

Conservation news

Launch of situational crime prevention toolkit to address illegal wildlife trade

On 1 December 2021, a new toolkit was launched to help conservation practitioners apply situational crime prevention to illegal wildlife trade. This practical toolkit has been developed by Fauna & Flora International in collaboration with conservation and criminology practitioners and academics.

Situational crime prevention is a framework from criminology that has been widely applied to a range of crimes globally, including violent crime, property crime, drug trafficking, international terrorism and maritime piracy. Evidence for its effectiveness is substantial (Eck & Clarke, 2019, *Handbook on Crime and Deviance*, 355–376). Situational crime prevention is a proactive approach that aims, through careful analysis of the problem and the cost–benefit decisions made by the individual, to modify the surrounding environment so as to reduce the likelihood of the crime being carried out, focusing on the illegal activity itself and not the motivations or types of individuals behind it.

Although a limited number of projects have tested situational crime prevention for conservation, the approach has yet to be systematically applied and evaluated in the context of illegal wildlife trade. Building on learning from the application of situational crime prevention to reduce other forms of crime, this toolkit provides practical guidance to design, implement and evaluate such crime prevention strategies for illegal wildlife trade. The long-term aim is to support application of the toolkit to contribute to a global evidence base of how situational crime prevention and other criminological approaches can help to reduce biodiversity loss from poaching and wildlife trafficking.

The toolkit addresses the need for interdisciplinary, evidence-led and proactive approaches to reduce illegal wildlife trade. Many efforts currently focus on strengthening reactive law enforcement, such as imposing sanctions and increasing surveillance with new technologies. These approaches aim to deter illegal activity but can be ineffective and sometimes counterproductive. Moreover, law enforcement intervenes once a crime has been committed and the impacts on biodiversity are often irreparable. Situational crime prevention focuses on preventing problematic behaviour by making it less attractive to commit rather than reacting to it.

There is increasing recognition of the role of Indigenous peoples and local communities in addressing illegal wildlife trade but they are often excluded from the benefits of conservation and can be negatively affected by heavy-handed, militarized approaches to tackling illegal activities. Such approaches seldom distinguish between illegal actions driven by large-scale profits and those driven by poverty. Moving beyond reactive law enforcement towards more holistic approaches has

the potential to curb illegal wildlife trade more effectively and to move towards more inclusive and socially just approaches.

The toolkit is available to download from the Fauna & Flora International website fauna-flora.org/approaches/situational-crime-prevention and on the Arizona State University Problem-Oriented Policing Center website popcenter.asu.edu/content/resources in English, French, Russian, Spanish and Vietnamese.

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Two-thirds of Bornean endemic Dipterocarp species threatened with extinction

Dipterocarpaceae is a tropical to subtropical tree family with 521 species (GlobalTreeSearch, bgci.org/resources/bgci-databases/globaltreesearch). Borneo is the centre of dipterocarp diversity, with 269 accepted species of which 162 are endemic. Dipterocarp species play a dominant ecological role in the major habitat of Borneo—lowland mixed dipterocarp forest—and in montane, heath (*kerangas*) and various types of peat swamp forest. They are also important as a source of timber.

In October 2021, *The Red List of Bornean Endemic Dipterocarps* was published (bgci.org/resources/bgci-tools-and-resources/the-red-list-of-bornean-endemic-dipterocarps), reporting the IUCN Red List status of all 162 endemic species: 99 species (62%) are threatened with extinction (18 Critically Endangered, 34 Endangered and 47 Vulnerable) and the other 63 species are categorized as Near Threatened, Data Deficient or Least Concern. Ninety-four per cent of species have a decreasing population trend, with most threatened species considered to have experienced a population decline of > 30% over three generations (IUCN Red List criterion A). Industrial agriculture was identified as the major threat to these dipterocarps and is the main driver of population decline. Other threats include timber harvesting, road construction and increasing occurrence of fires and droughts.

These conservation assessments, which are a contribution to the Global Tree Assessment (bgci.org/our-work/projects-and-case-studies/global-tree-assessment),

were completed by a partnership between Botanic Gardens Conservation International, Universiti Brunei Darussalam, Sabah Forestry Department, Universiti of Malaysia Sabah, Forestry Department Sarawak, Bogor Botanic Gardens, The Indonesian Institute of Sciences (LIPI) and Arboretum Sylva Untan (Pontianak, Kalimantan). All these organizations carry out research on and conservation of dipterocarps both in situ and ex situ. This work is showcased in seven case studies in the report.

Only 47 of the 162 endemic species are held in ex situ collections, but 146 species (90%) occur in protected areas. Priorities for the group are investment in and maintenance and expansion of in situ conservation, particularly for the 15 threatened species that do not occur in either protected areas or ex situ collections.

Dipterocarps are under serious threat in their centre of diversity and a range of conservation actions are needed to protect them. To mobilize and inspire conservation efforts for this group, conservation recommendations are outlined in the report, including details of the Global Conservation Consortium for Dipterocarps, established in early 2021, which aims to develop a network of dipterocarp experts to coordinate action and share knowledge and expertise.

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Nubian flapshell turtle found in northern Uganda

The Nubian flapshell turtle *Cyclanorbis elegans* is categorized as Critically Endangered on the IUCN Red List (2021) and is one of the five most threatened chelonians. This species, which was previously presumed extinct, was rediscovered in 2017 along the White Nile in South Sudan, where for the last 4 years we have been studying its distribution, population size and conservation status, and potential threats (Luiselli et al., 2021, *Oryx*, 55, 490).

In August–September 2021, funded by the Turtle Survival Alliance, USA, we focused our surveys on the border region between South Sudan and Uganda, where the species has never previously been recorded. This area is characterized by gallery forests along the White Nile river course, and the marshlands of the Onyama River and of the Paanzalla, Difule and Laropi areas. This was once the last sanctuary in this region for the white rhinoceros *Ceratotherium simum*, which was extirpated in the late 1980s during the civil unrest that afflicted Uganda and South Sudan.

During our surveys, by five surveyors in 600 person-hours over 12 days, we observed one live Nubian flapshell



A Nubian flapshell turtle *Cyclanorbis elegans* found in northern Uganda. Carapace length was 73.4 cm. Photo: Gift Simon Demaya.

turtle and the shells of three additional individuals, in a remote area of northern Uganda bordering South Sudan (the exact location is not provided here, for the security of the species). Nothing is as yet known about the population size and viability of this population, although we presume that it may be overexploited, as the turtle is captured by local fishermen both for subsistence and for sale. As the area is remote and not yet severely altered by development, habitat loss in this region does not appear to be a threat to the species.

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Human–carnivore conflict management in the central High Atlas mountains of Morocco

The central High Atlas mountains of Morocco encompass an area of 10,502 km² and have a rich biological diversity. The last observations of the serval *Leptailurus serval*, leopard *Panthera pardus* and Barbary lion *Panthera leo* in Morocco were in these mountains. This area is still home to eight carnivore species (golden jackal *Canis aureus*, African wolf *Canis lupus lupaster*, red fox *Vulpes vulpes*, wild cat *Felis silvestris*, striped hyaena *Hyaena hyaena*, Eurasian otter *Lutra lutra*, common genet *Genetta genetta* and least weasel *Mustela nivalis*), two of which are categorized as Near Threatened on the IUCN Red List.

On 5 May 2021, the M'goun Geopark Association and the Moroccan Association of Life and Earth Sciences Teachers, in collaboration with the Sultan Moulay Slimane, Cadi Ayyad and Hassan II universities, organized a workshop to examine the