

**PROPOSAL FOR INCLUSION OF SPECIES ON THE APPENDICES OF THE CONVENTION
ON THE CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS**

A. PROPOSAL: Inclusion of the species *Trichechus inunguis* in Appendix II to the CMS.

B. PROPONENT: Government of Peru

C. SUPPORTING STATEMENT

1. Taxon

- | | | |
|-----|--------------------|--|
| 1.1 | Class: | Mammalia |
| 1.2 | Order: | Sirenia |
| 1.3 | Family: | Trichechidae |
| 1.4 | Genus and species: | <i>Trichechus inunguis</i> Natterer 1883 |
| 1.5 | Common name: | Manatí amazónico, Vaca marina, Peixe boi, Amazonian manatee. |

2. Biological data

2.1 Distribution

The Amazonian manatee *Trichechus inunguis* is found all along the Amazonian basin, and is present from the river's sources in Colombia, Peru and Ecuador (Best, 1984), down to Marajó Island in Brazil (Domning, 1981).

It is also found in the Rupununi y Esequibo rivers in Guyana (Allsopp, personal communication; Husar, 1977), and in the Takutu river, in the border with Brazil (Bertram, 1963).

Although its presence in the Orinoco river (Venezuela) has been suggested (Husar, 1977), there are no records of the species' presence in the high Orinoco, or in the high Negro river (Best & da Silva, 1983).

In Peru it is present in the basins of the Napo, Tigre, Marañon (Pastaza), Samiria, and Pacaya rivers (Soini et al., 1996; and Álvarez, 1996; in Isola, 1999), and the Ucayali and Huallaga (Grimwood, 1969). Its presence was also reported in the system of the Purús (Magor et al., 1977) and in the rivers Nanay, Orosa, Yavarí, Yaguas and Putumayo (Mármol, 1995). It was recently reported in the low Puinahua (in Manco Cápac and Urarinas) and in the Iracahua, which belongs to the Ucayali basin (Anonymous, 1993). Its presence has been confirmed in the rivers Yanayacu Grande, Tapiche and Yarapa (Reeves et al., 1996).

It is also present with a significant population in the river Lagartococha (Álvarez, 1996; Isola, 1999).

In the Brazilian jungle it is present in lakes Amaña, Tefé, Manacapuru, Coari, Badajós and Aiapuá (Best, 1983). Equally in the rivers Negro, Solimoes (INPA, 1982), Branco, Jurua, Purús, Madeira, Tapajos, Xingu, Tacantins and Nhamunda. It has also been reported in Ilhas Caviana, das Pacas y Mexicana (IUCN, 1981).

In Colombia it was reported by Hernández, in 1973, in the river Putumayo, and in the low Caquetá. Manatees are also found in the low Apaporis (Sara Kendall, personal communication).

In Ecuador manatees are present in the rivers Aguarico and Cuyabeno. Also at the confluence of the Grande and Cuyabeno rivers, in lake Zancudococha (recent data point to their disappearance in that area), in the river Añangu, in lake Inuya and in Lorococha (Timm, et al. 1986).

2.2 Population

The size of the Amazonian region, the muddiness of its water courses, and the behaviour of the animal, which only shows a small part of its body when breathing, are factors that limit our capacity to estimate the population of manatees in the region (Domning, 1981; Marsh, O' Shea & Best, 1986; Rosas, 1991).

Some areas of the Brazilian Amazon region, in which the species was abundant in the past, now present reduced populations (Rosas, 1994). Timm predicted in 1986 that manatees would disappear from Equatorial Amazonia in ten to fifteen years, if hunting was not stopped. Since then, some populations seem to have disappeared, and others have decreased, the present manatee situation being much worse than in 1980 (Denkinger et al., unpublished).

Presently there are no total population estimates in any of the Range States. However, there are strong reasons to believe that the population levels of the Amazonian manatee are below the carrying capacity of its habitat (Domning, 1982).

2.3 Habitat

Manatees are present in aquatic habitats, generally in still water courses with abundant aquatic vegetation. They may reside in white, black or clear waters, in rivers, channels, and lakes, as well as in flooded forests during the wet season or flood periods (Best, 1984; Rosas, 1994).

During the dry season their habitat is drastically reduced, restricting them to deep rivers or permanent lakes where they remain awaiting an increase in the water level (Best, 1984).

2.4 Migrations

Migrations take place between seasons, when the water level starts to rise, or to decrease. Manatees migrate to rivers or lakes where they may spend the dry season (Best, 1984). Due to the hydric dynamics of Amazonia, the difference in the level of the water between seasons may be of the order of up to 12 metres, approximately. Many channels and lakes dry almost totally, reducing the habitat for aquatic species, such as the manatee, to rivers and lakes with sufficient depth and food.

In Brazil migrations of up to a hundred kilometres have been recorded in the dry season, in search of large lakes with sufficient depth, which serve as refuges during this critical period.

3. **Threat data**

3.1 Direct threats or threats to the population

At present the main risk for the species is presented by hunting for meat consumption. Hunting takes place by the fishermen of "paiche", *Arapaima gigas*, in opportunistic fashion, or by hunters that devote themselves exclusively to its capture. Manatees are also hunted with traps placed in narrow channels, especially built for the hunting of "paiche". Yet any animal that attempts to go through remains trapped.

Reeves and Leatherwood (1996), estimated that in the Samiria river (Reserva Nacional Pacaya Samiria) approximately 10 manatees were hunted every year, while Timm et al. (1986), mention that in the border between Peru and Ecuador, one manatee hunter had killed around 7 to 10 animals in the eight months that he had been living in the spot.

3.2 Habitat destruction

Mercury discharges from mining activities in the rivers of the Amazon region endanger the whole aquatic fauna. Mercury levels that are above those allowed have been recorded in the Madeira river. Water

hyacinths, *Eichhornia crassipes*, one of the plants eaten by manatees, have a mercury concentration which is double that allowed by the World Health Organization (Martinelli et al., 1988).

Agro-toxic product discharges, cellulose industry effluents, and the intense river traffic also contribute to environmental pollution, though their effects on manatee populations have not yet been studied (Rosas, 1994).

Oil exploration activities also create important sources of pollution, both from oil spills, and from the discharge of thousand of barrels of salty water without any kind of treatment, which on reaching the rivers, alter their chemical balance.

Pollution is very high in eastern Ecuador, where the rupture of pipelines allowed 16 million gallons of oil to leak into the ground in the last 20 years. It is estimated that ten thousand gallons of oil leak every week through secondary pipelines (Krane, 1994; in Carter and Rosas, 1997).

It was estimated in 1987, in Peru, that the oil wells in the Corrientes river resulted in 30 thousand barrels of salty water being emptied daily, without any treatment. Unofficial estimates point to almost a million barrels of salty water being emptied daily as a result of all the oil activities in the Amazon region (Vásquez, 1999, pers. com.)

3.3 Indirect threats

By-catch in fishing nets results in the killing of both adults and puppies. Death is produced also when manatees get caught in traps for hunting “*paiche*”, placed at the exit from lakes, or in narrow channels connected to the main river (Reeves et al., 1996).

Fishing with dynamite, mostly in rivers in Ecuador, causes serious decimation of local populations.

3.4 Threats connected especially with migrations

While migrating during the dry season, manatees search for refuge in deep lakes or rivers. Lakes that during the rainy season were connected with the main river, remain isolated during the dry period. Often large numbers of individuals concentrate there. Such refuges, if found by hunters, may be of great risk for the species.

In the Reserva de Producción Faunística Cuyabeno, in Ecuador, there is a small manatee population which migrates during the dry season towards the large rivers outside the limits of the Reserve. They are particularly threatened, since they lack any kind of protection (Timm et al., 1986). Similar situations may be taking place elsewhere in Amazonia, and not be the object of any information.

3.5 National and international utilization

Initially the Amazonian manatee was used only for meat consumption, the meat being eaten by the native tribes of the region. From 1935 to 1954, with the birth of the local leather industry, between 4000 and 7000 manatees a year were killed. Manatee leather was used for the manufacture of machine belts, sleeves and other products that required a highly resistant material (Doming, 1982). With the introduction of synthetic products into the market, there was a drastic reduction in the use of manatee leather. However, commercial hunting for meat consumption took over, and similar numbers of animals were hunted until 1973.

At present manatees are still being eaten by humans, and the animal’s fat is used as oil (Reeves et al., 1996).

4. Protection status and needs

4.1 National protection status

The Amazonian manatee is protected in Peru, in the reserve zone of Gueppí, and in the Reserva Nacional Pacaya Samiria. However there are records of hunting taking place within that area.

The Centro de Datos para la Conservación (CDC-UNALM) classifies the species as L2: species in danger of extinction in the area, due to small numbers or other factors. It is also listed in the Red Book on Wild Fauna of Peru, where it appears as a species in danger of extinction.

Peruvian legislation protects the species since 1973, by means of decree 934-73-AG (Reeves et al., 1996). However, in 1997, the decree was replaced by decree 020-97, which cancelled the previous one.

Presently the Amazonian manatee is protected by the Reglamento de Ordenamiento Pesquero of the Peruvian Amazon Region (R.M. N°147-2001-PE), of April 30, 2001.

4.2 International protection status

The Amazonian manatee has been locally exterminated in many parts of the Amazonian basin, due to excessive exploitation, and is thus considered closer to extinction than any other mammal in the region. (Grimwood, 1968).

The species is considered vulnerable by UICN since 1982 (Hilton-Taylor, 2000). It is also included in Appendix I to CITES since 1973 (Soini et al., 1996).

The Amazonian manatee is protected in Brazil since 1967 under the Law for the protection of wild fauna. Yet only in 1973 did the hunt for manatees decrease, thanks to Edict N° 3481. In 1986, Edict N-11 prohibited specifically the chasing, hunting and capture of small cetaceans, pinnipeds and sirenians in Brazilian waters.

In Ecuador, according to Resolution No. 105, of the Ministerio del Ambiente (Registro Oficial No.5, 28 January 2000), hunting and any type of commercial activity are forbidden for an indefinite period.

In Colombia, Resolution No.574, of 1969, of INDERENA (Instituto Nacional de los Recursos Naturales Renovables y del Ambiente), invites the establishment of a permanent prohibition of the hunting of the two species of manatee.

4.3 Additional protection needs

- ~~///~~ To propose effective protection measures one must, firstly, determine the manatees' presence and status both in Peru and in the other Range States.
- ~~///~~ Identify and offer protection in "refuges" in the dry season
- ~~///~~ Carry out studies to identify migration routes
- ~~///~~ Record data on by-catch from nets and traps, as well as on deliberate captures for consumption by the hunters, and for commercial purposes, so as to have estimates of mortality and hunting trends
- ~~///~~ Carry out education programmes, for the local population, on the conservation status of the species, its ecological importance, its habitat and the laws that protect it.
- ~~///~~ Sign agreements between the countries that share the species, in order to guarantee its conservation. (In the Peruvian-Ecuadorian border, information on the hunting of the manatee is being recorded by military detachments.)

In the frontier between Ecuador and Colombia there are also records of populations of *Trichechus inunguis*, yet no conservation efforts have ever been carried out.

Hunting data are available, as well as studies, made by Colombian institutions, for the populations of the frontier area between Peru and Colombia.

5. Range states

The *Trichechus inunguis* range states are Brazil, Ecuador, Colombia, Peru and Guyana.

6. Comments from Range States

Ecuador: The Amazonian manatee (*Trichechus inunguis*) ranges over the Napo and Aguarico river systems. Previously it was also present in the Pastaza river, but presently the natives from the area of the Pastaza (the Ashuar) are not aware of the existence of the animal, despite the fact that some old shamans remember seeing the species in the Pastaza 50 years ago.

There are still manatees in the Yasuni National Park, and in the Cuyabeno reserve, yet they are frequently hunted by natives and by soldiers that consume their meat and fat. Besides hunting as such, fishing with dynamite in the Yasuni river, Yasuni National Park, causes serious decimation to the surviving population.

According to the Cofan Indians of the Cuyabeno Reserve, there are manatees in the Sabalo river lakes, that have never been hunted.

Manatees are now absent from the Zancudococha lake, and the population of the Lagartococha river is greatly reduced.

The great pressure caused by hunting in the Cuyabeno river augurs ill for the species.

In conclusion, the Amazonian manatee is classified as a species in danger of extinction in Ecuador (CR C2a(1), Tirira et al., 2001), yet there is no effective protection for the species in the Ecuadorian Amazon Region (Judith Denkinger, Yaku Pacha: Organisation for the Conservation of South-American Aquatic Mammals).

Colombia: In the Colombian part of the Amazon river, by the border with Peru, 8 to 12 cases of hunting per year have been recorded, with occasional peaks of up to 20 animals (Sara Kendall, Fundación Omacha).

Peru: In the Reserva Nacional Pacaya Samiria manatees carry on being hunted both by poachers and locals, as recorded by Reeves and Leatherwood in 1996, and by ourselves in the Samiria river in March 2002. (Aldo Soto, Oceanic Society).

7. Additional remarks

The status of the largest aquatic mammal in the Amazon Region is one of serious danger. In Peru, as in the remaining range states, illegal hunting carries on, habitat destruction increases, and silent extinction may be taking place much faster than we think it possible. Although studies on the manatee are being prepared in Brazil, Ecuador and Colombia, there are no recent studies of the species in Peru. Lack of information constitutes a conservation threat in itself.

Historical records speak of the abundance of manatees, as well as other aquatic species of the Amazon. Yet, once again, an irresponsible attitude towards natural resources has led the species to be in danger of extinction.

If we want to avoid the disappearance of the Amazonian manatee from our rivers and lakes, joint efforts must be made in the short and the medium term. Long term plans must also be considered in the environmental policies of the Range States.

8. References

ANONYMOUS. 1993. Employment and Natural Resources Sustainability Project on Pacaya-Samiria Natural Reserve. FPCN-TNC, CDC-UNALM and IIAP. Final Report, 2 vols.

Best, R. 1983. Apparent dry-season fasting in Amazonian manatees (Mammalia: Sirenia). *Biotrópica* 15(1): 61-64.

Best, R. 1984. The aquatic mammals and reptiles of the Amazon. In *the Amazon: limnology and landscape ecology of mighty tropical river and it's basin*. Ed. H. Sioli, W Junk. Dordrecht, Netherlands, pp. 113-134.

Best, R y da Silva, V. 1983. Distribution of freshwaters dolphins and manatees in the upper río Negro and Orinoco. Abstracts of the V Biennial Conference on the Biology of Marine Mammals. Boston.

Carter, S y Rosas, F. 1997. Biology and conservation of the Giant Otter *Pteronura brasiliensis*. *Mammal Review*, 27 (1): 1-26.

Denkinger, J; Albuja, L; Miller, B and Rattenbury, K. (no publicado). Status of the Amazonian manatee (*Trichechus inunguis*) in the Cuyabeno Reserve, Ecuador.

Doming, D. 1981. Distribution and status of manatees *Trichechus* spp. near the mouth of the Amazon river, Brazil. *Biological Conservation*, 19:85-97.

Doming, D. 1982. Comercial exploitation of manatees *trichechus* in Brazil, c. 1785-1973. *Biological Conservation*. 22: 101-126.

Emmons, L. 1997. Neotropical rainforest mammals: a field guide. The University of Chicago Press. Chicago

Grimwood, I.R. 1968. Endangered mammals in Peru. *Oryx*, 9:411-421.

Husar, S. 1977. *Trichechus inunguis*. Mammalian Species Account. American Society of Mammalogist. N 72: 1-4.

INPA, Department of aquatic mammal biology. 1982. Seasonal breeding in the Amazon manatee, *Trichechus inunguis* (mammalia: sirenia). *Biotropica* 14(1): 76-77.

2000 IUCN Red List of Threatened Species, Hilton-Taylor, C. (compiler). IUCN, Gland, Switzerland and Cambridge, UK. xviii + 61pp.

Isola, Sandra. 1999. Evaluación del estado de conservación de tres especies de mamíferos dulceacuícolas sudamericanos: Lobo de río (*Pteronura brasiliensis*), Delfín rosado (*Inia geoffrensis*) y Manatí (*Trichechus inunguis*). WWF-Perú.

Magor, D; Lovisek, J; Robertson B; Zimmerman, B. 1977. Status and distribution of the Amazonian manatee *Trichechus inunguis*. Abstr. 2nd Bienn. Conf. Biol. Mar. Mamm. San Diego, California.

- Mármol, A. 1995. Consideraciones acerca de la vaca marina en Loreto y la necesidad de algún tipo de manejo para garantizar su supervivencia. En: II Congreso Internacional sobre Manejo de Fauna Silvestre en la Amazonía. Iquitos.
- Marsh, H; O'Shea, TJ; Best, R. 1986. Research on Sirenians. *AMBIO*, 15 (3), 177-180.
- Martinelli, L; Ferreira, J; Forsberg, B & Victoria, R. 1998. Mercury contamination in the Amazon: a gold rush consequence. *AMBIO*, 17 (4), 252-254.
- Montgomery, G; Best, R and Yamakoshi, M. 1981. A Radio-Traking Study of the Amazonian Manatee, *Trichechus Inunguis* (Mammalia: Sirenia). *Biotropica*. 13(2), 81-85.
- Pacheco, T. 1984. Estimación de Tendencias de Manatíes (*Trichechus Inunguis*) a través de Observaciones Directas y Referencia de Pescadores. Manuscrito UNALM. 25 pp.
- Pulido, V. 1991. El Libro Rojo de la Fauna Silvestre en el Perú. INIAA/WWF/USFWS. Maijosa ed. Lima. 219 pp.
- Reeves, R y Leatherwood, S. 1996. Amazonian Manatee, *Trichechus inunguis*, in Peru: Distribution, Exploitation, and Conservation Status. *Interciencia*. Vol 21 N 6.
- Rosas, F. 1991. Peixe-boi da Amazonia, *Trichechus inunguis* (Natterer 1883). In: Estado de conservación de los mamíferos marinos del Atlántico Sudoccidental (ed. by H.L Cappozzo & M. Junin). pp 178-181. Informe y estudios del programa de mares regionales del PNUMA, No. 138, 250 pp.
- Rosas, F. 1994. Biology, conservatioon and status of the Amazonian manatee *Trichechus inunguis*. *Mammal Review* 24(2): 49-59.
- Soini Pekka. 1992. Evaluación preliminar de la vaca marina (*Trichechus inunguis*). Reporte Pacaya Samiria. Pro-Naturaleza, TNC, US-AID. Perú.
- Soini, P; Sicchar, L; Gil, G; Fachìn, A; Pezo, Ry Chumbe, M. 1996. Una evaluación de la fauna silvestre y su aprovechamiento de la Reserva Nacional Pacaya Samiria, Perú. Documento Técnico N° 24. IIAP. Iquitos. 64pp.
- Timm, Robert. 1986. Ecology, Distribution, Harvest And Conservation of the Amazonian Manatee, *Trichechus inunguis*, in Ecuador. *Biotrópica* 18(2): 150-156.
- Tirira, D; V. Utreras y J. Denkinger. 2001. El Manatí Amazónico. En D. Tirira (ed.) Libro Rojo de los mamíferos del Ecuador. SIMBIOE/ EcoCiencia/Ministerio del Ambiente/ UICN. Serie Libros Rojos del Ecuador, Tomo 1. Publicación especial sobre los mamíferos del Ecuador. Pp. 124-126.