

Signs Good for Gray, Bowhead Whale Conservation

There's good news for two depleted species of whales, according to NOAA Administrator Richard A. Frank.

The Pacific gray whale, once severely depleted because of commercial hunting in the last century, is now approaching its mid-1800's level of approximately 15,000 animals. And the most complete bowhead whale research program ever undertaken has indicated that more animals than expected --- 2,264 --- passed Point Barrow, Alaska, between 15 April and 30 May with others expected during June.

Frank, who is also U.S. Commissioner to the International Whaling Commission (IWC) said the Alaskan spring bowhead whale hunt ended with Eskimo whalers, operating for the first time under IWC regulation, landing 10 bowhead and striking but losing another 5. The quotas, established by the IWC and adopted by the United States, permitted the Eskimos to land 12 bowheads and strike 18, whichever occurred first. The two whales remaining in the 1978 quota were to be taken in the September and October hunts.

Pointing out that last year the Eskimos landed 29 bowheads and struck but lost another 82, Frank expressed his satisfaction with the outcome of the bowhead hunt, and his admiration for the manner in which Eskimo whalers and Alaskan officials conducted it. The spring season brought an unprecedented effort to hunt with new efficiency and to eliminate as far as possible wasteful wounding of the great animals, he said.

Praising Eskimo whalers for their performance during the spring hunt, Frank said, "the Eskimos entered the season with strong reservations, and with a concern for their traditions and

food needs, but they accepted the necessity for quotas, complied with the quotas, and essentially regulated themselves. We all owe them a debt of gratitude."

Frank, who flew to Alaska at the height of the season to meet with Eskimo whalers and officials, cited the season as a prime example of cooperation. He praised the Alaska Eskimo Whaling Commission (AEWC), the Alaska Department of Fish and Game, and NOAA's own National Marine Fisheries Service (NMFS) for highly effective teamwork.

The AEWC, he pointed out, established communications between the whaling villages which united them in common purpose and provided them an active role in the making of decisions.

Frank said that Eskimo reporting officers and AEWC representatives worked daily with NMFS agents. "This relationship," he said, "must be credited with being largely responsible for the ultimate success of the program." The State of Alaska appropriated \$250,000 to support the work of the AEWC.

The bowhead research program, costing \$780,000, not only carried out the most comprehensive census of its kind in history but studied population dynamics and acoustic techniques. Analysis of population data, including figures for the summer and autumn months, will continue through the year, with final results anticipated in December.

The research program included an ice-based census camp designed to count whales going through a nearshore lead near Barrow, aerial surveys conducted at the site of the census camps to help validate observations made by

ice-camp observers, and land camp observations of the early and late migration patterns of bowheads taken in conjunction with aerial and vessel surveys. Additionally, the value of active sonar and recordings as tools for determining the distribution and abundance of whales was explored.

Researchers from the NMFS' Marine Mammal Division maintained a 24-hour observation schedule from two bases, the South and North Camps. Whales moved along the nearshore lead from South toward North Camp. Radio checks between bases served to increase accuracy.

The AEWC sponsored a whale counting camp manned by Barrow residents and assisted by two NMFS biologists. Eskimo whalers also participated independently. Observing conditions were excellent throughout the study.

Aerial surveys—174 hours—helped validate the census counts and delineate the spatial and temporal distribution of whales during migration. Researchers, employing an elaborate formula to correct figures for total observation time, duplicate sightings, and validation of animals believed to have been missed, offered a preliminary estimate of 1,783 whales at the lower end of the scale and 2,865 at the upper end, with 2,264 considered the best available estimate.

The gray whale, according to Frank, represents "a triumph of conservation. It vividly demonstrates that humankind can indeed protect endangered species, and that, once protected, they can recover." Ruthlessly exploited for more than a century, the gray whale has been on the IWC's protected list since 1946.

Frank cited a study conducted by Allen A. Wolman and Dale W. Rice of the NMFS. It showed a 1978 count indicating a total population of about 11,000, plus or minus 2,000 animals, as the whales passed southward off Monterey in California. In November and December 1977, other researchers counted gray whales leaving the Bering Sea at Unimak Pass, Alaska, and estimated a population of 15,120. NOAA officials, taking into account a variety of factors, estimate the probable population at between 11,000 and 15,000.

Program Compensates Fishermen for Losses

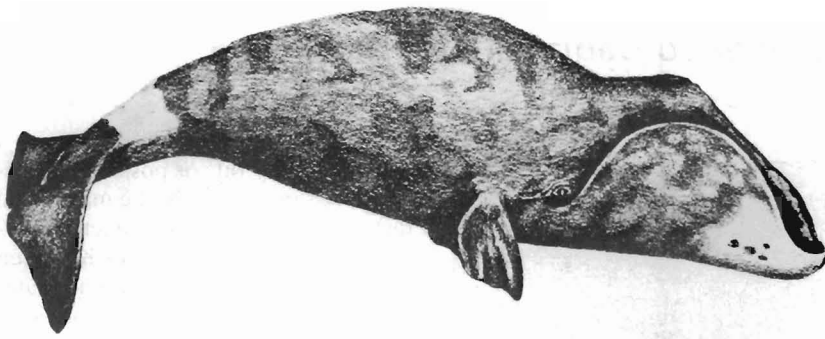
U.S. commercial fishermen whose vessels or gear are damaged or destroyed by foreign fishing vessels operating within the U.S. 200-mile fishery conservation zone will be eligible for compensation, the National Oceanic and Atmospheric Administration (NOAA) has announced. A system designed to reimburse fishermen quickly for any loss from incidents which occurred after 1 July 1976, has been instituted by NOAA's National Marine Fisheries Service (NMFS) to implement recent legislation.

Under the system, fishermen may apply for a loan if the replacement value of the damaged gear or vessel, less depreciation, exceeds \$2,000. Loans will be made shortly after the application is received and approved by the NMFS, and will carry an interest rate of 3.5 percent.

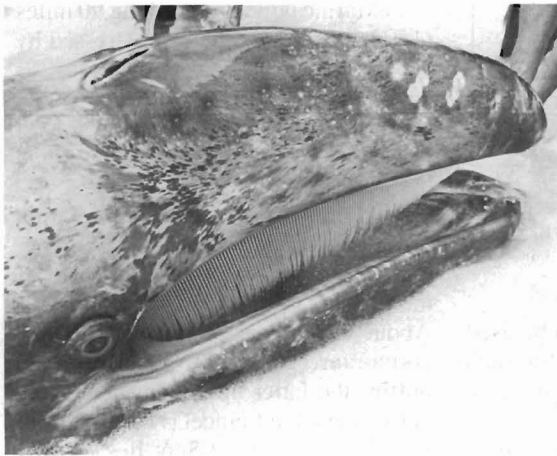
After the loan is made, an effort will be made to determine who was at fault. If it is determined that the U.S. fisherman was not, the loan will be cancelled, all payments made on the loan will be refunded, and the fisherman will keep the loan funds as full compensation. If the U.S. fisherman was at fault, the loan will become due in full at an earlier—but still reasonable—date than originally set. If fault cannot be determined, the loan must be repaid according to the original terms which would correspond to the expected life of the equipment.

Presidential approval was also expected on a new program that would supercede the present compensation system, Fisheries officials said. Under that program, proposed to be effective 1 January 1979, fishermen would be paid for losses caused by foreign fishing vessels without regard to who was at fault. This program would not be retroactive.

Applications for the loan should be sent to the National Marine Fisheries Service, NOAA, F-25, Washington, DC, 20235. Assistance may be obtained from NMFS Regional Offices in Gloucester, Mass.; St. Petersburg, Fla.; Terminal Island, Calif.; Seattle, Wash.; and Juneau, Alaska.



Above, bowhead whale. Illustration: Don Sineti. Left, California gray whale, showing baleen. NOAA photograph.



There are two geographically isolated stocks of gray whales: the eastern Pacific or California and the western Pacific or Asian.

The Asian stock summers in the northern Sea of Okhotsk and migrates down the Asian coast to calving grounds off the south coast of Korea. Its population is believed to be low, or it may even be extinct. The California stock summers in the northern Bering Sea, migrates down the North American coast, and winters off Mexico's west coast.

There is general agreement that the population did not exceed 15,000 prior to the initiation of exploitation in 1846.

After the IWC placed the gray whale on the protected list in 1946, intermittent counts were made. They indicated steadily increasing populations, for several years.

Starting in 1967-68, the Yankee Point-Grand Canyon site near Monterey was the scene of a winter shore count. There 95 percent of the whales pass within 2 km of shore, and boat

traffic is at a minimum. The counts indicate a stable population.

Subsistence hunting by Eskimos is virtually nil on the American side, since the Eskimos prefer other stocks. On the Asiatic side, the gray whale catch is about 165 per year, taken by Soviets for their aboriginal people.

Frank said the Wolman-Rice report pointed to a potential problem for the California stock.

"The greatest threat . . . is increasing industrial development and vessel traffic in the calving lagoons," the report stated. "Considerable harassment is caused by commercial cruise boats which take people into the calving lagoons to seek the whales . . ."

"Oil exploration is proceeding near some of the calving lagoons and may have an adverse effect on the habitat.

"In Scammon's Lagoon salt barges make daily trips and increasing visits by yachts, fishing boats, and small trailer-transported boats have occurred as well."

Marine Impact of Amoco Cadiz Oil Spill Reviewed

Oil spilled by the wrecked supertanker *Amoco Cadiz* last March permeated the marine habitats of the Brittany shoreline to an unprecedented degree, a scientific report indicates. The oil's impact varied greatly with time after the spill, and was strongly influenced by the shape and nature of the shoreline involved, according to the report.

These were among preliminary findings of government and university scientists in their analysis of the largest oil spill in maritime history. The report, "The *Amoco Cadiz* Oil Spill — A Preliminary Scientific Report," was prepared by the National Oceanic and Atmospheric Administration in cooperation with the Environmental Protection Agency. A complete analysis of the incident could take several years.

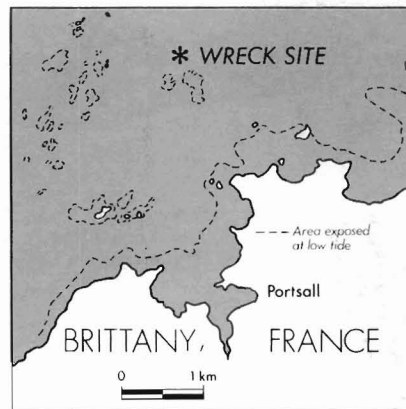
"We had never seen biological damage of this geographic extent in any previous oil spill," Wilmot N. Hess, director of NOAA's Environmental Research Laboratories, said. Hess led the Commerce Department agency's scientific study for several weeks in France, and is editor of the NOAA/EPA report. By making the spill the subject of a major study, important new insights were gained into how oil moves and changes in the marine environment. The NOAA/EPA report presented the following preliminary findings.

1) Coastal processes and the shape and nature of shoreline played a major role in dispersing and accumulating oil.

2) About one-third of the 220,000 tons of spilled oil came ashore, and about two-thirds was lost to evaporation and the sea.

3) A significant amount of the spilled oil appeared to sink to the seafloor, where high concentrations were measured, and become dispersed in the vertical water column. The impact of this large-scale sinking on bottom life remains to be assessed.

4) An American index that helps estimate the vulnerability of various coastal environments to oil-spill damage worked well in the *Amoco Cadiz*



Amoco Cadiz wreck site off the Brittany Coast.

incident, suggesting that it can be used as part of contingency plans for such similar, complex shorelines as those of Alaska and New England.

5) Several weeks after the spill, natural and human cleanup had reduced the amount of oil on the shoreline by an estimated 84 percent. However, a shift of winds from west to east, and the break up of large masses of oil offshore, extended contamination from the initial 43 miles (73 km) of shoreline to 192 miles (320 km) by late April, of which about 100 miles (180 km) were heavily oiled.

6) Contamination of ground water in

the beaches by oil, or possibly by dispersants, appeared to be the main lethal factor in the large kills of intertidal organisms. Even after beaches had been extensively cleaned, the ground water between sand and sediment particles remained severely oiled.

7) Marine populations along 90 miles (150 km) of shoreline were stressed by the oil, with intertidal populations, as well as populations in marshlands and other enclosed areas, particularly hard hit. The adverse effects were amplified by high spring tides.

8) Many bird species were migrating to nesting grounds when the spill occurred, and some 3,200 dead birds, of more than 30 species, were counted. About 85 percent of these were shag cormorant, guillemot, razorbill, and puffin, the latter three considered rare or threatened in France. (Populations in the bird sanctuary at Sept Iles, greatly reduced by the *Torrey Canyon* spill in 1973, could be further reduced by oil from the *Amoco Cadiz*.)

9) The spill had major impacts on commercial marine product harvests, with the French seaweed industry affected to an uncertain extent, oyster mariculture operations hardhit, and lobster holding pens in the spill areas so thoroughly oiled that scientists say they could be out of service for a year. Little

The wreck of the *Amoco Cadiz*. NOAA photograph.



is known thus far of the spill's impact on commercial fin fisheries.

10) Hydrocarbons blown ashore by gale-force winds could have contaminated crops in the nearshore area, and could have entered the human food chain by adhering to plants consumed by food animals ashore. This kind of oil-spill side effect is not well understood.

11) The impact of an oil spill is greatly enlarged by the creation of a water-in-oil emulsion called a "mousse" (for its resemblance to chocolate pudding), the volume of which is about 2.5 times that of the spilled oil.

12) While it is generally recognized that dispersing oil on the high seas is the preferred method of handling a large spill, any contingency plan aimed at combatting a spill of this magnitude under conditions of high onshore winds and heavy seas must focus on attacking the oil on the beach. The longer the cleanup takes, the more deeply the spilled oil penetrates the coastal ecosystem, and the broader its impact is likely to be.

Glazer Named to Head NOAA Policy, Planning

Michael Glazer, former Chairman of the California Water Commission, has been appointed Assistant Administrator for Policy and Planning of the National Oceanic and Atmospheric Administration (NOAA). In announcing Glazer's new appointment in the Commerce Department agency, NOAA Administrator Richard A. Frank said the Policy and Planning job was one crucial to the mission of the Administration.

"Michael Glazer comes to NOAA," Frank said, "at a time when increasing pressures are being felt for balanced environmental programs on local, national, and worldwide scales. We are most fortunate to have someone so well qualified to help NOAA in its evolving oceanic and atmospheric programs of resource management and scientific services."

Glazer is a native of Los Angeles, receiving a B.S. degree in industrial

engineering from Stanford University in 1962. He received a Master's degree from Harvard Graduate School of Business Administration in 1964, and a J.D. degree from the UCLA School of Law in 1967.

In 1968 he joined Tuttle and Taylor, a general business and securities law practice, representing a wide range of clients from publicly held corporations to Indian tribes. He was commissioner of the Los Angeles Department of Water and Power from 1973 to 1976, and served on the Blue Ribbon Committee on Water and Power Rate Restructuring for Los Angeles Mayor Tom Bradley. Earlier this year he entered Federal service as Special Assistant to the NOAA Administrator.

NOAA Fisheries Research Vessel Contract Issued

A \$2,875,000 contract for a 127-foot research vessel has been awarded the Bender Shipbuilding Company¹ of Mobile, Ala., by the National Oceanic and Atmospheric Administration (NOAA). The multiple purpose fisheries research ship will be used for stock assessment in the north Pacific 200-mile fisheries zone.

The NOAA ship, to be delivered by September 1979, will be a modified stock design combination crabber/trawler, with accommodations for 17 crew members and scientists. The contract will be administered by the Maritime Administration, a component of the Commerce Department.

The research vessel, with a beam of approximately 30 feet and a 13-foot draft, will have a range of 6,000 miles at 11 knots. The power plant will deliver 1,250 shaft horsepower at 1,225 r.p.m. The ship will provide stock assessments as a basis for fishery management actions by using conventional types of commercial gear, including bottom trawls, midwater trawls, bottom and surface longlines, gill nets, and

¹Mention of trade names or commercial firms does not imply endorsement by the National Marine Fisheries Service, NOAA.

pot fishings. It will have two research laboratories, and an 8- x 20-foot portable scientific van. Two trawl winches, typical of this size commercial fishing vessel, will have a pull of about 20,000 pounds net, and each will be equipped with 1,000 fathoms of 3/4-inch trawl wire.

NOAA Grant Emphasizes Improvements in Fishery Communications

A special task force designed to improve communications among fishermen and fisheries organizations in the Northeast has been established by the New England Marine Advisory Service under a \$59,200 grant awarded by the National Oceanic and Atmospheric Administration (NOAA). Recognizing that controversy exists among New England fishermen concerning limitations imposed under the 200-mile limit, the task force will focus much of its effort on resolving the issues, using workshops and other programs.

The advisory service also will strengthen its liaison with NOAA's National Marine Fisheries Service as well as the Northeast Regional Fisheries Management Council, which oversees fishing limits for both foreign and domestic fishermen under the 200-mile extended jurisdiction. The advisory service plans expanded use of Coast Guard and National Weather Service radio channels in providing information to fishermen, and hopes to use imagery from NOAA satellites to assist fishermen in locating fish.

An additional \$30,800 in funds supplementing the Commerce Department agency grant has been pledged by the Sea Grant programs of the Massachusetts Institute of Technology, State University of New York/Cornell University, University of Maine, University of Massachusetts, University of New Hampshire, University of Rhode Island, New England Aquarium, New England Center for Continuing Education, and the Council of Presidents, Land Grant Universities of New England.

Sea Turtle Protection Plan Announced

A comprehensive program under the Endangered Species Act to prevent the extinction of the oceans' largest turtles—some weighing over 1,000 pounds—has been unveiled by the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce and the Department of the Interior's U.S. Fish and Wildlife Service. The program, announced by Richard A. Frank, Administrator of NOAA, will protect green, olive (Pacific) ridley, and loggerhead turtles by largely banning the intentional killing of these animals, prohibiting trade in turtle meat and products, and preserving habitat.

In recent years, dangerous declines in the numbers of sea turtles have resulted from destruction of habitats and commercial exploitation of the animals. "Condominium and apartment construction, opening up of new beaches for recreation, and other human activities have destroyed or put pressures on the traditional turtle nesting areas," Frank said. "Moreover, turtle meat is often considered a delicacy, as are turtle eggs, and products made from shell and hides have been in great demand. The survival of sea turtles depends upon lessening these pressures." In addition, Frank noted that turtles are taken incidentally in U.S. commercial fishing operations, particularly the Gulf and South Atlantic

shrimp industry.

Frank stated that the new program will provide needed protection for the three species of sea turtles, "permitting them to survive and recover in the future." The new program includes the following elements:

1) Designation of green turtles with breeding grounds in Florida and the Pacific Coast of Mexico as endangered, and all other green turtles as threatened;

2) designation of olive ridley turtles breeding on the Pacific Coast of Mexico as endangered, and all other olive ridleys as threatened;

3) designation of loggerhead turtles throughout the world as threatened;

4) a stepped-up effort to develop excluder trawls that will permit fishermen to continue to catch shrimp while reducing the number of turtles accidentally caught in nets;

5) upcoming proposals to designate portions of the Cape Canaveral Ship Canal in Florida and nearshore areas of St. Croix, Virgin Islands, as critical habitats;

6) an expanded monitoring program with a view toward designation of additional areas for habitat protection;

7) a ban on the importation of turtle products from mariculture operations; and

8) a ban on subsistence taking of sea turtles except for limited taking in the Trust Territory of the Western Pacific.

The effect of the action is to prohibit trade in and the intentional taking of the three species of sea turtles, except for scientific research, public display, and the limited subsistence take in the Trust Territory. While some incidental taking of the sea turtles may continue in fishing operations, such operations are to be strictly regulated to preserve the species. Commercial interests that will be affected by the regulation include leather goods, food, cosmetics, and curio and jewelry concerns. A 1-year grace period will be allowed for interstate commerce to enable dealers, shopkeepers, and others to clear their shelves.

The green sea turtle, perhaps the most commercially valuable reptile in the world, is found in numerous areas around the globe, but has suffered a sharp drop in numbers. For example, NMFS scientists believe that the once abundant Florida population has now declined to less than 100 mature adults. The total world population of green sea turtles is believed to be no more than 600,000 adults.

Olive ridley turtles, which are not known to nest in the continental United States, have been taken commercially at the rate of between 500,000 and 1,000,000 annually since the 1960's. In one area of Mexico, females were reportedly taken last year from a population estimated to be 150,000. Scientists say that the stocks are beginning to show stress, and that if the take continues at the present rate, stocks may be beyond recovery in as few as 8 years. The olive ridley is hunted primarily for turtle leather.

Loggerhead turtles, like green turtles, are found throughout the world. They are estimated to number between 25,000 and 50,000 in the United States, but are not now in immediate danger of extinction. They are exploited for their meat, for soup, and for other products.

Three other species of sea turtles, the Atlantic ridley, leatherback, and hawksbill, are already listed as endangered. The Department of Commerce has jurisdiction over sea turtles from the edge of the water seaward and the Department of the Interior has jurisdiction on land.



A rare, white, 2-week-old loggerhead sea turtle hatched at Nova University's Ocean Science Center. NOAA photograph by Ralph F. Kresge.