

Appendix 9

A PLAUSIBLE RANGE OF INCIDENTAL TAKES FOR RMP IMPLEMENTATION SIMULATION TRIALS OF NORTH PACIFIC MINKE WHALES

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Specifications for the RMP *ISTs* are intended to take into account a range of plausible hypotheses or scenarios for the stocks in question. One of the parameters included in the specification is the level of incidental takes or fisheries related bycatch. There has been considerable debate about the plausible range of values for this parameter in the North Pacific minke whale *ISTs* and the specified values have changed several times in recent years.

At the 1998 meeting, specifications considered two levels of catch for Korea and two options for Japan (IWC, 1999, p.92):

Incidental catch off Korea

Option Ki in which incidental catches were assumed to be 0 in 1988, after which they scaled up linearly until 1995, then set to reported catch in 1996 (129) and 1997 (78). After this they are assumed to be density-dependent and scaled using a value of 78 from 1998.

Option Kii in which incidental catch is assumed to be 150 from 1988 and is not density-dependent.

Incidental catch off Japan

Option Ji in which only reported incidental catches are used, averaging 7.6/year for 1979 to 1997. The 1996-97 average of 27/year to be used for future years.

Option Jii in which an incidental catch of 93 is assumed (based on Tobayama *et al.*, 1992).

At the 1999 meeting, specifications were modified as follows (IWC, 2000, pp.110-111):

Incidental catch off Korea

Option K in which future catches are as above and scaled using a value of 61 from 1997-98.

Incidental catch off Japan

Option Ji as above, except future catches are assumed to be density-dependent and scaled using a value of 25 from 1996-98.

Option Jii in which an incidental catch of 75 is assumed from 1900 to present and assumed to be density-dependent in the future.

At the 2001 meeting, specifications remained unchanged despite direct and indirect evidence that these values were implausibly low (Baker, 2002). Following a change in regulations by the Government of Japan announced at the 2001 meeting, reported bycatch in that country increased substantially. As a result, the intersessional Working Group of the RMP, at its meeting in early 2002, agreed to consider an additional set of trials with bycatch at levels of 50 and 100 for Japan.

At the 2002 meeting, new information indicated high levels of bycatch in both countries.

SC/54/ProgRep Korea reported the entanglement of 148 minke whales and the recovery of 12 from drift or stranding for a total of 160 possible incidental takes. The majority of this bycatch was from sub-area 6 and a smaller proportion from sub-area 5. Korean annual bycatch of minke whales reported under new regulations began in 1996 with a report

of 129 animals, 78 in 1997, 45 in 1998, 56 in 1999 and 77 in 2000. Across the six years of records (including 2001), bycatch has averaged 91 whales/year and seems to be increasing.

Following the changes in regulations in Japan, a total of 54 minke whales were reported as bycatch in the second half of 2001 (SC/54/Rep1) for a total of 79 entanglements and 10 strandings in 2001 as reported in SC/54/ProgRep Japan. Most of this bycatch was from sub-areas 6, 2 and 7. It seems reasonable to extrapolate from the second half of 2001 to a total annual bycatch of approximately 100. This is close to the values suggested previously by Tobayama *et al.* (1992) and Baker *et al.* (2000).

Genetic surveys of markets confirmed high levels of J-stock products in both countries and the proportion of J-stock products seems to be increasing in Japan (SC/54/RMP8; SC/54/BC1).

The geographic distribution of J-stock products is widespread around Japan and J-stock products are found in a high proportion in prefectures bordering sub-areas 2 and 7 (SC/54/BC3; Dalebout *et al.*, 2002). If these products originate primarily from local bycatch, as required under previous government guidelines, this indicates a greater degree of mixing of these stock in coastal waters of these sub-areas than previously considered.

From this new information, we suggest the following plausible range of bycatch for future *ISTs*:

For Korea, a minimum of 91 (based on the six-year average) and an upper plausible range of 160 to account for the possibility of continued catches at the 2001 level.

For Japan, a minimum of 100 and an upper plausible range of 150 to account for possible continued under-reporting or further increases in reported bycatch under new regulations allowing sale of bycatch.

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