

a few Eskimo whalers say that the bowhead population has actually been increasing in recent years.

No firm figures on the total population are, in fact, available, but most estimates put the total in the range of 1000 to 2000 animals. What made the IWC scientists fear that recent Eskimo whaling activities may be inhibiting recovery or actually reducing the bowhead stocks was mainly the number of whales reported struck but not landed.

Federal officials say that into the 1960's, the average annual kill rate was 10 or 15. For the last 5 years, the total numbers of whales reported killed and landed and, especially, of animals struck and later found dead (called "stinkers") or struck and lost, has climbed sharply.

In 1976, 48 whales were landed, 8 were killed and lost, and 35 were reported struck and lost. This spring 26 were landed, 2 were killed and lost, and 77 were struck and lost.

The bowhead is hunted in the spring and fall as the whales migrate between the Beaufort Sea, off Alaska's northern coast, and the Northern Bering Sea where they winter. The whales move north as the ice pack breaks up in the spring and return in early fall as the ice reforms. The moratorium would go into effect in time to prohibit the spring hunt next year.

The momentum of events has made compromise difficult. The government must decide between now and 24 October whether or not to file an objection to

the moratorium. If no objection is filed the ban on hunting will go into effect. Under the rules of the IWC, which has no enforcement powers, filing of an objection would preserve the status quo for the Eskimos, but could cause real difficulties for the United States in the commission.

The United States has taken the lead in pressing for protection for whales. In 1972, U.S. representatives put forward a proposal for a 10-year moratorium on all whaling, which the government continues to espouse. Since the U.N. Stockholm meeting on the environment in that year, which marked something of a turning point for the IWC, quotas on the take of whales have been cut from a total of 45,000 to 18,000.

Briefing

Congress May Gut Federal Floodplains Policy

In the wake of the recent (and third since 1889) devastating flood in Johnstown, Pennsylvania, it is reasonable to ask how another disaster could be prevented. However, according to the American Rivers Conservation Council, "Even as the rains were falling, House and Senate conferees were meeting in Washington on legislation which would seriously emasculate the one federal program which could effectively reduce new construction within flood hazard areas and consequently future loss of life and property from floods."

Among the handful of federal programs designed to promote environmentally sound land-use policies, the Federal Flood Insurance Program clearly has the strongest teeth. Though the program has complex features, one of its underlying purposes is quite simple: to discourage people from constructing new buildings in flood-prone areas. Its powers of enforcement are straightforward. Federally regulated banks—which means most banks—are prohibited from giving mortgages to individuals or developers for construction in flood-hazard areas of communities that do not join the insurance program. Conversely, communities that do join and adopt floodplain management ordinances are rewarded by the availability of federally subsidized flood insurance for existing buildings and new construction outside the clearly haz-

ardous areas. Not surprisingly, approximately 97 percent of communities with flood-prone lands have chosen to participate.

An amendment to the proposed Housing and Community Development Act of 1977, now before Congress, would, in the opinion of environmentalists, take the guts out of the flood insurance program by stripping the mortgage prohibition. Introduced by Thomas Eagleton (D-Mo.) in the Senate and Richard H. Ichord (D-Mo.) and Gene Taylor (D-Mo.) in the House, the amendment would replace the mortgage sanction with a provision denying disaster relief to communities that are unwilling to join the program.

On the face of it, the Missouri sanction looks more stringent than the existing one on mortgages but, in fact, it opens the floodgates to abuse. Whereas it is reasonable for the government to say, "No, we won't loan you money to build a house that is likely to be flooded," it is not politically realistic to think that Washington would turn its unsympathetic back on a community after disaster struck, even if it could justly say, "We warned you."

Woods Hole Mulls *Titanic* Expedition

Ghoulish Fishing In The North Atlantic . . . *Ear hears that the Woods Hole Oceanographic Lab, those folks in Massachusetts who found the Civil War ship Monitor are getting set to drag for, and dig up, the Titanic.* From Ear, the gossip

column of the *Washington Star*, 8 August.

"Is it true?" *Science* asked geologist Robert Ballard, who heads the Woods Hole diving expeditions. In part, yes. Those "folks" at Woods Hole have no intention of trying to raise the *Titanic*, but they might be persuaded to try to find her and take her picture.

Within the past couple of months, Woods Hole scientists have been approached by two independent outfits whose mission is to find and film the great *Titanic*. One is a California organization called "Big Events." The other, based in landlocked Hinckley, Illinois, calls itself Phobos, after one of the moons of Mars. With visions of the box office success of "Jaws" firmly in mind, Big Events wants Woods Hole to help it film a "docudrama". Phobos apparently is more interested in actually raising the *Titanic*.

Ballard reports that "Absolutely no decision has been made to go ahead with this expedition," but does not dismiss the possibility that something may come of it. "There is," he says, "no major scientific justification for trying to find the *Titanic*, but we are interested in some of the advanced technology problems it presents."

Were Woods Hole scientists to undertake this mission, which Ballard says has not been attempted by anyone else, they would do it with two goals in mind. One is to bring together existing technology for locating objects in the deep ocean—sophisticated tracking systems, magnetometers, sonar scanners. "Eighty percent of the technology for finding the *Ti-*

The fear is that if the United States files an objection to the moratorium on the bowhead, major whaling nations, notably Japan and the Soviet Union, which have reduced their whaling operations sharply, will be likelier to file objections and, perhaps, reverse the progress made in protecting the whale. Despite the fact that the exemption is for aboriginal whaling and not commercial whaling, William Aron, director of the office of ecology and environmental conservation of the National Oceanic and Atmospheric Administration (NOAA) and U.S. representative on the IWC, says "There is good reason to believe that U.S. credibility would be diminished" on the IWC.

Aron and other federal officials emphasize that no decision has been made

on the matter of the objection. A draft environmental impact statement assessing the consequences both of filing and not filing the objection has been prepared under the auspices of NOAA's National Marine Fisheries Service and sent to the Council on Environmental Quality. Hearings in Washington and in Alaska are to follow in the first half of September. Then, having heard from the interested parties, the federal agencies concerned will hammer out a recommendation. If an objection is filed, it would be made by the Secretary of State in consultation with the Secretary of Commerce.

The impact statement on the moratorium, released as this was being written, appears to provide a fairly thorough and informed appraisal of the relation of the

bowhead to Eskimo life. The Eskimos and their partisans regard the hearings as providing an opportunity to present their case which they so far have been denied.

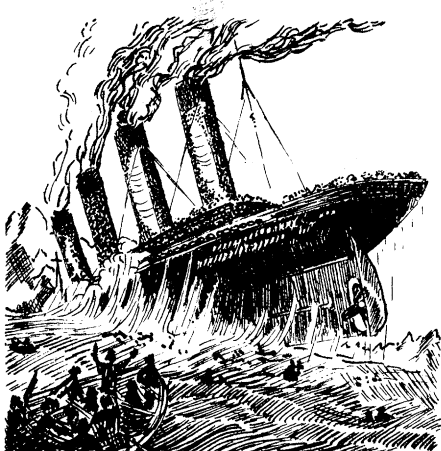
The proposed moratorium is seen by the Eskimos as a direct attack on the Eskimo way of life. Eskimos have hunted the bowhead for 3000 years or more. They resent being told they cannot go on hunting it because the whale is an endangered species, when it was the Yankee whalers of the last century and early part of this one who pursued the bowhead almost to extinction.

For the Eskimo, the bowhead hunt provides a test of manhood, and great prestige attaches to participating in a kill, particularly in captaining a successful crew. Whaling exerts a strong influence

Briefing

tanic exists somewhere," Ballard notes. "We'd be interested in integrating it."

Their other ambition is to develop new,



Richard Pellicci

high-quality technology for deep-sea photography. The *Titanic*, which went down on the night of 14 April 1912, lies somewhere off the Grand Banks of Newfoundland in an estimated 12,000 feet of water. A successful search and photographic mission would require the cameras, film, lighting equipment and other gear necessary for first-rate television, motion picture, and still shots of the ship, all in glowing Technicolor if moviegoers' tastes are to be satisfied. Getting lighting good enough for color motion picture photography at that depth is a special problem.

"This technology does not now exist," says Ballard, who is interested not in making box office spectacles but in photography for deep-sea mapping projects. "However," he adds, "here at the

lab we know enough about underwater photography to develop what we need," The producer for Big Events told *Science* that his company is ready to pay Woods Hole \$1.5 million or more for technological development. The director of Phobos refused any comment whatever.

An expedition to the *Titanic* would probably be an unmanned venture, using the (Alcoa) *Seaprobe* rather than the *Alvin*, which has taken researchers on diving missions to depths far greater than 12,000 feet. "It is just not worth risking someone's life by sending *Alvin* down where it could be trapped in the cables or remains of the ship," Ballard says.

An expedition to find the *Titanic*, including all the preliminary technological development, is likely to cost at least \$2 million to \$3 million and would not be launched until 1979 at the earliest. Woods Hole scientists figure that if things work out, what they stand to get out of this is a couple of million dollars worth of valuable technology. So far, no one has mentioned a percentage of the box-office gross.

Widespread PBB Contamination Can Affect Immune System

PBBs, those toxic flame-retardant chemicals that first claimed public attention about three years ago when they inadvertently were mixed with animal feed in Michigan, turn out not to be a problem to Michigan alone. In fact, PBBs (poly-

brominated biphenyls) may prove to be an environmental contaminant nationwide, posing yet unconfirmed but potentially serious threats to human health. At recent hearings of the House subcommittee on oversight and investigations, Congress heard evidence that PBB exposure may damage the immune system.

In addition, subcommittee members learned that PBBs have been found in catfish in the Ohio river and in plants, fish, soil, water, and human hair in the New York-New Jersey manufacturing area. In addition, Environmental Protection Agency officials say they are "urgently" studying fish, human hair, and breast milk for evidence of PBB contamination at plants where PBBs are used in large amounts in Ottawa and Cairo, Illinois; Oxnard, California; Iona, Mississippi; Cincinnati, Ohio; Milan, Tennessee, and Corry, Pennsylvania.

Revealing preliminary findings on the effects of PBBs on the immune system, George Bekesi of Mount Sinai medical school in New York, said he had examined blood samples from 45 Michigan farm residents. Eighteen of them showed immunologic deficits, similar to those often found in cancer patients or individuals taking immunosuppressive drugs.

House subcommittee staffers say that Congress plans to continue its investigation of PBBs as a public health issue, especially because federal agencies, including the Department of Health, Education, and Welfare, are taking what has been described as a "cavalier" attitude to what is being recognized as an increasingly serious problem.

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