

## **STATUS UPDATE AND CONSERVATION PRIORITIES FOR THE GREEN TURTLE (*CHELONIA MYDAS*) IN THE MEDITERRANEAN**

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The dire plight of this isolated taxon is compounded by its longevity, long period to maturation, previous exploitation, threatened and fragmented breeding sites, interaction with coastal fisheries. It is the only regional population of the species to have been afforded an IUCN status of Critically Endangered, and is clearly heading toward impending extinction without prompt governmental intervention including habitat conservation measures.

Notwithstanding the difficulty in interpreting survey data, because of differing survey efforts and duration and the characteristic fluctuation in seasonal nesting levels, we conclude that the annual nesting female population is now down to a level of only 250. This should be seen in the context of its previously recorded exploitation during the 1930's and 50's with up to 30,000 individuals taken per season by Turkey and Israel, mainly for luxury food export to the UK and France. The current figures were deduced assuming 3.5 nests per female with an average inter-nesting period of 3 years, a slightly different formula from other published estimates (Kasperek et al. 2001) but nevertheless arriving at a very similar, if dismal, result.

Their known nesting distribution is illustrated by Fig. 1 which is based on mean nesting figures per year and combines adjacent beaches into discrete nesting regions. It has to be noted how few of these remaining breeding sites are yet protected, despite the related agreements and obligations within specific Conventions.

The few Turkish sites for green turtle nesting were clearly identified within WWF's survey (Baran and Kasperek 1989) which concluded the now famous "17 most important marine turtle nesting beaches" from the c.2,000 kilometres of Turkey's Mediterranean coastline. They and the Cypriot nesting sites for this species, together with relevant offshore and over-wintering habitats were accepted for protective measures within Bern Convention Recommendations 7 and 8 (1987), 12 (1988), 24 and 26 (1991), 63 (1997), and 66

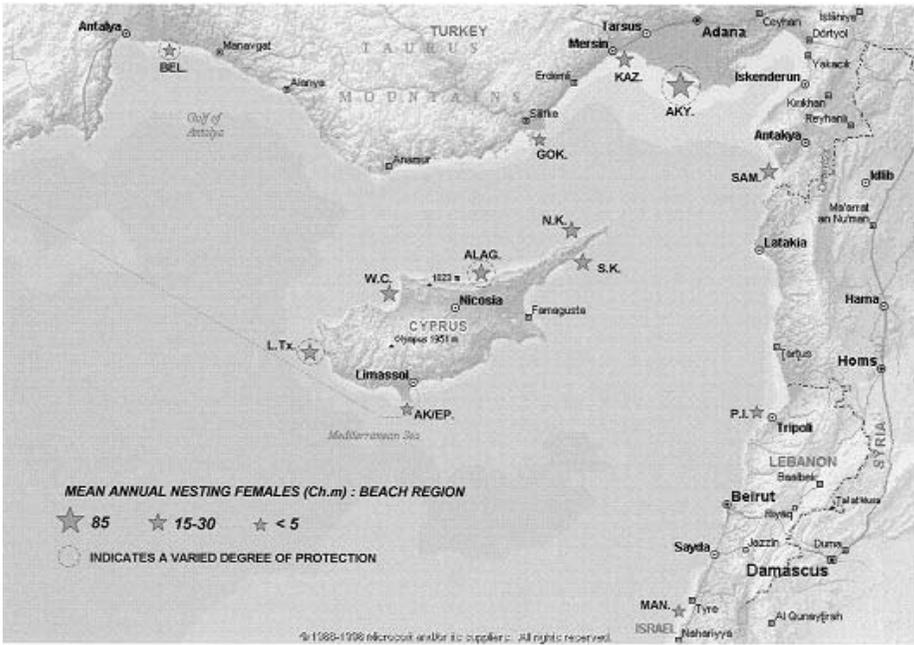


Fig. 1. Main nesting areas of green turtles in the eastern Mediterranean.

(1998). There was also a relevant On-the-Spot Appraisal procedure carried out in the Cyprus peninsula of Akamas in 1997.

The Barcelona Convention has also endeavoured to include marine turtle conservation within its Mediterranean brief, but despite a number of well-intentioned statements over the years on paper, no significant nesting site or offshore conservation has yet been achieved for the Green turtle. It is perhaps also important to note that IUCN at its 2000 World Conservation Congress adopted a strongly worded Recommendation urging the Contracting Parties to this Convention to facilitate more effective implementation of agreed measures.

Whilst the Bonn Convention on Migratory Species could have had a positive influence had it pursued a formal regional Agreement, as achieved for example for cetaceans, we now learn that it proposes to leave Mediterranean marine turtle conservation to the Barcelona Convention!

Tab. 1 presents a comparison across remaining key nesting regions; as such it also includes an assessment of the potential recruitment as deduced from hatching success; this gives a much truer reflection of the conservation status for each nesting population than does the oft published statistics on nest numbers alone.

Taking the Turkish situation first, we find that the main location of Akyatan is conservation designated - but not for its marine turtles for which there are no specific

COUNTRY	BEACH REGION	MEAN NESTS p.a.	NESTING FEMALES p.a.	RECENT HATCHING SUCCESS	PROTECTIVE STATUS
TURKEY	Kazanli	109	30	Low	None
"	Akyatan	297	85	Very Low	Good but .....
"	Samandag	64	18	Low	None
CYPRUS	S. Karpas	64	18	High	None
"	N. Karpas	104	30	High	None
"	Alagadi	68	19	Hign	(SPA)
"	'W. Coast'	55	16	High	None
"	Akamas	75	21	(High)	Threatened

All other remaining "populations" are extremely small, ie.

Turkey:- Belek; Göksu Delta  
 Lebanon:- Palm Island; Type; Mansouri (further quantitative field survey is required)  
 Israel:- Hadera/Netanya; Ashgelon

**Tab. 1.** Nesting and hatching potential of the main green turtle nesting beaches.

management measures. Its adjacent forest habitat is strictly protected with its resident mammalian predators being safeguarded against hunting. Consequently, its jackals, foxes, and wild boar impose an ever-increasing toll on the nests. Recorded nest losses to predation currently range between 64 and 75% in striking contrast to those around 13% at Alagadi in northern Cyprus.

Kazanli had boasted the highest density of green turtle nesting in the Mediterranean but it is still not protected and now exhibits serious deterioration caused by jetty-induced coastal erosion; horticultural use of adjacent sand dunes with extensive plastic waste; local tourist uses; and photo-pollution from adjacent apartments, roads, and a large factory. Whilst the exact effects of two pollution incidents this year from the adjacent Soda-Chrome factory remain unclear, it can surely only be adverse on this turtle sensitive marine eco-system.

Females still return to nest in significant numbers, but their site fidelity is resulting in decreasing recruitment as they endeavour to nest in what is now sub-optimal and often lethal habitat conditions. This season MEDASSET (Demirayak and Titchen 2001) carefully surveyed all other potential beaches 50 km to both the east and west of Kazanli in case there had been a shift of the breeding population caused by the deterioration at Kazanli; no such replacement nesting was found.

The last location of Samandag is also unprotected and is now seriously degraded by municipally sanctioned sand-winning; despite an official announcement stopping this abuse it was found to be continuing even into Summer 2001 with the resultant material left in obvious mounds in the centre of town for municipal road repair! To make matters worse, raw human sewage and dead animals are now openly dumped on the beach further encouraging scavenging, which spills over into nest predation. Lastly, this corner of the Mediterranean shore traps large amounts of plastic and other sea-borne wastes stemming from many other countries and/or their vessels. Although it is well known that its build-up on the Samandag beach front is a serious barrier to marine turtles, and especially to the sea-bound hatchlings, no attempt whatsoever has yet been made to lessen this annual obstruction. Nesting and recruitment continues to decline.

Conservation attention must also be focussed on the high fishing pressures offshore, including Kazanlı and Akyatan, and also the over-wintering area of Yumurtalık Bay. It is an unfortunate coincidence indeed that more than 15% of the total Mediterranean trawling fleet is based at the central port of Karatas. A sample (Oruç et al. 1997) of only 12 such boats (from a total exceeding 250) found in winter 1996/97 an accidental capture of 306 green turtle individuals; most were alive but weak or comatose and their fate on release can only be surmised. As with the nesting beaches, no recommended protective measures have been taken for any part of this important marine habitat area.

The situation of the Akamas peninsula on the west coast of Cyprus involves the important nesting area of Lara and Toxeftra, here presently there is a delicate compromise between tourist beach use and nesting zones. However, controversy reigns over future proposals for tourist development and conservation throughout the whole peninsula and which risks increasing pressures on nesting and offshore habitats.

Considerably more green turtle nests are laid along the northern shores of Cyprus (Broderick and Godley 1996). Of these, regional protection has been given to the Alagadi beaches, but as yet there are no relevant designations for those on the north or south of the Karpas peninsula, or for those along the "west coast".

While the political situation in Cyprus is well known and is impossible to address here, if we are to ensure the survival of the green turtle in the Mediterranean then it is increasingly important that the priority environmental need is recognised. It should then surely be conceivable in the 21st century for some appropriate international recognition/designation to be afforded to these surviving nesting beaches, and which would be independent of past, present, or future administrations. Without such justified international environmental recognition, the very real risk will remain of ever increasing tourist development and use of the coast to the detriment of turtle nesting, and as can be so clearly seen at too many other previous Cypriot nesting beaches.

Without repeating the relevant detail from the marine turtle facets of the Bern and Barcelona Conventions, a number of urgent actions are self-evident and it is hoped that this Conference would therefore endorse the following:

- Protect the key nesting areas of Kazanlı, Samandag, and of the Karpas peninsula.
- Prevent the current abuses at Kazanlı and Samandag.
- Take immediate measures to reduce the unsustainable nest predation at Akyatan.
- Reduce the seasonal fishing pressures and declare marine nature reserves at relevant offshore areas between Goksu Delta and Yumurtalık Bay.
- Give priority to applied research involving satellite tracking of mature females.

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