


PHILIP SEDDON¹  (philip.seddon@otago.ac.nz),
JOHANNES ELS², GERHARD STEENKAMP³, DAVID MALLON^{4,5},
HELEN SENN⁶, SARAH MAY⁷ and JANE BUDD⁸

¹Department of Zoology, University of Otago, Dunedin, New Zealand. ²Research & Studies Department, Environment & Protected Areas Authority, Sharjah, United Arab Emirates.

³Department of Companion Animal Clinical Studies, Faculty of Veterinary Science, University of Pretoria, Onderstepoort, South Africa. ⁴Division of Biology and Conservation Ecology, Manchester Metropolitan University, Manchester, UK.

⁵IUCN Species Survival Commission, Gland, Switzerland.

⁶Royal Zoological Society of Scotland, Edinburgh Zoo, Edinburgh, UK.

⁷Conservation Consultant, Canberra, Australia.

⁸Veterinary Services, Environment & Protected Areas Authority, Sharjah, United Arab Emirates

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New release! Geospatial tools for Sonoran Desert threats and protection of rare and threatened plant species now freely available


To help slow the unprecedented global loss of biodiversity, we need tools that quickly and effectively evaluate species at risk and the threats facing them. Threat maps can be a crucial component of informed conservation actions when employed in a structured decision-making process that considers the specific impact of threats on species of interest.

The Categories and Criteria of the IUCN Red List process, based on extinction risk theory, is used to assess a species comprehensively and systematically. The methods have been rigorously developed and are the most widely used and accepted measure of global threat at the species level. To complete IUCN Red List species assessments, extensive species-specific data are collected in consultation with species experts, available literature and other sources. Of the biodiversity assessment data fields, identifying threats is one of the most important, yet difficult, areas to complete. Because threats often occur at a regional level, a threats mapping approach has often been employed.

The Sonoran Desert ecoregion spans more than 320,000 km² across the USA and Mexico, hosting a high diversity of habitats and endemic species. This is one of the most rapidly urbanizing regions in North America, with accompanying habitat loss and fragmentation, invasive species and other anthropogenic impacts. Because of the immediate threats and its high species richness, we chose the Sonoran Desert as a target system to create a downloadable threat map to assist in evaluating spatially explicit threats to plant species for use in Red List assessments and conservation planning. Our goals were to create a map in which threats could be evaluated for

individual species, and to develop protocols for using the map in the Red List assessment process.

In May 2024, the completed Sonoran Desert threats map with associated documentation and help guides became publicly available (github.com/mereclay/North-America-Threats-Map). Documentation includes methods, instructions for installing and using the map in QGIS, and guidelines for applying the map results to IUCN Red List criteria. The map was developed from existing, high quality data layers. The threats not included in the map are either not relevant to the region or require data that is not fully known or mapped. This threats map provides, for the first time, a spatial tool to assess the threat of habitat loss, fragmentation and land degradation to a plant species, and is a powerful tool for assisting with assessments of extinction risk.

HELEN IVY ROWE^{1,2,3}  (helen.rowe@nau.edu) and
CLAYTON MEREDITH^{3,4} 

¹Northern Arizona University, Flagstaff, Arizona, USA.

²McDowell Sonoran Conservancy, Scottsdale, Arizona, USA.

³IUCN Species Survival Commission, Gland, Switzerland.

⁴New Mexico BioPark Society, Albuquerque, New Mexico, USA

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New otter conservation network in Central America

Otters are top wetland predators and their decline has a profound impact on food webs, biodiversity and habitats. They need good water quality and are therefore useful environmental indicators. Three otter species have been recorded in Central America. The Near Threatened Neotropical otter *Lontra longicaudis* is the most widely distributed species in the region. It has suffered from habitat loss and hunting and is now close to extinction in some areas. The Least Concern North American river otter *Lontra canadensis* was only confirmed in the region in 2019, in north Mexico, and more information on this species is required. The Endangered southern sea otter *Enhydra lutris nereis* was once common in Baja California, Mexico, but was wiped out by hunting for its fur. There have been sightings of this species in the region since 1961, most recently in 2011, and it has been suggested that reintroduced animals may have spread from St Nicholas Island, California.

Otters in Central America are threatened by climate change, habitat degradation, pollution, overfishing and conflicts with fishers, but few people are studying otters and their habitats in the region. To support the next generation of otter researchers, the International Otter Survival Fund and Nutrias de México, an NGO specializing in otter conservation, held a training workshop in November 2023 in Mexico.