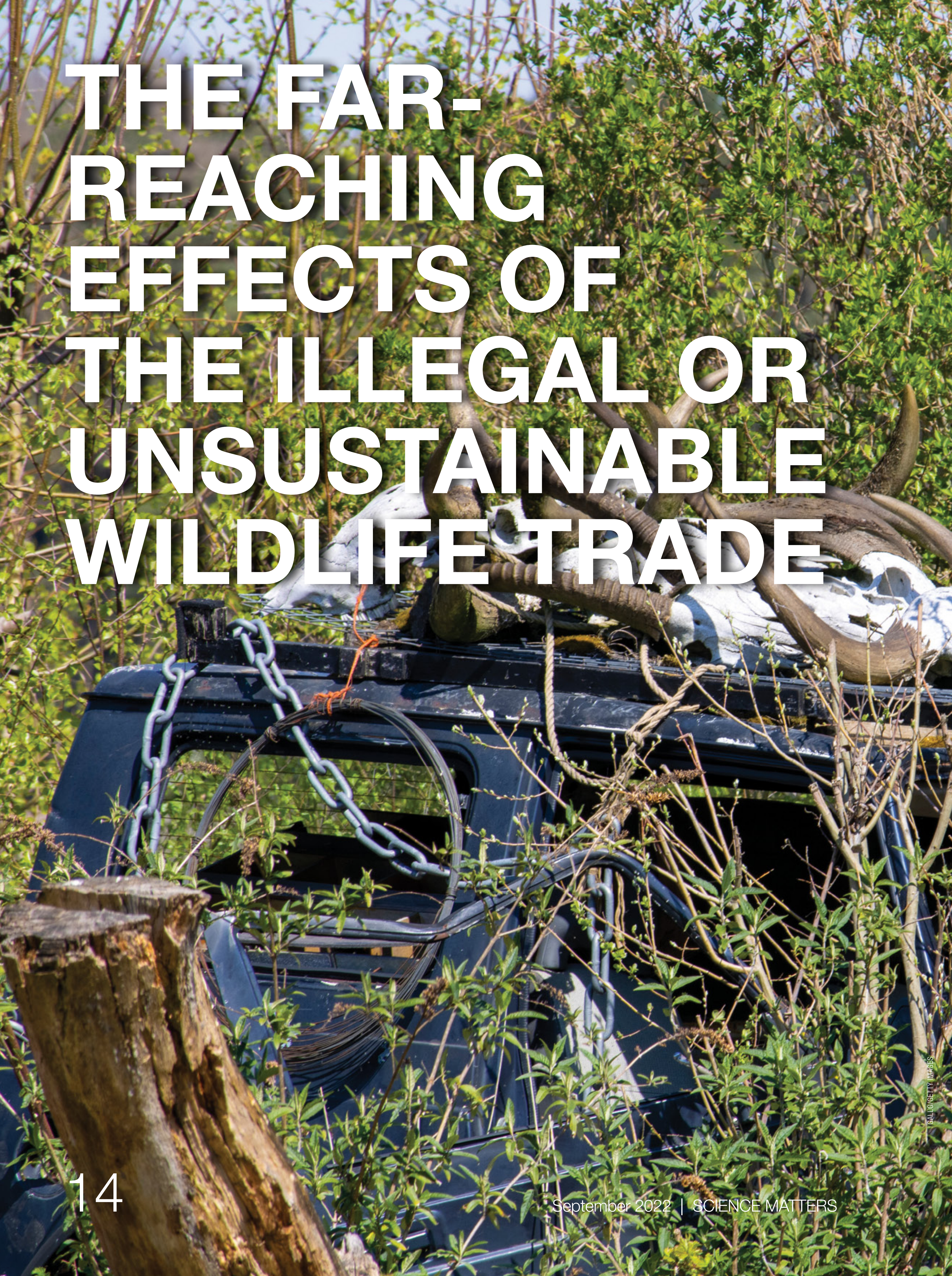
THE FAR-REACHING EFFECTS OF THE ILLEGAL OR UNSUSTAINABLE WILDLIFE TRADE



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A review by a group of scientists sounds a serious warning for humanity of the predictable and unpredictable effects of the illegal or unsustainable wildlife trade.

The illegal or unsustainable wildlife trade (IUWT)[1] has grown at a global level and, if left unchecked, presents serious negative impacts on not only species and ecosystems but also on the well-being of humanity from a variety of fronts. A review carried out by a team of international stakeholders and supported by, among others, the DSI-NRF Centre of Excellence for Invasion Biology, looked at the true cost of IUWT and issued a warning to humanity.

Target species impact

The effects of IUWT is complex with some of the outcomes being less apparent than others. Its most direct effect on the species that are targeted by IUWT is population depletion through over-exploitation (hunting, use for food and other products, medicine etc); ownership of exotic species as pets; and tourist exploitation. These can adversely impact the species' genetic diversity; create an over-exploitation that spills over to affect complementary species or, ultimately, lead to the extinction of the species altogether. For example, over-fishing has reduced the population of groupers which has depleted many wild stocks. The totoaba, whose swim bladder is considered a delicacy, has been over-fished in Mexico to the point that it is now considered Critically Endangered. The tourism sector has resulted in a decline in the population of molluscs and arthropods due to the demand for shells and conchs. The demand for exotic timber for use in building, furniture manufacture and musical instruments has resulted in the destruction of entire habitats. Demand for traditional and conventional medicine also plays a role in the reduction of animal, plant, and fungi populations.

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Non-target species impact

IUWT takes a huge toll on species that are not even the subject of direct exploitation. Bycatch, or unwanted marine animals caught up while fishing for another species, has led to the depletion of many types of marine life. For example, the vaquita, a species of porpoise found in the Gulf of California, has been brought to the brink of extinction by getting caught up in the gill nets used to catch totoaba. There is now an estimated 18 adult vaquitas left. The illegal hunting of tigers through the use of snares affects the mortality rates of Malayan tapirs. Logging can severely damage ecosystem, affecting neighbouring plant species, stream, and soil communities.

Invasive species

The introduction of non-native species can severely impact ecosystems as the invaders can lead to the displacement or elimination of native flora and fauna via mechanisms such as predation, competition, or hybridisation. This has been observed with the >

1 From the standpoint of the review, "wildlife" refers to both vertebrates and invertebrate land and aquatic animals as well as plants and fungi.

release of certain snake species in Florida and of trout in a large number of locations across the world. Indigenous plants often need to compete against invasive plants for resources such as water and soil nutrients.

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Loss of ecosystem services

Ecosystem services on which humans are dependent such as food and raw material provisioning; plant and animal breeding and carbon storage; habitat creation and nutrient cycling; and cultural traditions and education are all areas which can be negatively impacted by IUWT. Research has estimated that the loss of ecosystem services has cost the world around US$20.2 trillion annually, mainly caused by the destruction of habitats due to logging. The reduction or extinction of certain useful plants and animals could also lead to opportunities lost for the development of medicine and disease treatment. Human cultural and educational activities are constantly being threatened as animal and plant species which play important totemic or festive roles vanish.

Disease transmission

Two thirds of emerging diseases have been found to have zoonotic origins, i.e., they originate in animals. Diseases such as HIV, H1N1, H5N1, MERS, Ebola, variants of SARS, including those causing COVID-19, have adversely impacted on society, ultimately affecting economies across the globe. As human activity continues to spread into more remote areas of the globe, it is likely we will see more outbreaks as humans begin to inadvertently interact with wildlife.

Criminal networks

IUWT is also linked to criminal networks and the financing of illegal and terrorist networks. Large syndicates are rapidly depleting stocks of endangered wildlife worldwide such as the poaching of rhinoceros and elephants for their horns and ivory which fetch huge prices on the black market.

Economic impact

The illegal trade in wildlife was estimated to be between US$ 2.9 trillion and US$4.4 trillion between 1997 and 2016. Much of this money does not end up in local economies, depriving local citizens of employment opportunities and governments of tax revenue. The destruction of habitats may also force local communities to relocate as local ecosystem services break. Zoonotic diseases can reduce a country's workforce capacity ultimately impacting on the GDP of that country as well as place a strain on healthcare systems.

A word of warning

According to the researchers, the main root of the nefarious aspects of IUWT are at the local level with the ignorance of researchers, wildlife managers, private sector, economists, NGOs, civil society, and government policies, among others, creating and promoting continued inaction in solving the problem in an integrated manner. Urgent action is needed to close the knowledge gaps, connect interested parties and, more importantly, regulate the trade in wildlife, both legal and illegal, in order to preserve society and biodiversity.

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