

## **Impacts of Northern Right Whale Critical Habitat Designation in the North Pacific Ocean**

The proposed action being addressed in this Regulatory Impact Review (RIR) and Regulatory Flexibility Act Analysis (RFAA) is the designation of critical habitat in waters of the North Pacific Ocean for the northern right whale under authority of the Endangered Species Act (ESA). The purpose of this RIR/RFAA is to evaluate, to the extent practicable, the economic, socioeconomic, and other costs and benefits attributable to the alternatives identifying and describing critical habitat for the northern right whale in the North Pacific Ocean. These analyses meet the regulatory requirements of, and are the bases for, the 4(b)(2) Exclusion Analysis and Evaluation.

### **Statutory Authority**

Under the ESA, NMFS is responsible for designating critical habitat for the endangered northern right whale. Section 3 of the ESA defines critical habitat as “(i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found the physical and biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection: and (ii) specific areas outside the geographical area occupied by the species at the time it is listed that are determined by the Secretary to be essential for the conservation of the species.”

Section 3 of the ESA also defines the terms “conserve,” “conserving,” and “conservation” to mean “to use, and the use of, all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary.”

Section 4 of the ESA requires that before designating critical habitat, NMFS must consider the economic impacts, impacts on national security, and other relevant impacts of designating any particular area as critical habitat. Section 4 also provides that NMFS may exclude any particular area from critical habitat if the benefits of exclusion outweigh the benefits of inclusion, unless excluding an area from critical habitat will result in the extinction of the species concerned.

### **Regulatory Impact Review Requirements**

This RIR provides the analysis required under Executive Order 12866 (EO or EO12866). The following statement from the EO summarizes the requirements of an RIR:

*In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative*

*regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.*

EO12866 requires that the Office of Management and Budget (OMB) review proposed regulatory programs that are considered to be significant. A significant regulatory action is one that is likely to achieve the following:

1. Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities.
2. Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.
3. Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof.
4. Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this EO.

This rule raises novel issues arising out of a legal mandate. Therefore, this rule has been determined to be significant under EO12866.

### **Conducting a Regulatory Impact Review for Critical Habitat Designation**

A benefit/cost framework is the appropriate way to evaluate the relative economic and socioeconomic merits of the alternatives under consideration in this action, and to judge whether the costs of designating particular areas as critical habitat are justified, based upon the net expected benefits. When performing a benefit/cost analysis, the principal objective is to derive informed conclusions about probable net effects of each alternative under consideration. In the present case, however, necessary empirical data (e.g., operating, capital, and opportunity costs of potentially impacted commercial operations) are not available. Furthermore, empirical studies bearing on other important aspects of these alternative actions (e.g., passive-use and habitat values for the North Pacific population of northern right whales) are also unavailable, and time and resource constraints prevent their preparation for use in this analysis. For these reasons, a quantitative net benefit analysis is impossible.

Nonetheless, the following Regulatory Impact Review (RIR), Regulatory Flexibility Act analysis (RFAA or RFA) and supporting text utilize the best available information and quantitative data, combined with accepted economic theory and practice, to provide the fullest possible assessment (both quantitative and qualitative) of the potential benefits and costs attributable to each alternative. The analysis draws on relevant published research pertaining to valuation of habitat

for other protected or endangered species (as well as other forms of public goods), both in the United States and elsewhere. Based upon this analysis, conclusions are offered concerning the likely economic and socioeconomic effects that may derive from each of the critical habitat designation alternatives. This analytical approach is consistent with applicable NOAA policy and established practice for implementing EO12866.

EO12866 provides in relevant part that *“costs and benefits are, herein, understood to include, and have been assessed on the basis of, both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider.”* The EO also provides that *“in choosing among alternative regulatory approaches, agencies should select [presumably, based upon the combined interpretation of the quantitative and qualitative measures explicitly provided for in the preceding sentence from the EO] those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity ).”* NMFS guidelines for preparing economic analyses state that *“the analyst is expected to make a reasonable effort to organize the relevant information and supporting analyses, [but] . . . at a minimum, the RIR and RFAA should include a good qualitative discussion of the economic effects of the selected alternatives. Quantification of these effects is desirable, but the analyst needs to weigh such quantification against the significance of the issue and available studies and resources. Generally, a good qualitative discussion of the expected effects would be better than poor quantitative analyses.”* This RIR/RFAA has been prepared consistent with these prescriptions. (NMFS 2000)

The term ‘value’ is used, in the present context as it would be in a conventional cost-benefit analysis (i.e., “what would one be willing to give up, to acquire the asset being valued?”). In this case, that asset is the specific habitat off Alaska determined to be “critical” to the conservation of the northern right whale in the North Pacific Ocean. In the economic literature, such ‘value’ is referred to as “willingness to pay” (WTP).<sup>1</sup>

### **Alternatives Considered**

The proposal to designate critical habitat for the northern right whale in the North Pacific Ocean is explained in detail in the proposed Regulation and Preamble. As reported there, the critical habitat designation proposal contains two alternatives. A third alternative was also considered. These are:

Alternative 1. No action (status quo): NMFS would not designate critical habitat in the North Pacific Ocean for the northern right whale. Conservation and recovery of the listed species would depend exclusively upon the protection provided under the “jeopardy” provisions of section 7 of

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<sup>1</sup> If the implicit ownership interest is reversed, the appropriate measure is “willingness to accept” (WTA). WTP is methodologically superior, for empirical purposes, and most widely utilized in “stated preference” evaluations.

the ESA and the designated critical habitat in the Atlantic Ocean. NMFS rejected this alternative because it did not comply with the remand order in Center for Biological Diversity v. Evans, Civ. No. 04-04496 (N.D. Cal. June 14, 2005) or satisfy the agency's obligations under the ESA.

Alternative 2. Preferred alternative (embodied in the proposed regulation): The areas proposed for critical habitat designation lie offshore (outside) of State of Alaska waters. They encompass a substantial area in the central Bering Sea EEZ, and a small area immediately south of Kodiak Island. [See GIS mappings of proposed areas for critical habitat designation, accompanying the Preamble, for greater detail.]

Alternative 3. Center for Biological Diversity's (CBD) alternative: In its October 4, 2000, "Petition to Revise the Critical Habitat Designation for the Northern Right Whale (*Eubalaena Glacialis*) under the Endangered Species Act," CBD proposed designation of a large area in the "middle shelf and inner front regions of the southeast Bering Sea." After reviewing the proposal, NMFS determined that the best scientific information available did not support a finding that the physical or biological features essential for conservation of the northern right whale in the North Pacific Ocean are found throughout the entire area identified in CBD's petition. NMFS therefore rejected this alternative because the petitioned area does not meet the ESA's definition of "critical habitat."

To adequately evaluate the relative desirability of competing natural resource policy alternatives, including the requisite "no action" option, the analysis must include costs and benefits of both market and non-market aspects of the proposed action. When a good or service is traded in a conventional market, the equilibrium price reflects the marginal consumer's revealed WTP to acquire that good or service. When no market exists within which a good or service is traded, there is no price established to signal the value of that asset. Nonetheless, it is appropriate and necessary that these non-market values be accounted for, to the fullest extent practicable, when assessing the benefits and costs of a proposed regulatory action. In the case at hand, the North Pacific population of northern right whales displays a number of characteristics that make the presence of market-based use values unlikely. As an endangered species, all consumptive uses are strictly prohibited. The extreme rarity of these animals, and the geographically remote location of the most recently identified aggregations of northern right whales in the U.S. EEZ off Alaska (especially the area in the mid-Bering Sea), make the existence of market based non-consumptive uses (e.g., commercial whale watching excursions) highly improbable. This strongly suggests that passive-use value likely constitutes the majority of the welfare benefit accruing to the American public from conservation and management of these animals.

It is very likely that protection of these great whales and their habitat holds economic and other values for many people worldwide, in the same way Americans place value on, say, preservation of the mountain gorilla of central Africa and its habitat, or the Giant Panda of China and its habitat. However, OMB has directed that, when assessing a proposed management action under EO12866, only benefits and costs accruing to the U.S. population are relevant. Thus, the following evaluation of proposals to designate critical habitat for the North Pacific population of right whales within the U.S. EEZ off Alaska adheres to that guidance. For the reasons explained later in this impacts analysis, the value of critical habitat designation in the North Pacific Ocean for the northern right whale, while not known, is expected to be relatively small. However, it is probable that the total welfare benefit associated with critical habitat designation is greater than that accruing only to the U.S. population.

In connection with non-market valuation of natural resources, it can be demonstrated that society places economic (and other) value on environmental assets, especially when those assets are perceived to be unique and/or when they possess some symbolic or charismatic characteristic (e.g., the bald eagle). These values exist, whether or not the asset is ever directly encountered or exploited (i.e., passive-use or existence value). For example, people place real and (potentially) measurable economic value on simply knowing that a rare or endangered species of animal (e.g., the northern right whale) is protected in its natural environment. However, for the reasons explained later in this impacts analysis, the value of critical habitat designation in the North Pacific Ocean for the northern right whale, while not known, is expected to be relatively small.

Unlike the whale itself, the areas that are proposed for designation as critical habitat support a wide range of market, non-market, consumptive, and non-consumptive human uses. For this reason, it is incumbent upon NMFS to correctly and completely characterize benefits and costs of the designation of critical habitat, distinct from those costs and benefits attributable to the listing of the species. While some impacts may be co-extensive and not readily amenable to unique attribution, it is the incremental change in the net benefit to the Nation, ascribable to critical habitat designation (and not the listing of the species), that is the primary focus of this analysis. Nonetheless, where impacts are co-extensive, they have been cited as such and included in this regulatory impact assessment.

### **Benefits of Designating Critical Habitat for the Northern Right Whale in the North Pacific**

Empirical research on passive-use values (e.g., existence value, bequest value) within the broader context of natural resource economic valuation suggests that these values may be substantial. When the American public is consciously aware of risks posed to a unique asset (e.g., the Amazon rain forest), they often reveal significant WTP values for protective action. In that particular example, there is ample empirical evidence to support the existence of significant passive-use values (e.g., cash donations to various *Save the Amazon Rain Forest* groups or efforts, celebrity-sponsored fund raisers and large monetary donations to the cause, outright purchase of at-risk land, or acquisition of use-rights to at-risk land, etc.).

In the United States, a USDA Forest Service study that used contingent valuation to measure the value the public places on the existence of critical habitat for the northern spotted owl indicated that Oregon residents were willing to pay a substantial amount of money annually to protect this endangered species' critical habitat (Loomis et al. 1996). Similarly, a study published by Carson, et al. (2003) examined the estimated WTP of the American public in connection with the EXXON VALDEZ oil spill disaster. In that case, the public's WTP to avoid the habitat destruction and wildlife kills was extremely large by any measure. Both of these WTP estimates may reasonably be regarded as expressions of "habitat" values, as distinct from WTP for any specific endangered species. In the first example, the bid was *expressly* for critical habitat protection, while in the second the bids were based upon avoiding a spill that resulted in a widespread destruction of the "bundle" of ecological assets that were adversely impacted in Prince William Sound by the EXXON VALDEZ spill. There is no suggestion made here that the "size" of the habitat bids in these and other similar studies are indicative of the magnitude of WTP bids that may be associated with critical habitat designation for the northern right whale in the North Pacific. Rather, the points being made in citing these studies is that *habitat* may have an intrinsic passive-use value, and that it is technically possible to empirically measure the passive-use value of habitat.

Typically, passive-use values have been estimated for unique, rare, and widely recognized natural assets (e.g., the Grand Canyon of the Colorado). Indeed, more often than not, Contingent Valuation Methodology (CVM) analyses of passive-use values involve actions that propose to enhance, protect, or mitigate adverse effects on high profile *organisms*. In the literature, these are referred to as charismatic mega-fauna (Metrick and Weitzman 1998), and they include such animals as the great whales, pandas, lions, tigers, and bears.

There are numerous species that hold an elevated status for humans, as compared to their lesser regarded cousins in the animal kingdom. Certainly in the United States, the great whales rank at or near the top of any list of charismatic-mega fauna. Furthermore, anecdotal evidence suggests that the rarer (i.e., more severely endangered) a species, the higher the WTP to protect it and by implication, those aspects of the natural environment critical to achieving this end. At present, the North Pacific population of northern right whale is probably the most severely endangered of all the world's great whales.

With respect to northern right whale critical habitat designation, which is the action being proposed and the focus of this analysis, the values at stake are what economists refer to as marginal values. Typically, these values are associated with incremental changes in the status, condition, or abundance of the asset being valued (e.g., what is the value of a 10% increase in the population of peregrine falcons in the Seattle-metro area?), not the value of its continued existence or complete loss. The proposal to designate critical habitat off Alaska is no different. Any region of ocean habitat will possess a wide range of physical characteristics. These may include the relative proportions of different sea bed types, locations of corals or other living structures, water temperature, salinity, distribution of vegetation, the presence, abundance, and concentration of specific prey species, and so on. Human activity may potentially change the

nature, productivity, and value of habitat by altering these characteristics in different ways. The passive use values that society places on different regions of habitat will depend on these characteristics and can be expected to change as various combinations of characteristics of a particular region change (whether altered by human activity or through natural processes). Formal critical habitat designation will incrementally alter the status of the subject asset (i.e., enhancing its potential value), by providing a mechanism to manage human activity that may have the potential to destroy or adversely modify the characteristics that make the designated area “critical” for the whales. However, as will be shown in the next section, some Federal actions “may affect” the proposed critical habitat and result in consultation under section 7(a)(2) of the ESA, but none of the actions for which consultation is anticipated over the next ten years is expected to result in a finding of destruction or adverse modification of critical habitat. Thus, none of these Federal actions is expected to require modifications that would result in incremental conservation benefits to the species. Therefore, the WTP value for this designation, while not known, may be expected to be relatively small.

In the current context, the specific areas being proposed for designation as critical habitat contribute directly to the existence and productivity of many living marine assets, in addition to the right whales, for which both market and non-market values exist (e.g., commercial species of fish and shellfish, Steller sea lions, sea birds, and other whales of various species). As a result, isolating and measuring a passive-use value *unique* to northern right whale critical habitat designation in the EEZ off Alaska presents conceptual problems. That does not imply, however, that these values do not exist. However, at this time, several model elements essential to an empirical estimation of the impact of critical habitat designation on WTP are missing. These include: a behavioral model relating critical habitat designation to changes in activity levels (e.g., fishing, transportation, oil and gas exploration, and other uses); a model relating changes in economic behavior to changes in critical habitat designation characteristics; a model relating changes in critical habitat designation characteristics to relevant right whale population characteristics; and a model showing how WTP changes with changes in right whale population characteristics.

While the absence of empirical treatment of these critical habitat designation passive-use values is a limitation of the current benefit/cost analysis, previous passive-use value assessments provide some basic guidance to decision-makers and the public in evaluating the potential benefits of designating, versus ‘no action,’ as summarized by the following three points:

- (1) Society places a value on “habitat” for its own sake (i.e., direct benefit), as well as for its role in the functioning of the ecosystem and production of marketable consumptive-use and non consumptive-use goods (i.e., indirect benefit). The passive-use value placed on habitat by society may differ with the public’s perception of the role of the specific habitat in the ecosystem. For example, wetlands habitat may be perceived by the public to be of greater passive-use value than, say, desert sand habitat or Arctic pack ice habitat.

(2) The public perception of passive-use value for marine habitat may be dependent upon how unique that habitat is believed to be within the ecosystem. For example, a relatively rare, long-lived coral habitat's passive-use value may be perceived by the public to be higher than common mud habitat. Therefore, there may be differences in the value society places on critical habitat, depending upon its specific characteristics.

(3) The likelihood that any given mitigation measure (e.g., spatial or temporal area restrictions) will succeed in protecting critical habitat from destruction or adverse modification may also influence the public's WTP to support a designation action. (NMFS 2005-A)

While no economic WTP estimates are currently available for incremental changes in the stock characteristics of the northern right whale, such estimates have been derived for several other threatened or endangered great whales. In the Pacific, for example, economic values as reflected by WTP have been estimated for incremental changes in humpback, gray, and blue whale stocks (Hageman 1985; Samples and Hollyer 1990; Loomis and Larson 1994; Loomis and White 1996). Each of these analyses has been "peer reviewed" and published in the professional literature. Nonetheless, the "state-of-the-art" in estimating such stated preference values has advanced with time, and thus each study cited reflects the technical limitations of the period in which it was conducted. In *every* case, the estimated WTP value (when extrapolated over the relevant population) represents a very substantial amount of money (i.e., imputed benefit or value). Expressed another way, these (and similar) studies strongly suggest that Americans place very significant economic, cultural, social, and symbolic value on protection (and recovery) of the threatened and endangered great whales, within the whale's natural habitat.

While it is certainly not theoretically (nor empirically) appropriate to apply a specific dollar estimate developed for one species in a particular setting and at a particular time to a different species, in a different setting and time, a technique referred to as "benefit transfer" has been developed and extensively applied (and tested) by the economics profession. This technique may be useful in gaining insights into the value the public holds for similarly situated natural assets (e.g., great whales *and* the critical habitat upon which they depend). As Rosenberger and Loomis (2000) report, "*Benefit transfer is the application of values and other information from a 'study' site with data, to a 'policy' site with little or no data.*" These (and other) researchers point out that "primary" research is the preferred analytical strategy, when adequate time and resources are available. When they are not (as is presently the case for critical habitat designation of the northern right whale in the North Pacific Ocean), benefit transfer can be very helpful in illuminating the context within which the management decision will be made.

With the limitations of the benefit transfer technique clearly in mind, the fact that a number of assessments of the non-market economic value of several different great whale species, in different times and locations, have all elicited substantial WTP estimates suggests that the northern right whale likely also has a positive economic, social, and cultural value to the American public. Because WTP can be regarded as a measure of the *minimum* utility (benefit) an



individual (or society, when extrapolated over the relevant population) garners from acquisition of a good or service flow, the larger the stated WTP, the greater the associated benefit derived, *ceteris paribus*.

There can be little argument that the North Pacific population of northern right whales is highly valued. And, as previously reported, while no quantitative estimate of this value can at present be derived, circumstantial support for this conclusion is compelling. Having reasonably established that protection and recovery of these animals yields significant economic, cultural, as well as other benefits (e.g., passive-use value, bequest value, genetic and biological diversity values) to the American public, the key question within the present context is, “Does any demonstrable relationship exist between the benefit society derives from protecting this endangered species and the proposed action to designate critical habitat for this same population in the northeast Pacific and eastern Bering Sea?”

Again, although the evidence is primarily circumstantial and/or derived through benefit transfer from other similarly situated endangered and threatened species, it is reasonable to conclude, based on the best available scientific information that a portion of the (inferred) stated preference ‘value’ of the North Pacific population of northern right whale, is attributable to its critical habitat.<sup>2</sup> Support for this assertion can be drawn both from accepted economic theory and empirical studies reported in the professional literature. For example, Loomis and White (1996) hypothesize that the values expressed for some charismatic species may often include implicit WTP for the critical components of the habitat that support the survival of such species. Kontoleon and Swanson (2002) build on these arguments, suggesting further that these high profile charismatic species serve as “*flagship species . . . and are leading representatives to human society of the habitats from which they derive.*” These authors observe that WTP values may be perceived by those tendering these stated preference amounts as the benefit gained from knowing that the species continues to exist in its natural habitat, relatively undisturbed by human activity.

Standard economic production theory demonstrates that final demand for any given good or service can be decomposed. This decomposition reveals the contribution each primary constituent input makes to the production of the final good or service, and further allows the estimation of demand curves for each input, derived from the value placed by consumers on the final good. This is referred to as *derived demand*.

The nexus between species value and critical habitat value, as revealed through stated WTP, is consistent with this economic theory. Because critical habitat generally contributes primary and fundamentally important “inputs to production” of the desired output (i.e., continued existence of the charismatic species, in the wild), critical habitat value may be appropriately characterized as a derived demand, as Kontoleon and Swanson (2002) suggest, “... *for all of the plants and animal*

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2 Among the “other” benefits cited is the contribution designation of critical habitat can make to education of the public regarding the potential conservation value of an area, thereby focusing and enhancing conservation efforts, by clearly delineating areas of high conservation value for certain species.

*species that together comprise the (charismatic) species' natural habitat.*" These authors empirically test this hypothesis, using another "flagship species" (the Giant Panda) and its native bamboo forest habitat in China. Through the application of contingent valuation techniques and a series of econometric models, these authors find in their case study that the decomposition of WTP for the charismatic species' protection and conservation, *in situ*, yields a "value" of habitat that constitutes a non-trivial portion of the total.

As previously noted when identifying the significant WTP for preservation, conservation and recovery of great whales off the Pacific coast of the United States, it is certainly *not* suggested here that a large portion of the total WTP to protect right whales in the North Pacific is attributable to designation of critical habitat. However, neither is it reasonable to assume that the share of the WTP attributable to designation of critical habitat for this charismatic species is *zero*.

### **Costs of Designating Critical Habitat for the Right Whale in the North Pacific**

Under the provisions of the ESA, there must be a Federal nexus associated with an activity requiring consultation under section 7 of the ESA or the designation of critical habitat will have no effect on the private sector. Therefore, only activities that Federal agencies authorize, fund, or otherwise carry out in or around the areas proposed for critical habitat designation fall under this provision.

NMFS is the agency responsible for designating critical habitat for the northern right whale. NMFS must be consulted before any proposed action is authorized, funded, or carried out by a Federal agency if that action 'may affect' a listed species or its designated critical habitat. Depending upon the outcome of the consultation, the action agency may make no modifications to the proposed action; it may alter or modify the proposed action so as to reduce potential impacts; or, if jeopardy or adverse modification are likely, it may alter or modify the proposed action to avoid the likelihood of jeopardy or adverse modification.

Based in part on the existence of critical habitat, NMFS may formulate comments and recommendations at several stages of consultation, including pre-consultation (conference), informal consultation, and formal consultation. NMFS' recommendations often serve several purposes. For example, as they serve to avoid the destruction or adverse modification of critical habitat, these recommendations may also contribute to the conservation of other receptors (e.g., other whale species, seabirds, or fish that utilize the critical habitat).

The existence of designated critical habitat would be the basis upon which NMFS makes recommendations in the form of alternative locations, alternative plans or technologies, alternative timing, other mitigation, and/or monitoring requirements to avoid potential destruction or adverse modification of critical habitat. These recommendations may be made by NMFS without formal consultation or a finding of adverse modification under the ESA. They may be advisory, or developed as conditions under other Federal authorizations (e.g., Army Corps or

EPA permits). If “adverse modification of critical habitat” is found at the conclusion of the consultation, the action agency must implement the actions necessary to avoid the likelihood of jeopardy or adverse modification before the proposed action is initiated.

The areas proposed for critical habitat designation lie offshore (outside) of State of Alaska waters, in a relatively remote area of the central Bering Sea, and immediately south of Kodiak Island in the Gulf of Alaska. The following list identifies the federal actions that are expected to occur within the proposed critical habitat area, listed by authorizing Federal agency, and attempts to characterize the “expected” probability of occurrence over the foreseeable future:<sup>3</sup>

*U.S. Army Corps of Engineers (Corps):* Authorizes placement of structures in navigable waters, under the Rivers and Harbors Act. These may include oil and gas drilling and production rigs (low probability in critical habitat); jetties and breakwaters (very low probability in critical habitat). Under the Clean Water Act, the Corps authorizes discharges of dredged and fill materials, landfills, and bulkheads (very low probability in critical habitat). The Corps’ Civil Works Program also constructs harbors, installs navigational improvements, and dredges ship channels (very low probability in critical habitat).

*NMFS:* Approves and implements fishery management plans and amendments for Federal fisheries in the EEZ; issues fishing and fish processing permits for vessels participating in the commercial fisheries in the EEZ (certain to occur in critical habitat).

*Environmental Protection Agency (EPA):* Approves discharges under the Clean Water Act’s NPDES program, which applies to activities such as fish waste discharge from processing vessels (certain to occur in critical habitat) and discharges of mud, cuttings, and production waters from oil and gas drilling rigs (low probability in critical habitat).

*Minerals Management Service (MMS):* Conducts Outer Continental Shelf (OCS) lease sales in the Gulf of Alaska and Bering Sea (low probability in critical habitat – no current plans for new lease sales); authorizes pre-lease sale activities on the OCS, e.g., seismic geophysical exploration (low probability in critical habitat).

*U.S. Coast Guard (USCG):* Approves oil spill response plans, under authority of the Oil Pollution Act of 1990 (certain to occur in critical habitat); responds to oil spills at sea (low probability in critical habitat).

*U.S. Department of Defense (DoD):* Conducts at-sea training exercises, such as ‘Northern Edge’, an annual joint training exercise designed to practice operations and enhance interoperability among the services (certain to occur in critical habitat within the Gulf of Alaska (GOA));

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<sup>3</sup> For purposes of the RIR, an analytical time frame of ten years has been assumed. This interval, widely employed in the policy analysis arena, allows sufficient scope over which longer-cycle trends may be observed (e.g., progress towards population recovery for the northern right whale), yet is short enough to allow “reasonable” projections of changes in “use patterns” in an area, as well as exogenous factors (e.g., world supply and demand for petroleum, U.S. inflation rate trends) that may be influential.

Conducts SURTASS Low Frequency Sonar program (low probability in critical habitat).

It is not possible to predict with certainty the list of future activities that agencies might be called upon to evaluate and authorize, and thus which might require consultation to evaluate the potential effects on critical habitat. This will depend, in part, on the specific actions for which authorization is sought, when, by whom, and, where in relation to critical habitat it is sought. All of these factors may, in turn, be influenced by macroeconomic considerations exogenous to the regions of the North Pacific Ocean in which the actions are proposed (e.g., global demand for oil and gas, interest rates and financing availability, domestic and international demand for seafood and affiliated products, rationalization of U.S. fishing sectors, especially those operating in the Bering Sea/Aleutian Islands (BSAI) management area and the GOA management area).<sup>4</sup>

Notwithstanding these limitations on predicting the number of future actions that might result in one or another level of consultation, the following sections examine the possible implications of critical habitat designation for those “authorized activities and authorizing agencies” (enumerated above) with more than a “low probability” of occurrence.

### **Critical Habitat Designation Recommendations, Requirements, and Costs**

The primary constituent elements (PCEs) identified for critical habitat designation for the northern right whale in the North Pacific Ocean are large copepod zooplankton in areas in which northern right whales are known or believed to feed. The species of copepods upon which right whales feed include *Calanus marshallae*, *Neocalanus cristatus*, and *N. plumchris*. In addition, *Thysanoëssa raschii* is a copepod whose very large size, high lipid content, and occurrence in the region likely make it an important prey item for right whales (J. Napp, pers. comm.) The PCEs are essential for the conservation of the population. For additional detail, refer to the preamble to the proposed rule.

#### *Oil and Gas Exploration and production*

Any assessment of potential impacts to critical habitat, as well as any economic (or other) costs and operational restrictions, which may be imposed to avoid, mitigate, etc., such impacts attributable to a discharge of oil, gas, or derivatives, would be dependent upon the scale and duration of the specific discharge event. For example, NMFS might *recommend* all drilling production waters be re-injected into the well as a provision of an MMS area-wide lease program in order to avoid adverse impacts on copepods within critical habitat. NMFS may be less likely to make such a recommendation for a single exploratory well within or adjacent to critical habitat,

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<sup>4</sup> Some have suggested that the mere act of designating specific boundaries for right whale critical habitat results in potential imposition of costs should anyone decide to alter planned behavior upon being informed of this designation. However, because any such modification of future behavior would be an internal decision, voluntarily undertaken, rather than required (e.g., during a project consultation), the occurrence, frequency, size, and nature of such costs can never be empirically measured, nor even confidently verified to have actually been incurred.

because of differences in scope; an exploratory drilling operation would likely have smaller quantities of materials discharged and no chronic effects, while a production mode would present several point-source discharges with both chronic and acute impacts *potentially* capable of harming the PCEs to the point of adverse modification.

Similarly, NMFS might *recommend* restrictions on the application of large volumes of oil dispersants used for spill response at specific times of the year when copepods are most sensitive or vulnerable to the effects of hydrocarbons and dispersant compounds. Again, duration, location, scale, and severity of the associated event will dictate the nature (e.g., compensation, mitigation, technology requirements) and cost of such management actions (if any).

Based upon the best available information, it appears that the probability of oil or gas exploration activities within (or immediately adjacent to) proposed right whale critical habitat is very low, certainly within the timeframe of this assessment. Likewise, there are no commercial production facilities in operation, currently under development, nor ‘permitted’ for future development within these critical habitat areas. However, during the preparation of this proposed rule NMFS became aware that the oil and gas industry has expressed current interest in exploring and developing oil and gas resources in the North Aleutian Basin OCS Planning Area. NMFS also understands that the State of Alaska announced support for this activity. NMFS lacks specific information regarding this potential exploration and development activity and was unable to gather information in the time available to prepare this proposed rule. Therefore, NMFS specifically requests comment on the type of exploration and development activities under consideration and the likelihood for such activities to occur, a description of the areas in the North Aleutian Basin that may be affected by any such activities, the extent to which the activities may affect the proposed critical habitat, and any other issues that may be relevant to the analysis of impacts and the exclusion process under section 4(b)(2) of the ESA. Prior to the issuance of any final rule, NMFS will attempt to gather information on this topic. Any information NMFS acquires and public comments received on these issues will be considered in analyzing the impacts of the designation of critical habitat and in the section 4(b)(2) exclusion process.

Unless contrary information emerges suggesting exploration and development are imminent, there is no expectation that federal actions in the oil and gas sector will have the potential to “destroy or adversely modify” critical habitat as proposed under this action within the analytical time horizon.

### *Commercial Fisheries*

Arguably, the single largest scale anthropogenic use of the GOA and eastern Bering Sea is made by the U.S. commercial fishing sectors. These operations exploit a wide variety of finfish, shellfish, and other living marine resources in the oceanic areas adjacent to the proposed critical habitat. Some relatively small fraction of this fishing activity has

historically occurred within and immediately adjacent to the proposed critical habitat boundaries. Furthermore, fishery management rules do not (and likely would not in the future) restrict a fishing vessel from operating in or adjacent to the areas proposed for designation. Unlike the situation that exists with respect to commercial fisheries and the endangered Steller sea lion in which fishing vessels actively “target” fish species that are a primary food source for the Steller sea lion and thus have been restricted in their use of areas of critical habitat for this listed species, no such interaction is believed to exist between commercial fishing operations and the northern right whale’s prey. It then follows that no fishing or related activity (e.g., at-sea processing, transiting) would be expected to be restricted or otherwise altered as a result of critical habitat designation in the two areas being proposed.

The fisheries of the North Pacific Ocean are valued in the “billions” of dollars annually, and provide a vast array of outputs, from the very highest quality fresh and fresh-frozen products (e.g., king crab legs and sections, wild Chinook, sockeye, and coho salmon, Pacific halibut, sablefish); high quality seafood “commodities” (e.g., pollock surimi, pollock and Pacific cod fillets and block); specialty items (e.g., Pacific herring-roe, sea urchins, live rockfish) to important industrial and animal feed products (e.g., fish oils, white and brown fishmeal).

Many of these fishery products are delivered to U.S. markets, providing direct benefits to American consumers in the form of an extraordinary variety of wholesome, reasonably priced, and consistently available high grade dietary protein. In addition, virtually all these U.S. products are traded in the world seafood (and affiliated products) marketplace. While the United States remains a net importer of seafood, shipments from fisheries off Alaska provide, by far, the largest share of U.S. seafood and fishery product exports, and contribute positively to the nation’s balance of trade. For a detailed description of the commercial groundfish fisheries in the EEZ off Alaska, see the Alaska Groundfish Fisheries Final Programmatic Supplemental Environmental Impact Statement (PSEIS) (NMFS 2004). Crab, Pacific herring, and salmon fisheries are managed by the State of Alaska. The Pacific halibut resource is managed under a bilateral treaty between the United States and Canada, and the U.S. fisheries for halibut, by the NMFS in consultation with North Pacific Fishery Management Council (NPFMC).

The commercial fishing sectors of the North Pacific and BSAI utilize an assortment of vessel sizes, configurations, and capabilities in the prosecution of their trade. Floating factory ships up to 600 feet in length over all (LOA), catcher/processors from under 100 feet LOA to over 300 feet LOA, and catcher vessels ranging from small skiffs (< 20’) to seaworthy ships, well over 180 LOA, comprise the physical capacity employed to extract the target resource.

Many different gear-types are employed in the commercial fisheries off Alaska. These include, but are not limited to, single pots (groundfish and crab), longlines (pot strings

and hook-‘n’-line), trawls (pelagic and non-pelagic), seines (purse seines, beach seines), gillnets (salmon and herring), troll gear (power and hand), dingle bar gear, jig gear, dredges, and diving gear.

Capital investment in vessel and gear in these fisheries is equally diverse, and although not well documented, certainly ranges from the “hundreds” of dollars per operation, to the “tens of millions” of dollars. Some operators are very small-scale, single fishery, local “mom and pop” style businesses; others are highly diversified participants in many different fisheries; and some are substantially diversified beyond fishing, functioning as subsidiaries of vertically and horizontally integrated national, international, and multinational corporate structures.

Annual gross revenues accruing to the participants in these fisheries, again, range from a few hundred dollars, to many millions of dollars. Data on operating costs, debt service, other fixed and variable costs, capital assets, affiliations, and ownership linkages are not available to NMFS, making “net revenue” by entity impossible to evaluate.

While aggregate estimates of catch and value are systematically reported by the State of Alaska, the NPFMC and NMFS, specific gross revenue data are confidential, and may not be reported, except in aggregations of four or more independent operations (for State of Alaska data), or three or more independent operations (under Federal law). Categorical gross revenues and landing data are available for many of these fisheries, in the annual Economic SAFE document, available from the Alaska Fisheries Science Center, NMFS, Seattle, Washington. (NMFS 2005-B). State managed fisheries’ economic summary data may be obtained from the Alaska Commercial Fisheries Entry Commission, Juneau, Alaska.

It is anticipated that NMFS Sustainable Fisheries Division will consult with NMFS Protected Resources Division on Federal actions that potentially “may affect” critical habitat for the northern right whale, over the period under evaluation here. Those actions include consultations on both the BSAI and GOA groundfish fisheries and crab fisheries at the program level. NMFS may need to conduct consultations for the Bering Sea Essential Fish Habitat actions, GOA groundfish rationalization program, and GOA rockfish demonstration project. Steller sea lion protection measures may also change in the future, necessitating consultation on resulting interactions with the proposed right whale critical habitat. NMFS may also consult with EPA on that agency’s role in authorizing seafood waste discharges from at-sea processing that “may affect” critical habitat for the right whale.

#### *Underway Training for the U.S. Navy*

The DoD oversees authorizing and conducting of military training exercises and other related activities in areas that may overlap with the proposed critical habitat designation for the right whale. These activities potentially “may affect” critical habitat (e.g., due to ships’ noise,

explosions, or accidental pollution events). As a result, except in cases bearing on National Security considerations, DoD would be expected to consult with NMFS prior to authorizing or undertaking military training or other operations in the designated areas.

### *Oil Spill Response Plans*

The USCG has the responsibility to review and approve oil spill response plans for a variety of agents and activities in areas that may overlap the proposed critical habitat designation area for right whales. Some of the activities for which oil spill response planning is required potentially “may affect” critical habitat, thus making it necessary for the USCG to consult on these response plans with NMFS.

### **Estimated Costs of Potential Section 7 Consultations**

For purposes of the following discussion, it is assumed that there are, effectively, three distinct “levels” of consultation that may take place between an action agency and NMFS that will result from designation of critical habitat for the northern right whale in the North Pacific Ocean. They increase in technical rigor, procedural complexity, time, and cost from ‘pre-consultation’, to ‘informal consultation,’ to ‘formal consultation.’ Furthermore, because of the uncertain nature of the projected numbers and levels of inter-agency consultations that may occur over, say, a ten-year analytical period following critical habitat designation, and the factual complexity and differing objectives and obligations of the agencies that may be party to this process, it has proven infeasible to confidently disentangle agencies’ costs that are *exclusively* attributable to critical habitat designation (incremental to designation) from those that may more appropriately be characterized as co-extensive with listing provisions. Therefore, unlike the balance of the benefit/cost analysis (presented above) in which impacts accruing from each of these sources were disentangled and isolated, the hypothesized ten-year “agency consultation cost” totals reflect *all* consultation costs related to northern right whale issues in the North Pacific.

There is, at present, very little empirical information concerning the attributable government agency costs of ESA individual consultation. Inquiries were made within the agency, first within the Alaska Region, then more broadly across NOAA. Some “qualitative” guidance was offered by various agency personnel. For example, NMFS Alaska Region Protected Resources Division staff suggested that, in their experience, the cost of a ‘pre-consultation’ is generally low, involving limited staff time and minimal analysis. When one moves to the ‘informal consultation’ level, costs typically rise. More members of the staff, and more staff time and effort must be invested. Likewise, the complexity of the consultation increases, often involving *recommendations* for changes in the proposed action, made through negotiations between the action agency and the consulting agency. Formal consultations often result in substantially greater costs of staff time and other resources, imposed on both agencies. The associated costs of ‘formal consultation’ can represent a substantial share of the value of the proposed action itself. (Per. comm., Shane Capron. NMFS. August 2005).



The only other identified source of consultation cost information, consistent with the nature of the present right whale critical habitat designation proposed action, comes from a document prepared in support of critical habitat designation for the Gulf sturgeon (Industrial Economics, Inc. 2003). That economic analysis of consultation costs was reportedly developed by, among other things, utilizing an assessment of numerous cases, prepared for and by U.S. Fish and Wildlife Service (FWS) offices around the nation. According to this report, these files addressed consultations conducted for both listings and critical habitat designations, with costs estimated on the basis of a high, medium, and low scale of complexity (much as described by the NMFS Alaska Region above).

The Gulf sturgeon analysis attempted to monetize this range of consultation ‘classes’ by making a number of simplifying assumptions (some of which are more reasonable, and applicable to the right whale critical habitat designation, than are others. The interested reader is encouraged to consult the original report for more detail.) The authors employed an assumed wage rate to value staff labor costs for each type of consultation, etc.. The results were reasonably consistent with expectations, given the anecdotal information referenced earlier in this section. The consulting agency’s costs for an ‘informal consultation’ were projected to be on the order of \$1,000 to just over \$3,000. The action agency’s costs were somewhat higher, on the order of \$2,000 to perhaps \$9,600, while the costs born by third parties, including the applicant in cases in which such parties incur process costs, was reported to be in the range of \$1,200 to just under \$3,000. In the case of formal consultations, the authors report substantially higher costs. Consulting agency expenditures are reported in the range of \$6,000 per consultation; action agency costs are estimated at \$20,600 per formal consultation; and third party costs (if any) come in just over \$4,000 per consultation. These amounts presumably reflect the prevailing labor rate, transportation costs and distances, and support service costs that prevailed at the time and in the location of this study (i.e., 2002, Southeastern United States). These costs will be higher, in some instances substantially higher, in the Alaska context, as are reflected below in the right whale critical habitat designation per consultation cost model.

The reported “upper-bound” total ‘per consultation’ amounts do, according to the authors, reflect *co-extensive* costs. The authors acknowledge the need to separately identify costs uniquely attributable to critical habitat designation because the designation decision is a distinct decision independent of the listing decision. To the fullest extent practicable, these costs *should* be treated separately in order for society (through its decision-makers) to make informed judgments about the ‘net’ marginal welfare change (positive or negative) offered by the alternative critical habitat designation actions.

The Gulf sturgeon analysis explicitly recognizes the need to make this separate calculation and, in fact, supplements the *co-extensive* analysis with what the authors term “lower-bound” estimates of costs, which are interpreted as being uniquely attributable to ‘designation’. The authors acknowledge the potential superiority of the latter form of assessment, but also note the added data demands, cost, and complexity that accompany it.

In most instances, teasing out “jeopardy attributable” costs (and benefits) from “adverse modification attributable” costs (and benefits) can be quite difficult (e.g., time consuming and technically demanding, as well as data and information intensive). In the face of these challenges, the Gulf sturgeon study authors employed a “step-wise” approach, by first deriving the “upper-bound” *co-extensive* impact estimates, then extracting from that total those costs which data permitted them to uniquely assign to designation. In the present right whale critical habitat designation analysis, NMFS identifies, to the fullest extent data allow, the costs (and benefits) that are unique to the Critical Habitat Designation action being proposed.

As discussed below, based upon the best available information and analysis, the vast majority (*perhaps all*) of Section 7 direct costs associated with critical habitat designation for the right whale in the North Pacific will be borne by Federal agencies. NMFS is projecting that, although Federal actions “*may affect*” the proposed critical habitat, none of the actions for which consultation is anticipated over the next ten years would be *expected* to result in a finding of destruction or adverse modification of critical habitat. Thus, none of these Federal actions would be expected to require modifications that would impose additional public or private costs.

With specific reference to northern right whale critical habitat in the North Pacific, NMFS Alaska Region PR staff members predict that there *could* be, perhaps, 5 consultations on oil and gas development proposals, over a ten-year period (likely involving MMS as the action agency). Of these, the majority (3) are expected to be ‘formal’ consultation, with the balance (2) being ‘informal’. (Per.comm., Kaja Brix and Brad Smith, NMFS October 2005.) Furthermore, these sources suggest that all five oil and gas related consultations would be expected to involve “exploratory” activity (as distinct from “production” activity) in or adjacent to the proposed designation areas. Gas and oil exploration in the eastern Bering Sea<sup>5</sup> would principally entail use of seismic devices to identify and map potential hydrocarbon deposits for further, future exploration (e.g., drilling test wells) and possible longer term commercial development.

Seismic activity would, depending on timing, duration, and location, have the potential to adversely impact any right whales that may be within the area (i.e., a “taking” concern). All available scientific information suggests, however, that the potential for oil and gas seismic exploration to damage or adversely modify right whale critical habitat (i.e., the copepods that constitute the PCEs within this proposed right whale action), is exceedingly small. Therefore, while it is not currently feasible to disentangle the share of each of these 5 projected consultation as to its source (i.e., uniquely attributable to “jeopardy” versus “adverse modification” concerns), it is clear the latter must surely represent only a minuscule fraction of the co-extensive consultation costs (projected below) for oil and gas development actions.

During a ten-year time horizon, 2 consultations, each ‘formal,’ are expected with respect to EPA at-sea seafood processing waste discharge permits. Likewise, NMFS expects 1 ‘formal’ programmatic consultation with the USCG in connection with approval of oil spill response plans

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<sup>5</sup> There has been no interest expressed by the oil and gas industry in exploration or exploitation of the GOA.

under provisions of the Oil Pollution Act of 1990. The DoD will consult twice ‘formally’ and once ‘informally’ in connection with at-sea training exercises and associated activities over the ten years.

It is also expected that, over this time horizon, NMFS will undertake commercial fishery actions which will trigger consultation connected to right whale critical habitat concerns. In these instances, NMFS would serve as both the action and consulting agency. NMFS expects 11 consultations on fishery actions over the ten-year period, with 2 being ‘formal,’ 6 being ‘informal,’ and 3 involving ‘pre-consultation’ level interactions between the PR and SF Divisions of the agency. The critical habitat designation may also result in NMFS “reinitiating consultation” on existing actions, perhaps involving as many as 5 consultations over this period. (Per. comm. Kaja Brix, NMFS August 15, 2005)

As observed in connection with expected inter-agency consultations on oil and gas development, it is not possible to precisely attribute the consultation costs to “jeopardy” concerns, as distinct from those of “adverse modification.” It nonetheless appears that critical habitat concerns must certainly represent only a tiny fraction of the co-extensive consultation costs (enumerated below) for commercial fisheries, waste discharge, military training, and spill response planning actions, based upon the best scientific information concerning the size, distribution, abundance, and resilience of the copepod species.

In sum, based upon the preponderance of scientific and management information (and projecting over the ten-year analytical horizon), it does not appear *likely* that any activity with a Federal nexus would “destroy or adversely modify critical habitat” as proposed for the northern right whale in the North Pacific. Absent such a finding, NMFS would not expect to propose any reasonable and prudent alternative or other conditions or requirements to avoid “destruction or adverse modification” of critical habitat. It is only in this latter instance (i.e., a finding of “adverse modification”) that project modifications to avoid such impacts would be imposed on the action agency and applicant, possibly resulting in imposition of economic (and other) cost on the private sector.

Lacking any private sector adverse economic impacts associated with the findings emerging from these consultations, the costs associated with the proposed right whale critical habitat designation action will be limited to those incurred by the Federal agencies involved. As such, all the costs are effectively “internal” to the Federal government. Because Federal agency budgets are, for all practical purposes, “fixed” over any given budget cycle (e.g., FY), and therefore do not change at the margin, in response to small numbers of additional (or fewer) activities (e.g., ESA consultations expected to accompany right whale critical habitat designation in the North Pacific), it is doubtful that an estimate of “incremental agency consultation costs” would yield much useful information to decision-makers or the public when assessing the costs and benefits of designation. These consultations do, of course, represent an “opportunity cost” for the agencies incurring the expense of consultation, since the resources committed to consulting on right whale critical habitat are not available for use in some alternative agency task.

By adopting a number of simplifying assumptions, it is possible to monetize the agency consultation costs that might be regarded as attributable, in some part, to the proposed right whale critical habitat designation. For purposes of this exercise, it is assumed that the number of consultations over a ten-year period following designation of right whale critical habitat in the eastern Bering Sea and GOA is as described immediately above. Real labor rates are assumed to be constant over the ten-year period, at an average \$350.00 per staff day. Further, assume that the majority (14) of these right whale critical habitat consultations will be “informal;” a somewhat smaller number (10) will be “formal consultations,” and only very infrequently (3) will an action be limited to a “pre-consultation”.

NMFS staff advises that a “pre-consultation” requires one staff-day for each agency that is party to the conference (i.e., consulting and action agencies), but no other costs. They report that, on average, an “informal consultation” requires 4 staff-days for each agency and, in addition, non-labor costs accrue for data and information analyses, travel, meetings, documentation, etc. (say \$1,500 non-labor expenditures per informal consultation, for each agency). In the case of a “formal consultation,” as many as 135 staff-days (the full amount of time allowed under statute) may be required. Being significantly more complex, a formal consultation would be expected to impose proportionally greater non-labor expenses (assume \$50,625 per formal consultation for each agency).<sup>6</sup>

The following table reflects the derived dollar amounts when these assumptions are applied to the preferred alternative. Note that unlike the balance of the benefit/cost analysis presented in this RIR, the hypothetical ten-year agency totals reflect consultation costs related in some part to northern right whale critical habitat issue in the North Pacific, although not *exclusively* so. That is, for purposes of this section of the RIR *only*, the numerical estimates presented in the table represent the *co-extensive* costs of consulting on right whale management in the North Pacific Ocean in the presence of designated critical habitat. As such, the numbers likely *overstate* the true consultation costs directly attributable to the preferred alternative. Therefore, presentation of an equivalent “quantification” of consultation costs under the status quo, or ‘no action’ alternative, is meaningless. Perhaps the only identifiable distinction that could be presented is that associated with the five projected informal consultation “re-initiations.” The projected costs would be incurred to reinitiate consultations, made necessary uniquely because of the designation of critical habitat. But, even that is not certain because “jeopardy” considerations would undoubtedly represent some (unknown) portion of these expenditures, making the estimated total costs, arguably, *co-extensive*.

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<sup>6</sup> The derivation of this dollar amount employs the assumed “informal consultation” non-staff costs per agency (i.e., \$1,500), then multiplies that by the ratio of formal consultation staff days, to informal consultation staff days (i.e., 135:4) for an agency. This places the labor and non-labor expenditures for these two forms of consultation in like proportions.

**Projected Aggregate Agency Consultation Costs Ten Years post-Critical Habitat Designation**

| Consultation Type | Number | Percent | Labor Costs | Non-labor Costs | Total 10 Yr. Cost | Average Annual Cost |
|-------------------|--------|---------|-------------|-----------------|-------------------|---------------------|
| Formal            | 10     | 37%     | \$ 945,000  | \$1,012,500     | \$1,957,500       | \$ 195,750          |
| Informal          | 14     | 52%     | \$ 39,200   | \$ 42,000       | \$ 81,200         | \$ 8,120            |
| Pre-consultation  | 3      | 11%     | \$ 2,100    | \$ 0            | \$ 2,100          | \$ 210              |
| All Consultations | 27     | 100%    | \$ 986,300  | \$1,054,500     | \$2,040,800       | \$ 204,080          |

Costs are assumed to reflect “constant real dollars”, over the ten-year projection.

**Area Exclusions Based Upon Economic Impacts**

Section 4(b)(2) of the ESA provides that the Secretary may exclude an area from critical habitat designation if the benefits of exclusion outweigh the benefits of designation, but only if the exclusion would not result in the extinction of the species. The ‘balancing test’ provided for in section 4(b)(2) contemplates balancing benefits that are not directly comparable (e.g., the benefit to species conservation, balanced against the economic benefit of alternative uses of the area [i.e., *opportunity costs*], benefit to national security, or other relevant benefit). Section 4(b)(2) does not specify a method for this weighing process, however, agencies are frequently required to balance benefits of regulations against impacts. As previously noted, EO12866 established this requirement for Federal agencies seeking to promulgate regulation. Ideally, such a balancing would involve, first, translating the benefits and costs into a common metric. Executive branch guidance from the OMB suggests that benefits should first be monetized (i.e., converted into dollars), to the fullest extent that this can be meaningfully done. Benefits that cannot be monetized should be quantified (for example, numbers of sea birds saved). Where benefits can neither be monetized nor quantified, agencies are to fully describe the expected benefits in qualitative terms (OMB, 2003).

It is possible to monetize benefits of, for example, critical habitat designation for a threatened or endangered species by means of contingent value methodologies to obtain expressions of consumers’ WTP (OMB, 2003). However, NMFS is not aware of any such peer reviewed and published analysis for right whales, at the present time. Some research on this topic is underway in connection with critical habitat designation for the northern right whale in the Atlantic, but results are not expected for, perhaps, a year or more. In addition, ESA section 4(b)(2) requires analysis of other than economic impacts, that are equally difficult to monetize, such as benefits to national security of excluding areas from critical habitat.

Non-quantitative benefit/cost analyses are anticipated and, indeed, expressly provided for under E.O.12866, consistent with generally accepted economic theory. Non-quantitative benefit/cost analyses are commonplace in NMFS’ fishery management and regulatory processes, for example. Individual habitat areas can in this way be assessed using both their biological evaluation and net economic value, so that areas with relatively high conservation value, but lower net economic

value, might be considered to have a higher priority for designation. Areas with a low conservation value, but higher economic value, might have a higher priority for exclusion. While this approach can provide useful information to the decision-maker, there is no rigid formula through which this information translates into exclusion decisions. Every geographical area containing habitat eligible for designation is different, with a unique set of “relevant benefit and cost impacts” (i.e., biological, ecological, economic, social, cultural) that may be considered in the inclusion/exclusion process. Regardless of the analytical approach, section 4(b)(2) makes clear that what weight the agency gives various costs, impacts, and benefits, and whether the agency excludes areas from the designation, is *discretionary*.

NMFS may, therefore, exclude an area from the critical habitat designation when the “benefits of exclusion” outweigh the “benefits of inclusion,” unless the failure to designate the area as critical habitat will result in the extinction of the species. NMFS has identified two areas for designation that meet the definition of critical habitat for the northern right whale in the North Pacific Ocean. Based upon the best available scientific and commercial information, there are some benefits accruing to society as a result of including these designated areas. At the same time, the “benefits of exclusion” of any given area of the proposed critical habitat designation for the right whale have been shown to be quite small, approximating “zero” for the private sector of the U.S. economy. Attributable agency consultation expenditures account for an extremely small proportion of the Federal government’s annual budget, and even for those Federal agencies that will likely undertake additional consultations in connection with right whale critical habitat designation, the incremental costs are small (owing to the likelihood of there being multiple purpose, co-extensive aspects of projected consultation activities associated with this action). It is reasonable, then, to conclude that “the benefits of exclusion” of any of the areas proposed under the northern right whale critical habitat designation, do *not* exceed “the benefits of inclusion”. This follows logically from the fact that, to the extent that these costs are *co-extensive*, those costs would be incurred with or without the proposed critical habitat designation.

And, further, while unique attribution is infeasible, based upon the best scientific information concerning the size, distribution, abundance, and resilience of the copepod species, it appears that critical habitat concerns must certainly represent only a tiny fraction of the *co-extensive* consultation costs identified under this action. That notwithstanding, NMFS is soliciting comment on this proposed determination and may modify the proposed determination in response to comments submitted by the public and other agencies.

### **Net Benefit Conclusion**

While it has not been possible to provide quantitative estimates for all the projected benefits and costs that may be uniquely attributable to the proposed action to designate critical habitat in the North Pacific Ocean for the northern right whale, the agency believes that expected benefits outweigh expected costs. As required under the ESA, as well as E.O.12866, the foregoing RIR has sought to comprehensively identify (and, wherever practicable, quantify) benefits and costs attributable to critical habitat designation, not just those that can be readily monetized, or that

reflect market-based activities. The costs imposed as a result of this proposed designation have been shown to be small while some larger benefit accrues to society as a result of designation, including the educational value derived from identification of designation of the critical habitat areas within which the PCEs are found. When viewed in this context, the agency believes that the proposed right whale critical habitat designation action can be expected to result in a net benefit to the nation.

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## **A Regulatory Flexibility Act Analysis of Right Whale Critical Habitat Designation**

The Regulatory Flexibility Act (RFA), first enacted in 1980, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: (1) to increase agency awareness and understanding of the impact of their regulations on small business, (2) to require that agencies communicate and explain their findings to the public, and (3) to encourage agencies to use flexibility and to provide regulatory relief to small entities. The RFA emphasizes predicting impacts on small entities as a group, distinct from other entities, and on the consideration of alternatives that may minimize the impacts while still achieving the stated objective of the action.

On March 29, 1996, President Clinton signed the Small Business Regulatory Enforcement Fairness Act. Among other things, the new law amended the RFA to allow judicial review of an agency's compliance with the RFA. The 1996 amendments also updated the requirements for a final regulatory flexibility analysis, including a description of the steps an agency must take to minimize the significant economic impact on small entities. Finally, the 1996 amendments expanded the authority of the Chief Counsel for Advocacy of the Small Business Administration (SBA) to file *amicus* briefs in court proceedings involving an agency's violation of the RFA.

In determining the scope, or 'universe', of the entities to be considered in an Initial Regulatory Flexibility Analysis (IRFA), NMFS generally includes only those entities, both large and small, that can reasonably be expected to be directly regulated by the proposed action. If the effects of the rule fall primarily on a distinct segment, or portion thereof, of the industry (e.g., user group, gear type, geographic area), that segment would be considered the universe for the purpose of this analysis. NMFS interprets the intent of the RFA to address negative economic impacts, not beneficial impacts, and thus such a focus exists in analyses that are designed to address RFA compliance.

Data on cost structure, affiliation, and operational procedures and strategies in the sectors potentially subject to the proposed regulatory action are insufficient, at present, to permit preparation of a "factual basis" upon which to certify that the preferred alternative does not have the potential to result in "significant adverse impacts on a substantial number of small entities" (as those terms are defined under RFA). Because, based on all available information, it is not possible to 'certify' this outcome, should the proposed action be adopted, a formal IRFA, focusing on the complete range of available alternatives (including the designated "preferred" alternative), has been prepared and is included in this package for Secretarial review.

## **The Contents of an IRFA<sup>7</sup>**

Under 5 U.S.C., Section 603(b) and (c) of the RFA, each IRFA is required to contain:

- A description of the reasons why action by the agency is being considered;
- A succinct statement of the objectives of, and legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply;
- A description of the projected reporting, recordkeeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap or conflict with the proposed rule;
- A description of any significant alternatives to the proposed rule which accomplish the stated objectives (*of the proposed action*), consistent with applicable statutes, and which would minimize any significant economic impact of the proposed rule on small entities.

Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:

1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
3. The use of performance rather than design standards; and
4. An exemption from coverage of the rule, or any part thereof, for such small entities.

## **The definition of a small entity**

The RFA recognizes and defines three kinds of small entities: (1) small businesses, (2) small non-profit organizations, and (3) and small government jurisdictions.

Small businesses. Section 601(3) of the RFA defines a ‘small business’ as having the same meaning as ‘small business concern,’ which is defined under Section 3 of the Small Business Act. ‘Small business’ or ‘small business concern’ includes any firm that is independently owned and operated and which is not dominant in its field of operation. The SBA has further defined a

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<sup>7</sup> For a detailed treatment of the requirements of economic analyses in support of RIR and RFAA requirements, see, “Conducting Economic Impact Analyses,” Lewis E. Queirolo, Ph.D. NMFS Alaska Region, Juneau, Alaska. July 29, 2005.

“small business concern” as one “organized for profit, with a place of business located in the United States, and which operates primarily within the United States or which makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor. A (small) business concern may be in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that where the firm is a joint venture there can be no more than 49 percent participation by foreign business entities in the joint venture.”

The SBA has established size criteria for all major industry sectors in the United States, and publishes those on their website. For example, a business involved in fish harvesting is a small business if it is independently owned and operated and not dominant in its field of operation (including its affiliates) and if it has combined annual receipts not in excess of \$3.5 million for all its affiliated operations worldwide. Similarly, SBA defines a seafood processor as a small business if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in both the harvesting and processing of seafood products is a small business if it meets the \$3.5 million criterion for fish harvesting operations. A wholesale business servicing the fishing industry is a small business if it employs 100 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide.

Another SBA industrial sector size criterion which may be pertinent to this analysis is that of the oil and gas extraction sector. The table below includes the categories of firms in the oil and gas extraction sector, as defined by SBA, as well as the specific criterion to be used, for RFAA purposes.

| <b>Small Business Size Standards matched to North American Industry Classification System<br/>Effective June 21, 2004</b> |  |                     |                    |
|---|--|---------------------|--------------------|
| <b>Subsector 211 - Oil and Gas Extraction</b>   |  | <b>(\$ million)</b> | <b>(employees)</b> |
| <b>211111</b>   | Crude Petroleum and Natural Gas Extraction                 |                     | 500                |
| <b>211112</b>   | Natural Gas Liquid Extraction                              |                     | 500                |
| <b>Subsector 213 - Support Activities for Mining</b>  |  |                     |                    |
| <b>213111</b>   | Drilling Oil and Gas Wells                                 |                     | 500                |
| <b>213112</b>   | Support Activities for Oil and Gas Operations              | \$6.0               |                    |
| <b>213113</b>   | Support Activities for Coal Mining                         | \$6.0               |                    |
| <b>213114</b>   | Support Activities for Metal Mining                        | \$6.0               |                    |
| <b>213115</b>   | Support Activities for Nonmetallic Minerals (except Fuels) | \$6.0               |                    |

As indicated, an oil and gas extraction business, or a firm that drills oil and gas wells, is a small business entity if it is independently owned and operated, not dominant in its field of operation, and employs 500 or fewer persons on a full-time, part-time, temporary, or other basis, at all its affiliated operations worldwide. A business involved in oil and gas extraction support activities (except drilling) is a small business if it meets the \$6.0 million annual gross receipts criterion, specified for such operations, when all its affiliated operations are included, worldwide.

The SBA has established “principles of affiliation” to determine whether a business concern is “independently owned and operated.” In general, business concerns are affiliates of each other when one concern controls or has the power to control the other, or a third party controls or has the power to control both. The SBA considers factors such as ownership, management, previous relationships with or ties to another concern, and contractual relationships, in determining whether affiliation exists. Individuals or firms that have identical or substantially identical business or economic interests, such as family members, persons with common investments, or firms that are economically dependent through contractual or other relationships, are treated as one party with such interests aggregated when measuring the size of the concern in question. The SBA counts the receipts or employees of the concern whose size is at issue and those of all its domestic and foreign affiliates, regardless of whether the affiliates are organized for profit, in determining the concern’s size. However, business concerns owned and controlled by Indian Tribes, Alaska Regional or Village Corporations organized pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601), Native Hawaiian Organizations, or Community Development Corporations authorized by 42 U.S.C. 9805 are not considered affiliates of such entities, or with other concerns owned by these entities solely because of their common ownership.

Affiliation may be based on stock ownership when (1) a person is an affiliate of a concern if the person owns or controls, or has the power to control 50 percent or more of its voting stock, or a block of stock which affords control because it is large compared to other outstanding blocks of stock; or (2) if two or more persons each owns, controls or has the power to control less than 50 percent of the voting stock of a concern, with minority holdings that are equal or approximately equal in size, but the aggregate of these minority holdings is large as compared with any other stock holding, each such person is presumed to be an affiliate of the concern.

Affiliation may be based on common management or joint venture arrangements. Affiliation arises where one or more officers, directors, or general partners control the board of directors and/or the management of another concern. Parties to a joint venture also may be affiliates. A contractor and subcontractor are treated as joint venturers if the ostensible subcontractor will perform primary and vital requirements of a contract or if the prime contractor is unusually reliant upon the ostensible subcontractor. All requirements of the contract are considered in reviewing such relationship, including contract management, technical responsibilities, and the percentage of subcontracted work.

Small organizations The RFA defines “small organizations” as any not-for-profit enterprise that is independently owned and operated and is not dominant in its field.

Small governmental jurisdictions The RFA defines small governmental jurisdictions as governments of cities, counties, towns, townships, villages, school districts, or special districts with populations of less than 50,000.

### **Reason for Considering the Proposed Action**

Under provisions of the ESA, when a species is listed as endangered, it is necessary for the listing

agency to evaluate, on the basis of the best available scientific information, whether it is possible and appropriate to designate critical habitat for that species. The northern right whale was “listed” in 1973. Following listing, NMFS determined that scientific knowledge concerning the elements and attributes of critical habitat for the North Pacific population were not sufficiently understood to permit critical habitat designation for this species. In 1992, the agency again evaluated the state of scientific knowledge concerning critical habitat designation for this population and came to the same conclusion as it reached in 1973. A subsequent finding by a Federal court (in 2005) remanded this decision to NMFS for further consideration, prompting the present action to designate critical habitat for the northern right whale in the North Pacific. For details, refer to the preamble of the associated proposed rule accompanying this analysis.

### **Objectives of, and legal basis for, the proposed action**

The objective of this action is to utilize the best available scientific information, including historical distribution of these animals, feeding and foraging behavior of the species, migratory and aggregation patterns within the EEZ off Alaska, and primary constituent elements (PCEs) to characterize and, as appropriate, designate critical habitat for this species in this region.

This action is proposed under the authority of section 4 of the ESA.

### **A description of any directly regulated small entities under the proposed action**

This section summarizes what is known about the potential adverse impacts of right whale critical habitat designation on directly regulated small entities (if any). Several industry sectors participate in activities that are physically co-extensive with the proposed critical habitat designation area; and certainly some of these have members that would qualify as “small businesses” within the RFAA meaning of that term. There do not appear to be any entities that are directly regulated by the proposed action that would qualify as either “small nonprofit” entities, nor “small government jurisdictions.”

#### *Oil and Gas Exploration, Development, and Production*

Based upon the PCEs identified for the northern right whale in the North Pacific Ocean, it appears that the only directly regulated entities that *may* potentially be adversely impacted by the proposed designation would be businesses that, at some undefined future time, wish to undertake oil and gas exploration, development, or production within the boundaries of right whale designated critical habitat. This is the only category of regulated entities for which one could reasonably conclude a possibility exists to impact the PCEs to the degree that the action would “adversely modify” that habitat. To reach such a finding would require the activity occur in a manner that would cause harm to these plankton species to such an extent that they could not support the caloric needs of the right whales. NMFS considers this level of harm to be unlikely, but nonetheless *potentially* associated with oil and gas exploration and production features, including discharge of drilling mud, well bore cuttings, or production waters carrying

hydrocarbons. Should, after consultation on a proposed project, adverse modification be found, the action agency would impose measures to avoid this condition, such as changes in the timing or technology of the work.

There is, at this time, some disagreement as to whether or not even large marine discharges (or oil spills) have a significant potential to impact these PCEs in a manner sufficient to adversely modify critical habitat. Nonetheless, to err on the precautionary side, for purposes of this IRFA it is assumed that (relatively) large discharges, as *may* accompany oil and gas exploration and production, could *potentially* destroy or adverse modify the PCEs identified with right whale critical habitat.

At present, there is no active exploration or production of oil or gas going on within the boundaries of the proposed critical habitat area, although critical habitat overlies 3 OCS planning areas: St. George Basin, Kodiak, and North Aleutian Basin. Based upon information from the Department of Interior, MMS Alaska Region website, the table below lists *all* oil and gas lease sales in the OCS management areas off Alaska. As an examination of the data in this table reveals, both of the MMS areas that overlap proposed right whale critical habitat in the Bering Sea have had historical lease sales activity (highlighted). Kodiak planning area has not.

### OCS Oil and Gas Lease Sale Summary for Areas Off Alaska

| <u>Plan Area</u>      | Sale      | Date         | Leases Issued | Blocks Offered | Acres Offered      | Acres Leased     | Sum of All Bids Received | Sum of High Bids     |
|-----------------------|-----------|--------------|---------------|----------------|--------------------|------------------|--------------------------|----------------------|
| Gulf of Alaska        | 39        | 4/76         | 76            | 189            | 1,008,499          | 409,058          | 571,871,587              | 559,836,587          |
| Cook Inlet            | CI        | 10/77        | 87            | 135            | 768,580            | 495,307          | 400,319,543              | 398,471,313          |
| Beaufort              | BF        | 12/79        | 24            | 46             | 173,423            | 85,776           | 491,728,138              | 488,691,138          |
| Gulf of Alaska        | 55        | 10/80        | 35            | 210            | 1,195,569          | 199,261          | 117,550,113              | 109,751,073          |
| Gulf of Alaska        | RS-1      | 6/81         | 1             | 175            | 996,300            | 5,693            | 3,091,738                | 170,496              |
| Cook Inlet            | 60        | 9/81         | 13            | 153            | 858,247            | 73,157           | 4,405,899                | 4,405,899            |
| Cook Inlet            | RS-2      | 8/82         | 0             | 140            | 785,090            | 0                | 0                        | 0                    |
| Beaufort              | 71        | 10/82        | 121           | 338            | 1,825,770          | 662,860          | 2,067,604,786            | 2,055,632,336        |
| Norton Sound          | 57        | 3/83         | 59            | 418            | 2,379,751          | 335,898          | 325,267,372              | 317,873,372          |
| <b>St. George</b>     | <b>70</b> | <b>4/83</b>  | <b>96</b>     | <b>479</b>     | <b>2,688,787</b>   | <b>540,917</b>   | <b>427,343,830</b>       | <b>426,458,830</b>   |
| Navarin               | 83        | 4/84         | 163           | 5,036          | 28,048,995         | 927,989          | 631,228,331              | 516,317,331          |
| Beaufort              | 87        | 8/84         | 227           | 1,419          | 7,773,447          | 1,207,714        | 871,131,327              | 866,860,327          |
| Beaufort              | 97        | 3/88         | 202           | 3,344          | 18,277,806         | 1,110,764        | 115,261,636              | 115,261,636          |
| Chukchi               | 109       | 5/88         | 350           | 4,694          | 25,631,122         | 1,976,912        | 478,177,948              | 478,032,631          |
| <b>North Aleutian</b> | <b>92</b> | <b>10/88</b> | <b>23</b>     | <b>990</b>     | <b>5,603,586</b>   | <b>121,757</b>   | <b>95,439,500</b>        | <b>95,439,500</b>    |
| Beaufort              | 124       | 6/91         | 57            | 3,417          | 18,556,976         | 277,004          | 16,807,025               | 16,807,025           |
| Chukchi               | 126       | 8/91         | 28            | 3,476          | 18,987,976         | 159,213          | 7,117,304                | 7,117,304            |
| Beaufort              | 144       | 9/96         | 29            | 1,364          | 7,282,795          | 100,025          | 14,572,057               | 14,429,363           |
| Cook Inlet            | 149       | 6/97         | 2             | 101            | 427,886            | 9,766            | 253,965                  | 253,965              |
| Beaufort              | 170       | 8/98         | 28            | 203            | 920,983            | 86,371           | 6,239,015                | 5,327,093            |
| US v. AK*             | n/a       | 6/00         | 2             | 9              | 10,149             | 10,149           | n/a                      | n/a                  |
| Beaufort              | 186       | 9/03         | 34            | 1806           | 9,459,743          | 181,810          | 10,175,949               | 8,903,538            |
| Cook Inlet            | 191       | 5/04         | 0             | 447            | 2,219,000          | 0                | 0                        | 0                    |
| Beaufort              | 195       | 3/05         | 117           | 1728           | 9,301,423          | 607,285          | 46,735,081               | 46,735,081           |
| <b>Total</b>          |           |              | <b>1774</b>   | <b>30,317</b>  | <b>165,181,903</b> | <b>9,584,686</b> | <b>6,692,146,195</b>     | <b>6,532,775,838</b> |

Source: MMS, Alaska Region. [<http://www.mms.gov/alaska/lease/hlease/leasetable.htm>]

The following map shows the OCS Oil and Gas Lease Sale Planning Areas, and is taken from the MMS website, referenced immediately above.



The following information was drawn from a report prepared by the Minerals Management Service, entitled “Undiscovered Oil and Gas Resources, Alaska Federal Offshore, December 2000 Update”. While somewhat “dated”, the report nonetheless demonstrates further the exceedingly *low* expectation of oil and gas exploration and development in any of the three areas overlapping portions of the proposed right whale critical habitat. Quoting from that report:

“Significant new data were not available for the other Alaska OCS planning areas (Navarin Basin, *North Aleutian Basin*, *St. George Basin* (emphasis added), Norton Basin, St. Matthew-Hall, Shumagin, and *Kodiak*). With scant industry interest and lacking new transportation infrastructure, these areas are unlikely candidates for development during the next leasing program” (i.e., the period extending through mid-2007).

The same report contains a number of tables (one of which appears below) that project the volume of economically extractable oil and gas, as well as the “marginal probability of economically recoverable hydrocarbons under the given conditions (MPhc)”.



**Year 2000 National Assessment Update**  
**RISKED, UNDISCOVERED, ECONOMICALLY RECOVERABLE OIL AND GAS**  
**(High Case: \$30/bbl, \$3.52/mcf)**

| AREA                     | OIL (BBO) |       |       | GAS (TCFG) |      |       | BOE (BBO) |       |       | MPhc |
|--------------------------|-----------|-------|-------|------------|------|-------|-----------|-------|-------|------|
|                          | F95       | MEAN  | F05   | F95        | MEAN | F05   | F95       | MEAN  | F05   |      |
| ALASKA OFFSHORE          | 5.16      | 10.13 | 17.36 | 0.62       | 8.68 | 30.29 | 5.21      | 11.68 | 21.69 | 1.00 |
| ARCTIC SUBREGION         | 4.55      | 9.40  | 16.62 | 0.21       | 5.71 | 21.55 | 4.31      | 10.41 | 20.19 | 1.00 |
| BERING SHELF SUBREGION   | 0.00      | 0.04  | 0.39  | 0.00       | 1.52 | 14.39 | 0.00      | 0.315 | 2.96  | 0.10 |
| PACIFIC MARGIN SUBREGION | 0.29      | 0.69  | 1.32  | 0.14       | 1.45 | 4.71  | 0.31      | 0.95  | 2.06  | 1.00 |

**ARCTIC SUBREGION**

|                |      |      |       |      |      |       |      |      |       |      |
|----------------|------|------|-------|------|------|-------|------|------|-------|------|
| CHUKCHI SHELF  | 1.42 | 6.11 | 10.96 | N/A  | N/A  | N/A   | 1.42 | 6.11 | 10.96 | 0.95 |
| BEAUFORT SHELF | 1.00 | 3.24 | 7.76  | 0.64 | 4.20 | 10.67 | 1.11 | 3.99 | 9.66  | 1.00 |
| HOPE BASIN     | 0.00 | 0.04 | 0.16  | 0.00 | 1.51 | 6.02  | 0.00 | 0.31 | 1.23  | 0.40 |

**BERING SHELF SUBREGION**

|                   |      |      |      |      |      |       |      |      |      |      |
|-------------------|------|------|------|------|------|-------|------|------|------|------|
| NAVARIN BASIN     | 0.00 | Negl | 0.00 | 0.00 | 0.08 | 0.00  | 0.00 | 0.02 | 0.00 | 0.01 |
| N. ALEUTIAN BASIN | 0.00 | 0.04 | 0.39 | 0.00 | 1.27 | 13.56 | 0.00 | 0.26 | 2.80 | 0.08 |
| ST. GEORGE BASIN  | 0.00 | Negl | 0.00 | 0.00 | 0.10 | 0.00  | 0.00 | 0.02 | 0.00 | 0.01 |
| NORTON BASIN      | 0.00 | Negl | 0.00 | 0.00 | 0.07 | 0.00  | 0.00 | 0.01 | 0.00 | 0.01 |
| ST. MATTHEW-HALL  | N/E  | N/E  | N/E  | N/E  | N/E  | N/E   | N/E  | N/E  | N/E  | N/E  |

**PACIFIC MARGIN SUBREGION**

|                 |      |      |      |      |      |      |      |      |      |      |
|-----------------|------|------|------|------|------|------|------|------|------|------|
| COOK INLET      | 0.21 | 0.62 | 1.16 | 0.46 | 1.00 | 1.69 | 0.29 | 0.79 | 1.46 | 0.99 |
| GULF OF ALASKA  | 0.00 | 0.06 | 0.40 | N/A  | N/A  | N/A  | 0.00 | 0.06 | 0.40 | 0.26 |
| SHUMAGIN-KODIAK | 0.00 | 0.01 | 0.12 | 0.00 | 0.45 | 3.85 | 0.00 | 0.09 | 0.00 | 0.06 |

ECONOMIC ASSUMPTIONS: 2000 base year, \$30 per barrel oil price, \$3.52 per thousand cubic feet (MCF) gas price, 0.66 gas value discount, flat real prices and costs, 3% inflation, 12% discount rate, 35% Federal tax rate; units of BBO, billions of barrels; TCFG, trillions of cubic feet; BOE, total oil and gas in billions of energy-equivalent barrels (5,620 cubic feet of gas=1 energy-equivalent barrel of oil). Oil resources include crude oil and natural gas liquids (NGL). Gas resources include nonassociated dry gas and associated solution gas. All provinces analyzed on a stand-alone basis. N/A refers to Not Available (lacking transportation infrastructure and/or market). N/E refers to Not Evaluated because of very low resource potential. Negl refers to negligible (less than significant figures listed). MPhc is marginal probability of economically recoverable hydrocarbons under the given conditions. Mean values for provinces may not sum to values shown for subregions and region because of rounding.

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An examination of this table, with respect to the OCS planning areas of the North Aleutian Basin, the St. Georges Basin, and Kodiak suggests an MPhc of 0.08 (eight percent), and 0.01 (one percent), respectively, for the Bering Sea areas, and an ambiguous 0.06 (six percent) for a combined “Shumagin-Kodiak” estimate. Indeed, these “three” areas rank at or near the bottom of the list of fifteen OCS areas identified and evaluated in this table. While clearly a myriad of factors enter into development decisions of this size and complexity, on a comparative basis, *ceteris paribus*, those OCS areas with an MPhc nearer to 1.0 (one-hundred percent “... marginal probability of economically recoverable hydrocarbons ...”) would be most likely to see activity, should favorable conditions for exploration and development emerge. The smaller the MPhc, *ceteris paribus*, the lower seemingly would be the likelihood of activity.

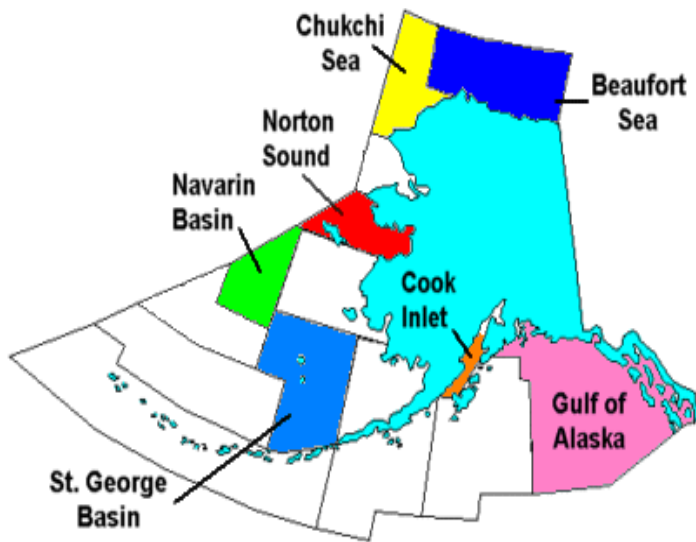
The same MMS website, cited above, contains a link to reviews of Alaska Region OCS Planned

Oil and Gas Lease Sale Activity. The information reported there states that, at least through May, 2007, there are no planned or scheduled oil or gas lease sales involving any area that overlaps critical habitat designation.<sup>8</sup> This suggests that the list of potentially directly regulated entities, referenced below, is likely complete, at least for the foreseeable future. (See: [<http://www.mms.gov/ld/AKsales.htm>])

The website presents the following map and table concerning *actual* exploration and development activity that historically has been conducted in any MMS area off Alaska, including any that are coincidental to the proposed critical habitat designation area.

***EXPLORATORY DRILLING BY SALE AREA***

| Area             | Wells Drilled |
|------------------|---------------|
| Beaufort Sea     | 31            |
| Chukchi Sea      | 4             |
| Norton Sound     | 6             |
| Navarin Basin    | 8             |
| St. George Basin | 10            |
| Cook Inlet       | 13            |
| Gulf of Alaska   | 12            |
|                  |               |
| <b>Total</b>     | <b>84</b>     |



The MMS graphic and accompanying table indicate that the *only* MMS oil and gas lease sales planning area that is both co-extensively situated with the proposed critical habitat designation, and has experienced any exploratory drilling activity, is St. George Basin.

Within the MMS' St. George Basin area, a total of 10 exploratory wells have been drilled. The most recent of these was drilled in March of 1985, with the first of the other nine commencing in September of 1984.

The ten lease holders responsible for this exploration activity include: SHELL Western E&P Inc. [2 wells]; ARCO Alaska Inc. [3]; EXXON Corp. [2]; Mobile Oil Corp. [1] (now merged with EXXON); GULF Oil Corp. [1]; and CHEVRON USA Inc. [1]. These data were last updated, according to the MMS website, 03/17/2005.

<sup>8</sup> However, as noted above, NMFS has requested information from the public regarding any potential oil and gas exploration and development activities under consideration by the industry and the likelihood for such activities to occur, a description of the areas in the North Aleutian Basin that may be affected by any such activities, the extent to which the activities may affect the proposed critical habitat, and any other issues that may be relevant to the analysis of impacts and the exclusion process under section 4(b)(2) of the ESA.

While empirical data on “numbers of employees” (i.e., SBA’s RFAA entity size criterion for this sector) are not readily available for each of these six (five with Mobile-EXXON’s merger) firms identified as having actually drilled exploratory wells on leases in or near the proposed right whale critical habitat in the 1980s, all are well known multinational operations within the oil and gas production sector. On that basis, it seems reasonable to conclude that each has more than 500 employees, when all affiliates, etc., worldwide, are combined, as specified by SBA. On this basis, it would not appear that there are any “small” entities in this sector that will be directly regulated by the proposed critical habitat designation action.

### *Commercial Fishing*

The probability that *any* commercial fishing activity that occurs (or, is expected to occur) in the proposed areas, has the potential of “destroying or adversely modifying” critical habitat, asymptotically approaches zero. It appears equally *improbable* that critical habitat designation, as it is being proposed under the subject action, will have a significant adverse economic impact on a substantial number of directly regulated small entities in the commercial fishing sector of the economy.

While this conclusion cannot be quantitatively demonstrated, (i.e., “certification” under RFA is not asserted) owing to the uncertainty concerning future actions and events, all of the available science, management, and fisheries information points to this result. Expressed another way, the best available information concerning the PCEs associated with right whale critical habitat designation supports the conclusion that commercial fisheries in the North Pacific Ocean have no capacity to adversely modify or destroy right whale critical habitat. It follows then that, while NMFS expects to consult on a number of fishery related proposed actions, annually, none of these consultations would be expected to result in a finding of “adverse modification,” and thus none would result in imposition of costs on commercial fishery participants (whether small or large entities) in association with critical habitat designation. (See the discussion in the RIR for details on the commercial fishing sectors).

### *Other Activities with a Federal Nexus*

The same logic, producing a similar conclusion concerning small entity impacts, would be expected to accompany the anticipated consultations on seafood processing waste discharges at-sea with EPA; DoD authorized military “underway training” activities; and USCG oil spill response plan approval. Specifically, these actions are unlikely to result in an “adverse modification” finding and, thus, no mandatory modifications would be imposed. It must follow then that no “costs” are imposed beyond those attributable to inter-agency (occasionally intra-agency) consultation. These costs, while representing “opportunity costs” for the agencies that participate in the consultation, impose no

attributable costs on small entities. (See the discussion in the RIR for a detailed treatment of activities that are federally authorize, fund, or otherwise carry out in or adjacent to the proposed critical habitat areas, which may lead to consultations).

### **Reporting, record keeping, and other compliance requirements**

The proposed action to designate critical habitat for the right whale in the North Pacific contains no new reporting or record keeping requirements.

### **An identification, to the extent practicable, of all relevant Federal rules that duplicate, overlap, or conflict with the proposed rule.**

NMFS has identified no such Federal rules.

### **A description and analysis of any significant alternatives to the proposed action [i.e., to the preferred alternative] that would accomplish the stated objective of the MFCMA and any other applicable statutes and that would minimize any significant economic impact on small entities.**

As noted above, NMFS initially considered the proposal for critical habitat designation proposed by the Center for Biological Diversity in its “Petition to Revise the Critical Habitat Designation for the Northern Right Whale (*Eubalaena Glacialis*) Under the Endangered Species Act” submitted to NMFS on October 4, 2000. The Center proposed designation of a large area in the “middle shelf and inner front regions of the southeast Bering Sea.” NMFS rejected this alternative as inconsistent with the Endangered Species Act’s definition of “critical habitat” because the best scientific information available did not support a finding that the physical or biological features essential for conservation of the right whale are found throughout the area identified in the petition.

After careful examination of the best available scientific data on right whale needs, dependency upon and interaction with their habitat, historic range, and current population dynamics, it is NMFS’ determination that *only* the “preferred alternative” has the potential to accomplish the stated objectives and legal mandates associated with critical habitat designation for this species. Furthermore, while designation is expected to result in a number of additional consultations, based upon the “*may affect*” criterion, none of the human activities with a Federal nexus that occur in, or adjacent to, these areas is *expected* to result in a finding of may “destroy or adversely modify” this critical habitat (i.e., the probability, while not zero, is believed to be very near zero).

Retention of the “no action” alternative is not a viable choice for several reasons. First,

no action would be contrary to the remand order of the Federal court in connection with Center for Biological Diversity v. Evans, Civ. No. 04-04496, N.D. Cal. June 14, 2005. Second, retention of the status quo would not be consistent with the objectives identified by the agency for this action (see the ‘Purpose and Need’ discussion in the RIR). Third, adoption of the no action alternative would be contrary to the agency’s obligations under the ESA. Finally, because the preferred alternative does not have the potential to have a significant economic impact on a substantial number of small entities, the status quo/no action alternative cannot result in a *smaller* burden, and could conceivably impose a greater burden, if selected (i.e., would not “minimize adverse impacts” as required under RFA).