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Agenda item 6(a)

CONSERVATION STATUS OF SMALL CETACEANS IN THE SOLOMON ISLANDS REGION

(Prepared by Dr. William F. Perrin, Appointed Councillor for aquatic mammals)

Background

1. At the scientific review meetings in the run-up to conclusion of the CMS *MoU for the Conservation of Cetaceans and their Habitats in the Pacific Islands* and in review of the SPREP Whale and Dolphin Action Plan (which will serve as the action plan for the MoU), it was noted that a potential conservation problem exists for dolphins and small whales exploited in drive fisheries in the Solomon Islands and that regional cooperation could usefully address the issue.

The Solomon Islands drive fisheries

2. The drive fisheries for several species of small cetaceans have existed at several villages on the island of Malaita for a number of generations (Dawbin 1966, Takekawa 1996a,b). The current main fishery is at Fanalei at the southern end of the island. A smaller fishery exists at Walande. The fishery at another location, Bit'a'Ama, has not operated in recent years but is slated to begin again in the near future (Kahn 2006).

3. The fishermen locate schools of dolphins offshore, surround them with small canoes, and drive them to shore and into a small embayment by banging rocks together underwater. The hunts are carried out every day during a period from January through April, when offshore waters are calm in the morning (Takekawa 1996a,b). An average season includes 8-10 successful drives, each taking from 20 to 700 dolphins. Catches of spinner and spotted dolphins in the aggregate by Funalei Village in 1999-2004 ranged from 600 to 1200 a year. Assuming an intrinsic population growth rate of 2-4% per year (Reilly and Barlow 1986) and no other anthropogenic mortality, the combined populations would have to total on the order of 15,000-60,000 for this catch to be sustainable. A record catch of 2000 occurred in 1965 (Kahn 2006). 40-60 canoes presently take part in the hunt at Funalei, an increase from 10-16 three generations ago.

4. Currently the main cetacean species taken in the hunt are the spinner dolphin (*Stenella longirostris*), known as *raa*; pantropical spotted dolphin (*Stenella attenuata*), or *unubulu*; and striped dolphin (*Stenella coeruleoalba*), or *robo tete*. In the past, the most sought-after

species was the melon-headed whale (*Peponocephala electra*), or *robo au*, possibly in mixed schools with Fraser's dolphins (*Lagenodelphis hosei*), but these two species are now rarely encountered (Kahn 2006, Takekawa 1996a, b). Other small cetaceans in the regions, such as the bottlenose dolphins (*Tursiops truncatus* and *T. aduncus*) and short-finned pilot whales (*Globicephala macrorhynchus*) are not commonly hunted.

5. Although the meat from the dolphins is utilized, they are hunted mainly for their teeth. The teeth are used as currency, for dowries and for barter in the local economy. The value of a single tooth from a pantropical spotted dolphin in 2004 was S\$1.00 (0.11 Euro), up from \$0.50 the previous year (Kahn 2006). The teeth from a single spotted dolphin were worth approximately 18 Euro. At least 1000 teeth were needed for a dowry, which represents approximately 6 dolphins. Most valuable in the past were teeth from the melon-headed whale (and possibly Fraser's dolphin), but they are no longer available (Takekawa 1996a,b). The dolphin meat is mostly consumed locally, but in recent years some has been transported to Honiara on Guadalcanal for sale in markets there (Kahn 2006).

6. The dolphins are likely migratory. Pelagic dolphins of the genus *Stenella* are known to undergo movements and seasonal migrations of hundreds of km (Perrin 1998, Perrin and Hohn, 1994, Miyazaki et al. 1974). In the Solomon Islands region, these may take them into the waters of neighboring nations (Papua New Guinea, Vanuatu, France [New Caledonia] and possibly Australia and Fiji).

Conclusion

7. The disappearance of at least one species and the increases in value of the teeth, in the number of fishermen, and in the scope of the market for meat suggest that overexploitation may have occurred and that it may be worsening. Action is needed to assess the size and status of the dolphin populations and to develop management recommendations to ensure sustainability of future use of the dolphins. Regional international technical and logistical assistance may contribute to this action.

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**DRAFT PROPOSAL FOR INCLUSION OF SPECIES ON THE APPENDICES OF
THE CONVENTION ON THE CONSERVATION OF MIGRATORY SPECIES OF
WILD ANIMALS**
(31 January 2007)

- A. PROPOSAL:** Inclusion of regional populations of cetacean species exploited in drive fisheries in the Solomon Islands: spinner dolphin (*Stenella longirostris*), pantropical spotted dolphin (*Stenella attenuata*), striped dolphin (*Stenella coeruleoalba*), Fraser's dolphin (*Lagenodelphis hosei*) and melon-headed whale (*Peponocephala electra*) on Appendix II.
- B. PROPONENT:** (a Pacific CMS party who has ratified the CMS *MoU for the Conservation of Cetaceans and their Habitats in the Pacific Islands Region* is suggested)

C. SUPPORTING STATEMENT:

1. Taxon

1.1 Classis	Mammalia
1.2 Ordo	Cetartiodactyla
1.3 Familia	Delphinidae
1.4 Genus/species/subspecies	<i>Stenella longirostris</i> <i>Stenella attenuata</i> <i>Stenella coeruleoalba</i> <i>Lagenodelphis hosei</i> <i>Peponocephala electra</i>
1.5 Common names	Spinner dolphin Pantropical spotted dolphin Striped dolphin Fraser's dolphin Melon-headed whale

2. Biological data

2.1 Distribution

The regional distribution of the cetacean populations involved in the Solomon Islands fisheries is unknown. The five species all occur in tropical waters around the world (Jefferson and Leatherwood 1994; Jefferson and Barros 1997; Perrin 1998, 2001, 2002a,b; Archer and Perrin 1999; Archer 2002; Dolar 2002, Perryman 2002). Geographically and/or genetically isolated subspecies of the spinner dolphin are recognized from inner Southeast Asia (*Stenella longirostris roseiventris*) and the eastern tropical Pacific (*S. l. orientalis* and *S. l. centroamericana*) (Perrin 2002c). Population structure in the Solomon Islands region of Oceania and in other regions of the Pacific, Indian and Atlantic oceans has not been examined; spinner dolphins in these regions are referred provisionally to the nominant subspecies *S. l. longirostris*. For the pantropical spotted dolphin, a coastal subspecies

(*Stenella attenuata graffmani*) and several pelagic management stocks have been recognized in the eastern tropical Pacific (Perrin 2002a). Pantropical spotted dolphins from other regions are referred provisionally to the nominant subspecies *S. a. attenuata*. Population structure in Oceania and the western Pacific of this species and the other three species is unknown, aside from a finding that Fraser's dolphins in Japanese and Philippine waters likely belong to different populations (Perrin and Dolar 2003).

2.2. Populations

Regional population size has not been estimated for any of the species involved in the Solomon Islands fisheries. It is thought that the populations of the melon-headed whale and possibly Fraser's dolphin may have declined in the 20th century due to overexploitation in the Solomon Islands drive fisheries; these species are now rarely seen in the region. The spinner dolphin and the pantropical dolphin were the most frequently encountered species in a survey in 2004 (Kahn 2006).

2.3 Habitat

The five species are all pelagic, inhabiting deep offshore waters. The spinner dolphin is unusual in coming into shallow water during the day to rest in some areas. The fishermen sometimes locate schools of the favored spotted dolphin near the shore outside the fringing reef, but they often must go more than 10km offshore to find them; the usual search is between 5 and 20 km from land (Takekawa 1996a,b).

2.4. Migration

Seasonal migration and individual movements on the order of hundreds of km have been recorded for pelagic spotted dolphins and spinner dolphins in the eastern tropical Pacific and striped dolphins in western Pacific waters (Perrin and Hohn 1994, Perrin 1998, Miyazaki et al. 1974). Such movements in the Solomon Islands region could extend into the waters of neighbouring nations (Papua New Guinea, Vanuatu and France (New Caledonia) and possibly farther into the waters of Australia and Fiji. Extent of movements in the other three species has not been determined but may be comparable.

3. **Threat data**

3.1 Direct threats to the populations

The major threat to the populations is ongoing drive fisheries at several sites on the island of Malaita. Takes at one location total 600—1200 dolphins per year. Populations in the 10s of thousands would be required to sustain these catch levels (Reilly and Barlow 1986). Population sizes have not been estimated. The melon-headed whale and possibly Fraser's dolphin may have been extirpated from the region (Kahn, 2006; Takekawa 1996a). The threat is growing as the human population increases. The number of boats taking part in the hunt at the major hunting village has tripled in three generations, the value of dolphin teeth has increased greatly, and dolphin meat is making its way to markets farther afield from the drive sites (Kahn 2006).

3.2 Habitat destruction

None identified.

3.3 Indirect threats

None identified.

3.4 Threats connected directly with migrations

None identified.

3.5 National and international utilization

Teeth from the dolphins serve as local currency. A tooth from a pantropical spotted dolphin in 2004 was worth S\$1.00 (0.11 Euro), an increase of 100% from 2003 (Kahn 2006). 1000 teeth are required for a bridal dowry, which represents approximately 6 spotted dolphins. Most of the dolphin meat is utilized locally, but increasingly meat is shipped to markets on the main island of Guadalcanal (Kahn 2006). The dolphin drives have additional value as part of the national cultural heritage of the Solomon Islands. No international traffic is known.

4. **Protection needs and status**

4.1 National protection status

The legal status of the drives under national law is uncertain [More investigation of this is needed].

4.2 International

The *Stenella* species and *Peponocephala electra* are classified globally by the IUCN as LR/lc (Low Risk/least concern). *Lagenodelphis hosei* is classified as DD (Data Deficient). All the species are listed on Appendix II of CITES. The Solomon Islands is not a party to CITES.

4.3 Additional protection needs

The sustainability of the drive hunts should be determined. Steps should include a) comprehensive collection and compilation of catch statistics from all of the drive sites, b) investigation of stock structure (i.e., what are the boundaries of the regional populations affected?), and c) estimation of abundance. If the catches are unsustainable, they should be reduced. Complete protection of some species may be necessary. Assessment and management of the dolphin populations and hunts will have to be carried out with the involvement and cooperation of national, provincial and local authorities. Assistance in research and capacity building needed for effective assessment and management can be provided through international cooperation.

5. **Range states**

The total range of the populations involved in the drive fisheries is not known, but possible range states in addition to the Solomon Islands include Papua New Guinea, Vanuatu, France (New Caledonia) and (less likely) Australia and Fiji.

6. **Comments from range states**

7. **Additional remarks**

8. References

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