



THE CILICIAN MONK SEAL COLONY IS GROWING

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The first seal colony size assessment study on the Cilician coast of Turkey, carried out by the Middle East Technical University, indicated a presence of 4 adult males, 6 adult females and 2 juveniles in 1996. This figure was very promising for an area that had previously been represented by a question mark on the Mediterranean monk seal distribution maps of scientific documents. In 2001, with 9 new pups and new identifications, that figure increased and the size of the colony reached 24 individuals. Although continuous breeding indicates the viability of the colony, the demographic evaluation of the colony made at the end of 2001 was a little worrying. The Age/Frequency chart (Fig. 1), illustrating the demographic structure of the colony in 2001, presented an abnormal pattern with a few missing year-classes (7 and 9). The figure also shows a very low annual birth rate (0.23) for the period in question.

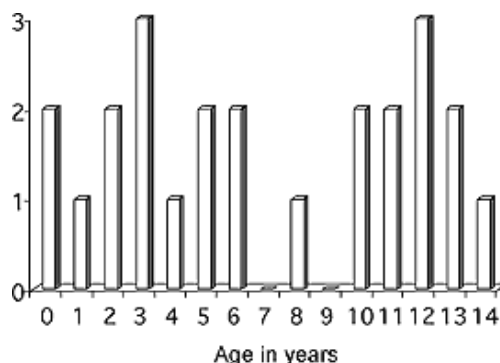


Figure 1. Estimated demographic structure of the Cilician monk seal colony (after Gucu et al. 2004).

Two major threats may be considered for reduced monk seal reproduction: pollution and lack of food. Pollutants, which may adversely affect reproductive success, such as heavy metals, PAH, and PCBs and insecticides, were not found in high concentration in the region. However, some new research results called attention to evidence of chronic lack of food in seals in the Aegean Sea. The increase in the industrial fishing power in the Cilician Basin and the subsequent reduction in the total catch of main target species is at an alarming level. The lack of food might therefore be linked to low reproduction rate and should be seriously considered as a threat to the survival of the colony.

Evaluation of the research results also indicated that the breeding sites of the Cilician monk seal colony have specific characteristics. Features common to all caves in which whelping was observed included: an entrance with a barrier against strong waves; a deep and wide beach located at the very far end; and a shallow protected pool in front. The cave floor texture also gradually changed seaward from coarse gravel to fine sand. These features seemed to be the distinguishing cave characteristics, which provided a safe and suitable whelping and nursing habitat. Whelping did not occur in all active caves, probably because they lacked a beach and/or a pool inside and protection against storms and strong waves. In active caves, seals only hauled-out and slept on the narrow and flat rock platforms. Furthermore, the presence of a protected pool inside all the breeding caves provided a safe area for

neonates to learn how to swim and to keep cool during warm weather conditions. The caves having these characteristics were very few and therefore it seemed that the number and size of suitable caves were limiting factors for reproduction success.



Figures 2 & 3. Seal caves with typical characteristics in the Cilician Basin.

The scarcity and importance of breeding caves and the dwindling state of the fish stocks are the main concerns in developing the conservation strategy designed and applied in the region. Two core zones, covering the near vicinity of the breeding caves, and a large fishery regulation zone in which only small-scale fishing operations by local artisanal fishermen are allowed, were designated along the Cilician coast in 1999. With this approach, young seals are protected against entanglement in fishing nets. Although some illegal trawling still occurs, the previously heavy fishing pressure on fish stocks has also been remarkably reduced. More importantly, the local small-scale fishermen, who are indebted to the seals for their exclusive coastal resource use rights, no longer see the seals as a pest to exterminate.

The conservation strategy applied aims solely in habitat protection. To what extent these measures will ultimately affect intrinsic population dynamism can hardly be foreseen and worrying questions like:

- What will happen when the new pups reach sexual maturity and the number of individuals ready to reproduce increases?
- Will inbreeding affect reproduction?
- Will the size of the few existing breeding caves be sufficient for multiple whelping, and will the breeding females peacefully share a cave?
- Will the slightly improving state of the ecosystem prove sufficient to meet the food requirements of the growing colony?

can best be answered by the colony itself.

Full of promise, the 2003 whelping season helped to diminish our concerns about the fate of the colony. First, one of the earliest pups found by the project team has reached maturity and has given birth to her first healthy pup in the cave where she was born. This is a significant event, signaling the efficient sharing of a breeding habitat among several reproducing individuals.

The second pup was found in a cave in which whelping had not previously been observed. The new cave meets the breeding cave criteria listed above, but was not frequently used until recently. We hope that, as the colony grows, recruits in search of new breeding sites will expand the range of the colony.

Further reading

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