

In This Issue

In This Issue

BD NEWS FROGS

Batrachochytrium dendrobatidis (Bd) infection is a leading cause of the global decline of amphibians. **Bie et al.** used space–time scan statistics and the maximum entropy model for spatial risk analysis of the global distribution of Bd. The results of the space–time scan statistics showed seven clusters, while the maximum entropy model showed that annual precipitation had the largest contribution percentage, and annual mean temperature highly influenced Bd distribution. The relationships between climate factors, wind speed, solar radiation, and Bd distribution were evaluated to predict the risk area of Bd distribution.

Rahman et al. conducted a preliminary study in Bangladesh that showed a 15% prevalence rate of Bd across 133 amphibian samples, with eight host species and one genus discovered to be newly infected hosts. The research is only focused in a small geographical area, yet the findings have key implications for global scientific communities.

Granados-Martínez et al. quantified changes in the climatic niche and geographic distribution of a susceptible frog host species in response to the introduced pathogen Bd. The results show that the frog exhibited a severe niche contraction, as consequence, the geographic distribution decreased by 98%. Extant populations seem to have been pushed toward dry and warm environments where they currently persist and coexist with Bd. The results contribute to the understanding of how emerging pathogens shape climatic niches and geographic distribution of species.

SALINITY AND DISEASE RISK IN BANGLADESH

The relationship between water salinity and water-related health risk in coastal Bangladesh was analyzed in a study by **Asma & Kotani**. The pair conducted field surveys with 527 households in non-salinity and salinity areas and analyzed the data to quantify the risk. Results show that the probability of suffering from water-borne, water-washed, and water-related diseases is higher in salinity areas than in non-salinity areas.

DISEASE RISK ANALYSIS METHODOLOGIES

Numerous methodologies for Disease Risk Analysis exist, but for wild animal translocations, the IUCN Manual by Jakob-Hoff et al. remains the gold standard. When compromises on methodology must be made due to constraints on time and/or resources, a cost-benefit assessment is required to determine the best approach. **Vaughan-Higgins et al.** propose a modified methodology highlighting hazard prioritization and ‘scoping’ to facilitate timely completion using the Shark bay bandicoot as an example. The need for a streamlined approach based on a cost–benefit analysis is recognized among DRA practitioners as many DRAs are now being undertaken retrospectively and with limited time and resources.

VACCINE VACILLATION

Thunström et al. surveyed of a nationally representative sample of adults in the USA that stated their intentions to

vaccinate themselves and their children for COVID-19 and found that 20% of people in the USA intend to decline the vaccine. The group found no statistically significant effect on vaccine intentions from the severity of COVID-19. In contrast, they found that the degree of infectiousness of the coronavirus influences vaccine intentions, and that inconsistent risk messages from public health experts and elected officials may reduce vaccine uptake. The most important determinants of COVID-19 vaccine hesitancy seemed to be distrust of the vaccine safety (including uncertainty due to vaccine novelty), as well as general vaccine avoidance, as implied by not having had a flu shot in the last two years.

PATHOGEN PRESENCE AT LANDFILLS IN IRAN

Wild birds are important in the transmission of many zoonotic pathogens. **Malekian et al.** investigated the presence of bacterial and viral pathogens in five abundant birds foraging at an open landfill located in Central Iran. Pathogens were present in landfill birds, indicating that a potential risk is posed to landfill workers and the surrounding community and adding to the limited knowledge of the potential for landfills to support disease vectors.

SARCOCYSTIS NEURONA TRANSMISSION

Sarcocystis neurona is a parasite that can kill marine mammals and opossums shed *S. neurona* sporocysts that can contaminate nearshore waters. **O'Byrne et al.** aimed to determine the prevalence of *S. neurona* in opossums from Washington State (USA) and to compare parasite strains in opossums and marine mammals. 9.4% of opossums and 40% of marine mammals were infected with *S. neurona*, and identical parasite strains were present among one harbor porpoise and two opossums. Watershed mapping linked water flowing from the opossums to the infected porpoise. The results provide molecular evidence linking land-to-sea strains of pathogens that kill marine wildlife.

SURVEYING ZONOTIC RISK IN CHINA

An online survey study by **Li et al.** provides a broad overview of the human–animal interaction in relation to zoonotic disease from the wildlife trade in southern China. Study results reveal that participants had a low level of knowledge and perceived risk regarding disease emergence

from the wildlife trade. Identifying the gaps between knowledge, attitudes, and behavior changes will be crucial to develop intervention strategies to mitigate disease risk.

TOXOCARA AWARENESS IN SAUDI ARABIA

Human toxocariasis is a zoonotic infection with global and regional impacts but is often underestimated and clinically overlooked. The objective of the study by **Omer et al.** was to assess knowledge and disease awareness among medical practitioners in Aseer region, southwestern Saudi Arabia. A questionnaire was used to interview 285 participants and the study found a lack of awareness regarding *Toxocara* infection and the disease spectrum it can generate. These results show that misdiagnoses and consequently misguided treatments may be more frequent.

VIRAL PREVALENCE IN SOUTH AFRICAN SERVAL

One of the key factors influencing the population dynamics of threatened species such as felids is disease, but long-term studies of the factors influencing seroprevalence of wild felids are extremely rare, hindering conservation efforts. **Loock et al.** set out to determine seroprevalence of six viral diseases among a population of serval with an extremely high density in South Africa. The group captured 55 individuals over four years and screened blood samples for antibodies to each virus. The results showed that seroprevalence was high and influenced by season and sex, but not body condition.

BAT VIRUSES IN SOUTH AMERICA

Chiropterans are known for hosting a large diversity of viruses. **Moreira Marrero et al.** screened bats of South America for ARN and ADN virus, detecting high prevalence and a wide diversity of both Beta- and Gamma-Herpesvirus. The viral community in bats species is more strongly associated with ecological traits rather than the taxonomy of the hosts. A separate clade of Gammaherpesvirinae in the common vampire bat evidence the relevance of these viruses to track vampire bats' population structure, and suggest that viruses can also be used to track the population dynamics of their host, including movement and demographics.