CRITIQUE –

The Facts About Whales and Fish Stocks
La Verité Sur les Baleines et les Stocks de Poissons
La Realidad Sobre las Ballenas y las Poblaciones de Peces
– U.S. Department of Commerce, National Oceanic and Atmospheric Administration *(undated pamphlet)*

Introduction

Scientific research is providing increasing evidence that marine mammals consume huge quantities of marine resources and that this consumption is often in direct competition with fisheries. The matter of competition between marine mammals and fisheries is now of serious concern for nations dependant of fisheries as well as for a number of global and regional fisheries management organizations including the United Nation's Food and Agriculture Organization.

The pamphlet produced by the U.S. Department of Commerce ignores recently published scientific findings and over-simplifies ecosystem considerations. Their simplistic and scientifically inaccurate arguments are presented as "facts" to justify inappropriate measures such as moratoria and sanctuaries that provide total protection of marine mammals for emotional or political reasons.

Rather, fisheries management regimes must be based on science and on the principle of sustainable use as reflected in the UNCLOS, UNCED, the Kyoto Declaration and, FAO's International Action Plans and Code of Conduct for Responsible Fisheries. (See Morishita and Goodman, 2001 for a detailed discussion of these issues.)

Recent calculations show that approximately three to five hundred million tons of marine food resources are consumed annually by cetaceans, some 3 to 5 times more than are fished for human consumption. While in 1998 the FAO called for a 30% reduction in the number of fishing vessels or fishing effort as part of urgently required improved fisheries management measures, the demands of an increasing human population require that we consider integrated ecosystem management for the use of all marine living resources.

This means that we must study the role of whales in the ecosystem including their impact on fisheries resulting from the consumption of huge volumes of fish and other marine resources. It also means that the sustainable use of resources at all levels of the ecosystem (including whales) is a more appropriate approach to the management of marine resources than the total protection of one component of the ecosystem (whales) irrespective of their conservation status.

Critique

The U.S. pamphlet says "As a whole, whales do not eat large quantities of fish as food" however, a recent study presented to the International Whaling Commission's Scientific Committee (Tamura and Ohsumi, 2000) conservatively estimates that annual fish consumption by cetaceans in the Southern Hemisphere is 18 to 32 million tons. In the case of the North Pacific, fish consumption was estimated to be 21-30 million tons and in the North Atlantic, 15-25 million tons. Much of this fish is comprised of species subject to commercial fishing. *Clearly, scientific facts contradict the statements of the U.S. Department of Commerce*.

The U.S. pamphlet uses simple "facts" such as "humans are primarily responsible for fisheries declines", "predatory and cannibalistic fishes consume vastly greater amounts of commercially valuable fish than do marine mammals", and "many whales feed on krill and fish species not used by humans" to dismiss the significance of fish consumption by whales. *Presentation of these simple "facts" ignores scientific findings that clearly show fish consumption is important and often in direct competition with fisheries for human food.*

Clearly, fisheries management organizations must address issues such as excess fishing capacity, illegal and unregulated fishing and other problems (indeed Japan has responded to the FAO by significantly reducing its tuna longline fleet) but at the same time, more effective management of marine resources means that we cannot ignore the issue of fish consumption by marine mammals when there is a growing demand by humans for fish and when whale populations are increasing.

Similarly, while predatory and cannibalistic fishes do consume large amounts of commercially valuable fish, most of this consumption is comprised of larval or juvenile fish in their first year. This predation is part of "natural mortality" and has remained relatively stable. However, since the moratorium on commercial whaling was imposed, whales are increasing and their corresponding increasing consumption of fish represents a new factor that can't be ignored.

Scientific Research Related to Marine Mammal Interactions with Fisheries

In the waters around Japan where catches in certain fisheries are declining, Japan's research catch of whales reveals that minke whales are eating at least 10 of the target species of these fisheries including Japanese anchovy, Pacific saury, walleye Pollock and others (Government of Japan, 2000).

Off the Pacific coast of Japan, Bryde's whales feed on krill, Japanese anchovy and chub mackerel (*Scomber japonicus*). In the waters around Bonin Islands, they fed on krill and lantern fish. In the East China Sea, they fed mainly on Japanese pilchard (*Sardinops melanostictus*), Japanese anchovy and horse mackerel (*Trachurus japonicus*) (Government of Japan, 2000).

Sperm whales feed not only on squids but their diet also includes commercially important fishes such as rockfishes, cods, Pacific saury, and Japanese pilchard.

Trites et al., (1997) estimated that 84 species of marine mammals in the Pacific Ocean, totaling over 20 million individuals, consume about 150 million tons of food per year. This amount is approximately 3 times the annual commercial harvest of fisheries in the Pacific. They suggest that commercial fisheries target only 35% of the prey items sought by marine mammals and suggest that the most significant consumer of fish is probably other predatory fish, and not marine mammals. However, this does not negate the conclusion that marine mammals could have a very significant impact on returns to commercial fisheries even if these fisheries target only 35% of the prey items sought by marine mammals. Trites et al., also acknowledge that indirect competition might occur for the primary production which sustains both marine mammals and those species of fish caught in commercial fisheries.

The Department of Commerce erroneously infers from this study that "In the Pacific Ocean direct competition between marine mammals and fisheries is limited" since "more than 65 percent of the food consumed by whales and other marine mammals consists of deep sea squids and deepwater fish not harvested by humans." However, 35% of 150 million tons of fish of commercial species is a very significant amount.

The U.S. pamphlet also makes the statement that "Southern Hemisphere baleen whales predominantly eat krill not fish…" This focus on a non-fishery area of the ocean simply ignores other areas where consumption of fish is a serious problem.

According to the Norwegian feeding ecology research conducted between 1992 and 1994, the prey species consumed by minke whales change conspicuously according to area, season and year, and minke whales have flexible feeding patterns to match the local abundance of prey species (Haug *et al*., 1995). Further, it was suggested from the concurrent prey species surveys that minke whales showed a preference for herring (*Clupea harengus*) and capelin (*Mallotus villosus*). Data from Iceland indicates that of sixty-eight minke whale stomachs examined, 51% contained fish only, 22.1% krill only and 25.0% fish and krill together (Sigurjonsson *et al*., 2000).

By inputting these kinds of data into models, future forecasting is possible (Bogstad *et al.,* 1997). For example, it was shown that, when minke whales increase, important fish resources such as cod decrease by predation, resulting in serious consequences for fisheries targeting these species (Schweder *et al*., 2000). Estimates from these models include the probability that close to 100,000 tons of cod are being consumed by cetaceans (Bogstad *et al*., 2000). *The U.S. pamphlet ignores these scientific findings by simply saying "scientists do not yet understand ecosystem dynamics well enough…".*

It is a clear contradiction that on the one hand, the U.S. Department of Commerce says scientists do not yet understand ecosystem dynamics and on the other hand, they are opposed to Japan's whale research programs that have as one of their objectives the study of ecosystem dynamics.

The U.S. Department of Commerce also contradicts itself on the matter of scientific knowledge. The first paragraph of their pamphlet says "Today's marine science community has enough expertise and experience with the complex ocean ecosystem to recognize…". However, on page 3 of the pamphlet they say "…marine scientists do not yet understand ecosystem dynamics well enough…".

Multi-species management of marine resources

The principle of multi-species management has been discussed by many international organizations including the FAO. In the 1995 Kyoto Declaration adopted by the International Conference for the Sustainable Contribution of Fisheries to the Food Security and agreed to by 95 countries, it was noted that the effectiveness of multi-species management should be studied and harvesting at multi-trophic levels should be considered (Government of Japan, 1995). This means that marine mammals should not be exempted from the sustainable use of marine resources. Also, in 1999, the Indian Ocean Tuna Commission (IOTC), recognizing the importance of the ecosystem approach to fisheries management, encouraged its Scientific Committee to carry out research on the predation by marine mammals and sharks on tunas caught on longlines. This decision was made on the basis of many reports of damage caused by the marine mammal predation in tuna longline fisheries especially those in developing countries.

The North Pacific Marine Science Organization (PICES) also set up a working group on food consumption by marine mammals and seabirds in 1995 which noted that there is inadequate quantitative data on the ecosystem, especially feeding ecology of top predators (PICES, 1999). The Fourth Annual Conference of the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea (Pusan, Republic of Korea, November 1999) decided to include a study on the ecosystem approach in its 2000 work plan, focusing on the prey/predator relationship between walleye pollock and marine mammals.

The FAO Conference of Fisheries Ministers (Rome, March 1999) and the FAO Committee of Fisheries (FAO 1999) also recognized the importance of the multi-species management approach for the sustainable utilization of fisheries resources. The competition between top predators and fisheries was also discussed at both the 51st and 52nd meetings of the International Whaling Commission. Further, the Scientific Committee of the IWC plans to hold a workshop on this matter in 2002.

The Scientific Committee of the North Atlantic Marine Mammal Commission is also currently pursuing studies on the role of marine mammals in the ecosystem. The 2000 report of the NAMMCO Scientific Committee specifically notes that for some areas of the North Atlantic, consumption of fish by marine mammals at least equals that of fisheries (NAMMCO, 2000).

Most recently, participants (mostly fisheries scientists) at The Third World Fisheries Congress held in Beijing from October 31 to November 3, 2000 which had as its themes the need to feed the world with fish in the next millennium and the need to balance fisheries production and environmental concerns, adopted a resolution strongly endorsing further research and other initiatives in support of the development of multi-species management approaches to managing marine resources.

This means that we must study the role of whales in the ecosystem including their impact on fisheries resulting from the consumption of huge volumes of fish and other marine resources. It also means that the sustainable use of resources at all levels of the ecosystem (including whales) is a more appropriate approach to the management of marine resources than the total protection of one component of the ecosystem (whales) irrespective of their conservation status.

Contrary to the simplistic position taken by the U.S. Department of Commerce, all of these international scientific organizations have recognized that marine mammals do have the potential to impact on commercial fisheries and that the consumption of fish by marine mammals must be included in multi-species approaches to managing marine resources.

The U.S. Department of Commerce pamphlet also ignores the fact that whales are a valuable food resource and that sustainable harvesting is possible given the abundance of some stocks and the very conservative and risk averse management procedure developed by the IWC's Scientific Committee.

The U.S. pamphlet says "In actuality, other ocean predators might increase their levels of predation if fish became more abundant". We agree. Clearly, if fish were more abundant, humans could increase their harvest to feed people.

We also agree with the U.S. Department of Commerce that "the most effective way to improve fishery yields would be through better fisheries management as outlined by the United Nations Food Agriculture Organization."

However, the Department of Commerce forgot to mention that in 1998, the FAO's High Level Panel of External Experts in Fisheries expressed the view that FAO and all fishery bodies must increasingly develop an ecosystem approach to management. This means that predator – prey relationships among the major components of an ecosystem must be understood.

It also means that we can not ignore the consumption of fish by cetaceans which is estimated to be 3 to 5 times the amount of marine resources harvested for human consumption. Indeed, cetacean/fisheries interactions have become a major issue in many parts of the world and it is an important issue in the context of world food security. It does not make sense on one hand, to implement fishing fleet reduction recommended as necessary by the FAO and on the other hand, to ignore the huge consumption of fish by cetaceans.

Whales have been increasing since the introduction of the moratorium on commercial whaling almost 20 years ago. Fish populations have not increased during this time so that the competition between whales and fisheries has been intensifying while fish predation on fish has likely decreased or remained stable.

Conclusion

The position of the Government of the United States within the IWC to provide for the total protection of cetaceans irrespective of their conservation status is contrary to improving the management of our fisheries resources to ensure sustainable fisheries. U.S. policy which puts marine mammals above human needs puts at risk the proper management of fisheries for the politically expedient goal of total protection of whales.

The U.S. Department of Commerce pamphlet tries to hide or ignore the serious problem of competition between marine mammals and fisheries by making statements that ignore scientific findings and calling these statements "facts" and by citing non-problem examples. It is analogous to saying that crime is not a problem by citing one or two cities with low crime rates. On the other hand, for many areas of the ocean, scientific findings clearly show that fish consumption by cetaceans is important and often in direct competition with fisheries for human food.

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