

# THE 2008 IUCN REASSESSMENT OF THE STATUS OF MONK SEALS

By: Lloyd Lowry, David Aurioles, Vladimir Burkanov, Claudio Campagna, Nick Gales, Tom Gelatt, Simon Goldsworthy, Greg J. Hofmeyr, Tero Härkönen, Kit M. Kovacs, Colin Southwell, Dave Thompson, Fritz Trillmich and Alex Aguilar (The IUCN Pinniped Specialist Group)

## Background

In 2008, the International Union for the Conservation of Nature (IUCN) published the results of a reassessment of the status of the world's land and marine mammals (www.iucnredlist.org/mammals, Schipper et al. 2008). This was the first major IUCN review of the status of mammals since 1996, and each taxon (species or subspecies) was evaluated based on specific criteria that reflect relative degree of endangerment (IUCN 2001). As part of this project, the IUCN's Pinniped Specialist Group (PSG) reviewed the status of 47 taxa of seals, sea lions, and walrus, including three species of monk seals.



Table 1. Summary of IUCN Red List status for monk seals in 1996 and 2008.

	1996 listing	2008 listing
<b>Caribbean monk seal</b>	Extinct	Extinct
<b>Mediterranean monk seal</b>	Critically endangered	Critically endangered
<b>Hawaiian monk seal</b>	Endangered	Critically endangered

Table 2. Major known threats to the survival of Mediterranean and Hawaiian monk seals.

Mediterranean monk seal	Hawaiian monk seal
Displacement from habitat	Food limitation
Destruction of physical habitats	Entanglement in marine debris
Fishery interactions—shooting and net-entanglement	Shark predation
Depletion of prey resources	Fishery interactions (entanglement in nets and hooking)
Pollution	Disease
Disease	Displacement from habitat
Reduced genetic diversity	



A Hawaiian monk seal mother-pup pair nursing peacefully on Molokai.



Two young Mediterranean monk seals at Cap Blanc.

## Mediterranean monk seal, *Monachus monachus*

The PSG review of the status of Mediterranean monk seals (Aguilar and Lowry 2008) concluded the following - "The Mediterranean monk seal was historically reduced to negligible population numbers as a consequence of persecution by fishermen and sealing. This produced a severe bottleneck that significantly reduced genetic variability. In the last half century, numbers have continued to decline mostly as a consequence of human invasion of habitat and adverse fisheries interactions. The population is heavily fragmented and many small subpopulations have become extinct in the last two decades. In the two main extant subpopulations (Greece-Turkey and Cabo Blanco), the number of mature individuals is certainly lower than 250 and, except in Cabo Blanco, the original colony social structure has been lost. Reproductive rates are abnormally low in both areas, potentially as a result of inbreeding. This is preventing demographic recovery. Conservation efforts have mostly been "only on paper" and adverse fisheries interactions continue to produce alarmingly high mortality in the eastern Mediterranean. The only reserve areas that have served to stabilize population numbers, or to produce some degree of recovery in the last 20 years, are those of the northern Sporades and the Desertas, but in combination these areas shelter less than 10% of the total population of the species. Mediterranean monk seals qualify for listing as Critically Endangered under IUCN criteria A22, C2ai3, and E4." The species was listed as critically endangered on the 2008 Red List.

## Hawaiian monk seal, *Monachus schauinslandi*

The PSG review of the status of Hawaiian monk seals (Lowry and Aguilar 2008) concluded the following- "The Hawaiian monk seal population is greatly reduced in size from historical levels, has been declining in abundance since at least 1958, and will without question continue to decline for some time into the future. The causes for the decline are only partially understood, have not ceased, and may not be reversible. The number of mature individuals within the population is currently only about 600. The total number of animals in the northwestern Hawaiian Islands, their core range, could drop to about 200 within the next 20 years. The Hawaiian monk seal qualifies for listing as vulnerable under IUCN criterion D, for endangered under criteria A2(a) and C1, and critically endangered under criteria A3(c and e)5 and A4(c and e) 6." The species was listed as critically endangered on the 2008 Red List.



Monk seals face a variety of threats including: food shortages, shark predation, marine debris and human encroachment on their habitat.

## Caribbean monk seal, *Monachus tropicalis*

The last authoritative sighting of Caribbean monk seals was at a small seal colony off Seranilla Banks (Colombia) in 1952. None of the seal sightings reported within the historical range of the species since then have been confirmed to be monk seals. Recent sightings of seals in this area that could be investigated have been of other species, particularly hooded seals (Mignucci-Giannoni and Odell 2001). Thus, Caribbean monk seals meet the IUCN criteria for extinct1 and are listed as such on the 2008 IUCN Red List (Kovacs 2008).

## Summary

The conservation status of monk seals did not improve between the 1996 and 2008 IUCN evaluations (Table 1). There is no new evidence to suggest that Caribbean monk seals are anything but extinct. Mediterranean monk seals are still critically endangered and current demographic trends do not indicate recovery; for the few populations from which information is available, numbers suggest either stabilization or decline. The condition of the Hawaiian monk seal has deteriorated, and because of their continued decline in numbers, they have now been listed as critically endangered.

At this time prospects for the remaining members of the genus *Monachus*, a group of animals that has survived for more than 10 million years, are not good. Only about 1,500 individuals remain in two widely separated species, each of which faces numerous threats (Table 2). Serious and effective conservation actions are needed if monk seals are to persist in the future.

## References

- Aguilar, A. and L. Lowry. 2008. *Monachus monachus*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.1. <www.iucnredlist.org>.
- IUCN. 2001. IUCN Red List Categories and Criteria: Version 3.1. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK. ii + 30 pp.
- Kovacs, K. 2008. *Monachus tropicalis*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.1. <www.iucnredlist.org>.
- Lowry, L. and A. Aguilar. 2008. *Monachus schauinslandi*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.1. <www.iucnredlist.org>.
- Mignucci-Giannoni A.A. and D.K. Odell. 2001. Tropical and subtropical Western Atlantic records of hooded seals (*Cystophora cristata*) dispel the myth of extant Caribbean monk seals (*Monachus tropicalis*). *Bulletin of Marine Science* 68(1):47-58.
- Schipper, J. et al. 2008. The status of the world's land and marine mammals: diversity, threat, and knowledge. *Science* 322:225-230.

## Footnotes

- 1 A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual) throughout its historic range have failed to record an individual (IUCN 2001).
- 2 A population reduction of ≥80% over three generations observed in the past.
- 3 The number of mature individuals remaining in the population <250, a continuing population decline, and the number of mature individuals in each subpopulation <50.
- 4 Quantitative analysis indicating the probability of extinction in the wild to be ≥50% over three generations.
- 5 A population reduction of ≥80% over three generations projected to be met in the future.
- 6 A population reduction of ≥80% over three generations including both past observations and future projections.

## Acknowledgements

The PSG thanks Simon Stuart (IUCN) for guidance through the assessment process and Jan Slipper (IUCN & Conservation International) for his efforts in putting pinniped threats in "context" within broader mammalian patterns and getting our message out to an extended audience. Photos for this poster were kindly provided by: NOAA Fisheries, Pacific Islands Fisheries Science Center (under NMFS/PIFESCA permit #648-1365 - threats); National Marine Fisheries Service (Hawaiian monk seals); and University of Barcelona (Mediterranean monk seals).

Monk Seal Workshop, 10 October 2009, Quebec City

