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The numbers game (III)

Note: the following updates The numbers game (II), TMG 6 (2): December 2003.

Thousands of islands, inaccessible coastlines, and a species that shies away from human contact have all conspired to make distribution and abundance assessments for the Mediterranean monk seal (Monachus monachus) an extraordinarily inexact science. Conventional wisdom, however, suggests that only 400-500 individuals survive, making the Mediterranean monk seal Europe's most endangered marine mammal.

The Mediterranean monk seal is "Critically Endangered (CR)" according to the IUCN Red List of Threatened Species (IUCN 2000, UNEP-WCM). A species is so listed, according to IUCN, "when it is facing an extremely high risk of extinction in the wild in the immediate future," as defined by specific criteria (For information. see: www.redlist.org/info/categories_criteria1994.html#categories).

Historically, Monachus monachus occupied a wide geographical range. Colonies were found throughout the Mediterranean, Marmara and Black seas. The species also frequented the Atlantic coast of Africa, as far south as Mauritania, Senegal and the Gambia, as well as the Atlantic islands of Cape Verde, Madeira, the Canary Islands and the Azores (Johnson & Lavigne 1999, Johnson 2004).

More recently, however, the species has disappeared from most of its former range, with the most severe contraction and fragmentation occurring during the 20th century. Nations and island groups where the monk seal has been extirpated during the past century include France and Corsica, Spain and the Balearic Islands, Italy, Sardinia, Sicily and the Tuscan archipelago, as well as Egypt, Israel and Lebanon (UNEP/MAP 1994, Aguilar 1998). More recently, the species is also

thought to have become effectively extinct in the Black Sea, the Sea of Marmara (Kirac 2001), and the Adriatic coasts and islands of Croatia (Johnson & Lavigne 1999a, Lavigne & Johnson 2001).

Uncertainty also hangs over the survival of the monk seal in Tunisia, where the species has faced onslaughts in its last retreats by tourists and sports divers (Ouerghi et al. 2001).

Despite sporadic sightings, the species appears to be effectively extinct in Sardinia (Johnson 1998, Johnson & Lavigne 1999a, 1999b).

Illustrating the inherent uncertainty of monk seal population estimates, a monk seal birth was reported in December 2004 in Sicily – possibly the first recorded birth on the island in 30 years [see "Incredible news" from Favignana, this issue]. It is unclear whether some monk seals continued to inhabit Sicily during the intervening years unbeknownst to researchers, or whether they recolonised the island from elsewhere.

Eradicated from most of its former range, the Mediterranean monk seal is now mainly confined to two surviving populations, one occupying the Atlantic coast of northwest Africa, and the other, the northeastern Mediterranean.

Partly because of their own tendency to err on the side of caution, historically, biologists have consistently underestimated the numbers of monk seals populating the Mediterranean — offering some explanation as to why estimates have remained numerically stable over the last 20 years despite severe and undiminished threats (Cf. Ronald & Duguy 1979 and Aguilar 1998).

Conversely, errors have also been known to creep into population estimates when biologists rely on old data. This has often resulted in monk seal colonies being placed in areas where they have been extinct for many years.

Predictably, absence of accurate population data has hampered the implementation of effective conservation actions (Forcada et al. 1999). Although sometimes subject to changing political climates, political instability and military sensitivity has also prevented research along some extensive reaches of the Mediterranean basin, particularly Algeria and Libya.

With question marks hanging over monk seal abundance in many regions and countries, the figures presented in the table below should be treated with caution.

Mediterranean monk seal population estimates

area	regionalsubtotal	areatotal
Black Sea		0 – 0
Bulgaria	0	
Georgia	0	
Romania	0	
Russia	0	
Turkey	0	
Ukraine	0	
Eastern Mediterranean		250 – 300
Albania	0	
Croatia	0	
Cyprus	5	
Egypt	0	
Greece	200 – 250	
Israel	0	
Lebanon	0	
Libya	?	
SerbiaandMonteNegro	0	
Slovenia	0	
Syria	?	
Turkey *	50	

WesternMediterranean		15 – 20
Algeria	10	
France & Corsica	0	
Italy & Sardinia **	0	
Malta	0	
Morocco	5 – 10	
Spain	0	
Tunisia	0	
Atlantic		178-182
Azores (Portugal)	0	
Canary Islands (Spain)	0	
Cape Verde Islands	0	
Gambia	0	
Madeira (Portugal)	24	
Mauritania	3	
Morocco	1-5	
Senegal	0	
western Sahara *** (Cabo Blanco)	150	
TOTAL		443 – 502

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Additional notes:

- * As a result of more intensive research, Turkey is expected to increase its population estimates for the species in the months ahead: for the time being, the estimate remains at 50.
- ** Italy and Sardinia remain at "0" despite recent sightings, because researchers have yet to identify occupied habitat.
- *** Following the mass mortality that struck the world's largest surviving monk seal colony in the western Sahara in 1997, 103 individuals were estimated to survive (mean estimate. 95% CI: 77 148, Forcada, Hammond & Aguilar 1999), down from 300. These estimates are generally considered more reliable than those obtained elsewhere since they relied upon clearly-defined photo-identification procedures, often impractical elsewhere. New estimates of 150 individuals are based on interpretations of evidence by researchers counts of seals at low tide in breeding caves, increasing beach counts, decreasing mortalities but have not been confirmed by capture-recapture methods (that compare data from different sample frames).

Sources and further reading

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IFAW defends seal priorities

Waging its high profile campaign against Canada's annual harp seal hunt, the International Fund for Animal Welfare (IFAW) has defended its efforts to conserve the Mediterranean monk seal. In a recent article examining its harp-versus-monk seal priorities, published in The Telegram of St. John's, Newfoundland, IFAW suggests that "strategic" choices must be made on where to focus the organisation's efforts.

A long-time supporter of the monk seal, IFAW has provided funds to frontline projects in Greece and Madeira, and also to The Monachus Guardian.

In the economic fallout of 9/11, it axed its Mediterranean monk seal programme, quietly withdrawing from the conservation of the species. Facing criticism both from within the organisation and from outside, however, it quickly reconsidered its decision. Some piecemeal funding was restored, at much reduced levels.

Drawing on figures provided by the organisation, the article claims that IFAW "has spent, on average, less than \$25,000 US a year over the past decade and a half on efforts to save critically endangered Mediterranean monk seals."

The Telegram goes on to note, however, that internal documents provided to the paper suggest that the organization is now considering "ramping up its involvement in monk seal conservation."

Signs of that ramping up may have become apparent in May when the IFAW boat Song of the Whale set off on a monk seal research expedition along the poorly investigated coasts of the Western Sahara [see IFAW boat studies mystery coast, this issue].

Further information

Antle, Rob. 2005. A tale of two species. Mediterranean monk seals may be critically endangered, but they don't get the same spotlight as Canadian harp seals. Special Report, The Telegram (St. John's), Canada, Tuesday, May 3, 2005, p. A1, A4. [PDF 1.4MB].

Mediterranean bottom trawling prohibited below 1000 meters

All areas of the Mediterranean and Black Sea deeper than 1000 m will be permanently off-limits to bottom trawling, according to a decision in late February by the General Fisheries Commission for the Mediterranean (GFCM), the main intergovernmental fishery management body in the region. The binding measure will take effect in late June 2005, although individual GFCM member states may object in the meantime to its applying to them.

The prohibition was influenced by a comprehensive study, conducted in 2004 by WWF and IUCN, on the status of deep-sea ecosystems in the Mediterranean basin. The study recommended as a precautionary measure that fisheries be prevented from extending beyond 1000 m; the measure would protect deep-sea biodiversity, including the nurseries of juvenile deepwater shrimp. That depth represents the current technological limit for most of the Mediterranean deepwater shrimp fleet. Much of the Mediterranean deep sea, with depths to 5000 m, remains unexplored by science or industry. (The IUCN/WWF report, "The Mediterranean Deep-Sea Ecosystems", also called for a representative network of deep-sea MPAs in the region and is available online at www.panda.org/downloads/marine/bookmeddeepsea.pdf 2.2MB)

GFCM has released no official figure on the size of the pending gear closure. However, biologist Sergi Tudela of WWF-Mediterranean estimates it at 55% of the entire basin surface (including the Black Sea), or 1.63 million km2 in total. This would be larger than the 950,000-km2 bottom-trawl closure recommended in February for the Aleutian Islands in Alaska (MPA News 6:8). In comparison, the Great Barrier Reef Marine Park, widely considered the world's largest MPA, is roughly 350,000 km2.

Enforcement of the measure will be the responsibility of the 24 member states of the GFCM, which surround the Mediterranean sea. Part of the closure will be within the 12-nm territorial seas of these states, but most will be on the Mediterranean high seas, outside of national authority. Enforcement of the latter portion will be more complex and challenging, as is the case with high-seas governance (MPA News 5:4). Tudela points out, however, that the areas that would have been most accessible to advances in gear technology are closer to coasts: that is, in territorial seas rather than deeper international waters. "So those waters within 12 nm are important," he says. He adds that regional fisheries ministers are discussing the concept of implementing fisheries protection zones beyond coastal states' 12-nm limits, which could have the effect of helping states enforce the trawl prohibition.

Fishing industry response to the measure has been relatively muted so far, although European industry representatives with interests in other regions have expressed concern that it could spread as a concept to other parts of the world. There have also been statements that the firm 1000-m limit unnecessarily excludes some promising fishing grounds slightly beyond this depth while leaving open some shallower but still fragile areas, including sites with deepwater corals. Francois Simard, marine program coordinator for the IUCN Centre for Mediterranean Cooperation, says a regional network of MPAs could protect unique seabed ecosystems too shallow to be covered by the prohibition. — Bottom trawling prohibited below 1000 meters in Mediterranean courtesy MPA News, www.mpanews.org.

EndQuote

IFAW's "moral obligation"

"Clearly, IFAW has played a key leadership role in advancing monk seal protection," the internal [IFAW] documents said.

"But the species still faces serious threats throughout its range, and IFAW, with its in-house expertise and experience, is well positioned to play a leadership role in co-ordinating conservation and animal welfare efforts to enhance its protection."

The documents then list eight reasons why IFAW should get more involved in the issue.

Those reasons include the monk seal's status as "one of the most threatened marine mammals in the world," and the lack of co-ordination in current conservation efforts.

"IFAW is the world's leading NGO with regard to the protection of abundant seal species and therefore also has a moral obligation to protect this highly endangered species," the internal documents said. "All European offices can be involved in IFAW's work for the protection of the Mediterranean monk seal, and it can provide fundraising opportunities for these offices."

Source: Antle, Rob. 2005. A tale of two species. Mediterranean monk seals may be critically endangered, but they don't get the same spotlight as Canadian harp seals. Special Report, The Telegram (St. John's), Canada, Tuesday, May 3, 2005, p. A1, A4. [PDF 1.4MB]

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