

Let's Have Less Public Relations And More Ecology

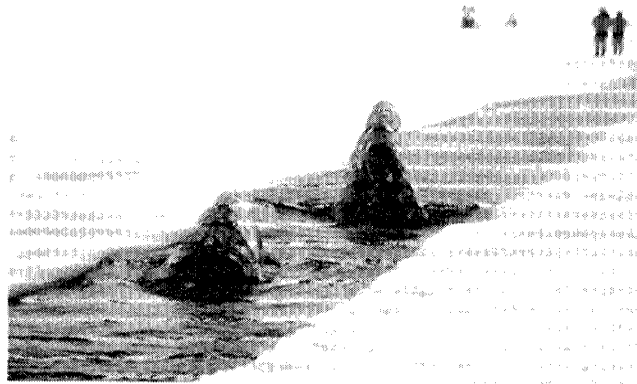
by Peter L. Tyack

The heroic and expensive efforts to free three California gray whales, *Eschrichtius robustus*, from the ice off Point Barrow last fall evoked a powerful response among many Americans. Hundreds of reporters and photographers flocked to Alaska, and the sounds of the whales struggling to breathe were carried by television into millions of living rooms. Freeing the whales was a "feel good" action and a public relations coup for environmental organizations that have spent millions of dollars to make killing whales appear immoral. However, even the most sympathetic viewers had to wonder how and why federal agencies decided to collaborate in so costly an enterprise that managed to save, perhaps only temporarily, only two trapped whales (of a population of 20,000).

In part, the answer lies in the special status that whales have acquired as a symbol of our interest in the environment. Like the sacred cows of India, they have come to require official protection. Yet it's one thing for a privately funded organization like Greenpeace to stage an environmental "action" on their behalf, and quite another for the government to do so. Indeed, its participation was exquisitely rich in ironies. How could it undertake heroic measures for whales of a species that has mostly recovered, while allowing Eskimos to kill more endangered bowheads, *Balaena mysticetus*, in the very same area?* And didn't the commitment of precious resources for the rescue mean that it was in effect choosing not to devote them to more pressing problems facing endangered whales?

Regulations and Regulators

The agency on whose shoulders these questions fall is National Marine Fisheries Service, an arm of the National Oceanic and Atmospheric Administration (NOAA). Under the Marine



Freeing the grays made us "feel good" but was it sensible? (Courtesy of National Marine Mammal Lab)

Mammal Protection Act (MMPA) of 1972, it has the responsibility for protecting whales, dolphins, and seals. But in carrying out that Congressional mandate, it has displayed striking inconsistencies, of which the questionable rescue of the trapped grays is only one conspicuous example. Time and again, NOAA Fisheries has acted politically rather than ecologically. It is more likely to target problems that yield a quick

*Aboriginal whaling of bowheads has long been an issue for U.S. policymakers. In 1977 the International Whaling Commission (IWC) became so concerned about this species, one of the most endangered, that it banned all whaling of bowheads. The United States had to decide whether Alaskan Eskimos should be allowed to continue their aboriginal whaling. In the ensuing conflict between whale conservation and native rights, the latter won. The United States persuaded the IWC to grant the Eskimos an annual quota for hunting bowheads—35 whales in 1988—in spite of their endangered status. Thereupon other nations requested aboriginal hunts of the less-endangered gray and humpback whales.

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payoff in public relations rather than those that pose the greatest threat to marine mammals.

Passed after a decade of growing environmentalism, the MMPA was the government's response to this increasingly powerful movement, which looked with alarm not only on commercial whaling, but also on the incidental kill of hundreds of thousands of dolphins each year by the U.S. tuna purse-seine fishery in the Pacific. The act committed the United States to long-term management and research programs to protect marine mammals. It also prohibited Americans from either importing or "taking" the animals—the latter a euphemism for killing, harassing, or removing them from the wild. But while marine mammals are the focus of the act, it had a broader goal—"the primary objective of their management should be to maintain the health and stability of the marine ecosystem" (Section 2.6, MMPA). As Patricia Birnie pointed out, the MMPA is "distinguished as the world's first legislation recognizing that maintenance of habitats is a prerequisite of survival of a species, and is aimed at international as well as national protection."

In 1973, the Endangered Species Act (ESA) was enacted and joined the MMPA as the principal means employed by the United States to protect endangered marine mammals. The ESA's defined purpose was "to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved" (Section 2b, ESA). It mandated that federal agencies formulate recovery plans for endangered species and establish management priorities for their protection, especially those threatened by the long-term effects of economic development. It also specified that areas crucial for the survival and reproduction of endangered species may be designated *critical habitats*, subject to special protective regulation. For all its powers, however, NOAA Fisheries has not declared critical habitats for any marine mammal species, nor has it implemented any broad policies to protect marine ecosystems.

Great whales, all of which have been declared endangered under ESA, have been objects of particular concern. Many feed, breed, or migrate in U.S. coastal waters, where they encounter heavy shipping traffic, intensive fishing, and such byproducts of coastal development as pollution. In spite of the threat to their habitat, however, not a single recovery plan has been formulated since the legislation's passage. Only in the past year, after considerable



Recovery plans are finally being drawn for species like these humpbacks. (Photo by Jordan Coonrad)

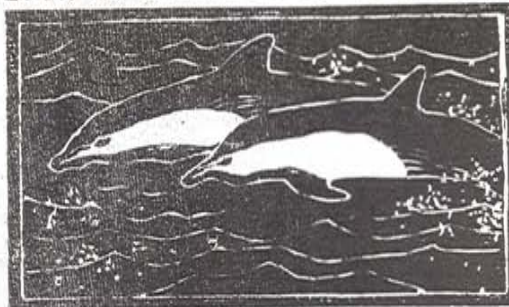
pressure, is NOAA Fisheries finally beginning work on recovery plans for two of the most endangered species, namely humpback whales, *Megaptera novaeangliae*, and right whales, *Eubalaena glacialis*.

There are still more obvious inconsistencies in NOAA Fisheries policy. If the Federal government supports heroic measures to save three gray whales, why has it granted exemptions from the law that let American and foreign fishing fleets incidentally kill tens of thousands of marine mammals each year?

Admittedly NOAA Fisheries faces tough political choices. Special interest groups, such as the Eskimos or the tuna fishery, are formidable adversaries. They've been able to hire good lawyers and get around the clear intent of the law. For example, an "immediate goal" of the MMPA was "that the incidental kill or serious

injury of marine mammals permitted in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate." Quotas limiting the number of dolphins killed by tuna fishing did in fact reduce dolphin mortality from around 368,000 in 1972 to 20,000 or so in 1978. But there has been no improvement since then. Between 10,000 and 20,000 dolphins are still dying in tuna nets each year, largely because NOAA Fisheries has

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The death of dolphins in fisheries is a matter of concern.

consistently backed away from the law's zero mortality goal in face of the tuna fishing industry's effective lobbying.

Instead of selecting targets for regulation based on their potential impact on whale populations, NOAA Fisheries has taken the easier course, choosing those that are highly visible and less likely to resist. One of its targets has been research, even though both the MMPA and ESA contain specific provisions allowing animals to be taken for scientific purposes and public display on the grounds that these activities are likely to benefit endangered marine mammals.

By 1975 more than 100 permits had been granted to individual researchers as well as aquariums and oceanariums for marine mammals. Indeed, the Marine Mammal Commission was so concerned by bureaucratic delays that it urged NOAA Fisheries to establish a two-tier permit system: it would reduce regulatory demands on research activities with no determinable adverse impact, such as census and behavioral studies, while maintaining strict control on research that required killing animals.

NOAA Fisheries ignored this recommendation. Instead, it got tough with researchers, who were less likely to resist than the tuna fishing industry. When scientists inquired whether they needed permits for activities they considered harmless, such as carefully approaching whales in small boats, NOAA Fisheries regulators made it clear that they wanted all research activities brought under their control. This allowed them to claim that they were regulating even activities that posed only a remote risk of being harmful to whales.

Research at Risk

The singling-out of scientists for regulation has led to paradoxical situations. If I want to study the effects of ship noise on whales, for instance, I must file for a permit, while none is required of the hundreds of large ships that regularly plow past concentrations of the endangered animals in which I'm likely to do my work. These not only may disturb the whales with their loud noises but occasionally strike them as well, inflicting injury and sometimes death. Recently, NOAA Fisheries expanded its regulatory net still further by requesting permits for active acoustic research such as geophysical surveys and ocean acoustic tomography sources, though there's little probability that such work will injure a whale.

On the other hand, the regulators avert their eyes in the case of activities likely to kill marine mammals outright, such as the California gill- and trammel-net fisheries, that are responsible for the deaths of some 200 to 300 harbor porpoises, *Phocoena phocoena*, annually (article, pp. 63–70). NOAA Fisheries doesn't require the fishermen to obtain permits for their "takes," nor has it prosecuted them for killing porpoises. And the few fisheries that must obtain permits for the mammals they kill, such as the Japanese salmon gillnet fishery, which is responsible for the deaths of thousands of Dall's

porpoises, *Phocoenoides dalli*, each year, operate under blanket permits issued to fishing consortia. These permits impose much less of a burden on individual fishermen than those required of research groups.

The discriminatory policy against researchers reverses the original intent of the research permits, which was to allow scientific activities that would otherwise be prohibited.

Aiming for the Easy Targets

NOAA Fisheries' latest target is whale watching, which has enjoyed a spectacular growth on both coasts and in Hawaii in the last decade (article, pp. 84–88). Both the MMPA and ESA prohibit "taking" whales by harassment. The original intent was to protect marine mammal populations from human activities that might not cause immediate mortality but were harmful to the animals in the long run. There's no evidence that whale watching, if it's conducted responsi-



Whale watching has become the latest target of government regulation. (Photo by Flip Nicklin)

bly, harms individual whales, much less whale populations. Nonetheless, NOAA Fisheries has broadened the definition of harassment to include any disturbance of the animals' normal behavior. The purpose is to bring approaches by small vessels carrying whale watchers under the law.

Why pick on whale watching? After all, it's one of the few human activities likely to benefit whales, since it creates so many advocates for whale conservation. For one thing, like research, it's an easy target, conducted in full public view. For another, the activity is increasing. Hundreds of thousands of people are now going out on whale watches each year, creating understandable concerns about the effects on the whales of all this human curiosity.

When a few reckless whale watchers disturb whales, the public is upset and the industry is alarmed by the adverse publicity, even if there's no long-term impact from the incident on

whale populations. Acting in their own interest as well as the whales', whale watching organizations have begun to work with NOAA Fisheries to develop formal regulations governing their industry.

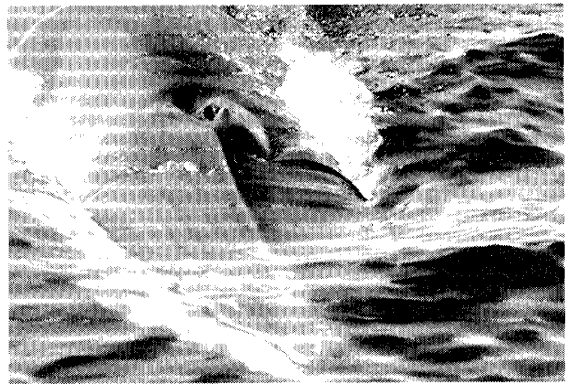
But there are pitfalls in enforcing regulations when there is no demonstrated impact upon populations. An example is a NOAA Fisheries effort to limit approaches by boats in the Hawaiian Islands. More than a decade ago, NOAA Fisheries published a notice of interpretation suggesting no approaches closer than 300 yards in calving grounds, and 100 yards elsewhere in the islands. Since then, NOAA Fisheries has administered studies of the effects of boats on humpbacks in Hawaii and Alaska. Both showed that whales avoided boats at ranges of one to several kilometers, 10 to 20 times the range suggested before there were any data.

The studies raise serious questions about the strategy of singling out for regulation boats that intentionally approach whales. The average spacing of humpbacks on the Hawaiian breeding ground is less than one kilometer, so any boat transiting it is likely to evoke responses from whales. More important than close approaches is the cumulative impact of the total boat traffic on the breeding ground.

Why then did NOAA Fisheries prefer 100 yards over 300 yards when it proposed new regulations in 1987? In its discussions of the proposed regulations, it gave a hint: it acknowledged that neither limit was adequate as a safeguard against harassment, but then it went on to say that a 300-yard limit "could adversely affect whale watching tour operators," that is, they wouldn't be able to bring customers close enough to see the whales. Is it appropriate for the agency to devote scarce management resources to helping industry rather than helping endangered whales?

Subtle Effects of Human Activities

The public relations successes of NOAA Fisheries obscure even deeper failures. The agency has yet to complete recovery plans for any of the endangered great whale species. It states that it has resisted developing these plans in part because of "its uncertainty as to whether or how recovery plans would enhance the protection of the species." And there are some grounds for this claim. Most populations of endangered great whales seem to be doing pretty well. The ESA was developed with terrestrial species in mind, and it's relatively simple to see the direct conflict between construction and other economic activity on critical habitats for endangered terrestrial species. But the effects of human activities on marine animals are often more subtle. How can one even choose which species are most threatened, or which activities are most threatening, without careful research on the long-term cumulative consequences of development? This kind of research and monitoring is expensive, but it is necessary for developing any rational management and



The fin whale is one of the most elegant of the great whales, but is increasingly at risk from growing boat traffic. (Photo by Karen E. Moore)

regulatory priorities.

If NOAA Fisheries were devoting most of its resources to monitoring the health of marine mammal populations and evaluating the long-term effects of human activities on them, then its resistance to recovery plans could be taken at face value. However, NOAA Fisheries is regulating research and whale watching in spite of the great uncertainty about whether these regulations will actually enhance species protection. It's almost as if NOAA Fisheries is afraid that the recovery plan process will force priorities for managing endangered marine mammals based upon biological need rather than on political expediency.

A switch of regulatory focus from protecting whale populations to protecting individual whales from even minor behavioral disturbance would only make sense after whale populations faced no more direct dangers from human activities. Consider the northern right whale. Of the several hundred individuals identified off the East Coast, some 58 percent bear scars from fishing gear, while eight percent have visible injuries from collision with vessels. Over half the adult mortality since 1970 appears to have been caused by net entanglement and collisions. Yet NOAA Fisheries has done virtually nothing to monitor or reduce the collision hazard.

And even while the public applauds the saving of gray whales trapped in the ice off Point Barrow, we pay almost no attention to the growing dangers these animals face at the other end of their annual migration route. In Laguna Guerrero Negro, one of the breeding and birthing lagoons of this species in Baja California, a direct conflict exists between conservation and economic development. From 1957 to 1967, the lagoon's channel was continuously dredged to accommodate the barges that were carrying out shipments from the largest open salt mine in the world. The number of mothers and calves decreased sharply, and none was sighted again until long after the dredging ceased. Gray whales

prefer calm protected lagoons for giving birth, not centers of hectic industrial activity that also create pollution. Reduction of the number of undisturbed lagoons available for calving and breeding could have a serious impact upon the reproduction of this species. Even for a healthy population like the grays, critical breeding habitats must be protected. In 1971, Mexico declared Scammon's Lagoon, a breeding lagoon for gray whales, a refuge zone, and it limits the entry of vessels under a permit system.

Humpback whales do not have the benefit of habitat protection on their Hawaiian breeding grounds. In fact, the emphasis NOAA Fisheries places on regulating intentional acts of harassment obscures the importance of examining the cumulative effects of all human activities upon whale populations. For example, the California wife-husband research team of Deborah Glockner-Ferrari and Mark Ferrari studied humpback mothers and calves off Maui for more than a decade. Maui has been undergoing rapid coastal development during the last decade, accompanied by an explosion of boating activity, including the introduction of such high-speed aquatic playthings as jet skis. Female humpbacks with their young used to congregate in the sheltered waters near the leeward coast of Maui. Since 1980, though, increasing numbers of mother-calf pairs have been sighted at increasing distances offshore.

Glockner-Ferrari and Ferrari suggest that this movement offshore is more likely linked to the increase in the total number of boats than to any individual acts of harassment. Whales may avoid areas filled with hundreds of boats, but ignore a single boat. This suggests that some boating activities in small doses may be completely compatible with marine mammals, although they become harmful when the numbers increase.

That harm can be more than "psychological" to the whales. In 1987 Glockner-Ferrari and Ferrari, joined by Daniel McSweeney, documented an increase in the number of abnormal, injured, and stranded whales off Maui. Two of the three injured whales in their small sampling had been struck by boats. Other whales had abnormal skin or eye conditions. The authors suggest that these problems may be related to the degradation of the shallow water habitat that has accompanied increased vessel traffic, agricultural runoff, and other forms of marine pollution.

The current NOAA Fisheries strategy of regulating intentional approaches of individual boats is incapable of dealing with these habitat degradation problems. The focus on intentional harassment is unlikely even to help with the vessel collision problem. Few boats intentionally strike whales; it's more likely that the boats striking whales were moving too rapidly to avoid whales that had surfaced in front of them.

NOAA Fisheries lags far behind our neighbors in protecting whale breeding grounds. Mexico led the way by creating refuges for breeding and calving gray whales. The Dominican Republic

has declared Silver Bank, the main breeding ground for North Atlantic humpback whales, as a marine sanctuary as well. The Hawaiian Islands contain the main breeding grounds for North Pacific humpbacks. Yet, NOAA Fisheries failed to establish a marine sanctuary there (*Oceanus*, Vol. 31, No. 1, pp. 59-65). It failed to limit human impact on this habitat, and its narrow harassment regulations fail to prevent the abandonment of previously preferred inshore waters by mothers and their young, according to Glockner-Ferrari. These failures contradict the spirit, if not the letter, of the ESA, which specifies that priority for recovery plans should be given to endangered species, such as the Hawaiian humpbacks, whose critical habitats are threatened by development.

But the great whales, migrating throughout the oceans, are less threatened by habitat degra-



Habitat destruction may be the greatest threat to whales like this Hawaiian humpback. (Photo by the author)

ation than many smaller species that may spend their entire lives within a small stretch of river or coastline. In the St. Lawrence River, for example, the resident population of beluga whales, *Delphinapterus leucas*, has been declining for years, even after hunting was prohibited, apparently because of pollution, some of which originates in the United States. These animals are endemic and can't simply leave for a less spoiled environment. Hence, specifying their habitats as critical would be far simpler and much more effective than attempting to provide similar protection for more wide-ranging whales.

NOAA Fisheries has scarcely begun to address the issue of habitat protection for marine mammals. One blatant example of habitat degradation for marine mammals is lost fishing gear. Drifting fishing nets kill uncounted numbers of cetaceans, pinnipeds, and sirenians each year. Significant mortality may also stem from such marine debris as plastics (*Oceanus*, Vol. 31, No. 3, pp. 29-36). Federal agencies have held workshops and conferences on these problems, but they have been less inclined to regulate this situation than whale watching.

During the summer and fall of 1987, hundreds of bottlenose dolphins, *Tursiops truncatus*, washed up dead along the mid-Atlantic coast. Post-mortems revealed signs of infection by disease-causing organisms, and high levels of chlorinated hydrocarbons and toxins of biological origin. Were these two findings somehow connected? Some scientists speculate that the

animals may have been suffering from impaired immune function due to marine pollution. This would have increased their susceptibility to disease (box, page 79).

Organochlorines and heavy metals accumulate in all cetacean species tested so far, even in fetuses. The implications of this contamination for the health of these animals isn't clear yet, but it has been suggested that the die-off of seals in the North Sea during the summer of 1988, like those of the belugas and bottlenose dolphins, may be linked with marine pollution. There are even indications of cetacean responses to pollutants in the absence of obvious increases in mortality or decreases in fertility. Studying tissue from minke whales, *Balaenoptera acutorostrata*, caught by Norwegian whalers, Anders Goksøyr of the University of Bergen and coworkers last year found elevated levels of organochlorines. All these whales appeared healthy, but some had levels of toxic compounds sufficient to activate an enzyme system that detoxifies foreign compounds within their bodies. We now need to determine if and how such toxic compounds affect the fertility and mortality of these animals.

Overseeing Complex Interrelationships

Habitat protection involves more than monitoring toxin levels, however. It requires overseeing many interrelationships within a complex ecosystem. For example, marine mammals and humans compete for some of the same fish resources. Killer whales, dolphins, seals, and sea lions off our Pacific Coast regularly snatch fish from fishing operations. The government response has been to consider easing the strict protections required by the MMPA and to look for ways of protecting the fisheries.

Less attention has been given to the question of whether human fisheries are reducing the available prey of endangered species to such an extent as to affect their recovery. Rough calculations of consumption by cetaceans indicate that in many areas they consume about the same biomass as human fisheries. The existence of such a balance points to a possible way of setting limits for fisheries and cetaceans. However, these relationships are unpredictable. While fishermen in many parts of the world have killed marine mammals because they view them as competitors, there are no clear data on the extent of the competition.

Canadian biologists have recently suggested that culling the population of gray seals off the Maritime provinces may improve Canadian fishery catches. Will agencies responsible for facilitating the recovery of marine mammal populations be equally keen on suggesting limits on human fisheries in order to foster the recovery of depleted marine mammal populations?

Clearly, the competition between marine mammals and human fisheries may lead to important and unpredictable consequences. For example, there's a suggestion that young herring, which were overfished on Georges Bank during the 1960s and early 1970s, were driven nearly to local extinction by continued predation from fin whales, *Balaenoptera physalus*. When NOAA Fisheries sets its quotas for commercial fishing, it hasn't taken this kind of effect into account. But as marine mammal populations continue to grow, these effects are likely to become even more important. One responsibility of NOAA Fisheries is to determine whether fisheries are limiting the recovery of endangered whale populations. The entire question of multispecies, or ecosystem, management and the effects of competition between human fisheries and marine mammals on prey populations requires careful study to enable rational management of both.

The next few years will offer an excellent opportunity for NOAA Fisheries to abandon its tendency to regulate what's easy instead of what's important. Under prodding from the Marine Mammal Commission, NOAA Fisheries has committed itself to developing recovery plans for the most endangered whales. If NOAA Fisheries can develop biologically relevant management priorities for these species, it may be able to allocate its limited regulatory and enforcement resources more effectively. It's particularly important for NOAA Fisheries to investigate the unintended long-term consequences of a broad range of human activities, and to take an ecosystem-level approach to habitat protection rather than focusing on narrow harassment regulations. This might reverse the current situation in which research, rather than being facilitated by government policy, is discouraged by excessive regulation. Such a new policy would do more for the preservation of endangered species than policies based upon politics and PR. □

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