



Bluefin Tuna in the West Atlantic: Negligent Management and the Making of an Endangered Species

Carl Safina

Conservation Biology, Vol. 7, No. 2. (Jun., 1993), pp. 229-234.

Stable URL:

<http://links.jstor.org/sici?sici=0888-8892%28199306%297%3A2%3C229%3ABTITWA%3E2.0.CO%3B2-C>

Conservation Biology is currently published by Blackwell Publishing.

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/about/terms.html>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/journals/black.html>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

The JSTOR Archive is a trusted digital repository providing for long-term preservation and access to leading academic journals and scholarly literature from around the world. The Archive is supported by libraries, scholarly societies, publishers, and foundations. It is an initiative of JSTOR, a not-for-profit organization with a mission to help the scholarly community take advantage of advances in technology. For more information regarding JSTOR, please contact support@jstor.org.

Bluefin Tuna in the West Atlantic: Negligent Management and the Making of an Endangered Species

The bluefin tuna (*Thunnus thynnus*) is a creature of superlatives. Growing to 1500 pounds (700 kilos), traveling on transoceanic migrations, and reputedly capable of swimming 50 miles (90 km) per hour, it is one of the largest, most wide-ranging, and fastest of animals. To anyone who has seen this saber-finned giant explode through the surface of the sea, it is among the most magnificent. The bluefin is also one of the most valuable and most over-exploited of creatures. Its west Atlantic breeding population has plummeted 90% since 1975, from an estimated quarter million to 22,000 animals (ICCAT 1991). The east Atlantic adult population is currently estimated to be half what it was in 1970 (ICCAT 1992). A highly prized delicacy in Japan's most exclusive sushi restaurants, a single bluefin can bring fishermen up to U.S. \$30,000, sell at auction in Tokyo for more than U.S. \$60,000, then cost diners U.S. \$350 per pound. Most fishing for bluefin tuna is driven by the Japanese market and this international trade.

Built, like most tunas are, for speed and endurance ("tuna" is from Greek meaning "to rush"), its fins retract into slots during high-speed acceleration. The bluefin tuna is "one of the most highly developed of the tuna species" (Cort & Liorzou 1991). Through a highly developed circulatory thermal exchange system known as the rete mirabile or

"miraculous network," bluefins maintain body temperature of 24° to 35° C, though they inhabit waters ranging as low as 6° C (Cort & Liorzou 1991).

The bluefin tuna inhabits both sides of the Atlantic and the Pacific. Highly migratory, western Atlantic bluefin range from waters off Labrador south at least to Brazil and breed almost exclusively in the Gulf of Mexico (Mather 1974; Clay 1991). There is approximately a 3% west-to-east exchange of adult bluefin across the Atlantic Ocean (Suzuki 1991). The eastern and western populations are considered distinct for fishery management purposes (ICCAT 1989). Southern bluefin tuna (*Thunnus maccoyii*), whose adult population has also declined continually and is now "remarkably low" (ICCAT 1992), migrate circumpolarly in the southern hemisphere, apparently breeding only off Java and northwest Australia but ranging into the south Atlantic.

The body responsible for stewardship of Atlantic tunas is the International Commission for the Conservation of Atlantic Tunas (ICCAT, pronounced "eye-cat," hereafter referred to as the Commission). The Commission comprises roughly 20 member Atlantic-rim countries, plus Japan, a major fisher, importer, and consumer of Atlantic tunas. Founded in the late 1960s, the Commission assumed scientific and management authority for "tunas and tuna-like

species." In practice this has included both tunas and such taxonomically distant species as marlins (Istiophoridae) and swordfish (*Xiphias gladius*).

The Commission's scientific committee, composed of scientists from several countries, compiles catch statistics and models population trends. The Commission's managers are responsible for setting fishing management policy. The managers often have strong industry ties. For example, at this writing one of the three U.S. commissioners works full time as executive vice president for a national seafood industry advocacy and lobbying firm. Another works for the U.S. Department of Commerce.

The Commission's charter mandates that it manage for maximum sustainable yield. But though several species are declining under the Commission's purview, the west Atlantic bluefin tuna is the only one for which the Commission has ever recommended catch quotas. These quotas have long exceeded maximum sustainable yield. An independent panel convened in 1991 by the U.S. National Marine Fisheries Service (NMFS) found that the west Atlantic bluefin population "could provide substantially greater yield and spawning potential if fishing mortality was reduced." The panel also noted that the bluefin population modeling that NMFS contributes to the Commission "used state-of-the-

art methodology and is generally of high quality" (NMFS 1991).

But the Commission's managers have repeatedly ignored their own scientists' advice. In 1981 the Commission's Standing Committee on Research and Statistics concluded that the western Atlantic's bluefin tuna population was depleted and that catches "should be reduced to as near zero as feasible." The Commission's managers set a 1160 metric ton annual quota, ostensibly for "scientific monitoring." (The Commission's U.S. advisory committee chairman remarked publicly 10 years later, "It isn't actually a scientific quota and we never really believed it was.") In 1983, the "scientific" quota was raised to 2660 metric tons. Throughout the 1980s this annual "scientific" quota remained unchanged, though the Commission's own data showed the breeding population declining each year, as fishing mortality increased severalfold (Fig. 1). In 1990, the Commission's Standing Committee on Research and Statistics noted that existing catch quotas "will cause the decline of the age 8+ group [breeders] to continue" and "is expected to result in an increase in the estimated fishing mortality rate and a

corresponding decline in the estimated stock size" (ICCAT 1990).

In 1991, the Commission's scientific committee reported that the west Atlantic breeding population had declined 24% in the preceding 12 months. The scientific committee also projected an 8% decline between 1992 and 1995 under current fishing pressure, but projected a 47% increase between 1992 and 1995 if the quota was cut by 50%. By that time, Sweden had announced that it would seek to list the western Atlantic bluefin on CITES Appendix 1, and Swedish observers were present at the 1991 meeting of the Commission (CITES, the Convention on International Trade in Endangered Species of Wild Flora and Fauna, is a treaty with approximately 120 party countries at present. Appendix 1 includes species threatened with extinction that are affected by international trade). Apparently feeling some pressure, the Commission's managers cut quotas 10% that year. No recovery target or recovery schedule for bluefin tuna, or any other species, has ever been adopted by the Commission.

The Commission is not in a strong position to regulate or manage much of the international bluefin

tuna fishing. Countries that are not Commission members make significant catches. Japan Fisheries Agency officials have said that catches by non-ICCAT countries may exceed 80% of the Commission's members' catch in the Atlantic, and "an increasing number of boats have been reported flying flags of convenience of ICCAT non-member countries so as to target bluefin tuna in the Gulf of Mexico and the Mediterranean Sea [the only known spawning areas], and thereby fish without any restrictions" (Miyake 1992).

These problems have drawn the attention of conservation organizations. Based on the Commission's management record and on its 1990 statistical report, and in an attempt to make the Commission accountable for its actions, the National Audubon Society in the spring of 1991 proposed to the U.S. Fish and Wildlife Service that the western Atlantic population be included in CITES Appendix 1. Such a listing would have suspended export to Japan of bluefin tuna from the listed population. The U.S., under heavy pressure from tuna exporters, decided not to seek listing. Consequently, Audubon sought the World Wildlife Fund's assistance in furthering discussions Audubon had initiated with Sweden, whose once-productive bluefin fishery had vanished in the last two decades. In October 1991, Sweden announced its proposal that the western Atlantic population be listed in CITES Appendix 1 and the eastern Atlantic population in Appendix 2 (the latter listing would mandate monitoring of international trade).

A month after Sweden's announcement, the Commission held its annual meeting in Madrid. The U.S. position at that meeting was to pursue a 50% reduction in catch quota for the western Atlantic population. This position, the first catch reduction for bluefin tuna proposed by a Commission country in nearly a decade, had been hard-won by conservation advocates working against bitter industry lobbying. This lobby-

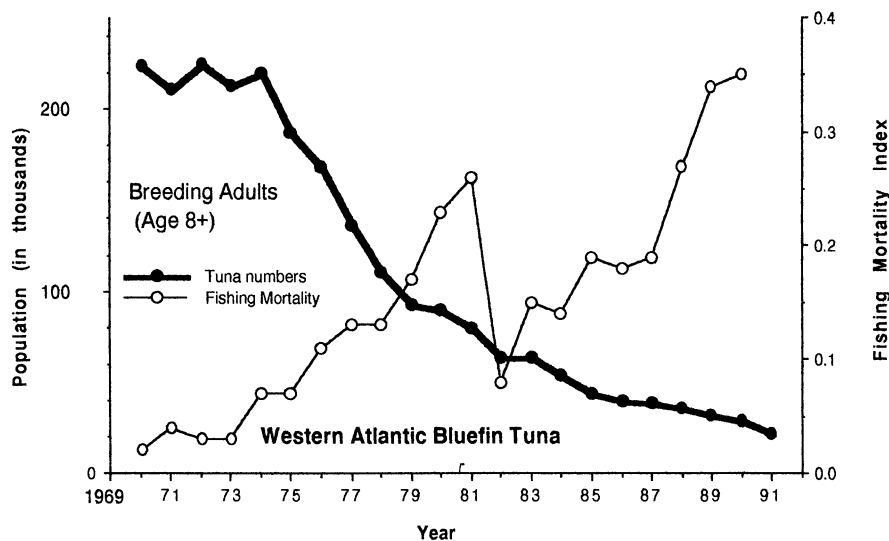


Figure 1. While managers have ignored their own Commission's science, west Atlantic bluefin tuna have been in prolonged decline, and pressure on the animals has increased significantly. Data from ICCAT 1991.

ing had escalated to the White House when tuna exporters hired a lobbying firm partnered by a former White House political director and by the man who would become chairman of the Republican National Committee during the Presidential campaign. Conservationists countered with their own White House contacts and prevailed, and the policy to seek a 50% catch quota reduction, based on the U.S. National Marine Fishery Service's scientists' population projections, emerged.

At the 1991 Commission meeting, the three member countries fishing for bluefin in the western Atlantic were encouraged to decide fishing and quota policies among themselves. However, two of the three U.S. Commissioners told members of the U.S. delegation that they did not believe such a catch reduction was necessary or politically realistic (the third commissioner later reported that he had been excluded by the chief U.S. commissioner from attending a closed session with Canadian and Japanese delegates). Initial Japanese opposition to the U.S. position for halving allocations shifted to support of a 50% phased reduction over four years. Japan's desire to avoid a CITES listing and Canada's strong resistance to reduced quotas resulted in continued negotiations throughout the meeting.

By the Commission's adjournment, a conditional four-year phased 25% reduction was agreed to. Over the four-year period this phased scheme would reduce the allowed catch by 17.5% compared with the current allocation scheme. By year four, the quota would be reduced by 25%. However, it was agreed that this phase-in will be automatically abandoned after the 1993 or 1995 scientific reports of the Commission, unless these reports "indicate otherwise." No quantitative targets for population recovery were set. Japan had also offered a trade resolution which would have banned trade in bluefin tuna from non-ICCAT countries, but this resolution was re-

sisted by the European Community because it would have affected some of their non-ICCAT members.

CITES' 100-plus member nations and a host of nongovernmental organizations and observers convened in March 1992 in Kyoto. Japanese seafood representatives picketed the convention. Listing west Atlantic bluefin as proposed would have suspended only 1% of Japan's total tuna species imports, and roughly 15–20% of its bluefin tuna imports (up to 85% of Japan's bluefin imports come from the east Atlantic, Pacific, and Indian Oceans—including southern bluefin—and this international trade would not have been interrupted by the proposed listings). But Japanese delegates said repeatedly to members of the conservation community, "This is the same sort of thing you did to us on whales, sea turtles, and driftnets, and we will not let this happen with bluefin tuna. If you succeed here, you will go on to the next species and the next until you destroy our food culture."

Japan, with Canadian and U.S. assistance, worked feverishly to force Sweden to withdraw the proposal prior to a vote. One Swedish delegate said, "The Japanese and Canadians are applying the worst kind of pressure. We will have to do as instructed." Fierce conflict over the bluefin proposal was evident in the constant flow of position papers and rebuttals distributed throughout the CITES meeting by the Japan Fisheries Association, the Japan Tuna Federation and their American consultants, the Japanese government's Fisheries Agency, the World Conservation Union (IUCN), and a wide variety of international conservation groups. The paper debate raging in the conference lobby was reflected in the attentions of reporters from around the world; only the fight over elephant ivory received more attention.

A peculiar bluefin tuna "briefing book" appeared, containing a six-page statement by "The Federation of Japan Tuna Fisheries Cooper-

atives, in agreement with the International Commission for the Conservation of Atlantic Tunas, the Inter-American Tropical Tuna Commission, the National Fisheries Institute of the United States [the seafood industry lobbying firm employing one of the U.S.' tuna Commissioners], the U.S. East Coast Tuna Association [bluefin exporters], the International Coalition of Fisheries Associations . . ." This did little to dispel impressions that the Commission for the Conservation of Atlantic Tunas has conflicts of interest.

When the bluefin proposal was formally taken up on the floor of the CITES conference, Sweden advocated the need for a 50% quota reduction, adding that they would withdraw the proposal if the Commission's countries agreed to pursue quota reductions. The U.S., Canada, Morocco, and Japan eagerly agreed, and Sweden withdrew their proposal.

Although floor statements were permitted on all other proposals that were withdrawn by their proponents during the two-week conference, an attempt at floor debate by the World Conservation Union (IUCN) was not permitted on the bluefin issue. Eyewitnesses to closed meetings that had occurred over the bluefin proposal reported that, apparently to squelch debate, Canada and Japan had insisted that no floor statements be permitted from anyone besides the fishing countries, and Sweden, under severe duress, acquiesced. Sweden's delegation head said at a press conference after formally withdrawing its proposal, "We had come expecting to debate the biological merits of our tuna proposal, but it soon became evident that other concerns would decide the issue." TRAFFIC USA (Trade Record Analysis of Flora and Fauna in Commerce; a subsidiary of the World Wildlife Fund) later reported "official discussion over the merits [of Sweden's proposal] never even took place, due to backroom politicking . . . In a well-orchestrated

presentation designed to foreclose any open debate . . . Sweden, under extreme pressure . . . withdrew its proposal before any views could be heard" (Hemley 1992). An African delegate later wrote "I was sickened by the manipulations on the Bluefin Tuna."

A special Commission meeting was convened in May 1992 in Tokyo in accordance with the promises made by the fishing countries to the CITES assembly prior to Sweden's withdrawal of its proposal. Although Japan seemed ready to ban imports of tuna from non-ICCAT countries pending consensus by Commission members that it do so, France and the European Community (which includes several non-ICCAT countries) again blocked any attempted trade controls. Although Japan supported in principle the U.S. proposal for halving catch quotas, Japan's delegates emphasized that non-ICCAT countries must be dealt with first. By adjournment, the Commission appeared more incapable than ever of addressing conservation needs, even those it had identified itself.

The Commission's mismanagement is perhaps best highlighted by the U.S. National Marine Fisheries Service's recent analysis showing that if the Commission had simply not raised the catch quota from 1160 to 2660 metric tons in 1983, the adult population would by now have been approximately 3.4 times what it is, and would have been steadily increasing, rather than declining (Powers 1992). When the catch level of 2660 metric tons for Atlantic bluefin tuna was put in place in 1983, 2660 metric tons was roughly 15% of the breeding adult biomass. By 1991, 2660 was approximately 50% of the breeding biomass. Under the system whereby a fixed tonnage (rather than a percentage) quota is taken from an ever-diminishing adult population, pressure on the remaining fish increases even if the number of animals taken remains constant. The National Marine Fisheries Service states that "the

objective of stemming the decline in adult population size will not be achieved under the management program now in effect. In order to stem further decline in the adult spawning stock . . . it is necessary to reduce the allowable take 50% or more" (NMFS 1992). (The U.S. cannot unilaterally reduce its catch quota because, through a fishing-industry-sponsored 1990 amendment to the United States' Atlantic Tunas Convention Act, the U.S. has legally prohibited itself from setting a domestic catch quota that is less than the quota provided to the U.S. by the Commission; this appears to be the only law that suspends U.S. discretion over management of its own natural resources.) The American Fisheries Society's 1991 resolution on western Atlantic bluefin tuna concluded that "all directed harvests should be immediately prohibited. . . ." In 1992 the Society stated that "The present management regime (A) will not allow the stock to recover, (B) poses an unacceptable risk of there not being enough adult fish to spawn new generations of tuna, and (C) is counter to the long-term interest of both fishery producers and consumers. . . . Although the threat to the biological integrity of the stock is of most concern, the economic losses incurred to date are staggering and cannot be recovered" (AFS 1992).

Despite this increasing international scrutiny from conservation groups and fishery scientists, the Commission has attempted to remain insulated. At its 1992 meeting in Madrid, the Commission refused observer status to the World Wildlife Fund. The Commission's secretariat also refused to distribute to its delegates a modestly worded joint statement by World Wildlife Fund, Audubon, and the Center for Marine Conservation, which requested rebuilding targets and timetable, catch reductions that reflect the Commission's scientists' population projections, and a certificate-of-origin system for bluefin (and similar mea-

asures for swordfish, whose population trends have also been a source of serious concern).

Despite the Commission's attempts to remain behind closed doors, scrutiny of the Commission by conservation organizations and fishery scientists seems likely to increase. Audubon, World Wildlife Fund, and the Center for Marine Conservation have formed "ICCAT Watch" to track and publicize the Commission's activities. And just prior to the Commission's 1992 meeting, the American Fisheries Society's president warned the U.S.' delegation head that "Failure to implement strong conservation measures would be a serious mistake which could cause concerned countries to find solutions through . . . CITES and the Endangered Species Act" (Fetterolf 1992).

The Commission may be changing its approach. At its November 1992 meeting the Commission adopted some modest but potentially constructive measures. It recommended that beginning 1 September 1993, all frozen bluefin imported into any of the Commission's member countries be accompanied by an "ICCAT statistical document." The original proposal by the U.S., Canada, and Japan was for a "certificate of origin," but after three days of intense negotiating with the European Community, France, Portugal, and Spain, the countries agreed to replacing the term "certificate of origin" with "bluefin statistical document," allowing use of a Commission-accepted document or its equivalent, instead of a certificate that would have required validation by a government official. The countries also agreed to delete any language about whether bluefin unaccompanied by appropriate documents would be denied entry into any member country of the commission. Each country may determine the disposition of undocumented bluefin depending on its interpretation of obligations under the General Agreements on Tariffs and

Trade. Prior to implementation of this program for imports of fresh bluefins (the high-value animals prized for sashimi), several practical problems regarding handling by customs officials must be resolved. Despite its dilutions and potential implementation problems, this arrangement could help distinguish non-Commission international trade from that of member nations. This could give Japan, by far the major importer, the discretion to prohibit imports of bluefin tuna from non-Commission countries, depending on its interpretation of trade obligations. The Commission also directed its scientific committee to provide and evaluate "various management measures that could be implemented on the east and west bluefin tuna stocks and provide scientifically based target options for the rebuilding of the stocks in a reasonable period of time." The scientific committee will conduct a new assessment of the west Atlantic bluefin population in 1993.

These movements give rise to the hope that the Commission's long quiescence may be changing. Real progress will not have been made, however, until Japan prohibits non-Commission imports, catch quotas are halved, and recovery plans are implemented to rebuild the breeding population to its early-1970s level within a decade (a recovery rate equivalent to the depletion rate that the Commission allowed). If the Commission's conservation and rebuilding measures remain inadequate after its 1993 meeting, a CITES Appendix 1 listing for west Atlantic bluefins may be necessary. It also seems that a CITES Appendix 2 listing, which would require uniform monitoring of all international bluefin trade, might offer the most efficient and cost-effective way of accomplishing the monitoring of non-Commission countries' catches, something the Commission itself has identified as necessary.

Catches of other fishes under the Commission's purview have been in

excess of maximum sustainable levels, including blue marlin (*Makaira nigricans*), white marlin (*Tetrapturus albidus*), swordfish, east Atlantic bluefin tuna, east Atlantic yellowfin tuna (*Thunnus albacares*), albacore tuna (*Thunnus alalunga*), and bigeye tuna (*Thunnus obesus*) (ICCAT 1992). Currently, nothing prevents systematic repetition of the west Atlantic bluefin scenario for these species, several of which have already declined significantly. Until the Commission becomes serious about complying with its charter mandate to manage for sustainable yield, the acronym ICCAT will appear to represent International Commission to Catch All the Tuna. If suspension of international trade in west Atlantic bluefin tuna eventually occurs, whether through CITES, another legal mechanism, or through commercial extinction, it might seem the result of the Commission's long history of failing to heed its charter and its scientists.

Carl Safina

Science Division
National Audubon Society
306 South Bay Avenue
Islip, NY 11751

Acknowledgments

I thank Jan Beyea for his helpful critique of an earlier draft.

Literature Cited

AFS 1991. American Fisheries Society resolution for the conservation of west Atlantic bluefin tuna. American Fisheries Society.

AFS 1992. American Fisheries Society position statement on bluefin tuna, April 24, 1992.

Clay, D. 1991. Atlantic bluefin tuna (*Thynnus thynnus thynnus* (L.)): a review. Pages 91-179 in R. B. Deriso and W. H. Bayliff, editors. World meeting on stock assessment of bluefin tunas: strengths and weaknesses. Inter-American Tropical Tuna Commission Special Report No. 7. 357 pp.

Cort, J. L., and B. Liorzou. 1991. Migration—eastern Atlantic and Mediterranean. Pages 130-132 in R. B. Deriso and W. H. Bayliff, editors. World meeting on stock assessment of bluefin tunas: strengths and weaknesses. Inter-American Tropical Tuna Commission Special Report No. 7. 357 pp.

Fetterolf, C. M., Jr. 1992. Letter to Carmen Blondin, U.S. Commissioner to ICCAT. October 19, 1992.

Hemley G. 1992. CITES 1992: endangered treaty? *TRAFFIC USA* 11:1-3.

ICCAT 1989. Report of the Standing Committee on Research and Statistics. International Commission for the Conservation of Atlantic Tunas.

ICCAT 1990. Report of the Standing Committee on Research and Statistics. International Commission for the Conservation of Atlantic Tunas.

ICCAT 1991. Report of the Standing Committee on Research and Statistics. International Commission for the Conservation of Atlantic Tunas.

ICCAT. 1992. Report of the Standing Committee on Research and Statistics. International Commission for the Conservation of Atlantic Tunas.

Mather, F. 1974. The bluefin tuna situation. Sixteenth annual international game fish research conference, pp. 93-106. Woods Hole Oceanographic Institution, contribution 3304.

Miyake, P. M. 1992. Tuna catches by ICCAT non-member countries. International Commission for the Conservation of Atlantic Tunas. NMFS. 1992. Draft Environmental Assessment for the U.S. Western Atlantic Bluefin Tuna Fishery. National Marine Fisheries Service. 31 pp.

NMFS 1991. Meeting Report. Ad-hoc bluefin tuna review group, Southeast Fisheries Center, Miami. September 4-6, 1991.

NMFS 1992. Regulatory Impact Review for the Atlantic Bluefin Tuna Regulations for 1992. National Marine Fisheries Service. 56 pp.

Powers, J. E. 1992. Bluefin tuna stock trajectories under alternative catch histories. Memo to Dr. William J. Fox, Jr., Director, National Marine Fisheries Service. January 9, 1992.

Suzuki, Z. 1991. Migration—western Atlantic. Pages 129–130 in R. B. Deriso and W. H. Bayliff, editors. World meeting on stock assessment of bluefin tunas: strengths and weaknesses. Inter-American Tropical Tuna Commission Special Report No. 7. 357 pp.

ANNOUNCEMENTS

New Reserves and Conservation Plans

Twelve thousand square kilometers of Banks Island in the western Arctic region of Canada will soon be designated as the Aulavik National Park. A portion of Aulavik is already protected as a sanctuary for snow geese and other waterfowl that inhabit the area during the summer. The new park also contains several archaeological sites.

A new national park has been established in Russian Karelia. The park, which surrounds the 20 kilometer long Lake Paanajärvi, encompasses more than 1000 square kilometers and borders on Finland's 270 square kilometer Oulanka National Park.

The President of Mexico announced in June 1992 that 110 square kilometers to the west of Mexico City used by overwintering monarch butterflies (*Danaus plexippus*) will be protected from logging for fuelwood by local residents. The government is working to employ people in the region by establishing reforestation projects, small businesses, orchards, and a tourism industry. (Source: Oryx)

Restoration of Coral Reefs

Venezuelan marine biologist Héctor Guzmán, working with the Smithsonian Tropical Research Institute in Panama, has developed a technique to restore damaged coral reefs. The technique involves implanting into dead reefs thousands of stakes that have been wired with small fragments of live coral. Guzmán's technique is currently being employed on coral reefs in Costa Rica, Panama,

and Colombia. For more information contact: Héctor Guzman, Smithsonian Tropical Research Institute, P.O. Box 2072, Balboa, Ancon, Panama, Telephone (507) 62-3133, Telefax (507) 62-6084. (Source: CEPNEWS)

Wildlife Management in Zimbabwe Drought

Culling, feeding, and translocation are being employed by the Department of National Parks in Zimbabwe in response to a severe drought in the southeast Lowveld. Buffalo, elephant, and impala populations will be halved (and meat from the culled individuals made available to local residents), some buffalo will be captured and fed prior to restocking certain areas, and up to 1000 elephants will be reintroduced into currently unoccupied habitat. In addition, sable, waterbuck, and nyala will be temporarily relocated. (Source: Oryx)

Endangered Species Lawsuit Settlement

The U.S. Department of the Interior has agreed to an out-of-court settlement of a lawsuit filed in May 1992 by numerous environmental organizations charging that the USDI has unreasonably delayed the listing of species as endangered or threatened in violation of the U.S. Endangered Species Act (ESA) and the Administrative Procedure Act and that the USDI was unlawfully classifying species as "warranted but precluded" when it could not demonstrate that they were making "expeditious progress" in carrying out the listing procedure. The increasing number of species in need of federal protection has resulted in delays by the U.S. Fish and Wildlife Service in its implementation of the ESA since the early 1980s. The settlement provided a timetable under which species in need of protection under the ESA will be listed or proposed for listing. The amount of time allotted for processing each listing will depend upon the current designation

of the species. The agreement also stipulates that when applicable and biologically appropriate, the U.S. Fish and Wildlife Service must use a multispecies, ecosystem approach to the listing process. (Source: Biodiversity Legal Foundation)

Captive Breeding of European Minks

A committee for the breeding and conservation of European minks, *Mustela lutreola*, was recently established. Isolated populations of the mink currently inhabit only 20% of the species' former range. Seventeen minks donated by Estonia's Tallinn Zoo will be loaned to participating institutions for breeding; possession of any juveniles will be decided by the committee. (Source: Oryx)

1992 Pew Scholars Named

The Pew Charitable Trusts, a private Philadelphia-based foundation, named 10 early to mid-career conservation scientists as 1992 Pew Scholars in Conservation and the Environment. Each Scholar's work represents a different disciplinary background but is also focused on the conservation of biological diversity. The three-year, U.S.\$150,000 award is intended to provide flexible, unrestricted support for a wide range of activities in problem solving, research, and education. The 1992 Scholars are Susan L. Anderson (Lawrence Berkeley Laboratories), Enrique H. Bucher (Universidad Nacional de Cordoba, Argentina), Rodolfo Dirzo (Universidad Nacional Autonoma de Mexico), Jack R. Kloppenburg, Jr. (University of Wisconsin—Madison), Jane Lubchenco (Oregon State University), Dennis D. Murphy (Stanford University), Terry L. Root (University of Michigan), Victor M. Sher (Sierra Club Legal Defense Fund), John W. Terborgh, (Duke University), and Christopher F. Uhl (Pennsylvania State University). (Source: Jon Jensen)