

Scientific contribution from JARPA/JARPA II

The Institute of Cetacean Research, Toyomi-cho 4-5, Chuo-ku, Tokyo 104-0055, Japan

The Japanese Whale Research Program under Special Permit in the Antarctic (JARPA) was conducted between the austral summer seasons of 1987/88 and 2004/05. The JARPA had four main objectives: a) estimation of biological parameters to improve the stock management of the Southern Hemisphere minke whale; b) elucidate the role of whales in the Antarctic marine ecosystem; c) elucidation of the effect of environmental change on cetaceans; and d) elucidation of the stock structure of Southern Hemisphere minke whales to improve stock management.

The International Whaling Commission Scientific Committee carried two review workshops on JARPA, the first in 1997 and the final on December 2006.

JARPA II started with two feasibility surveys in the seasons 2005/06 and 2006/07. The first full survey started in 2007/08. The objectives of the JARPA II are the following: a) monitoring the Antarctic ecosystem (whale abundance trends and biological parameters; krill abundance and the feeding ecology of whales; effects of contaminants on cetaceans; cetacean habitat); b) modeling competition among whale species and future management objectives (constructing a model of competition among whale species; new management objectives including the restoration of the cetacean ecosystem); c) elucidation of temporal and spatial changes in stock structure; and d) improving the management procedure for Antarctic minke whale stocks.

Scientific contribution of JARPA/JARPA II

Scientific contribution of JARPA/JARPA II has been made available in different forms, as scientific documents for the IWC/SC meetings, as publications in peer reviewed journals, and as oral presentations at scientific symposiums.

Table 1 shows the number of IWC/SC documents, peer-reviewed publications and oral presentations at scientific symposium based on JARPA/JARPA II sample/data, by year.

IWC/SC documents

In the period 1988-2008 a total of 186 documents were presented to annual and intersessional meetings of the IWC/SC, with an annual average of 8.9 documents. Several of these documents were prepared by or in collaboration with foreign scientists. Documents were presented mainly at the RMP, IA and SP sub-committees, which deal mainly with management of whales.

Peer reviewed publications

The number of peer-reviewed papers made in same period is 101, with an annual average of 4.8 documents. These contributions have been made not only in the field of whale management but also in the field of whale natural sciences. Again several of these papers were prepared by or in collaboration with foreign scientists.

Oral presentations at symposium

The number of oral presentations made at scientific symposium in the period 1988-2008 is 183, with an annual average of 8.7 documents. These contributions have been made not only in the field of whale management but also in the field of whale natural sciences. Titles and contents of such presentations can be found in the annual progress report of the Institute of Cetacean Research (ICR).

The list of IWC/SC documents and peer-reviewed papers derived from JARPA/JARPA II is shown in the Appendix 1, by year. An asterisk indicates those papers published in peer-reviewed journals.

Other scientific contribution

JARPA/JARPA II material has been used in:

- a) Pre-graduated, master and doctoral thesis: 16
- b) Chapters of books: 52
- c) Local bulletin of ICR (*Geiken Tsushin*) and Suisan Shigen Kanri Danwakaihohou: 31
- d) Other reports: 0

JARPA/JARPA II biological material such as whale skeletons has been provided to municipal museums.

Data access and availability

All the data and samples obtained by JARPA have been available to the national and international scientific community through established data access protocols. Appendix 2 shows the data access protocol of ICR, which can also be found at the IWC/SC web page. As a result ICR scientists carried research collaboration with a number of national and international scientists and research institutions, as indicated above.

Table 1: Scientific contribution of JARPA/JARPA II

Year	IWC/SC documents	Peer reviewed publications	Oral presentations at symposium
1988	0	0	2
1989	3	2	6
1990	6	8	5
1991	4	9	5
1992	4	2	6
1993	4	7	7
1994	9	3	7
1995	9	3	11
1996	6	7	7
1997	27	3	4
1998	5	7	2
1999	12	3	6
2000	13	5	10
2001	6	3	15
2002	7	6	15
2003	8	4	22
2004	2	8	14
2005	8	6	21
2006	44	8	12
2007	9	7	6
2008	-	-	0
Total	186	101	183

Appendix 1

List of scientific papers based on data and samples collected by JARPA and JARPA II (peer-reviewed papers and unpublished documents submitted to the IWC/Scientific Committee). Asterisks indicate those papers published in peer reviewed journals.

[1989] (5)

Kasamatsu, F. and Shigemune, H. 1989. Preliminary report of the second minke whale sighting surveys in low and middle latitudinal waters in the Southern Hemisphere in 1988/89. Paper SC/41/SHMi15 presented to the IWC Scientific Committee, June 1989 (unpublished). 15pp.

*Kato, H., Hiroyama, H., Fujise, Y. and Ono, K. 1989. Preliminary report of the 1987/88 Japanese feasibility study of the special permit proposal for Southern Hemisphere minke whales. *Rep. int. Whal. Commn* 39: 235-248.

Kishino, H., Kato, H., Kasamatsu, F. and Fujise, Y. 1989. Statistical method for the estimation of age composition and biological parameters of the population. Paper SC/41/Mi3 presented to the IWC Scientific Committee, June 1989 (unpublished). 38pp.

Naganobu, N., Shimamoto, K. and Kato, H. 1989. Oceanographical analysis on the southern minke whale distribution based on the data during Japanese research take in 1987/88. Paper SC/41/SHMi18 presented to the IWC Scientific Committee, June 1989 (unpublished). 9pp.

*Nakamura, T., Ohnishi, S. and Matsumiya, Y. 1989. A Bayesian cohort model for catch-at-age data obtained from research takes of whales. *Rep. int. Whal. Commn* 39: 375-382.

[1990] (14)

*Butterworth, D. S. and Punt, A. E. 1990. Some preliminary examinations of the potential information content of age-structure data from Antarctic minke whale research catches. *Rep. int. Whal. Commn* 40: 301-315.

Fujise, Y., Kato, H. and Kishino, H. 1990. Reproductive segregation of the minke whale population in high latitudinal waters with some estimations of pregnancy and sexual maturity rates, data from Japanese research takes in 1987/88 and 1988/89. Paper SC/42/SHMi10 presented to the IWC Scientific Committee, June 1990 (unpublished). 20pp.

Fujise, Y., Yamamura, K., Zenitani, R., Ishikawa, H., Yamamoto, Y., Kimura, K. and Komaba, M. 1990. Cruise report of the research on southern minke whales in 1989/90 under the Japanese proposal to the scientific permit. Paper SC/42/SHMi25 presented to the IWC Scientific Committee, June 1990 (unpublished). 56pp.

*Ichii, T. 1990. Distribution of Antarctic krill concentrations exploited by Japanese krill trawlers and minke whales. *Proceedings of the NIPR Symposium on Polar Biology* 3: 36-56.

Ichii, T. and Kato, H. 1990. Food of southern minke whales from Japanese research take in 1987/88. Paper SC/42/SHMi14 presented to the IWC Scientific Committee, June 1990 (unpublished). 15pp.

*Itoh, S., Takenaga, F. and Tsuyuki, H. 1990. Studies on lipids of the Antarctic minke whale. I. The fatty acid compositions of the minke whale blubber oils caught on 1987/88 season. *Yukagaku* 39 (7): 486-90. (in Japanese).

*Kasamatsu, F., Kishino, H. and Hiroyama, H. 1990. Estimation of the number of minke whale (*Balaenoptera acutorostrata*) schools and individuals based on the 1987/88 Japanese feasibility study data. *Rep. int. Whal. Commn* 40: 239-247.

*Kato, H., Fujise, Y., Yoshida, H., Nakagawa, S., Ishida, M. and Tanifuji, S. 1990. Cruise report and preliminary analysis of the 1988/89 Japanese feasibility study of the special permit proposal for southern hemisphere minke whales. *Rep. int. Whal. Commn* 40: 289-300.

*Kato, H., Kishino, H. and Fujise, Y. 1990. Some analyses on age composition and segregation of southern minke whales using samples obtained by the Japanese feasibility study in 1987/88. *Rep. int. Whal. Commn* 40: 249-256.

*Nagasaki, F. 1990. The Case for Scientific Whaling. *Nature* 334: 189-190.

Sedlak-Weinstein, E. 1990. Preliminary report of parasitic infestation of the minke whale *Balaenoptera acutorostrata* taken during the 1988/89 Antarctic expedition. Unpublished paper. 4pp.

Taga, Y., Kishino, H. and Kasamatsu, F. 1990. Detection probabilities and search half-widths of paired vessels. Paper SC/42/SHMi27 presented to the IWC Scientific Committee, June 1990 (unpublished). 5pp. + Addendum 1pp.

*Tanaka, S. 1990. Estimation of natural mortality coefficient of whales from the estimates of abundance and age composition data obtained from research catches. *Rep. int. Whal. Commn* 40: 531-536.

Yoshioka, M., Fujise, Y., Kato, H. and Aida, K. 1990. Serum progesterone levels in southern minke whales by reproductive status. Paper SC/42/SHMi13 presented to the IWC Scientific Committee, June 1990 (unpublished). 10pp.

[1991] (13)

*Bergh, M. O., Butterworth, D. S. and Punt, A. E. 1991. Further examination of the potential information content of age-structure data from Antarctic minke whale research catches. *Rep. int. Whal. Commn* 41: 349-361.

Fujise, Y., Kato, H. and Kishino, H. 1991. Some progress in examination on age distribution and segregation of the southern minke whale population using data from the Japanese research take. Paper SC/43/Mi18 presented to the IWC Scientific Committee, May 1991 (unpublished). 17pp.

*Ichii, T. and Kato, H. 1991. Food and daily food consumption of southern minke whales in the Antarctic. *Polar Biology* 11: 479-487.

*Kasamatsu, F., Kishino, H. and Taga, Y. 1991. Estimation of southern minke whale abundance and school size composition based on the 1988/89 Japanese feasibility study data. *Rep. int. Whal. Commn* 41: 293-301.

*Kato, H., Fujise, Y. and Kishino, H. 1991. Age structure and segregation of southern minke whales by the data obtained during Japanese research take in 1988/89. *Rep. int. Whal. Commn* 41: 287-292.

*Kato, H. and Miyashita, T. 1991. Migration strategy of southern minke whales in relation to reproductive cycles estimated from foetal lengths. *Rep. int. Whal. Commn* 41: 363-369.

*Kato, H., Zenitani, R. and Nakamura, T. 1991. Inter-reader calibration in age readings of earplugs from southern minke whale, with some notes of age readability. *Rep. int. Whal. Commn* 41: 339-343.

*Kishino, H., Kato, H., Kasamatsu, F. and Fujise, Y. 1991. Detection of heterogeneity and estimation of population characteristics from the field survey data: 1987/88 Japanese feasibility study of the Southern Hemisphere minke whales. *Annals of the Institute of Statistical Mathematic* 43(3): 435-453.

Kishino, H., Fujise, Y., Kato, H. and Taga, Y. 1991. Maximum likelihood procedure for the estimation of the mean age at sexual maturity of minke whales using the data from Japanese research take. Paper SC/43/Mi23 presented to the IWC Scientific Committee, May 1991 (unpublished). 9pp.

Kishino, H., Taga, Y., Nishiwaki, S. and Kasamatsu, F. 1991. Abundance estimate of the Southern Hemisphere minke whales in area IV from the sighting in the 1989/90 Japanese research take. Paper SC/43/Mi22 presented to the IWC Scientific Committee, May 1991 (unpublished). 15pp.

Matsuishi, T. and Kishino, H. 1991. Precision of the estimated natural mortality coefficient and recruitment rate evaluated by Monte Carlo simulation. Paper SC/43/Mi21 presented to the IWC Scientific Committee, May 1991 (unpublished). 9pp.

*Nakamura, T. 1991. A new look at a Bayesian cohort model for time-series data obtained from research takes of whales. *Rep. int. Whal. Commn* 41: 345-348.

*Wada, S., Kobayashi, T. and Numachi, K. 1991. Genetic Variability and Differentiation of Mitochondrial DNA in Minke Whales. *Rep. int. Whal. Commn*(special issue 13): 203-215.

[1992] (6)

Fujise, Y., Kato, H., Zenitani, R. and Kishino, H. 1992. Seasonal and areal changes in age distribution and segregation of the southern minke whales in Antarctic areas IV and V using data from the Japanese researches. Paper SC/44/SHB10 presented to the IWC Scientific Committee, June 1992 (unpublished). 37pp.

*Nakamura, T. 1992. Simulation trials of a Bayesian cohort model for time-series data obtained from research takes of whales. *Rep. int. Whal. Commn* 42: 421-427.

Nishiwaki, S., Kawasaki, M., Kishino, H. and Taga, Y. 1992. Abundance estimates of the Southern Hemisphere minke whale in Area V from the sightings in the Japanese research in 1990/91. Paper SC/44/SHB8 presented to the IWC Scientific Committee, June 1992 (unpublished). 12pp.

*Tanaka, S., Kasamatsu, F. and Fujise, Y. 1992. Likely precision of estimates of natural mortality rates from Japanese research data for Southern Hemisphere minke whales. *Rep. int. Whal. Commn* 42: 413-420.

Yoshioka, M. and Fujise, Y. 1992. Serum testosterone and progesterone levels in southern minke whales (*Balaenoptera acutorostrata*). Paper SC/44/SHB13 presented to the IWC Scientific Committee, June 1992 (unpublished). 4pp.

Yoshioka, M., Okumura, T., Aida, K. and Fujise, Y. 1992. Development of techniques for quantifying muscle progesterone content in the minke whale (*Balaenoptera acutorostrata*). Paper SC/44/SHB12 presented to the IWC Scientific Committee, June 1992 (unpublished). 4pp.

[1993] (11)

Cooke, J. G. and De La Mare, W. K. 1993. A comparative note on demographic parameters of right and minke whales. Paper SC/45/O25 presented to the IWC Scientific Committee, May 1993 (unpublished). 4pp.

*Fujise, Y., Ishikawa, H., Saino, S., Nagano, M., Ishii, K., Kawaguchi, S., Tanifuji, S., Kawashima, S. and Miyakoshi H. 1993. Cruise report of the 1991/92 Japanese research in Area IV under the special permit for Southern Hemisphere minke whales. *Rep. int. Whal. Commn* 43: 357-371.

Fujise, Y., Zenitani, R., Saino, S., Itoh, S., Kawasaki, M., Matsuoka, K. and Tamura, T. 1993. Cruise report of the 1992/93 Japanese research under the special permit for Southern Hemisphere minke whales. Paper SC/45/SHBa12 presented to the IWC Scientific Committee, April 1993 (unpublished). 39pp.

*Hasunuma, R., Ogawa, T., Fujise, Y. and Kawanishi, Y. 1993. Analysis of selenium metabolites in urine samples of minke whale (*Balaenoptera acutorostrata*) using ion exchange chromatography. *Comparative Biochemistry and Physiology* 104C (1): 87-89.

*Itoh, S., Takenaga, F. and Tsuyuki, H. 1993. Studies on lipids of the Antarctic minke whale. II. The fatty acid compositions of the blubber oils of minke whale and dwarf minke whale caught on 1988/89 and 1989/90 seasons. *Yukagaku* 42(12): 1007-1011. (in Japanese).

*Iwata, H., Tanabe, S., Sakai, N., and Tatsukawa, R. 1993. Distribution of persistent organochlorines in the oceanic air and surface seawater and the role of ocean on their global transport and fate. *Environ. Sci. Technol.* 27: 1080-1098.

*Kasamatsu, F., Yamamoto, Y., Zenitani, R., Ishikawa, H., Ishibashi, T., Sato, H., Takashima, K. and Tanifuji, S. 1993. Report of the 1990/91 southern minke whale research cruise under scientific permit in Area V. *Rep. int. Whal. Commn* 43: 505-522.

Naganobu, M., Kano, H., Fujise, Y. and Kato, H. 1993. Preliminary oceanographical analyses on the southern minke whale distribution based on the data during Japanese research take in 1988/89. Paper SC/45/SHBa15 presented to the IWC Scientific Committee, May 1993 (unpublished). 13pp.

*Nakamura, T. 1993. Two-stage Bayesian cohort model for time-series data to reduce bias in the estimate of mean natural mortality rate. *Rep. int. Whal. Commn* 43: 343-348.

*Pastene, L.A., Kobayashi, T., Fujise, Y. and Numachi, K. 1993b. Mitochondrial DNA differentiation in Antarctic minke whales. *Rep. int. Whal. Commn* 43: 349-355.

Pastene, L. A., Kobayashi, T., Fujise, Y. and Numachi, K. 1993a. Temporal Variation in Mitochondrial DNA Haplotypes Composition in Minke Whales from Antarctic Area IV. Paper SC/45/SHBa13 presented to the IWC Scientific Committee, April 1993 (unpublished). 16pp.

[1994] (12)

Fujise, Y. and Kishino, H. 1994. Patterns of segregation of minke whales in Antarctic Areas IV and V as revealed by a logistic regression model. Paper SC/46/SH11 presented to the IWC Scientific Committee, May 1994 (unpublished). 23pp.

Fujise, Y., Zenitani, R., Kato, H. and Kishino, H. 1994. Age distributions of minke whales in the Antarctic Areas IV and V in 1991/92 and 1992/93 seasons. Paper SC/46/SH20 presented to the IWC Scientific Committee, May 1994 (unpublished). 22pp.

Hori, H., Bessho, Y., Kawabata, R., Watanabe, I., Koga, A. and Pastene, L.A. 1994. World-wide population structure of minke whales deduced from mitochondrial DNA control region sequences. Paper SC/46/SH14 presented to the IWC Scientific Committee, May 1994 (unpublished). 11pp.

*Kimoto, H., Endo, Y. and Fujimoto, K. 1994. Influence of interesterification on the oxidative stability of marine oil triacylglycerols. *Journal of American Oil Chemists Society* 71(5): 469-473.

Naganobu, M., Kano, H., Fujise, Y. and Kato, H. 1994. Relationship between oceanographic condition and minke whale density in the Ross Sea based on the data from the 1992/93 cruise of Japanese whale research programme under special permit. Paper SC/46/SH17 presented to the IWC Scientific Committee, May 1994 (unpublished). 21pp.

Nishiwaki, S., Ishikawa, H., Itoh, S., Matsuoka, K., Yuzu, S., Nagatome, I., Yamagiwa, D., Murase, H., Tanifuji, S., Miyakoshi, H. and Ono, K. 1994. Report of the 1993/94 cruise of the Japanese whale research programme under special permit in the Antarctic Area IV. Paper SC/46/SH15 presented to the IWC Scientific Committee, May 1994 (unpublished). 42pp.

Nishiwaki, S., Matsuoka, K. and Kawasaki, M. 1994. Abundance estimates of Southern Hemisphere minke whale in 1991/92 and 1992/93 seasons using data from Japanese whale research programme under special permit in Antarctic. Paper SC/46/SH12 presented to the IWC Scientific Committee, May 1994 (unpublished). 14pp.

Ohsumi, S., Kawasaki, M. and Nishiwaki, S. 1994. Biological results of beaked whales surveyed by Japanese whale research programme under special permit in the Antarctic and the need of their research take. Paper SC/46/SM15 presented to the IWC Scientific Committee, May 1994 (unpublished). 24pp.

*Pastene, L.A., Fujise, Y. and Numachi, K. 1994. Differentiation of mitochondrial DNA between ordinary and dwarf forms of southern minke whale. *Rep. int. Whal. Commn* 44: 277-281.

Pastene, L.A. and Fujise, Y. 1994. An outline, with a progress report, of the photo-identification experiments on southern baleen whales conducted during the Japanese Whale Research Programme Under Special Permit in the Antarctic. Paper SC/46/SH21 presented to the IWC Scientific Committee, May 1994 (unpublished). 14pp.

Pastene, L.A., Goto, M., Fujise, Y. and Numachi, K. 1994. Further analysis on the spatial and temporal heterogeneity in mitochondrial DNA haplotype distribution in minke whales from Antarctic Areas IV and V. Paper SC/46/SH13 presented to the IWC Scientific Committee, May 1994 (unpublished). 25pp.

*Yoshioka, M., Okumura, T., Aida, K. and Fujise, Y. 1994. A proposed technique for quantifying muscle progesterone content in the minke whales (*Balaenoptera acutorostrata*). *Canadian Journal of Zoology* 72: 368-370.

[1995] (12)

Butterworth, D. S., Thomson, R. and Kato, H. 1995. An Initial Analysis of Updated Transition Phase Data for Minke Whales in Antarctic Area IV. Paper SC/47/SH24 presented to the IWC Scientific Committee, May 1995 (unpublished), and Paper SC/47/SH24 (Rev) presented to the IWC Scientific Committee, June 1996 (unpublished). 18pp.

Fujise, Y. 1995. A Preliminary morphometric study in minke whales from Antarctic Area IV using data from the 1989/90 JARPA survey. Paper SC/47/SH7 presented to the IWC Scientific Committee, May 1995 (unpublished). 15pp.

*Fukui, Y., Mogoe, T., Terawaki, Y., Ishikawa, H., Fujise, Y. and Ohsumi, S. 1995. Relationship between physiological status and serum constituent values in minke whales (*Balaenoptera acutorostrata*). *Journal of Reproduction and Development* 41(3): 203-208.

*Ishikawa, H., Amasaki, H. 1995. Development and Physiological Degradation of Tooth Buds and Development of Rudiment of Baleen Plate in Southern Minke Whale, *Balaenoptera acutorostrata*: *The Journal of Veterinary Medical Science*: 665-670.

*Kasamatsu, F., Nishiwaki, S. and Ishikawa, H. 1995. Breeding areas and southbound migrations of southern minke whales *Balaenoptera acutorostrata*. *Mar. Ecol. Prog. Ser.* 119: 1-10.

Matsuoka, K. 1995. Finding of blue whales by JARPA in the Antarctic. Paper SC/M95/BW3 presented to the Steering Committee Meeting for Research Related to Conservation of Large Whales in the Southern Oceans, Tokyo, 1995 (unpublished). 10pp.

Matsuoka, K. and Ohsumi, S. 1995. Yearly trend in population density of large baleen whales in the Antarctic Areas IV and V in recent years. Paper SC/47/SH9 presented to the IWC Scientific Committee, May 1995 (unpublished). 25pp.

Naganobu, M., Kano, H., Fujise, Y., Nishiwaki, S. and Kato, H. 1995. Relationship between oceanographic condition and minke whale density in the Antarctic Ocean based on the data from the Japanese scientific permit cruise in 1989/90, 1991/92 and 1993/94. Paper SC/47/SH11 presented to the IWC Scientific Committee, May 1995 (unpublished). 21pp.

Nishiwaki, S., Ishikawa, H., Itoh, S., Shimamoto, K., Mogoe, T., Kawazu, H., Machida, S., Yamane, T., Ono, K. and Ohkoshi, C. 1995. Report of the 1994/95 cruise of the Japanese whale research programme under special permit (JARPA) in the Antarctic Area V. Paper SC/47/SH5 presented to the IWC Scientific Committee, May 1995 (unpublished). 38pp.

Nishiwaki, S., Matsuoka, K. and Kawasaki, M. 1995. Comparison of parameters to obtain abundance estimates in the Japanese whale research programme under special permit in the Antarctic (JARPA) and the International Decade of Cetacean Research (IDCR). Paper SC/47/SH10 presented to the IWC Scientific Committee, May 1995 (unpublished). 17pp.

Tanabe, S., Aono, S., Fujise, Y., Kato, H. and Tatsukawa, R. 1995. Persistent organochlorine residues in the Antarctic minke whale, *Balaenoptera acutorostrata*. Paper SC/M95/P13 presented to the Workshop on Chemical Pollution and Cetaceans, Bergen, 1995 (unpublished). 6pp.

Tanaka, E. and Nakamura, T. 1995. Preliminary estimation of average natural mortality coefficient of southern minke whales using JARPA data. Paper SC/47/SH8 presented to the IWC Scientific Committee, May 1995 (unpublished). 10pp.

[1996] (13)

Aono, S., Tanabe, S., Fujise, Y. and Tatsukawa, R. 1996. Specific accumulation of persistent organochlorines in minke whale (*Balaenoptera acutorostrata*) and their prey species from the Antarctic and the North Pacific. Paper SC/48/O22 presented to the IWC Scientific Committee, June 1996 (unpublished). 10pp.

*Bakke, I. Johansen, S., Bakke, O. and El-Gewely, M.R. 1996. Lack of population subdivision among the minke whales (*Balaenoptera acutorostrata*) from Icelandic and Norwegian waters based on mitochondrial DNA sequences. *Marine Biology* 125: 1-9.

*Butterworth, D. S. and Geromont, H. F. 1996. On the provision of advice on the effect on stock(s) of scientific permit catches, with particular reference to proposed research catches of minke whales from Antarctic Area IV. *Rep. int. Whal. Commn* 46: 653-655.

*Butterworth, D. S., Punt, A. E., Geromont, H. F., Kato, H. and Miyashita, T. 1996. An adapt approach to the analysis of catch-at-age information for Southern Hemisphere minke whales. *Rep. int. Whal. Commn* 46: 349-359.

Butterworth, D. S. and Punt, A.E. 1996. An Extension of the adapt Approach Put Forward for the Analysis of Catch-At-Age Information for Southern hemisphere Minke Whales. Paper SC/48/SH17 presented to the IWC Scientific Committee, June 1996 (unpublished). 17pp.

*Fukui, Y., Mogoe, T., Jung, Y.G., Terawaki, Y., Miyamoto, A., Ishikawa, H., Fujise, Y. and Ohsumi, S. 1996. Relationships among morphological status, steroid hormones, and post-thawing viability of frozen spermatozoa of male minke whales (*Balaenoptera acutorostrata*). *Marine Mammal Science* 12(1): 28-37.

*Iga, K., Fukui, Y., Miyamoto, A., Ishikawa, H. and Ohsumi, S. 1996. Endocrinological observations of female minke whales (*Balaenoptera acutorostrata*). *Marine Mammal Science* 12(2): 296-301.

*Matsuoka, K., Fujise, Y. and Pastene, L.A. 1996. A sighting of a large school of the pygmy right whale, *Caperea marginata* in the southeast Indian Ocean. *Marine Mammal Science* 12(4): 594-597.

Naganobu, M., Kano, H., Itoh, K., Nishiwaki, S. and Kato, H. 1996. Relationship between oceanographic conditions and minke whale density in and around the Ross Sea based on the data from the Japanese scientific permit cruise in 1994/95. Paper SC/48/SH19 presented to the IWC Scientific Committee, May 1996 (unpublished). 25pp.

Nishiwaki, S., Ishikawa, H., Tohyama, D., Kawasaki, M., Shimamoto, K., Yuzu, S., Tamura, T., Mogoe, T., Hishii, T., Yoshida, T., Hidaka, H., Nibe, H., Yamashiro, K., Ono, K. and Taguchi, F. 1996. Report of the 1995/96 Japanese whale research program under special permit in the Antarctic (JARPA) in Area IV and eastern part of Area III. Paper SC/48/SH12 presented to the IWC Scientific Committee, May 1996 (unpublished). 48pp.

*Pastene, L.A., Goto, M., Itoh, S. and Numachi, K. 1996. Spatial and temporal patterns of mitochondrial DNA variation in minke whale from Antarctic Areas IV and V. *Rep. int. Whal. Commn* 46: 305-314.

Pastene, L.A., Goto, M., Abe, H. and Nishiwaki, S. 1996. A preliminary analysis of mitochondrial DNA in humpback whales (*Megaptera novaeangliae*) from Antarctic Areas IV and V. Paper SC/48/SH10 presented to the IWC Scientific Committee, May 1996 (unpublished). 17pp.

Pastene, L.A., Kishino, H. and Goto, M. 1996. Preliminary RFLP analysis of mitochondrial DNA in the Antarctic minke whale from Areas III and VI. Paper SC/48/SH13 presented to the IWC Scientific Committee, May 1996 (unpublished). 19pp.

[1997] (30)

Anonymous. 1997a. List of data sets produced by the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA). Paper SC/M97/8 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 6pp.

Anonymous. 1997b. Scientific contribution of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA). Paper SC/M97/9 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 12pp.

Anonymous. 1997c. Abstract of the scientific works, based on JARPA data and material, presented in symposium and other scientific meetings (Item 2 of Documents 'Scientific contribution of the JARPA'). 24pp.

*Aono, S., Tanabe, S., Fujise, Y., Kato, H. and Tatsukawa, R. 1997. Persistent organochlorines in minke whale (*Balaenoptera acutorostrata*) and their prey species from the Antarctic and the North Pacific. *Environmental Pollution* 98: 81-89.

Burt, M.L. and Borchers, D.L. 1997. Minke whale abundance estimated from the 1991/92 and 1992/93 JARPA sighting surveys. Paper SC/M97/23 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 16pp.

Butterworth, D. S. and Punt, A.E. 1997. The effects of different tunings of control parameters and of the incorporation of an independent estimate of MSY rate on the performance of the Punt-Butterworth whale stock management procedure. Early version of the paper (SC/J90/Mg1 and SC/J90/Mg3) are presented to the IWC Workshop on Management Procedure, June 1990 (unpublished). 44pp.

Butterworth, D. S., Punt, A. E. Geromont, H. F., Kato, H. and Fujise, Y. 1997. Further ADAPT analyses of catch-at-age information for Southern Hemisphere minke whales in Areas IV and V. Paper SC/M97/6 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 50pp.

Clarke, E.D. and Borchers, D.L. Proposal for the development of unbiased abundance estimators for JARPA sightings survey data. Paper SC/49/SH30 presented to the IWC Scientific Committee, September 1997 (unpublished). 10pp.

Cooke, J., Fujise, Y., Leaper, R., Ohsumi, S. and Tanaka, S. 1997. An exploratory analysis of the age distribution of minke whales collected during JARPA expeditions 1987/88 through 1995/96. Paper SC/M97/21 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 11pp.

Cooke, J., Fujise, Y. and Kato, H. 1997. A analysis of maturity stage and transition phase data from minke whales collected during JARPA expeditions in Area IV, 1987/88 through 1995/96. Paper SC/M97/22 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 16pp.

Fujise, Y. 1997. A brief review of studies related to research on effects of environmental changes on cetaceans in the JARPA survey. Paper SC/M97/5 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 19pp.

Fujise, Y., Honda, K., Yamamoto, Y., Kato, H., Zenitani, R. and Tatsukawa, R. 1997. Changes of hepatic mercury accumulations of Southern minke whales in past fifteen years. Paper SC/M97/20 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 16pp.

Fujise, Y. and Kishino, H. 1997. Further examination of segregation pattern of minke whales in Antarctic Areas IV and V as revealed by a logistic regression model. Paper SC/M97/13 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 22pp.

Fujise, Y., Nishiwaki, S. and Pastene, L.A. 1997. An examination of the random sampling scheme of the JARPA surveys. Paper SC/M97/14 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 17pp.

*Fukui, Y., Mogoe, T., Ishikawa, H. and Ohsumi, S. 1997a. Factors affecting in vitro maturation of minke whale (*Balaenoptera acutorostrata*) follicular oocytes. *Biology of Reproduction* 56: 523-528.

*Fukui, Y., Mogoe, T., Ishikawa, H. and Ohsumi S. 1997b. In Vitro Fertilization of in Vitro Matured Minke Whale (*Balaenoptera acutorostrata*) Follicular Oocytes. *Marine Mammal Science* 13(3): 395-404.

Ichii, T. 1997. A review of the Marine Ecosystem Studies under the JARPA. Paper SC/M97/4 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 9pp.

Ichii, T., Tamura, T., Fujise, Y., Nishiwaki, S. and Matsuoka, K. 1997. Interannual changes in body fat condition, stomach-content mass and distribution of minke whales in Areas IV and V. Paper SC/M97/16 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 19pp.

Nishiwaki, S., Matsuoka, K., Kawasaki, M., Kishino, H. and Kasamatsu, F. 1997. Review of the sighting surveys in the JARPA .Paper SC/M97/1 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 42pp.

Nishiwaki, S., Matsuoka, K., Hakamada, T. and Kasamatsu, F. 1997. Temporal change of distribution and abundance estimates on large baleen whales in Areas IV and V in the Antarctic. Paper SC/M97/19 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 20pp.

Nishiwaki, S., Niimi, Y., Ito, S., Shimamoto, K., Abe, H., Yuzu, S., Shimokawa, T., Miyamoto, S., Taguchi, F., Kasai, H., Kinoshita, T., Iwata, T., Sano, K. and Tanabe, K. 1997. Report of the 1996/97 Japanese Whale Research Program under Special Permit in the Antarctic (JARPA) in Area V and western part of Area VI. Paper SC/49/SH10 presented to the IWC Scientific Committee, September 1997 (unpublished). 37pp.

Ohsumi, S. 1997. Development of objectives in the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA). Paper SC/M97/10 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 5pp.

Ohsumi, S., Tanaka, S. and Kato, H. 1997. A review of the studies on estimation of biological parameters conducted under the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA). Paper SC/M97/2 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 25pp.

Ohsumi, S., Fujise, Y., Ishikawa, H., Hakamada, T., Zenitani, R. and Matsuoka, K. 1997. The fattyness of the Antarctic minke whale and its yearly change. Paper SC/M97/18 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 21pp.

Pastene, L.A. and Goto, M. 1997. A review of the studies on stock/species identity in the minke and other baleen whale species, conducted under the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA). Paper SC/M97/3 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 34pp.

Pastene, L.A., Goto, M., Kimura, T. and Nishiwaki, S. 1997. Population structure of the humpback whale in the Antarctic feeding ground based on analysis of mitochondrial DNA control region sequences. Paper SC/M97/15 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 13pp.

Tamura, T., Ichii, T. and Fujise, Y. 1997. Consumption of krill by minke whales in Areas IV and V of the Antarctic. Paper SC/M97/17 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 9pp.

Tanaka, E. and Fujise, Y. 1997. Interim estimation of natural mortality coefficient of Southern minke whales using JARPA data. Paper SC/M97/11 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 20pp.

Thomson, R.B., Butterworth, D.S. and Kato, H. 1997. Has the age at maturity, as indicated by transition phase readings, of Southern Hemisphere minke whales declined over recent decades? Paper SC/M97/7 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 33pp.

Zenitani, R., Fujise, Y. and Kato, H. 1997. Biological parameters of Southern minke whales based on materials collected by the JARPA survey under special permit in 1987/88 to 1995/96. Paper SC/M97/12 presented to the IWC Intersessional Working Group to Review Data and Results from Special Permit Research on Minke whales in the Antarctic, May 1997 (unpublished). 19pp.

[1998] (12)

Clarke, E.D., Ashbridge, J., Burt, M.L., Hedley, S.L. and Borchers, D.L. GAM-based abundance estimation from JARPA survey data: Progress and simulation model design. Paper SC/50/CAWS33 presented to the IWC Scientific Committee, May 1998 (unpublished). 51pp.

Goto, M., Zenitani, R., Fujise, Y. and Pastene, L.A. 1998. Examination of mitochondrial DNA heterogeneity in minke whale from Area IV considering temporal, longitudinal and latitudinal factors. Paper SC/50/CAWS7 presented to the IWC Scientific Committee, April 1998 (unpublished). 10pp.

*Ichii, T., Shinohara, N., Fujise, Y., Nishiwaki, S. and Matsuoka, K. 1998. Interannual changes in body fat condition index of minke whales in the Antarctic. *Marine Ecology Progress Series* 175: 1-12.

Ishikawa, H., Matsuoka, K., Tohyama, D., Yuzu, S., Shimokawa, T., Ohshima, K., Mizushima, Y., Nibe, T., Kido T., Asada, M., Nakamura, M., Ichinomiya, D. and Kinoshita, T. 1998. Cruise report of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA) Area IV and eastern part of Area III in 1997/98. Paper SC/50/CAWS8 presented to the IWC Scientific Committee, April 1998 (unpublished). 26pp.

*Ito, S., Takenaga, F. and Tsuyuki, H. 1998. Lipids in Antarctic Minke Whales III. Site and Sexual Differences of Muscle Lipids. *J. Jpn. Oil Chem. Soc.* 47(2): 191-194. (in Japanese).

*Kida, M.Y. 1998. Morphology of the Tracheobronchial Tree and the Route of the Pulmonary Artery in the Fetal Minke Whale (*Balaenoptera acutostrata*). *Okajimas Folia Anat. Jpn.* 75(5): 251-258.

Matsuoka, K., Nishiwaki, S., Hakamada, T. and Kasamatsu, F. 1998. Abundance and Distribution of Sperm and Beaked Whales in the Antarctic Areas IV and V -Preliminary Report-. Paper SC/50/CAWS9 presented to the IWC Scientific Committee, April 1998 (unpublished). 15pp.

*Mogoe, T., Fukui, Y., Ishikawa, H. and Ohsumi, S. 1998a. Morphological Observations of Frozen-Thawed Spermatozoa of Southern Minke Whales (*Balaenoptera acutorostrata*). *Journal of Reproduction and Development* 44(1): 95-100.

*Mogoe, T., Fukui, Y., Ishikawa, H. and Ohsumi, S. 1998b. Effects of Diluent Composition and Temperature on Motility and Viability After Liquid Storage and cryopreservation of Minke Whale (*Balaenoptera acutorostrata*) Spermatozoa. *Marine Mammal Science* 14(4): 854-860.

*Nagasawa, K., Yamada, T.K. and Ishikawa, H. 1998. Measurements of the skeleton of a minke whale (*Balaenoptera acutorostrata*) from the Antarctic Ocean. *Bulletin of the Yamagata Prefectural Museum* 20: 1-19.

Pastene, L.A. and Goto, M. 1998. Further RFLP analysis of mitochondrial DNA in Antarctic minke whales from Areas V and VI. Paper SC/50/CAWS4 presented to the IWC Scientific Committee, April 1998 (unpublished). 16pp.

*Terabayashi, T. and Kawanishi, Y. 1998. Naturally occurring ganglioside lactones in Minke whale brain. *Carbohydrate Research* 307(1998): 281-290.

[1999] (15)

Abe, H., Goto, M., Katsumata, Y., Mizutani, M. and Pastene, L.A. 1999. Preliminary microsatellite DNA analysis to investigate stock structure in the Antarctic minke whale (*Balaenoptera acutorostrata*). Paper SC/51/CAWS9 presented to the IWC Scientific Committee, May 1999 (unpublished). 12pp.

*Bannister, J.L., Pastene, L.A. and Burnell, S.R. 1999. First record of movement of a southern right whale (*Eubalaena australis*) between warm water breeding grounds and the Antarctic ocean, South of 60°S. *Marine Mammal Science* 15(4):1337-1342.

*Butterworth, D. S., Punt, A. E. Geromont, H. F., Kato, H. and Fujise, Y. 1999. Inferences on the dynamics of Southern Hemisphere minke whales from ADAPT analyses of catch-at-age information. *J. Cetacean Res. Manage.* 1(1): 11-32.

Butterworth, D.S., Punt, A.E., Fujise, Y. and Kato, H. 1999. Do the JARPA age-structure data for Southern Hemisphere minke whales provide indication that commercial selectivity could have been age-specific for higher ages? Paper SC/51/CAWS21 presented to the IWC Scientific Committee, May 1999 (unpublished). 10pp.

Clarke, E.D., Burt, M.L. and Borchers, D.L. 1999. Simulation of JARPA surveys to test abundance estimation methods. Paper SC/51/RMP16 presented to the IWC Scientific Committee, May 1999 (unpublished). 17pp.

Fujise, Y. and Ohsumi, S. 1999. Progress of the outstanding tasks identified at the JARPA review meeting. Paper SC/51/CAWS13 presented to the IWC Scientific Committee, May 1999 (unpublished). 5pp.

Fujise, Y., Tamura, T., Ichihashi, H. and Kishino, H. 1999. Further examinations of the Segregation pattern of minke whales in the Antarctic Area IV using a logistic regression model, with considerations on the pack ice distribution. Paper SC/51/CAWS18 presented to the IWC Scientific Committee, May 1999 (unpublished). 18pp.

*Ishikawa, H., Amasaki, H., Dohguchi, H., Furuya, A. and Suzuki, K. 1999. Immunohistological distributions of fibronectin, tenascin, type I, III and IV collagens, and laminin during tooth development and degeneration in fetuses of minke whale, *Balaenoptera acutorostrata*. *The Journal of Veterinary Medical Science* 61(3): 227-232.

Matsuoka, K., Watanabe, T., Ichii, T., Shimada, H. and Nishiwaki, S. 1999. Application of the XCTD oceanographic survey in the Antarctic Areas IIIE and IV (35°E-130°E) during 1997/98 JARPA cruise. Paper SC/51/E5. presented to the IWC Scientific Committee, May 1999 (unpublished). 11pp.

Nishiwaki, S., Tohyama, D., Yuzu, S., Bando, T., Watanabe, M., Kitajima, A., Takeda, S., Murase, H., Ootose, S., Okubo, J., Tsutsui, S., Takatsuki, M. and Kinoshita, T. 1999. Cruise Report of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA) Area V and western part of area VI in 1998/99. Paper SC/51/CAWS10 presented to the IWC Scientific Committee, May 1999 (unpublished). 20pp.

Pastene, L.A. and Goto, M. 1999a. Further spatial and temporal analysis of mitochondrial DNA variation in minke whales from Areas III and IV considerations on the pack-ice distribution. Paper SC/51/CAWS11 presented to the IWC Scientific Committee, May 1999 (unpublished). 11pp.

Pastene, L.A. and Goto, M. 1999b. Review of the studies on stock identity in the minke whale *Balaenoptera acutorostrata* from the Southern Hemisphere. Paper SC/51/CAWS30 presented to the IWC Scientific Committee, May 1999 (unpublished). 28pp.

Polacheck, T., Dobbie, M., Fujise, Y. and Kato, H. 1999. Spatial and Temporal distribution of ages of southern hemisphere minke whales in commercial and JARPA catches in areas IV and V. Paper SC/51/CAWS31 presented to the IWC Scientific Committee, May 1999 (unpublished). 32pp.

Tanabe, S., Aono, S., Fujita, K., Nakata, H., Fujise, Y., Kato, H. and Tatsukawa R. 1999. Temporal trend of persistent organochlorine residues in minke whale (*Balaenoptera acutorostrata*) collected from the Antarctic during 1984-1995. Paper SC/51/E4 presented to the IWC Scientific Committee, May 1999 (unpublished). 8pp.

Tanaka, S. 1999b. Bias in density estimates when the speed of whale sampling vessels is reduced in high density areas. Paper SC/51/CAWS12 presented to the IWC Scientific Committee, May 1999 (unpublished). 18pp.

[2000] (18)

*Asada, M., Horii, M., Mogoe, T., Fukui, Y., Ishikawa, H. and Ohsumi, S. 2000. In Vitro Maturation and Ultrastructural Observation of Cryopreserved Minke Whale (*Balaenoptera acutorostrata*) Follicular Oocytes. *Biology of Reproduction* 62(2): 253-259.

Clarke, E.D., Burt, M.L. and Borchers, D.L. 2000. Investigation of bias in GAM-based abundance estimation methods and their suitability for JARPA survey data. Paper SC/52/IA19 presented to the IWC Scientific Committee, June 2000 (unpublished). 15pp.

Goto, M. and Pastene, L.A. 2000. Results of molecular genetic analyses of whale products collected from the Japanese retail markets in 1996 and 1999/2000 surveys. Paper SC/52/SD7 presented to the IWC Scientific Committee, June 2000 (unpublished). 21pp.+ Appendix 11pp.

Hakamada, T. and Fujise, Y. 2000. Report of an experiment on alternative sampling methodology performed during the 1999/2000 JARPA survey. Paper SC/52/O19 presented to the IWC Scientific Committee, June 2000 (unpublished). 6pp.

Ishikawa, H., Murase, H., Tohyama, D., Yuzu, S., Otani, S., Mogoe, T., Masaki, T., Kimura, N., Ohshima, T., Konagai, T., Asada, M., Takeuchi, J. and Kinoshita, T. 2000. Cruise report of the Japanese Whale Research

Program under Special Permit in the Antarctic (JARPA) Area IV and eastern part of Area III in 1999/2000. Paper SC/52/O20 presented to the IWC Scientific Committee, June 2000 (unpublished). 25pp.

*Kasamatsu, F., Matsuoka, K. and Hakamada, T. 2000. Interspecific relationships in density among the whale community in the Antarctic. *Polar Biol.* (2000) 23: 466-473.

Kato, H. and Fujise, Y. 2000. Dwarf minke whales; Morphology, growth and life history with some analyses on morphometric variation among the different forms and regions. Paper SC/52/OS3 presented to the IWC Scientific Committee, June 2000 (unpublished). 30pp.

Matsuoka, K., Hakamada, T. and Nishiwaki, S. 2000. Current abundance and density trend of humpback whales in the Antarctic Area IV using JARPA data. Paper SC/52/IA2 presented to the IWC Scientific Committee, June 2000 (unpublished). 14pp.

Matsuoka, K., Murase, H., Nishiwaki, S., Fukuchi, T. and Shimada, H. 2000. Development of a retrievable sonobuoy system for whale sounds recording in polar region. Paper SC/52/O7 presented to the IWC Scientific Committee, June 2000 (unpublished). 7pp.

Matsuoka, K., Watanabe, T., Ichii, T., Shimada, H. and Nishiwaki, S. 2000. Large whale distributions in relation to the southern boundary of the ACC in the Antarctic Areas IV and IIIE using JARPA 1997/98 data. Paper SC/52/E4 presented to the IWC Scientific Committee, June 2000 (unpublished). 15pp.

*Mogoe, T., Suzuki, T., Asada, M., Fukui, Y., Ishikawa, H. and Ohsumi, S. 2000. Functional reduction of the Southern minke whale (*Balaenoptera acutorostrata*) testis during the feeding season. *Marine Mammal Science* 16(3): 559-569.

Murase, H., Matsuoka, K., Ichii, T. and Nishiwaki, S. 2000. Relationship between the distribution of euphausiids and baleen whales in the Antarctic examined using JARPA data. Paper SC/52/E5 presented to the IWC Scientific Committee, June 2000 (unpublished). 18pp.

Nishiwaki, S. 2000. Performance of biopsy skin sampling for minke whales during the JARPN and JARPA surveys using ICR air gun. Paper SC/52/O5 presented to the IWC Scientific Committee, June 2000 (unpublished). 8pp.

Pastene, L.A. and Goto, M. 2000. Mitochondrial DNA analysis in minke whales from Antarctic Areas V and VI. Paper SC/52/IA3 presented to the IWC Scientific Committee, June 2000 (unpublished). 12pp.

Pastene, L.A., Goto, M., Abe, H., Nishiwaki, S. and Palsbøll, P. 2000. Genetic diversity of humpback whales in the Antarctic feeding ground examined by mitochondrial DNA and microsatellite. Paper SC/52/IA4 presented to the IWC Scientific Committee, June 2000 (unpublished). 16pp.

*Rosenbaum, H.C., Brownell JR, R.L., Brown, M.W., Schaeff, C., Portway, V., White, B.N., Malik, S., Pastene, L.A., Pateneude, N.J., Baker, C.S., Goto, M., Best, P.B., Clapham, P.J., Hamilton, P., Moore, M., Payne, R., Rowntree, V., Tynan, C.T., Bannister, J.L., DeSalle, R. 2000: World-wide genetic differentiation of *Eubalaena*: questioning the number of right whale species. *Molecular Ecology* 9:1793-1802.

Tamura, T. and Ohsumi, S. 2000. Regional assessments of prey consumption by marine cetaceans in the world. Paper SC/52/E6 presented to the IWC Scientific Committee, June 2000 (unpublished). 42pp.

*Wei, H., and Fukui, Y. 2000. Fertilizability of ovine, bovine or minke whale (*Balaenoptera acutorostrata*) spermatozoa intracytoplasmically injected into bovine oocytes. *Zygote* 8(3): 267-274.

[2001] (9)

*Asada, M., Tetsuka, M., Ishikawa, H., Ohsumi, S. and Fukui, Y. 2001. Improvement on in Vitro Maturation, Fertilization and Development of Minke Whale (*Balaenoptera acutorostrata*) Oocytes. *Theriogenology* 56: 521-533.

*Asada, M., Wei, H., Nagayama, R., Tetsuka, M., Ishikawa, H., Ohsumi, S. and Fukui, Y. 2001. An attempt at intracytoplasmic sperm injection of frozen-thawed minke whale (*Balaenoptera bonaerensis*) oocytes. *Zygote* 9(November): 299-307.

Hakamada, T., Matsuoka, K., Nishiwaki, S., Murase, H and Tanaka, S. 2001. Abundance trend of Southern Hemisphere minke whales in Areas IV and V obtained from JARPA data. Paper SC/53/IA12 presented to the IWC Scientific Committee, July (unpublished). 35pp.

Matsuoka, K., Hakamada, T., Murase, H. and Nishiwaki, S. 2001. Current abundance and density trend of humpback and fin whales in the Antarctic Areas IV and V using JARPA data. Paper SC/53/IA18 Presented to the IWC Scientific Committee, July 2001 (unpublished). 23pp.

Nishiwaki, S., Matsuoka, K., Murase, H. and Hakamada, T. 2001. Review of the sighting procedure in the JARPA. Paper SC/53/IA7 presented to the IWC Scientific Committee, July 2001 (unpublished). 24pp.

Nishiwaki, S., Ishikawa, H., Narita, H., Otani, S., Kiwada, H., Kariya, T., Yoshimura, I., Takamatsu, T., Teraoka, T., Shiozaki, M., Abe, N., Okamura, S., Yasui, K. and Mori, M. 2001. Cruise report of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA) Area V and Western part of Area VI in 2000/2001. Paper SC/53/O11 presented to the IWC Scientific Committee, July 2001 (unpublished). 21pp.

Pastene, L.A., Goto, M. and Kanda, N. 2001. An update of the mitochondrial DNA RFLP analysis in the Antarctic minke whales from Areas III and IV. Paper SC/53/IA17 presented to the IWC Scientific Committee, July 2001 (unpublished). 16pp.

*Suzuki, T., Mogoe, T., Asada, M., Miyamoto, A., Tetsuka, M., Ishikawa, H., Ohsumi, S., Fukui, Y. 2001. Plasma and pituitary concentrations of gonadotropins (FSH and LH) in minke whales (*Balaenoptera acutorostrata*) during the feeding season. *Theriogenology* 55(5): 1127-1141.

Zenitani, R., Kato, H. and Fujise, Y. 2001. Year to year trends of some biological parameters of Antarctic minke whales from the viewpoint of population monitoring. Paper SC/53/IA13 presented to the IWC Scientific Committee, July 2001 (unpublished). 16pp.

[2002] (13)

*Abe, H. and Goto, M. 2002. The Application of Microsatellite DNA for Determining Population Structure of Minke Whale. pp. 109-113. In: Nishimura, A. ed. *Technical Reports of the Hokkaido National Fisheries Research Institute No.5*. pp.113. Hokkaido National Fisheries research Institute, Hokkaido.

Butterworth, D.S., Punt, A.E., Branch, T.A., Fujise, Y., Zenitani, R. and Kato, H. 2002. Updated ADAPT VPA recruitment and abundance trend estimated for Southern Hemisphere minke whales in areas IV and V. Paper SC/54/IA25 presented to the IWC Scientific Committee, May 2002 (unpublished). 18pp.

Hakamada, T. 2002. Comparative analyses on abundance trend for Antarctic minke whales between JARPA and IWC/IDCR-SOWER in Areas IV and V. Paper SC/54/IA14 presented to the IWC Scientific Committee, May 2002 (unpublished). 6pp.

Ishikawa, H., Otani, S., Mogoe, T., Kiwada, H., Tohyama, D., Yoshida, T., Hayashi, T., Nagamine, M., Fukutome, K., Koyanagi, T., Fujihira, T., Sasaki, T., Ishihara, T. and Mori, M. 2002. Cruise report of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA) Area IV and Eastern Part of Area III in 2001/2002. Paper SC/54/O18 presented to the IWC Scientific Committee, May 2002 (unpublished). 20pp.

*Kunito, T., Watanabe, I., Yasunaga, G., Fujise, Y. and Tanabe, S. 2002. Using trace elements in skin to discriminate the populations of minke whale in southern hemisphere. *Marine Environmental Research* 53: 175-197.

Matsuda, H., Murase, H. and Morishita, J. 2002. Comprehensive re-evaluation of the IWC's standard Antarctic minke whale abundance estimation approach. Paper SC/54/IA11 presented to the IWC Scientific Committee, May 2002 (unpublished). 12pp.

*Murase, H., Matsuoka, K., Ichii, T. and Nishiwaki, S. 2002. Relationship between the distribution of euphausiids and baleen whales in the Antarctic (35°E-145°W). *Polar Biol* 25: 135-145.

*Pastene, L.A., Goto, M. and Kanda, N. 2002. The utility of DNA analysis for the management and conservation of large whales. *Fisheries Science* 68(Supp.I): 286-289. (Proceedings of International Commemorative Symposium, 70th Anniversary of the Japanese Society of Fisheries Science).

Pastene, L.A. and Goto, M. 2002. An update of the mitochondrial DNA RFLP analysis in the Antarctic minke whales from Areas V and VI. Paper SC/54/IA9 presented to the IWC Scientific Committee, May (unpublished). 14pp.

Shimada, H. and Murase, H. 2002. Some analyses on sea ice condition in relation to changes in the Antarctic minke whale distribution pattern in the Antarctic Area IV. Paper SC/54/IA18 presented to the IWC Scientific Committee, May 2002 (unpublished). 8pp.

*Suzuki, M., Ishikawa, H., Otani, S., Tobayama, T., Katsumata, E., Ueda, K., Uchida, S., Yoshioka, M. and Aida, K. 2002. The characteristics of adrenal glands and its hormones in cetacean. *Fisheries Science* 68(Supp.I): 272-275. (Proceedings of International Commemorative Symposium, 70th Anniversary of the Japanese Society of Fisheries Science).

Tanaka, E., Matsuoka, K. and Hakamada, T. 2002. A Calculation of Extent of Discrepancy of Cetacean Stock Abundance under Assumption that $g(0)=1$. Paper SC/54/IA30 presented to the IWC Scientific Committee, May (unpublished). 5pp.

*Urashima, T., Sato, H., Munakata, J., Nakamura, T., Arai, I., Saito, T., Tetsuka, M., Fukui, Y., Ishikawa, H., Lyndersen, C. and Kovacs, K. M. 2002. Chemical characterization of the oligosaccharides in beluga (Delphinapterus leucas) and Minke whale (Balaenoptera acutorostrata) milk. *Comparative Biochemistry and Physiology Part B* 132: 611-624.

[2003] (12)

Branch, T.A., Matsuoka, K. and Miyashita, T. 2003. Antarctic blue whales are recovering. Paper SC/55/SH6 presented to the IWC Scientific Committee, May 2003 (unpublished). 21pp.

Goto, M., Berube, M., Kanda, N., Ishikawa, H., Nishiwaki, S. and Pastene, L.A. 2003. Phylogenetic analysis of fin whale mtDNA control region sequences world-wide. Paper SC/55/SD6 presented to the IWC Scientific Committee, May 2003 (unpublished). 8pp.

*Hayashi, K., Nishida, S., Yoshida, H., Goto, M., Pastene, L.A. and Koike, H. 2003. Sequence variation of the *DQB* allele in the cetacean MHC. *Mammal Study* 28: 89-96.

LeDuc, R.G., Dizon, A.E., Goto, M., Pastene, L.A., Kato, H. and Brownell, R.L.Jr. 2003. Patterns of genetic variation in southern hemisphere blue whales. Paper SC/55/SH9 presented to the IWC Scientific Committee, May 2003 (unpublished). 8pp.

Marques, Fernanda F.C., Hedley, S.L., Hakamada, T. and Matsuoka, K. 2003. Spatial modelling of JARPA survey data in Area IV. Paper SC/55/IA3 presented to the IWC Scientific Committee, May 2003 (unpublished). 25pp.

Matsuoka, K., Hakamada, T., Murase, H. and Nishiwaki, S. 2003. Current distribution, abundance and density trend of humpback whales in the Antarctic Areas IV and V. Paper SC/55/SH10 presented to the IWC Scientific Committee, May 2003 (unpublished). 15pp.

Nikaido, M., Goto, M., Kanda, N., Pastene, L.A. and Okada, N. 2003. A new SINE procedure for species identification of baleen whales. Paper SC/55/SD7 presented to the IWC Scientific Committee, May 2003 (unpublished). 6pp.

*Nishida, S., Hayashi, K., Pastene, L.A., Goto, M., Kanda, N. and Koike, H. 2003. Polymorphic analysis of cetacean MHC - A case study on the minke whales -. *Mammalian Science* 3: 75-78. (in Japanese).

*Nishida, S., Pastene, L.A., Goto, M. and Kanda, N. 2003. SRY gene structure and phylogeny in the cetacean species. *Mammal Study* 28: 57-66.

Nishiwaki, S., Tohyama, D., Mogoe, T., Murase, H., Yasunaga, G., Mori, M., Yoshida, T., Fukutome, K., Machida, S., Ogawa, R., Oka, R., Ito, S., Konagai, T., Isoda, T., Mori, Y., Iwayama, H. and Horii, N. 2003. Cruise Report of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA) Area V and western Part of Area VI in 2002/2003. Paper SC/55/O6 presented to the IWC Scientific Committee, May 2003 (unpublished). 20pp.

*Ohishi, K., Zenitani, R., Bando, T., Goto, Y., Uchida, K., Maruyama, T., Yamamoto, S., Miyazaki, N. and Fujise, Y. 2003. Pathological and serological evidence of *Brucella*-infection in baleen whales (Mysticeti) in the western North Pacific. *Comparative Immunology Microbiology & Infectious Diseases* 26: 125-136.

Pastene, L.A., Goto, M. and Kanda, N. 2003. Further analyses of mtDNA RFLP data in the Antarctic minke whale from Areas III-VI. Paper SC/55/IA8 presented to the IWC Scientific Committee, May 2003 (unpublished). 6pp.

[2004] (10)

*Amemiya, K., Iwanami, Y., Kobayashi, T., Terao, T., Fukui, Y., Ishikawa, H., Ohsumi, S., Hirabayashi, M. and Hochi, S. 2004. Acquirement of Oocyte-activating Factor in Antarctic Minke Whale (*Balaenoptera bonaerensis*) Spermatogenic Cells, Assessed by Meiosis Resumption of Microinseminated Mouse Oocytes. *J. Mamm. Ova Res.* 21: 149-156.

*Fujihira, T., Kinoshita, M., Sasaki, M., Ohnishi, M., Ishikawa, H., Ohsumi, S. and Fukui, Y. 2004. Comparative Studies on Lipid Analysis and Ultrastructure in Porcine and Southern Minke Whale (*Balaenoptera bonaerensis*) Oocytes. *Journal of Reproduction and Development* 50(5): 525-532.

*Fukui, Y., Togawa, M., Abe, N., Takano, Y., Asada, M., Okada, A., Iida, K., Ishikawa, H. and Ohsumi, S. 2004. Validation of the Sperm Quality Analyzer and the Hypo-osmotic Swelling Test for Frozen-thawed Ram and Minke Whale (*Balaenoptera bonaerensis*) Spermatozoa. *Journal of Reproduction and Development* 50(1): 147-154.

*Ikumi, S., Sawai, K., Takeuchi, Y., Iwayama, H., Ishikawa, H., Ohsumi, S. and Fukui, Y. 2004. Interspecies Somatic Cell Nuclear Transfer for *In Vitro* Production of Antarctic Minke Whale (*Balaenoptera bonaerensis*) Embryos. *Cloning and Stem Cells* 6(3): 284-293.

Ishikawa, H., Otani, S., Kiwada, H., Isoda, T., Tohyama, D., Honjo, K., Hasegawa, A., Terao, T., Kushimoto, T., Ohshima, T., Sugiyama, K., Sasaki, T., Itoh, S., Takamatsu, T. and Yoshida, T. 2004. Cruise Report of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA) Area IV and Eastern Part of Area III in 2003/2004. Paper SC/56/O12 presented to the IWC Scientific Committee, June 2004 (unpublished). 18pp.

*Iwayama, H., Hochi, S., Kato, M., Hirabayashi, M., Kuwayama, M., Ishikawa, H., Ohsumi, S. and Fukui, Y. 2004. Effects of cryodevice type and donor's sexual maturity on vitrification of minke whale (*Balaenoptera bonaerensis*) oocytes at germinal vesicle-stage. *Zygote* 12(4): 333-338.

Matsuoka, K., Hakamada, T., Murase, H. and Nishiwaki, S. 2004. Current abundance estimates of humpback and fin whales in the Antarctic Areas III, IV, and VIW (35°E-145°W). Paper SC/56/SH11 presented to the IWC Scientific Committee, June 2004 (unpublished). 33pp.

*Muranishi, Y., Sasaki, M., Hayashi, K., Abe, N., Fujihira, T., Ishikawa, H., Ohsumi, S., Miyamoto, A. and Fukui, Y. 2004. Relationship between the appearance of preantral follicles in the fetal ovary of Antarctic minke whales (*Balaenoptera bonaerensis*) and hormone concentrations in the fetal heart, umbilical cord and maternal blood. *Zygote* 12: 125-132.

*Tetsuka, M., Asada, M., Mogoe, T., Fukui, Y., Ishikawa, H. and Ohsumi, S. 2004. The Pattern of Ovarian Development in the Prepubertal Antarctic Minke Whale (*Balaenoptera bonaerensis*). *Journal of Reproduction and Development* 50(4): 381-389.

*Watanabe, H., Mogoe, T., Asada, M., Hayashi, K., Fujise, Y., Ishikawa, H., Ohsumi, S., Miyamoto, A. and Fukui, Y. 2004. Relationship between Serum Sex Hormone Concentrations and Histology of Seminiferous Tubules of Captured Baleen Whales in the Western North Pacific during the Feeding Season. *Journal of Reproduction and Development* 50(4): 419-427.

[2005] (14)

Burt, M.L., Hedley, S.L., Hakamada, T. and Matsuoka, K. 2005. Comparison of abundance estimates of JARPA survey data in Area V from standard line transect analysis and density surface fitting. Paper SC/57/IA18 presented to the IWC Scientific Committee, May-June 2005 (unpublished). 14pp.

Butterworth, D.S. and Mori, M. 2005. Some implications of the ADAPT-VPA assessments of minke whales in Areas IV and V for their dynamics. Paper SC/57/IA19 presented to the IWC Scientific Committee, May-June 2005 (unpublished). 6pp.

*Ishikawa, H. and Shigemune, H. 2005. Improvements in More Humane Killing Methods of Antarctic Minke Whales, *Balaenoptera bonaerensis*, in the Japanese Whale Research Program under Special Permit in the Antarctic Sea (JARPA). *Jpn. J. Zoo Wildl. Med.* 10(1): 27-34.

*Iwayama, H., Ishikawa, H., Ohsumi, S. and Fukui, Y. 2005. Attempt at *In Vitro* Maturation of Minke Whale (*Balaenoptera Bonaerensis*) Oocytes Using a Portable CO₂ Incubator. *Journal of Reproduction and Development* 51(1): 69-75.

*Matsuoka, K., Pitman, R. and Marques, F. 2005. A note on a pigmy right whale (*Caperea marginata*) sighting in the southwestern Pacific Ocean. *J. Cetacean Res. Manage* 7(1): 71-73.

*Matsuoka, K., Hakamada, T., Kiwada, H., Murase, H. and Nishiwaki, S. 2005. Abundance Increases of Large Baleen Whales in the Antarctic based on the Sighting Survey during Japanese Whale Research Program (JARPA). *Global Environmental Research* 9(2): 105-115.

Matsuoka, K., Kiwada, H., Hakamada, T., Nishiwaki, S. and Ohsumi, S. 2005. Distribution and Abundance of Sperm Whales in the Antarctic Areas III E, IV, V and VI W (35°E-145°W). Paper A&D 7 presented to the Cachalot Assessment Research Planning (CARP) Workshop, March 2005 (unpublished). 13pp.

Mori, M. and Butterworth, D.S. 2005. Some advances in the application of ADAPT-VPA to minke whales in Areas IV and V. Paper SC/57/IA17 presented to the IWC Scientific Committee, May-June 2005 (unpublished). 27pp.

Mori, M. and Butterworth, D.S. 2005. Modelling the predator-prey interactions of krill, baleen whales and seals in the Antarctic. Paper SC/57/O21 presented to the IWC Scientific Committee, May-June 2005 (unpublished). 44pp.

Naganobu, M., Taki, K. and Hayashi, T. 2005. Preliminary survey report of the Japanese R/V *Kaiyo Maru* in the Ross Sea and adjacent waters, Antarctica in 2004/05. Paper SC/57/O16 presented to the IWC Scientific Committee, May-June 2005 (unpublished). 8pp.

*Nikaïdo, M., Sasaki, T., Makino, H., Goto, M., Kanda, N., Pastene, L.A. and Okada, N. 2005. Phylogenetic reconstruction of baleen whales and detection of their past extensive radiation event by the SINE insertion analysis. *Fossils* 77: 22-28 (in Japanese).

Nishiwaki, S., Tohyama, D., Goto, M., Mogoe, T., Isoda, T., Tsunekawa, M., Yoshimura, K., Kasai, H., Teraoka, T., Koyanagi, T., Ito, S., Kitajima, A., Ogihara, M., Hasegawa, A. and Fujihira, T. 2005. Cruise report of the Japanese whale research program under special permit in the Antarctic (JARPA) Area V and western part of Area VI in 2004/2005. Paper SC/57/O5 presented to the IWC Scientific Committee, May-June 2005 (unpublished). 22pp.

Punt, A.E. and Polacheck, T. 2005. Application of statistical catch-at-age analysis to data for Southern Hemisphere minke whales in Antarctic Areas IV and V. Paper SC/57/IA9 presented to the IWC Scientific Committee, May-June 2005 (unpublished). 75pp.

*Sasaki, T., Nikaïdo, M., Hamilton, H., Goto, M., Kato, H., Kanda, N., Pastene, L.A., Cao, Y., Fordyce, R.E., Hasegawa, M. and Okada, N. 2005. Mitochondrial Phylogenetics and Evolution of Mysticete Whales. *Systematic Biology* 54(1): 77-90.

[2006] (52)

Bando, T., Zenitani, R. and Fujise, Y. 2006. A study on stock structure in the Antarctic minke whales from the JARPA research area based on analysis of body length of physically matured whales. Paper SC/D06/J11 presented to the JARPA Review Meeting, December 2006 (unpublished). 7pp.

Bando, T., Zenitani, R., Fujise, Y., Hakamada, T. and Kato, H. 2006. Biological parameters of Antarctic minke whale based on materials collected by the JARPA survey in 1987/88 to 2004/05. Paper SC/D06/J17 presented to the JARPA Review Meeting, December 2006 (unpublished). 28pp.

*Fujihira, T., Kobayashi, M., Hochi, S., Hirabayashi, M., Ishikawa, H., Ohsumi, S. and Fukui, Y. 2006. Developmental capacity of Antarctic minke whale (*Balaenoptera bonaerensis*) vitrified oocytes following *in vitro* maturation, and parthenogenetic activation or intracytoplasmic sperm injection. *Zygote* 14: 89-95.

Fujise, Y., Hatanaka, H. and Ohsumi, S. 2006. What has happened to the Antarctic minke whale stocks? – An interpretation of results from JARPA -. Paper SC/D06/J26 presented to the JARPA Review Meeting, December 2006 (unpublished). 15pp.

Hakamada, T., Goto, M. and Ishikawa, H. 2006. Examination of the effect of skip on the abundance estimate for Antarctic minke whales in JARPA. Paper SC/58/IA6 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 10pp.

Hakamada, T., Matsuoka, K. and Nishiwaki, S. 2006. Abundance trend of Antarctic minke whales in Areas IV and V based on JARPA data. Paper SC/58/IA7 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 4pp.

Hakamada, T. and Matsuoka, K. 2006. Examination of the effect of survey mode on abundance estimate for Southern Hemisphere humpback whales using JARPA Sighting data. Paper SC/58/SH6 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 5pp.

Hakamada, T., Goto, M. and Ishikawa, H. 2006. Examination of correction the effect of skip on the abundance estimate for Antarctic minke whales in JARPA. Paper SC/D06/J3 presented to the JARPA Review Meeting, December 2006 (unpublished). 8pp.

Hakamada, T., Matsuoka, K. and Nishiwaki, S. 2006. An update of Antarctic minke whales abundance estimate based on JARPA data. Paper SC/D06/J6 presented to the JARPA Review Meeting, December 2006 (unpublished). 34pp + Addendum 2pp.

Hakamada, T. 2006. Morphometric analysis on stock structure in the Antarctic minke whale based on JARPA samples. Paper SC/D06/J10 presented to the JARPA Review Meeting, December 2006 (unpublished). 8pp.

Hatanaka, H., Fujise, Y., Pastene, L.A. and Ohsumi, S. 2006. Review of JARPA research objectives and update of the work related to JARPA tasks derived from the 1997 SC meeting. Paper SC/D06/J1 presented to the JARPA Review Meeting, December 2006 (unpublished). 12pp.

*Honda, K., Aoki, M. and Fujise, Y. 2006. Ecochemical Approach Using Mercury Accumulation of Antarctic Minke Whale, *Balaenoptera bonaerensis*, as Tracer of Historical Change of Antarctic Marine Ecosystem During 1980-1999. *Bull. Environ. Contam. Toxicol* 76: 140-147.

*Iwanami, K., Mita, H., Yamamoto, Y., Fujise, Y., Yamada, T. and Suzuki, T. 2006. cDNA-derived amino acid sequences of myoglobins from nine species of whales and dolphins. *Comp Biochem Physiol B Biochem Mol Biol*. 45:249-56.

Kato, H. and Zenitani, R. 2006. Interpretation of differences in body length for younger age classes of Antarctic minke whales between by commercial and JARPA data sets. Paper SC/58/IA22 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 5pp.

*Kobayashi, T., Amemiya, K., Takeuchi, K., Tsujioka, T., Tominaga, K., Hirabayashi, M., Ishikawa, H., Fukui, Y. and Hochi, S. 2006. Contribution of spermatozoal centrosomes to the microtubule-organizing centre in Antarctic minke whale (*Balaenoptera bonaerensis*). *Zygote* 14(1): 45-51.

*Konishi, K. 2006. Characteristics of blubber distribution and body condition indicators for Antarctic minke whale (*Balaenoptera bonaerensis*). *Mammal Study* 31: 15-22.

Konishi, K., Tamura, T. and Walloe, L. 2006. Decline in energy storage in the Antarctic minke whale *Balaenoptera bonaerensis* in the Southern Ocean. Paper SC/D06/J19 presented to the JARPA Review Meeting, December 2006 (unpublished). 6pp.

Matsuishi, T., Ikeda, H. and Nishiwaki, S. 2006. Estimation of $g(0)$ based on the sighting survey data and covariates information of JARPA. Paper SC/D06/J5 presented to the JARPA Review Meeting, December 2006 (unpublished). 12pp.

Matsuoka, K., Hakamada, T., Kiwada, H., Murase, H. and Nishiwaki, S. 2006c. Distribution and abundance estimates of humpback whales in the Antarctic Areas IV and V (70°E -170°W). Paper SC/A06/HW57 presented to the Comprehensive Assessment of Southern Hemisphere Humpback Whales, April 2006 (unpublished). 21pp.

Matsuoka, K., Hakamada, T., Kiwada, H., Murase, H. and Nishiwaki, S. 2006a. Distribution and abundance estimates of blue whales in the Antarctic Areas III E, IV, V and VI W (35°E -145°W) based on JARPA data. Paper SC/58/SH7 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 9pp.

Matsuoka, K., Hakamada, T., Kiwada, H., Murase, H. and Nishiwaki, S. 2006b. Updated distribution and abundance estimates of humpback whales in the Antarctic Areas IV and V (70°E -170°W). Paper SC/58/SH21 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 41pp. [Colour figures]

Matsuoka, K., Hakamada, T., Kiwada, H., Murase, H. and Nishiwaki, S. 2006d. Distribution and standardized abundance estimates for humpback, fin and blue whales in the Antarctic Areas III E, IV, V and VI W (35°E-145°W), south of 60°S. Paper SC/D06/J7 presented to the JARPA Review Meeting, December 2006 (unpublished). 37pp.

*Mori, M. and Butterworth, D.S. 2006. A first step towards modelling the krill-predator dynamics of the Antarctic ecosystem. *CCAMLR Science* 13: 217-277.

Mori, M. Butterworth, D.S. and Kitakado, T. 2006. Application of ADAPT-VPA to Various stock Hypotheses for the Antarctic minke whales Distributed through IWC Management areas III E to VI W. Paper SC/58/IA8 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 40pp.

Mori, M., Butterworth, D.S. and Kitakado, T. 2006. Application of ADAPT-VPA to Antarctic minke whales in the JARPA research area. Paper SC/D06/J14 presented to the JARPA Review Meeting, December 2006 (unpublished). 32pp.

Mori, M., Butterworth, D.S., Zenitani, R. and Kato, H. 2006. Model-based analyses of trends over time in age corresponding to the transition phase for Antarctic minke whales in the JARPA research area. Paper SC/D06/J16 presented to the JARPA Review Meeting, December 2006 (unpublished). 17pp.

Murase, H., Kiwada, H., Matsuoka, K. and Nishiwaki, S. 2006. Results of the cetacean prey survey using a quantitative echo sounder in JARPA from 1998/99 to 2004/2005. Paper SC/D06/J21 presented to the JARPA Review Meeting, December 2006 (unpublished). 15pp.

Murase, H., Tamura, T., Matsuoka, K., and Hakamada, T. 2006. First attempt of estimation of feeding impact on krill standing stock by three baleen whale species (Antarctic minke, humpback and fin whales) in Areas IV and V using JARPA data. Paper SC/D06/J22 presented to the JARPA Review Meeting, December 2006 (unpublished). 7pp.

Murase, H., Tamura, T., Matsuoka, K., Nishiwaki, S., Yasuma, H., Matsukura, R., Yabuki, T., Takao, Y., Taki, K., Hayashi, T. and Naganobu, M. 2006. Distribution patterns and biomass of Antarctic krill (*Euphausia superba*) and ice krill (*E. crystallophias*) with reference to Antarctic minke whales in the Ross Sea in 2005 using Kaiyo Maru-JARPA joint survey data. Paper SC/D06/J24 presented to the JARPA Review Meeting, December 2006 (unpublished). 19pp.

Murase, H., Kitakado, T., Matsuoka, K., Nishiwaki, S. and Naganobu, M. 2006. Relating the distribution patterns of Antarctic minke whales with abiotic and biotic environmental factors in the Ross Sea in 2005 using Kaiyo

Maru-JARPA joint survey data. Paper SC/D06/J25 presented to the JARPA Review Meeting, December 2006 (unpublished). 15pp.

Naganobu, M., Nishiwaki, S., Yasuma, H., Matsukura, R., Takao, Y., Taki, K., Hayashi, T., Watanabe, Y., Yabuki, T., Yoda, Y., Noiri, Y., Kuga, M., Yoshikawa, K., Kokubun, N., Murase, H., Matsuoka, K. and Ito, K. 2006. Interactions between oceanography, krill and baleen whales in the Ross Sea and Adjacent Waters: An overview of Kaiyo Maru-JARPA joint survey in 2004/05. Paper SC/D06/J23 presented to the JARPA Review Meeting, December 2006 (unpublished). 33pp.

*Nikaido, M., Hamilton, H., Makino, H., Sasaki, T., Takahashi, K., Goto, M., Kanda, N., Pastene, L.A. and Okada, N. 2006. Baleen whale phylogeny and a past extensive radiation event revealed by SINE insertion analysis. *Molecular Biology and Evolution* 23(5): 866-873.

Nishiwaki, S., Ishikawa, H. and Fujise, Y. 2006. Review of general methodology and survey procedure under the JARPA. Paper SC/D06/J2 presented to the JARPA Review Meeting, December 2006 (unpublished). 47pp.

Nishiwaki, S., Tohyama, D., Ishikawa, H., Otani, S., Bando, T., Murase, H., Yasunaga, G., Isoda, T., Nemoto, K., Mori, M., Tsunekawa, M., Fukutome, K., Shiozaki, M., Nagamine, M., Konagai, T., Takamatsu, T., Kumagai, S., Kage, T., Ito, K., Nagai, H. and Komatsu, W. 2006. Cruise Report of the Second Phase of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA□) in 2005/2006 -Feasibility study-. Paper SC/58/O7 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 21pp.

Pastene, L.A., Goto, M., Nishiwaki, S., Yoshida, H. and Kanda, N. 2006. Genetic characteristics and population structure of humpback whales in the Antarctic feeding ground as revealed by mitochondrial DNA control region sequencing and microsatellite analyses. Paper SC/A06/HW40 presented to the Comprehensive Assessment of Southern Hemisphere Humpback Whales, April 2006 (unpublished). 13pp.

Pastene, L.A. 2006. A brief review of the genetic studies on dwarf minke whale based on JARPA samples. Paper SC/D06/J8 presented to the JARPA Review Meeting, December 2006 (unpublished). 8pp.

Pastene, L.A., Goto M. and Kanda, N. 2006. Genetic analysis on stock structure in the Antarctic minke whales from the JARPA research area based on mitochondrial DNA and microsatellites. Paper SC/D06/J9 presented to the JARPA Review Meeting, December 2006 (unpublished). 22pp.

Pastene, L.A. 2006. What do we know about the stock structure of the Antarctic minke whale? A summary of studies and hypotheses. Paper SC/D06/J12 presented to the JARPA Review Meeting, December 2006 (unpublished). 24pp.

Pastene, L.A., Goto, M., Nishiwaki, S., Yoshida, H. and Kanda, N. 2006. Genetic characteristics and population structure of humpback whales in the Antarctic feeding ground as revealed by mitochondrial DNA control region sequencing and microsatellite analyses. Paper SC/D06/J31 presented to the JARPA Review Meeting, December 2006 (unpublished). 14pp.

Pastene, L.A., Ishikawa, H., Goto, M. and Nishiwaki, S. 2006. Overview of other studies on large whales based on JARPA samples. Paper SC/D06/J32 presented to the JARPA Review Meeting, December 2006 (unpublished). 6pp.

Paxton, C.G.M., Burt, M.L., Hakamada, T. and Matsuoka, K. Spatial modelling of JARPA survey data in Area V: fitting all years in a single model. Paper SC/58/IA20 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 16pp. [Colour figures]

Polacheck, T. and Punt A.E. 2006. Minke whale growth models for use in statistical catch-at-age models. Paper SC/58/IA3 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 36pp.

Punt, A.E., and Polacheck, T. 2006. Further statistical catch-at-age analyses for Southern Hemisphere minke whales. Paper SC/58/IA2 presented to the IWC Scientific Committee, May-June 2006 (unpublished). 40pp.

Tamura, T. and Konishi, K. 2006. Food habit and prey consumption of Antarctic minke whale *Balaenoptera bonaerensis* in JARPA research area. Paper SC/D06/J18 presented to the JARPA Review Meeting, December 2006 (unpublished). 23pp.

Tamura, T., Konishi, K., Nishiwaki, S., Taki, K., Hayashi, T. and Naganobu, M. 2006. Comparison between stomach contents of Antarctic minke whale and krill sampled by RMT net in the Ross Sea and its adjacent waters. Paper SC/D06/J20 presented to the JARPA Review Meeting, December 2006 (unpublished). 13pp.

Tanaka, E., Zenitani, R., Hakamada, T. and Fujise, Y. 2006. An estimate of average natural mortality coefficient of Antarctic minke whales using JARPA data. Paper SC/D06/J13 presented to the JARPA Review Meeting, December 2006 (unpublished). 12pp.

Watanabe, T., Yabuki, T., Suga, T., Hanawa, K., Matsuoka, K. and Kiwada, H. 2006. Results of oceanographic analyses conducted under JARPA and possible evidence of environmental changes. Paper SC/D06/J30 presented to the JARPA Review Meeting, December 2006 (unpublished). 13pp.

*Yabuki, T., Suga, T., Hanawa, K., Matsuoka, K., Kiwada, H. and Watanabe, T. 2006. Possible Source of the Antarctic Bottom Water in the Prydz Bay Region. *Journal of Oceanography* 62(5): 649-655.

Yasunaga, G., Fujise, Y. and Honda, K. 2006. Trace element accumulations of Antarctic krill, *Euphausia superba*, in Areas III, IV, V and VI from the Antarctic Ocean during 1989-1999. Paper SC/D06/J27 presented to the JARPA Review Meeting, December 2006 (unpublished). 12pp.

Yasunaga, G., Fujise, Y., Zenitani, R., Honda, K. and Kato, H. 2006. Yearly trend of trace element accumulation in liver of Antarctic minke whales, *Balaenoptera bonaerensis*. Paper SC/D06/J28 presented to the JARPA Review Meeting, December 2006 (unpublished). 23pp.

Yasunaga, G., Fujise, Y., Zenitani, R., Tanabe, S. and Kato, H. 2006. Spatial and temporal variation in organochlorine contaminants in the Antarctic minke whales, *Balaenoptera bonaerensis*. Paper SC/D06/J29 presented to the JARPA Review Meeting, December 2006 (unpublished). 13pp

Zenitani, R. and Kato, H. 2006. Temporal trend of age at sexual maturity of Antarctic minke whales based on transition phase in earplugs obtained under JARPA surveys from 1987/88 - 2004/05. Paper SC/D06/J15 presented to the JARPA Review Meeting, December 2006 (unpublished). 9pp.

[2007] (16)

*Asada, M., Tetsuka, M., Ishikawa, H., Ohsumi, S. and Fukui, Y. 2007. Ultrastructural Changes during Maturation and Cryopreservation of Follicular Oocytes of Antarctic Minke Whales (*Balaenoptera bonaerensis*). *Japanese Journal of Zoo Wildlife and Medicine* 12(1): 51-66.

*Branch, T.A., Stafford, K.M., Palacios, D.M., Allison, C., Bannister, J.L., Burton, C.L.K., Cabrera, E., Carlson, C.A., Galletti Vernazzani, B., Gill, P.C., Hucke-Gaete, R., Jenner, K.C.S., Jenner, M. M., Matsuoka, K., Mikhalev, Y.A., Miyashita, T., Morrice, M.G., Nishiwaki, S., Sturrock, V.J., Tormosov, D., Anderson, R.C., Baker, A.N., Best, P.B., Borsa, P., Brownell Jr, R.L., Childerhouse, S., Findlay, K.P., Gerrodette, T., Ilangakoon, A.D., Joergensen, M., Kahn, B., Ljungblad, D.K., Maughan, B., Mccauley, R.D., Mckay, S., Norris, T.F., Oman Whale and Dolphin Research Group, Rankin, S., Samaran, F., Thiele, D., Van Waerebeek, K. and Warneke, R.M. 2007. Past and present distribution, densities and movements of blue whales in the Southern Hemisphere and adjacent waters. *Mammal Rev*37(2): 116-175.

Butterworth, D S and Mori, M.2007. On the compatibility of results from ADAPT-VPA and transition-phase-based trends in age-at-maturity for the I-stock of Antarctic minke whales. Paper SC/59/IA22 presented to the IWC Scientific Committee, May 2007 (unpublished). 5pp.

Government of Japan (Compiled by Fujise, Y., Pastene, L.A., Hatanaka, H., Ohsumi, S. and Miyashita, T.). 2007. Evaluation of 2005/06 and 2006/07 feasibility study of the Second Phase of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA II). Paper SC/59/O3 presented to the IWC Scientific Committee, May 2007 (unpublished). 23pp.

Hakamada, T., Matsuoka, K. and Nishiwaki, S. 2007. Improvements of the JARPA abundance estimation of Antarctic minke whales based on JARPA Review Meeting recommendations. Paper SC/59/IA11 presented to the IWC Scientific Committee, May 2007 (unpublished). 24pp.

Konishi, K., Tamura, T., Zenitani, R., Bando, T., Kato, H. and Walloe, L. 2007. Decline in energy storage in the Antarctic minke whale (*Balaenoptera bonaerensis*) in the Southern Ocean using JARPA data. Paper SC/59/O10 presented to the IWC Scientific Committee, May 2007 (unpublished). 10pp.

*LeDuc, R.G., Dizon, A.E., Goto, M., Pastene, L.A., Kato, H., Nishiwaki, S. and Brownell, R.L. 2007. Patterns of genetic variation in southern hemisphere blue whales, and the use of assignment test to detect mixing on the feeding grounds. *J. Cetacean Res. Manage.*9(1): 73-80.

Murase, H. and Kitakado, T., Matsuoka, K., Nishiwaki, S. and Naganobu, M. 2007. Exploration of GAM based abundance estimation method of Antarctic minke whales to take into account environmental effects: A case study in the Ross Sea. Paper SC/59/IA12 presented to the IWC Scientific Committee, May 2007 (unpublished). 13pp.

Mori, M., Butterworth, D. and Kitakado, T. 2007. Further progress on application of adapt-VPA to Antarctic minke whales. Paper SC/59/IA13 presented to the IWC Scientific Committee, May 2007 (unpublished). 32pp.

*Nagai, H., Mogoe, T., Ishikawa, H., Hoshi, S., Ohsumi, S. and Fukui, Y. 2007. Follicle Size-Dependent Changes in Follicular Fluid Components and Oocyte Diameter in Antarctic Minke Whales (*Balaenoptera bonaerensis*). *Journal of Reproduction and Development* 53(6): 1265-1272.

*Nishida, S., Goto, M., Pastene, L.A., Kanda, N. and Koike, H. 2007. Phylogenetic Relationships Among Cetaceans Revealed by Y-Chromosome Sequences. *Zoological Science* 24(7): 723-732.

Nishiwaki, S., Ogawa, T., Matsuoka, K., Mogoe, T., Kiwada, H., Konishi, K., Kanda, N., Yoshida, T., Wada, A., Mori, M., Osawa, T., Kumagai, S., Oshima, T., Kimura, K., Yoshimura, I., Sasaki, T., Aki, M., Matsushita, Y., Ito, H., Sudo, S. and Nakamura, G. 2007. Cruise report of the second phase of the Japanese Whale Research Program under Special Permit in the Antarctic (JARPA II) in 2006/2007 -Feasibility study-. Paper SC/59/O4 presented to the IWC Scientific Committee, May 2007 (unpublished). 23pp.

*Onbe, K., Nishida, S., Sone, E., Kanda, N., Goto, M., Pastene, L.A., Tanabe, S. and Koike, H. 2007. Sequence Variation in the *Tbx4* Gene in Marine Mammals. *Zoological Science* 24(5): 449-464.

*Pastene, L.A., Goto, M., Kanda, N., Zerbini, A.N., Kerem, D., Watanabe, K., Bessho, Y., Hasegawa, M., Nielsen, R., Larsen, F. and Palsbøll, P.J. 2007. Radiation and speciation of pelagic organisms during periods of global warming: the case of the common minke whale, *Balaenoptera acutorostrata*. *Molecular Ecology* 16: 1481-1495.

Tamura, T. and Konishi, K. 2007. Additional analysis of stomach contents weight of the Antarctic minke whale *Balaenoptera bonaerensis* in the Southern Ocean. Paper SC/59/O9 presented to the IWC Scientific Committee, May 2007 (unpublished). 7pp.

Zenitani, R., Kishiro, T., Hakamada, T. And Kato, H. 2007. Current status and future plan of age reading by earplugs in baleen whales under the scientific permits, with note on age reading of Antarctic minke whales. Paper SC/59/O8 presented to the IWC Scientific Committee, May 2007 (unpublished). 8pp.

Appendix 2

Protocol for access to samples/data from the Institute of Cetacean Research (ICR), Tokyo, Japan under Procedure B (JCRM 6 (suppl.): in press)

INTRODUCTION

This protocol has been developed in the context of Procedure B of the IWC Scientific Committee's rules for data availability adopted at the 55th Annual Meeting (*Journal of Cetacean Research and Management* 6 (suppl.): in press). Procedure B applies to data required for analyses deemed important in providing advice to the Committee other than catch limits. Conditions for data recipients (repeated below) as specified in the rules for data availability are applicable.

It was agreed that the Committee shall specify the nature of the work and the data required during the meeting at which the recommendation is made, to the fullest extent possible in the time available at the meeting and in accord with the published protocol. Requests to the ICR for data under Procedure B of the Scientific Committee's rules for data availability shall be submitted by the Data Availability Group assisted by a nominated member of ICR.

It was also agreed that if the correct process is followed, the data owners will normally approve the applications within a 'specified time period'; in this case ICR agrees that it will respond within XXX weeks of receiving an application.

FORMAT OF THE APPLICATION

The format for the application is based on the revised application for catch-at-age analyses agreed by all members of the Scientific Committee at the end of the Scientific Committee meeting in 2003 (Annex G, Appendix 11).

- (a) *Title* of the proposal, giving the broad subject of the proposed analyses.
- (b) *Investigators*: the full name and affiliation of the principal investigator(s) and co-investigator(s) should be provided. This should include at least one scientist from ICR.
- (c) *Objectives and rationale of the study* as specified by the by the Scientific Committee along with the appropriate reference to the report(s) of the Scientific Committee. This will include the reasons why the proposed analyses are important and how they fit into previous work.
- (d) *Data to be used* will include a general description of all data to be used as well as data held by ICR. For the ICR-held data, the precise requirements will be given, including the level of disaggregation.
- (e) *Description of the methods* likely to be used. The level of detail must be in accordance with the level of novelty of the proposed methods and the particular research questions they will address. References to similar analyses should be included where available.
- (f) *Schedule of the work*: this should include estimated times for the various analyses to be carried out and an indication of which investigators will collaborate on individual components. If the project is a long-term project, annual progress reports will be required by ICR and the Scientific Committee.
- (g) *Output of the research*: this will follow the rules for publication agreed at the Scientific Committee meeting and given below. ICR may consider requests for less stringent conditions (e.g. presentations at non-IWC scientific meetings, publications, etc.). Such requests should be detailed here.

CONSIDERATION OF THE PROPOSAL

If an application has been approved by the whole Scientific Committee at an annual meeting, it will normally be approved by ICR. However, the final decision will always remain the prerogative of ICR. ICR may request reviews by an internal review group and/or external experts. The following factors will be taken in to account by ICR when considering applications.

- (a) *Priority*: highest priority for analysis/research of samples/data produced by Japan's Whale Research Programs under Special Permit, will be for the scientists that collected and obtained the data in any particular field.
- (b) *Suitability of the requested data in the context of the proposed methods and the objectives of the research*.

(c) Level of co-operation with ICR scientists.

The response to an application for data will be communicated by the ICR's Director General to the Data Availability Group and may include requests for further information. If the research proposal is accepted, ICR will nominate a scientist, (normally one of the co-investigators) who shall be responsible for making the necessary arrangements to provide the required samples/data.

Agreed Scientific Committee conditions for data recipients

Applications deemed suitable under Procedure A or Procedure B below are granted under the following conditions:

- (1) Data shall not be transmitted to third parties.
- (2) Papers may only be submitted to a Committee meeting in accordance with the time restrictions given below. Such papers must not include the raw data or the data in a form in more detail than is necessary to understand the analysis.
- (3) Papers must carry a restriction on citation except in the context of IWC meetings.
- (4) Data owners are offered co-authorship.
- (5) Publication rights remain strictly with the data owner.
- (6) Data shall be returned, to the Secretariat or the data owner as appropriate, immediately after the meeting at which the paper is submitted and any copies destroyed, unless an extension is granted.
- (7) Data requesters sign a form agreeing to the above conditions. Such forms will be held by the data owner and the Secretariat. In the case of Procedure B, the Data Availability Group will sign the agreement on the Committee's behalf and ensure that the conditions of any agreement are met by any individual scientists involved in the analysis.
- (8) In the event of a breach of the conditions in (6), serious sanctions [to be determined] will apply.