



The proposed Reserve includes the waters of Kachemak Bay and its subembayments, and includes shoreline at Kachemak Bay State Park, and the Fox River Flats Critical Habitat Area. A map of the proposed site is enclosed for your information. Although the final boundaries may change during the development of the EIS, inclusion of additional waters is not considered likely. In view of the above mentioned positive benefits of the Kachemak Bay site, we believe that endangered species within your purview will not be affected by the Reserve designation and we therefore request your concurrence with this determination. We understand that the only listed endangered species in this area is the Stellar sea lion (*Eumetopius jubatus*).

Matt Menashes of my staff and Brad Smith of your staff have been in contact regarding this request. Mr. Smith will be provided with a copy of the draft environmental impact statement and Reserve management plan when it is available early this Autumn. If you have any questions, please do not hesitate to contact Matt Menashes at (301) 713-3132, Ext. 165.

Thank you very much for your consideration of this request.

Sincerely,



R. Randall Schneider, Chief
Estuarine Reserve Branch

Enclosure

cc: JBenoit, Office of Ocean and Coastal Resource Management
MMenashes, Sanctuaries and Reserves Division
GSeaman, Alaska Department of Fish and Game
BSmith, NMFS Alaska Region



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

June 10, 1997



R. Randall Schneider, Chief
Estuarine Reserve Branch
Sanctuaries and Reserves Division
Office of Ocean and Coastal
Resource Management
1305 East-West Highway
Silver Spring, MD. 20910

Attn: Matt Menashes

Dear Mr. Schneider:

Thank you for your inquiry regarding threatened and endangered species concerns associated with the designation of Kachemak Bay as a National Estuarine Research Reserve. We concur with your assessment that this action is not likely to affect any listed species or their habitat that our agency is responsible for. Unless new information becomes available concerning endangered species in this area, this concludes your Section 7 consultation responsibilities with the National Marine Fisheries Service under the Endangered Species Act. Please direct any questions to Jeanne Hanson in our Anchorage field office at 271-5006.

Sincerely,

for 
Steven Hennoyer
Administrator, Alaska Region





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Silver Spring, Maryland 20910

Sanctuaries and Reserves Division

JAN 6 1998

Ann Rappoport, Project Leader
Ecological Services--Anchorage
Fish and Wildlife Service
605 West 4th Street Room G-62
Anchorage, Alaska 99501

Dear Ms. Rappoport:

The National Ocean Service's Sanctuaries and Reserves Division is responsible for administering the National Estuarine Research Reserve System (NERRS), under authority of the Coastal Zone Management Act. Through a Federal-state partnership, estuaries that represent the various regions and estuarine types of the nation are designated and managed as estuarine research reserves to provide a stable environment for long-term research and monitoring.

Reserves, through stewardship and education programs, actively use scientific information to improve the public's understanding of issues facing estuaries and their potential solutions. The System presently consists of 21 Reserves protecting nearly 450,000 acres of estuarine lands, wetlands and waters and five proposed sites (see enclosed map).

The State of Alaska has proposed Kachemak Bay, in the southcentral region of the State, as a National Estuarine Research Reserve. Kachemak Bay is already established as a State Critical Habitat Area. Designation of the Reserve will increase protection for important estuarine resources, and improve the ability of local communities to make informed coastal management decisions.

Inasmuch as Alaska has a Coastal Zone Management Program, and lands within the proposed Reserve are entirely in public ownership by the state government, there is a significant level of resource protection already in place. However, designation of the Reserve will provide a mechanism for more coordinated ecosystem-level management of the region. In doing so, designation of the Kachemak Bay NERR will support the missions of the Fish and Wildlife Service, the National Marine Fisheries Service, the Alaska Department of Fish and Game, and the Alaska Department of Natural Resources to protect estuarine habitat and associated fish and wildlife resources. Traditional uses of the proposed Reserve permitted by state and Federal agencies will continue to be allowed, including boating and commercial and recreational fishing.



The proposed Reserve includes the waters of Kachemak Bay and its subembayments, and includes shoreline at Kachemak Bay State Park, and the Fox River Flats Critical Habitat Area. A map of the proposed site is enclosed for your information. Although the final boundaries may change during the development of the EIS, inclusion of additional lands are not considered likely. In view of the above mentioned positive benefits of the Kachemak Bay site, we believe that endangered species within your purview will not be affected by the Reserve designation and we therefore request your concurrence with this determination. We understand that the only listed species in this area is the Steller's eider (*Polysticta stelleri*), which has been seen in limited numbers off of the Homer spit.

Matt Menashes of my staff and Greg Balogh of your staff have been in contact regarding this request. Mr. Balogh will be provided with a copy of the draft environmental impact statement and Reserve management plan when it is available early next year. If you have any questions, please do not hesitate to contact Matt Menashes at (301) 713-3132, Ext. 165.

Thank you very much for your consideration of this request.

Sincerely,

A handwritten signature in dark ink, appearing to read "R. Randall Schneider". The signature is fluid and cursive, with the first name "R." and last name "Schneider" clearly legible.

R. Randall Schneider, Chief
Estuarine Reserve Branch

Enclosures

cc: JBenoit, Office of Ocean and Coastal Resource Management
w/o enclosure
DAllen, Fish and Wildlife Service
MMenashes, Sanctuaries and Reserves Division w/o enclosure
GSeaman, Alaska Department of Fish and Game w/o enclosure
GBalogh, USFWS Alaska Region



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services Anchorage
605 West 4th Avenue, Room 62
Anchorage, Alaska 99501

IN REPLY REFER TO:

WAES

Mr. R. Randall Schneider, Chief
Estuarine Reserve Branch
USDOC/NOAA
Office of Ocean and Coastal Resource Management
Silver Spring, MD 20910

13 January, 1998

Re: Kachemak Bay as a proposed National Estuarine Research Reserve

Dear Mr. Schneider:


This letter is in response to your request for concurrence of your determination that the designation of Kachemak Bay as a National Estuarine Research Reserve will not adversely affect threatened or endangered species.

Based on the project description provided, the Service concurs with your agency's assessment that this project is not likely to adversely affect threatened or endangered species. Preparation of a Biological Assessment or further consultation under Section 7 of the Act regarding this project is not necessary at this time. If project plans change, additional information on listed or proposed species becomes available, or new species are listed that may be affected by the project, consultation should be reinitiated.

This letter relates only to endangered species under our jurisdiction. It does not address species under the jurisdiction of National Marine Fisheries Service, or other legislation or responsibilities under the Fish and Wildlife Coordination Act, Clean Water Act, or National Environmental Policy Act.

This concludes section 7 consultation on the impact of designating Kachemak Bay as a National Estuarine Research Reserve. Thank you for your cooperation in meeting our joint responsibilities under Section 7 of the Endangered Species Act. If you have any questions or concerns about this consultation or the consultation process in general, please feel free to contact me at (907) 271-2778.

Sincerely,


Gregory R. Balogh
Endangered Species Biologist

LA57REPLY\KACHEMAK.S7

APPENDIX M

Public Process on the DEIS/DMP

Cover Letter Mailed with DEIS/DMP

Published Announcements

Summary & Response to Comments Received

Copies of Written Comments Received



UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

MAR 10 1998

To All Interested Governmental Agencies and Public Groups:

Pursuant to the National Environmental Policy Act, an environmental review has been performed on the following action:

TITLE: Draft Environmental Impact Statement and Draft Management Plan (DEIS/DMP) for the Proposed Kachemak Bay National Estuarine Research Reserve (KBNERR) in Southcentral Alaska

LOCATION: Kachemak Bay on the Kenai Peninsula of the Southcentral coast of Alaska

ABSTRACT: The State of Alaska proposes the designation of certain areas of Kachemak Bay and surrounding uplands as the Kachemak Bay National Estuarine Research Reserve. The proposed site totals over 365,000 acres of lands and waters.

Federal financial assistance for operations and development will be requested by the State of Alaska. These funds accompanied by the required state match will be used for basic program activities, including research and educational projects; and for construction of research and educational facilities. The proposed KBNERR will be managed by the Alaska Department of Fish and Game (ADFG). Appropriate Memoranda of Understanding are under preparation for portions of the site that are managed by agencies other than ADFG.

Approval of this proposal would allow for the establishment of the Reserve representing the Fjord biogeographic region. The Reserve will be operated primarily for research and education purposes, particularly as a tool for improving coastal decision making. No new regulations have been proposed pursuant to this action. Traditional uses within the boundary will continue to be regulated by existing local and state laws and management policies. The educational programs will increase public awareness of estuarine resources and their importance. The research plan will establish a baseline monitoring program for Kachemak Bay, and encourage research projects consistent with the reserve's role as a natural field laboratory.



A copy of the DEIS/DMP is enclosed for your review.
Two public hearings are scheduled to take comments:

April 21, 1998 7:00-9:00 p.m.	Seldovia Community Center, 260 Seldovia Street, Seldovia, AK 99663
April 22, 1998 7:00-9:00 p.m.	Homer City Council Chambers, 491 East Pioneer Avenue, Homer, AK 99603.

Comments will also be accepted by mail and e-mail. Submit any written comments to the contact identified below, postmarked no later than May 4, 1998. E-mail comments to: kachemakbay@surf.nos.noaa.gov, by the same deadline.

RESPONSIBLE
OFFICIAL

Stephanie Thornton, Chief
Attn: Proposed Kachemak Bay NERR
Sanctuaries and Reserves Division
Office of Ocean and Coastal Resource Management
National Ocean Service
1305 East-West Highway N/ORM2
Silver Spring, MD 20910
Phone: (301) 713-3125

Please send one copy of your comments to me in Room 5805, OPSP,
U.S. Department of Commerce, Washington, D.C. 20230.

Sincerely,

Susan Fruchter

Susan B. Fruchter
Director, Office of Policy and
Strategic Planning

Enclosure

- 05, 1998, Contact: David J. Dorworth (202) 514-6470.
- EIS No. 980078, FINAL EIS, USN, FL, SC, VA, NC, Cecil Field Naval Air Station, Realignment of F/A-18 Aircraft and Operational Functions, to Other East Coast Installations; NAS Oceana, VA; MCAS Beaufort, SC and MCAS Cherry Point, NC, Implementation, COE Section 404 Permit, FL, SC, NC and VA, Due: April 20, 1998, Contact: J. Daniel Cecchini (703) 604-5469.
- EIS No. 980079, DRAFT EIS, IBR, CA, Programmatic—CALFED Bay-Delta Program, Long-Term Comprehensive Plan to Restore Ecosystem Health and Improve Water Management, Implementation, San Francisco Bay—Sacramento/San Joaquin River Bay-Delta, CA, Due: June 01, 1998, Contact: Rick Brietenbach (916) 657-2666.
- EIS No. 980080, DRAFT EIS, IBR, CA, NV, CA, NV, Truckee River Operating Agreement (TROA, Modify Operation and Selected Non-Federal Reservoirs, Implementation, Truckee River Basin, EL Dorado, Nevada, Placer and Sierra Counties, CA and Douglas, Lyon, Storey and Washoe Counties, NV, Due: June 19, 1998, Contact: David Overvold (702) 884-8367.
- EIS No. 980081, DRAFT EIS, NOAA, AK, Kachemak Bay National Estuarine Research Reserve (KBNERR) Management Plan, Operations and Development, Southcentral, AK, Due: May 04, 1998, Contact: Stephanie Thornton (301) 713-3125.
- EIS No. 980082, FINAL EIS, AFS, MT, Poorman Project, Implementation, Harvesting and Road Construction, Helena National Forest, Lincoln Ranger District, Lewis and Clark County, MT, Due: April 20, 1998, Contact: Thomas J. Andersen (406) 449-5201 ext. 277.
- EIS No. 980083, FINAL EIS, MMS, AK, Beaufort Sea Planning Area Outer Continental Shelf Oil and Gas Lease Sale 170 (1997) Lease Offering, Offshore Marine, Beaufort Sea Coastal Plain, North Slope Borough of Alaska, Due: April 20, 1998, Contact: George Valiulis (703) 787-1662.
- EIS No. 980084, FINAL EIS, FHW, RI, Newport Marine Facilities Project, To Develop the Marine Mode of the Intermodal Gateway Transportation Center, Selected siting in various locations within the City of Newport, Towns of Middletown and Portsmouth, Funding, COE Section 404 Permit and US Coast Guard Permit, Aquidneck Island, RI, Due: April 20, 1998, Contact: Daniel Berman (401) 528-4541.

EIS No. 980085, FINAL EIS, AFS, CA, Liberty Forest Health Improvement Project, Implementation, Tahoe National Forests, Sierraville Ranger District, Sierra and Nevada Counties, CA, Due: April 20, 1998, Contact: John Kennedy (530) 994-3401.

Amended Notices

EIS No. 980018, DRAFT EIS, AFS, AK, Crane and Rowan Mountain Timber Sales, Implementation, Tongass National Forest, Stikine Area, Kuiu Island, AK, Due: March 30, 1998, Contact: Everett Kissenger (907) 772-3841.

Published FR 02-06-98—Review Period extended.

EIS No. 970500, DRAFT SUPPLEMENT EIS, AFS, MT, Asarco Rock Creek Copper and Silver Mining Construction and Operation Project, Plan of Operations Approval, Special Use Permit (s), Road Use Permit, Mineral Material Permit, Timber Sale Contract and COE Section 404 Permit Issuance, Kootenai National Forest, Sanders County, MT, Due: 04-10-98, Contact: Paul Kaiser, (406) 293-6211.

Published FR 01-09-98—Review Period extended.

Dated: March 17, 1998.

William D. Dickerson,
Director, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 98-7355 Filed 3-19-98; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[E-R-FRL-5490-1]

Environmental Impact Statements and Regulations; Availability of EPA Comments

Availability of EPA comments prepared March 02, 1998 Through March 06, 1998 pursuant to the Environmental Review Process (ERP), under Section 309 of the Clean Air Act and Section 102(2)(c) of the National Environmental Policy Act as amended. Requests for copies of EPA comments can be directed to the Office of FEDERAL ACTIVITIES AT (202) 564-7167.

An explanation of the ratings assigned to draft environmental impact statements (EISs) was published in FR dated April 11, 1997 (62 FR 16154).

Draft EISs

ERP No. D-COE-E30039-FL Rating EC2, Sunny Isles (North Miami) Proposed Modification to a segment of the Dade County Beach Erosion Control

and Hurricane Protection Project, Dade County, FL.

Summary: EPA expressed environmental concerns regarding unavoidable losses of biotic resources and how effectively they will be mitigated.

ERP No. D-COE-K30030-CA Rating EO2, Unocal Avila Beach Cleanup Project, Petroleum Hydrocarbon Contamination, Approval and Implementation, US Army COE Section 10 and 404 Permits Issuance, San Luis Obispo County, CA.

Summary: EPA expressed environmental objections that the DEIS did not adequately address the environmental consequences of implementing the "No-Action" alternative in Area 7 despite data in the DEIS which indicates that Area 7 is extensively contaminated with hydrocarbons which may be adversely affecting shellfish and other aquatic species. EPA commented that it is unclear whether the preferred "No-Action" alternative for Area 7 is consistent with Federal and State environmental laws. EPA also indicated that there was insufficient discussion in the DEIS to determine the extent to which existing contamination in the intertidal zone Area 7 may be affecting the environment and human health and whether a "No-Action" decision in Area 7 would exacerbate those impacts.

ERP No. D-COE-K39046-AZ Rating EC2, Rio Salado Environmental Restoration of two Sites along the Salt River: (1) Phoenix Reach and (2) Tempe Reach, Feasibility Report, in the Cities of Phoenix and Tempe, Maricopa County, AZ.

Summary: EPA expressed environmental concerns that the project's recreational and interpretive aspects received a higher value than potential wildlife and aquatic-related functions. EPA expressed concerns about the potential relationship of this project with several sand and gravel mining operations in the area, in particular, whether mitigation implemented by the sand and gravel operators may be adversely affected by the Salado project.

Final EISs

ERP No. F-COE-K67020-CA, Syar Mining Operation and Reclamation Plan, Six Sites Selected along the Russian River, Construction, Mining-Use-Permit and COE Section 404 Permit, City of Healdsburg, Sonoma County, CA.

Summary: EPA continued to have environmental objections with the Supplemental DEIS. EPA requested that the Record of Decision reflect the

Final Results of Changed Circumstances Antidumping Duty Review

Pursuant to section 751(d) of the Act, the Department may revoke an antidumping duty order based on a review under section 751(b) of the Act (i.e., a changed circumstances review). Section 751(b)(1) of the Act requires a changed circumstances review to be conducted upon receipt of a request containing information concerning changed circumstances sufficient to warrant a review.

The Department's regulations at 19 C.F.R. 351.222(g) permit the Department to conduct a changed circumstances review under 19 C.F.R. 351.216 based upon an affirmative statement of no interest from producers accounting for substantially all of the production of the domestic like product to which the order pertains. Therefore, based on an affirmative statement of no interest in this proceeding by petitioners, we are issuing final results in this changed circumstances review pursuant to section 751(b) of the Act and 19 C.F.R. §§ 351.216, and 351.222. Based on the fact that no interested parties have objected to the revocation of the antidumping duty order on solid urea from the former G.D.R., we have determined that there are changed circumstances sufficient to warrant revocation of this finding.

This revocation applies to all entries of the subject merchandise entered, or withdrawn from warehouse, for consumption made on or after the effective date of this notice. The Department will order the suspension of liquidation ended and will instruct the Customs Service to refund with interest any cash deposits or bonds for all affected entries. This notice also serves as a final reminder to importers of their responsibility under 19 CFR 353.26 to file a certificate regarding the reimbursement of antidumping duties prior to liquidation of the relevant entries during this review period. Failure to comply with this requirement could result in the Secretary's presumption that reimbursement of antidumping duties occurred and the subsequent assessment of double antidumping duties. This notice also serves as a reminder to parties subject to administrative protective order (APO) of their responsibility concerning the return or destruction of proprietary information disclosed under APO in accordance with 19 CFR 353.34(d). Failure to comply is a violation of the APO. This changed circumstances review and notice are in accordance with section 751(b) of the Act, as

amended (19 U.S.C. 1675(b)), and 19 CFR 351.216.

Dated: March 27, 1998.

Robert S. LaRussa,
Assistant Secretary for Import
Administration.

[FR Doc. 98-8847 Filed 4-2-98; 8:45 am]

BILLING CODE 3510-DS-M

DEPARTMENT OF COMMERCE

International Trade Administration

Notice To Apply and To Participate in Department of Commerce Trade Missions

AGENCY: U.S. Department of Commerce (DOC), International Trade Administration (ITA).

ACTION: Notice to apply and to participate in Department of Commerce trade missions.

SUMMARY: This notice serves to inform the public of the opportunity to apply and to participate in trade missions to be held in June, September, and October 1998.

DATES: Applications should be submitted to the Project Officer indicated for the specific mission of interest by the closing date specified in the mission statement. Applications received after the closing date will be considered only if space and scheduling constraints permit.

ADDRESSES AND REQUESTS FOR FURTHER INFORMATION: Requests for further information and for application forms should be addressed to the Project Officer. Information is also available via the International Trade Administration's (ITA) internet homepage at "http://www.ita.doc.gov/uscs/doctrm."

Numbers listed in this notice are not toll-free. An original and two copies of the required application materials should be sent to the Project Officer. Applications sent by facsimile must be immediately followed by submission of the original application.

SUPPLEMENTARY INFORMATION: The Department of Commerce invites U.S. companies to apply to participate in trade missions to be held in June, September and October 1998. For a more complete description of the trade mission, obtain a copy of the mission statement from the Project Officer indicated below. The recruitment and selection of private sector participants for these missions will be conducted according to the Statement of Policy Governing Department of Commerce Overseas Trade Missions announced by Secretary Daley on March 3, 1997.

A. High Technology Trade Mission, Egypt, Israel, Jordan and West Bank/Gaza, June 7-12, 1998. Recruitment closes: April 30, 1998. Contact Information: Thomas Parker, Tel: (202) 482-1860; Fax: (202) 482-0878.

B. Computer Software Trade Mission, to Mexico City, Guadalajara and Monterrey, Mexico, September 28-October 3, 1998. Recruitment closes: August 7, 1998. Contact information: Nicole Bair, Tel: (202) 482-0551, Fax: (202) 482-0952.

C. U.S. Information Technology Trade Mission to Argentina, Brazil and Venezuela, October 18-31, 1998. Recruitment closes: August 14, 1998. Contact Information: Daniel Valverde, Tel: (202) 482-0573; Fax: (202) 482-0952.

Dated: March 30, 1998.

Thomas Parker,
Director, Office of the Near East.

[FR Doc. 98-8746 Filed 4-2-98; 8:45 am]

BILLING CODE 3510-25-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Public Hearing on the Draft Environmental Impact Statement and Draft Management Plan for the Proposed Kachemak Bay National Estuarine Research Reserve in Alaska

AGENCY: Sanctuaries and Reserves Division, Office of Ocean and Coastal Resource Management, National Ocean Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

ACTION: Public hearing notice.

SUMMARY: Notice is hereby given that the Sanctuaries and Reserves Division, of the Office of Ocean and Coastal Resource Management (OCRM), National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, will hold public hearings for the purpose of receiving comments on the Draft Environmental Impact Statement and Draft Management Plan (DEIS/DMP) prepared on the proposed designation of the Kachemak Bay National Estuarine Research Reserve in Alaska. The DEIS/DMP addresses research, monitoring, education and resource protection needs for the proposed reserve.

The Sanctuaries and Reserves Division will hold public hearings at 7:00 p.m. on April 21, 1998, at the Seldovia Community Center, 260 Seldovia Street, Seldovia, Alaska 99663,

and at 7:00 p.m. on April 22, 1998, at the Homer City Council Chambers, 491 East Pioneer Avenue, Homer, Alaska 99603.

The views of interested persons and organizations on the adequacy of the DEIS/DMP are solicited, and may be expressed orally and/or in written statements. Presentations will be scheduled on a first-come, first-heard basis, and may be limited to a maximum of five (5) minutes. The time allotment may be extended before the hearing when the number of speakers can be determined. All comments received at the hearing will be considered in the preparation of the Final Environmental Impact Statement (FEIS) and Final Management Plan.

The comment period for the DEIS/DMP will end on May 4, 1998. All written comments received by this deadline will be considered in the preparation of the FEIS.

FOR FURTHER INFORMATION CONTACT: Mr. R. Randall Schneider (301) 713-3132, Sanctuaries and Reserves Division, Office of Ocean and Coastal Resource Management, National Ocean Service, NOAA, 1305 East West Highway, N/ORM2, Silver Spring, MD 20910. Copies of the Draft Environmental Impact Statement/Draft Management Plan are available upon request to the Sanctuaries and Reserves Division.

Federal Domestic Assistance Catalog Number 11.420 (Coastal Zone Management) Research Reserves

Dated: March 31, 1998.

Nancy Foster,

Assistant Administrator for Ocean Services and Coastal Zone Management.

[FR Doc. 98-8831 Filed 4-2-98; 8:45 am]

BILLING CODE 2510-08-M

DEPARTMENT OF COMMERCE

Patent and Trademark Office

Patent Application Bibliographic Data Entry Format (Proposed Addition to Package 0651-0032—Initial Patent Application)

ACTION: Proposed collection; comment request.

SUMMARY: The Department of Commerce (DOC) and the Patent and Trademark Office (PTO), as part of their continuing effort to reduce paperwork and respondent burden, invite the general public and other Federal agencies to comment on the proposed addition to a continuing information collection, as required by the Paperwork Reduction

Act of 1995, Pub. L. 104-13 (44 U.S.C. 3506(c)(2)(A)).

DATES: Written comments must be submitted on or before June 2, 1998.

ADDRESSES: Direct all written comments to Linda Engelmeier, Departmental Forms Clearance Officer, Department of Commerce, Room 5327, 14th and Constitution Avenue, NW, Washington, D.C. 20230.

FOR FURTHER INFORMATION CONTACT:

Requests for additional information or instructions should be directed to the attention of Jeff Cochran, Director, Office of Electronic Document Programs, telephone number (703) 306-3449 or by e-mail at

jeff.cochran@uspto.gov. All

correspondence should be addressed to Patent Application Data Entry Format, c/o Jeff Cochran, U.S. Patent and Trademark Office, Crystal Park 3, Suite 700, 2231 Crystal Drive, Arlington, VA 22202.

SUPPLEMENTARY INFORMATION:

I. Abstract

The Patent and Trademark Office (PTO) plans to accept from applicants, on a voluntary basis, papers containing the bibliographic information for a patent application in a specific format termed a "Patent Application Data Entry Format." This format groups the bibliographic information into different information sections composed of headings and labels. Providing the bibliographic information for a patent application to the PTO in the Patent Application Data Entry Format will enable the PTO to automate the data entry process for the application. The purpose of the program is three fold. *First*, the system will improve the quality of Filing Receipt information mailed by the PTO to applicants. *Second*, the program will provide the PTO with experience in establishing a simplified system that completely captures the bibliographic information for all patent applications. *Third*, the system will accurately and directly feed this bibliographic information into the PTO's automated electronic information management systems.

II. Method of Collection

The initial patent application may be filed by mail or hand-delivery to the PTO, and a continued prosecution application may also be filed by facsimile. Papers submitted subsequently during the prosecution of an application may be filed by mail, facsimile, or hand-delivery. The PTO is preparing a publication entitled Guide for Preparing the Patent Application Data Entry Format which describes the

format and provides instructions for completing the information sections. Information concerning the Guide for Preparing the Patent Application Data Entry Format may be obtained by contacting Jeff Cochran (refer to the "For Further Information" section of this notice for the necessary details).

The Patent Application Data Entry Format is not a PTO form, but a format for entering data. This format may be created either by directly typing the bibliographic information on blank sheets of paper in the specified format (using a typewriter or word processor), or by using electronic templates in a word processor. Applicants will be encouraged, but not required, to provide bibliographic information for applications in the Patent Application Data Entry Format. When this program is implemented, the PTO will provide a copy of the Guide for Preparing the Patent Application Data Entry Format, as well the electronic templates for Microsoft Word and WordPerfect word processing programs, on its Internet Web site.

III. Data

OMB Number: 0651-0032.

Type of Review: Revision of a currently approved collection.

Affected Public: Any individual filing a patent application.

Estimated Number of Respondents: 243,100 responses per year.

Estimated Time Per Response: 7.88 hours. Please note that this figure is an average based upon the number of each type of application received by the PTO per year times the amount of time that it takes an applicant to complete each type of application. This total is then divided by the total number of applications submitted per year.

Estimated Total Annual Respondent Burden Hours: 1,915,500 hours per year.

Estimated Total Annual Respondent Cost Burden: \$335,212,500 per year.

Note: The addition of the "Patent Application Data Entry Format" does not change either the burden hours or the number of responses already reported for this collection. This format simply suggests a particular arrangement for the bibliographic data that is already requested in this collection, and as such, does not change or affect the burden hour estimates for this information collection.

IV. Request for Comments

With respect to the following collections of information, comments are invited on: (a) whether the proposed collection of information is necessary for the proper performance of the agency's functions, including whether the information will have practical

Notice of Public Hearing

Proposed National Estuarine Research Reserve in Kachemak Bay

Tuesday, April 21, 1998, 7:00 - 9:00 p.m.

Seldovia Community Center
260 Seldovia Street
Seldovia, AK 99663

Wednesday, April 22, 1998, 7:00 - 9:00 p.m.

Homer City Council Chambers
491 E. Pioneer Ave.
Homer, AK 99603

The Sanctuaries and Reserves Division of the National Oceanic and Atmospheric Administration (NOAA) and the Alaska Department of Fish and Game (ADF&G) will hold a public hearing for the purpose of receiving comments on the Draft Environmental Impact Statement (DEIS) and Draft Management Plan (DMP) for the proposed Kachemak Bay National Estuarine Research Reserve. The DEIS/DMP addresses research, monitoring, education and resource protection issues for the proposed Reserve.

We are soliciting comments on the adequacy of the DEIS/DMP. Comments may be expressed orally and/or in written statements. Presentations will be scheduled on a first-come, first-heard basis and may be limited to a maximum of five (5) minutes. All comments received at the hearing and all written or e-mail comments received before May 4, 1998 will be considered in the preparation of the Final Environmental Impact Statement and Management Plan.

For Further Information or a Copy of the Draft Plan, Contact:

- Mr. R. Randall Schneider, (301) 713-3132, Sanctuaries and Reserves Division, OCRM, NOS, NOAA, 1305 East West Highway, N/ORM2, Silver Spring, MD 20910.
- Glenn Seaman, (907) 267-2331, or Betsy Parry, (907) 267-2341, ADF&G, 333 Raspberry Road, Anchorage, AK 99518.

NERR hearings next week

Opportunities for education, scientific research, even improved access to federal funding could be among the benefits to the lower Kenai Peninsula if Kachemak Bay is named part of the National Estuarine Research Reserve program.

The effort to that end, which began two years ago, takes another step forward this week with public hearings on a draft environmental impact statement and management plan. Hearings are set for the Seldovia Community Center on Tuesday at 7 p.m., and at Homer City Hall on Wednesday at 7 p.m.

Creation of the proposed Kachemak Bay National Estuarine Research Reserve is seen by many as a logical extension of the scientific and educational opportunities afforded by the area's unique marine environment. The Kachemak Bay area was one of three areas proposed in Alaska, but the Bay area got the state nod and became the state's nominee to the federal program.

The National Oceanic and Atmospheric Administration and the Alaska Department of Fish and Game will take testimony. Copies of the impact state-

ment and operating plan are available at 202 West Pioneer Ave., Suite B.

The area to be included in the NERR is entirely in public ownership. It includes Kachemak Bay and Fox River Flats Critical Habitat Areas, and the portion of Kachemak Bay State Park that drains into Kachemak Bay. Those designations are the state's toughest resource protection labels, according to Fish and Game.

Critics have raised concerns that creating an estuarine research reserve here will add still another layer of bureaucracy and possibly affect the ability of private land holders to use their property. However, designating the bay as a research reserve will not introduce new regulations and will not alter traditional uses of Kachemak Bay, according to an executive summary of the impact statement and management plan document.

Under the NERR, educational and scientific data-gathering activities and a long-term monitoring project are expected to provide invaluable information about the Bay region and make that data available to agencies, industry and the public.

Recycle, reduce, reuse and learn at Earth Day Fair on Wednesday

Ever wonder what happens to a candy wrapper when you chuck it in the trash?

Members of Homer Recycling Advocates and some guest speakers aim to tell you that and a lot more Wednesday, 3:30-7:30 p.m., during an Earth Day Fair at Big E's Eatery on Pioneer Avenue.

The fair will feature live music, guest speakers from local environmental groups and a presentation by Kenai Peninsula Borough Solid Waste Director Cathy Mayer on what can and cannot be recycled in the borough.

"We've been really active in implementing a recycling program into our operation and most communities (in Alaska) don't do that," Mayer said.

The Homer landfill was the first in the borough to start a recycling program about 10 years ago. It collects cardboard, office paper, newspaper, glass, aluminum and tin cans, clear plastic milk jugs and used oil and last year marketed 174 tons of recyclables, according to a borough report.

The borough's recycling program has drawn criticism from some who say that it

does not do enough. Mayer said it could probably recycle twice as much as it currently does.

"They concentrate on so many things we're not doing that they forget about the things we can collect," she said. "It could probably double and we could handle it."

Ironically, Homer, thought of across the state as an environmentally active community, is not as active in recycling as other towns on the Peninsula, Mayer said.

The Homer Recycling Advocates hope to change that.

"A big focus of our group is about knowing what's going on when you throw something away," said member Dale Banks, owner of Loopy Lupine, a company that sells products made with recycled and environmentally friendly ingredients.

The fair will include workshops from groups like the Cook Inlet Keeper and the Kachemak Bay Conservation Society and is aimed at families. For kids there will be puppet shows and workshops on creations from things that normally get thrown away, like scraps of paper.

KENAI PENINSULA BOROUGH NEWSPAGE

The following meetings and Assembly session will be held in the Assembly Chambers at the Borough Administration Building in Soldotna, Alaska:

April 20, 1998	Board of Equalization (Real Property)
11:00 AM-Noon	Hearings
1:00 PM-6:00 PM	Hearings (continued)
April 21, 1998	Kenai Peninsula Borough Assembly
2:30 PM	Policies and Procedures Committee
3:00 PM	Finance Committee
4:00 PM	Land Use Planning Committee
5:00 PM	Legislative Committee
7:30 PM	Assembly Meeting

7:30 p.m. Policies and Procedures Committee

7:30 p.m. Assembly Meeting

- CALL TO ORDER
- PLEDGE OF ALLEGIANCE
- INVOCATION
- ROLL CALL
- APPROVAL OF AGENDA AND CONSENT AGENDA

(All items listed with an asterisk (*) are considered to be routine and non-controversial by the Assembly and will be approved by one motion. There will be no separate discussion of these items unless an Assembly Member so requests, in which case the item will be removed from the Consent Agenda and considered in its normal sequence on the agenda.)

- APPROVAL OF MINUTES
- April 7, 1998 Regular Assembly Meeting Minutes
- PUBLIC COMMENTS AND PRESENTATIONS -- Items other than those appearing on the agenda (3 minutes per speaker, 20 minutes aggregate)

(Mayor) (Referred to Finance Committee)

N. PUBLIC COMMENTS AND PUBLIC PRESENTATIONS (3 minutes per speaker)

O. MAYOR'S REPORT

- Agreements and Contracts
 - Professional Services Agreement between Kenai Peninsula Borough and Architects Alaska for Homer Intermediate School Facility Assessment.
- Other
 - Kenai River Center 1997 Annual Report.
 - Memorandum from Finance Department dated April 9, 1998, regarding FY99 General Budget Projection.
 - Memorandum from Finance Department dated April 9, 1998, regarding Retention of Business Records for Inspection and/or Audit.
 - Budget Revisions -- March, 1998.
 - Revenue Expenditure Report -- March, 1998.

Appendix M
Responses to Written and Oral Comments Received on the
Kachemak Bay NERR DEIS/DMP

The Draft EIS/Draft Management Plan was circulated for public and agency review for seven weeks in the spring of 1998. NOAA also conducted public hearings to receive oral comments in Seldovia and Homer on April 21 and 22, 1998. Twenty written comments were received, all of which supported designation of the KBNERR. A total of eight individuals testified at the hearings. The following is a summary of the most significant comments received, absent minor wording changes. The comments have been grouped by topic. Those with similar remarks have been combined.

BOUNDARIES

Comment: Several commenters wanted a larger boundary. The community's original nomination was that the NERR would include the entire watershed of Kachemak Bay. Many also said in their comments that they realize the political realities, and therefore will be satisfied with a watershed approach to the NERR. They hope that all research and educational programs will be planned around the whole watershed, as was the original intent of the proposers.

Response: To be included in the boundary of a national reserve, the state must be able to assure NOAA that the lands and waters are in "protected status," suitable for long-term research and educational programs. The entire watershed includes a mixture of private, federal, state, and local government lands. Meeting the criterion for protected status would not be feasible for the entire watershed, not even for some of the public lands (such as the "general state lands" at the head of the bay).

The proposal of the State of Alaska was to create the KBNERR as a non-regulatory program, therefore limiting the reserve to those areas where adequate protections were already in place. The public lands and waters within the KBNERR boundary were carefully chosen to adequately represent the bay's ecological units, meet the research and education goals of the reserve, as well as remain a non-regulatory program. Given the required protective status, the benefits of including more types of public lands or private lands did not clearly outweigh the cumbersome administrative agreements that would have been necessary.

It is important to keep in mind that NOAA does not restrict NERR funding to educational and research projects only occurring within the official NERR boundary. For instance, if we wanted to gather data further up the Fox River than the boundary extends (and we have landowner permission), that would be suitable for a NERR-sponsored project.

The KBNERR fully intends to have a watershed perspective. For example, the current NERR-sponsored Ecological Characterization project encompasses the entire watershed, and will provide information on biological species, uses and trends in the watershed. In response to this comment, we reexamined the wording of our KBNERR goal, objective, and strategy statements to see if the watershed approach was adequately reflected. We added watershed perspective to

several of these statements, and expanded the description of the watershed approach at the beginning of the preferred alternative.

Comment (from NOAA): The DEIS/DMP included the Kasitsna Bay laboratory within the boundary of the reserve. The NERRS regulations restrict the inclusion of federal lands to those properties that are in protected status. NOAA, which owns the Kasitsna Bay laboratory and the property, does not have statutory authority that “protects” its properties. Therefore, remove the Kasitsna Bay Lab from the NERR boundary in the FEIS/FMP.

Response: After consulting with NOAA, the KBNERR boundary plan was revised to remove this parcel, and include it in the plan for future acquisitions and boundary expansion opportunities (Section 3.1.1.4). This change does not affect the ability of reserve staff and reserve-associated researchers to work cooperatively with NOAA and the University of Alaska Fairbanks, which operates the laboratory, to use the facility for research and education projects. An agreement between ADF&G and UAF for use of the laboratory will be developed. The property is now discussed in “Boundary Expansion Opportunities” to allow for the possibility that ownership of the laboratory and its property could eventually be transferred to the State of Alaska.

Comment: The Kachemak Bay Conservation Society would like to see additional lands on the Homer side included in the KBNERR. The new park purchases, Diamond Creek, Overlook Park, and Baycrest parcels, all would be excellent additions. In time consideration should be given to include the Anchor River-Fritz Creek Critical Habitats.

Response: The management of the new state park properties mentioned were in limbo at the time of FEIS/FMP publication. As separate park units, the adopted management plan of Kachemak Bay State Park does not apply to them, and management plan(s) for these parcels had not yet been developed. The timing was not appropriate to include them in the reserve boundary. Instead, a description of these parcels was added to Section 3.1.1.4, Future Expansion Opportunities. They may be added in the future (a) if their future management and protective status is satisfactory for inclusion within the reserve, and (b) pending an additional agreement with the agency landholder (DNR).

Comment (via telephone): The areas of the spit in the reserve—do these include much of the intertidal areas of Mud and Mariner Park, or just the areas of the spit recently purchased by the Exxon Valdez Restoration Fund and transferred to the City? As part of that effort, the City put conservation easements on much of the adjacent upper spit parcels with shorebird habitat values. The City plans to rezone much of the Mud Bay/Mariner Park area as “conservation district” within the next year. Why couldn’t all this area be included in the research reserve?

Response: This idea merits consideration. However, it requires new agreements to be worked out with the landholders in the area—the City and various state agencies. It may be more appropriate to pursue these agreements once the conservation district has been put into place. In the meantime, these areas were added to Section 3.1.1.4 of the FEIS/FMP, Future Expansion Opportunities.

Comment (in person): It would be helpful for this section to explain what is involved in expanding the reserve boundary in the future.

Response: This information was added to Section 3.1.1.4, Future Expansion Opportunities.

ADMINISTRATIVE ORGANIZATION/OVERSIGHT

Comment: Several commenters were concerned that adequate weight be given to input of the advisory committees. Some suggested that the NERR management plan lay out a review procedure to ensure that committee concerns get full consideration, should ADF&G/NOAA or the NERR staff override an advisory committee recommendation.

Response: Under the NERR System, the State of Alaska will manage the reserve, and must retain ultimate decision-making authority. However, the sparse KBNERR staff cannot work effectively unless supported by the greater research and education communities. The State is fully committed to developing a process to work together efficiently with the research and education committees. When discussing this issue with other NERRs around the country, we heard without exception that the system of staff working with advisory committees works very well.

These committees will meaningfully participate in shaping the Kachemak Bay reserve's direction. This is reflected in the KBNERR management plan. For instance, the reserve's goals and objectives refer to essential committee input:

Strategy: Conduct periodic meetings between the education coordinator and Education Committee to share information about ongoing programs and discuss local issues and needs.

Strategy: Utilize input from the Education Committee to annually develop new strategies [to fulfill specific needs in Kachemak Bay].

The listed responsibilities of NERR staff positions (Administrative Chapter) describe their ongoing role with the committees, which is basically to work with these groups to prepare annual priorities/work plan for the reserve addressing the research and/or education programs, respectively. Similarly, this chapter outlines the committee member responsibilities. When meeting with those who commented on this topic, we pointed out where the plan explains that the role of the research and education committees will be crucial to the success of NERR programs. They agreed that perhaps there is not much more we could put in the words on the page to address their concerns as much as adopting a real team attitude on the part of the NERR staff.

Another existing avenue of public input is through the biennial Section 312 evaluations conducted by NOAA. During this process, the NOAA review team makes inquiries to determine whether we are abiding by the management plan and following the mission, goals, and objectives of the reserve. Advisory groups will play a key role in that review. In addition, NOAA requires a reserve to revise their management plan every few years in a public process.

The multi-year management plan is not the best place to fine-tune the working details of the committees. We did not want to decide in advance how the committees should run their schedule and procedures. As the committees convene, they will have a better perspective to work out these details for most effective performance.

Comment: Eliminate the word “advisory” and simply call them an education committee or research committee, then to develop some job descriptions and outline the responsibilities for those committees.

Response: We removed the word “advisory” in the title of these groups. The functions of these groups are outlined in the Administrative Plan (Section 3.1.2.2 E).

Comment: Attempt to hire NERR staff from the local community.

Response: As a state agency, ADF&G must treat all state residents equally in hiring decisions. However, it is likely that people who reside and/or have an active interest in the Kachemak Bay area are those that would apply for any short- or long-term KBNERR positions.

EXISTING RESOURCE PROTECTION

Comment: In several sections of the plan it is stated that “The CHA designation is the highest level of protection that the State may afford to lands and waters.” This is not entirely correct because by law, State Parks could easily dispute that. We recommend that you change the statements in the plan to state in effect: “State Parks and the CHA designations are the highest levels of protection that the State affords its lands and waters. In most cases, State Park lands and waters will have more restrictive policies and regulations than the CHA.”

Response: These changes were made in the chapter and in the appropriate appendix.

Comment: It is recommended that you add the chapters on Private Lands and Commercial Activities from the Kachemak Bay State Park Management Plan to the summary in Appendix C, Relevant Policies of KBSP. In both sections you may want to reference the Cooperative Agreements between ADF&G and DNR.

Response: This appendix currently lists specific policies taken from two different sections of the KBSP plan. The two topics referenced were in the park plan under the chapter called “Issues” but, especially for the private land topic, there was no **policy** language here to cite. Some information about commercial activities was added to the NERR plan appendix from the “Guidelines” table of the state park plan.

FACILITIES

Comment: We support a shared facility with AMNWR.

Response: This is identified as the preferred alternative in the management plan and KBNERR will pursue that alternative this next year, but many factors are not yet known which may not make this feasible.

Comment: The 4.5 acre site owned by the UAA/Kachemak Bay Campus is offered as an optional location for a NERRS facility, near the future consortium library in Homer.

Response: This possible location was added to the discussion in the Facilities chapter.

Comment: Include the possibility of using the CACS as a remote educational facility in the preferred alternative.

Response: Done.

Comment: CACS wants to pursue a long-term agreement for use of their lands and facilities.

Response: The time to do this would be after the KBNERR staff are on board and have developed their annual education and research priorities with the committees. Then it would be clearer what type and the timing of KBNERR uses for which CACS facilities may be appropriate.

PROGRAMS

Comment: The KBNERR water quality program should augment, not duplicate existing programs such as the water quality work of the Cook Inlet Keeper.

Response: That is KBNERR's intention, and this is clearly stated in the research and education goals and objectives.

Comment: The KBNERR could possibly develop some memorandums of understanding with groups like the Center for Alaskan Coastal Societies, the Pratt Museum, the Wildlife Refuge, and other outfits that are providing educational programs. There are a lot of educational programs, and it seems to me that there is room there for some MOUs with some of these groups to provide certain types of activities for the reserve.

Response: There is much room for mutual benefit between the new KBNERR and existing educational programs in the area. Revisions to the education chapter of the plan make it clearer that KBNERR intends to work through and with complementary educational efforts. Once the reserve is operational, the Education Committee and KBNERR education coordinator will develop education priorities annually; appropriate agreements or arrangements with local educational groups will likely be a natural outcome.

Comment: Developing a coordinated education program in Kachemak Bay should be equal to that of a coordinated research program. Also, identifying funding should be a priority so they can continue to offer and expand many of the in-place educational opportunities traditionally or typically provided by other NERR sites. The scope of activities is vague. We recommend that

the final education plan clarify the intended scope of the KBNERR education program—is the plan talking about all educational activities conducted within the NERR? or only KBNERR-sponsored or KBNERR-implemented activities?

Response: Our research at the time of site nomination identified research and its applications for wise resource management as the number one reason that the public supported the reserve proposal in Kachemak Bay. At the same time, educational institutions voiced a concern that the proposed reserve should not compete with existing educational programs in the area. They did, however, see a real need for better coordination of these efforts. Existing programs perform functions complementing the educational mission of the estuarine research reserve. Thus, as expressed in the management plan, KBNERR intends to coordinate with existing educational groups, facilitate and strengthen their efforts, and find appropriate niches (as yet unaddressed) for the KBNERR to pursue. It is likely that such new niches would concern issues of watershed health and stewardship rather than target K-12 school groups. The education chapter was largely revised to clarify the intended relationship of KBNERR educational efforts to those of other groups in the region.

GOALS AND OBJECTIVES

Many small changes were made to the goal, objective, and/or strategy statements based on comments received. As explained above, the watershed approach was emphasized in several research and education statements. The relationship of KBNERR programs to other educational programs in the area was clarified in the KBNERR education goals and program description.

EIS REQUIREMENTS

Comment: Add the Section 7 consultation that was conducted (under the Endangered Species Act) to the section addressing Federal Authorizations Necessary to Implement the Action.

Response: Done

Comment: Cumulative Impacts should also be addressed in the EIS.

Response: This section was added to the Environmental Consequences chapter (Section 5.4).

AFFECTED ENVIRONMENT SECTION

In addition to items mentioned below, several minor wording changes were made in this section to clear up any possible confusion, as pointed out by one reviewer.

Comment: In oceanography, a portion of a NOAA chart might be helpful. Also this section should discuss the topic of “ice” in Kachemak Bay.

Response: There could be many other informational items about Kachemak Bay in this chapter, including a NOAA chart and/or discussion of ice. However, it is important to remember the purpose of this document. The Affected Environment section of this FEIS document is meant to

provide some background about the possible environmental impact of simply designating the reserve. By no means is it meant to be a definitive scientific work about Kachemak Bay. These topics might be best addressed in the upcoming Ecological Characterization of Kachemak Bay, which will result from the NERR designation. Since the ice patterns in Kachemak Bay do not have much bearing on the immediate designation question, we won't take that up here but will address it in the Characterization and/or other works.

Comment: Fauna Factors. Rocky substrates and sand and mud substrates do not in themselves represent fauna. They also support flora as indicated in the text, and therefore these two sections overlap.

Response: The Flora and Fauna Factors sections were re-worked to clarify intent and make them less overlapping.

Comment: A list of additional species was submitted to augment the Kachemak Bay species lists in Appendix I.

Response: A number of these species were added to the lists in the plan appendix. However, this plan is not meant to be a definitive scientific work. The appendix was intended to represent the breadth of species inhabiting the reserve area. The Kachemak Bay Ecological Characterization project and other future scientific efforts will refine and embellish the listing of species for the bay.

Public Hearing

Proposed National Estuarine Research Reserve in Kachemak Bay
Tuesday, April 21, 1998 - 7:00 - 9:00 p.m

Seldovia Community Center
260 Seldovia Street - Seldovia, AK 99663

<p>★ Name: <u>Sandy Murray</u></p> <p>Company or Affiliation: _____</p>	<p>Address: <u>PO Box 237</u> <u>Seldovia AK 99663</u></p>	<p>Phone: <u>907-234-7646</u></p> <p>E-Mail: <u>murray@yug.net</u></p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>Joe Murray</u></p> <p>Company or Affiliation: _____</p>	<p>Address: <u>Same as above</u></p>	<p>Phone: _____</p> <p>E-Mail: <u>Same as above</u></p>	<p>Do you wish to give testimony? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>Mike Bear</u></p> <p>Company or Affiliation: <u>Kachemak Bay LAR-VAF</u></p>	<p>Address: <u>Draven G</u> <u>Seldovia</u> <u>99663</u></p>	<p>Phone: <u>235-4042</u></p> <p>E-Mail: <u>EMBEAR@ALASKA.FG</u></p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>Karl Pulliam</u></p> <p>Company or Affiliation: _____</p>	<p>Address: <u>Box 31</u> <u>Seldovia, AK 99663</u></p>	<p>Phone: <u>234-7641</u></p> <p>E-Mail: <u>Karlsp@juno.com</u></p>	<p>Do you wish to give testimony? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>Caren Coraupe</u></p> <p>Company or Affiliation: _____</p>	<p>Address: <u>General Del.</u></p>	<p>Phone: <u>234-8034</u></p> <p>E-Mail: _____</p>	<p>Do you wish to give testimony? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>WALTER MCINNES</u></p> <p>Company or Affiliation: <u>SOS RESPONSE TEAM</u></p>	<p>Address: <u>PO Box 55</u> <u>SELDOVIA AK 99663</u></p>	<p>Phone: <u>907 234-7673</u></p> <p>E-Mail: _____</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: _____</p> <p>Company or Affiliation: _____</p>	<p>Address: _____</p>	<p>Phone: _____</p> <p>E-Mail: _____</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: _____</p> <p>Company or Affiliation: _____</p>	<p>Address: _____</p>	<p>Phone: _____</p> <p>E-Mail: _____</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: _____</p> <p>Company or Affiliation: _____</p>	<p>Address: _____</p>	<p>Phone: _____</p> <p>E-Mail: _____</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

Public Hearing

Proposed National Estuarine Research Reserve in Kachemak Bay
Wednesday, April 22, 1998 - 7:00 - 9:00 p.m

Homer City Council Chambers
491 E. Pioneer Ave - Homer, AK 99603

<p>★ Name: <u>MARK MAJOR</u></p> <p>Company or Affiliation: <u>AK OIL & GAS ASSOC.</u></p>	<p>Address: <u>AACO AK INC.</u> <u>P.O. Box 100360 (ATO)</u> <u>ANCHORAGE, AK 99510</u></p>	<p>Phone: <u>265-6136</u></p> <p>E-Mail: <u>MMAJOR@AACO.ORG</u></p>	<p>Do you wish to give testimony? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>MICHAEL SLOAN</u></p> <p>Company or Affiliation: <u>MT2C "Mountain to Sea"</u></p>	<p>Address: <u>PO Box 541</u> <u>Anchor Pt., AK 99556</u></p>	<p>Phone: <u>235-9714</u></p> <p>E-Mail: <u>MT2C@MT2C.COM</u></p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>Will Files</u></p> <p>Company or Affiliation:</p>	<p>Address: <u>59835 Tern Ct</u> <u>Homer AK 99603</u></p>	<p>Phone: <u>235-2443</u></p> <p>E-Mail: <u>willfiles@webtr.net</u></p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>NINA FAUST</u></p> <p>Company or Affiliation:</p>	<p>Address: <u>P.O. Box 2994</u> <u>Homer AK 99603</u></p>	<p>Phone: <u>235-6262</u></p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>Roger L. MacCampbell</u></p> <p>Company or Affiliation:</p>	<p>Address: <u>POB 3248</u> <u>Homer, AK 99603</u></p>	<p>Phone: <u>235 7024</u></p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>D.N.R. Dwyer</u></p> <p>Company or Affiliation: <u>ADF&N/ANPA/DAF</u></p>	<p>Address: <u>P.O. Box 5802</u> <u>Homer, AK 99603</u></p>	<p>Phone: <u>235-7225</u></p> <p>E-Mail: <u>bridgette@philaaska.net</u></p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>★ Name: <u>Jon Peterson</u></p> <p>Company or Affiliation: <u>Center for Alaskan Coastal</u></p>	<p>Address: <u>PO Box 2225</u> <u>Homer AK 99603</u></p>	<p>Phone: <u>235-6667</u></p> <p>E-Mail: <u>ccas@xyz.net</u></p>	<p>Do you wish to give testimony? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>Doug Coughender</u></p> <p>Company or Affiliation: <u>University of Alaska Fairbanks</u></p>	<p>Address: <u>4614 Lolo St. #201B</u> <u>Homer, AK 99603</u></p>	<p>Phone: <u>907/335-5647</u></p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>★ Name: <u>Bab Shavelson</u></p> <p>Company or Affiliation: <u>Cook Inlet Keeper</u></p>	<p>Address: <u>Box 3269</u> <u>Homer AK 99603</u></p>	<p>Phone: <u>907/235-4068</u></p> <p>E-Mail: <u>keeper@xyz.net</u></p>	<p>Do you wish to give testimony? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

Public Hearing

Proposed National Estuarine Research Reserve in Kachemak Bay
Wednesday, April 22, 1998 - 7:00 - 9:00 p.m

Homer City Council Chambers
491 E. Pioneer Ave - Homer, AK 99603

<p>◆ Name: <u>Marilyn Sigman</u> Company or Affiliation: <u>Center for Alaskan Coastal Studies</u></p>	<p>Address: <u>P.O. Box 2225</u> <u>Homer 99603</u></p>	<p>Phone: E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: <u>MIKE O'NEARA</u> Company or Affiliation: <u>PRATT MUSEUM</u></p>	<p>Address: <u>P.O. Box 2225 361</u> <u>Homer, AK 99603</u></p>	<p>Phone: <u>235-8635</u> E-Mail: <u>PRATT@AKUSA.NG</u></p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: <u>Robert DeCino</u> Company or Affiliation:</p>	<p>Address: <u>P.O. Box 1947</u> <u>Homer, AK 99603</u></p>	<p>Phone: <u>235-1038</u> E-Mail:</p>	<p>Do you wish to give testimony? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: _____ Company or Affiliation:</p>	<p>Address:</p>	<p>Phone: E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: _____ Company or Affiliation:</p>	<p>Address:</p>	<p>Phone: E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: _____ Company or Affiliation:</p>	<p>Address:</p>	<p>Phone: E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: _____ Company or Affiliation:</p>	<p>Address:</p>	<p>Phone: E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: _____ Company or Affiliation:</p>	<p>Address:</p>	<p>Phone: E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: _____ Company or Affiliation:</p>	<p>Address:</p>	<p>Phone: E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/MP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

Public Hearing

Proposed National Estuarine Research Reserve in Kachemak Bay
Wednesday, April 22, 1998 - 7:00 - 9:00 p.m

Homer City Council Chambers
491 E. Pioneer Ave - Homer, AK 99603

<p>◆ Name: JACK CUSHING</p> <p>Company or Affiliation:</p>	<p>Address: 1423 BAY AVE HOMER AK, 99603</p>	<p>Phone: 907-235-6745</p> <p>E-Mail: THOIZ@XYZ.WEST</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name: Laurie Daniel</p> <p>Company or Affiliation:</p>	<p>Address: PO Box 3713 Homer 99603</p>	<p>Phone: 235-4349</p> <p>E-Mail: CSPACK@XYZ.NET</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name:</p> <p>Company or Affiliation:</p>	<p>Address:</p>	<p>Phone:</p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name:</p> <p>Company or Affiliation:</p>	<p>Address:</p>	<p>Phone:</p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name:</p> <p>Company or Affiliation:</p>	<p>Address:</p>	<p>Phone:</p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name:</p> <p>Company or Affiliation:</p>	<p>Address:</p>	<p>Phone:</p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name:</p> <p>Company or Affiliation:</p>	<p>Address:</p>	<p>Phone:</p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name:</p> <p>Company or Affiliation:</p>	<p>Address:</p>	<p>Phone:</p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name:</p> <p>Company or Affiliation:</p>	<p>Address:</p>	<p>Phone:</p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>◆ Name:</p> <p>Company or Affiliation:</p>	<p>Address:</p>	<p>Phone:</p> <p>E-Mail:</p>	<p>Do you wish to give testimony? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Do you want to receive a copy of Final EIS/NP? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

Mime-Version: 1.0

Date: Fri, 3 Apr 1998 16:10:37 -0400

To: kachemakbay@surf.nos.noaa.gov

From: kachemakbay@surf.nos.noaa.gov

Subject: Proposed Kachemak Bay NERR

>Date: Tue, 31 Mar 1998 10:25:57 -0900

>From: Tom Shirley <fftc@aurora.uaf.edu>

>Mime-Version: 1.0

>To: kachemakbay@surf.nos.noaa.gov

>Subject: Proposed Kachemak Bay NERR

>

>Stephanie Thornton, Chief

>Attn: proposed Kachemak Bay NERR

>Sanctuaries and Reserves Division

>Office of Ocean and Coastal Resource Management

>National Ocean Service

>1305 East-Wes Highway N/ORM2

>Silver Spring, MD 20910

>

>Dear Ms. Thornton:

>

>I have reviewed the DEIS/DMP for the proposed Kachemak Bay NERR and wish

>to express my strong support for Preferred Alternative 3.1: approval of

>Kachemak Bay as a NERR. The site has many attractive options, including

>large areas of pristine wilderness, public access, a strong history of

>habitat protection in the area, and the availability of state and

>federal agency personnel for oversight. The Kasitsna Bay Lab being

>located with the KBNERR is also an added plus, as it represents an ideal

>location for basing research studies to be conducted within the NERR.

>

>Sincerely,

>

>Thomas C. Shirley, Ph.D.

>Professor of Fisheries

>School of Fisheries & Ocean Sciences,

>University of Alaska Fairbanks

>11120 Glacier Highway

>Juneau, Alaska 99801

>(907) 465-6449

>



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

received
JRB

APR 21 1998

Reply To
Attn Of: ECO-088

APR 13 1998

Ref: 98-021-NOA

Stephanie Thornton
Sanctuaries and Reserves Division
Office of Ocean and Coastal Resource Management
National Ocean Service
1305 East-West Highway, N/ORM2
Silver Spring, Maryland 20910

Dear Ms. Thornton:

The U.S. Environmental Protection Agency (EPA) has received the draft Environmental Impact Statement/draft Management Plan for the **Proposed Kachemak Bay National Estuarine Research Reserve** for review in accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act.

EPA Region 10 has used a screening tool to conduct a limited review of the draft EIS and, based upon the screen, we do not foresee having any environmental objections to the proposed project. Therefore, we will not be conducting a detailed review of the draft EIS.

Should you have any questions, please contact Bill Ryan of my staff at (206) 553-8561.

Sincerely,

Richard B. Parkin, Manager
Geographic Implementation Unit

cc: Susan B. Fruchter, NOAA

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF LAND

TONY KNOWLES, GOVERNOR

3601 C STREET, SUITE 1122
ANCHORAGE, ALASKA 99503-5947
PHONE: (907) 269-8503
FAX: (907) 269-8904

Wednesday, April 22, 1998

Stephanie Thornton, Chief
Sanctuaries and Reserves Division
Office of Ocean and Coastal Resource Management
1305 East-West Highway N/ORM2
Silver Spring, MD 20910

received
SRD
MAY 1 1998

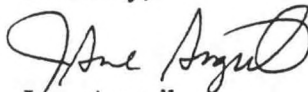
Dear Ms. Thornton:

Thank you for the opportunity to comment on the Kachemak Bay NERR Draft EIS/ Management Plan. Please note that the following comments reflect comments from the Alaska Department of Natural Resources (DNR) Division of Land and the Division of Agriculture. Comments from the DNR Division of Parks and Outdoor Recreation (that administer the Kachemak Bay State Park) will be forthcoming.

The Alaska Department of Fish and Game has worked closely with our department during this planning process and we are pleased with the results. As you know, DNR has many responsibilities for land and water management in the National Estuarine Reserve including issuing permits, leases, rights-of way, management agreements, and other authorizations. Although we initially had concerns that the NERR designation would further compound the complexity of managing the resources in Kachemak Bay, these notions have been dispelled. Through the planning process, ADFG's receptiveness to DNR's concerns, input from the Plan Review Group, and public comments have demonstrated that the designation will not further complicate these management issues. Rather, the plan and designation will expand opportunities for sorely needed research and education in the bay area.

With the exception of some minor edits on the attached page, we heartily support the draft EIS and plan and hope that the designation of Kachemak Bay as a National Estuarine Research Reserve will result.

Sincerely,


Jane Angvik,
Director

CC Jim Stratton, DNR DOPOR
Robert Wells, DNR DOA
Glenn Seaman, ADFG
Attachment

Minor Edits To The Draft EIS/Management Plan

Grazing page 9

Third paragraph, first and second sentences should read:

“Grazing leases and permits currently are in effect for a large portion most of the Fox River Flats CHA. but also must be approved by the Alaska Department of Fish and Game for CHA areas. Grazing leases and permits are administered by the Department of Natural Resources (DNR). The Alaska Department of Fish and Game has also issued Special Area Permits in the CHA for these same grazing operations.”

ADFG approval of DNR authorizations is not required in this CHA. Each agency issues it's own authorizations and approval between agencies is not required (although agreement between agencies is a desirable, although not always achievable outcome).

In the last paragraph the sentence should read:

“However, This plan was never finalized and thus never went into effect. provides direction for administering grazing leases and permits.”

Although the plan was not officially adopted by ADFG, DNR, ADFG, HRCS and the S&W Conservation District all use the plan to guide their authorization decisions. The important fact is that the plan is being used to guide grazing authorizations, not the fact that DFG didn't sign the final document.

Mariculture, page 9

Change fourth paragraph to read:

“Shellfish may be cultured in Kachemak Bay by permit or lease. The Alaska Department of Natural Resources (DNR) is responsible for leasing authorizing sites suitable for mariculture through Aquatic Farm Site Permits and Leases. and two authorizations are required from ADF&G authorizes for shellfish mariculture within the reserve through (an Aquatic Farm Operations Permits and a Special Areas Permits). Only certain locations in the bay are approved as suitable, Through these ADF&G authorizations, and the terms and conditions are applied to make the activities compatible with the goals and policies of the CHA Management Pplan. The establishment of the proposed NERR will not change these authorities.”

DNR Division Names, page 36

Change all references in the plan from “Division of Lands” to “Division of Land.”

Change all references in the plan from “Division of Water” to “Division of Mining and Water Management.”

Sentence in the third paragraph should read: "Management decisions by of these DNR divisions is will be consistent with the Kenai Area Plan, to be completed in 1998."



received
SRO

MAY 1 1998

COOK • INLET • KEEPER

Stephanie Thornton, Chief
Sanctuaries & Reserve Division
Office of Ocean & Coastal Resource Management
National Ocean Service
1305 East-West Highway N/ORM2
Silver Spring, MD 20910

Re: Proposed Kachemak Bay NERR Draft EIS Comments

Dear Ms. Thornton:

Cook Inlet Keeper (Keeper) is a community-based nonprofit organization dedicated to protecting the Cook Inlet watershed and the life it sustains. Keeper has worked with a variety of local groups, businesses and agencies to support a NERR designation for Kachemak Bay, and on behalf of its members, staff and Board Directors, submits the following comments on the Draft Environmental Impact Statement (DEIS):

1. Nonregulatory Goals: Keeper recognizes that a NERR will not burden local property owners and businesses with additional laws or regulations which might impede economic growth in the area. Accordingly, Keeper supports the preferred alternative's (PA) operational, research and educational goals.
2. Boundary Plans: The PA's buffer area boundary's do not reflect the original boundaries submitted by the NERR Ad Hoc Working Group, and because those boundaries resulted from lengthy and well-reasoned considerations by local residents, they should be expanded. Keeper recognizes the political and jurisdictional issues surrounding boundary expansion. However, to attain the NERR's stated goals most effectively and efficiently, and to enhance the scientific and educational opportunities available under the NERR, the buffer area boundaries should approximate the natural topographic watershed boundaries of Kachemak Bay to the maximum extent possible.
3. Administration: Keeper strongly supports the PA's reliance on advisory committees for support and direction of the NERR as it grows and evolves. Local oversight has been a prerequisite for local support since the earliest days of NERR discussions in the Kachemak Bay area. In order to ensure that local citizens, businesses and groups play a meaningful role in the development of the NERR, NOAA and ADF&G should carefully heed the input and recommendations of the advisory committees. Specifically, in matters where NOAA, ADF&G

(over)

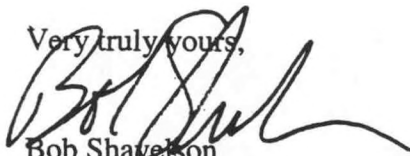
and/or NERR staff override an advisory committee recommendation, the NERR administrative plan should contain adequate safeguards and procedures to ensure that local concerns are fully considered. Furthermore, because of the wealth of local and traditional knowledge about local resource issues in the Kachemak Bay region, ADF&G should take pains to hire NERR staff from the local community.

In short, Keeper strongly supports the preferred alternative for a NERR designation in Kachemak Bay. A NERR's research and education activities will not only have a positive impact on the local economy, but will also enhance our understanding and stewardship of this magnificent area. The knowledge and information developed under a NERR will play an important role ensuring intelligent resource management decisions in Kachemak Bay, while also helping to chart a sustainable course for the future of the Kachemak Bay community.

Developing the proposal for a Kachemak Bay NERR has been a long and arduous task, and Keeper wishes to thank NOAA and ADF&G, as well as the numerous local groups, businesses, citizens and governments, for their tireless efforts to see this proposal through. Keeper especially appreciates the important roles played by ADF&G's Glenn Seaman, Betsy Parry and Bridgett Callahan, as well as the support of NOAA's Matt Menashes, in helping to make a Kachemak Bay NERR a reality.

Thank you for the opportunity to comment, and please do not hesitate to contact me if you have any questions.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Bob Shavelson', with a stylized, flowing script.

Bob Shavelson
Executive Director

RECEIVED

APR 22 1998

STATE OF ALASKA
FISH & GAME
HABITAT & RESTORATION

P.O. Box 2994
Homer, AK 99603
April 22, 1998

Glenn Seaman
NERRS/ACMP Coordinator
Alaska Dept. of Fish and Game
333 Raspberry Road
Anchorage, AK 99518-1599

Dear Glenn,

I am very pleased to comment on the Draft EIS and Draft Management Plan for the Proposed Kachemak Bay National Estuarine Research Reserve. Having followed this process from its inception, I know how much time and effort has gone into planning the KBNERR by citizens and Fish and Game staff. I greatly appreciate all the efforts of you and your staff in carrying this project through. Kachemak Bay residents are looking forward to the establishment of this new site and feel that it will be a welcome asset to the area.

Regarding my comments on the DEIS for KBNERR, I have a few specific points. First, I support the Preferred Alternative. I am disappointed in the boundaries because I know the intent of the original proposers from the community. We all were strongly supportive of a watershed approach and wanted to see the boundaries reflect that. It certainly seems that it would not have been that complicated to have included the Kenai Wildlife Refuge since those lands also are well protected by existing regulations and are contiguous with Kachemak Bay Wilderness Park. I understand the reasons explained in the DEIS for not including these lands, but do not necessarily agree with them. It is important that the management approach be watershed based and that the research and education programs be designed to encompass the whole watershed. There are so many development activities occurring throughout the watershed, that this type of ecosystem approach is critical to ensuring an accurate picture of Kachemak Bay's health in the future. I am heartened that the boundary lines do not preclude studies in the watersheds outside the boundaries. I hope all research and education programs will be planned around the watershed as was the original intent of the proposers.

I think there are some reservations within the community about Advisory Committees simply because they are usually advisory with no power. During the proposal process and public hearings, residents were clear in their desire to have meaningful input into the design and implementation of KBNERR programs. They did not want another governmental agency administering the agency's program without meaningful public input. I am not sure how to provide a strong mechanism for the public to guide the direction of KBNERR programs and administration, but it has to be stronger than just a

powerless advisory group.

The Research Coordinator will have a big job bringing together all the different research efforts now occurring in the Bay. It is important that this person be responsible for getting the information into the research library. This library will serve as an important clearing house for all research information as well as an important resource for educators who want to use this information.

The Volunteer Coordinator should be required to coordinate with local groups in planning programs and education of volunteers. Perhaps to avoid duplication, the KBNERR can serve as the focal point for groups to present their programs. By having different groups present their programs at the KBNERR facility, KBNERR would be able to establish a varied series of programs using the different groups and prevent volunteer burnout. It would be great to have non-profits presenting programs in cooperation with the KBNERR for public education year round.

A major component of the KBNERR is developing a water quality monitoring program. This program should not duplicate existing water quality monitoring programs but rather augment them. KBNERR should become partners with organizations like the Cook Inlet Keeper to create a comprehensive water quality program that avoids duplication.

I support a shared facility with the Alaska Maritime National Wildlife Refuge. Partnering two federal programs in one building is a cost effective way to house these very important agencies.

I look forward to the establishment of the Kachemak Bay National Estuarine Reserve in Homer. The research and education that this program will provide will be a model for other coastal Alaskan communities and will help us to make informed decisions about management of the Kachemak Bay watershed. Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in cursive script that reads "Nina Faust".

Nina Faust



KACHEMAK BAY CONSERVATION SOCIETY
P. O. Box 846 • Homer, Alaska 99603

April 22, 1998

Glenn Seaman
NERRS/ACMP Coordinator
Alaska Dept. of Fish and Game
333 Raspberry Road
Anchorage, AK 99518-1599

ALASKA DEPT. OF
FISH & GAME
APR 29 1998
REGION II
HABITAT AND RESTORATION
DIVISION

Dear Glenn,

The Kachemak Bay Conservation Society appreciates all the hard work you and your staff have done toward establishing a Kachemak Bay National Estuarine Research Reserve. An agency responsible for coordinating research and education, partnering with other agencies, businesses, and non-profits, and developing grants will be a welcome addition to the Kachemak Bay community.

The Society strongly supports the Preferred Alternative. Although we supported a larger watershed based boundary, we feel our interests and concerns will be met if the NERR programs are based on a watershed approach. With increasing development occurring throughout the watershed, understanding what is happening in Kachemak Bay's watershed is critical to ensuring an accurate picture of Kachemak Bay's health in the future.

Community input in management of the NERR is important and vital to the success of this agency. Whatever method is created, the public must have a real say in how the NERR is run, but also the system must not be so burdensome that it bogs the NERR system down. This mechanism for the community must be carefully devised so that it is stronger than just an Advisory group. Several suggestions at the hearing this month in Homer do bear consideration.

The Society would like to see additional lands on the Homer side included in the KBNERR. The new park purchases, Diamond Creek, Overlook Park, and the Baycrest Parcels, all would be excellent additions. In time, consideration should be given to including the Anchor River-Fritz Creek Critical Habitats.

We strongly urge cooperation with local groups in education and research to avoid duplication. A KBNERR water quality monitoring program should complement the

work of the Cook Inlet Keeper. A comprehensive water quality program that avoids duplication will be a great asset for the Bay.

The Society supports a shared facility with the Alaska Maritime National Wildlife Refuge. Partnering is a cost effective way to meet the needs of both these important agencies.

The Kachemak Bay Conservation Society looks forward to the establishment of the Kachemak Bay National Estuarine Reserve in Homer. The research and education will help the community make informed decisions about management of the Kachemak Bay watershed. Thank you again for all the work and efforts in this process.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Joel Cooper', written in a cursive style.

Joel Cooper
President



ALASKA DEPT. OF
FISH & GAME

MAY 07 1998

REGION II
HABITAT AND RESTORATION
DIVISION

SELDOVIA NATIVE ASSOCIATION, INC.

P.O. Drawer L, Seldovia, Alaska 99663
(907) 234-7625 Fax (907) 234-7636 Email snai@snai.com

April 28, 1998

TO: Glen Seaman
Betsy Parry

NERRS Program

Dear Glen and Betsy;

I would like to wish NERRS best of luck on receiving your official NERRS designation. I feel that we have had an excellent relationship with you at SNA and hope to continue this mutually cooperative atmosphere into the future.

Even before you have received your official designation you have been a big help to myself at SNA. I appreciated your help and our discussions concerning our proposed joint venture with the Center for Alaskan Coastal Studies. Your input was both educational and insightful. I appreciated our frank discussions concerning our logging plans. The Board of Directors liked your presentation to them in Seldovia. You were also a help to us when Common Murre's started dying off of our coast.

We probably won't agree on everything in the future, but the ability to get more information, to have a good honest frank dialogue, and have somebody help us find a research study that could help us in the future will be a big benefit to SNA.

SNA plans to concentrate on eco-tourism in the future and I believe a NERRS designation will help SNA get more tourists.

You have my support!

Sincerely,


Michael Beal
CEO

National Audubon Society



April 30, 1998



MAY 4 1998

ALASKA STATE OFFICE

308 G Street, Suite 217

Anchorage, AK 99501

Tel: (907) 276-7034

Fax: (907) 276-5069

Stephanie Thornton, Chief
Attn: Proposed Kachemak Bay NERR
Sanctuaries and Reserves Division
Office of Ocean and Coastal Resource Management
National Ocean Service
1305 East-West Highway N/ORM2
Silver Spring, MD 20910

Dear Ms. Thornton:

On behalf of the National Audubon Society and our 550,000 members and Alaska Audubon and our 2,000 members represented by chapters in Juneau, Kodiak, Anchorage, and Fairbanks, I would like to express our support for the establishment of the Kachemak Bay National Estuarine Research Reserve (NERR) in southcentral Alaska. Alaska Audubon is a broad-based, conservation organization that applies sound science and common sense to protect birds, other wildlife, and their habitats throughout Alaska.

The establishment of a NERRs program in Kachemak Bay makes a great deal of sense and parallels the mission and goals of the National Audubon Society. This region is a very productive coastal ecosystem that lends itself nicely to research and education. The NERRs program will further enhance the opportunity for state, federal, and private/public partnerships in research and education. Audubon is most supportive of this program and would like the opportunity to become a future partner in bird conservation and education programs within the reserve. This program will bring significant benefits to Alaska and the local communities surrounding Kachemak Bay.

Thank you for the opportunity to comment on this proposal.

Sincerely,

John W. Schoen, Ph.D.
Executive Director

cc: Susan Fruchter
Frank Rue
Dave Allen
Steve Pennoyer
Frank Gill



Center for Alaskan Coastal Studies, Inc.

P.O. Box 2225, Homer, Alaska 99603 907/235-6667 Fax 907/235-6668 Email cacs@xyz.net

May 1, 1998



MAY 7 1998

Stephanie Thornton, Chief
Attn: Proposed Kachemak Bay NERR
Sanctuaries and Reserves Division
Office of Coastal and Coastal Resource Management
National Ocean Service
1305 East-West Highway N/ORM2
Silver Springs, MD 20910

Dear Ms. Thornton,

The Center for Alaskan Coastal Studies (CACS) is an educational nonprofit organization that has been providing education and research programs within the proposed KBNERR area for 18 years. We welcome this opportunity to comment on the Draft Environmental Impact Statement and Draft Management Plan for the Proposed Kachemak Bay National Estuarine Research Reserve (KBNERR). We strongly support designation of the KBNERR and believe it has the potential for positive effects on estuarine research and education in this area and beyond.

Our comments on the draft management plan are somewhat detailed because, unfortunately, we feel that we were disenfranchised as an organization from the planning process to develop the draft plan. The person who initially represented our organization during development of the education and outreach plan element failed to notify the Alaska Department of Fish and Game staff at the point in early fall, 1997, when she was no longer an employee of the organization and no longer representing the interests of the organization. We feel there is a tremendous potential for CACS to develop cooperative and complementary programs with KBNERR and to share remote facilities on the south side of Kachemak Bay which may not have been fully explored and considered during the development of the draft management plan.

Thank you for your attention to these comments.

Sincerely,

Maundy Sigman for
Jon Peterson, President
Board of Directors

cc: Susan B. Fruchter, U.S. Dept. of Commerce
Glenn Seaman, ADFG, Betsy Parry, ADFG



printed on recycled paper

Comments on the Draft Environmental Impact Statement and Draft Management Plan for the Proposed Kachemak Bay National Estuarine Research Reserve

CACS is an educational nonprofit organization that has been providing education and research programs within the proposed KBNERR area for 18 years. Our mission is to foster responsible interactions with our natural surroundings and to generate knowledge of the marine and coastal ecosystems of Kachemak Bay through environmental education and research programs. We appreciate this opportunity to comment on the Draft Environmental Impact Statement and Draft Management Plan for the Kachemak Bay National Estuarine Research Reserve.

General Comments

CACS is in a unique position as a locally-based public non-profit organization that owns a waterfront land parcel and residential educational facility on the south side of Kachemak Bay adjacent to the proposed KBNERR boundaries. We currently conduct educational and research programs in intertidal areas within the Kachemak Bay Critical Habitat Area and along forest trails under a lease arrangement with the Seldovia Native Corporation. These Native Corporation lands are the subject of a proposal to the Exxon Valdez Oil Spill Council which, if accepted in its present form, could result in acquisition of the lands and their addition to Kachemak Bay State Park. We view our potential status as an "education inholding" and access point surrounded by public and specially-designated lands as a tremendous opportunity for private-public partnering.

We look forward to working cooperatively with NERR staff and other local organizations to develop mutual goals and objectives, projects, and programs. We would like to highlight the fact that this planning process has involved many, many people who live in and around the proposed NERR and who appreciate the values and resources that designation, research, and education will promote. We especially wish to commend the excellent and dedicated work of the Alaska Department of Fish and Game staff who have worked to develop the proposal and the document under review at this time. We believe that establishing the KBNERR will have a long-lasting impact on the lives of many people here in the Homer area and generations to come and will help conserve world-class resources.

We strongly support the preferred alternative of approval of KB as a NERR. The DEIS document provides an excellent summary of the affected environment and accurately describes the overall environmental impact of establishing the NERR as beneficial.

1. Boundary Plan:

We support the proposed boundaries but would like to pursue development of a land trust or conservation easement arrangement on the CACS land parcel. We request that this be identified as a current option in the final planning document rather than a future opportunity.

The listing of "education goals, objectives, and strategies of the proposed KBNERR" are preceded by a disclaimer that they "are meant only as a guideline for developing the reserve and do not reflect direct actions that are mandated or required, or actions that will be undertaken solely by the reserve staff." Therefore, we have to assume that these goals, objectives, and strategies are not necessarily those of the KBNERR and, as stated, the specific "policies" will be developed after designation by the education coordinator, reserve manager, and the Education Advisory Committee. However, the framework for education, interpretation, and outreach programs appears to limit the "educational activities occurring in the proposed reserve" to "include general estuarine education associated with a proposed visitors center as well as needs-based education on identified natural resource problems," and includes the statement "Designing educational activities that would aid managers with identified natural resource issues should be a high priority." This wording implies these are the only types of educational activities within the scope of the KBNERR educational program which will receive staff attention and KBNERR funding support. Discussions with ADFG staff involved in the planning process have strengthened this reading of intent through indications of a desire to avoid competition with the on-going efforts of existing educational organizations providing programs in and about Kachemak Bay while seeking to assist with the expressed need for coordination. Unfortunately, an advisory committee and assignment of KBNERR staff will not ensure that coordination and effective estuarine and coastal education will occur in a way that national, State of Alaska, and even local priorities are effectively addressed if the scope of KBNERR educational efforts has already been limited to preclude the use of KBNERR staff and funding in on-going estuarine and coastal education efforts. We recommend that the final educational program plan 1) clarify the intended scope of the KBNERR education program and 2) include commitments to develop a coordinated education program and to provide opportunities for the financial support of educational projects by independent or public educational organizations or educators under the broader scope of promoting public awareness and understanding of estuarine areas.

b. Integration of Research and Education The NERR has a tremendous opportunity to contribute to the effort to improve the quality of science education that is occurring at the national, state, and local level through integration of research and education. Two of the key elements of this effort is the involvement of scientists in education as mentors to teachers and their students and the lifelong learning that can occur when citizens participate in data-collection and direct interactions with "real science." We recommend specific strategies in our page-specific comments.

4. Facilities:

a. Short-term Needs:

We have had a preliminary discussion with Glenn Seaman, ADFG, about a potential future opportunity for CACS to offer commercial rental space in a downtown Homer location with high visibility and public accessibility which would meet the short-term interpretive and office needs for the KBNERR. Although mention of this possibility in the final document is premature, we would like to note that co-location of

Monitoring Advisory Committee “monitor and provide advice on reserve issues and opportunities for cooperative education programs.”

Please clarify the proposal process being referenced. It is unclear whether the review and identification of responsiveness of proposals is for the purpose of determining KBNERR staff priorities, of providing funding or KBNERR staff support, or of providing endorsement and support to secure funding from outside sources or cooperators. If it is intended that a proposal/grant process for educational projects will occur on a regular basis, this would address our general comment #3a. However, this intent is not explicit in the draft management plan.

Pages 44-49:

Education is not identified as a use of the NERR while, in fact, a significant amount of use of the area can be attributed primarily to an educational purpose and this use may have an impact on estuarine and coastal ecosystem resources and values. Tourism-related education could be addressed in that section by adding “tidepooling and guided educational hikes” in addition to the list of water-based recreational activities. However, the educational use of Peterson, China Poot, Jackolof, and Kasitsna Bays should be described in a separate section. The use could bear monitoring and may require user education and management such as that done by CACS to reduce impact off-trail and in intertidal areas. We can provide the following statistics on our use of Peterson and China Poot Bays - in 1998, we anticipate guided intertidal hikes for 650 children and adults associated with K-12 school groups. West Homer Elementary School will bring an additional 100 children and adults to these bays, several school groups will visit Jackolof and Kasitsna Bays, and at least one school group visits Sadie Cove. Staff of the Kasitsna Bay Field Station may be able to provide you with information on annual visits by school groups. We will also have approximately 350 children and adults participating in Oceanography cruises on Kachemak Bay.

Page 48 - Shoreline lodges and residences.

Please clarify the statement at the end of the paragraph. If parcels remain in private ownership following annexation of the area, what are the activities being referred to that would require state permits?

Page 52, Section 3.1.4.4:

Recommend adding “and to provide cooperative education opportunities” to the end of the first paragraph.

Page 54, Goal 1, Objective 1, Strategy 5: Suggested rewording - “Organize a KBNERR volunteer program and participate in training volunteers for other educational organizations to . . . (See comment for page 31, above)

Goal 2, Objective 1: Not all education activities occurring in the bay will be community-based. Suggested rewording - “educational efforts in Kachemak Bay and in Kachemak Bay communities.”

Goal 2, Objective 2, Strategy 5: CACS has an internship program through Alaska Pacific University. Suggested rewording: Create a KBNERR program on interpretive activities and identify internship opportunities for existing internship programs.

Goal 3, Strategy 2: Recommend adding a second sentence to this objective: "Create user-friendly interfaces for computer databases and provide training for educators and the general public."

Page 56, Section 3.1.4.6A, paragraph 1: Clarify what is meant by "educational activities occurring in the proposed reserve." Are these activities the ones that will be conducted by KBNERR staff or by KBNERR staff and other entities? See general comment #3a.

Section 3.1.4.6B. Please clarify whether "proposed reserve" refers to "reserve facilities and staff" or "educational entities operating in the proposed reserve area." This statement is confusing since existing educational organizations already serve these audiences. A reference here to the needs assessment process would distinguish between existing education programs versus ones that may be created by KBNERR staff or by KBNERR staff and cooperators.

Section 3.1.4.6B (1) Please clarify - does "proposed reserve" refer to KBNERR facilities or the reserve as a geographic area? (See general comment #3a.)

Page 58, Section 3.1.4.8, first paragraph:

The mention of creating a Kachemak Bay-specific environmental education curriculum as "an important role of the reserve" does not clarify who would be responsible for creating the curriculum. The guidelines for the education program also include an objective for "aiding Kachemak Bay educational organizations" in creating a comprehensive environmental education curriculum. We ask that the management plan recognize that unless created with public funds, curriculum materials are copyrightable and often involve a significant investment of staff time and review/evaluation by users. While we believe a comprehensive Kachemak Bay-specific environmental education curriculum is desirable and are working towards this goal, we request that the copyright issues be recognized in statements about compiling existing local education materials. Curriculum development is a good candidate for a cooperative project provided that non-agency cooperators can be compensated for their contributions.

We recommend the wording about "a consistent message" be revised as described above.

Section 3.1.4.8, second paragraph: Please clarify the term "reserve education program" in terms of educational activities that will be carried out by reserve staff versus other educational programs that will occur within reserve boundaries. The KBNERR Education Coordinator can only facilitate coordination of the latter.

From: Jere Murray <jmurr@xyz.net>
To: "kachemakbay@surf.nos.noaa.gov" <kachemakbay@surf.nos.noaa.gov>
Cc: "betsyp@fishgame.state.ak.us" <betsyp@fishgame.state.ak.us>
Subject: Comments on Proposed Kachemak Bay NERR DES/DMP
Date: Sat, 2 May 1998 23:08:36 -0800
Encoding: 64 TEXT

Disregard earlier unfinished email - using unfamiliar mail pgm on unfamiliar computer.

Based on my past 20+ years on the waters of Kachemak Bay, I feel confident of the following list of marine life which should be added to APP. I, Table I-2.

Unidentified xxxx means this observer did not identify.

I think I can do a bit more on the plants if I get home and get my own computer working in time. Otherwise this is it.

Jere Murray

Finfish:

Spiny Dogfish *Squalus acanthias*
Pacific Sleeper Shark
Unidentified Skates .
Pacific Sand Lance - *Ammodytes hexapterus*
Unidentified Greenlings
Red Irish Lord - *Hemilepidotus hemilepidotus*
Unidentified Sea Poachers
Giant Wrymouth - *Delolepis gigantea*
Wolf-eel - *Anarrhichthys ocellatus*
Crabs
Pigmy Cancer Crab - *Cancer oregonensis*
Horse Crab - *Telemessus cheiragonus*
Decorator Crab - *Oregonia gracilis*
Unidentified Hermit Crabs
Shrimp
Unidentified Shrimp other than Pandalids
Sea Stars -Several unidentified
Unidentified Brittle Stars
Basket Star - *Gorgonocephalus caryi*
Greenspined Sand Dollar - *Echinarachnius parma*
Unidentified Nudibranchs
Horse Mussel - *Modiolus modiolus*
Black Mussel - *Musculus niger*
Eastern Soft Shell Clam - *Mya arenaria*
Unidentified Snails - several
Sea Pen
Unidentified Worms
Unidentified Sponges
Unidentified Corals
Unidentified Bryozoans
Unidentified Barnacles
Unidentified Anemones

Plants/Trees

Several ferns
Lupine
Serviceberry?
Bog Lillies
Monkshood
Indian Paintbrush
Marsh Marygold
Pond Lillies
Several Willows

Trees

Birch (Paper?)

Date: Mon, 4 May 1998 18:06:02 -0800 (AKDT)
X-Sender: crockett@alaska.net
To: kachemakbay@surf.nos.noaa.gov
From: Marilyn Crockett <crockett@alaska.net>
Subject: AOGA Comments on Kachemak Bay NERR Proposal
Cc: "Seaman, Glenn" <glenns@fishgame.state.ak.us>
Mime-Version: 1.0

May 4, 1998

Ms. Stephanie Thornton
Chief
Attn: Proposed Kachemak Bay NERR
Sanctuaries and Reserves Division
Office of Ocean and Coastal Resource Management
National Ocean Service
1305 East * West Highway N/ORM2
Silver Spring, MD 20910

Subject: Alaska Oil & Gas Association Comments
Proposed Kachemak Bay National Estuarine Research Reserve (KBNERR)

Dear Ms. Thornton:

The Alaska Oil and Gas Association (AOGA) is a trade association whose 19 member companies account for the majority of oil and gas exploration, production, transportation, refining, and marketing activities in Alaska. AOGA welcomes this opportunity to submit comments on the proposed KBNERR.

In April, 1997 Alaska Governor Tony Knowles nominated the Kachemak Bay area to the National Oceanic and Atmospheric Administration (NOAA) for designation as a National Estuarine Research Reserve (NERR). AOGA representatives and other oil and gas industry personnel have been involved in activities associated with formation of the KBNERR since that time. They have participated in the series of scoping sessions, planning meetings, and public forums held by the Alaska Department of Fish & Game (ADF&G) and/or NOAA personnel. We applaud the ADF&G's and NOAA's efforts in soliciting input, providing information concerning NERR formation and potential activities, as well as addressing comments and concerns from public groups, community representatives, and other interested parties in and around the Kachemak Bay area. This was not an easy mission, particularly in view of the diverse interests of these parties and the complexities of creation of such a reserve. These actions were a critical step in the overall process and have led to broad community support for the creation of the KBNERR.

The draft environmental impact statement and draft management plan for the KBNERR have been reviewed. We are pleased to see that this document accurately reflects oil and gas industry activities occurring in the Kachemak Bay area. We believe that the boundaries proposed for the KBNERR in this document are appropriate and that adequate controls exist within the proposed boundary to ensure ecological integrity of the site for future research and education activities. We also believe that the draft management plan proposed in this document is well suited to deal with many of the unique aspects of the KBNERR, which would be the largest and northernmost NERR in the system.

In summary, AOGA believes that the creation of the proposed KBNERR is a positive action that will enhance the overall quality and condition of Kachemak Bay. Many of the activities contemplated by this NERR (e.g. performance of oceanographic studies, water quality monitoring, etc.) may yield information beneficial to the oil and gas industry. AOGA looks forward to a continuing relationship with the KBNERR after its approval by NOAA.

If you have any questions, please contact me by phone at (907) 272-1481 or by e-mail at crockett@alaska.net at your convenience.

Sincerely,

Marilyn Crockett
Assistant Executive Director

C: Susan Fruchter, U. S. Department of Commerce ~ Washington D.C.
Glenn Seaman, AK Department of Fish & Game ~ Anchorage, AK

Date: Mon, 04 May 1998 19:23:31 -0800

From: Carol Swartz <incis@UAA.ALASKA.EDU>

Subject: Public Comments: Draft Management Plan of proposed Kachemak Bay NERR-
section 3.1.6.2

To: "kachemakbay@surf.nos.noaa.gov" <kachemakbay@surf.nos.noaa.gov>

Cc: "glenn@micronet.net" <glenn@micronet.net>

MIME-version: 1.0

The Kachemak Bay Campus of the University of Alaska Anchorage is an entity that is greatly interested in promoting a partnership with the proposed KBNERR. Many of its programs share a similar and compatible mission with that of the NERR. The Kachemak Bay Campus is the sole provider of post-secondary education in the Homer area and a significant provider of informal and continuing educational/professional development opportunities in the area as well. It has a long history of both facilitating and implementing collaborative activities with area organizations.

The campus owns 4.5 acres in the center of town on which it plans to build a new classroom facility. Plans are currently in place to soon clear the property. Currently the campus operates out of two buildings(one leased), one mile apart from each other. To further promote collaborative efforts and reduce duplication of services/facilities, the campus offers this site as an optional one for the KBNERR facility. Such a partnership would greatly enhance the mission of the NERR in an innovative, cost-effective, professional and collaborative manner. The site is adjacent to the future location of a new University/City of Homer Consortium Library and near the locations of other cooperating agencies. Such a partnership could also provide the NERR with computing services as part of the university-wide computing infrastructure. This would significantly enhance the NERR'S research and educational goals.

The Kachemak Bay Campus is greatly supportive of the Draft Management Plan. It is a significant demonstration of community support that there exists a variety of potential partnerships with local entities. I am pleased that I have the opportunity to potentially provide an alternative NERR facility site.

Carol Swartz, Director
Kachemak Bay Campus

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS AND OUTDOOR RECREATION

TONY KNOWLES, GOVERNOR

3601 C STREET, SUITE 1200
ANCHORAGE, AK 99503-5921
PHONE: (907) 269-8700

ALASKA DEPT. OF
FISH & GAME

MAY 07 1998

REGION II
HABITAT AND RESTORATION
DIVISION

Received
May 19, 1998
SKD/ell

May 6, 1998

Glenn Seaman
Alaska Department of Fish and Game
Habitat and Restoration Division
333 Raspberry Road
Anchorage, AK 99518-1599

Dear Mr. ~~Seaman~~ ^{Glenn},

The Division of Parks and Outdoor Recreation staff have reviewed the Draft Management Plan for the Kachemak Bay National Estuarine Research Reserve and provides the following comments.

In several sections of the plan (ex: pages 39 par. 5, pg. 50, sec. 3.1.3.5) it is stated that *The CHA designation is highest level of protection that the State may afford to lands and waters*. This statement is a minor error, State Parks have much more restrictive regulations and policies and by law would be the highest level of protection. However, rather than disagreeing on this minor point we recommend that you change the statements in the plan to state in effect; State Park and the CHA designations are the highest levels of protection that the State affords it's lands and waters. In most cases, State Park lands and waters will have more restrictive policies and regulations than the CHA. (There are several examples that we could point out, specifically Title 38 and 41 and the management plans).

On page 39, Section B paragraph 1, we recommend adding a statement to the effect; As the definitions provided below imply and by regulation and management policies enacted, the Wilderness Park is more restrictive in terms of allowable uses and development. The State Park, which includes major portions of the waters of Kachemak Bay and the proposed NERR has more restrictive regulations and policies than other state lands. Examples of prohibited activities include: construction or placement of any structure on park lands or waters (docks and mooring buoys may be permitted), tideland leases, mariculture, livestock grazing use of motorized vehicles and bicycles, removal of any natural resource including plants and minerals. Violation of these and other regulations and policies is a criminal offense or violation punishable by fine or court action. These regulations and management policies listed below provide that any activities with the State Park and Wilderness park will be compatible with the following definitions and establishment of the parks and with the establishment of the research reserve.

Under Appendix C: Policies of the Existing Legislatively Designated Areas: We recommend adding a statement to the first paragraph to the effect; 'Where CHA lands and waters overlap with the Kachemak Bay State Park, the Division of Parks and Outdoor Recreation may have more restrictive policies and regulations, separate park permits may be required (see also Summary: Relevant Policies of Kachemak Bay State Park, pg. C-6).'

It is also recommended that you add the Chapters on Private Lands and Commercial Activities from the Kachemak Bay State Park Management Plan to the summary, Pg. C-6, Relevant Policies of KBSP. In both sections you may want to reference the Cooperative Agreements between ADF&G and DNR.

Also note, page 95, sec. 4.2.3 Geology, 1st paragraph, last sentence; 'Doroghin' is a misspelling, correct to Doroshin.

I would also like to extend my staff's appreciation in working with you and your department through this process. We would also like to extend to the NERRS that there may be opportunities in the future to request the local staff's assistance with transportation and perhaps other limited partnerships. Keep in mind that we have several park boats and crew quarters where it may be possible to coordinate transportation to the park and bunkspace at the Ranger Station facility for researchers.

Other than these minor recommendations, we are satisfied with the plan and look forward to working with your department in the future for the success of this program. Thank you for the opportunity to review and comment.

Sincerely,



Jim Stratton
Director

cc: Chris Degernes, Superintendent
Roger MacCampbell, District Ranger



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

National Marine Fisheries Service

P.O. Box 21668

Juneau, Alaska 99802-1668

May 11, 1998

received
[Stamp]

MAY 20 1998

MEMORANDUM FOR: Stephanie Thornton
Chief, Sanctuaries and Reserves Division
National Ocean Service

FROM: *For* Steven Pennoyer *Donald J. Berg*
Administrator, Alaska Region

SUBJECT: Proposed Kachemak Bay National Estuarine
Research Reserve DEIS

The National Marine Fisheries Service (NMFS) supports efforts of the State of Alaska to designate Kachemak Bay as a National Estuarine Research Reserve System (NERRS). We are providing the following comments based upon our resources responsibilities. In general, the goals of the NERRS are compatible with and support these responsibilities.

General Comments

- A consultation under Section 7 of the Endangered Species Act was done with this office for this proposal. However, no mention of this is made in the document. This information should be contained in the section addressing Federal Authorizations.
- Impacts have been addressed as "General," "Specific," and "Unavoidable Adverse Environmental or Socioeconomic Impacts." Cumulative Impacts should also be addressed.
- The document references several areas where agreements with agencies should be established for the use of different facilities and setting up opportunities for research, monitoring and education. We request that we be kept informed of these opportunities, as we may be able to assist in implementing the goals and objectives of the Kachemak Bay NERRS.



- Will a database be created to track the information that will be generated as a result of research and monitoring?

Specific Comments

- Page 92, General Location and Climate, sixth sentence - The wording should state "... influenced by the North Gulf of Alaska waters."
- Page 92, General Location and Climate, ninth sentence - The sentence states "the relatively low annual precipitation..." Is this relative to Alaska?,
- Page 95, Geology, fourth paragraph, last sentence - How much additional gravel was placed on the spit? When did this occur, and where did the gravel come from?
- Page 95, Oceanography - Use of a portion of a NOAA chart for a figure might be helpful in this section. Also, this section should discuss the topic of "ice" in Kachemak Bay.
- Page 99, Flora Factors - This section addresses the wetlands and salt marsh in the area. To illustrate the importance of this area, a comparison of the amount of coastal wetlands and salt marshes in the state versus the wetlands in the state would be helpful. Also, this section seems to overlap with the next section.
- Page 100, Fauna Factors - Rocky substrates, and sand and mud substrates do not in themselves represent fauna. They also support flora as indicated by the text, and therefore may need to also be addressed under the previous section or combined.
- Page 102, Table 6 - Correct spelling on scientific name for Humpback whale.

cc: Susan Fruchter, Office of Policy & Strategic Planning



KENAI PENINSULA BOROUGH

144 N. BINKLEY SOLDOTNA, ALASKA 99669-7599
BUSINESS (907) 262-4441 FAX (907) 262-1892

received
SRD

MIKE NAVARRE
MAYOR

May 13, 1998

MAY 18 1998

Stephanie Thornton, Chief
Attn: Proposed Kachemak Bay NERR
Sanctuaries and Reserves Division
Office of Ocean and Coastal Resource Management
National Ocean Service
1305 East-West Highway N/ORM2
Silver Spring, MD 20910

Dear Ms. Thornton:

The Kenai Peninsula Borough recently reviewed the Draft Environmental Impact Statement (DEIS) and Draft Management Plan for the proposed Kachemak Bay National Estuarine Research Reserve (KBNERR). Kachemak Bay represents a diverse and productive ecosystem that is under increasing pressure from land, resource, and recreational uses. The KBNERR promises to provide an objective and multi-faceted tool for research, education, resource preservation and management.

Facets of the KBNERR will include the development of Geographic Information System (GIS) map layers and metadata, a detailed written description of the ecosystem, primary natural resources and human uses, a synthesis of current and ongoing research, and an annotated bibliography for the Kachemak Bay watershed and the Anchor River drainage. This information will be extremely valuable to the Borough and the local communities to guide sensible, sustainable development.

In support of the KBNERR project, the Borough is willing to provide the following assistance:

- 1) technical liaison with GIS staff to provide guidance on map and database formatting,
- 2) sharing of GIS data layers such as land ownership, subdivisions and parcels, timber harvests and roads, areas of beetle infestation, oil and gas leases and well locations, and
- 3) participation in an advisory capacity to guide development of useful management tools.

Designating Kachemak Bay as a National Estuarine Reserve is a positive step towards preserving the long-term health of this unique area. We appreciate the opportunity to review the Draft EIS and Management Plan and express support for this remarkable project.

Sincerely,

A handwritten signature in cursive script, appearing to read "Mike".

Mike Navarre
Mayor

MN/gl

cc: Susan Fruchter, Director, Office of Policy and Strategic Planning
Glenn Seaman/ACMP/NERRS Coordinator



"The mission of the Council is to ensure the safe operation of the oil terminals, tankers, and facilities in Cook Inlet so that environmental impacts associated with the oil industry are minimized."

14 May 1998

Glenn Seaman, KBNERRS Coordinator
Habitat and Restoration Division
Alaska Dept. of Fish & Game
333 Raspberry Road
Anchorage, AK 99518

Dear Mr. Seaman,


The Cook Inlet Regional Citizens Advisory Council (RCAC) supports the preferred alternative designation of a Kachemak Bay National Estuarine Research Reserve (KBNERR) and recommends to the National Oceanic Atmospheric Administration to establish this reserve.

The Cook Inlet RCAC is a citizen's oversight council for oil industry operations in the Cook Inlet region and was established according to Section 5002 of the Oil Pollution Act of 1990 (OPA '90). As part of our mandate, the Cook Inlet RCAC conducts environmental monitoring to assess impacts of oil industry operations to the Cook Inlet environment. As you know, a member of our staff was active in the development of the Draft Environmental Impact Statement/Draft Management Plan (DEIS/DMP) for the Kachemak Bay as a member of the Plan Review Group and the Research Subcommittee.

The Cook Inlet RCAC supports the concept of integrated, interdisciplinary research and monitoring plans such as that proposed in the DMP. In developing the Cook Inlet RCAC monitoring program, we noted a lack of integrated ecological data from Cook Inlet and that "comprehensive" monitoring of the inlet can only occur with the coordination of researchers from agencies, industry, and universities. A NERR designation for Kachemak Bay would provide the framework for coordinating research efforts, would increase opportunities for information and data exchange, and would draw researchers to the area.

It is with the understanding that the KBNERR administrative organization will be as illustrated on Page 28 of the DESI/DMP and that existing land-use management plans continue that the Cook Inlet RCAC makes the recommendation for KBNERR designation. If you have questions about these comments, please call our Scientific Research Coordinator, Susan Saupe, at (907) 283-7222.

Sincerely,


Captain Glen Glenzer
President, Cook Inlet RCAC

CC: Susan B. Fruchter, Director, OPSP



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

Bill ✓
Ramon —

In Reply Refer To:
ER 98/169

MAY 26 1998

Ms. Susan B. Fruchter
Director, Office of Policy and Strategic Planning
Room 5805, OPSP
U. S. Department of Commerce
Washington, D.C. 20230

Dear Ms. Fruchter:

The Department of the Interior has reviewed the Draft Environmental Impact Statement/Draft Management Plan for the Proposed Kachemak Bay National Estuarine Research Reserve. The Department supports the inclusion of Kachemak Bay into the National Estuarine Research Reserve (NERR) program, as proposed. The Southcentral Ecosystem Team of the U.S. Fish and Wildlife Service has as one of its responsibilities to encourage partnerships among various research and education groups, and the NERR program is an ideal vehicle for this purpose.

Many studies covering a wide spectrum of disciplines are already occurring in Kachemak Bay. One of the NERR program functions is to develop a meta-database of current and past studies. The database will be widely available and should promote greater coordination and interaction among researchers in Kachemak Bay.

Because NERR designation is non-regulatory in nature, there are no additional administrative "burdens" placed on those interested in participating in studies of the area. Furthermore, land status does not change, nor does the drainage's classification as a NERR site obstruct land use changes.

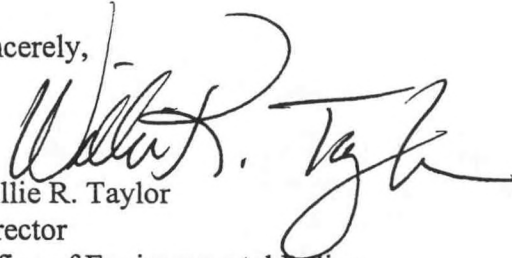
In our view, we can not identify any negative aspects associated with assimilating the Kachemak Bay drainage into the NERR program and we endorse this designation since it promotes research and education within the area.

MAY 29 1998

SP

Thank you for the opportunity to review and comment on this important proposal. We hope that our comments are helpful. Should you have any questions on our comments or need to further discuss our views, please contact Ken Havran in the Office of Environmental Policy and Compliance at (202) 208-7116.

Sincerely,

A handwritten signature in black ink, appearing to read "Willie R. Taylor". The signature is fluid and cursive, with a large, sweeping "W" and "T".

Willie R. Taylor
Director
Office of Environmental Policy
and Compliance



135 STERLING HWY

P.O. BOX 541

HOMER, AK 99603

907/235-7740

FAX/235-8766

CELEBRATING
THE PAST,
BUILDING
FOR THE FUTURE

May 29, 1998

Mr. Glenn Seaman
NERRS Coordinator
Alaska Department of Fish and Game
333 Raspberry Road
Anchorage, Alaska 99516

Dear Mr. Seaman:

The Homer Chamber of Commerce would like to provide its full support for designating the proposed Kachemak Bay National Estuarine Research Reserve (NERR) as detailed in the February 1998 Draft Environmental Impact Statement/Draft Management Plan.

The Homer Chamber of Commerce has over 400 business members, making it the largest business organization in the Homer area. The establishment of a NERR in Kachemak Bay is supportive of the Chamber's mission to *promote cooperative economic development that preserves and enhances the quality of life for the community*. Designation of the Kachemak Bay NERR will make Kachemak Bay part of a national system of estuarine areas to promote long-term research, monitoring and education. We are confident that this non-regulatory program will bring many benefits to Homer and the greater Kachemak Bay Community, including new jobs, support and enhancement of local education efforts, construction of new facilities and improved understanding of Kachemak Bay upon which our local economy relies.

The Chamber of Commerce recognizes Alaska Department of Fish and Game for the open and comprehensive process under which the management plan was developed. The department has made a conscientious effort to not only involve the Chamber, but all sectors of the community in the planning process. Your success is well reflected in the broad community support for designation of the reserve.

We wish you luck in this endeavor, and encourage the State of Alaska to see the reserve through to designation. The Chamber looks forward to working closely with the Alaska Department of Fish and Game during operation of the reserve.

Sincerely,


Ann Koskovich, President

ALASKA DEPT. OF
FISH & GAME

JUN 10 1998

REGION II
HABITAT AND RESTORATION
DIVISION



*In recognition of the importance of the marine environment,
1998 is the International Year of the Ocean.
Check out the National Oceanic and Atmospheric Administration
website for Year of the Ocean information:
www.yoto98.noaa.gov*