Supplementary Explanation for Scientific Research Whaling

May 2008

SLIDE 1 - The Position of the Japanese Government on Whaling

There are more than 80 species of cetaceans in the world. While some species are endangered, others are abundant, increasing or recovering. The Japanese Government strongly supports the idea of the protection of endangered species such as Blue Whales and Bowhead Whales.
At the same time, we consider that sustainable use of abundant species should be allowed, as is often the case with other living marine resources such as fish and shellfish, when best scientific evidence shows that those species are not endangered.
Japan's policy on whaling, its position on the IWC and its whale research programs have been subject to severe criticism, much of which is based on misunderstanding and misinformation. The following slides will address the most commonly raised points.

SLIDE 2 - Scientific Research whaling is legal (1)

The purpose of the International Convention for the Regulation of Whaling as defined in the Convention is "to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry" as described in the preamble of the ICRW.

SLIDE 3 - Scientific Research whaling is legal (2)

Scientific Research whaling is a fundamental right of each Member State of the IWC according to Article VIII of the ICRW. It is not a "loophole" in the Convention – rather it constitutes a critical element of the Convention that requires its decisions to be based on scientific findings. Japan's scientific whale research programs are therefore not only perfectly legal but also conducive to the object and purpose of the ICRW.

SLIDE 4 - Scientific Research whaling is legal (3)

Furthermore, Article VIII 2 stipulates that research by-products (meat) shall be processed and sold under the Government's direction. This is a legally binding obligation of all IWC

members. The fact that the whale meat ends up in the market is a requirement of the convention to ensure that resources are not wasted. It is not a "loophole" or "illegal". The income from the sale of by-products (meat) should be used to offset part of the cost of the next research.

SLIDE 5 - The purpose of Japan's whale research program

Japan has been conducting research whaling programs in order to collect and analyze scientific data necessary for proper management and sustainable use of whales.
In order to find out the sustainability of any species, including certain kinds of whales, we have to conduct scientific researches and make analyses based on the objective data gathered by scientists.
To this end, we believe that the following steps are necessary and appropriate:
-Accumulating scientific data and findings with regard to whales stocks and the ecosystem surrounding them;
-Deriving objective conclusion from scientific analyses of those data and findings; and
-Developing an international system for proper conservation and management of whales based on the conclusion.

SLIDE 6 - Survey Items

Stocks

For management and conservation purposes, the relevant unit is the biological stock, which is defined as a genetically differentiated population within a species. Estimation of abundance and biological parameters are made on the basis of the biological stocks. The number of stocks in the JARPA research area and their range of distribution are investigated through the collection and analyses of genetic data (DNA extracted from tissue samples) as well non-genetic data (external body measurements, external morphology).

Age

Age distribution in a stock is critical for management. For example, when drawn as a 'population pyramid', age distribution can hint patterns of growth. To get a representative 'population pyramid', random sampling of animals is essential. Also, age data are used to estimate biological parameters important for management such as natural mortality, which is based on the age distribution in the stock. In conjunction with sexual maturity data and body length data, age data are used to estimate other parameters such as age of sexual maturity, length at sexual maturity, etc. Such parameters are important for management, because they are indicators of the condition of a stock.

Maturity

Maturity data is important for the estimation of some important biological parameters. Maturity in female whales is determined by examining the existence of corpora in the ovaries. Maturity in male whales is determined by examining the testis histologically.

Reproductive status

This includes information such as sexual maturity status in whales. Mature females can be subdivided into lactating, pregnant, resting. Pregnancy rate in a stock is an indicator of the condition of a stock.

Diet

For investigating the condition of a whale it is important to investigate what and how much a whale eats. This information is of great importance also as input parameter in ecosystem models, which in turn will inform measures based on multi-species management in the future.

Pollutant

Monitoring pollutants in both whales and the whale's environment is critical because high level of contamination could cause health problems, which would result in reduction of stock size by mortality. In addition, differences in the level of pollutants between geographical areas can be used as ecological markers in stock structure studies.

Parasites

There are both external and internal parasites in whales. Some of the internal parasites come from the prey species consumed. Like pollutants, differences in the parasites load and its frequencies between geographical areas can be used as ecological markers in stock structure studies.

Sex hormones

Sex hormones are steroid hormones that interact with vertebrate androgen or estrogen receptors. These are made by the ovaries or testes, by adrenal glands, or by conversion from other sex hormones in other tissues such as liver or fat. Sex hormones can be used to investigate reproductive status and reproductive cycle of whales.

SLIDE 7 - Research Methods

There are roughly two types of survey methods: research without killing whales (non-lethal methods) and that entailing killing whales (lethal methods). JARPA II (the Japanese Whale Research Program under Special Permit in the Antarctic) is constructed so as to employ both methods in response to data needed.

For instance, non-lethal sighting surveys will provide estimation on abundance of whale stocks. However, more accurate and comprehensive biological data, such as weights of individuals, ages, sexual maturity, pregnancy rate, blubber thickness and prey species in the stomach can be obtained only through lethal research. These data are indispensable to ensure that the research makes it possible for us to have a better understanding of the

complicated ecology of whales. Without such sufficient knowledge, we cannot create an effective framework for management of conservation and sustainable use of whale resources.

SLIDE 8 - Oceanographic/Environment Survey

By means of EPCS (Electronic Particle Counting and Sizing System), Japan collects data on the biological environment of the surface water and monitor it.
Water temperature and salinity affect the distribution of prey of whales such as fish, squids, and zooplankton. State-of-the-art devices are used to gather oceanographic data.

SLIDE 9 - Sighting Survey

Sighting surveys are conducted to estimate the diversity of species and the number of whales. Whales are counted with human eyes to find out how many there are and how they are distributed, from the result of which we can tell how many whales inhabit the area and how they are distributed. By repeating these surveys, we will find out valid estimation of whale population and distribution in the entire region.

SLIDE 10 - A Reason for Lethal Methods

Whereas certain information can be obtained through non-lethal means, lethal methods are needed to have other information on internal organs such as ovaries, ear plugs and stomachs. For example, while the population age structure and reproductive rates of land mammals can be determined by observation over a long period of time, such is not the case for whales since they spend most of their time underwater. In this case, we need ear plugs for determining age and ovaries for establishing reproductive rates.

SLIDE 11 - Morphological Survey

“Morphological Survey” includes:
1- Qualitative examination (morphology)
One conducts observation on external morphology (including body shapes, body color patterns, etc.) for each whale. One also conducts photographic recording of external characters (at three parts of the body in JARPA) for each whale.
2- Quantitative examination (morphometry)

Body length and measurements of external proportions (at 20 parts in JARPA) are obtained for each whale. Also, the length and breadth of skull are measured for each whale.
Data collected from this “morphological survey” have been examined together with genetic data to elucidate questions on whale taxonomy and stock structure within specie. For example, morphological and genetic analyses conducted under JARPA confirmed that two different species of minke whales existed in the Southern Hemisphere: the Antarctic minke whale *Balaenoptera bonaerensis* and the common minke whale *Balaenoptera acutorostrata*. Also, morphometric and genetic analyses conducted under JARPA suggested the occurrence of two stocks of the Antarctic minke whale in the JARPA research area.

SLIDE 12 - Sample Collection and Diet Composition Survey

Sample Collection:
Biological material is gathered on board the research base vessel as specimens for biological research on stocks, age, maturity, reproductive status, diet, pollutant, sex hormones, parasites, and other items.

Diet Composition Survey:
In order to study the interactions of whales and other parts of the marine ecosystem, we need to know what they eat. This study is done by examining stomach contents. The research on stomach contents proves that whales eat large amount of fish. Among their prey are Pacific saury, salmon, walleye pollock, and other fish that humans exploit as fishery resources. The amount consumed by whale is three to five times as much as the world’s total marine fisheries catch. The possible consequences to fishery resources as food for people are tremendous.
The blue whales are said to have been depleted to a few hundreds from the original 200 thousands. It has been forty years since all the catch of blue whales was banned, but they have not yet recovered. It is a generally accepted theory that Antarctic minke whales that have increased as if filling the gap left by blue whales deprives blue whales of their share of prey, which hinders their recovery.

SLIDE 13 - The results of research program

Whales are the largest marine mammals on earth and at the top of the food web in the ecosystem surrounding them.
The research results show that whales feed on many important fishery resources and their feeding patterns could strongly affect the balance of the marine ecosystem.
Since the moratorium on commercial whaling was introduced, many whale species show the salient trend of increase of these stocks. The research has shown that some whale

resources, including Antarctic minke whales, are abundant enough to be exploited by human.
Wild animals of the same species separate into groups on different breeding grounds. Such groups of whales are called stocks. We need to understand the range of distribution and boundaries of whale stocks by collecting and analyzing genetic, morphological, and ecological information for the proper management of whale resources.
It is possible to learn about the marine environment and oceanic pollution by studying whales. This fact means that we can monitor the effects of changes in the marine environment on cetaceans, which will also contribute greatly to the management of all marine living resources.
As a result of research programs, we have more information on the status of whale stocks, whale biology, and so forth.

SLIDE 14 - The results of research programs

The results of all Japan's research programs have been submitted to the IWC Scientific Committee and reviewed at the Committee. Scientific data from the research programs have also been reported every year at the annual meeting of the IWC Scientific Committee and appreciated by many scientists, including those from anti-whaling nations.

SLIDE 15 - Japan's Institute of Cetacean Research submitted more than 180 papers to the IWC Scientific Committee, and contributed more than 90 papers to peer-reviewed scientific journals, many of which are written in English.

Scientists against research whaling claim that there are few papers published in conjunction with Japan's research programs, but it is not true. Actually, we have so far contributed as many as 91 papers to peer-reviewed scientific journals (both in English and Japanese). We also submitted 182 papers to the IWC Scientific Committee.

SLIDE 16 - Limited number of samples

The stocks of whale species to be sampled in JARPA II (Antarctic minke, fin, and humpback whales) are abundant or nearly abundant. About 760,000* Antarctic minke whales, 50,000** fin whales (Indian Ocean stock: 31,000; Pacific stock: 16,000) and 40,000** humpback whales (D-stock: 32,000; E-stock: 4,000) migrate to the research area.

The number of samples (whales taken) will be limited to 850 ±10%, 50, and 50 for Antarctic minke whales, fin whales and humpback whales respectively, and quite small enough to keep their abundance level (see next slide). Also, in designing the program, we checked with the standard methods accepted in the IWC (Hitter/Fitter Approach, etc.), that there would be very little effect on the status of the stocks.
(Japan agreed to postpone the catch of humpback whales at the request of the Chairman of the IWC as long as it views that the progress is being made toward the normalization of the IWC.)
＊International Decade for Cetacean Research (IDCR)
＊＊JARPA Ⅰ

SLIDE 17 - Some species of whales are overabundant

It is a misleading to think that all whales are endangered. For instance, the initial abundance (population before man started hunting) of Antarctic minke whales is estimated at 80,000; yet in 1990, the IWC agreed that there were 761,000.

SLIDE 18 - How to find a solution

One of the factors that contributes to the current “impasse” or “dysfunctional nature” of the IWC is emotional confrontation over whaling. All parties concerned should talk with each other based on international law, the principle of science-based policy as well as respect for cultural diversity related to food and ethics. Mutual respect for differences is indispensable to find a way out of this impasse. Japan embraces a long history of sustainable use of whales as a source of diet.
We hope that anti-whaling countries should respect this historic and cultural background of Japan as long as whales are sustainably used based on scientific analyses in a fully consistent manner with international law.