



# MARINE MAMMAL COMMISSION

18 June 2012

Mr. Glenn Merrill, Assistant Regional Administrator  
Sustainable Fisheries Division, Alaska Region  
National Marine Fisheries Service  
P.O. Box 21668  
Juneau, AK 99802-1668  
Attn: Ellen Sebastian

Dear Mr. Merrill:

On 18 April 2012 the National Marine Fisheries Service requested comments on a proposed rule to implement Amendments 86 and 76 to the Fishery Management Plan for the Groundfish of the Bering Sea and Aleutian Islands Management Area and the Fishery Management Plan for the Groundfish of the Gulf of Alaska, respectively (77 Fed. Reg. 23326). The amendments and proposed rule modify the existing deployment system for observer coverage of the North Pacific Groundfish Observer Program to reduce the bias in catch and bycatch estimates while achieving a desired level of precision. The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the proposed rule and its objectives and offers the following recommendations and rationale.

## RECOMMENDATIONS

The Marine Mammal Commission recommends that the National Marine Fisheries Service—

- adopt the proposed rule to implement Amendments 86 and 76 to the Fishery Management Plan for the Groundfish of the Bering Sea and Aleutian Islands Management area and the Fishery Management Plan for Groundfish of the Gulf of Alaska, respectively;
- work with the North Pacific Fishery Management Council to further modify the observer program so that the Service controls the deployment of observers in both the partial and full coverage categories;
- develop and implement a method to estimate reliably the bias in estimates of protected species bycatch that would result from not observing the exempted vessels and gear types (i.e., those using jig gear or those less than 40 ft using pot or hook-and-line gear);
- develop an implementation plan for electronic monitoring on groundfish vessels, including (1) a means for assessing both those protected species that are brought on board and those that are not, and (2) a means for analyzing the effectiveness of the electronic monitoring at identifying the species, estimating the numbers, and characterizing the severity of injuries to protected species, whether they are or are not brought on board;
- establish coverage performance standards based on desired strata variances (CV's), rather than potentially inadequate, budget-driven, one-size-fits-all coverage prescriptions; and
- modify the proposed rule to include precision targets for estimates of protected species bycatch, which are no lower than a CV of 30 percent, or its equivalent.

## **RATIONALE**

The current groundfish observer program was implemented in 1989. Coverage levels are based on vessel length or processing volume, with a few exceptions. Groundfish vessels longer than 125 ft are required to have an observer onboard at all times when fishing, and vessels between 60 ft and 125 ft are required to carry observers at least 30 percent of the time while fishing. Vessels less than 60 ft and all vessels fishing for halibut are exempt from the program.

The primary goal of the observer program is to “provide accurate and precise catch, bycatch, and biological information for conservation and management of groundfish resources and the protection of marine mammals, seabirds, and protected species” (North Pacific Fisheries Management Council, National Marine Fisheries Service, and Alaska Fisheries Science Center 2011). Managers, scientists, and enforcement agents use observer data for assessing stock status, monitoring fishery quotas, monitoring bycatch, and assessing the fishery’s impact on living marine resources. Such information also is useful for characterizing the nature of interactions between fisheries and protected species and using that information to reduce bycatch of the latter. The extent to which observer programs provide reliable data depends, in part, on whether the deployment of observers on vessels and fishing trips (coverage) provides a statistically representative sampling of fishing effort that produces unbiased and acceptably precise estimates of catch and bycatch.

Observer programs can produce unbiased estimates of catch and bycatch with less than 100 percent coverage if they are based on representative catch and/or bycatch samples and/or some validated means of correcting sample biases. Obtaining such samples and developing such corrections is difficult because catch and bycatch are affected by vessel characteristics, where and how they fish, and the “observer effect”—i.e., fishermen altering their practices when carrying observers.

The need for observer coverage that produces unbiased and suitably precise catch and bycatch estimates has long been a goal of the program, as documented in an earlier report by MRAG Americas (2000). Catch and bycatch data almost certainly are biased because the program currently does not place observers on vessels less than 60 ft in length and vessels fishing for halibut. However, the magnitude and significance of the biases are not clear.

In addition, vessel owners/operators currently contract directly with observer providers and are able to choose when to take observers, and, to a certain extent, which observers to take. The current system creates potential conflicts of interest and leaves managers little opportunity to direct the distribution of coverage over time and area. As a result the coverage is not representative of the spatial and temporal distribution of fishing effort, which clearly can bias estimates of catch and bycatch. And, because the current approach imposes observer costs based on vessel size, it also creates an economic incentive to minimize participation through tactics such as modifying or building vessels to fit just under the 60-ft or 125-ft cutoffs—further, adding to the potential bias (North Pacific Fisheries Management Council, National Marine Fisheries Service, and Alaska Fisheries Science Center 2011).

The Commission supports the amendments and proposed rule, which are the latest of a series of attempts to improve the groundfish observer program and eliminate these and other

sources of bias. The improvements would stem from three fundamental changes to the observer program. First, the Service's proposed rule indicates that the new program would include all groundfish and halibut vessels and processors in the program (but see below for exceptions). Vessels would be placed in one of two categories—full or partial coverage—based on data needs for each program objective, rather than vessel size or processor volume. Second, under the proposed rule the Service would establish a new fee plan to pay observer costs that would be more equitable across the various sectors of the fishery. Third, under the rule the Service would control deployment of observers on vessels in the partial coverage category by contracting directly with observer providers. Vessels in the full-coverage category would retain control over which observer providers and observers they use.

The full coverage category would include all vessels and processors previously in the 100 percent coverage category and some vessels and processors that had previously been in the 30 percent coverage category. The partial coverage category would include all other vessels and processors including those currently unobserved—i.e., vessels less than 60 ft or fishing for halibut (but again, see below for exceptions). The Service would eliminate fixed coverage rates and, instead, assign observers to vessels undertaking fishing trips using randomized, stratified hierarchical statistical models with data updated annually. As stated in the rule: “The restructured Observer Program would require NMFS [the Service] to efficiently allocate observer effort towards multiple objectives, such as estimating catch, bycatch, and protected species interactions, within the budget generated by ex-vessel value-based fee proceeds.” For vessels in the partial coverage category, the new program would include a vessel and trip selection system designed to randomize observer deployment and minimize the chances that operators could avoid participation, while accommodating the logistical difficulties associated with deploying observers on small vessels.

The Marine Mammal Commission commends the Service and the Council for attempting to resolve the problem of biased catch and bycatch estimation in the groundfish fisheries. The Commission agrees with the Service that the proposed redesign of the North Pacific Groundfish Observer Program would be a substantial improvement. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service adopt the proposed rule to implement Amendments 86 and 76 to the Fishery Management Plan for the Groundfish of the Bering Sea and Aleutian Islands Management area and the Fishery Management Plan for Groundfish of the Gulf of Alaska, respectively, as identified in the other recommendations in this letter.

However, the proposed changes would not eliminate all sources of bias or uncertainty regarding the precision of protected species bycatch estimates. Having the Service contract directly with observer providers and control the deployment of observers in the partial coverage category of the fishery largely eliminates the potential conflict of interest between vessel owners/operators and observer providers. Nonetheless, this potential still exists in the full-coverage category because owners/operators would still select their observer providers and affect the selection of the particular observers whom they are assigned. To address this concern, the Marine Mammal Commission recommends that the National Marine Fisheries Service work with the North Pacific Fishery Management Council to further modify the observer program so that the Service controls the deployment of observers in both the partial and full coverage categories.

The motivation for redesigning the observer program came, in part, from an Inspector General's recommendation that the observer program achieve a random sampling of the portion of the groundfish fishery previously subject to 30-percent observer coverage (Inspector General's Office, U.S. Department of Commerce, 2004). Accordingly, the implementation plan for the proposed rule would include all groundfish and halibut vessels and processors in the full or partial observer coverage category. However, at least in its early years, the program would not assign observers to vessels using jig gear and catcher vessels less than 40 ft in length using pot or hook-and-line gear. The Service apparently has not made coverage of these vessels a priority because the placement of observers on small vessels can be difficult and/or because these vessels account for very little of the total groundfish catch. The Service's analysis of the proposed rule found that small vessels accounted for only 9.2 percent of the total groundfish catch. However, the analysis also found that these vessels accounted for 41 percent of the trips and the effect of not including those trips in the estimation of protected species bycatch is not clear. In any case, excluding certain sectors from coverage would not achieve fully the recommendation of the Inspector General to randomly sample the fishery. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service develop and implement a method to estimate reliably the bias in estimates of protected species bycatch that would result from not observing the exempted vessels and gear types (i.e., those using jig gear or those less than 40 ft using pot or hook-and-line gear).

The Commission understands that placing observers on small vessels is particularly challenging given space limitations and safety concerns. Such vessels may not have room to berth an observer or to stow their gear, and adding another person on deck could create unsafe working conditions. The proposed rule suggests that vessels in this size class might be observed in future years, but provides no details on how this might be accomplished. The rule suggests that electronic monitors could be deployed instead of observers on such vessels, but the Service does not yet have a clear plan for their deployment. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service develop an implementation plan for electronic monitoring on groundfish vessels, including (1) a means for assessing both those protected species that are brought on board and those that are not, and (2) a means for analyzing the effectiveness of the electronic monitoring at identifying the species, estimating the numbers, and characterizing the severity of injuries to protected species, whether they are or are not brought on board.

The current program aims to cover at least 30 percent of the vessels between 60 and 125 ft long. The proposed changes are intended to reduce substantially the bias in catch and bycatch estimates, but it is not clear what their effect would be on the precision of those estimates because, in effect, total observer coverage would be determined by the number of vessels and fees collected from the fishery. Initial analysis by the Council suggests that the fees would provide funding sufficient to cover at least 30 percent of the vessels in the partial coverage category. However, the proposed rule does not definitively state that 30 percent is the target for coverage, nor does it provide assurances that the program would be able to maintain coverage and performance standards in the face of substantial decreases in the size of the fishery or increases in the cost of deploying observers. In its analysis of the options for implementing the rule, the Service recommends the use of performance standards such as a specific coefficient of variance (CV) for the catch or bycatch estimate or a specific coverage rate. The analysis clearly demonstrates large variation in the relationship between coverage rate and catch/bycatch rate CVs. According to that analysis, specifying a CV of 0.2 as the performance standard for most sectors might require an average of 80

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percent coverage. In contrast, 30 percent coverage would be needed to achieve a CV of 0.3 in half of the sectors. It appears that the Service and Council have settled upon a minimum, least conservative coverage target that is achievable under the funding model but will not necessarily ensure adequate precision of catch and bycatch estimates across the fishery (National Marine Fisheries Service 2004a). In accordance with the recommendations of the Service's 2004 workshop on observer coverage levels (National Marine Fisheries Service 2004b), the Marine Mammal Commission recommends that the National Marine Fisheries Service establish coverage performance standards based on desired strata variances (CVs), rather than potentially inadequate, budget-driven, one-size-fits-all coverage prescriptions. Budgetary constraints may limit the Service's ability to meet its performance standards, but it should be mindful of those standards and seek ways to achieve them even when funding is limited.

The Service's analysis of the proposed rule describes the statistical approach and model that was used to examine the current allocation of observer effort (North Pacific Fisheries Management Council, National Marine Fisheries Service, and Alaska Fisheries Science Center 2011). However, the proposed plan does not indicate whether that approach or model will be used by the new program to allocate observer effort. The analysis document states that the number one objective of the observer program is to "provide accurate and precise catch, bycatch, PSC [prohibited species catch], and biological information for conservation and management of groundfish resources and the protection of marine mammals, seabirds, and protected species." However, the Service acknowledges that the efficiency of the observer program cannot be maximized simultaneously with respect to all of these objectives. The variance in different sampling strata can be used to maximize the precision of a catch estimate, for example, but there is no guarantee that it would produce acceptably precise estimates of other measures, such as the bycatch of protected species. Undoubtedly the Service will have to prioritize on a case-specific basis, but it would be helpful if the Service provided a publicly available description of the rationale used to make such decisions. Therefore, the Marine Mammal Commission recommends that the National Marine Fisheries Service modify the proposed rule to include precision targets for estimates of protected species bycatch, which are no lower than a CV of 30 percent, or its equivalent.

Startup funds will be necessary to make the transition to the new observer program. The Service has proposed to use federal funds for the purpose, but it has not described the specific source of those funds or alternative sources if they are needed. The proposed new program will provide a much improved basis for monitoring fishery catch and bycatch. Therefore, the Commission requests that the Service keep the Commission informed about the availability of funds for this program or the need for additional support. The Commission would be pleased to support the Service's transition to this new program however it can.

Please contact me if you have questions regarding the Commission's recommendations.

Sincerely,

A handwritten signature in blue ink that reads "Timothy J. Ragen". The signature is written in a cursive, flowing style.

Timothy J Ragen, Ph.D.  
Executive Director

## References

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MRAG Americas. 2000. Independent review of the North Pacific Groundfish Observer Program. Report prepared for the National Oceanic and Atmospheric Administration and the National Marine Fisheries Service, Alaska Fisheries Science Center, Seattle, WA by MRAG Americas, Inc., Tampa, FL, 134 pages.

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