Doc. 9.57

Interpretation and Implementation of the Convention

ILLEGAL TRADE IN WHALE MEAT

This document has been prepared and submitted by the United States of America.

Background

In 1978, the International Whaling Commission (IWC) passed a resolution requesting that CITES "take all possible measures to support the IWC ban on commercial whaling for certain species and stocks of whales as provided in the Schedule to the International Convention on the Regulation of Whaling" (ICRW). The CITES Parties responded, at the second meeting of the Conference of the Parties, in 1979, by passing a Resolution recommending that "the Parties agree not to issue any import or export permit, or certificate for introduction from the sea," under CITES "for primarily commercial purposes for any specimen of a species or stock protected from commercial whaling by the International Convention for the Regulation of Whaling".

From 1979 to 1983, as zero catch limits were set in the Schedule of the ICRW for additional populations of whales, the CITES Parties added those populations of whales to Appendix I, coincident with their effective dates in the Schedule of the ICRW. This now includes most species and populations of great whales. The zero catch limits set in paragraph 10(e) of the Schedule of the ICRW in 1983 remain in effect, and the IWC has not communicated further with CITES on this matter. In addition, a resolution of the IWC deals with the prevention of the importation by any IWC Party of whale meat from IWC non–member States.

Trade for primarily commercial purposes in specimens of species listed in Appendix I, by a Party without a reservation is in contravention of the requirements of CITES. Furthermore, the United States notes that any commercial trade in parts and products of Appendix–I species undermines the effectiveness of the Convention.

Shipments in violation of the IWC moratorium or domestic regulations

Since 1980, government authorities have stopped or seized a number of shipments of whale meat, which were found to be in violation of IWC requirements or domestic regulations. Some examples are listed below. A more detailed list will be prepared for distribution by the United States at the ninth meeting of the Conference of the Parties.

In April 1980, the United States Department of State received reports from the United States Embassy in Tokyo that two affiliates of major Japanese companies were recipients of whale meat illegally imported into Japan from the Province of Taiwan via the Republic of Korea. A single shipment was 628 tonnes.

In December 1984, an attempt was made to import 50 tonnes of Bryde's whale (*Balaenoptera edeni*) meat into Japan without proper documentation. *Balaenoptera edeni* was then and is now both protected by a zero quota in the IWC and listed in CITES Appendix I. The shipment was from the Province of Taiwan.

In June 1987, Japanese Customs officers seized 115 tonnes of whale meat.

In April 1989, Japanese Customs officers seized a fishing vessel in Okinawa, Japan, with 30 tonnes of whale meat from Japan.

In November 1992, seven tonnes of whale meat was seized from a Japanese vessel in Okinawa. This meat originated in Takao (=Kaohsiung), Province of Taiwan, and was subsequently identified as from *Balaenoptera edeni*

Discussion at the 1994 Annual Meeting of the IWC

In October 1993, a container marked "shrimp" was confiscated at the airport in Oslo, Norway, and found to contain 3.5 tonnes of whale meat. It was being readied for shipment to Pusan, Republic of Korea. This incident was discussed in May 1994 at the meeting of the Infractions Sub–Committee of the IWC:

> "New Zealand ... requested information from Norway and the Republic of Korea on the report of a seizure of whale meat at Oslo airport in October 1993. Norway informed the Sub–Committee that the October 1993 case was still under investigation.
>
> "The Republic of Korea said that it had no specific information on this matter, but that it had a long record of being strict in enforcing its anti–smuggling laws and in co–operating with other governments on such issues."

Other instances of alleged illegal international trade were the subject of extensive discussion in the IWC Infractions Sub–committee. The following is also taken from the Report of the IWC Sub–committee:

> The United Kingdom "sought information relating to reports of large quantities of whale meat discovered in Vladivostok, which apparently arrived from Taiwan and had been intended for illegal shipment to Japan. The Russian Federation noted that, in June 1993, the Russian Ministry of Environmental Protection became aware of an attempt to purchase whale meat stored in Vladivostok. The Ministry obtained documents, which included what appeared to be a contract between a Japanese firm and a Russian firm, as well as a certificate of origin stating that the meat was a product of Russia dating from 1976. Upon investigation, it became clear that the Russian firm did not exist and that the meat could not have been of the stated origin. Further investigation showed that, in April 1993, a Honduran–flagged refrigerated vessel unloaded in Vladivostok a cargo of 232 tons of whale meat of unknown species. A certificate of origin related to that delivery states that the meat is a product of Taiwan. The Ministry declined to permit the reexport of the meat, in light of possible violations of national and international regulations that might be involved. Accordingly, the meat remains in storage in Vladivostok pending further investigation. The Russian Federation also noted that, with the assistance of USA authorities, DNA analyses were being conducted to determine the species of the whale meat involved." Annexes 1, 2 and 3 are items of correspondence concerning the eventual identification of the species contained in the samples.
>
> "Japan described the strenuous efforts it was undertaking to investigate the matter and, more generally, to prevent the illegal smuggling of whale meat into its territory ... Relating to recent press reports on the attempted smuggling of whale meat from Russia, Japan stated that all relevant information would be made available to the Commission in due course and disclosed the following actions which it had taken:
>
> 1. In February 1993, an inquiry was made on the report of 220 tons of whale meat from Russia, and a copy of the certificate of origin was submitted for verification based on the Trade Control Law of Japan.

2. The Japanese Government checked with the Government of the Russian Federation, through diplomatic channels, on the certificate in question and received a response that it could not be recognized to be valid as its format and content were questionable.
3. When the last remaining minke whale meat produced in the 1983/84 season was imported from Russia, the Government of the former Soviet Union stated that there was no additional stock of whale meat.
4. Under these circumstances, the Japanese Government judged that the import of the whale meat from Russia should not be permitted, and dismissed the application."

A paper was recently published in *Science* (Annex 4), detailing the results of an investigation to determine by genetic typing the biological and geographic origin of whale products purchased in Japanese retail markets [Baker, C.S. and S.R. Palumbi, *Science*, **265**, 1538 (1994)]. Among the samples tested, the researcher identified such Appendix–I species as North Atlantic fin whales (*Balaenoptera physalus*), southern hemisphere and North Atlantic minke whales (*Balaenoptera acutorostrata*) and a North Pacific humpback whale (*Megaptera novaeangliae*). Based on this spot check of Japanese retail markets, a legitimate source can only be identified with any degree of certainty for the southern hemisphere minke whales. Japan is whaling in the southern ocean under a research permit, with the meat from such taking being sold exclusively in Japan. North Atlantic fin and sei whales (only 1986–1988) were taken for research purposes by Iceland between 1986 and 1989. In 1992, Iceland withdrew from the IWC and ceased whaling altogether. Norway has continued to take minke whales under research permits and commercial operations between 1988 and 1994, but the Government of Norway has stated that the last recorded export of minke whale meat was in 1986. The North Pacific humpback whale has been protected by a zero quota in the IWC since 1966. The current high value of whale meat makes it unlikely that stocks of meat from most of these species, particularly the humpback whale, have been in storage since they were protected or last allowed to be caught in compliance with IWC stipulations.

Annex 5 is the resolution that was adopted by the IWC on this topic. The resolution invites each Contracting Government to report the following to the Infractions Committee of the IWC at every annual meeting: 1) information on whale meat products available on its domestic market, and the specific source of these products; 2) any shipments of whale meat intercepted in international commerce; and 3) any other developments relevant to trade in whale meat or products. Because international trade in whale products from research or fisheries by–catch makes detection of illegal commerce almost impossible, the resolution calls on those countries that engage in whaling under research permits to limit their utilization of such products to domestic consumption.

In May 1994, as these discussions of illegal trade were taking place in the annual meeting of the IWC, Japanese Customs officials in Nagasaki detained a Korean freighter for attempting to smuggle 11 tons of frozen whale meat into Japan.

For discussion at the ninth meeting of the Conference of the Parties

The United States commends the International Whaling Commission for undertaking discussions of illegal trade in whale products during its 1994 annual meeting, and for the resulting resolution on this topic. At that meeting, some governments that are Parties to both the IWC and CITES proposed that a CITES Conference of the Parties was a more appropriate venue for these discussions. The United States believes that both bodies must take steps, individually and in co–operation, to bring a halt to any illegal trade in whale products.

The United States recommends discussion of the following recommendations at the ninth meeting of the Conference of the Parties, and their possible adoption as Decisions of the Conference of the Parties.

1. The IWC is encouraged to continue to co–operate with CITES Parties and the CITES Secretariat. The Secretariats of both Conventions should share information about trade in whale specimens.
2. The CITES Parties reaffirm their support for the IWC moratoria on commercial whaling, noting that any commercial trade in Appendix–I specimens undermines the effectiveness of both the IWC and CITES.
3. The IWC is urged to continue to explore the issue of illegal trade in whale meat, and is asked to report to the CITES Standing Committee in one year and to the tenth meeting of the CITES Conference of the Parties on any developments regarding this issue (through the CITES Secretariat). The CITES Parties do consider it appropriate that IWC meetings explore this issue, with the goal of reporting to the CITES Parties, through the CITES Secretariat and the Standing Committee.

Note from the Secretariat

1. Most if not all the countries involved in the reported cases of illegal trade in whale meat are not Party to CITES or have reservations with regard to the species concerned and, therefore, are considered as non–Parties regarding the trade in these species. Most of the trade reported in this document was therefore not conducted in contravention of CITES.
2. Regarding the proposed decision number 2, "the IWC moratoria" presumably refers to the decision taken by the IWC to forbid the use of factory ships for baleen whales except minke whales, in specified areas (1979), and to the decision to set zero catch limits for all species (1982). The Conference of the Parties agreed, in 1983, to include in Appendix I all species of cetaceans for which the IWC had set zero catch limits except the West Greenland population of the minke whale. However the Secretariat is not aware of any agreement by the Conference that the IWC should have adopted the "moratoria".

International Whaling Commission

Chairman
Dr. P. Bridgewater (Australia)

Vice-Chairman
Dr. Louis Botha (South Africa)

Secretary
Dr. Ray Gambell OBE

The Red House,
Station Road, Histon,
Cambridge CB4 4NP
United Kingdom

Telephone: (0223) 233971
Fax: (0223) 232876

Your Ref.

Our Ref. RG/VJH/25455

25 August 1994

CIRCULAR COMMUNICATION TO COMMISSIONERS
AND CONTRACTING GOVERNMENTS

Whale Meat in Russia

The Report of the Infractions Sub-committee (IWC/46/7) which met at the 46th Annual Meeting of the Commission in Puerto Vallarta, Mexico, in May 1994 included discussion concerning a large quantity of whale meat discovered in Vladivostok which had apparently arrived from China, Taiwan, and had been intended for illegal shipment to Japan.

The Russian Federation noted that, with the assistance of USA authorities, DNA analyses were being conducted to determine the species of the whale meat involved. It was stated that the results will be provided when available.

Mr Konstantin Shevliagin, the Commissioner for the Russian Federation, has requested that the following two letters from himself and Dr Mike Tillman be circulated. These indicate that the samples in question were from Bryde's whales.

Ray Gambell

Dr R. Gambell
Secretary to the Commission

Encs

КОММИССИОНЕР

Российской Федерации

в

Международной китобойной комиссии

N 21 от 18.08. 1994г.

117874 ГСП Москва, ул. Кедрова д. 8 к. 1
тел. 1255281
факс 2548283
телекс 411692 БОРЕЙ

18 August 1994

Dr. Ray Gambell
International Whaling Commission
Station Road, Histon
Cambridge CB4 4NP
UNITED KINGDOM

Dear Dr. Gambell:

At the 46th Annual meeting of the IWC (during the Infractions Sub-Committee IWC/46/7), I provided details on a large quantity of whale meat that was discovered in Vladivostok last year. In April 1993, a Honduran-flagged refrigeration vessel unloaded a cargo of 232 tons of whale meat of unknown species in Vladivostok. The Russian Ministry of Environmental Protection became aware of an attempt to purchase this whale meat stored in Vladivostok. My Ministry obtained documents, which included what appeared to be a contract between a Japanese firm and a Russian firm, as well as a certificate of origin stating that the meat was a product of Russia taken in 1976. After additional investigation, it became clear that the Russian firm did not exist and that the meat could not have been of Russian origin. We also found a certificate of origin related to the delivery of the meat to Vladivostok that stated the meat was a product of Taiwan. My Ministry declined to permit the reexport of the whale meat, in light of the possible violations of national and international regulations.

I recently received the attached letter from the U.S. Deputy Commissioner, Dr. M.F. Tillman, concerning the results of analyzing samples obtained from the whale meat in Vladivostok. Personnel at Dr. Tillman's Center have compared the mitochondrial DNA sequences of the samples with known sequences from all rorquals and a gray whale. They have identified the Vladivostok samples as Bryde's whales, Balaenoptera edeni, and stated that they represent at least four individuals.

I would appreciate it if would circulate this letter and Dr. Tillman's letter to all IWC commissioners and members of the Scientific Committee.

Sincerely,

Konstantin V. Shevliagin
Russian Federation Commissioner
to the International Whaling Commission

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Science Center
P.O. Box 271
La Jolla, California 92038-0271

June 28, 1994 F/SWC1

Mr. Konstantin V. Shevliagin
Ministry of Environmental Protection
and Natural Resources
117874 Moscow
ul. Kedrova 8, korp. 1
RUSSIAN FEDERATION

Dear Konstantin:

We now have the results from the eight unknown whale meat samples from Vladivostok that you transferred to my Center via the U.S. Embassy in Moscow. The eight unknown samples were identified by comparing their mitochondrial DNA sequences known with sequences from all rorquals and a gray whale as well as known sequences from representative right whales and toothed whales. The unknown samples contained a sequence insert that unequivocally defined them as rorqual or gray whale sequence. Four different but closely related sequences were observed among the eight samples resulting in a mean sequence difference of 0.6%. The closest sequence similarity to a known sample was to a Bryde's whale (*Balaenoptera edeni*) from South African waters, differing by an average of 3%. This greater difference may represent a stock-level difference between Atlantic/Indian Ocean and Pacific Ocean stocks if indeed the unknowns came from the Pacific. For instance, Pacific and Atlantic minke (*B. acutorostrata*) whales differ by 3% also. The next closest similarity to the unknown sequences was to a North Atlantic sei whale (*B. borealis*), differing by 7%. We, therefore, believe that the samples you supplied are from Bryde's whales and represent at least four individuals.

My staff was pleased to be able to work with you on the identification of these samples and look forward to additional cooperative efforts.

Sincerely,

Michael F. Tillman

Michael F. Tillman, Ph.D.
Science and Research Director
Southwest Region

POLICY FORUM

Which Whales Are Hunted? A Molecular Genetic Approach to Monitoring Whaling

C. S. Baker and S. R. Palumbi

In recognition of the global overexploitation of whale populations, the International Whaling Commission (IWC) voted in 1982 to impose an indefinite moratorium on commercial hunting. Although the moratorium has been in effect since 1986, whaling never actually ceased. Some IWC members have continued to hunt whales under scientific permit and for aboriginal or subsistence use. As a result, a commercial market for whale products has been sustained. Are the whale products available today exclusively from species hunted or traded in accordance with international treaties? A recent spot check of Japanese retail markets shows that they are not and suggests that the existence of legal whaling serves as a cover for the sale of illegal whale products.

In developing a Revised Management Procedure for future harvests, the IWC has carefully selected a catch-limit algorithm to maintain abundant stocks above 54% of their preexploitation numbers (*1*). By contrast, little attention has been given to the problem of illegal hunting of the many depleted stocks of whales. This omission is a particular concern given the magnitude of illegal whaling that can go unnoticed by the international community (*2*). Recent revelations of Soviet "secret" whaling in the Southern Hemisphere are staggering—from 1948 to 1973, four factory ships processed 48,477 humpback whales and reported only 2,710 (*3*). There is little doubt that this illegal hunting has contributed to the variable recovery among stocks of right and humpback whales (*4*, *5*) and the absence of recovery among blue whales throughout the Southern Hemisphere (*3*).

In addition, there is increasing concern over illegal international trade in whale products and domestic sale from unregulated local whaling or fisheries by-catch. A recent attempt to export 260 tons of whale meat (reportedly in storage since 1976) from Russia to Japan was stopped by the Russian Ministry of the Environment (*6*). In October 1993, an air cargo handler in Oslo, Norway, uncovered 3.5 tons of whale meat, labeled as Norwegian shrimp, bound for export to South Korea (*7*). Baleen whales from by-catch of coastal Japanese fisheries are reportedly sold on the domestic markets without permission of government agencies (*8*). While the IWC Scientific Committee was meeting this year (May 1994), Japanese customs officials in Nagasaki intercepted 11 tons of undocumented whale meat inbound on a Korean fishing vessel (*9*).

The IWC's acceptance of the Revised Management Procedure at this year's meeting is generally viewed as a step toward the return to commercial whaling. If so, there is an urgent need to consider new and effective methods to verify catch records of exploited species and to interdict illegal trade of protected species. We tested the potential of molecular genetic methods for identifying the species and probable geographic source of whale products using samples purchased in retail markets throughout the main island of Japan from February to April 1993. The products were all labeled as "kujira," the Japanese generic term for whale, and ranged in quality from dried and salted strips of meat, marinated in sesame oil and soy sauce, to unfrozen sliced meat sold for "sashimi." In order to comply with restrictions on importation and exportation of whale products for scientific research (*10*), we conducted all analyses of whale tissue in situ using a portable laboratory for polymerase chain reaction (PCR). We successfully amplified, purified, and later sequenced 155 to 378 base pairs (bp; mean, 322 bp) of the mitochondrial DNA (mtDNA) control region from 16 commercial products. We focused on the control region of the mtDNA because of its high species- and population-specific variability (*4*, *11*, *12*). The "test" sequences were then aligned and compared to "type" sequences from a total of 16 cetacean species ($n = 24$ individuals, including representative geographical variants where available) found in our own collection (*4*) and in a complete search of GenBank (release 79) and European Molecular Biology Laboratory databases (release 36.0).

Bootstrap simulations unambiguously (>90%) grouped 14 of the test samples with a type-species sequence, providing statistical support for our species identifications (Fig. 1). Eight samples grouped with the minke whales and four grouped with fin whales. One sample of marinated meat, #19, yielded both a minke whale and a humpback whale sequence. Two samples, #13 and #28, were placed unambiguously (bootstrap value, 92%) within the family Delphinidae, which includes dolphins, pilot whales, and killer whales. One sample, #16, was placed intermediate between the sperm whale and the harbor porpoise, differing from each by >30%.

The humpback whale sequence (sample #19b) was identical to sequences we have obtained from other humpback whales sampled near the Mexican, Hawaiian, and Japanese (Ogasawara Islands) wintering grounds, suggesting a North Pacific origin. One fin whale sequence (sample WS4) was identical to fin whales sampled near Iceland (*13*) and in the western Mediterranean, suggesting that the origin of this sample was the North Atlantic. The other three fin whales, however, differed by 1.6 to 2.9% from the type sequences, possibly suggesting an origin outside of the North Atlantic. Among the nine minke whale sequences, eight were similar to type samples from

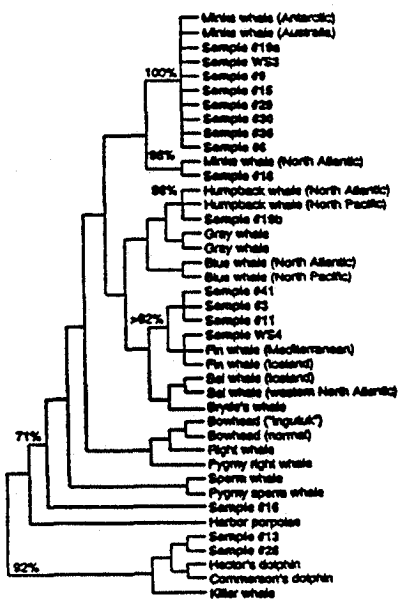

Fig. 1. Phylogenetic relationship of mtDNA control region sequences from "test" samples (#1 to #19b, shown in bold) of whale products from the Japanese retail market and "type" samples of whales and dolphins from our own laboratory or from GenBank (*11*, *23*–*26*). Sequences are homologous to positions 15,891 to 16,318 with respect to the mtDNA of the fin whale (*13*). Phylogenetic reconstruction of type and test sequences was performed with PAUP (*27*). Bootstrap values for the groupings of type and test sequences are shown along branches (*28*). Type and test sequences have been deposited in GenBank under accession numbers L35607 to L35633.

C. S. Baker is at the School of Biological Sciences, University of Auckland, Private Bag 92019, Auckland, New Zealand. S. R. Palumbi is in the Department of Zoology and Kewalo Marine Laboratory, University of Hawaii, Honolulu, HI 96822, USA.

Australia and the Antarctic (*14*), whereas sample #18 was most similar to a North Atlantic minke whale (*11*). Because minke whales from different oceans are known to be genetically distinct (*11*, *15*, *16*), it is likely that the sources of these products were the Southern Hemisphere and the North Atlantic, respectively.

To evaluate the legality or illegality of the baleen whale products (*17*), we reviewed the postmoratorium catch reports of the IWC (*18*). Several hundred Southern Hemisphere minke whales have been taken by Japan under scientific permit every year since 1987 and can be sold on the domestic market. Except for aboriginal catches by Greenland and Denmark, North Atlantic minke whales have been hunted only by Norway, which killed 95 during 1992 under scientific permit. Export of these products, however, has been prohibited by national policy, and the last recorded export of minke whales from Norway was in 1986 (*19*). Except for aboriginal catches by Greenland and Denmark, North Atlantic fin whales have not been hunted since 1989, when Iceland killed 68 under scientific permit. Fin whales from oceans other than the North Atlantic have not been hunted legally since the 1986 moratorium. Hunting of humpback whales in the North Pacific has been prohibited by international agreement since 1966 (*20*).

This review of recent whaling activity indicates that products available currently on the Japanese retail market may include species that have been imported illegally and others that have been hunted or processed illegally (*21*). An alternative interpretation is that fin whale, sold as unfrozen lean meat, has been in storage for at least 4 years, North Atlantic minke whale, sold as "sashimi," has been in storage (outside of the country of origin) for at least 7 years, and humpback whale meat has been in storage for 27 years.

These results demonstrate the inadequacy of the current system for verifying catch reports and trade records of commercial and scientific whaling. Systematic molecular genetic testing of commercial products (even those that have been smoked, marinated, or otherwise processed) should be integrated into requirements for future whaling under conditions for monitoring and observation by the IWC. The effectiveness of such a system would be improved by standardized labeling of retail whale products by species, geographic source, and processing date. Provided that tissue samples are made available from all whales caught under the Revised Management Procedure, it should be possible to obtain representative mitochondrial and nuclear (*22*) genetic information from all exploited stocks. Alternatively, tissue samples could be collected by biopsy sampling, as we have done (*4*). Genetic information from these samples could then be deposited in international genetic databases and would allow unambiguous identification of whale products of unknown origin.

Arguments about sustainable whaling are based on the tacit assumption that only abundant species will be killed and that depleted or endangered species will continue to enjoy protection. Without an adequate system for monitoring and verifying catches, however, history has shown that no species of whale can be considered safe.

REFERENCES AND NOTES

1. *Rep. Int. Whal. Comm.* 43, 221 (1993).
2. A. V. Yablokov, *Nature* 367, 108 (1994).
3. *Rep. Int. Whal. Comm.*, in press.
4. C. S. Baker *et al.*, *Proc. Natl. Acad. Sci. U.S.A.* 90, 8239 (1993).
5. P. B. Best, *ICES J. Mar. Sci.* 50, 169 (1993).
6. *New Sci.* 141, 11 (1994).
7. K. Mulvaney, *BBC Wildlife* 111, 62 (1993).
8. *Yomiuri Shimbun* (Tokyo), 30 April 1993.
9. *New Sci.* 142, 4 (1994).
10. CITES, *Convention on International Trade in Endangered Species of Wild Flora and Fauna, Part of the U.S. Endangered Species Act*. Public Law 93-205, Title 50 (1973).
11. U. Arnason, A. Gullberg, B. Widegren, *Mol. Biol. Evol.* 10, 960 (1993).
12. C. S. Baker *et al.*, *Mol. Ecol.*, in press.
13. U. Arnason, A. Gullberg, B. Widegren, *J. Mol. Evol.* 33, 556 (1991).
14. A. R. Hoelzel and G. A. Dover, *Rep. Int. Whal. Comm.* (special issue 13), 171 (1991).
15. S. Wada, T. Kobayashi, K. Numachi, *ibid.*, p. 203.
16. A. R. Hoelzel, *ibid.*, p. 225.
17. There is no international system for regulating or documenting hunting and sale of small-toothed whales.
18. *Rep. Int. Whal. Comm.* 37, 1 (1987); *ibid.* 38, 1 (1988); *ibid.* 39, 1 (1989); *ibid.* 40, 1 (1990); *ibid.* 41, 1 (1991); *ibid.* 42, 1 (1992); *ibid.* 43, 1 (1993); *ibid.*, in press.
19. E. Larson, personal communication.
20. D. W. Rice, in *The Whale Problem*, W. E. Schevill, Ed. (Harvard Univ. Press, Cambridge, 1974), pp. 218–238.
21. Experimental contamination can be excluded for all odontocetes, all minke whales, and most fin whales, because these were not identical to "type" sequences from our laboratory. For the two samples that were identical to sequences from our laboratory (WS4 and #190), contamination is extremely unlikely. All field reagents were new, all equipment was decontaminated, nonaspirating tips were used for micropipetting, and no contamination appeared in the negative controls. Contamination after the amplified samples were returned to the laboratory can be excluded: Reamplifications from the magnetic beads always gave the same results.
22. S. R. Palumbi and C. S. Baker, *Mol. Biol. Evol.* 11, 426 (1994).
23. S. O. Southern, P. J. Southern, A. E. Dizon, *J. Mol. Evol.* 28, 32 (1988).
24. A. R. Hoelzel and G. A. Dover, *Mol. Biol. Evol.* 8, 475 (1991).
25. P. E. Rosel, thesis, University of California, San Diego (1992).
26. M. C. Dillon and J. W. Wright, *Mol. Biol. Evol.* 10, 296 (1993).
27. D. L. Swofford, *PAUP: Phylogenetic Analysis Using Parsimony* (Illinois Natural History Survey, 1993), version 3.1.1.
28. A 550-bp fragment of the mtDNA control region (*4*) was amplified in situ from 4 mg of ethanol preserved tissue with the use of Generelaeser (Bioventures, Inc.) and a portable thermal cycler (MJ Research, Inc.). After amplification by standard methods (29), double-stranded DNA was bound to streptavidin-coated beads (Dynal Corp.), washed to remove all unbound DNA, and returned to the laboratory for solid-phase sequencing (30).
29. S. R. Palumbi *et al.*, *The Simple Fool's Guide to PCR* (Department of Zoology, University of Hawaii, Honolulu, HI, 1991).
30. T. Hultman, S. Stahl, E. Hornes, M. Uhlen, *Nucleic Acids Res.* 17, 4937 (1989).

31. For collection of whale products we thank three agents who have asked to remain anonymous. For access to "type" samples or sequences we thank T. Albert, A. Baker, J. Calambokidis, S. Dawson, J. Mead, G. Notarbartolo-di-Sciara, C. Potter, R. Paterson, P. Rosel, L. Slooten, A. van Helden, and M. Zanardelli. For technical assistance and review we thank A. Perry, B. Bowen, R. Brownell, D. Taylor, and M. Donoghue. This project was conceived and coordinated by S. White and D. White of Earthtrust, Hawaii, and managed by D. Hack. MJ Research, Inc., donated a PTC-150 portable MiniCycler. Funding was provided by Earthtrust, the U.S. National Science Foundation, the University of Hawaii Foundation, and the University of Auckland.

Agenda Item 11 IWC/46/61

RESOLUTION ON INTERNATIONAL TRADE IN WHALE MEAT AND PRODUCTS

Sponsored by: Argentina, Australia, Brazil, India, Monaco, New Zealand, USA

WHEREAS it is the purpose of the 1946 International Convention for the Regulation of Whaling (ICRW) to provide for the effective conservation and management of whale stocks through a coherent system of international regulation;

WHEREAS the International Whaling Commission is the universally recognized competent international organization responsible for the management of whales and whaling;

WHEREAS the Commission's Resolution IWC/30/Appendix 9, and prior resolutions, declared that member States should not import whale products from non-member countries;

WHEREAS at a Special Meeting in Tokyo in 1978, the Commission recognized that, to reinforce adherence to IWC regulations, it is desirable to use each international opportunity to ban trade in those species and stocks of whales that receive total protection from commercial whaling;

WHEREAS at the Special Meeting, the Commission requested the Second Meeting of the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to take all possible measures to support the IWC ban on commercial whaling for certain species and stocks of whales, as provided in the Schedule to the ICRW;

WHEREAS at the Special Meeting, the Commission resolved that each Contracting Government take all appropriate measures to prevent the import of any whale or whale product taken or processed under the jurisdiction of any non-IWC member countries;

WHEREAS in 1979, CITES recognized that the meat and other products of protected stocks of whales are subject to international trade that cannot be controlled effectively by the IWC alone;

WHEREAS in 1979, the Second Meeting of the Conference of the Parties recommended that CITES Parties agree not to issue for primarily commercial purposes any import or export permit, or certificate for introduction from the sea, for any specimen of a species or stock protected from commercial whaling by the ICRW;

WHEREAS at its Annual Meeting in 1982, the Commission set catch limits for the killing for commercial purposes of whales from all stocks for the 1985 coastal and the 1985-86 pelagic seasons at zero, which catch limits remain in effect under paragraph 10(e) of the ICRW Schedule;

WHEREAS under CITES there is a prohibition on commercial trade, including introduction from the sea, in all stocks of whales for which the IWC has set zero catch limits;

WHEREAS at its Annual Meeting in 1986, the Commission resolved that the products of research whaling should be used "primarily for local consumption";

WHEREAS the Commission is concerned by reports of the discovery of whale products appearing for sale in, or en route to, importing countries, from no plausible legitimate source;

WHEREAS the Commission in 1993 sought information on possible illegal whaling activities by non-member governments, and is concerned to prevent such activities and the trade in whale products derived from such activities;

NOW THEREFORE the International Whaling Commission:

(1) CALLS UPON all IWC members to enforce strictly their existing international obligations under the ICRW, including fully complying with the moratorium on commercial whaling declared in paragraph 10(e) of the Schedule, and under CITES, relating to the control of international trade in whale products.

(2) REAFFIRMS the need for Contracting Governments fully to observe earlier IWC resolutions addressing trade questions, particularly resolutions prohibiting the import of any whale or whale product taken or processed under the jurisdiction of any non-IWC member countries;

(3) OBSERVES that any commercial international trade in whale products obtained from research whaling or fisheries bycatch makes illegal commerce more difficult to detect, and undermines the effectiveness of the IWC's conservation program;

(4) CONSIDERS THEREFORE that meat and products from research whaling should be utilized entirely for domestic consumption; and

(5) INVITES each Contracting Government to report to the Infractions Sub-Committee at every Annual Meeting:

(a) information on whale meat and products available on its domestic market, and the specific source of those items (i.e., commercial whaling, research whaling, fisheries bycatch);

(b) any shipments of whale meat and products intercepted in international commerce, especially those involving their nationals or interests, and what measures the Government has taken in response; and

(c) any other developments relevant to trade in whale meat or products (e.g., new laws or regulations).

Doc. 9.57.1 (Rev.)

Interpretation and Implementation of the Convention

Illegal Trade in Whale Meat

PROPOSAL FROM NEW ZEALAND

The attached draft resolution (Annex) has been prepared and submitted by the delegation of New Zealand.

Doc. 9.57.1 (Rev.) Annex

DRAFT RESOLUTION OF THE CONFERENCE OF THE PARTIES

Illegal Trade in Whale Meat

CONCERNED with continuing international reports of the discovery of whale meat and products appearing for sale in, or en route to importing countries, from no plausible existing source;

NOTING that some unknown level of whale exploitation may be occurring outside the International Whaling Commission (IWC);

CONCERNED that the international trade in meat and other products of whales is lacking international monitoring or control;

RECOGNIZING that the IWC is the major source of information on whales stocks around the world;

RECOGNIZING further the need for IWC and CITES to co–operate and exchange information on international trade in whale products;

THE CONFERENCE OF THE PARTIES TO THE CONVENTION

URGES the IWC to continue to explore the issue of illegal trade in whale meat and the geographic origin of such meat, with the goal of fully informing the CITES Parties, through the CITES Secretariat and Standing Committee between meetings of the Conference of the Parties on all related developments regarding the illegal trade in whale products;

REAFFIRMS its concern that any illegal trade in Appendix–I whale specimens undermines the effectiveness of both IWC and CITES;

INVITES all related countries to co–operate to prevent illegal trade in whale meat, and to report to the CITES Secretariat on any development regarding this issue;

DIRECTS the Secretariat to share with the IWC any information it collects regarding the issue of illegal trade in whale meat; and

URGES the Parties to co–operate with the Secretariat in the collection of such information.

Doc. 9.57.2

Interpretation and Implementation of the Convention

Illegal Trade in Whale Meat

ADDITIONAL INFORMATION FROM JAPAN

The attached document has been submitted by the delegation of Japan.

1. "Fact sheet: Blocked whale meat import from Russia" – (Japan has submitted this paper also to the International Whaling Commission).
2. "Comments on the paper "Which whales are hunted? A molecular genetic approach to monitoring whaling", which constitutes the document Doc. 9.57 Annex 4.

Fact Sheet: Blocked whale meat import from Russia

15 February 1993
A shipping and trade company faxed a copy of certificate of origin to the Fisheries Agency of Japan, a managing authority of trade in whale products in the Government of Japan. The document was written in English and issued by the Russian Chamber of Commerce. It included the following information:

Port of Discharge: Tokio port, Japan
Port of loading: Vladivostok port, Russia
Description of Goods: Frozen meat of whale prod. 1981 (Balaenoptera borealis)
Number of Packages: 14,908
Weight: 238.45 ton

On receiving the fax, the Fisheries Agency notified to the company that Russian whaling operation for sei whales had been prohibited since 1979 and that the Government of Japan would not permit the import.

25 February 1993
The same company again faxed another certificate of origin issued by the Russian Chamber of Commerce. Document format was almost the same as the former one. The difference was the following:

Description of Goods: Frozen meat of whale prod. of 1976 (Balaenoptera borealis)
Number of Packages: 16,000
Weight: 260 ton

The Fisheries Agency expressed its suspicious on the certificate of origin.

26 April 1993
The above mentioned company formally applied for import permission of whale product using the same certificate of origin faxed on 25 February. Upon receiving the document, the Government of Japan instructed its embassy in Moscow to inquire the validity of the certificate of origin.

8 June 1993
The Russian Chamber of Commerce answered to the Embassy of Japan in Moscow as follows:

- The document was signed by inappropriate person.
- The format and stamp of the document were those of former Soviet Union and were not used anymore.
- The certificate of origin was not documented under the set rule of the Chamber of Commerce.

17 June 1993
The Russian Government notified to the Embassy of Japan in Moscow that the signature appeared in the certified origin was forged. The Fisheries Agency rejected the import permit submitted by the trade company. It also requested the Japanese Customs, the Maritime Safety Bureau, domestic whale meat distributors that precautions was needed to prevent the smuggling from Russia.

20 May 1994
At the 46th annual meeting of the International Whaling Commission, Japan explained its efforts exercised to prevent the illegal trade of whale meat. It stressed that the illegal import from Russia was successfully blocked because of the efforts put by Japan.

Comments on the paper "Which whales are hunted? A molecular genetic approach to monitoring whaling" which is used as Doc.9.57, Annex 4

The delegation of Japan

The paper (Science 265:1538-39) written by C.S.Baker and S.R.Palumbi claimed that the authors found several cetacean species in the Japanese retail market using DNA analysis. However, suspicious were expressed about the paper's conclusion at the International Symposium on Marine Mammal Genetics held in La Jolla, California on September 23-24. Also, there has as yet no opportunity for other genetic specialists to independently analyze the samples to check the results obtained. (The Fisheries Agency of Japan asked Dr.Baker one month ago to provide his samples for this purpose, but he has yet to respond.)

The authors of the paper claimed that, in the Japanese retail market, they found minke whale, fin whale, two species of Delphinidae, one species intermediate between sperm whale and harbor porpoise (unknown species for the authors), and one sample which matched both minke and humpback whale type sequences. Except for humpback whale, however, all other species are likely to exist legally in the Japanese retail market.

The paper stated "One sample of marinated meat, #19, yielded both a minke whale and a humpback whale sequence." We suspect this resulted from experimental contamination. Samples were purchased from the retail market and prepared for the experiment by some non biologists, not by Dr.Baker nor Dr.Palumbi. DNA was isolated from the samples under the non ideal conditions of a hotel room in Tokyo. Rigorous steps need to be routinely taken to prevent contamination throughout a DNA experiment. Although there is no direct evidence that contamination occurred in this case, the possibility cannot be excluded.

Another example of our doubts about the paper is the reported price of fin whale meat. The authors claim that they bought fin whale meat at 400 yen per 100 grams in the retail market. However, our records show that fin whale products are sold around 2000 yen per 100 grams. We also suspect experimental contamination in this case.

DNA was isolated from samples of widely varying quality. Data are presented only for 16 samples out of at least 41 samples taken. DNA of high quality was not able to be extracted from more than 25 samples. This may reflect difficulty in obtaining DNA of sufficient quality for subsequent amplification from highly processed samples. This would limit the applicability of their approach.

Doc. 9.58

Interpretation and Implementation of the Convention

Management of Sharks

TRADE IN SHARK PARTS AND PRODUCTS

This document has been prepared and submitted by the United States of America.

Introduction to the Topic

The United States requested that the topic "Management of Sharks" be included in the agenda for the ninth meeting of the Conference of the Parties, noting that it would submit a paper for discussion by the Parties. In order to clarify and focus the scope of the discussions by the Parties, the United States suggests that the agenda item be more appropriately titled "Trade in Shark Parts and Products".

The intent of the United States in asking that this issue be discussed by the Conference of the Parties is twofold: 1) to encourage discussion of how best to collect data on international trade in shark parts and products, particularly how to document catches by species; and 2) to collect data that will provide the best information about the impact of international trade (including introduction from the sea) in shark parts and products, both on shark populations and on the ecosystems of which they are a part.

There is no international organization or body currently responsible for the management of shark species, which would include the recommendation of catch quotas, minimum sizes, time and area closures, or restrictions on fishing gear. The United States does not believe that it is the role of CITES to assume these responsibilities at this time. However, CITES is the international treaty responsible for international trade in wildlife, including marine fish; this includes introduction from the sea, whether or not parts and products will be subsequently re-exported. Because of this responsibility, CITES provides an ideal forum for discussion regarding this trade. The United States believes that it is incumbent upon CITES Parties that allow international trade in shark parts or products, including introduction from the sea outside the country's territorial limits, to co–operate in determining whether or not shark populations are being harmed by this trade, in order that such trade might be more effectively regulated.

Biological perspective

There are about 350 described species of sharks (Selachii) in the world. Many of these species are small, deep–water sharks that are seldom encountered. About 100 species are encountered in commercial fisheries throughout the world. Most sharks are long–lived, slow–growing animals with a very limited reproductive potential. Many of the commercially important species reproduce biennially and produce only a handful of young per birth. The total lifespans and reproductive potential of most species are unknown. Although there have been many attempts at ageing sharks using vertebrae or other hard parts, most of the estimates obtained have not been validated by other means. In many cases all that can be said is that they live for more than one or two decades.

Historical perspective

Much historical evidence is available about how sharks, and elasmobranchs in general, are susceptible to intensive exploitation. The California and Oregon shark fisheries of the 1940s, the Australian school shark fishery of the 1950s, and the porbeagle (*Lamna nasus*) fishery off New England in the 1960s, are examples of fisheries that collapsed quickly after periods of intensive exploitation. More recently (Brander, 1981) there has been a report of a ray (*Raja batis*) in the North Sea that is presumably extinct due to trawling in the area, and a report from France (Quero and Emmonet, 1993) about the disappearance or rarefaction of rays (Rajidae spp.), angel sharks (Squatinidae spp.), and the bramble shark (*Echinorhinus brucus*) from areas of the French coast where they were very common in previous centuries. The biological evidence of very limited reproductive potential and the historical evidence strongly indicate that the exploitation of sharks must be conducted very conservatively.

International trade perspective

The demand for shark fins throughout Asia has engendered a worldwide, lucrative trade for shark fins. Shark fisheries have expanded in response to the demand. Many local fisheries that previously targeted sharks for local meat markets have expanded and are now connected to the Asian trade in shark fins. Directed shark fisheries have appeared where they did not exist before, generated by the price of the fins (USD 40–50 per kg) which greatly exceeds the price of the meat (USD 50–2 per kg). High–seas fleets catch very large numbers of sharks as a by–catch in fisheries for tuna, swordfish and other species. Many sharks that were formerly released alive now have their fins cut off and their carcasses discarded into the ocean because of the high value of their fins. The lightweight fins require little storage space in a ship, and therefore, they are an ideal trade item. There is information about a recent increase in international trade in shark parts and products, particularly in fins for the food market. These fisheries and the resulting trade are unregulated and undocumented. The numbers of sharks caught and the effect of their removal on the ecosystems of which they are a part have not yet been determined.

Following are the reasons why it is difficult to assess the effects of international trade on sharks.

1. Data on landings by species are not currently collected in a systematic way. For this reason, historical evidence indicating trends in catch rates for a given species of shark is not available. Since catch rates can not be determined by species, assessment of their impact on the overwhelming majority of populations is not possible. Similarly, the rate of incidental take of sharks in fisheries directed at other species is also largely undocumented.

   Historical evidence of declines in abundance is available for only a couple of species, such as the soupfin shark (*Galeorhinus zyopterus*) and the porbeagle (*Lamna nasus*). These species were severely impacted decades ago by intensive fisheries and the soupfin shark does not appear to have recovered to its previous numbers. The porbeagle seems to be recovering now, some thirty years later. There is anecdotal evidence of severe declines in night sharks (*Carcharhinus signatus*) along the south–eastern coast of the United States after the development of a swordfish (*Xiphias gladius*) fishery in which this species was subject to high levels of incidental take, but no data are available about this.

2. Most commercially important species of sharks have wide ranges and many are cosmopolitan. It is likely that many species of sharks have been severely impacted in some localities, but there is not any solid evidence of decreases in abundance or range of any species. It is not known if species of cosmopolitan distribution are divided into separate populations. Knowledge of the population structure of shark species is critical to

determining the effects of catches on individual populations.

Recommendations

The United States looks forward to the discussion of these issues at the ninth meeting of the Conference of the Parties.

The United States recommends that any decisions for action that arise from these discussions be in the form of the newly instituted Decisions of the Conference of the Parties, which include specific and/or short–term decisions of the Conference that direct the Secretariat or permanent Committees to perform specific activities of limited duration.

The United States recommends that the Parties consider requesting that the Animals Committee: 1) specifically review the international trade in shark parts and products between the ninth and tenth meetings of the Conference of the Parties; and 2) assess the biological and trade status of shark species in international trade.

References

Brander, K., 1981. Disappearance of common skate *Raja batis* from Irish Sea. Nature 290: 48–49.

Quero, J.C. and R. Emmonet, 1993. Disparition ou raréfaction d'espèces marines au large d'Arcachon. Actes du III Colloque international "Océanographie du Golfe de Gascogne," p. 221–225.