

WHALE STOCKS

Mystery of the Missing Humpbacks Solved by Soviet Data

In 1991, Victoria University postdoc C. Scott Baker set out to study humpback whales migrating through New Zealand's Cook Strait. Although locals hadn't spotted a humpback for 30 years, Baker knew that the whales, once hunted to the brink of extinction, were recovering elsewhere, even in Australia, and that the Cook Strait had been one of their classic migration routes from the Antarctic to the islands of Oceania. Baker, now a conservation geneticist at Oregon State University's Marine Mammal Institute in Newport, quickly learned that "the locals were right. There weren't any humpbacks. And there should have been." Had there been some environmental change in their breeding or feeding grounds? "It was a puzzle because the Australian and Oceania populations feed in the same [Antarctic] waters," says Baker.

A paper in *Marine Fisheries Review*, made available online last week in advance of its June publication, now solves the mystery: "It was massive illegal hunting by the Soviet Union and other countries," especially of the Oceania humpbacks, says whale biologist Phillip Clapham of the National Marine Mammal Laboratory in Seattle, Washington, lead author of the study and an accompanying commentary. The study concludes that the high number of unreported catches by Soviet whalers of humpbacks in the Southern Ocean decimated this population so severely that it has not yet recovered. These revelations have implications for the management of whales today, for the papers come at a time when the International Whaling Commission (IWC), the primary body for the global conservation and management of whales, is itself at a crossroads, divided between pro- and antiwhaling factions (*Science*, 27 April 2007, p. 532).

"These papers lay out how [IWC] got into this mess," says marine biologist Douglas DeMaster of NOAA Fisheries in Juneau. DeMaster headed the U.S. delegation this year to a series of IWC negotiations designed to reconcile the organization's differences, which have so far failed, according to an IWC report posted online last week. IWC's troubles "all stem from this overharvesting as well as the illegal, unreported, and unregulated hunting," says DeMaster.

From 1947 to 1973, the Soviet Union, as a member of IWC, was allowed to take a certain number of whales of certain species in certain areas. (IWC was created in 1948 to put commercial whaling on a sustainable course.) As required, each Soviet whaling vessel carried biologists to record various data about the harpooned whales.

But instead of the prescribed catch, Clapham and his colleagues report, whalers on Soviet ships such as the *Sovetskaya Ukraina* killed every whale they encountered, regardless of species, age, size, or sex. Marine biologists on the Soviet whaling fleet in the

true records to colleagues in other labs; he complained so loudly about the fake data that he lost his job as a researcher. In 1993, a top Russian scientist admitted the deception, and later, the biologists began turning over their original data to IWC.

In the current paper, Clapham's team combines interviews with the biologists with other records to link the Soviet catch data to specific IWC-management areas in the Southern Hemisphere—thereby solving the mystery of Baker's missing Oceania whales. The study reveals that the Soviets hit this population in the Antarctic waters south of New Zealand particularly hard from 1959 to 1961, killing more than 25,000. Later, they took another 23,000, but they reported only 2710 total to IWC.

Because of earlier whaling, "those humpbacks were already in decline," says Baker, "and the Soviets took the rest. Their whaling cast a very long shadow." Clapham's team says that the Oceania subpopulation today numbers between 3000 and 5000, 20% to 25% of its original size, and was categorized last year as endangered. "It will easily take them another 50 years to recover," says Baker.

The paper is timely because some IWC members are calling for modifying the current moratorium on commercial whaling, says whale biologist Sidney Holt, who played a key role at IWC for 49 years. Two years ago, citing the worldwide recovery of humpbacks, Japan announced that it would begin hunting the humpbacks of the Southern Ocean as part of its scientific whaling, although that plan is now on hold.

IWC, then as now, relies on self-reporting of results and has no enforcement provisions. To Holt, the Soviet catch data "show how essential it must be to put in place a watertight international system to ensure compliance with regulations." But Lars Walløe, a whale scientist at the University of Oslo, Norway, says that "it is quite a different story today." Nowadays, whales are hunted for meat, not oil, and so there "isn't the same incentive for such deception."

The moratorium will be at the heart of discussions next month at the IWC annual meeting in Madeira. Mikhalev plans to attend—a living reminder, says Clapham, that "self-regulation in environmental matters doesn't work."

—VIRGINIA MORELL

Whales beware. Dimitri Tormosov, Yuri Mikhalev, and Nikolai Doroshenko (inset) were told to falsify data on Soviet whaling ships.

