



Possible Arabian leopard scrape mark found on 23 October 2023 in southern Saudi Arabia. Photo: Hadi Al Hikmani.

extinction in the country as a result of persecution, habitat fragmentation and loss of prey species.

The national action plan for the Arabian leopard considered the population to number 50 individuals, in the Sarawat and Hijaz mountains (Islam et al., 2017, *Cat News*, 66, 14–17), but a 2020–2022 camera trap study across most of the leopard's historical range in Saudi Arabia found no evidence of its occurrence (Dunford et al., 2023, *Oryx*, 58, 351–362). However, this study did not include the mountainous areas along the Saudi–Yemen border. In October 2023, we installed 14 camera traps in 200 km² of the mountainous border area. The camera traps did not detect the leopard, but we found four potential leopard scrape markings 4–8 km from the border. Three of the scrapes were along a wadi trail in soft soil at 1,380 m elevation and the fourth was in a cave at 1,525 m. Leopards are known to scrape the ground with their hind paws to mark their territories. In Oman, leopards commonly leave their signs in soft substrates, including in caves and overhangs. The length and width of the four scrapes were 18–28 and 10–24 cm, respectively, similar to records of leopard scrapes in Iran and Oman (Ghoddousi et al., 2008, *Zoology in the Middle East*, 44, 101–103).

These scrapes are potential evidence of current Arabian leopard occurrence in southern Saudi Arabia. There are recent unconfirmed reports of leopards along the border area, and the mountains where we found the scrapes extend into the mountains of Yemen. Thus, it is likely that the scrapes were from dispersing leopards. We recommend extensive camera-trap surveys along the border area to ascertain whether the leopard is extant in the region, and thus help conservation authorities in Saudi Arabia plan for the protection of any remaining leopards in the country.

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23rd Sharjah International Conservation Forum for Arabia's biodiversity


The 23rd Annual Sharjah International Conservation Forum for Arabia's Biodiversity was held at Sharjah Safari, United Arab Emirates (UAE), during 5–8 February 2024. This Forum brought together over 200 participants regionally from Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia, UAE, Yemen and internationally from Australia, France, Germany, Greece, New Zealand, Russia, South Africa, the UK and the USA. The Sharjah workshops are hosted by the Environment and Protected Areas Authority, Government of Sharjah, under the patronage of H.H. Sheikh Dr Sultan bin Mohammed al Qasimi, Member of the Supreme Council and Ruler of Sharjah. The 23rd meeting had multiple themes: species prioritization for conservation, rewilding and multi-species translocations, conservation genetics and marine strandings.

In the prioritization theme, using general overview presentations and international and regional case studies, participants were introduced to approaches to species prioritization through scoring species against selected criteria, including classification of extinction risk by applying Red List assessments derived in previous forum meetings. Working groups applied criteria to a subset of Arabian species to rank their importance for conservation action.

The rewilding theme focused on trophic rewilding and the use of conservation translocations to restore trophic interactions to promote self-regulating biodiverse ecosystems, and looked at case studies involving seagrasses, marine and freshwater fishes, and terrestrial Arabian fauna, including the restoration of predator–prey systems.

The conservation genetics theme was led by the Royal Zoological Society of Scotland's WildGenes laboratory, extending the 2023 meeting's theme by introducing the application of genetic scorecards to assess risk to wildlife genetic diversity. Genetic scorecards are an assessment tool recommended by the Global Species Action Plan to support monitoring of genetic diversity under Target 4 of the Kunming–Montreal Global Biodiversity Framework. Working groups used Regional Red Listing outputs from previous Forum workshops, and conservation genetics literature, to make draft assessments of key threatened species.

The marine stranding theme focused on marine turtles and sea snakes and worked towards the formation of a marine stranding response network. The first session was devoted to organizations already active in marine animal strandings. Speakers shared research on risks and pollutants affecting marine animals, including oil spills, boat strikes, micro/macroplastics and pesticide toxins. Lectures on the anatomy and pathology of sea snakes and turtles complimented autopsies performed on several species. Standardized sample and data collecting protocols were developed.

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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.

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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.