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'Natural remedies' for COVID-19 as a driver of the illegal wildlife trade

The COVID-19 crisis has highlighted the importance of connections between wildlife and the emergence of novel pandemic diseases in humans (Zhou et al. 2020, [Nature 579:270–273](#)). The wildlife trade is hypothesised to have played a role in the origins of the current pandemic, resulting in calls for restrictions on the legal wildlife trade, and greater enforcement against the illegal wildlife trade, on public health grounds. There is also speculation about how the pandemic might affect the illegal wildlife trade by making consumption of wildlife products less socially acceptable, or because 'lockdown' measures and travel restrictions may hamper effective regulation of the illegal wildlife trade. Here we highlight a case where COVID-19 is increasing demand for illegal wildlife trade products used as perceived natural disease remedies, drawing on long-term monitoring of the illegal wildlife trade in the northern Caspian Sea.

The illegal wildlife trade in the Caspian region is an important environmental threat, particularly unregulated illegal fishing targeting the 6 native Caspian sturgeon species, all of which are Critically Endangered, for their meat and roe (caviar), and for the endemic, Endangered, Caspian Seal (*Pusa caspica*) (IUCN 2020, [The IUCN Red List of Threatened Species](#)). Seals are deliberately targeted and caught as sturgeon fisheries bycatch (Dmitrieva et al. 2013, [PLoS One, 8\(6\), e67074](#); Ermolin and Svolkinas 2018, [Marine Policy 87:284-290](#)). Their pelts are used in the fur trade, and other body parts in traditional medicine. Seal blubber is rendered for oil, which is used as a general health tonic in the Caspian region, as are rendered fats from sturgeon, bear, badger, wolf, and other species (Dmitrieva et al. 2013; Svolkinas et al. unpublished data). Targeting seals and trading in their products is illegal, but compared to other illegal wildlife trade products such as elephant ivory, the trade is not strongly regulated and is not fully clandestine. Fishermen typically sell seal carcasses to middlemen, who render the blubber and wholesale the resulting oil to retailers, with the final product traded openly in regional street marketplaces selling food and household goods.

Our long-term qualitative and quantitative monitoring of marketplaces in the Russian region of Dagestan, in the northern Caspian, shows a trade in seal and sturgeon oil of at least 1000 litres per year. Seal oil is considered particularly effective in treating respiratory diseases, including bronchitis, asthma, sinusitis, coughing, colds, pneumonia, and tuberculosis. Since the arrival of COVID-19 in the region in March 2020, 8 interviews undertaken by LS with key actors in the wildlife oil trade reveal that demand has risen to the extent that some have exhausted their stock, and consumers are actively seeking out new sources of wildlife oil products. This rising demand may put further pressure on endangered Caspian species, given the high COVID-19 incidence in Dagestan.

Wildlife products are used extensively as natural remedies and in traditional medicine around the world. We suggest that monitoring of illegal wildlife trade issues, and discussions of policy responses, should also consider the potential for health pandemics to drive demand for some wildlife products. Solutions should be based on an understanding of trade supply chains, dynamics, and underlying causes of consumer demand.

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