



ÖZETLER KİTABI

TASLAK / DRAFT

V. Uluslararası
Coğrafya Eğitimi Kongresi
(UCEK-2023)

*“Güçlü Coğrafya Eğitimi,
Güçlü Gelecek”*

**ABSTRACTS
BOOK**

V. International Congress
on Geographical Education
(ICGE-2023)

*“Powerful Geographical
Education, Powerful
Future”*

UCEK-2023 / ICGE-2023
05–08 Ekim 2023 / 05–08 October 2023
Akdeniz Üniversitesi, Antalya / TÜRKİYE

ASSESSMENT OF CASPIAN SEAL DISTRIBUTION (*PUSA CASPICA* GMELIN, 1788) DURING ISLAND HAULOUT PERIODS.

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The Caspian seal is the only mammal endemic to the Caspian Sea. It is in the IUCN Red List as an endangered species. It is also included in the List of Rare and Endangered Species of Kazakhstan Animals. Similar status is attributed to this species in other Caspian region countries. Primarily, the population of the Caspian seal was negatively impacted by excessive hunting and other factors, including sea pollution, accumulation of toxins in the animals' bodies leading to reduced immunity and increased female infertility, the development of maritime transport in areas of island and ice haulouts, bycatch in fishing nets, and a decrease in the food supply. In particular, the population's condition worsened in the late 20th to early 21st centuries, when there were several instances of mass mortality of seals, ranging from 6 thousand individuals in 1997 to 30 thousand in 2000. These mortalities have periodically recurred, washing up hundreds and thousands of carcasses along the Caspian coast, including the territory of Kazakhstan. The Caspian seal population is adversely affected by a combination of natural and anthropogenic factors. These factors act simultaneously and within a very short time, making it challenging for the species to adapt to the occurring changes.

The Caspian seal is a semi-aquatic animal, spending part of its life in the water, where it feeds and migrates. In spring and autumn, it forms haulouts on coastal islands. Since 1996, there has been a rapid decline in sea levels and regression of the sea, leading to the periodic drying up of seal haulout sites, which diminishes their significance. This unfavorable situation can negatively impact the health of seals and contribute to the development of various diseases. The analysis using the Normalized Difference Vegetation Index (NDVI) in the area of haulouts located in the northeastern part of the sea showed a change in the median area of land and water from 2009 to 2022 – the land area, including newly forming islands, increased approximately 3.1 times.

As a result of aerial surveys conducted in 2020-2022, it has been revealed that the main haulout sites of the Caspian seal are concentrated on newly forming islands in the northeastern part of the Caspian Sea, located between 46 and 46.2 degrees north latitude and 52.4 – 52.6 degrees east longitude. The number of seals hauled out during the post-ice period in March reaches 60 – 62 thousand individuals. By mid-April, the number of molting seals is approximately 35 – 36 thousand. The analysis of behavior and distribution shows that the number of seals on the haulouts is influenced by surge phenomena. When estimating the population size, it is essential to consider the behavior of seals and their reactions to natural and anthropogenic factors that affect the haulout sites.

It has been determined that favorable conditions for haulout during the spring and autumn periods are preserved in the northeastern part of the sea. On the island haulouts of the Kazakhstan sector of the sea, approximately 98% of all molting seals undergo molting. Therefore, at this stage, it is essential to assess the habitat conditions for seals in this area and determine their vulnerability to adverse factors. As urgent measures, it is recommended to establish a state nature reserve to protect the habitats of the seal, adopt an Action Plan for species conservation in Kazakhstan, and foster intergovernmental cooperation among Caspian region countries.

This research is funded by the Ministry of Ecology and Natural Resources of the Republic of Kazakhstan (Grant No. BR10264205).

The authors would like to thank Tengizchevroil LLP for their assistance in conducting the research for the project "Conservation of the Caspian seal population."

Keywords: Caspian Sea, Caspian seal, distribution, spatial analysis.