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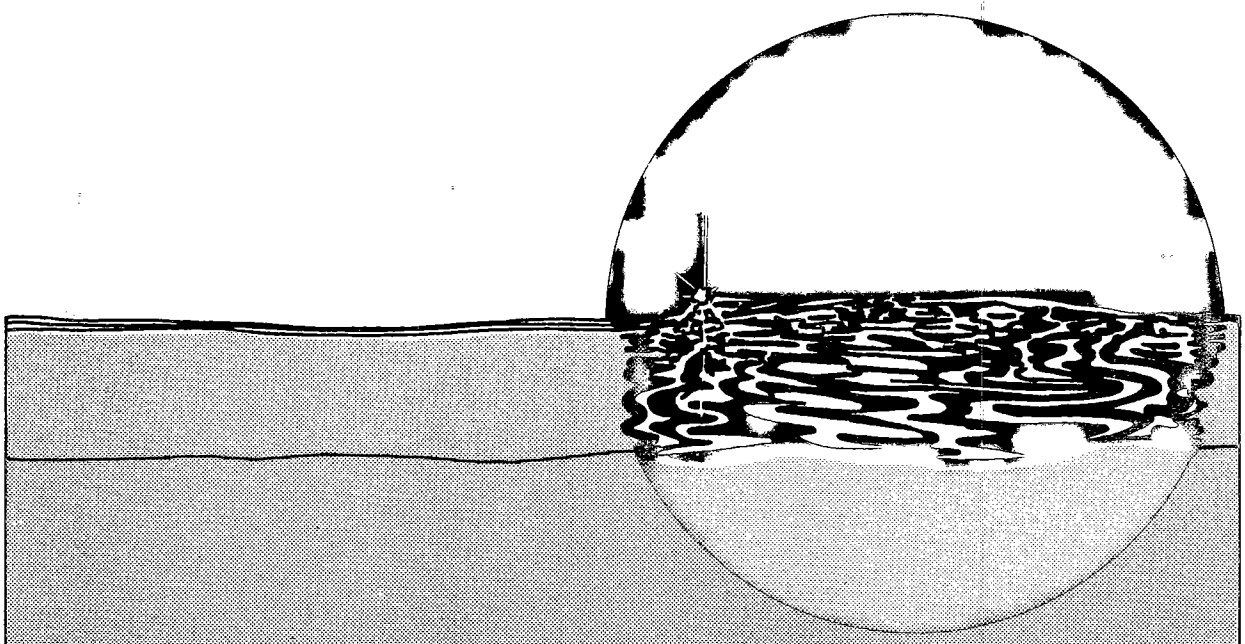

# Marine Education in PASGAP States

## An interim progress report for FY 1979-80

PASGAP: A Consortium of Pacific Region Sea Grant Colleges

# MARINE EDUCATION IN PASGAP STATES:

# AN INTERIM PROGRESS REPORT FOR FY 1979-80

compiled by

Rose Pfund

July 1980

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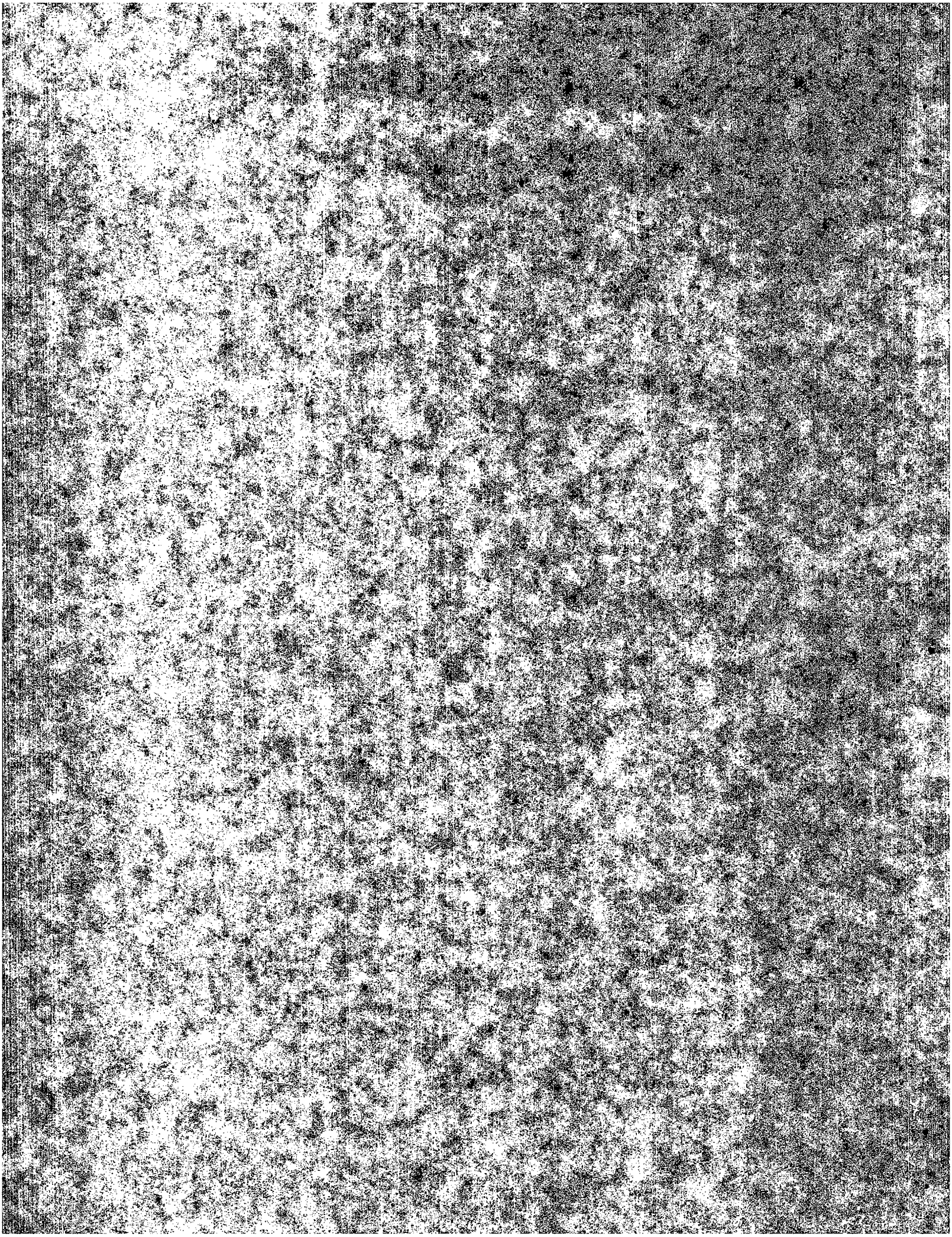
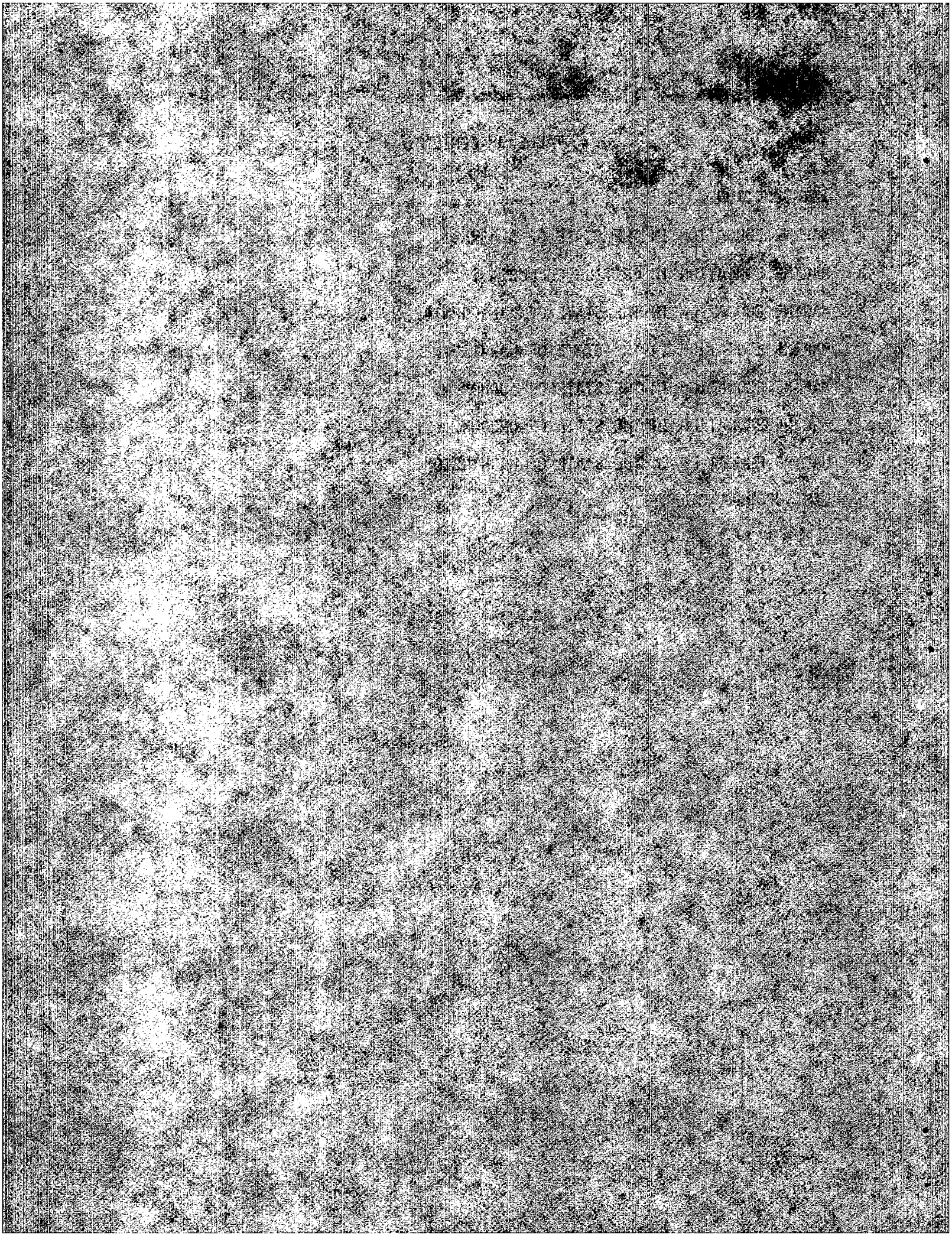


TABLE OF CONTENTS



# INTRODUCTION

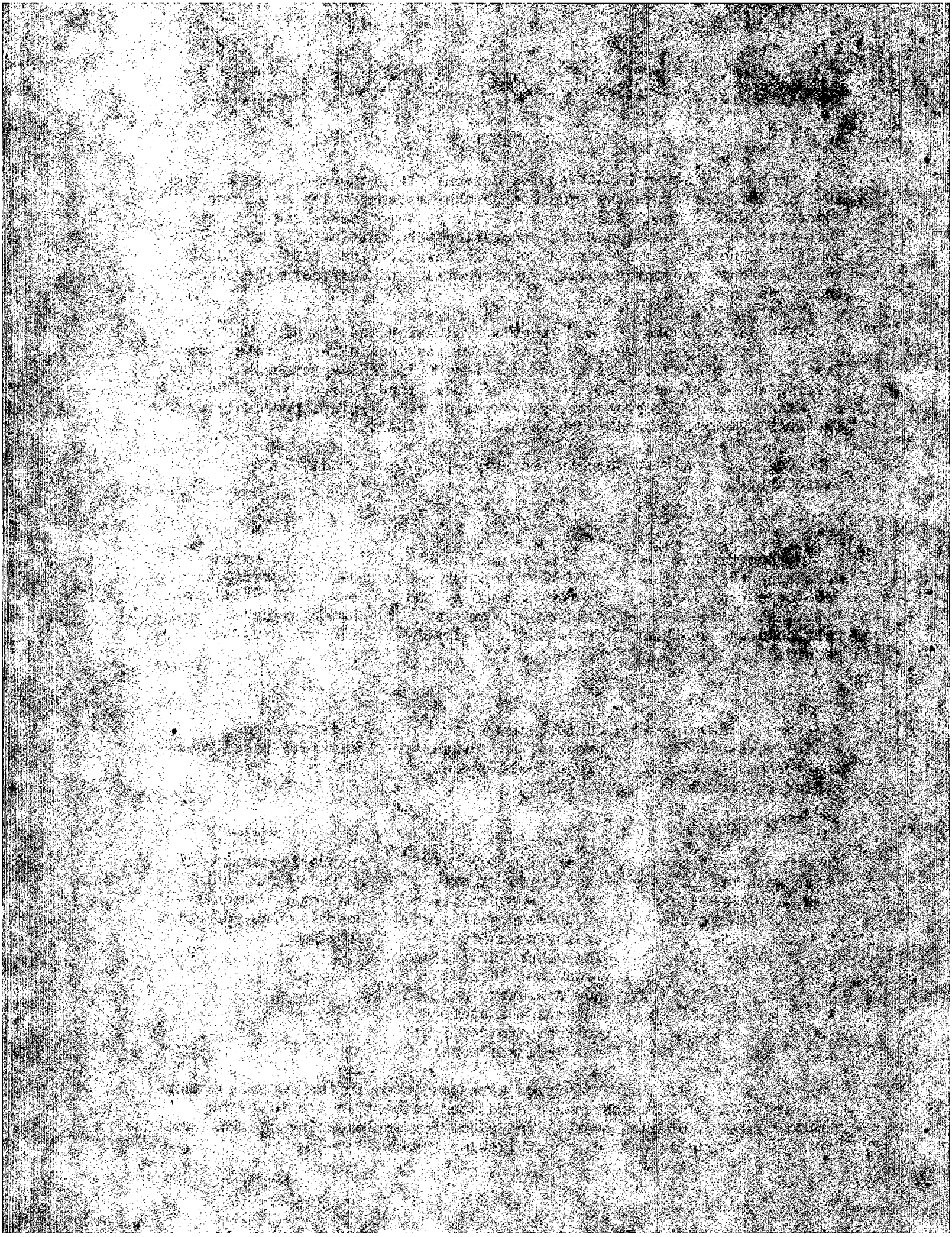
Members of seven PASGAP states convened in Anchorage, Alaska, June 10-12, 1980 to discuss the progress of the implementation of marine education within their states and to lift up unmet needs and problems. This impetus and focus on marine education were initiated in the 1979 PASGAP marine education workshop held in Hawaii. They reflect PASGAP's initial effort to promote quality instruction and curriculum development in marine education.

The participants of the "Interim Evaluation and Planning Meeting" were selected on the basis of their participation in their state teams. They did not officially represent their state's PASGAP membership. The meeting was convened at the request of Rose Pfund, University of Hawaii Sea Grant College Program, the developer of the original proposal for the 1979 PASGAP workshop under the auspices of PASGAP.

Regional goals to support the three-year program developed by each state are:

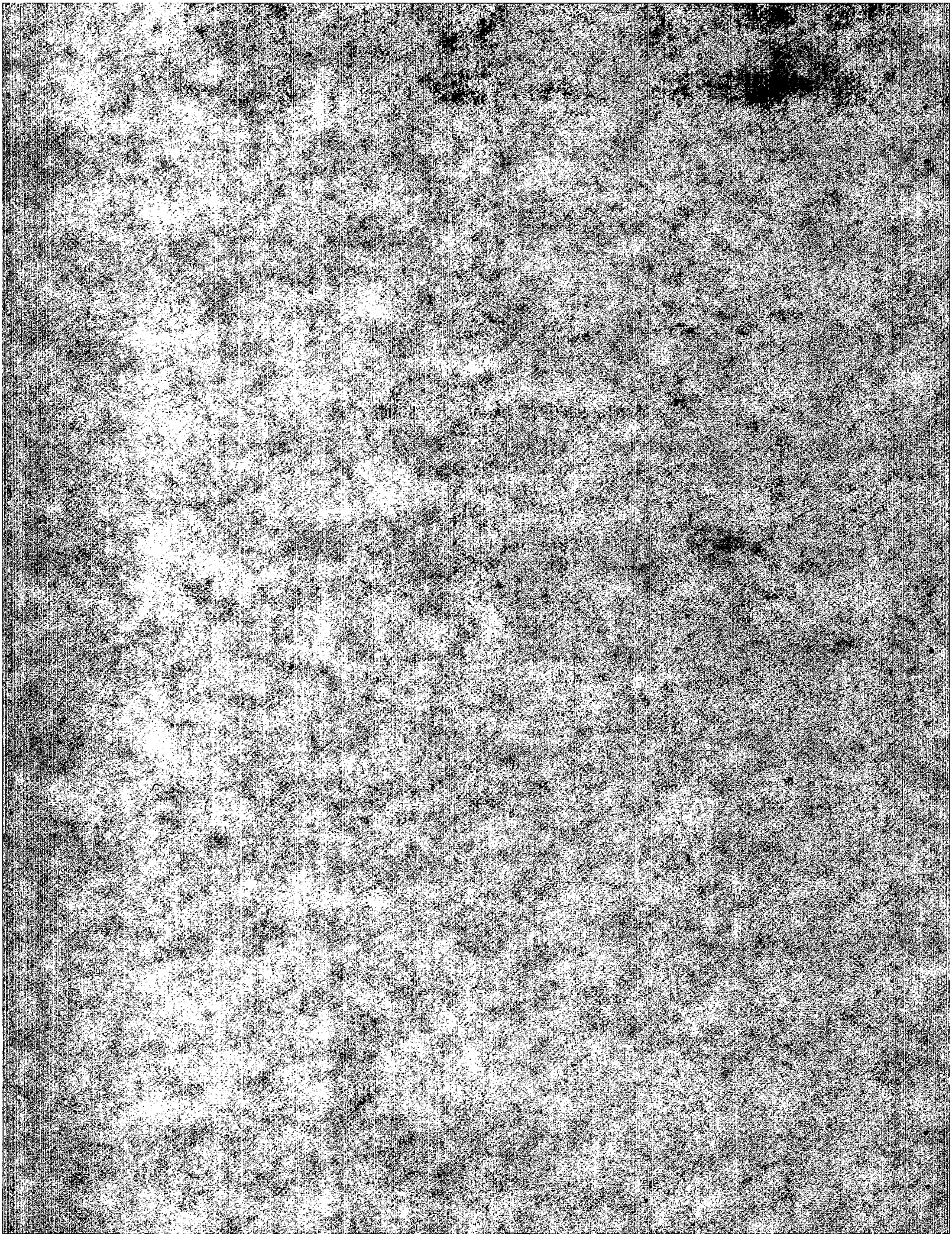
| 1979 | 1981 | 1983 |
|---|---|---|
| To improve marine education through the development of innovative instructional curricula and teaching methods | To improve marine education through improving faculty and manager program and organizational development skills | To improve marine education through developing effective community-based delivery programs |
| ↓ | ↓ | ↓ |
| Workshop to develop state framework for the implementation of marine education | Conference on staff, program, and organizational development | Conference on community-based education |
| ↓ | ↓ | ↓ |
| To provide participants with skills to plan, implement, and evaluate curriculum | To provide participants with experiential opportunities to develop skills as trainers in developing other faculty and managers, including how to manage and implement a state workshop to replicate the regional model | To provide skills in planning and implementing a community-based marine education program |

The 1979 goals and activities were completed in the interim evaluation session. The successes are described in part in the following summary reports of each state. The plans for implementing the 1981 and 1983 goals are also part of the following report.



# STATE REPORTS ON MARINE EDUCATION

Alaska
British Columbia
California
Hawaii
Idaho
Oregon
Washington



# MARINE EDUCATION IN THE STATE OF ALASKA

## Background

Shortly after the marine education conference in Hawaii during April 1979, the state Department of Education named a coordinator for marine education programs from within their existing staff. Before we could get the team together to continue development of a statewide plan resulting from the regional marine education conference, that individual accepted another position with the department. No permanent replacement has been made to date. We are hopeful that the department will recruit someone with a keen interest in marine education to fill the position, since that is not the major responsibility of the position.

## Activities

I will only report on the two marine education projects which are currently being funded by Sea Grant since there is no information on a broader scale from which to pull.

Alaska Tidelines, a monthly publication aimed at secondary school students, is currently in its second year of existence. Initially it was distributed to 14,000 students throughout the state of Alaska. The last issue was distributed to 28,500 students in the state. There has been no effort made at instructing the teachers how to use this material. Feedback indicates that most use it for classroom instruction, then send it home with the students. Some use it in the classroom but collect the issues back for use in future classes. There are no teachers who have found out about this publication that don't want to use it. The publication is being used in grades as low as fourth and as high as twelfth and is also used in many of the adult basic training classes around the state.

Alaska Sea Week is aimed at students and teachers in grades K-6. It is a set of seven curricula on marine topics for use by each grade. One week each spring is set aside for work on marine matters. Marine influences are brought to light not only in science classes but English, math, history, art, music, etc., as well. This year four communities were used as pilot programs. A one-credit teacher workshop was held before each Sea Week to familiarize the teachers with the materials, marine things, field trips, and others interested in the programs. This was an unqualified success and will expand to more communities during the next two years of funding.

## Conclusion

From the two projects briefly described above, we have received input from teachers in 80 percent of the Alaskan schools. There is no problem in this state with getting teachers interested in using new materials or with marine education. We have not yet been successful in coordinating our program with the Department of Education nor in working with School District personnel. We are hoping this obstacle will be overcome in the next year. We look forward to implementing a statewide program in marine awareness not only for the formal education presentation but for the resident and transient general public as well.

# MARINE EDUCATION IN BRITISH COLUMBIA

## OVERVIEW

Marine education in British Columbia is experiencing an almost inexplicable upsurge. Two years ago we couldn't get enough teachers to fill a workshop, now, for the same workshop we have a year's waiting list. We are not sure how to explain this phenomenon, but we are working to capitalize on it.

The B.C. approach to getting marine education introduced into the curriculum has differed from that of neighboring states. Our approach was formulated at the P.A.S.G.A.P. conference in Hawaii, 1979. The essence of the approach is ... since we do not have a host of K-12 programs spread all over the province, it would be premature to propose a provincial coordinating or planning effort. Therefore our effort for the 1980 year should be spent on increasing the level of participation, spending and demands. From this position of activity or need it would then seem appropriate to offer a state/province-wide master plan.

## GOALS

The B.C. committee is composed of teachers and, as such, reflects it in their goals. They are basically concrete goals oriented to classroom activities affecting students. They were as follows:

- to provide field tested, polished, locally appropriate classroom materials for teachers.
- to get the teachers with their students actually doing hands-on marine activities.
- to provide training for teachers - mainly to insure that their programs were both safe and educational.
- to have a recognized course of marine studies taught in the B.C. school system.

## ACTIVITIES

The activities we designed were of relatively high profile and with a high probability of success based on past experience. Therefore to increase the level of participation on marine education we decided to:

- provide workshops in exciting locations where there also exists a lot of support for a teacher beginning marine studies.

eg. (a) Bamfield Marine Station, West Coast, Vancouver Is.

(b) Local Salmon Hatcheries

- to develop local curricula for a few "in demand" topics.

eg. (a) Port of Vancouver Study - this port project will be taught by approximately 60 teachers in one school district alone. K-5.

(b) Lower Fraser River - materials for this unit will be used by six school districts grs. 8-10.

(c) The Beach Book - by University of B.C.

- to have the universities train teachers for working in the marine environment.

eg. Simon Fraser University is offering a credit course to teachers. It will be offered, summer 1980, and a coastal town, Sechelt, has been chosen as the location.

- to consult, without charge, for any school district that is needing assistance in setting-up a program.

eg. Our group, through a non-profit society, is providing a crewboat and staff for an environmental school in Jervis Inlet.

- to promote and field test the materials from our federal government's Salmonid Enhancement Project. Several hundred thousand dollars are available to teachers through the public involvement section of the project.

- to have the Canadian Coast Guard put together a traveling Water Safety Workshop for teachers and students. Also, through us, they will even train a school as an auxilliary unit, specializing in search and rescue.

- to publicize the Vancouver Public Aquarium's educational program of wet lab experiences on beach trips.

- to have a marine studies course taught at the high school level. This would include a flexible teaching space, wet lab, pool, etc. (It will be taught at the new Pacific Marine Training Inst. in the fall of 1981.)

- to have the Northwest Association of Marine Educators hold its annual meeting in B.C. It would be hosted as a mini-conference and establish N.A.M.E.'s presence in B.C.

## SUCCESSES

We would have to say that every activity we have promoted has met or exceeded our expectations.

But I would have to say the most dazzling success has been the conception of a highschool course, the writing of its curriculum, the design of a building space to teach it in and now the construction start on the building.

## PROBLEMS

We are starting to develop some intense activity at a variety of locations, but as of yet we are nowhere near a province wide subject. We have to provide materials and curricula for non-coastal regions. We also have to find ways of turning on some of the small isolated towns to marine studies.

## FUTURE PLANS

In one word "organize". The 1980 year saw the initiation of a lot of activity. Now we will try to pull it more together. We plan to do this by promoting N.A.M.E. in B.C. We are now in the process of identifying the person in our provincial education offices who has most control/responsibility over marine education. From there we will work on implementing a unified regional and or provincial program.

# MARINE EDUCATION IN THE STATE OF CALIFORNIA

Submitted by: Dorothy M. Bjur
Parker Olson

## INTRODUCTION

During the PASGAP Marine Education Workshop, held in Hawaii, April,1979, the California Marine Education Team submitted a projected three year proposal for marine education in California schools. The major goal of the proposal was stated as follows:

> The major goal for the introduction of marine education into the public education system in the next three years is as follows: "constructive marine education programs will be incorporated into all 58 counties of California, which will affect 50% of students in California schools, grades k-12."

Extending 1200 miles along the Pacific Coast, the California coastline borders a state with 58 counties, 1100 school districts, and between 3-4 million school children, grades k-12. A large percentage of these students live within the greater Los Angeles area. It is evident from these statistics that there is alot of work to do if we expect to reach these students with marine education.

## FIRST YEAR REPORT

The first year of this proposal has objectively seen the California Marine Education Team, assisted by local,

district, and state educators, moving toward the goal as stated in the original proposal. All 58 counties have been involved in some marine education program. The state marine education coordinator has systematically included marine education in curricula areas otherwise not included. The Coordinator, Rudy Schafer, has involved marine educators in future planning for public education programs, and in meetings where educators from the 58 counties were involved. This support has given the marine educator an opportunity of reaching new audiences, otherwise difficult to contact.

There were three general objectives stressed in the proposal:

1) to make useable multidisciplinary marine education materials available on a statewide basis,

2) provide adequate teacher training programs for the public school teacher so materials will be properly used, and

3) achieve community, public, and professional support.

During this first year, these objectives were achieved in the following manner:

A. <u>Making marine education materials available on a statewide basis</u>

a. By way of the Environmental Education Coordinators newsletter, marine education materials, articles, brochures, etc., were disseminated to the 58 counties.

b. Approximately 150,000 marine briefs, classroom activities, articles, and other informational materials were distributed throughout California.

c. Newspapers all over California have carried mini-information fillers in Spanish and English, and marine cookery information.

d. As a result of an extensive survey of existing marine education programs in public schools, a special report will be published this summer and available to marine educators.

e. A statewide task force of approximately 26 professionals spent a week in Sacramento, reviewing textbooks, and compiling a needs assessment in environmental education. From this task force will come an environmental education packet, to include substantive marine education materials, and be distributed statewide.

f. The Marine Education Guide developed at USC was translated into Spanish and is now being considered for publication by Title VII National Dissemination and Assessment Center, Cal State College, Los Angeles. They would disseminate the document nation wide.

B. <u>Provide adequate Teacher Training programs</u>

a. Scripps Aquarium and Sea World have developed and conducted Teacher Training Workshops for teachers in the San Diego area. The Aquarium

trained teachers reached over 45,000 students from all over the state of California this past year. Sea World conducted a marine ecology class with over 100 students, taught by their teacher trainers.

b. Both district wide and teachers from individual schools took part in the teacher training courses in the Los Angeles area. For example, one district had 18 teacher who met monthly for training. This group of teachers will now become trainers of other teachers within their district, as well as other school districts.

c. There were a number of training courses conducted in the northern part of the state, and in land-locked cities. An example was the workshop held in Merced with 50 classroom teachers attending.

d. An intensive three day workshop was held for teachers involved in teaching marine education to the visually impaired.

C. Achieve community, public, and professional support

a. Parents were involved through Parent Orientation meetings, volunteering their services to help on field trips and in the classroom, funding summer classes.

b. Volunteers are trained as "docents" at the Aquarium, Cabrillo Beach Museum, and other public

marine centers to assist both at the facility and in the classroom.

c. The black community has become involved in a "Science Education in America" program through public meetings and promoting better science education for their children. Marine Science has been made the center of the program.

d. There are numerous public facilities such as the Aquarium in San Diego and in San Francisco, plus Marine World, Sea World, Marine Land and museums with programs for children. Marine Studies programs have been developed and are being used in summer camps, boy scouts, and parks and recreation centers. In San Francisco special facilities have just been given at Fort Mason to develop a marine science learning center. These are just a few of the public facilities involved in marine education.

e. Universities and Community Colleges have developed special courses for teachers and students interested in marine studies. Science Institutions and Centers statewide are offering special education programs for public school children.

This brief description of marine education in California only partially depicts the marine education effort in California. This year has seen marine education activities and materials disseminated to all 58 counties. This does not

assume that formal education programs in marine studies are being conducted in all 58 counties.

With the continued support of the state Department of Education, the Sea Grant Programs, the public education facilities, and dedicated public school teachers, California will attain their goal within the three year proposal period.

# MARINE EDUCATION IN THE STATE OF HAWAII

## State Activities

1. Master Plan for Marine and Aquatic Education (Draft), January, 1980. Produced through the Marine Affairs Coordinator's Office, this document consists of three major parts.

   Part I. A broad overview of marine employment opportunities, marine recreation and safety, and marine education programs and opportunities in Hawaii.

   Part II. An analysis of marine education in Hawaii presented in terms of marine education goals and objectives for the next five years, long range goals for the general adult population, administrative goals and objectives to establish support systems for marine programs, and programmatic goals and objectives addressing preferred content of various programs.

   Part III Restates administrative goals and objectives, discusses pros and cons of various institutional roles, and makes specific recommendations for funding and assignment of primary marine education responsibilities.

2. Educational Programs, K-12.

   a. Continuation Programs.
      1) Blue Water Marine Laboratory--School year round, on-board ship experiences in marine disciplines and sailing for secondary students statewide. Cruise instructor training program for selected 11th grade students during the summer months.
      2) Sea Trek--Hawaiian and in-shore studies for 7th grade students in Windward and Honolulu school districts.
      3) Secondary Student Symposium on Marine Affairs--Statewide symposium for secondary students on selected marine related topics.
      4) Drownproofing--Statewide program targeting 4th grade students.
      5) Hawaii Marine Science Study (HMSS)--CRDG curriculum materials development project targeting 10th grade students of marine science.

   b. New Curricular/Instructional Materials Developments.
      1) Maili Coastal Awareness Module - Draft, 1979. A fourth grade module designed to help students become aware of Hawaii's coastal environment, develop knowledge of various aspects of the marine environment and marine-related survival skills, and become committed to living in harmony with the marine environment.
      2) Living Coral: How It Grows and Reproduces - Draft, 1979. A 16 minutes filmstrip/audio-cassette on coral growth and reproductive processes.
      3) Nudibranchs of Hawaii, 1979. A 23 minutes filmstrip/audio-cassette on Hawaiian nudibranchs.
      4) Hawaii Marine Plant and Animal Slide Series, 1979. A set of slides depicting native marine flora and fauna.

5) Hawaii Nature Study Program, Reef and Shore Guide, Revised 1980. An instructional guide primarily designed to acquaint elementary school students with the natural marine environment through a variety of direct and classroom experiences.
6) Teacher's Guide for the Sea Trek Seventh Grade Program in Experiential Environmental Education - Draft, 1980. This guide is designed to provide teachers with information to fully implement and use the potentials inherent in direct student experiences.

c. Staff Development
1) Elementary teacher training programs in marine education are conducted primarily at the district and school levels. The training activities result in many experiences with the marine environment for elementary students.
2) Secondary teacher training programs in marine education are conducted primarily through state and district offices in conjunction with educational programs conducted by community agencies and institutions of higher education.

Goals and Objectives: To improve marine education through the development of operational documents and plans, and innovative instructional methods and materials.

Successes

1. Development of Master Plan for Marine and Aquatic Education (Draft).

2. Development of a number of significant instructional and curricular support documents, guides, and materials related to marine education for diverse target groups.

Problem: To incorporate the diverse thinking and energies of community agencies, institutions and groups into a comprehensive marine education curriculum structure for grades K-12.

Future Plans

1. Development of curriculum structure for grades K-12 based on Master Plan for Marine and Aquatic Education, Draft.
2. Expansion of staff development activities and direct services to students based on the proposed comprehensive marine education curriculum structure.
3. Systematic improvement of marine education over the next five years through coordination of community-wide resources, interests and activities.

# MARINE EDUCATION IN THE STATE OF IDAHO

## State Activity

In Idaho we are developing 4-H project materials, both printed and visual, in the wildlife curriculum area. Currently we do not offer study materials in this subject. Our definition of wildlife includes fish and their habitat as well as big game, waterfowl, upland game, furbearers and other birds. The project will include study of wildlife management principles, study of the wild species, their habitat, lifecycles and importance to man and the environment. Our anticipated deadline to have these materials available for use is the fall of 1980.

## Goals and Objectives

Our goals, as affect the marine education portion of the wildlife curriculum, are to provide education materials to do the following:

1. Teach youth to identify major northwest fish species.
2. Develop an understanding of the specific habitat requirements of major fish groups.
3. Develop a keen awareness of the purpose and value of fish in the ecosystem and how man's influence will affect it.
4. Develop an understanding of fish management principles, and learn how to enjoy the benefits of sport fishing.

## Successes

The National 4-H Council has made available 33 4-H project booklets on wildlife (including fish and fishing). Sixteen more booklets are expected to be available during 1980. Some of the latter will deal with marine subjects that may also be useful in our program. A copy of one of these, Fish Identification and Display, is attached to this report. We are in the process of determining which of these will be used in Idaho. We believe several of our marine objectives will be met with these materials.

We have just completed production of two wildlife slide sets that will be used with these 4-H projects. They are "Wildlife and Its Environment" and "Man and Wildlife." Although marine education is not the primary concern in these sets, some information is included.

We have been promised technical assistance in the development of 4-H fish literature from the Fisheries Department of the University of Idaho College of Forestry, Wildlife and Range Science.

## Problems

Since our state 4-H staff is small, we have limited time and expertise to totally develop new materials. Our desire is to find 4-H or school materials already produced that we can adapt to our program needs. We have not been successful in finding materials on land-lock or freshwater salmon (Kokanee and Coho principally in Idaho) and anadromous species, particularly Chinook salmon and Steelhead trout. There is much technical information available, but much of it has to be re-written for the age group with which we work.

## MARINE EDUCATION IN THE STATE OF OREGON

I. Activities

A. Collection of marine education materials from around the nation and the state of Oregon.

B. Establishment of a "Marine Education Curriculum File" at the Oregon Department of Education which includes current curriculum projects from the U.S. and Canada.

C. Participation in numerous workshops for the purpose of exposing educators to current marine education curriculum projects.

D. Writing of a K-12 interdisciplinary volume of marine education materials for use in Oregon schools. The materials have been given a common format and adapted to a conceptual framework for water education.

E. Survey of marine education conducted in Oregon schools to assess present state-of-the-art and establish marine educator network.

F. Technical assistance given to numerous schools and teachers in marine education.

G. Conducted first Coastal Problems and Resource Management workshop to be held in the northwest.

H. Supported Northwest Association of Marine Educators in their effort to become a chapter of the National Marine Education Association.

II. Goals and Objectives Addressed

A. To have identified, selected, modified, and field tested existing marine education materials to be implemented statewide in grades K-12.

Discussion: Materials for initial publication have been identified, selected, and modified. This phase is 90 percent completed. Field testing will not occur until the 1980-81 school year.

About sixty activities have been selected for inclusion in the initial volume. Materials selected (1) had to be useful to a wide range of grade levels, (2) had to be useful to teachers removed from the coastal environment, and (3) were not generally available to teachers. Underlying the selection process was the desire to provide primarily science activities, since the demand was greatest there; however, by providing materials for other curriculum areas, two outcomes were anticipated: (1) that marine science classes would begin to deal with issues related to but traditionally held outside science parameters (thus illustrating the interdisciplinary nature of the world of water), and (2) that science teachers would begin to solicit help from other subject area teachers (thus establishing marine education as a communication medium between them).

B. To have developed an implementation system to infuse marine education into the existing educational programs K-12 in Oregon.

Discussion: Infusion will hopefully occur in the third year of the project and will depend on results of field testing. After the initial volume, activities are planned to be disseminated on an individual basis. This maximizes the ease with which they may be infused into existing curriculum. A suggested scheme for implementation is not yet developed.

C. To have designed strategies or techniques that will develop an awareness of the need for marine education statewide.

Discussion: Implementation will occur as awareness becomes more widespread among educators. Workshop presentations have impacted many educators. Cooperation between state and federal agencies, education organizations, and local marine education associations is essential.

III. Successes

A. The availability of curriculum materials seems to be the single most important factor in implementation. Numerous presentations at workshops have impacted approximately 500 teachers. Those presentations include an overview of the curriculum available, information on how to acquire the material, and individual help on locating specific activities.

B. The curriculum file has had widespread use. The file is housed in portable drawers and can be taken almost anywhere. It has had much impact, considering it originally was thought to be a project "spin-off."

C. The availability of a marine education resource person at the Department of Education has had much impact. Teachers call daily for help with their curriculum. The position has also acted as a focal point for cooperation among agencies and associations in the state.

D. The importance of associations like the Northwest Association of Marine Educators to development of marine awareness has been realized.

IV. Problem

A. Classroom teachers are not aware of the availability of curriculum materials. Workshops and school visits to increase this awareness are needed. Administrators need to encourage their staff to attend such workshops. A regional clearinghouse for marine education materials would make these activities more accessible.

V. Future Plans

A. Completion of the initial volume of activities.

B. Subsequent publishing of activities on an individual basis.

C. Updating and maintenance of marine curriculum file.

D. Continued participation in workshops, and technical assistance.

E. Continued support for Northwest Association of Marine Educators.

F. Field testing in 1980-81.

G. Dissemination of materials after field testing.

# MARINE EDUCATION IN THE STATE OF WASHINGTON

## OVERVIEW

Marine Education in Washington state continues to enjoy and support exemplary programs for K - 12, created especially for our area. With one exception, these programs are localized, with few materials reaching beyond the confines of the housing institutions. A framework for state planning for marine education was formulated at the Pacific Area Sea Grant Advisory Program (P.A.S.G.A.P.) conference held at Kuilima, Oahu, Hawaii, April 1979. This framework was designed to provide a cohesive foundation for existing programs and define strategies for implementation of marine education on a broader basis.

Subsequent to the conference, the participants wrote a proposal to develop a comprehensive state and regional approach for instituting marine education. The proposal included the creation of a generic model for planning and instituting marine education and the formation of a communications network for the state and region. The proposal, entitled Spinnaker, Leadership, Master Planning, and Communications for Marine Education, was submitted to the National Sea Grant Office for review and funding, for it represented the type of interactive relationship between the state education office and Sea Grant, that was being touted by the National Sea Grant Office. The plan was submitted to Sea Grant by the Office of the Superintendent of Public Instruction for the state of Washington. As of this date, the proposal has been reviewed and rejected.

A modified proposal, Spinnaker 81, was submitted to the Washington Sea Grant office as part of the omnibus package. Spinnaker 81 deletes reference to all regional interaction as part of the planning effort.

Funding seems to be the major obstacle to state planning efforts. Despite the acknowledged support for marine education, National Sea Grant has been unable to find either in-house or pass-through funding for the state and regional plan. The future of Spinnaker 81, the state oriented effort, remains unknown at this time, as it is just now being reviewed through the local Sea Grant Office.

## STATE ACTIVITIES AND PROGRAMS

The following are the on going marine education programs identified in the state of Washington:

1. Marine Education Project ORCA - Pacific Science Center. A Sea Grant supported marine education project focusing on: 1) development of K-12 multidisciplinary activity packets; 2) teacher training, consultation, inservice and advisory fundtions; and 3) resource center of curriculum and topical items. ORCA operates in direct cooperation with the Office of the Superintendent of Public Instruction and distributes materials state wide as requested by teachers.

2. For Sea - Bremerton E.S.D. 114. A title IV-C grant supporting development of lessons for grades 2,4, and 6. Many materials are utilized by the Marine Science Center at Poulsbo.

3. Project Sea - Olympia School District. A title IV-C project involving lessons and activities development by the school district personnel, on a variety of subjects.

4. Seattle Aquarium - Seattle. Supported by city funds and gate revenues, the education program in on - site, with school chilren visiting the exhibits and having lab experiences. Program includes some teacher training, using, in part, the ORCA materials.

5. Marine Science Center - Poulsbo. Supported by a consortium of school districts within the Bremerton E.S.D. 114. Labs are conducted on site or aboard a variety of vessels.

6. Salmon Enhancement - Metro. A project funded and supported by federal funds for the improvement of Water Quality (section 208 of the Federal Water Quality Act.) Involved several school districts, civic groups the State Fisheries Department and the Office of the Superintendent of Public Instruction in educational programs about salmon and water quality. Also involved is the King County Planning Office.

7. Padilla Bay Estuarine Sanctuary - State Department of Ecology. A proposal for an estuarine sanctuary which includes a marine education component that will use the estuary as a training environment.

8. Spinnaker 81, Leadership, Master Planning and Communications for Marine Education - Office of the Superintendent of Public Instruction. A proposal for a state plan for marine education.

## GOALS AND OBJECTIVES

The goal for Spinnaker 81 is to improve collaborative efforts of educators, private industry, resource management personnel and the lay community in working towards high quality marine education programs for young people. The project objectives are to:

1) complete operational plan for marine education in Washington state and begin implementation.
2) establish a marine education communications network which enables the sharing of ideas, materials and techniques which provide on-going support for the marine education community.

## SUCCESSES

The existing individual marine education programs are successful, and despite funding difficulties, are facing a continuing future. Most programs are limited, as they are not equipped to deal out side of the district or institution confines. On the other hand, Spinnaker has the potential for a unified foundation for marine education.

Spinnaker has enjoyed highly favorable comments from state and regional residents, as well as 'out of region' marine educators. People from other

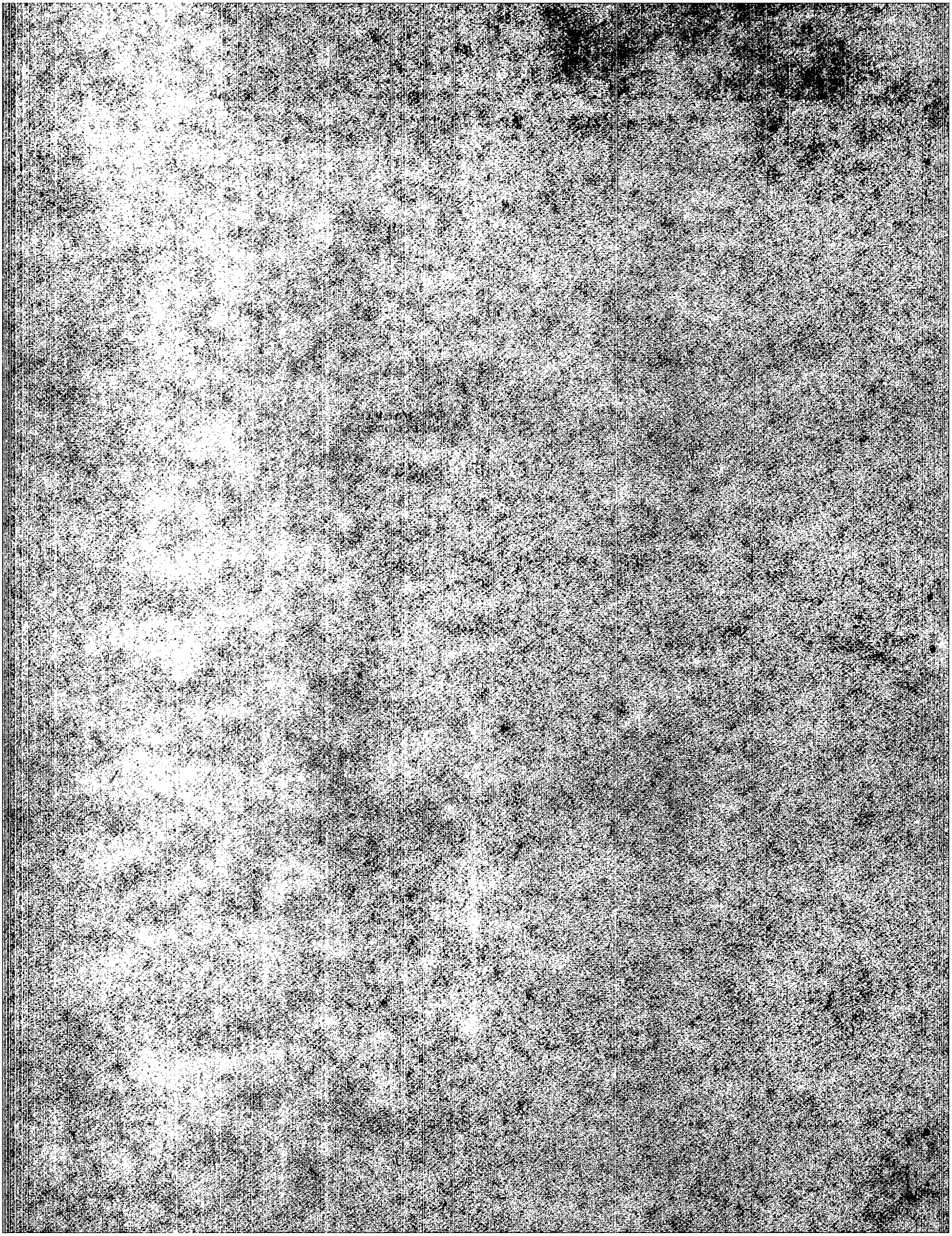
states and regions have read the proposal and have expressed their support and encouragement for the concept of the project.

## SIGNIFICANT PROBLEM(S)

The singular most significant problem facing Spinnaker is the funding of the proposal. Declining enrollments and inflation impact education funding for innovative programs. The National Sea Grant Office continues to provide only level funding for on going programs, and education does not yet enjoy the same level of support as Marine Advisory Services or Research.

National Sea Grant and the Department of Education have acknowledged the importance of marine education and have mandated that state level personnel be identified as marine education specialists. Funds to implement a unified regional and/or state program though, seem increasingly difficult to identify.

# LIST OF PARTICIPANTS



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