

Experts Gather to Talk Turtle

Despite endangered species pact, sea turtles are threatened by world trade in meat, skins, and shells

The spotlight was on the sea turtle at a 5-day international conference held at the State Department at the end of November. Participants from 40 nations were there to hammer out a conservation strategy for the earth's seven species of sea turtle, six which are endangered.

Sea turtles embody all the major challenges faced by efforts to conserve endangered species. Like whales, they are distributed internationally and they travel a lot—some regularly migrate thousands of miles—so nothing less than a global strategy is required. Also, they are extraordinarily valuable commercially because of the variety of products they yield, including eggs, skin, meat, calipee (cartilage used for soup), shells, oil, and trophies. In some areas, sea turtle meat is an important food for indigenous populations, which poses the same type of conflict that has occurred over the bowhead whale in Alaska. Finally, sea turtles are difficult to protect because they are easy to catch, slow to mature, and vulnerable at many stages. Their habitats are being threatened, their eggs are poached, and adults are being lost in large numbers to shrimp fishing operations, where they are caught in shrimping nets and drown.

The species are as follows: the green (which are the most numerous and the ones that make the best eating), hawksbill (suppliers of tortoiseshell), the loggerhead, the leatherback, the olive (Pacific) ridley, the Kemp's (Atlantic) ridley, and the flatback. All are now listed on Appendix 1, the list of the Convention on International Trade in Endangered Species (CITES); however, Japan, a major consumer of turtle products, has not ratified the treaty, and two other big consumers, France and Italy, have taken reservations on sea turtles.

Anyone who attended all the sessions of the conference should be dreaming about sea turtles for many weeks to come. There were sea turtle movies, and long, detailed presentations about sea turtle reproduction, migration, nutrition, trade, "incidental catch," subsistence hunting, history, laws, tagging, nesting, hibernation, "headstarting," managing, and farming. But despite all that is known about sea turtles, much is not known about their populations, life-

spans (they can live 30 to 40 years in captivity, but life-span in the wild is unknown), and how a turtle finds its way back to nest on the beach where it hatched.

One certainty is that turtle populations have drastically diminished in the past

few decades. They were once so plentiful in the Caribbean that Spanish galleons could navigate in the fog to Grand Cayman Island by following the sounds of migrating herds. As recently as 1947, 40,000 Atlantic ridleys were seen nesting together on a beach in Mexico. Now At-

NEI Votes to Protect Cold-Blooded Animals

The National Advisory Eye Council, which must review and approve research grants made by the National Eye Institute (NEI), is asking all investigators not to inflict needless pain on the cold-blooded lower vertebrates (such as frogs and turtles) used extensively in vision research. Some investigators are said to assume that cold-blooded animals do not experience pain when in fact they probably do, some scientists believe.

At its October meeting, the council approved a statement of policy calling on all researchers supported by NEI to adopt "effective and uniform procedures . . . to minimize pain in these animals." Henceforth, researchers will be expected to note in their grant applications what they are doing to ensure that this policy is followed. The council indicates that, in most cases, the policy can be met—and is often already being met—without compromising the advantages of working with cold-blooded vertebrates.

Council member Kenneth T. Brown, a professor of neurophysiology at the University of California School of Medicine at San Francisco, first raised the issue at a council meeting last January. In a memorandum to his colleagues on the council, he said that, while it may be impossible to prove that cold-blooded vertebrates experience pain, the argument sometimes advanced by researchers that they do not is "so strained that one wonders whether it would be advanced at all except in self-justification."

Brown then observed, "Since pain is an important adaptive survival mechanism, it is probably a primitive mechanism that appeared early in evolution. This is indicated, for example, by the fact that the withdrawal reflex is organized at a spinal level. . . . Since it is demonstrably reasonable to assume similarity among vertebrates for many of the research problems that interest investigators, it would be unreasonable to assume at the same time that cold-blooded animals do not feel pain."

Brown said certain investigators do not consider or take seriously the pain that may be inflicted on these animals. "For example," he said, "I have heard a first-hand account from a well-known investigator who systematically practiced removal of one eye from a live fish, which was then replaced into the tank, awaiting an experimental need for the second eye. . . . The investigator even joked about this in a group of experimenters in a social situation, which seems to indicate the generality with which such practices are accepted."

The upshot of his initiative was that the council, in considering the matter again in May, concluded that the National Institutes of Health's general policy on "Responsibility for Care and Use of Animals" is not specific enough clearly to protect cold-blooded vertebrates from needless suffering. Accordingly, the council asked Brown to draft the statement of policy which it has now adopted.—LUTHER J. CARTER