Data Papers

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Caspian Sea environmental variables: an extension of the Bio-ORACLE ocean data set

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Abstract. The Caspian Sea hosts unique native and endemic faunas. However, it is also a source and sink of invasive alien species (IAS), with some listed among the worst 100 invasive species by the IUCN. A common approach to study biodiversity and biogeographic patterns or to predict the invasive potential of species is the application of ecological niche models and species distribution models. These are statistical methods using spatially gridded environmental data and species occurrence information. As the Caspian Sea is not connected to the world's oceans, spatially gridded environmental data for the Caspian Sea are not available in the widely used Bio-ORACLE marine data set. To address this issue, we compiled 28 ecologically relevant spatially gridded environmental variables using Kriging interpolation of point data to model minimum, maximum, mean, and range of temperature, salinity, and dissolved oxygen for the surface and benthic zones of the Caspian Sea. Data were retrieved from the World Ocean Database. Additionally, we utilized raster statistics to create surface layers of maximum, mean, minimum, and range of chlorophyll *a* from remotely sensed data. We developed these environmental variables as they were previously confirmed to be relevant for the biogeographical classification of the Caspian Sea. To allow projections of models across the world's oceans into the Caspian Sea (and vice versa), we matched our raster dimensions with those of the Bio-ORACLE data set. Our extension of the Bio-ORACLE data set with data from the Caspian Sea provides an important basis for the monitoring and evaluation of suitable habitats for native species as well as predicting the invasive potential of Caspian Sea species into world oceans. Please cite this Data Paper and the associated Figshare data set if the data are used in publications.

Key words: chlorophyll a; *ecological modeling; invasive alien species; oxygen; salinity; sea surface temperature.*

The complete data sets corresponding to abstracts published in the Data Papers section in the journal are published electronically as Supporting Information in the online version of this article at http://onlinelibrary.wiley.com/doi/10.1002/ecy.3076/suppinfo.

Data Availability

The data set is also available on Figshare: https://doi.org/10.6084/m9.figshare.9980954

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