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MIGRATORY
SPECIES**

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**PROPOSAL FOR THE INCLUSION OF
THE CASPIAN SEAL (*Pusa caspica*)
ON APPENDIX I AND II OF THE CONVENTION**

Summary:

The Government of the Islamic Republic of Iran has submitted the attached proposal* for the inclusion of the Caspian Seal (*Pusa caspica*) on Appendix I and II of CMS.

*The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CMS Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

**PROPOSAL FOR THE INCLUSION OF THE CASPIAN SEAL (*Pusa caspica*)
ON THE APPENDICES OF THE CONVENTION ON THE
CONSERVATION OF MIGRATORY SPECIES OF WILD ANIMALS**

A. PROPOSAL:

Inclusion of the *Pusa caspica* (Caspian Seal) in Appendix I and II

B. PROPONENT: Iran Department of Environment

C. SUPPORTING STATEMENT:

1. Taxonomy

- 1.1 Class: Mammalia
- 1.2 Order: Carnivora
- 1.3 Family: Phocidae
- 1.4 Genus, species or subspecies, including author and year: *Pusa caspica* (Gmelin, 1788)
- 1.5 Scientific synonyms: Recently used *Phoca caspica*
- 1.6 Common name(s), in all applicable languages used by the Convention:
 - English.: Caspian Seal
 - French.: Phoque de la Caspienne
 - Spanish.: Foca del Caspio
 - Persian: Foke khazari and Foke Caspian

2. Overview

Pusa caspica, the only marine mammal of the Caspian Sea and migratory species, is proposed here for listing on CMS Appendix I and II. This endangered species would benefit from strict Range State protections under a CMS Appendix I listing as well as collaborative management initiated under a CMS Appendix II listing, since it is a slow reproducing, commercially exploited aquatic species that is in decline. International trade in the northern part of the Caspian Sea and unregulated bycatch in industrial and artisanal fisheries, have led to significant rates of decline in population sizes in recent years. Appendix I listing would encourage Range State Parties where *Pusa caspica* are targeted to seek help with implementing measures to protect this species and enable artisanal fishers to benefit from the much more lucrative and sustainable tourism revenues this species generates. The Range States, which currently do not have real protection measures in place for *Pusa caspica*, are Azerbaijan, the Russian Federation, Turkmenistan Kazakhstan, and Iran, the last two of which are CMS Parties. The CMS Appendix I listing, therefore, will help this species by curbing existing legal and illegal targeted poaching and by-catch via fishing nets.

3. Migrations

3.1 Kinds of movement, distance, the cyclical and predicable nature of the migration

This species is confined to the Caspian Sea and its feeder rivers. The animals' seasonal movements are prompted by ice formation and foraging. In the late winter, adults migrate to the northern part of the sea, where they haul out on islands awaiting ice formation. In late January, they assemble on the ice for pupping. After pupping, and the ice melt, adults again haul out on islands of the north Caspian, where they undergo their annual molt. After the molt, from late spring, they disperse to all parts of the Caspian, particularly the deep central and southern basins which means this species is highly mobile and can migrate more than 1,000 km from northern to southern parts. Non-breeding adults and juveniles may spend the winter in the central and southern Caspian.

3.2 Proportion of the population migrating, and why that is a significant proportion

The most recent estimates of abundance are based on aerial surveys of the breeding population on the northern ice field conducted annually in February between 2005 and 2012

(Härkönen *et al.* 2008, Dmitrieva *et al.* 2015b). Large numbers of mostly nonbreeding Seals spend the winter in the middle and southern Caspian, with one estimate of 15,000 Seals along the Turkmenistan coast (Krylov 1990). Recent satellite telemetry studies indicate about 60 per cent of animals move to the middle and southern Caspian, with the remainder staying in the north, primarily around the inflow of Volga and Ural rivers (Dmitrieva 2013).

4. Biological data (other than migration)

4.1 Distribution (current and historical)

This species is confined to the Caspian Sea and its feeder rivers. Their seasonal movements are prompted by ice formation and foraging. In the late winter, adults migrate to the northern part of the sea, where they haul out on islands awaiting ice formation. In late January, they assemble on the ice for pupping. After pupping, and the ice melt, adults again haul out on islands of the north Caspian, where they undergo their annual molt.

After the molt, from late spring, they disperse to all parts of the Caspian, particularly the deep central and southern basins. Non-breeding adults and juveniles may spend the winter in the central and southern Caspian. A small number of females pup on Ogurchinsky Island in the south.

4.2 Population (estimates and trends)

Historically, the population of Caspian Seals was estimated to have exceeded one million (Krylov 1990, Härkönen *et al.* 2012). From the late 18th to the mid-19th century, it is estimated that sealers took about 115,000 animals per year, but at least one harvest reached 300,000. The population probably was 1 – 1.5 million early in the 20th century, and declined to 360,000 – 400,000 by the late 1980s. Large commercial harvests ended in 1996. However, about 3,000 – 4,000 pups per year are still taken. Their numbers remained fairly high into the early 2000s, but in 2005 they were found to have declined to a very low level of 100,000 or less, about 10 per cent of their former greatest abundance (Härkönen *et al.* 2008, Dmitrieva *et al.* 2015b).

4.3 Habitat (short description and trends)

The entire Caspian Sea is the territory of this mammal and the population abundance in each part depends on the seasonal migration (Dmitrieva 2013).

4.4 Biological characteristics

Caspian Seals are monogamous, an unusual trait among pinnipeds. Females become sexually mature at 5 years old, but usually do not produce a pup until they are 7. The onset of sexual maturity in males is at about 6 – 7 years. Most pups are born in winter in the northern Caspian on the surface of the ice, and are not concealed in snow lairs. Pups are often born along edges and cracks in the ice, but females also can give birth away from the ice edge where they create a network of holes for access to the sea. Pups are weaned in 4 – 5 weeks, and females mate around this time after which they molt. Females molt from late February to early March and males molt from late March to early April. Predators include wolves and eagles which prey primarily on pups. Caspian Seals are long-lived, with females reported to reach 43.5 years and males, 33.5 years. Most dives for two adult males were less than 50 seconds, with some dives to over 3 minutes. Most dives were less than 50 m, with a few dives to over 200 m (the Caspian Sea's average depth in the central basin is 190 m). The sea is freshwater in its northern portions, and more saline in the south, with an average salinity 1/3 that of typical ocean water. Caspian Seals eat many species of fish and crustaceans; the diet varies by season and location. Several species of Caspian kilka (sprat), silversides and gobies, zander and bream, make up much of the diet. Other species taken include sand smelts and crustaceans, and when in rivers, carp, Caspian roach and pike-perch. Caspian seals are counter shaded medium gray to grayish-brown above and paler below. There are often yellowish or tan undertones to the coat color. Caspian seals have a variable covering of light and dark spots and mottling all over their body. Males are typically more heavily spotted than females. Pups are born in a long white lanugo coat that is molted around weaning, at about 3 – 4 weeks. The juvenile coat is lightly spotted and more silvery and paler than the adult pelage. Caspian seals are relatively

short and plump. The head is small in proportion to the body with large conspicuous eyes. The muzzle is relatively long, wide, and somewhat flattened, with whitish vibrissae. Adult males and females reach maximum lengths of 1.5 and 1.4 m, respectively, and weigh 75 – 86 kg. Pups are 65 – 80 cm and about 5 kg at birth. The dental formula is I 3/2, C 1/1, PC 6/5.

4.5 Role of the taxon in its ecosystem

As a major mammal, anchoring one end of the food web, it also plays an important role in the biodiversity of the Caspian Sea and is a remarkable indicator of the Caspian ecosystems health.

5. Conservation status and threats

5.1 IUCN Red List Assessment (if available)

Listed as an endangered species since 2008.

5.2. Equivalent information relevant to conservation status assessment

N/A

5.3 Threats to the population (factors, intensity)

Commercial and subsistence hunting have been ongoing for over 200 years. From the late 18th to the mid-19th century, it is estimated that sealers took about 115,000 animals per year, but at least one harvest reached 300,000. Three large mortality events (1997, 2000, and 2001), attributed to canine distemper virus (morbillivirus), claimed mainly young seals. A further threat to seal survival is by-catch in fishing nets and direct kills by fishermen. There has been considerable industrial development around the shores of the Caspian Sea, and discharge of high levels of many kinds of pollutants. Accumulation of organochlorine contaminants, including DDT, in Caspian seals has been reported at levels high enough to play a role in weakening their immune system, contributing to disease outbreaks, and reducing the reproductive rates in females. Overfishing in this large enclosed ecosystem is an ongoing concern. An invasive comb jellyfish, a predator on zooplankton, arrived in the Caspian Sea in 1999. It is believed to be causing a reduction in fish, including stocks of kilka, and poses an undetermined threat to the Caspian seal. Predation by sea eagles and wolves has an impact that is not well understood. In the past, wolves were implicated in high mortality of pups, but a recent study found eagles took 10% of pup production, or about 2,000 pups, in 2005 – 2006. Finally, diversion of water, particularly from the Volga River, has led to fear of falling water levels and harm to the entire Caspian Sea ecosystem.

5.4 Threats connected especially with migrations

Unsustainable hunting was the main driver of Caspian Seal decline during the 20th century (Härkönen *et al.* 2012), and human caused mortality continues to be the main ongoing threat to the population. Recently, by-catch of Caspian Seals, primarily in illegal sturgeon fisheries has been identified as a major cause of Caspian Seal mortality (Dmitrieva *et al.* 2013). Based on semi-structured interviews conducted in fishing communities from Dagestan (Russia), Astrakhan region (Russia), and Atyrau region (Kazakhstan), Dmitrieva *et al.* (2013) documented a minimum by-catch of 1,215 Caspian Seals during the 2008-2009 fishing season, 93 per cent of which occurred in illegal Sturgeon fisheries. However, the study sampling reflected less than 10 per cent of the overall poaching activity in the north Caspian, so the actual by-catch is likely to be substantially higher, and to exceed the Potential Biological Removal level (Wade *et al.* 1998) for the population (Dmitrieva *et al.* 2013). Moreover, the survey did not cover fisheries in the middle and southern Caspian. Iranian commercial fisheries cause an estimated mortality of 500 Caspian Seals annually (Eybatov *et al.* 2002). Further work is needed to fully quantify Seal by-catch rates throughout the Caspian Sea, and its implications for population demography. Fishermen frequently sell skins and blubber from bycaught Caspian Seals.

Natural sources of mortality include predation and disease. The primary non-human predators

are Wolves (*Canis lupus*) and Sea Eagles (*Haliaeetus* spp.). Krylov (1990) estimated that Wolves killed 17-40 per cent of Caspian Seal pups on “some breeding grounds from 1974 to 1976”, while Eagles took less than 1 per cent of pups. The reverse was found during recent aerial surveys (Harkonen *et al.* 2008, Dmitrieva *et al.* 2015b). Few Wolves were observed each year between 2005-2012, but up to 3,100 eagles. Eagles are likely to primarily scavenge afterbirth and dead pups, but may also be capable of killing unaccompanied, unweaned pups.

Mass mortality events occurred in 1997 and 2000-2001, killing several thousand Caspian Seals each time, and have since been attributed to canine distemper virus (CDV). Presence of a hitherto unknown strain of CDV was confirmed in one dead Seal in 1997 (Forsyth *et al.* 1998), and the same strain was confirmed as the primary cause of death in Seals dying in 2000 in Kazakhstan and Azerbaijan (Kennedy *et al.* 2000, Kuiken *et al.* 2006). Examination of archived stranding records in Azerbaijan since 1971, show an increased mortality every few years, suggesting the possibility of previous outbreaks of CDV (Wilson *et al.* 2014). A serology study of archived samples indicated that CDV was present in Caspian Seals in 1993, 1997, and 1998 (Ohashi *et al.* 2001). There have been no further mass mortalities since 2001, but disease would become a concern should they reoccur.

Degradation of the Caspian Sea ecosystem and overexploitation of primary food resources may also be threats to Caspian Seals (Reijnders *et al.* 1993, Barannik *et al.* 2004). An invasion of Comb Jellyfish, *Mnemiopsis leidyi*, arrived in the Caspian Sea via ship ballast water in the Volga-Don Canal in 1999 (Ivanov *et al.* 2000). Comb Jellyfish consume zooplankton rapidly, leading indirectly to a reduction in fish stocks and a substantial impact on local fisheries. A 70% reduction in commercial landings of three species of Kilka was recorded within three years of the Comb Jellyfish invasion (Kideys *et al.* 2005). Kilka are thought to be important prey for Caspian Seals in the central and southern parts of the sea, and the invasion of Comb Jellyfish is considered a threat to the Seals (Ivanov *et al.* 2000, Eybatov *et al.* 2002). In addition to impacts from Comb Jellyfish, most commercial fisheries in the Caspian are considered to be severely depleted or extinct due to unsustainable fishing practices and/or loss of fish habitats such as spawning grounds (Strukova and Guchgeldiyev 2010). While Caspian Seals are known to feed on commercially important fish species, commercial catch rates are not necessarily an indicator of prey availability, and Seals have a varied and adaptable diet which includes non-commercial species such as Gobies. To date it has not been possible to make any quantitative assessment on potential impacts from changes in Caspian food webs and Caspian Seal energetics and demography. Dmitrieva *et al.* (2015) did not find a significant correlation when testing for association between annual pup production and net primary productivity 2005-2012, but a longer time series of surveys is required to achieve adequate statistical power.

The Caspian Sea has no outlet and receives most of its input from the Volga, Ural, and other rivers. Contamination of the Volga with lead, copper, zinc, and cadmium has increased dramatically since the mid-1980s, but levels in Seals do not appear to be elevated, with the exception of zinc in some diseased animals that may have suffered homeostatic disturbance of trace metal levels (Anan *et al.* 2002).

Organochlorine levels (principally polychlorinated biphenyls (PCBs) and dichlorodiphenyltrichloroethanes (DDTs)) have been assessed for Caspian Seals dying in the 1997-2001 CDV epizootics (Hall *et al.* 1999; Kajiwara *et al.* 2002, 2008; Wilson *et al.* 2014). Most animals were found to have levels below thresholds believed to cause toxic effects in mammals. Overall levels in Caspian Seals were lower than those seen in European seal species, comparable to Baikal Seals, and higher than those reported for Arctic species (Wilson *et al.* 2014). Presently there is no evidence that organochlorine burdens in Caspian Seals cause reproductive or immune impairment, or contributed to the 1997-2001 CDV outbreaks at a population level, although some individual Seals may have high burdens (Kuiken *et al.* 2006, Eybatov *et al.* 2002, Härkönen *et al.* 2012, Wilson *et al.* 2014). Organochlorine accumulation was found to be primarily age-related, which means animals at the older end of the age distribution may be at risk of crossing toxicity thresholds towards the end of their reproductive lifespan (Wilson *et al.* 2014). It has been recommended that levels of

persistent organic pollutants should be monitored in the future due to the continuing industrial development around the Caspian region and time elapsed since the last survey following the CDV epizootics (Wilson *et al.* 2014).

Combined juvenile mortality from continued hunting, natural predation, and fisheries by-catch is believed to be unsustainable. Overall mortality before breeding from all sources is likely to be in the region of 50 per cent (Härkönen *et al.* 2008). Demographic models indicate such a high rate of juvenile mortality would be capable of causing a continuing decline in the Caspian Seal population, with lowered fertility due to organochlorine contamination being a relatively minor factor (Härkönen *et al.* 2012). Variation in annual pup production determined from aerial surveys makes empirical estimation of current population trends uncertain (Dmitrieva *et al.* 2015b), and a longer time series is necessary to assess the demographic trajectory directly.

As a landlocked ice-breeding species with no option to migrate to alternative habitats, Caspian Seals may be vulnerable to future climate change (Kovacs *et al.* 2012). Warming may cause a reduction in the spatial extent, temporal duration, and stability of the winter ice breeding habitat. Premature break-up of the ice sheet before pups are molted will cause significant mortality among pups of the year. January-March 2007 was one of the mildest winters in the Caspian in recent years, with ice cover suitable for breeding limited to a narrow strip along the coastline of the north-east Caspian. Storms in mid-February may have caused ice-flows with large numbers of pups to be swept out to sea, and pup counts for that year were less than one third the maximum observed for 2005-2012 (Dmitrieva *et al.* 2015b). It has also been suggested that poor ice conditions may play a role in the epidemiology of CDV outbreaks due to Seal crowding on limited haul-out space and poor condition of weaned pups (Kuiken *et al.* 2006). Long term trends in Caspian Sea ice cover and the implications for population demography remain to be fully assessed.

Through the geological history of the Caspian, there have been several substantial fluctuations of sea level (Dumont 1998), which will have affected the relative amounts of shallow and deep water habitats available to Seals. The population adapted to those past changes, but there is some concern about whether the same will be possible for future sea level changes given added pressures of habitat loss and human impacts.

Further threats to the Caspian Seals on shore and on ice now come from increasing disturbance due to offshore and shoreline developments. One of the largest oil fields in the world is currently being developed in the Caspian, with the construction of numerous offshore oil drilling islands, pipelines, shipping access to these, and onshore logistics facilities. A recent study found that breeding Seals are using shipping channels as artificial leads into the ice and are giving birth close to the edge of these channels. A significant proportion of the breeding population and pups may therefore experience disturbance by shipping traffic depending on the ice conditions (Härkönen *et al.* 2008). More research is required to quantify the likely impacts of this intensive oil development. The coasts of Kazakhstan, Azerbaijan and Iran have also seen increased development for domestic and leisure use in recent years, with many previously undisturbed stretches of coast now being developed.

Disturbance of island and reef haul-out sites by illegal fishing activities and opportunistic Seal hunting are another ongoing problem. Recent surveys have found that the Caspian Seal has effectively disappeared from Azerbaijan, with the once important haul-out sites of the Apsheron Peninsula and Archipelago abandoned. These sites were used by many thousands of Seals until the 1930s when they were heavily hunted (Krylov 1990). However, between 1997 and 2002 a few hundred Seals were still counted regularly at these sites (e.g., Allchin *et al.* 1997, Wilson *et al.* 2014). Few live Seals have been seen in this area since 2004 (Wilson *et al.* 2014). The overall Caspian Seal population's decline since 2002 is unlikely to account for this total disappearance, which is most probably due in part to severe disturbance by illegal fishing and other coastal activities (T. Eybatov, unpublished data). Similar declines in the regularity of Seal occupancy have also been noted recently at other sites, such as South West Island near the Ural Delta and Osushnoy Island (Kazakhstan), Bautino (Kazakhstan), and in Turkmenbashi Bay (Turkmenistan). The number of Seals at Ogurchinsky Island (Turkmenistan) has also

declined from several thousand in the 1980s to a few hundred (P. Erokhin, unpublished observations). By-catch via sturgeon nets (gill nets) in Iran is the main reason of seal mortalities (The Caspian Seal Rehabilitation and research centre). There is a need to develop an inventory of all haul-out sites throughout the Caspian together with archived and current records of Seal occupancy (Wilson and Goodman 2012).

5.5 National and international utilization

Caspian Seals have been commercially exploited since the late 18th century. Harvests averaged 119,000-174,000 per year throughout the 19th century, with peaks of 300,000 having been recorded. In the 20th century, harvest levels peaked in the 1930s with an average annual harvest of 164,000 and a maximum single year take of 227,600. The numbers of Seals taken fell during World War II to an average of 60,800 per year, and subsequently ranged between a low of 41,400 and a high of 108,300 for the period 1951-1975 (Krylov 1990, Härkönen *et al.* 2012). Commercial harvesting was temporarily halted in 1996 after a much-reduced estimated take of 14,000 Seals. Since the start of the 21st century smaller scale commercial and scientific hunting has taken place in Russia, typically with recorded hunts of tens or hundreds of individuals per year, with a maximum of 4,600 (in 2003-2004), reported for the period up to 2010. Official hunting is conducted under a quota system administered by an inter-governmental body, the Caspian Bioresources Commission. Typical annual quotas are for 18,000 Seals, with 8,000 allocated to Russia, and the remainder divided among the other Caspian states. The scientific rationale for the quotas is not clear. Currently only Russia actively pursues official hunting under the quota, but large-scale hunting does not appear to be commercially viable at present and recorded takes are far below the official quota levels (Härkönen *et al.* 2012, Dmitrieva *et al.* 2013). The level of 'unofficial' or illegal hunting is poorly documented, but illegal hunting on ice on the scale of hundreds of Seals is known to take place periodically (Dmitrieva *et al.* 2013). Seal skins are used for hats and other clothing in Russia, while Seal blubber is used as a medicinal tonic, fishing bait, and cattle feed in Kazakhstan and Turkmenistan. The total economic value and trading networks for Seal products remain to be fully determined, but high quality individual seal skins may sell for up to US\$100 at the point of origin, while seal oil can sell for \$14.00 per litre in local markets (Dmitrieva *et al.* 2013).

6. Protection status and species management

6.1 National protection status

On May, 2010, the Government of Iran enacted a law prohibiting any type of poaching for the Caspian seal species and applied around US\$4,000 fines for each individual. Nowadays, any animal incidentally caught must notified to the Department of Environment and if it was necessary be transferred to the Seal Rehabilitation Centre or be released to the sea after tagging and external examination by experts. The Caspian seal is totally protected species in Iran and the conservation project is performing via the Caspian Seal Rehabilitation and Research Centre. The Iranian Caspian Seal Conservation and Rescue Team has started its activities in Iran along the Caspian sea coast line in 2006 with the help of the Mrs. Lenie't Hart the founder of the SRRC (the Dutch Seal Rehabilitation and Research Centre) and some interested people under the umbrella of the Department of Environment.

6.2 International protection status

Various prohibitions, quotas, and protective measures have been taken to conserve the Caspian Seal, beginning in 1940 when seal nets were prohibited. The harvest of molting Seals in the spring was ended in 1946, and in 1952 the Apsheron Archipelago in Azerbaijan was closed to sealing. Female harvesting on the breeding grounds was stopped in 1966 and all take was prohibited on the eastern islands of the northern Caspian in 1967. These last two changes led to a complete change in the commercial harvest, resulting in a switch to newborn and molted pups. Quotas on harvest of pups, purportedly based on biological data, began in 1970 (Krylov 1990), although in retrospect the quotas were at unsustainable levels. The Russian Federation continues to consider the Caspian Seal to be a 'harvested' species, with quotas set through the Caspian Bioresources Commission (Härkönen *et al.* 2008, 2012). A Seal Conservation Action and Management Plan was approved by the nations bordering the

Caspian Sea, pursuant to the 2003 Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Caspian Environment Programme 2007), but it had no legally binding actions. The action plan recommended cessation of hunting, measures to reduce by-catch in legal and illegal fisheries, and the strategic creation of protected areas of sea, ice, and shore. However, to date none of the Caspian states have taken steps to implement the action plan. In 2012 the CaspEco Project, a UNDP funded follow up to the Caspian Environment Programme, published a framework report and road map for the establishment of a network of protected areas for Caspian Seals, including suitable locations (Wilson and Goodman 2012), but no further action has yet taken place. A number of small non-governmental organizations within Caspian countries are involved in producing educational materials and promoting awareness of Caspian Seals. In Iran, localized work with fishing communities has been conducted promoting release rather than killing of live animals found entangled in fishing gear, and a stranded seal rehabilitation facility has been established. In 2014 the Caspian States banned all catching of wild sturgeon and in recent years Kazakhstan has increased maritime patrols to counter sturgeon poaching which in principle may have potential to also help reduce seal by-catch.

6.3 Management measures

- Define habitat and diet requirements for the different age groups;
- Take appropriate measures to survey and identify seal breeding, foraging and resting sites in all seasons in all areas for different age groups within the jurisdiction of each Caspian State;
- Take appropriate measures to identify areas within which the highest densities of breeding seals are most likely to occur on ice;
- Develop measures to define new protected areas and define restricted activities within it. Define any remedial measures required to restore seal habitat (haul-out sites).

6.4 Habitat conservation

A Seal Conservation Action and Management Plan was approved by the nations bordering the Caspian Sea, pursuant to the 2003 Framework Convention for the Protection of the Marine Environment of the Caspian Sea (Caspian Environment Programme 2007), but it had no legally binding actions. The action plan recommended cessation of hunting, measures to reduce by-catch in legal and illegal fisheries, and the strategic creation of protected areas of sea, ice, and shore. However, to date none of the Caspian States has taken steps to implement the action plan. In 2012 the CaspEco Project, a UNDP funded follow up to the Caspian Environment Programme, published a framework report and road map for the establishment of a network of protected areas for Caspian Seals, including suitable locations (Wilson and Goodman 2012), but no further action has yet taken place. Therefore, the following programme has been suggested concerning the habitat conservation:

- Create protected areas (may be seasonal - winter) within the ice-field where highest breeding seal densities most likely to occur. Elaborate specific definition of seasonal protected area allowing seal conservation following seals movements on the ice according to annual variations in ice condition;
- Create if necessary new protected areas at seal haul-out islands and surrounding water;
- Prepare proposals to make changes in Shipping Regulations and other industrial activity to circumvent ship ways as far as possible from seal breeding areas;
- Release seals trapped in 'pareh' nets (type of beach seining) unharmed;
- Prevent deliberate killing of seals encountered during fishing operations such as kilka fishing and using of gill-nets;
- In coordination with other designated organizations strength measures to prevent illegal setting of fishing nets which may entrap and drown seals;
- Research ways of reducing seal by-catch in legally-set fishing nets.

6.5 Population monitoring

- Establish Regional Seal Centre (RSC), which will lead and coordinate monitoring and research works on the seal population in the region;
- RSC should compile an inventory of recent, ongoing and planned research projects on seals in the entire Caspian Sea;
- Facilitate the annual aerial survey of the breeding seal population on the winter ice field;
- Train young scientists in practical and theoretical methodology of seals counting according to the best international scientific and ethical standards;
- RSC to establish and maintain electronic data base for all aerial survey results;
- RSC to prepare annual report on population winter counting according to international standards;
- Facilitate and carry out seal counts at all haul-out sites to the possible extent in non-iced areas of the Caspian, simultaneously with the annual winter survey and at other seasons;
- RSC to identify and chart all non-iced haul-out sites in the Caspian Sea;
- RSC to establish and maintain electronic data base for non-iced seals haul-outs;
- RSC to prepare annual report of seal numbers at each haul-out site (to the possible extent); data to be integrated with results of annual winter survey, where appropriate.

7. **Effects of the proposed amendment**

7.1 Anticipated benefits of the amendment

- Establishing of an appropriate body for coordination of all measures to conserve seals in the region.
- To take appropriate measures for the protection of key habitats and for ensuring the preservation of areas which are essential to the maintenance of the vital biological functions of seals (breeding, feeding, and rest).
- Preservation habitats and seals, within and outside protected areas, from undue disturbance or changes resulting, directly or indirectly, from human activities.
- Identification areas of degraded seals habitat and explore possibilities for restoring such habitat (haul-out sites) or creating new habitat to compensate.
- Coordination of research programmes and projects. Increasing knowledge of the seals biology and ecology including harmful effects of human activities on the seal population. Create a scientific basis for measures to improve seal condition and conservation status.
- Research of pollution impact to seals and develop measures to reduce such impact.
- Reducing and/or prohibition the hunting and the taking of Caspian seals on the period of its population decline
- Prevention of illegal hunting and other illegal taking of seals.
- General public awareness of the conservation status of the population, conservation measures, and population condition of the seal in the Caspian Sea.

7.2 Potential risks of the amendment

Despite of its tremendous population decline, the Caspian Seal is hunted by the majority of the Caspian littoral states and in some cases there is a quota for hunting the seals. Therefore, upon the amendment, initially the hunters might show reluctance to observe the new rules and regulations as is the case all over the world with new restrictions on hunting. However, by having the Caspian Seal in Appendix I and II, the Ministries of the Environment and Natural Resources of the Caspian region will get chance to restart establishment of the Seal Special Protected Areas Network in the Caspian region.

7.3 Intention of the proponent concerning development of an Agreement or Concerted Action

During recent years, different meetings have been hold concerning the Caspian Seal conservation issue, unfortunately there is no common agreement to save the only marine mammal in the Caspian and their population declines every year, all these happened due to

lack of cooperation between five countries around the Caspian Sea.

8. Range States

Essentially all five countries around the Caspian Sea (Republic of Azerbaijan, Islamic Republic of Iran, Republic of Kazakhstan, Russian Federation and Turkmenistan).

9. Consultations

Concern over the seal population decline led to number of regional meetings and short term intervention under the framework of the three phases of the Caspian Environment Program (CEP) during the years 1998-2012. Under the GEF supported project CASPECO (2009-2012), an Action Plan for the conservation of seals was developed and the Caspian littoral States agreed to establish a network of Seal Special Protected Areas. However, with the completion of the CASPECO project in 2012 and lack of further support from the GEF, the proposed Action Plan remained inactive. All Caspian littoral states are concerned over the seal population decline and bearing in mind that there is a consensus about the necessity of a concerted efforts at regional level, inclusion of the *Pusa caspica* (Caspian Seal) in the Appendix I and II, shall bring the momentum back to the region for the conservation of the only Caspian mammal i.e. the Caspian Seal.

10. Additional remarks

N/A

11. References

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