

#### Mediterranean monk seal, Monachus monachus Turkey



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#### **1. STATUS REVIEW**

**1.1 Taxonomy:** Chordata > Mammalia > Carnivora > Phocidae > Monachus > monachus (Hermann, 1779)

The Mediterranean monk seal (*Monachus monachus*) is the only extant representative of the genus Monachus (Scheel et al. 2014). The species first scientific description was authored by Johann Hermann in 1779, who studied a single specimen found in a travelling show in Strasburg, France. The individual was caught in the Adriatic.

Hermann didn't named the species *Phoca monachus* for its supposed solitary habits, but for its appearance (Johnson & Lavigne 1999a, Johnson 2004). In Hermann's description, he stated: "It looked from the rear not dissimilar to a black monk in the way that its smooth round head resembled a human head covered by a hood, and its shoulders, with the short-stretched feet, like two elbows protruding from a scapular..." (Hermann 1779, Johnson 2004).

In 1782, France's most prominent naturalist, Georges-Louis Leclerc de Buffon, published his own description of the Mediterranean seal without realising that Hermann had already done so (Buffon 1782). Buffon came across his first individual in a travelling show encamped in Paris in December 1778, and christened it *le phoque à ventre blanc* or the White-bellied seal (Johnson 2004).

In 1785, P. Boddaert, a Dutch naturalist and physician, used Buffon's description, and reclassified the species according to the taxonomic principles of Linnaeus. Boddaert transformed Buffon's phoque à ventre blanc into the suitably Linnaean *Phoca albiventer*, which remained in use for many years, also recording its habitat only as the Adriatic (Boddaert 1785, King 1956, Johnson 2004). In 1822, twenty years after Hermann's death in Strasbourg, the British naturalist John Fleming proposed that zoology officially adopted the genus *Monachus*. (Johnson 2004).

Based on a limited sample size, morphological differences from between Mediterranean monk seals from the Atlantic and those from the western Mediterranean were suggested (van Bree 1979). More recently, genetic differences between Atlantic and eastern Mediterranean monk seal populations were determined by examining mitochondrial DNA:this study found four different haplotypes in eastern Mediterranean monk seals in contrast with only one haplotype found in monk seals from Madeira and Cabo Blanco in the Atlantic (Karamanlidis and Dendrinos, 2015).

Temporal, morphological and molecular divergence between the Mediterranean monk seals and "New World monk seals" (Caribbean and Hawaiian) is profound, equivalent to, or even greater, than between sister genera of phocids. As a result, the Caribbean and Hawaiian monk seals together are classified in a newly erected genus, *Neomonachus*. The Caribbean monk seal, *Monachus tropicalis*, was last reported in 1952, beingone of the few marine mammal species to become extinct in historical times (Scheel et al. 2014).

Common Name(s):

- English Mediterranean Monk Seal
- French Phoque-moine Méditerranéen
- Spanish Foca Monje







#### **1.2 Distribution and population status:**

#### **1.2.1 Global distribution:**

Country	Population estimate	Distribution	Population	Notes
	(plus references)		trend	
			(plus	
			references)	
Current globa	al population trend: Incr	easing		
Current Medi	terranean population tre	end: Decreasin	g	
Current Medi Turkey	<ul> <li>Northern Aegean (35 individuals) (UNEP-MAP- RAC/SPA 2011c)</li> <li>Southern Aegean (28 individuals) (Güçlüsoy et al. 2004) (UNEP- MAP-RAC/SPA 2011c)</li> <li>Mediterranean coast (Levantine Sea) (42 individuals: Gucu et al. 2009b)</li> </ul>	and: Decreasin 3 coastal segments: Sea of Marmara, Aegean coasts and Mediterranea n coasts (and maybe Black Sea)	g Despite its rapid decline, which is about 50% during the last two decades, <i>Monachus.</i> is still found along Turkish coasts. However, the species distribution is patchy and fragmented. The Aegean and Mediterranean coasts of Turkey still hold small populations (approx. 100 seals). But it is highly probable that the species might	Mediterranean monk seals are scattered along the Turkish Aegean and Mediterranean coasts, all the way from the Dardanelles to the border with Syria, with three main breeding concentrations
			disappear from the Sea of Marmara and the Black Sea in the near future (Güçlüsoy et al. 2004).	
Greece	<ul> <li>Northern Sporades (52 individuals, with a mean annual pup production of &gt;8)</li> <li>North Karpathos and Saria (23</li> </ul>	<ul> <li>Northern</li> <li>Sporades</li> <li>North</li> <li>Karpathos</li> <li>and Saria</li> <li>Kimolos and</li> <li>Polvaigos</li> </ul>	In Greece, detailed data on fecundity in three important monk seal areas (17	-

15 14







	indiv moon	Guaraa	voore in the	
	<ul> <li>Indiv., mean pups/year &lt;4)</li> <li>Kimolos and Polyaigos (49 indiv., mean pups/year &lt;8)</li> <li>Gyaros (60 indiv., mean pups/year 10: Mom, pers. comm.)</li> <li>Ionian Islands: Kefallinia, Lefkada, Ithaca and Zakynthos (about 20 indiv. according to Panou, 2009)</li> </ul>	- Ionian Islands: Kefallinia, Lefkada, Ithaca and Zakynthos	Northern Sporades; 10 years, respectively, in the Kimolos- Polyaigos and Karpathos- Saria areas) show a positive recruitment trend. The implementatio n of a concrete conservation strategy may still allow the recovery of the species in Greece (Notarbartolo di Sciara et al. 2009).	
Cyprus	<ul> <li>Probably 6-7 individuals left; evidence of pupping still occurring, although solely based on the finding of one dead newborn in 2009 (UNEP- MAPRAC/SPA 2011b).</li> <li>from 3 to 17 individuals estimated in 2006-7; a young seal observed there was likely to have been born locally (Gucu et al. 2009a).</li> </ul>	Not available	A small number (<10) of monk seals still inhabit the seas around Cyprus. In the Limassol, and Xylofagou areas, coastal caves were the presence of monk seals was confirmed. In November 2011, a monk seal pup, approx. 1 month old, was discovered in one of the sea caves of the island (Marcou, 2015).	The recent evidence of breeding having occurred in Cyprus also requires the greatest attention, considering the very small and fast declining number of seals still present on that island.
Archipelago	Approximately 40 monk	Not available	Once almost	
	<u>55415 (1 1105 6t ul. 2000,</u>		Skiipulou ulu	







	Pires 2011)		restricted to the remote Desertas Islands (Neves & Pires 1999), monk seals have recently begun to recolonize the main	
			island of Madeira (Pires 2011), where suitable habitat for the species still exists (Karamanlidis et al. 2003).	
Mediterranea n coasts of eastern Morocco	An unknown number of monk seals might still survive (Mo et al. 2011). Despite sporadic sightings, <i>Monachus</i> <i>monachus</i> is also functionally extinct in the Mediterranean coasts of Morocco (Johnson 1998, Johnson & Lavigne 1999a, 1999b, Lavigne & Johnson 2001, Abdellatif Bayed, pers. comm. 2005).	Not available	Without systematic monitoring, the status and fate of this subpopulation remains uncertain.	
Algeria	An unknown number of monk seals might still survive (Mo et al. 2011)	Not available	Without systematic monitoring, the status and fate of this subpopulation remains uncertain.	
Cabo Blanco (also known as Cap Blanc)	Approximately 220 monk seals (Martínez-Jauregui et al. 2012, unpublished data, Fundación para la Conservación de la Biodiversidad y su Hábitat; CBD Habitat)	- At the border of Mauritania and Western Sahara	The Cabo Blanco monk seal subpopulation was estimated in the early 1990s to number 317 seals, but a mass mortality event in 1997 reduced the subpopulation	







by more than
two-thirds
(Forcada et al.
1999, Forcada
& Aguilar
2000). Since
then, the
subpopulation
has been
showing
encouraging
signs of
recovery: in
2013, 159
individual adult
seals were
identified and
it is estimated
that
approximately
220 seals
currently
compose the
second largest
monk seal
subpopulation
(Martínez-
Jauregui et al.
2012,
unpublished
data,
Fundación
para la
Conservación
de la
Biodiversidad
y su Hábitat;
CBD Habitat).

In recent years, sporadic extralimital occurrences of individual monk seals have been reported in countries where the species is considered to be effectively extinct, such as Albania (Anonymous 2012), Croatia (Gomerc<sup>\*</sup>ic<sup>\*</sup> et al. 2011), Egypt (Di Sciara & Fouad 2012), Israel (Scheinin et al. 2011), Italy (Mo 2011), Lebanon (Anonymous 2010b), the Libyan Arab Jamahiriya (Alfaghi et al. 2013), Spain (Anonymous 2008a), and Syria (Abou-Zahra 2013). Without recurring sightings of different individuals, however, and ongoing, systematic monitoring and recovery efforts, the species should still be regarded as recently extinct in these countries.







#### 1.2.2 Local distribution:

Country	Region /	Site	Level of	Population	Reference(s)	Notes
Turkey	province	N o utho o uso	Protection	SIZE		
Тигкеу	Aegean	Aegean	Critically Endangered A2abc; C2a(i); E (Regional assessment) ver 3.1	35 individuals	UNEP-MAP- RAC/SPA 2011c	
Turkey	Southern Aegean	Southern Aegean	Critically Endangered A2abc; C2a(i); E (Regional assessment) ver 3.1	≥ 28 individuals	Güçlüsoy et al. 2004, UNEP-MAP- RAC/SPA 2011c	
Turkey	Mediterranean coast	Levantine Sea	Critically Endangered A2abc; C2a(i); E (Regional assessment) ver 3.1	42 individuals	Gucu et al. 2009b	
Turkey	Sea of Marmara	Sea of Marmara	Critically Endangered A2abc; C2a(i); E (Regional assessment) ver 3.1	Some individuals still survive in the Sea of Marmara ( ≥1 )	Inanmaz et al. 2014, Güçlüsoy et al. 2004	
Turkey	Black Sea	Black Sea	Critically Endangered A2abc; C2a(i); E (Regional assessment) ver 3.1	It is considered extinct in the Black Sea (Kıraç 2001). Although Güçlüsoy et al. (2004) hypothesized that 2-3 individuals might still be surviving there at the time of their writing.	Kıraç 2001, Güçlüsoy et al. 2004	

#### 1.2 Protection status:

The species is protected by the Barcelona (Fourth protocol species), Bern (Appendix II), Biodiversity (Eligible species), Bonn (Appendix I and II) and CITES (Appendix I) Conventions. In Turkey, Mediterranean monk seals have been officially under national







protection since 1977 and 1978 by Ministry of Environment and Forestry and also Ministry of Agriculture and Rural Affairs respectively (Güçlüsoy, 2008). Turkish National Strategy was prepared for the conservation of the species in 1991 and for the coordination of the Mediterranean monk seal conservation activities, a national seal committee was established (Güçlüsoy et al. 2004). **Global category of threat:** Endangered C2a(i) ver 3.1

#### Justification:

The Mediterranean monk seal (*Monachus monachus*) is one of the most endangered pinniped species in the world (Karamanlidis and Dendrinos, 2015), with approximately 600-700 animals in the population (an estimated 350-450 mature individuals) according to IUCN Red List of threatened species, with a distribution range across the eastern Atlantic and the eastern Mediterranean coasts.

Almost all threats faced by this species are anthropogenic such as habitat destruction, disturbance by tourism during summer months, deliberate killing, reduction of prey abundance by illegal fishing activities and overfishing and entanglement in fishing nets (Berkes, 1982; Kıraç and Savaş, 1996; Yediler and Gücü, 1996). Toxic algal blooms (red tides) and diseases also constitutes a serious threat to remaining Mediterranean monk seal population; for example the mass mortality at Cabo Blanco when more than 200 animals died in 1997. Because of that, the species is listed as Critically Endangered (CR) (Karamanlidis and Dendrinos, 2015).

According to recent data, it might be assumed the previous assessment (Critically Endangered A2abc: Aguilar and Lowry 2008) overestimated the global population's scale of decline over the previous 33 years, since most of the reduction in population size likely happened more than three generations ago. At that time, the appropriate assessment for the situation would have been Endangered (EN C2a(i)).

Mediterranean monk seal population size has been reduced to below the the IUCN Red List of Threatened Species lower limit for EN under criterion C: the current population includes 350-450 mature monk seal individuals, for the largest subpopulation less than 250 mature animals (The IUCN Red List of Threatened Species 2015). Although small increases have been recently observed for each of the main three subpopulations, it is not clear when the increasing trend began or whether this trend is likely to continue into the future. Continuing decline in population size should be taken into account as a precautionary approach for this assessment. Monitoring the population is crucial over the next five years to establish whether the population is actually increasing and whether the trend is likely to continue in the future. Conservation measures should be maintained and enhanced to secure the species' future. Currently, the species is listed as Endangered (EN C2a(i)), and reassessment of its status is recommended in five years' time (Karamanlidis and Dendrinos, 2015).

#### **1.4 Habitat and resource assessment:**

For breeding and/or resting purposes, Mediterranean monk seals mostly seek inaccessible caves or caverns as a refuge on long, remote, cliff-bound coasts that have no urban development, or far away from human activities. Some of the caves may have underwater entrances, not visible from the water line. However, the Mediterranean monk seal's occupation of such marginal habitat is believed to be a relatively recent adaptation in response to human pressures (Johnson et al. 2006). It is known that the species used to inhabit open sandy beaches and shoreline.

On the other hand, it is possible that Mediterranean monk seals exist in the coasts other than the aforementioned coastal habitats such as beaches or coasts in Turkey, for they are known to go out of the desolate, rocky coasts and for time to time widen their roaming area







for foraging. They may even be observed around sandy or pebbly beaches or a river estuary, although this rarely occurs (Kıraç et al. 1998).

Mediterranean monk seals are opportunistic predators and their diet differs from region to region according to the availability of prey species (Güçlüsoy, 2008). The species has a heterogeneous diet consisting of crustaceans, cephalopods and bony fishes according to stomach content analysis of a dead individual. Bony fish from the family Sparidae (~28%) and the common octopus (Octopus vulgaris ~34%) were the two most frequently identified food items in the stomach (Karamanlidis and Dendrinos, 2015). It is useful to indicate here that one of the threats to the species is decreasing prey availability due to overfishing.

#### 1.5 Biology and ecology:

As medium-sized phocids (Gilmartin & Forcada 2002), Mediterraean monk seals are approximately 1 m in length as new born pups, weighing between 15-26 kg and measuring between 2.1-2.5 m as adults, with a weight between 240-300 kg (Dendrinos and Karamanlidis, 2017). Adult Mediterranean monk seals have the shortest hair amongst pinnepeds, peaking at 0.5cm in length (Ling, 1970); however, their new born pups have longer and glossy black hairs of 1-1.5cm. On average, of eight weeks postpartum, a new born pup's fur begins to change during the neonatal moulting stage, where short and glossy grey hairs replace the black bristly ones (Dendrinos and Karamanlidis, 2017).

Sexual dimorphism, particularly in coloration is evident in Mediterranean monk seals (González et al. 1996, Samaranch & González 2000). Male adults have just one white belly patch on overall black pelage, whereas female adults have a lighter belly from neck to tail with a brown or grey pelage (Samaranch & González 2000, Dendrinos 2011). Additionally, an area of irregular white coloration may occur around the throat and hind flippers due to scratches from aggressive males, or multiple scars on some dorsal areas of females made by males during mating and social interactions (Karamanlidis et al. 2015). The newborn pups have a black to dark chocolate, wooly coat ('lanugo' fur) with a white belly patch located on the ventral side of the body (Badosa et al. 1998, Dendrinos 2011). The position, size and shape of the ventral patch varies largely with gender, but are generally different among individuals. The ventral patch of a pup is often marked with black spots (Karamanlidis et al. 2015).

Monk seal pups moult an average of 64 and 82days after birth, for females and males respectively. The moulting process takes approximately 15 days and occurs partly in the water (Karamanlidis and Dendrinos, 2015). Neonatal moulting is not necessary for weaning, as there are records of moulted pups suckling during this period. Adults and juveniles molting period continues all the year round; the Cabo Blanco and the eastern Mediterranean region populations have no significant difference in respect to molting period. Except nursing females, the intermolt period is around one year in the Cabo Blanco population. Females have longer periods of intermolt and also they can even molt on the lactation period (Dendrinos and Karamanlidis, 2017). Male monk seals develop the mature pelage pattern after at least two annual moults and it can be completed by the age of 4 years (Badosa et al. 2006).

Male monk seals reach sexual maturity at the age of 6, whereas female monk seals reached sexual maturity at 3 years old. This makes them have the lowest age band of sexual maturity amongst phocid species. Female monk seals tend to give birth around the same time in successive years, within a 15 day span (Pastor and Aguilar 2003). Mating occurs in the water (Karamanlidis et al. 2015). The gestation period lasts about 9 to 11 months and during each reproductive cycle female monk seals give birth to a single pup yearly or every two years. Females generally seek isolated caves to give birth in order to defend the pup and







provide protection against aggressive interactions with other seals (Dendrinos and Karamanlidis, 2017).

In a time where the threat of terrestrial predators did not existed, Mediterranean monk seals hauled out on open beaches on islands or mainland areas. Today, they breed and rest in coastal caves with sea entrances (Gilmartin and Forcada 2002). A possible breeding cave should have a set of common geophysical characteristics; such as an entrance above or below water level, an entrance corridor, and a dry surface/area having a haul out platform of sandy beach or a rocky platform to which waves cannot reach easily (Karamanlidis and Dendrinos, 2015). The cave usage increases in October coincident with the Autumn pupping season in Turkey (Gucu et al. 2004). The maximum number of seals from the small Turkish subpopulation found in a cave at the same time was 3 individuals (Gucu et al. 2004).

During the first week, Mediterranean monk seal pups enter the water and start diving, after that they spend 55-74% of their time at sea (Dendrinos 2011). In the study, 3 pups tagged with time depth recorders revealed that they spent more time in the water, diving more at night than on day time and the greater part of the dives were the bottom dives taking relatively long periods and probably for foraging (Karamanlidis and Dendrinos, 2015). At 4-5 months of age, monk seal pups are weaned (Pastor and Aguilar 2003, Aguilar et al. 2007). Milk stealing and fostering are common patterns and have been recorded at Cabo Blanco (Aguilar et al. 2007), Madeira (Pires 2004), and in Greece (Karamanlidis et al. 2012). At the end of the nursing period, pups begin to catch fish by themselves (Pastor and Aguilar 2003).

#### 1.6 Threat analysis:

The factors mentioned below continue to be serious threats to the Mediterranean monk seal's survival:

• Habitat loss and deterioration (including increased pup mortality caused by pupping in unsuitable locations)

- Deliberate killings mostly by fishers
- Accidental killing through entanglement in fishing gears
- Lack of food and depressed physical condition as a result of depleted fish stocks due to overfishing and illegal fishing activities
- Lack of international coordination and funding for conservation and management actions
  - Diseases, collapses of the caves
  - Pollution such asoil spills, and toxic algae blooms.
    - Inbreeding depression resulting in reduced fecundity and pup survival

#### Habitat loss and deterioration

Over centuries, human disturbance and persecution has driven the Mediterranean monk seal from open beaches into coastal caves which is a marginal habitat for them. Primary habitats of the Mediterranean monk seals are coastal caves or caverns for breeding and/or resting purposes. These coastal caves are located on remote and untouched rocky/cliff coasts that have no urban development and far away from human activities (Güçlüsoy & Savaş 2008).

Deterioration of habitat has acted selectively against colony formation, in favour of individuals or mothers with pups (Sergeant et al. 1978, Johnson & Lavigne 1999a). The risks that the species is facing are limiting social interaction, mating and breeding success (Johnson & Lavigne 1999a, b).







The main causes are coastal development and tourism pressure. Since the 1980s, habitat destruction due to holiday housing projects and industrialisation became another major threat to the species on Turkish coasts (Güçlüsoy et al. 2004).

#### Deliberate killings

Although the Mediterranean monk seal was hunted commercially for its oil and skin until the late Middle Ages, population collapse eventually brought an end to such exploitation. Deliberate killing is still one of the most important threat for the survival of the species and are closely related to fishery activities (Androukaki et al. 1999; Dendrinos & Karamanlidis, 2017) throughout its range (except the coasts of Turkey). Fishers might get angry over damaged nets and/or stolen fishes. As an additional threat, fish farm operators have also come into conflict with monk seals that raid their facilities, particularly where adequate protective netting has not been installed (Güçlüsoy & Savas 2003b).

#### Entanglement in fishing gear

As a mortality factor, entanglement in fishing gear has played a significant role in the extirpation of the species from several parts of its former range (Johnson & Karamanlidis 2000).

Entanglement is not restricted to a specific type of fishing gear. And Mediterranean monk seals appear to be most vulnerable to entrapment in static gear and discarded nets in coastal areas (Israëls 1992). In the middle 1970s, research along the southern Aegean and western Mediterranean coasts of Turkey revealed that entanglement could almost rival shooting as a cause of mortality. Out of 7 known seal deaths, 4 could be attributed to direct killing by fishers, and 3 to drowning by entanglement in the fishing gear (Berkes et al. 1979). More recently, entanglement in fishing gears has been blamed for several monk seal deaths in the Foça Specially Protected Area (SPA) and environs, effectively wiping out a new generation of Mediterranean monk seal individuals that the SPA had been established to protect (Veryeri et al. 2001).

Despite the earlier belief that no age or sex category was particularly vulnerable (Anon. 1990), consistent monitoring implemented in Greece and Turkey indicates that Mediterranean monk seal pups and juveniles may be particularly prone to entanglement (Mursaloglu 1984, Androukaki 2000, Veryeri et al. 2001). The survey conducted in Greece found that most drownings were juveniles ranging from 1.5 - 4 years of age. The researchers speculated that individuals at this age range might be less cautious and experienced than adults when approaching fishing gears (Androukaki et al. 1999, Androukaki 2000).

There are two separate theories advanced to explain the monk seal's habit of raiding fishermen's nets. The first one is related to the optimal foraging theory which means every species tries to conserve energy and seek food at the most convenient places. The second theory implicates overfishing of coastal areas within the species' distribution range (Johnson & Karamanlidis 2000).

#### **Overfishing**

The survival of Mediterranean monk seal is threatened by "poor condition due to lack of food as a result of over fishing" according to the IUCN Seal Specialist Group. The possible effects of overfishing are malnourishment and susceptibility to pathogens. These may affect growth, reproduction, juvenile survival and thus, the population's mortality rate and cause dispersion of the animals (Israëls 1992).

In certain areas, insufficient fish resources may have led Mediterranean monk seal individuals to become dependent on fishers for food. Research indicates that some monk seals seek out fishing boats to lay their nets, and they 'steal' fish and damage fishing gears







(Johnson & Karamanlidis 2000). Monk seals cause reduced catches and damaged gears (Karavellas 1994, Johnson (ed) 1998) – including fish farm installations (Glain et al. 2001, Guçlusoy & Savas 2003) – damage that may be considerable in certain areas, decreasing economic income, particularly among artisanal fisheries.

#### **Pollution**

Pollution has been a potentially serious threat to the Mediterranean monk seal ever since the growing efforts to protect the species in the late 1970s (Ronald & Duguy eds. 1979). Although there isn't any conclusive field data, various researchers have continued to hold pollution at least partly responsible for the reduction in monk seal population numbers for various regions.

A detailed scientific research which addressed the effects of pollution upon marine mammals in general and pinnipeds in particular (O'Shea 1999), has also furthered understanding of its possible impacts upon *Monachus monachus* (Yediler et al. 1993, Henderson et al. 1994, Georgakopoulou-Gregoriadou et al. 1995, Dosi 2000, Dosi et al. 2002). The effects of organochlorine compounds used in pesticides have been a focus of concern. These compounds have been identified as a primary environmental factor that affects the general health and reproductive fitness of many other pinniped populations (Olson et al. 1992 in Borrell et al. 1997).

In the Cabo Blanco population, the effects of these pollutants are considered to be negligible (Borrell et al. 1997). However, organochlorine levels detected in monk seals living in the Mediterranean are considered high (Duguy & Marchessaux 1992, Cebrian et al. 1994, Borrell et al. 1997). Additionally, there is some evidence that suggests that heavy metal compounds may be higher in the Mediterranean seal populations than in the Atlantic seal populations (Sergeant et al. 1978, Duguy & Marchessaux 1992). In Greece, a recent study that analysed Mediterranean monk seal blubber and skin samples was unable to draw firm conclusions on the significance of heavy metal presence (Dosi 2000, Dosi et al. 2002).

#### Inbreeding depression

Inbreeding depression is common as a risk factor to small populations of species, and inbreeding is considered to be a potential future threat to the survival of *Monachus monachus*. Reduced fertility, increased infant mortality and a distorted sex ratio are caused by loss of genetic variability and subsequent inbreeding depression, which in turn can limit the response of an endangered species to environmental change (Anon. 1990).







#### 1.7 Stakeholder analysis:

Country	Stakeholder	Interest	Current activities	Impact (positive, negative or both)	Intensity of impact (low, medium, high or critical)
All the countries mentioned below	Fisheries Cooperatives	Conflict of interest between the fishers and the species	Detailed below	Positive / negative (depends on the person)	Critical where the species' subpopulations still extant







Tur	key	<ol> <li>1.</li> <li>2.</li> <li>3.</li> <li>4.</li> <li>5.</li> <li>6.</li> </ol>	Mediterranean Conservation Society (MCS) SAD AFAG Underwater Research Society Mediterranean Seal Research Group Turkish Marine Research Foundation (TÜDAV) Assoc. Prof. Dr. Harun Güçlüsoy - Dokuz Eylul University – The Institute of Marine Sciences and Technology (IMST) Prof. Dr. Ali Cemal Gücü - Middle East Technical University – Institute of Marine Sciences (METU- IMS) Bayram Öztürk / Ayhan Dede Istanbul University, Faculty of Fisheries Dept. of Marine Biology	1.         2.         3.         4.         5.         6.	-Conservation and Advocacy - Research - Public Awareness and Environmental Education -Conservation and Advocacy - Research - Public Awareness and Environmental Education -Data bank - Research - Publications - Education Harun Güçlüsoy does research in Marine Conservation. Ali Cemal Gücü does research in Fisheries Oceanography and Marine Conservation. - Bayram Öztürk does research in Marine Biodiversity, Fisheries and Marine Ecology. - Ayhan Dede does	1. 2. 3. 4. 5.	<ul> <li>"Assessment of the Mediterranean Monk Seal, <i>Monachus monachus</i>, Population and Habitats in Gokova Special Environmental Protection Area" EDGE Project</li> <li>Research on monk seals, individual identification, population and distribution.</li> <li>Determination of habitats, coastal caves and core areas on coasts.</li> <li>Analysis of threats to monk seal and its habitats.</li> <li>Interviews with local people with special emphasis to local fishermen to obtain 1st hand monk seal sightings.</li> <li>"Assessment of the Mediterranean Monk Seal, Monachus monachus, Population and Habitats in Gokova Special Environmental Protection Area" EDGE Project consultancy</li> <li>"Publication Preview Source the Mediterranean monk seal <i>Monachus monachus</i>: Status, biology, threats, and conservation priorities" Article - Dec 2015 - Mammal Review.</li> <li>"The stomach content of a Mediterranean Monk Seal (<i>Monachus monachus</i>): finding of Green Turtle (<i>Chelonia mydas</i>)</li> </ul>	Positive	Critical	
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		research in Marine Mammals	remains" Article - Jun 2016 - Zoology in the Middle East		
Croatia	Jasna Antolović - Mediterranean Monk Seal Group (Grupa Sredozemna Medvjedica) Association for the Research and the Protection of Nature	- Conservation and Advocacy - Research - Public Awareness and Environmental Education	"Insights on the foraging ecology of the Mediterranean monk seal" – Poster – Mar 2015	Positive	Critical
Cyprus	The Department of Fisheries and Marine Research (DFMR)	- Conservation and Advocacy - Research	<ul> <li>Monk seal surveys had previously been carried out in Cyprus in 1997, 2005-2006 and 2011.</li> <li>Implementing a monitoring programme since 2011, with visits to the previously discovered sea caves, recording the presence / absence of monk seals, as well as any signs of occupation by monk seals.</li> <li>Furthermore, a database is being maintained, recording sightings of the monk seals around the island of Cyprus.</li> </ul>	Positive	Critical







		3.	the Study & Protection of the Monk Seal Management Body of the National Marine Park of Alonnisos Northern Sporades Constantine Alexander BLUEnature	2.	<ul> <li>Conservation</li> <li>Public Awareness</li> <li>Environmental Education</li> <li>Implementation of protection and research programs</li> <li>public awareness and sensitization campaigns</li> <li>Scientific news on marine biodiversity conservation</li> <li>.</li> </ul>	2.	<ul> <li>Monitoring the distribution of Med. monk seals in Greece,</li> <li>Locating and mapping pupping areas,</li> <li>Monitoring annual pup production,</li> <li>Studying the genetic status of Med. monk seal population in Greece,</li> <li>Studying the biology of the species,</li> <li>Studying human-species interaction,</li> <li>Studying the effects of environmental parameters to Med. monk seals</li> <li>In 1986, the first resolution was signed aiming to the protection of the Mediterranean monk seal and its natural habitat. These efforts were followed by a series of ministerial decisions on the protection of the local nature reserve. In 1992, the area was finally declared a "National Marine Park".</li> </ul>	Positive	Critical	
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	Italy	<ol> <li>Gruppo Foca Monaca Italia</li> <li>ISPRA Istituto Superiore per la Protezione e la Ricerca Ambientale (Italian National Institute for Environmental Protection and Research) III Department - CRA 15 "Protection of biodiversity and habitats"</li> </ol>	<ol> <li>Conservation and Advocacy         <ul> <li>Research</li> <li>Public Awareness and Environmental Education</li> <li>Data bank</li> </ul> </li> <li>Conservation and Advocacy</li> <li>Research</li> </ol>	<ol> <li>Identify and classify caves in areas affected by recent sighting         <ul> <li>Establish a database containing the historical info, bibliographic and documentary references, info on recent monk seal sightings in Italy</li> <li>Define a "Protocol of intervention" to be submitted to the Authorities approval to formalize the actions to be taken in case a regular presence of the species is found in Italy</li> <li>Support a national campaign for information gathering and sightings through a questionnaire</li> <li>Provide methodological and technological support to groups of researchers in another countries</li> </ul> </li> <li>Article - Mo G., Agnesi S., Di Nora T., Tunesi L. (2007) "Mediterranean monk seal sightings in Italy through interviews: validating the information (1998-2006)". Rapp. Comm. int. Mer Médit., 38: 542</li> </ol>	Positive	Critical	
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Mauritania 1. Fundación CBD-Habitat 2. Parc National du Banc d'Arguin 3. Fondation Internationale du Banc d'Arguin – MAVA Foundation	<ol> <li>Acting within the framework of the Action Plan for Recovery of the Mediterranean monk seal in the Eastern Atlantic</li> <li>Protect, conserve terrestrial, marine and island ecosystems</li> <li>Improve the conservation status of this endangered species and enable its survival in the future</li> </ol>	<ol> <li>Creating surveillance and maintenance of the reserve         <ul> <li>Identifying and tracking Med. monk seals</li> <li>Carrying out activities to support the local population in the Cap Blanc area</li> <li>Protection of the breeding caves and their surrounding areas by creating the Seal Coast Reserve</li> <li>Revealing demographic recovery of the population.</li> </ul> </li> <li>Contribute to the prevention of endangered species whose area of the Park constitutes a place of transit or stay         <ul> <li>Contribute to marine environment research and promote educational activities</li> <li>Ensure the establishment of a marine protected area of ecological and biological importance in the sub-region</li> </ul> </li> <li>Results for 'monk seal' - Monk Seal Conservation Program at Cap Blanc</li> </ol>	Positive	Critical
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Morocco	1.	Groupe d'Etude des Cétacés et Pinnipèdes du Maroc (GECPM) Université Mohammed V Institut Scientifique - Zoology Laboratory (Arahou Mohamed - Coordinator) Association Nature Initiative	<ol> <li>Research</li> <li>-Conservation and Advocacy         <ul> <li>Research</li> </ul> </li> </ol>	Information not available	Positive	Medium
Portugal		Parque Natural da Madeira Quinta do Bom Sucesso Caminho do Meio (Natural Park of Madeira)	<ul> <li>Compatibilize and promote economic and traditional activities with biodiversity in Natura 2000 sites</li> <li>Adopt appropriate behaviours for sustainable development</li> <li>Increase social involvement in nature conservation</li> </ul>	Information not available	Positive	Medium







Spain	<ol> <li>Fundación CBD-Habitat</li> <li>Xisco Avella Fondo para la Foca del Mediterráneo (FFM)</li> <li>Joan Mayol Servei de Protecció d'Èspècies</li> <li>Dr. Manel Gazo SUBMON Divulgació, Estudi i Conservació de l'Entorn Natural</li> </ol>	<ol> <li>Acting within the framework of the Action Plan for Recovery of the Mediterranean monk seal in the Eastern Atlantic</li> <li>Public Awareness</li> <li>-Conservation and Advocacy -Public Awareness</li> <li>- Action and management plans - Environmental education training and communication - Conservation and Advocacy</li> <li>- Revealing demographic recovery of the population.</li> </ol>	Positive	High	
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1.8 Context and background information that will affect the success of any conservation action for this species:

	Description	Threats	Opportunities
Socio-cultural effects	Interaction of monk seal and humans has been occurring since ancient times.	Fishermen perception towards the monk seals is negative (due to monk seal – fishing gear interactions; removed the catch form the fishing gears, damaging the fishing equipment, scaring the catch away or damaging the caught fish).	Historic evidence suggests that monk seal might have had high cultural value in Turkey. For example a human settlement in the west coast, owns it name (Phokaia=Foça means seal) to the monk seal. Also, coins depicting monk seal figures were discovered during archaeological excavations. The coins were dated as BC 625.
Economic implications	Effects of NFZs on local fishermen	- Fishermen initial perception towards NFZ is the reduction of income. Economic benefits are derived mid-term.	<ul> <li>Increasing income of local fishers</li> <li>Recovery of the reduced fish stocks and protection of sensitive spawning areas.</li> </ul>







Existing conservation	The Mediterranean monk	Several conservation	- Monk seal conservation is
measures	seal, Monachus monachus	projects were carried out by	included within the Turkish
	(Hermann, 1779), protected by	several national NGOs and	national strategy
	the Barcelona (Fourth protocol	universities but these initiatives	prepared in 1991.
	species), Bern (Appendix II),	have been independent from	- A national seal committee was
	Biodiversity (Eligible species),	each other and focusing on the	established for co-ordination of
	Bonn (Appendix I and II) and	local seal populations.	the monk seal conservation
	Cires (Appendix I)		Activities.
	Conventions.		- Conservation projects have been
	Mank agala baya baan undar		NCOs and universities
	official protection in Turkey since		NGOS and universities.
	1077 and 1078 by Ministry of		
	Forestry and Ministry of		
	Agriculture and Rural Affairs		
	respectively. For the conservation		
	of the species Turkish National		
	Strategy was repaired in 1991		
	and consequently a national seal		
	committee was established for		
	co-ordination of the monk seal		
	conservation activities. Since		
	then, several conservation		
	projects have been carried out by		
	several national NGOs and		
	universities.		









Administrative/political set-up	Collaboration with related institutons and establishment of a regional strategy for the species conservation	Lack of information exchange between the institutions and organizations might halt the impact	Regional Strategy for the Conservation of Monk Seals In the Mediterranean (2014-2019) has been conducted by United Nations Environment Programme - Mediterranean Action Plan Regional Activity Centre for Specially Protected Areas
Local expertise and interest	The researchers and many institutes and NGOs who are involved already in working with the monk seal but these initiatives have been independent from each other and focusing on the local seal populations	<ul> <li>Lack of collaboration between the institutions and organizations</li> <li>Budget constrains for the institutes and NGOs</li> <li>Insufficient enforcement of fishing regulations especially the areas close to important pupping sites</li> </ul>	<ul> <li>Creating an national network system for the study and conservation of the Mediterranean monk seal</li> <li>Decreasing number of monk seal pups being caught as by-catch to the fishing gear</li> <li>The interaction between local people and the species will improve in a positive way by awareness raising activities</li> </ul>
Cultural attitudes	-The monk seal's habit of raiding fishers' nets to conserve energy and seek food at the most convenient of places due to this, fishers lost their income (fishes on the nets) and their fishing gears get damaged	- Fishers-monk seal interaction might result in harmed seals and even killings.	Establishing NFZs within the MPAs or without any protection status, establishing temporary NFZs during the lactation period of 4 months might be recommended in the areas where monk seals breed (Mursaloğlu, 1984; Güçlüsoy, 2008).







Appeal of species	As a marine mammal, seals are more appealing to humans than other marine species. Iconic individuals such as Badem, who is the most famous monk seal in the Mediterranean, have helped increase the appeal of the species. She became an icon after it was released from a 5 months long rehabilitation,	Threat is that there will not be willingness to react in cases of major habitat destruction (monk seal cave tourism, insufficient coastal development etc.) due to incentives	Raising awareness on threats that monk seals facing and raise people's will to contribute conservation actions, especially due to this species appeal
Resources	- National and international collaboration between the researchers and many institutes, NGOs (first of all Mediterranean Conservation Society) and related ministries who are involved already in working with the monk seal	Lack of international coordination and funding of conservation and management actions	Creating a platform to share knowledge and provide coordination between national NGOs, universities, organisations and other related international organisations which has been carried out conservation actions









#### 2. ACTION PROGRAMME

Vision (30-50 years)	
The ecological recovery of monk seals in the Mediterranean will occur, when multiple colonies have maintained within all n	najor habitats of
their historic range, interacting with other species in ecologically significant ways, and inspiring and connecting human cult	ures.
Goal(s) (5-10 years)	
Improve the status of the Mediterranean monk seal by improving protectionaround the breeding coastal caves and improving collaborative co-ordinated response through an alert network	
Objectives	Prioritisation
	(low, medium,
	high or critical)
1. Within the next two to three years, bioecological knowledge relevant for the species conservation is obtained.	High
2. Critical breeding habitats are identified and prioritized within the next five years.	Critical
3. The areas containing monk seal critical breeding habitats are legally protected and organised into a functional network	Critical
of protected areas	
4. Monk seal conservation measures are legally adopted and effectively implemented	Critical
5. Reduce human-caused monk seal mortality within the next eight years.	Critical
6. Reduce in more than 50% illegal fishing activities within No-Fishing zones in the next ten years.	High
7. Establish one rescue and rehabilitation centre on each country of the species range within the next ten years.	Medium
8. Strengthen international collaboration on Mediterranean monk seal within the next ten years.	High
9. Encourage public support for the proposed conservation actions for the protection of the Mediterranean monk seal within the next eight years.	High









Activities	Country /	Priority	Associated	Time	Responsible	Indicators	Opportunities	Activity type
	region	(low,	Cost	scale	stakeholders		and threats	
	-	medium,						
		high or						
		critical)						
Related stake	holders as NG	Os, universiti	es, research institutes and	experts who	work on Mediterrane	an monk seal in Tu	irkey, Greece and Cypr	us:
Turkey;								
<ul> <li>Mediterranea</li> </ul>	n Conservation	Society (MCS	)					
- SAD AFAG L	Inderwater Res	earch Society	Mediterranean Seal Researc	h Group		(1) (0)		
- Assoc. Prof. I	Dr. Harun Guçlu	JSOY - DOKUZ E	ylul University – The Institute	e of Marine Sci	ences and Technology	y (IMST)		
- Prof. Dr. All C	emai Gucu - M	iddie East Teo	nnicai University – Institute c	of Marine Scien	ces (IME I U-IIVIS)			
- MOm / Heller	vic Society for th	na Study & Pro	tection of the Monk Seal					
- Management	Body of the Na	itional Marine I	Park of Alonnisos Northern S	porades				
Cvprus:				poradoo				
The Departme	nt of Fisheries a	and Marine Re	search (DFMR)					
Objective t	itle: . Within	the next two	to three years, bioecol	ogical knowle	edge relevant for t	he species cons	ervation is obtained	
1.1	- Turkey	High	~ £ 20 000	2019	- NGOs	Analytical and	Standard	Species
Standardisi	(Turkish	Ū	(3 day workshop)		- Universities	synoptic	implementation of	Management;
ng	Àegean				- Research	programmes	the monitoring	
monitoring	and				institutes		techniques to	
techniques	Mediterran				- Experts who		compare the visual	
	ean				work on		data gathered from	
	coasts)				Mediterranean		different initiatives	
	- Greece				monk seal			
	- Cvprus							
	- 77- 000							







Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
1.2 Population monitoring and surveying	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 1,000,000 per country	Continuou sly every year from 2019 until 2023	- NGOs - Universities - Research institutes - Experts who work on Mediterranean monk seal	Analysis report. Population size and trend. Identified critical habitats	<ul> <li>Monitoring of monk seal distribution and abundance, as well as advances in knowledge important for monk seal conservation, are promoted and supported by the collaboration of three countries</li> <li>Population parameters and the data on species' cave usage are revealed</li> </ul>	Improving Knowledge;
1.3 Determining Mediterrane an monk seal status	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High		Continuou sly every year 2019 - 2023	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> </ul>	Evaluation report	Completion of monk seal breeding site inventories	Improving Knowledge;







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
1.4 Determining demographi c parameters	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High		Continuou sly every year 2019 - 2023	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> </ul>	Analysis report	Demographic parameters of monk seal are revealed	Improving Knowledge;
1.5 Health monitoring	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High		Continuou sly every year 2019 - 2023	- NGOs - Universities - Research institutes - Experts who work on Mediterranean monk seal	Analysis report	Dead, sick or wounded monk seal individuals are located and the cause of monk seal's condition is detected	Improving Knowledge;







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
2.1 Currently known monk seal breeding areas and other locations that may be eventually be discovered in the future, are geographic ally delimited and well managed.	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Critical	£ 250,000 establishment cost £ 100,000 running coast / year for each region (as large as Gulf of Gökova)	2019 2019-2024	<ul> <li>NGOs</li> <li>Universities</li> <li>Research institutes</li> <li>Experts who work on Mediterranean monk seal</li> <li>The related ministries</li> <li>Coast guard, marine rangers and gendarmerie</li> <li>Fisheries cooperatives</li> </ul>	Evaluation report	Well managed monk seal breeding areas	Law & Policy;
Objective tit	le: The areas rotected area	containing as	monk seal critical breed	ling habitats a	are legally protecte	ed and organised	l into a functional	







Activitie	es Country / region	Priority (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
3.1 Monk seal MPA network encompa ng the most importan monk sea habitats a formally establish (Monk sea have an estimated home ran of 37-56 (Gucu & 2004).	A - Turkey A (Turkish Aegean and Mediterran ean t coasts) al - Greece are - Cyprus ed eals d nge km Ok	Critical	£ 50,000 per site as large as Gökova SEPA / year	2019-2027	<ul> <li>NGOs</li> <li>Universities</li> <li>Research institutes</li> <li>Experts who work on</li> <li>Mediterranean monk seal</li> <li>The related ministries</li> <li>Fisheries cooperatives</li> </ul>	Evaluation report	- Monk seal MPA network is established - Cooperation with the fisheries sectors is provided	Land/Water Protection;







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
3.2 Currently known monk seal breeding areas and other locations that may be eventually discovered in the future, are legally protected	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Critical	£ 250,000 establishment cost £ 100,000 running coast / year for each region (as large as Gulf of Gökova)	2019 2019-2027	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Coast guard,</li> <li>marine rangers</li> <li>and</li> <li>gendarmerie</li> <li>Fisheries</li> <li>cooperatives</li> </ul>	Evaluation report	Legally protected monk seal breeding areas	Law & Policy;







Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
4.1 Legal protection of monk seal habitats and support for its implementat ion	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Critical	£ 50,000 per site as large as Gökova SEPA	2020	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Coast guard,</li> <li>marine rangers</li> <li>and</li> <li>gendarmerie</li> <li>Fisheries</li> <li>cooperatives</li> <li>Local</li> <li>communities</li> </ul>	The legal document containing the resolution or decree	Effectively protected monk seal habitats	Law & Policy;







Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
4.2 Equip and maintain the protected natural areas hosting monk seals with the necessary material, human and financial resources	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Critical	£ 50,000 per site as large as Gökova SEPA / year	2020-2029	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Coast guard,</li> <li>marine rangers</li> <li>and</li> <li>gendarmerie</li> <li>Fisheries</li> <li>cooperatives</li> <li>Local</li> <li>communities</li> </ul>	The management framework is implemented	Effectively protected haul out and pupping sites	Land/Water Management; -







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
4.3 Create a network of Special Conservatio n Areas for the Mediterrane an monk seal in the area consisting of habitats declared of interest for the species	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Critical	£ 100,000 per site as large as Gökova SEPA / year	2020-2029	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Fisheries</li> <li>cooperatives</li> </ul>	Established outputs from joint efforts	The network of Special Conservation Areas for Mediterranean monk seal is created	Capacity Building
Objective tit	e: Reduce hu	ıman-cause	d monk seal mortality wi	thin the next	eight years.			







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
5.1 Compliance with existing laws concerning firearms and explosives aboard fishing vessels routinely enforced to come into effect with immediate urgency	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Critical	£ 50,000 per site as large as Gökova SEPA / year	2020-2027	<ul> <li>NGOs</li> <li>Universities</li> <li>Research institutes</li> <li>Experts who work on Mediterranean monk seal</li> <li>Coast guard, marine rangers and gendarmerie</li> <li>Fisheries cooperatives</li> </ul>	Decreasing number of deliberate killings	Preventing deliberate killings	Law & Policy;







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
5.2 Establish an action plan in accordance with updated information about the problems affecting the species (e.g entangleme nt in fishing gear)	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Critical	£ 100,000 per site as large as Gökova SEPA	2020-2027	- NGOs - Universities - Research institutes - Experts who work on Mediterranean monk seal -The related ministries -Fisheries cooperatives	The number of fisher's reports on the species entanglement in fishing gear	Decreasing number of drowning individuals (especially pups) by entanglement in the fishing gear	Species Management;
Objective titl	le: Reduce in	more than t	50% illegal fishing activit	ties within No	o-Fishing zones in	the next ten yea	rs.	
1								







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
6.1 During patrolling the NFZs, marine rangers report the illegal fishing activities and keep official records about illegal activities through the communicat ion network established by local authorities (Coast guard, marine rangers, Gendarmeri e, and related ministries branches)	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 250,000 establishment cost £ 100,000 running coast / year for each region (as large as Gulf of Gökova)	2020 2020-2029	<ul> <li>NGOs</li> <li>Universities</li> <li>Research institutes</li> <li>Experts who work on Mediterranean monk seal</li> <li>The related ministries</li> <li>Fisheries cooperatives</li> <li>Coast guard, marine rangers and gendarmerie</li> </ul>	Illegal fishing activities official records and reports	<ul> <li>The Marine Ranger Service System sustainably implemented to prevent illegal fishing activities in No Fishing Zones</li> <li>Official records and evidence of the illegal fishing activity are reported</li> </ul>	Law & Policy;







Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
6.2 Distribution of informative leaflets to raise awareness among local people and tourists and warning those who are involved in illegal activities in NFZs	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 50,000 per site as large as Gökova SEPA / year	2020-2029	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>Fisheries</li> <li>cooperatives</li> <li>Local people</li> <li>and tourists</li> <li>Marine rangers</li> </ul>	Official records of the illegal fishing activities	Raising awareness among local people and tourists	Species Management;
Objective tit	le: Establish	one rescue	and rehabilitation centre	on each cou	intry of the specie	s range within th	ne next ten years.	r
7.1 Rescuing and handling threatened adults and pups in accordance with existing procedures and	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Medium	£ 50,000 establishment cost £ 40,000 running coast / year for each region	2020	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> </ul>	Rescuing and handling protocol	Increasing survival rate of threatened adults and pups	Species Management;







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
7.2 Creating a joint action protocol including establishing criteria for rescue, rehabilitatio n and reintroducti on methodolog y	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Medium	~ £ 20 000 (3 day workshop)	2020	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> </ul>	<ul> <li>An action protocol on handling threatened pups</li> <li>The criteria for the rescue and the rehabilitation and reintroduction methodology</li> </ul>	The rescue protocol will evaluate each pup's chances of survival.	Species Management







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
7.3 Rescue, rehabilitatio n, reintroducti on and monitoring threatened individuals in accordance with the new protocol	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Medium	£ 40,000 running coast / year for each region	2020-2029	<ul> <li>NGOs</li> <li>Universities</li> <li>Research institutes</li> <li>Experts who work on Mediterranean monk seal</li> <li>The related ministries</li> </ul>	The international rescue and rehabilitation network	<ul> <li>Rescue centres should be established to receive wounded, sick seals and abandoned pups. After the recovery, rehabilitated seals should be released in protected areas, preferably in the region where they were originally found. The survival of these individuals and the contribution to the wild population should be carefully assessed.</li> <li>The international rescue and rehabilitation network is established</li> </ul>	Species Management;







Activities	Country / region	Priority (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
7.4 Evaluate the reliability of the new protocol	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	Medium	~ £ 10 000	2020	- NGOs - Universities - Research institutes - Experts who work on Mediterranean monk seal - The related ministries - Local community	Sustainability of the new protocol	Successful implementation of new protocol	Species Management
Objective tit	le: Strengthe	n internatio	nal collaboration on M	editerranean	monk seal within the	ne next ten years.	1	
8.1 Draft a common protocol for action to deal with emergencie s.	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	~ £ 20 000 (3 day workshop)	2021	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Local</li> <li>community</li> </ul>	Draft version of Common Action Protocol	Actions to deal with emergencies	Species Management







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
8.2 Create an international alarm network to determine and co-ordinate implementat ion of the emergency plan.	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 50,000 establishment cost £ 150,000 running coast / year for each region	2021 2021-2029	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> </ul>	Creation of international alarm network	The experts' knowledge and resources constitute subject to the emergency plan unit	Capacity Building
8.3 Prepare the infrastructur e needed to implement the emergency plan.	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 150,000 establishment cost	2021	- NGOs - Universities - Research institutes - Experts who work on Mediterranean monk seal -The related ministries	Existence of an emergency plan	Emergency plan is implemented	Species Management







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
9.1 Develop and execute campaigns targeting, above all, the public powers, activity sectors related with the monk seal and local people.	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 50,000 per site as large as Gökova SEPA / year	2022-2027	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Fisheries</li> <li>cooperatives</li> <li>Local people</li> <li>and tourists</li> </ul>	Main groups of stakeholders in monk seal conservation are identified	<ul> <li>Monk seal conservation and recovery are effectively embraced at the international level.</li> <li>A widespread campaign for the protection of the Mediterranean monk seal encourages public support for conservation measures.</li> </ul>	Capacity Building
9.2 Establish mechanism s of public participation and social support.	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 50,000 per site as large as Gökova SEPA / year	2022-2027	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Fisheries</li> <li>cooperatives</li> <li>Local people</li> <li>and tourists</li> </ul>	- Specific information and awareness- raising campaigns and social support projects - Funds for development co-operation	- Strategic educational plans - Making people aware and involving them in conservation efforts	Capacity Building;







Activities	Country / region	<b>Priority</b> (low, medium, high or critical)	Associated Cost	Time scale	Responsible stakeholders	Indicators	Opportunities and threats	Activity type
9.3 Devise and implement specific information and awareness raising campaigns targeting the fishing sector.	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 50,000 per site as large as Gökova SEPA / year	2022-2027	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Fisheries</li> <li>cooperatives</li> </ul>	- Surveys with fishers - Awareness raising campaigns	Informed professionals from the fishing sector about the importance of monk seal conservation	Education & Awareness
9.4 Implement education strategies for local people.	- Turkey (Turkish Aegean and Mediterran ean coasts) - Greece - Cyprus	High	£ 50,000 per site as large as Gökova SEPA / year	2022-2027	<ul> <li>NGOs</li> <li>Universities</li> <li>Research</li> <li>institutes</li> <li>Experts who</li> <li>work on</li> <li>Mediterranean</li> <li>monk seal</li> <li>The related</li> <li>ministries</li> <li>Local people</li> </ul>	<ul> <li>Level of participation to the training programs</li> <li>Progress reports before &amp; after the trainings</li> </ul>	<ul> <li>Positive change in attitudes of local people</li> <li>Increasing social support and participation</li> </ul>	Education & Awareness

