

Letter from the Editor

COVID-19: the spearpoint of human–wildlife interactions



HUMAN–WILDLIFE INTERACTIONS (HWI) is a peer-reviewed scientific journal published by the Jack H. Berryman Institute (BI). The BI was chartered in 1994 by Utah State University's (USU) Board of Trustees and given the mission of improving

human–wildlife interactions by reducing human–wildlife conflicts through research, teaching, outreach, and education. At USU, the BI is housed in the Department of Wildland Resources.

In 1994, the world population was estimated at 4.3 billion. To provide our stakeholders with current information in 1994 regarding human–wildlife interactions, we published the first review of human injuries, illnesses, and economic losses caused by wildlife in the United States. In 2019, we published an updated review in HWI (Conover 2019). In 2020, the world's population was estimated at 8 billion. We also witnessed first-hand just how globally connected and dependent we are on each other when the COVID-19 pandemic (see HWI's recent article, Messmer 2020) brought international travel and commerce to a standstill. The pandemic highlighted how humans globally are connected.

In 2021, I experienced first-hand the effects of COVID-19. One year after the first confirmed case of COVID-19 in the United States, I was diagnosed with the virus and was hospitalized for 4 weeks, 3 of which were in an intensive care unit. Thanks to emerging science and dedication of the committed caregivers, I survived. However, I still have lingering effects of my "dance with the devil." To make some sense of the confusion and isolation caused by the virus and to provide some comfort to others impacted by the virus, with the help of colleagues, I journaled my experience in a blog (<https://dennishinkamp.wixsite.com/terrymessmer>).

As we enter 2022, more uncertainty remains regarding the pandemic. As a zoonotic disease, COVID-19 has now become the most visible spearpoint of all human–wildlife interactions. To date, science has cataloged 1,415 known human pathogens, of which 62% were of zoonotic origin. Most of the emerging infectious diseases (i.e., SARS, N1H1 influenza, West Nile Virus, hantavirus, Lyme disease) in humans are zoonoses. More wild animals are increasingly being linked in their epidemiology as major reservoirs for their transmission to domestic animals and humans.

Scientists have long warned that the rate of emergence of new infectious diseases is accelerating. In 2012, HWI published a special issue on One Health and its role in mitigating the zoonosis outbreaks. One Health is a worldwide approach that recognizes that the health of people is closely connected to the health of animals and our shared environment. Public education and behavioral change are critical to successful disease intervention. However, even in 2012, we never anticipated the consequences and lingering effects of the current pandemic.

Microbial changes influence the epidemiology of zoonoses that have wildlife reservoirs. These changes include mutations, such as genetic drift and recombination in viruses, and transformations in bacteria that increase their resistance to vaccines. The risk of transmission of adaptive or genetically changed microorganisms from wildlife to humans, either directly or indirectly through domestic animals, is also increasing because of human-caused ecological changes. The ecological changes that are influencing the epidemiology of wildlife reservoir zoonoses include human population expansion and encroachment, reforestation and other habitat changes, pollution, and climatic change. The changes in land use that accompany human population growth, the increased global transportation of wildlife and livestock and their products, and increases in both domestic and international travel increase the risk of new dis-

ease outbreaks of pandemic scale.

Given these dramatic and complex events, HWI's mission of promoting a dialogue among wildlife professionals and their stakeholders concerning contemporary human–wildlife interactions have increased relevance and importance. The journal exists to provide a forum to address the uncertainty about how best to improve human–wildlife interactions. This uncertainty we now face exists, not because we lack the management expertise or will, but more so because of public perceptions of the conflicts, their acceptance of the responsibility, and science-based management options.

One thing is certain: for humans and wildlife to coexist in a world where human population growth is increasingly encroaching into wildlife habitats, managers and stakeholders must be willing to engage in open and frank dialogue where human desires and the needs of wildlife are both considered. Wildlife professionals working at the interface where conflicts arise between people and wild animals have a responsibility in the long-term interest of sustaining society's support for wildlife and its conservation by resolving human–wildlife conflicts so that humans continue to view wildlife as a valued resource.

As did I, HWI has been impacted by the virus but has withstood the effects to emerge even stronger and more committed to provide the

best in service and support for our readers and authors. The virus has impacted our production and review processes and delayed publication, as many of our authors, reviewers, and editors have been impacted. To address the publication backlog that resulted from the challenges created by the virus, we are publishing a double special topics issue on ravens in Volume 15 Issue 3. These papers, although published in 2022, will have a winter publication date of 2021. We also have implemented measures to ensure, when we experience another pandemic, we will continue to provide the best service to our stakeholders.

We thank you for your continued support of HWI and our mission. We look forward to working with you to create a better informed and engaged human and wildlife conservation constituency. Please feel free to share your thoughts, ideas, or concerns with me at terry.messmer@usu.edu.

Terry A. Messmer, Editor-in-Chief

Literature cited

- Conover, M. R. 2019. Numbers of human fatalities, injuries, and illnesses in the United States due to wildlife. *Human–Wildlife Interactions* 13:264–276.
- Messmer, T. A. 2020. Humans, wildlife, and our environment: One Health is the common link. *Human–Wildlife Interactions* 14:137–140.