

MARINE MAMMAL COMMISSION
4340 EAST-WEST HIGHWAY, ROOM 905
BETHESDA, MD 20814

8 March 2005

Mr. P. Michael Payne, Chief
Marine Mammal Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226

Dear Mr. Payne:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the National Marine Fisheries Service's proposed changes to the stock assessment guidelines and provides the following comments and recommendations.

Definition of "stock"

The Marine Mammal Protection Act establishes "stocks" or "population stocks" as the appropriate conservation/management unit for marine mammals. Marine mammal species often consist of multiple stocks within separate spatial arrangements that interbreed when mature. Such stocks, for the most part, are best identified based on a common geographic distribution and demographic separation from other similar units. Most scientists recognize these sub-specific groupings as essential to conservation efforts aimed at maintaining marine mammal populations as functioning parts of marine ecosystems, a primary goal of the Marine Mammal Protection Act.

Recent scientific advances—primarily in the field of genetics—are providing important insights into marine mammal population structure. In particular, these advances help identify separation among groups of the same species of animals that was not previously recognized. In addition, these advances indicate that stock structure is more complex than envisioned at the time Congress passed the Marine Mammal Protection Act.

The Service proposes to incorporate and apply the new information regarding stock structure by defining a stock as "a management unit that identifies a demographically isolated biological population," where animals are considered to be demographically isolated if "the population dynamics of the affected group is [sic] more a consequence of births and deaths within the group (internal dynamics) rather than immigration or emigration (external dynamics)."

The proposed changes use humpback whale stock structure as an example. In both the North Pacific and North Atlantic Oceans, humpback whales from reproductive populations disperse into multiple separate feeding aggregations. Individual whales exhibit strong fidelity to specific feeding aggregations, apparently based on maternal lineages. Because the aggregations are discrete, the decline or loss of one aggregation (e.g., southeast Alaska or Bay of Fundy/Gulf of Maine) likely would not be replenished by immigration of whales from another aggregation (e.g., the Aleutian

Islands or Greenland). In essence, the status of each aggregation is demographically independent of, or isolated from, the others. For that reason, the Service has proposed changes to the definition of stock that would recognize these independent feeding aggregations as separate stocks.

Taking this further, the Service currently recognizes three stocks of humpback whales in the North Pacific (eastern, central, and western) and one in U.S. waters of the North Atlantic. Scientists have suggested that the central North Pacific stock may include three distinct feeding aggregations (Southeast Alaska, Prince William Sound, and around Kodiak Island) that could be considered for treatment as separate stocks under the revised definition. Additional aggregations also may exist. These seem to the Commission to be good examples where groups of animals are large enough to represent functional elements of ecosystems and yet of instances discrete enough to be considered demographically isolated populations.

The Commission supports the revised definition of stock proposed by the Service. The revisions arguably are in keeping with the definition of stock in the Marine Mammal Protection Act and the Act's goals; however, we believe that a more rigorous analysis of how the proposed distinctions tie into the applicable statutory definition is needed. In making this change, the Service should recognize that it will require substantial adjustments to management efforts and careful application to other species where the degree of demographic isolation may not be so evident. For that reason, the Commission believes that the Service should develop criteria for applying the modified guidelines to determine when a population is demographically isolated to an extent that it is a discrete group that warrants recognition as a separate stock. The Commission would welcome the opportunity to assist in the development of these criteria.

The Commission also suggests that the Service carefully consider the relationship of the term "population stock" under the Marine Mammal Protection Act ("a group of marine mammals of the same species or smaller taxa in a common spatial arrangement, that interbreed when mature") and the term "species" under the Endangered Species Act ("any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature"). To the maximum extent practical, we believe the agencies implementing these statutes should adopt compatible definitions of these terms or clearly explain why they are treating them differently. The changes proposed to the definition of stock in the stock assessment guidelines could lead to further distinction of the applicable management unit under the two Acts, exacerbating differences in their interpretation and implementation. In view of the considerable confusion that currently exists with regard to the application of these terms, we would welcome an opportunity to discuss them with you and our Fish and Wildlife Service colleagues.

Potential biological removal (PBR) elements

The Commission appreciates the Service's efforts to address the inconsistency apparent in the setting of a PBR level for a stock that is declining even in the absence of known human impacts. This situation could result from a natural decline, as well as from a decline that results from, but has not yet been attributed to, human activities. In either case, the allowance for removals, albeit limited, under the PBR framework may exceed the tolerance of the stock, particularly if the stock is designated as depleted or listed as threatened or endangered. In such cases, the best approach would be to set PBR at zero and disallow takes so that human impacts are not accelerating the rate of

decline. This approach seems consistent with the statutory definition of PBR, which uses one-half of the stock's maximal net productivity rate (R_{max}) as one of the multipliers. If a stock is known to be declining in the absence of human impacts, then R_{max} is negative (i.e., the theoretical default value should not be used). A negative R_{max} results in a negative PBR value that would indicate that no taking could be authorized.

As noted in the proposed changes to the guidelines, setting PBR at zero would not allow serious injuries or mortalities of threatened and endangered species incidental to commercial fishing. However, we do not agree with the suggestion that this would necessarily be inconsistent with the Congressional intent reflected in the legislative history of the 1994 amendments to the Marine Mammal Protection Act. Section 101(a)(5)(E) of the Act sets forth the requirements for authorizing the taking of endangered and threatened marine mammals incidental to commercial fishing operations. Among other things, the Service must determine that any authorized taking that results in incidental mortality and serious injury from commercial fisheries will have a negligible impact on the species or stock. The Service has established criteria for making negligible impact determinations based on whether take levels are greater than 10 percent of a stock's PBR.

Reporting PBR for declining stocks as "undefined" certainly draws attention to this problem, which is helpful. However, this designation does not necessarily resolve the problem. It is not clear how managers, who are responsible for determining if a stock is strategic and limiting incidental mortality, will interpret an undefined PBR or how such a classification would be useful in making determinations of negligible impact under section 101(a)(5)(E). We would be even more concerned if reporting a PBR as undefined were interpreted as removing any specific limits to incidental mortality. Although this interpretation seems unlikely, given the statutory constraints, a process is needed to ensure that the involved stock is not further disadvantaged by an incautious interpretation of undefined. For that reason, the Marine Mammal Commission recommends that the Service continue its deliberations on this problem involving declining stocks to identify management responses that will ensure that the stocks are not further disadvantaged by incidental mortality. We would be pleased to assist the Service in its efforts to address this problem.

Recovery factor (Fr)

The first paragraph of this section describes some exceptions to using the default value of Fr for stocks of unknown status, including stocks of unknown status that are known to be increasing and stocks that are not known to be decreasing that are taken primarily by aboriginal subsistence users with no recent increases in harvest levels. In these cases, the Service suggests that the recovery factor could be increased above its default value, thereby increasing the estimate of PBR and reducing the level of protection for the stocks.

In the first case, the fact that a stock is known to be increasing does not provide sufficient information to raise the recovery factor. Hypothetically, all stocks that have been reduced to the extent that their status is unknown should be increasing if the source of human-related serious injury and mortality has been effectively managed. Nonetheless, the tolerance of the population for additional mortality cannot be judged solely by the fact that it is increasing. That determination would be better based on a reliable estimate of the growth rate.

In the second case, the effect of raising the recovery factor for a stock of unknown status could be significant if the stock were experiencing an undetected decline. Here, too, the information available is not sufficient to judge the tolerance of a stock for additional mortalities and raising the recovery factor does not seem warranted until a stronger rationale—i.e., one based on scientific evidence—can be provided. For those reasons, the Marine Mammal Commission recommends that default recovery factors be used until such time as the Service has reviewed situations in which the recovery factor might be raised for stocks of unknown status and has developed evidence-based criteria that ensure that such stocks are not further disadvantaged.

Annual human-caused mortality and serious injury

The only proposed changes in this section pertain to the problems that arise when animals from two or more stocks are taken in the same area. The Commission concurs that when the available biological information allows killed animals to be identified as belonging to specific stocks, their deaths should be associated with those stocks. However, we are concerned about the proposed approach when dead animals cannot be attributed to a specific stock. The Service proposes that those mortalities be partitioned among the stocks according to the estimated stock abundances. This approach to be followed would work if the probability of a taking were independent of the stock of origin and exactly proportional to actual stock abundance. However, such is likely not the case, and the result could seriously disadvantage one or more of the more vulnerable stocks. First, abundances are not known precisely in most of these cases, and therefore the assignment of mortality based on estimates of abundance may include considerable error. Second, stocks that are less abundant but more vulnerable to human interactions (e.g., because of their geographical distribution or behavioral patterns) would be disadvantaged because their level of mortality would not be fully recognized and appropriately managed. Third, the significance of incorrectly attributing take to another stock would increase (become more serious) as the stock declined. For example, if humpback whales from the western Pacific stock were taken in the central Aleutians but their stock identity was unknown, the mortalities would be partitioned between the western and central Pacific stocks. The mortalities would be attributed primarily to the central Pacific stock because the central stock has a much larger population, and the western stock would be disadvantaged by the error. If additional takes from the western stock further decreased its abundance, a diminishing proportion of future takes would be correctly attributed to the stock, driving the population that much closer to extinction.

The PBR approach is largely aimed at management of risks to marine mammal stocks. If the proposed approach to allocating takes is followed, it could seriously increase the risk to more vulnerable stocks and reduce the risks to those with more tolerance for human interactions. For the above reasons, the Marine Mammal Commission recommends that the Service reconsider its options for attributing deaths to stocks and develop alternatives that do not pose disproportionately larger risks to small, vulnerable stocks.

Mortality rates

In previous letters regarding the zero mortality rate goal (ZMRG; dated 10 September 2003 and 1 June 2004), the Commission recommended that, for stocks with high PBR levels, mortality and serious injury should be reduced substantially below 10 percent of PBR before the ZMRG is considered to be met. In previous letters, we used the example of the eastern Pacific stock of

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northern fur seal, which currently has a PBR of approximately 12,500. Mortality and serious injury to 1,250 animals (10 percent of PBR) does not seem to be insignificant and approaching zero, particularly in this case when recent evidence indicates that the stock is declining. The Marine Mammal Commission reiterates its previous recommendation here.

Status of stocks

The Commission agrees with the last sentence in paragraph 2 that “In the complete absence of any information on sources of mortality, and without guidance from the Scientific Review Groups, the precautionary principle should be followed and the default stock status should be strategic until information is available to demonstrate otherwise.” The current default decision seems to be that stocks are not strategic until information is available, as suggested by the current draft assessments for stocks in the Pacific in which all stocks without population trend and mortality estimates were considered non-strategic, except for those stocks listed as endangered. The Marine Mammal Commission recommends that the Service heed the guidance provided here and take a more precautionary approach when designating status for stocks for which essential information is lacking.

Please contact me if you wish to discuss these comments and recommendations.

Sincerely,

A handwritten signature in black ink, appearing to read "David Cottingham". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

David Cottingham
Executive Director