



CASPIAN SEALS AND CLIMATE CHANGE

The future of the Caspian Seal is threatened by the effects of climate change – Photo: Caspian Seal © Mirgaliy Baimukanov

ABOUT THE CASPIAN SEAL

Names:

Scientific: *Pusa caspica*

English: Caspian Seal

French: Phoque de la Caspienne

Spanish: Foca del Caspio

The Caspian Seal is only found in the Caspian Sea with populations existing in the waters and shores of Azerbaijan, the Islamic Republic of Iran, Kazakhstan, the Russian Federation and Turkmenistan. *Pusa caspica* is the smallest of the earless seals and the only mammal to reside in the brackish waters of the Caspian Sea. Adults grow to be approximately 130 cm long and weigh on average 86 kg. The seals are shallow divers reaching depths of approximately 50 m. *Pusa caspica*'s diet comprises crustaceans, shrimp, gobies, kilka and various other fish species found in the Caspian Sea. They eat on average two to three kilogrammes of fish per day, depending on the season.

The breeding season takes place during late boreal autumn on sheets of sea ice that form in the north-eastern corner of the Caspian Sea. Following the winter months and after the ice has melted, the pups' weaning period has finished, the young seals head to the water to start life on their own. It is estimated that there are currently between 104,000 to 168,000 Caspian Seals; however, the number of pups born each year is declining dramatically compared with historical rates of reproduction.

Threats due to climate change

Over the past 100 years, the Caspian Seal population has fallen by 90 per cent. Although there has been significant progress towards reducing illegal hunting, these declines are mainly due to the unsustainable slaughter of seals for their blubber and fur. Fishery by-catch and the overexploitation of the Seal's prey also puts pressure on these populations. Several outbreaks of canine distemper have caused mass mortalities in the past with the most recent event occurring in the year 2000. Pollution of these ecosystems is also thought to contribute to population declines as various chemicals such as insecticides have been found in the carcasses of Caspian Seals. Similarly, the run-off of agricultural fertilizers into the Caspian Sea is negatively impacting the habitats of the Seals. Climate change is increasingly being recognized as also having a negative impact on this habitat-restricted species.

Pusa caspica utilizes sea ice cover for its breeding period and for rearing the young pups. The effects of climate change, however, are causing the early melting and break-up of the sea ice upon which the Caspian Seal relies on for these critical stages of its lifecycle. More specifically, the survival of the young pups is threatened as they need to have moulted before entering the cold waters of the Caspian Sea. Rising average temperatures due to climate change are recorded as reducing the thickness, seasonal duration and quality of the sea ice. The limitation of suitable ice will restrict the distribution and reproduction of Caspian Seals and may push the animals into other areas of the Sea with lower habitat quality and ice that is even more unstable.

The Seals' main predator, wolves (*Canis lupus*), are opportunistic hunters meaning that they only prey upon the Seals when it is relatively easy to do so. The reduction of sea ice is forcing breeding adults to share the small patches of ice that remain, increasing the density of Seal groups and forcing them to congregate on land. The opportunity for wolves to easily hunt the Seals has dramatically increased as the icy refuges become rarer. This will soon result in levels of losses that threaten the sustainability of healthy populations.

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Threats due to climate change

The Caspian Sea has historically undergone fluctuations in sea water level but recent studies have documented an unprecedented rate of decline in the past several decades.

In fact, the water level dropped seven cm per year from 1996 to 2015. According to studies, the main cause for these declines is an increased rate of evaporation with warmer conditions throughout the region.

As previously mentioned, one of the major effects of climate change in the area is a rise in temperatures, and the Caspian Sea region has seen an increase in average temperature of approximately 1°C between 1979 and 2015.

Not only do increased average temperatures lead to a reduction in sea ice but also to a reduction of the Seals' habitat as a whole. If the Caspian Sea continues to shrink in volume, the Seals' only habitat on the Earth will eventually disappear, along with the species that it supports.

Species Listing

Pusa caspica was placed on Appendix I and II of the Convention on the Conservation of Migratory Species of Wild Animals in 2017 and is categorized 'Endangered' on the International Union of Conservation of Nature (IUCN) Red List. The most recent IUCN assessment of the Caspian Seal took place in 2015. A Seal Conservation Action and Management Plan has been approved by the nations bordering the Caspian Sea, in the framework of the 2003 Framework Convention for the Protection of the Marine Environment of the Caspian Sea.



Photos: Caspian Seals (*Pusa caspica*) © Mirlaliy Baimukanov

About CMS

The Convention on the Conservation of Migratory Species of Wild Animals (CMS), also known as the Bonn Convention, works for the conservation of a wide array of endangered migratory animals worldwide through negotiation and implementation of agreements and species action plans. It has 130 Parties (as of 1 February 2020).

CMS engages all relevant stakeholders in addressing threats to migratory species in concert with all other aspects of wildlife conservation and management.

CMS Instruments

Animals receive protection under CMS through listing on its two Appendices, through global or regional agreements and through action plans.

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