

Conservation news

Unprecedented mass mortality of aquatic organisms in the River Oder

The 854 km River Oder (Odra in Polish), with a catchment area of 118,861 km², flows through Czechia, Poland and Germany. In late July 2022, it became severely polluted and its fish and aquatic molluscs suffered unprecedented mass mortality (Save the Oder Coalition, 2022, [saveoder.org](https://www.saveoder.org)).

The disaster began in the Polish part of the river on 27 July. At the beginning of August, toxic golden algae *Prymnesium parvum* were detected by the German research institute IGB (Leibniz-Institute for Freshwater Ecology and Inland Fisheries). As these algae are associated with saline waters, the primary cause of their appearance in the river must have been contamination by such waters, most likely from coal mines. The toxins produced by golden algae are lethal to gill-breathing organisms and could have been responsible for the mass die-off. This is the first record of these invasive algae in Poland.

The conservation programme for the Critically Endangered Baltic population of the Atlantic sturgeon *Acipenser oxyrinchus oxyrinchus* turned out to be in vain; some 20,000 young fish, due for release into the river, perished before this could happen as they were being kept in tanks through which contaminated river water was flowing. From the end of July to 12 September, over 249 t of dead fish were taken out of the river. The deaths of millions of fish and molluscs will have a catastrophic effect on the whole ecosystem, including on the hundreds of thousands of waterbirds that winter in the area.

The lower Oder valley is a diverse ecosystem with several dozen protected areas. The Oder influences the ecosystems at its mouth and in the southern Baltic Sea, and these areas are the most important wintering areas of the threatened velvet scoter *Melanitta fusca*, long-tailed duck *Clangula hyemalis* and greater scaup *Aythya marila*.

There has never before been a disaster on such a scale in this region, so its consequences are difficult to predict. Although human activities were undoubtedly responsible, no precise cause has been identified. To prevent a similar catastrophe, scientists have recommended ceasing all regulation of the river, beginning its restoration and improving monitoring. Unfortunately, the Polish authorities are planning the opposite: the implementation of extensive projects for cascading, regulating and deepening the Oder (Ławicki et al., 2017, *Oryx*, 51, 397), a process that has already begun. In addition, the discharge of industrial sewage continues unabated, as evidenced by the sustained high salinity of the river. In the context of this disaster, the Brandenburg Ministry of the Environment has filed a legal complaint against Poland.

Photographic documentation of the mass mortality is available at doi.org/10.17632/kw5pd8ckwy.1.

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IUCN Red List reassessment reveals further decline of sturgeons and paddlefishes

Sturgeons have survived epochal ecological changes but are succumbing to the greed of *Homo sapiens*. A Red List update by the IUCN Sturgeon Specialist Group on 21 July 2022 revealed that the already precarious state of sturgeon populations has further declined.

The Chinese paddlefish *Psephurus gladius*, endemic to the Yangtze River, is extinct. Another species endemic to the Yangtze River, the Dabry sturgeon *Acipenser dabryanus*, is categorized as Extinct in the Wild as all animals observed in nature are from restocking programmes. European species are faring poorly: the eight species, although under protection since 1992, are either Endangered or Critically Endangered. One of these, the ship sturgeon *Acipenser nudiiventris*, is extinct in the Danube. The situation of the North American species is slightly better than that of the Eurasian species, as a result of more timely conservation efforts, but their condition has also worsened.

The causes of the disappearance of sturgeons are well known. The first is illegal fishing: although fishing is banned in most of the species' ranges and although > 500 t of caviar are produced annually in aquaculture, poaching is still a serious problem. The second is the loss of migration corridors and habitats because of the development of hydropower. Many species of sturgeons are anadromous and all species migrate long distances: they need to swim upstream during the spawning period, lay their eggs in suitable habitat and freely return to the sea. Finally, pollution of waterways, and changes of discharge and temperature as a result of climate change, and the spreading of invasive species are also threats.

But there remains hope. In the Caucasus, in the Rioni River, the ship sturgeon has reappeared after years of absence (Beridze et al., 2021, *Oryx*, 55, 9). The Adriatic sturgeon *Acipenser naccarii* has shown sporadic reproduction in the Po basin (Congiu et al., 2021, *Oryx*, 55, 816) and has therefore been recategorized from Extinct in the Wild

to Critically Endangered. *Pseudoscaphirhynchus hermanni* of the Amu Darya has been rediscovered after almost 20 years (Sheraliev et al., 2021, *Oryx*, 55, 332). These are signs that if adequate protection measures are put in place, sturgeons will benefit from them. The Pan European Action Plan approved by the Bern Convention in 2018 provides a guideline for the conservation of sturgeon species. If we are able to organize and support international recovery projects based on the scientific knowledge acquired in the last few decades, we can still hope to save sturgeon species from extinction.

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The crested porcupine in Tunisia's semi-arid steppes

Arid lands and their biodiversity are undervalued and often considered an inefficient investment for conservation funding. However, although they may hold relatively low species richness and population densities compared to global biodiversity hotspots, the fauna and flora of these harsh ecosystems are highly adapted and often unique.

The crested porcupine *Hystrix cristata*, one of North Africa's endemic mammals, is a relatively large rodent (c. 10 kg), but because of its nocturnal habit little is known about its behaviour and distribution across its presumed range. It is categorized as Least Concern on the IUCN Red List, but with an unknown population trend. In particular, occurrence data are lacking for Tunisia. Early references suggested the crested porcupine occurs extensively from the north to the southern edge of the Sahara. This reported range covers diverse habitats from Mediterranean conifer forests in northern Tunisia to Saharan steppes in the south. However, the IUCN Red List assessment for the species reports a narrower range, with a declining distribution restricted to the north of the country.

As part of the post-release monitoring of reintroduced large herbivores, camera traps were established in three National Parks in the south of Tunisia; Dghoumes (8,000 ha) and Sidi Toui (6,315 ha) in steppe habitat, and Jbil (7,700 ha) in the desert. The camera traps were placed at a spacing of c. 1.5 km along visible animal trails, at knee-height, and set

to take three photographs at each trigger. The intervals between successive triggers were set to the lowest value allowed by the camera model (0.6–5.0 seconds). In a total camera-trapping effort of 20,382 days during April 2018–March 2022 in Dghoumes National Park, and 10,383 days during October 2020–March 2022 in Sidi Toui National Park, there were 39 and 160 detections of crested porcupines, respectively. In 14,398 camera-trap days during April 2019–October 2021 in Jbil National Park, the species was not recorded.

Our findings thus concur with the geographical range reported for the crested porcupine in Tunisia in the 20th century, and indicate that the species Red List account requires updating.

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Wildfire kills Endangered Barbary macaques in Bouhachem mixed oak forest, Morocco

In 2022, Morocco experienced a serious drought, resulting in numerous forest fires. One of the most serious of these occurred in Bouhachem mixed oak forest in the Rif mountains, a stronghold for the Endangered Barbary macaque *Macaca sylvanus*. This population of the Barbary macaque is important in a global context because it resides in continuous forest habitat and is unaffected by the unmanaged primate tourism seen elsewhere in Morocco.

On 25 July, a wildfire spread rapidly in the forest, assisted by high winds and tinder dry leaf litter. The fire burned for a week and wiped out 7,500 ha of forest, killing wildlife and livestock, destroying crops and damaging surrounding villages. Post-fire, we found the burned bodies of > 50 macaques from the two groups closest to our base, which is in former agricultural land close to the forest. Our monitoring revealed that one of our study groups, which formerly