Killing Whales For Science?

A storm is brewing over plans to expand Japan's scientific whaling program

On the rise. Humpback populations are rebounding, sparking plans to hunt them for research purposes.

WHEN LOUIS HERMAN, PROFESSOR EMERITUS at the University of Hawaii, Manoa, sets out to study humpback whales in Hawaii, the goal is to see the animals as individuals. His team identifies whales genetically, with small skin samples taken with a retractable dart, and physically, with photos of their tail flukes. Whale by whale, he and other marine biologists around the world are building a picture of a population rebounding from the overhunting of the last century. At the same time, however, another kind of study is planned for Antarctic humpbacks: Japanese researchers plan to kill 50 annually in an effort they claim will help explain ecosystem dynamics in the Southern Ocean. It would be the first time in 33 years that humpbacks have been killed for science.

Japan's intention to expand their scientific whaling, which has been condemned by many Western scientists, will be discussed at what all expect to be a fiery meeting next month in Anchorage, Alaska, when some 200 whale researchers gather for the Scientific Committee meeting of the International Whaling Commission (IWC); it will be followed by the commission's full-court meeting, which is expected to be equally rancorous.*

"There are going to be some fireworks," predicts Doug DeMaster, a marine mammal biologist, director of the Alaska Fisheries Science Center in Seattle, Washington, and deputy commissioner of the U.S. delegation. The roster is peppered with contentious topics, including aboriginal subsistence whaling and whales as bycatch, but none is as explosive as scientific whaling.

Even before the delegates have gathered, tempers are flaring over Japan's larger catch of Antarctic minke whales (in 2005, it upped its annual take from 440 to 935) and its plans to kill 50 humpback and 50 fin whales each year. "If Japan wants to resume commercial whaling, it should just come out and say that's what it's doing," fumes marine biologist Nick Gales of the Australian Antarctic Division in Kingston, Tasmania, who is a member of IWC's Scientific Committee (IWC/SC). "But to do this in the name of science is simply not defensible."

Scientists at the Government of Japan's Fisheries Agency, which oversees the hunts, contend that their project is indeed scientific. "We are attempting to build an ecosystem model of the Antarctic's Southern Ocean," explains Joji Morishita, director for the agency's international negotiations. "And to do that, we need to include data from the humpback and fin whales, since their biomass now equals that of the minke whales. We need to know their numbers, what they eat, how much, when and where, and whether they are outcompeting other whale species."

The issue highlights the sharply differing perspectives of wildlife conservation and resource management. Humpbacks, for example, were nearly hunted to extinction in the 20th century and now serve as the poster child for many conservation organizations; most Western nations consider them, as well as the fin whales, to still be endangered. But Morishita takes a different view. "It's dangerous to make the humpback a special animal that cannot be used," he says. "What's wrong with using an abundant species while we still protect the endangered ones?"

Some fear that the tension may ultimately break the fragile convention itself. The 73-member voluntary organization is virtually divided between pro- and anti-whaling nations and suffers from unhappy memories of previous meetings marred by insults and physical attacks. IWC, many say, is sinking like a harpooned humpback (although at least six new countries will join this year, as each side cultivates new members). Scientific whaling "has polarized the [IWC's] Scientific Committee,"

* 59th Annual Meeting of the International Whaling Commission, 4–31 May, Anchorage, Alaska.

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says Scott Baker, a conservation geneticist at Oregon State University's (OSU's) Marine Mammal Institute in Newport. "We're asked to review Japan's proposals, to treat them as science when they are not. And that is objectionable."

In the beginning

Scientific whaling was not the original purpose behind IWC, which serves as the decision-making body for the International Convention for the Regulation of Whaling (ICRW). Rather, it was set up in 1948 for the interests of commercial whaling. At the time various nations, including the United States, were concerned that many species of the great whale were being overhunted. According to ICRW's charter, it was organized "to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry." The convention also sanctioned scientific whaling under the four sentences of Article VIII, which allows members to catch whales for scientific purposes. Countries doing so are charged with regulating their own hunts, with no catch limits or oversight from member nations.

Article VIII was drafted by Norwegian whaling expert and first chair of IWC, Birger Bergersen, now deceased. "It's clear that in his mind he was thinking that the number of whales a country could take for science was less than 10; he didn't intend for hundreds to be killed for this purpose," says Lars Walløe, a physiological biologist at the University of Oslo, Norway, who has written about Bergersen and heads the Norwegian delegation to the Scientific Committee. "He had in mind, for instance, the possibility of finding a new animal and thus needing to take some in order to describe them scientifically."

In 1982, with many populations plummeting to near-extinction levels, IWC enacted a moratorium on commercial whaling, which took effect in 1986, and its focus shifted to conservation. "The moratorium is probably one of the greatest conservation success stories of the 20th century," says Phillip Clapham, a marine biologist with the Alaska Fisheries Science Center in Seattle. "Many species of whales that were really hammered are now making remarkable comebacks," including some populations of humpback and fin whales. But some blue, right whale, and bowhead populations remain worrisomely low, he adds.

Not every IWC nation joined the moratorium. Member nations can lodge formal objections to the body's decisions, which it has no authority to enforce. Norway objected and has continued commercial hunting of minke whales, which are smaller (8 meters in length) baleen whales thought to number in the hundreds of thousands. Last year, Norway unilaterally upped its annual quota from 745 to 1052. Japan settled on a different tack, withdrawing its formal objection but launching scientific whaling programs in the Southern Ocean and North Pacific under Article VIII. In the past 5 years, Iceland has also started both scientific and commercial whaling programs targeting minke and fin whales, although its take is only a fraction of Japan's (see table, below).

Although many whale researchers decry Iceland's decision, they are even more alarmed by the ever-increasing scale of Japan's scientific program and the fact that Japan kills whales within IWC's Southern Ocean Whale Sanctuary. Under the scientific whaling program launched in 1987 (called JARPA, for Japan's Whale Research Program under Special Permit in the Antarctic), the Japanese have killed an estimated 6500 minke whales there; that compares to about 2100 whales killed worldwide under Article VIII by all nations combined between 1952 and 1986.

Japan began its second scientific whaling operation (JARPN) in the North Pacific in 1994, where it targets minke, Bryde's, sei, and sperm whales. According to Article VIII, the meat from these hunts should be used, and despite low demand, it is available in Japanese markets. Some is now stewed in ketchup at schools for lunches, and some can be found in restaurants and for sale online, says Naoko Funahashi, a conservationist with the International Fund for Animal Welfare in Tokyo.

In 2005, at the 57th IWC meeting in Ulsan, South Korea, Japan stunned IWC/SC with its announcement that it was beginning a new operation (JARPA II), which would include taking humpback and fin whales in the Southern Ocean Sanctuary. So far, it has harpooned 12 fin whales and intends to begin killing humpbacks in 2007–08.

Science under scrutiny

Under the convention, the Scientific Committee is required to review scientific whaling proposals, and many researchers are sharply critical of the results of JARPA I. "The science and data are very poor," says Clapham, echoing a complaint voiced by many other IWC/SC members. "It's outrageous to call this science; it's a complete charade," charges Daniel Pauly, director of the Fisheries Centre at the University of British Columbia in Vancouver.

The committee produced a consensus review of the 18-year JARPA I study last December, but the document includes few areas of agreement. On minke whale abundance: "The workshop has not developed any agreed estimates." On the role of whales in the marine ecosystem, "relatively little progress has been made."

Yet the Japanese stand firmly by the science behind their whaling program. "We hear these criticisms all the time," says Morishita. "A lot of non-Japanese scientists are always calling for us to submit our data, and we present our research results every year to the Scientific Committee and at other scientific meetings. If they think our data is so useless, I don't think they'd demand it. We would also like to publish our papers in more leading Western science journals," but Morishita perceives these as being biased against scientific whaling. "We are also the only scientists collecting age data on these populations." Scientists determine a whale's age by its waxy ear plugs, which can only be studied if the whale is dead.

Recent Total Whale Catches by Country

	Norway Commercial	Iceland Commercial & scientific	Japan Scientific	Russian Federation Subsistence	U.S. Subsistence	Denmark (Greenland) Subsistence
2001	552	—	598	113	75	158
2002	634	—	684	134	50	164
2003	647	37	704	131	41	209
2004	544	25	755	112	43	204
2005	639	39	1243	126	68	193
2006 *	546	37	1320	140	39	197
Total *	**3562**	**138**	**5304**	**756**	**316**	**1125**

* 2006 data incomplete.

SOURCE: PAUL WADE/IWC

Taken. Japanese ships catch minke whales like this one, as well as a few other species, under scientific programs.

Morishita argues that humpback and fin whales are now competing with the minke for krill and says their new program will test this idea.

Some researchers agree that the Japanese data are important. "They are doing valid science," says Norway's Walløe, pointing in particular to Japanese genetic data that suggest the minke whale numbers in the Southern Ocean are declining, and that minkes there are growing slimmer, losing blubber. "Whether or not it is necessary for their study to take so many hundreds of whales every year for science, I cannot comment." Walløe adds that the Japanese also provide biopsy samples, which are rare from large baleen whales in the Southern Ocean.

But these data can be gathered without killing the whale, say Herman and others. "The Japanese want to ask which breeding populations the whales belong to, if these are growing, and where do they feed," says Gales. "These are all questions which can be answered using nonlethal techniques including observation, satellite tracking, and genetic studies." He and many others are unconvinced by the idea of food competition and say that it betrays an overly simplistic view of complex marine ecosystems.

Researchers on all sides agree that the humpback whales' numbers in the Southern Ocean are increasing. Indeed, the data should "make everyone happy," says Morishita. "Their numbers are so large now that their increase seems to be adversely affecting the minke whale. We want to see if that is the case."

But Clapham says not all southern humpback populations are rebounding. Whales from a variety of breeding populations congregate in the feeding area of the Southern Ocean. Most are part of two fairly large populations (totaling nearly 20,000) that travel from Antarctica to Australia's coasts, where they mate and birth their calves. Others, however, hail from far smaller populations that breed in the waters off Fiji, New Caledonia, and Tonga. "These stocks were devastated by illegal Soviet whaling in the late 1950s and '60s," says Clapham. "They've never recovered and still number in the mere hundreds or fewer. But they feed in Antarctica with the whales from Australia. It's impossible to tell them apart; they don't have signs on their backs. How are the Japanese going to be sure they don't take humpbacks from these highly endangered populations?"

Japan's program suggests to OSU's Baker that the science is largely about managing whales for future harvest. Whaling "can be done sustainably, which is why Japan collects the kind of data it does," says Walløe. "If whales are going to be hunted in a sustainable manner, then we need this kind of information. But, if we're not going to kill any whales, then it could be argued we don't need it." And the killing of whales, he notes, has now become more of a political than a scientific question.

Because the scientific whaling program is "out of control," says former U.S. Whaling Commissioner Rollie Schmitten, it might be better to just phase it out and permit tightly controlled commercial whaling, while prohibiting any international trade in whale meat. IWC has attempted to negotiate similar agreements at its annual meetings since 1996—but it has always failed, partly because some countries, notably Australia, New Zealand, and the United Kingdom, refuse to consider removing the ban. Meanwhile, subsistence hunts by aboriginal peoples in the United States, Russia, Greenland, and the Caribbean nation of St. Vincent and the Grenadines are also up for renewal this year. All this sets the stage for a contentious meeting when the full IWC gathers at the end of May.

As a small island nation, Japan defends its right to marine resources. Japanese generally perceive antiwhaling sentiment as anti-Japanese, says Funahashi. But she holds out hope for change. "Most Japanese don't know that we hunt whales in Antarctica," she says. "They think it's only in Japanese waters. When they hear about this other, they don't approve. Now more Japanese are going whale watching, and this is changing people's attitudes." It's harder, after all, to eat an animal you know. **–VIRGINIA MORELL**

CROSS-CULTURAL RESEARCH

Pentagon Asks Academics for Help In Understanding Its Enemies

A new program at the U.S. Department of Defense would support research on how local populations behave in a war zone

The Iraq War was going badly in Diyala, a northern province bordering Iran, in late 2005. A rash of kidnappings and roadside explosions was threatening to give insurgents the upper hand. Looking for insights on how to quell the violence, the U.S. Department of Defense invited a handful of researchers funded by the agency to build computer models of the situation combining recent activity with cultural, political, and economic data about the region collected by DOD-funded anthropologists.

The output from one model, developed by sociologist Kathleen Carley and her colleagues at Carnegie Mellon University in Pittsburgh, Pennsylvania, connected a series of seemingly disparate incidents to local mosques. Results from another model, built by computer scientist Alexander Levis and his colleagues at George Mason University (GMU) in Fairfax, Virginia, offered a better strategy for controlling the insurgency: Getting Iraqis to take over the security of two major highways, and turning a blind eye to the smuggling of goods along those routes, the model found, would be more effective than deploying additional troops. The model also suggested that a planned information campaign in the province was unlikely to produce results within an acceptable period of time.

Researchers and DOD officials say these insights, however limited, demonstrate a role for the social and behavioral sciences in combat zones. And a new program called Human Social Culture Behavior Modeling will greatly expand that role. John Young Jr., director of Defense Research and Engineering and

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