Marine Mammal Commission
4340 East West Highway, Room 905
Bethesda, MD 20814

25 October 2002

The Honorable Donald L. Evans
Secretary of Commerce
Herbert C. Hoover Building
14th and Constitution Avenue, NW
Washington, DC 20230

Dear Secretary Evans:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the "Report of the Scientific Research Program under the International Dolphin Conservation Program Act," prepared by the National Marine Fisheries Service, and the comments of individual experts on issues pertinent to the question of whether chase and encirclement of dolphins to catch tuna in the eastern tropical Pacific are having a significant adverse impact on any depleted dolphin stock. The Commission offers the following comments in light of the guidance provided by the U.S. Court of Appeals for the Ninth Circuit in *Brower* v. *Evans*, which determined that the Marine Mammal Protection Act requires that you, as Secretary of Commerce, "affirmatively find whether or not there is a significant adverse impact before the dolphin-safe labeling standard can be relaxed."

Population trends — Three dolphin populations (northeastern offshore spotted dolphins, eastern spinner dolphins, and coastal spotted dolphins) that occur in the eastern tropical Pacific have been significantly reduced as a result of mortality associated with tuna fishing that involves chase and encirclement of dolphins to capture tuna. Changes in fishing practices have resulted in a marked reduction of observed dolphin mortality in tuna nets, yet the depleted dolphin populations appear not to have exhibited the recovery expected in light of these reduced mortality rates. Generally accepted population theory on density dependence suggests that, at their reduced abundance levels, these populations should exhibit a growth rate approaching four percent per year. The information provided in the scientific report (e.g., Figure 2) indicates clearly that northeastern offshore spotted dolphins and eastern spinner dolphins have failed to recover as one would expect. Because of inadequate information concerning the historic population size of the coastal spotted dolphin stock, no conclusions can be drawn about its trends.

With respect to northeastern offshore spotted dolphins and eastern spinner dolphins, it is conceivable that some recovery occurred in the 1980s, but that supposition appears to be based

largely on relatively high, imprecise counts in 1988 and 1989 and, absent those counts, the trends appear to have remained relatively flat for the past two decades. The concern reflected in the International Dolphin Conservation Program Act, under which the research at issue was conducted and the secretarial finding is to be made, is that, even in the absence of biologically significant levels of observed fishery-related mortality, the practice of chasing and encircling dolphins to catch tuna may be having significant effects on these populations and their ability to recover from depleted status.

Other factors that may impede dolphin recovery — The primary alternative hypothesis that might explain the apparent lack of recovery is that the eastern tropical Pacific environment/ecosystem has changed in a manner that results in a lowered environmental carrying capacity for dolphins, thereby impeding or preventing their populations from returning to pre-fishery abundances. By their very nature, the effects of environmental changes on a population may be highly complex and difficult to assess with respect to both the direction and magnitude of change. The comments from the panel of experts asked to review information on the ecosystem suggest that some changes may have occurred since the inception of the eastern tropical Pacific purse seine fishery for tuna. However, available information is clearly insufficient to support a conclusion that any such changes that may have occurred during that period do, in fact, explain the failure of dolphin stocks to recover. Furthermore, because dolphins are long-lived and have life history strategies that promote population stability even when there is environmental variability, environmental changes, if they occurred, may have had no significant effect on the dolphins. Based on the available information, the possibility that significant environmental/ecosystem changes have affected recovery of the eastern tropical Pacific dolphin stocks cannot be ruled out conclusively. However, an environmental change sufficient to cause a three- to fivefold shift in the carrying capacity would likely have been of sufficient magnitude to be detectable. In our view, the data collected and examined do not support a conclusion that environmental/ecosystem changes have prevented dolphin stocks from recovering.

Fishery effects beyond reported incidental mortality — Estimates of mortality associated with tuna fishing are based on observations during and subsequent to encirclement or capture. Other potential types of mortality include unobserved mortality such as might occur during the chase phase of the fishing operation, mortality resulting from the separation of mothers and their calves (a potentially large source of unobserved mortality, as was demonstrated by the scientific research conducted by the National Marine Fisheries Service), mortality due to predation that may be facilitated by the chase/capture/release process, and mortality that results from heightened levels of stress associated with chase and capture but

which may not be manifested until hours or even days after release. In addition, population recovery may be impeded by reproductive failure caused by the stress resulting from chase and capture. Finally, population recovery may be impeded if the tuna/dolphin bond, which is central to this whole issue, has positive benefits to dolphins that are diminished or denied either immediately through removal of tuna or over longer periods as a result of fishery-induced reductions in the abundance or biomass of large tuna. A number of such potential benefits are possible although almost nothing is known about their existence or significance.

The extent of other fishery effects required to impede recovery — The research and modeling studies conducted by the Service indicate that the level of additional mortality or reduced fecundity required to impede recovery is relatively small (i.e., on the order of a few animals per chase/capture event), in part because of the relatively large number of times that an average dolphin school is chased and captured during a year. Because potentially significant effects may be small, they are likely to be difficult to detect. Ascertaining what may be contributing to the lack of recovery is further complicated by the fact that multiple factors, each potentially small in itself, may be cumulatively affecting the dolphin stocks. Thus, the effects of this fishing practice must be evaluated in light of the combined effects of multiple factors.

The adequacy of available scientific information for characterizing other fishery effects — Unfortunately, the existing information does not provide a sufficient basis for quantifying any increased levels of mortality that occur during chase operations, reproductive failure resulting from stress, facilitated predation, post-release capture myopathy, or disruption of the tuna-dolphin bond. However, the information assembled from the Service's research program is sufficient to demonstrate a significant occurrence of mother-calf separation and to provide evidence of stress-induced injuries that may have lethal or sub-lethal (e.g., reproductive) consequences of population-level significance. Due to limitations of the research conducted, including inadequate sample sizes (which resulted in part because fishing nations failed to provide adequate opportunities for sample collection), the full nature of hypothesized stress effects and their implications for population recovery cannot be fully described.

The basis for conclusions regarding the significance of other fishery effects — As noted above, the Court of Appeals has determined that a finding must be made as to whether or not the practice of chasing and encircling dolphins to catch tuna is impeding recovery of the affected dolphin populations. Our review of the scientific report on the investigations related to fishery effects on these dolphin stocks leads us to conclude that (1) based on generally accepted population theory on density dependence, the stocks are not exhibiting the recovery expected in light of the considerable reduction in

observed mortality incidental to the fishery; (2) environmental/ecosystem changes may have occurred and may have affected dolphin recovery, but large-scale changes that would explain the lack of growth of depleted dolphin stocks in the eastern tropical Pacific were not detected by the Service's research program and, consequently, the nature and extent of any such ecosystem effects remain hypothetical; (3) unobserved fishery-related effects need not be large (when viewed on a per-set basis) to prevent or significantly impede dolphin population recovery; and (4) the practice of chasing and encircling dolphins to catch tuna may have a number of unobserved and indirect effects that have not yet been adequately characterized or quantified, but that, in combination, could be impeding population recovery.

For the reasons listed above, the Marine Mammal Commission believes that there is an insufficient basis for making a determination that the practice of chasing and encircling dolphins with purse seine nets in the eastern tropical Pacific tuna fishery is not having a significant adverse impact on depleted dolphin stocks. Furthermore, we believe that the results of the Service's research program, although not conclusive, provide evidence that the practice of chasing and encircling dolphins is having adverse affects on the recovery of depleted dolphin stocks and that the magnitude of those effects, at both the individual and population levels, may be significant.

Please contact me if you have questions about these comments.

Sincerely,

Robert H. Mattlin
Executive Director