

In This Issue

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GREEN AND BROWN CONSERVATION

Olival et al. examine the historical roots of conservation in the United States and how this relates to the current and future relationship between environmental protection and human health.

ONE HEALTH... EVERYWHERE?

Transdisciplinary One Health approaches have recently been rediscovered as a promising tactic for addressing complex health risks at the human–animal–ecosystem interface. However, there is little evidence of widespread adoption of One Health approaches as the new operating norm for addressing health issues. **Hueston et al.** have used a transformational change model as an evaluation tool and part of an overall assessment to establish a point of reference for measuring global adoption of One Health approaches.

HEALTH IMPACTS OF HEALTHCARE

Though medical interventions improve the health of many, they may also cause harm to people and ecosystems through the life-cycle impacts of medical supplies and pharmaceuticals. In this issue, **Vatovec et al.** describe the cradle-to-grave impacts on the natural environment, occupational health, and public health that resulted from common medical practices at three medical inpatient units over the course of a year-long ethnographic investigation. These findings point toward policy needs that could reduce

the negative consequences of clinical practices and health-care operations while providing high quality patient care.

REFINING SEROLOGY

Serology is an invaluable and commonly used tool in studies of human and animal infectious diseases. The interpretation of serological data within and across studies is complex due to factors such as host genetic diversity, cross reactions of antibodies with different agents, and lack of standardization for test platforms. As the functional significance of antibody varies across disease systems, **Gilbert et al.** highlight potential misinterpretations of antibody negative and positive results and provide recommendations for sound study design and inference to guide appropriate utilization of serologic data in epidemiological modeling of wildlife diseases.

ECOHEALTH APPROACH TO FOOT-AND-MOUTH

Strategies to control transboundary diseases do not always address environmental and local human population. Past attempts to control such diseases have resulted in wildlife losses. Integrating perspectives from across disciplines, including livestock, veterinary and conservation sectors, is necessary for identifying disease control strategies that optimize environmental goods and services at the wildlife–livestock interface. Prompted by the recent development of a global strategy for the control and elimination of foot-and-mouth disease, **Ferguson et al.** provide insight into the

consequences of, and rational options for potential foot-and-mouth control measures in relation to environmental, conservation and human poverty considerations in Africa.

BALLAST TREATMENT

Bacteria associated with plankton are important in marine bioinvasions and implementation of ship's ballast water treatment technologies. **Khandeparker and Anil** looked at bacterial attachment on different zooplankton groups when they were intact or pulverized, focusing specifically on pathogenic bacteria. The bacteria released from plankton on their death are significant contributors to the pathogenic load. *Vibrio cholerae* numbers increased twofold once the plankton were pulverized. The quantity of bacteria released did not depend on the biovolume of plankton. These results are relevant to ballast other marine water treatment processes.

RUNOFF RISKS

Rapid development of coastal landscapes throughout the world has the potential to increase runoff of terrestrial pathogens and the risk of human and animal exposure. **VanWormer et al.** examined the roles of sympatric domestic and wild felids in land-to-sea pathogen transmission of *Toxoplasma gondii*, a zoonotic parasite that has caused significant mortality in the threatened California sea otter population. Parasite infection and shedding differed significantly among felid populations. Domestic cats appear to contribute more *T. gondii* oocysts to the coastal terrestrial environment than wild felids, which has important implications for human management of domestic animal populations.

PLAGUE AND PRAIRIE DOGS

Black-tailed prairie dogs live in socially complex colonies that can cover hundreds of hectares of prairie, but *Yersinia pestis*—the bacterium that causes plague—can decimate these colonies so that only a few individuals survive. The time-frame of plague outbreaks is not well understood—in part because prairie dogs die underground, and therefore observing mortality is difficult. **St. Romain et al.** sampled

fleas from burrows and prairie dogs and noted that plague activity can occur for several months to over a year, suggesting that disease transmission can occur cryptically and that perhaps prairie dog colony die-offs are the tip of the iceberg in regard to pathogen persistence.

RABIES AND SKUNKS

A striped skunk rabies epizootic in northwestern Wyoming possibly is the first rabies epizootic in a previously rabies-free zone monitored from the Index Case (1988) to the last case (1993). Of 1,015 skunks tested, 215 were rabies-positive. **Ramey et al.** analyzed the epizootic's movements and dynamics at 6-month intervals using Multivariate Movement Maps, a new multivariate descriptive methodology demonstrating the epizootic's directional flow, while illustrating areas with higher case densities. This approach should help epidemiologists and public health officials better understand future rabies epizootics

BICOSTAL BACTERIA

The rapid spread of *Mycoplasma gallisepticum* in introduced house finches in eastern North America compared to their native western counterparts points to the need to understand relative health from both populations. **Davis et al.** compared blood parasite prevalence of birds from both populations, using field collections and a literature review and with both methods found that eastern birds have surprisingly low prevalence of infections. This suggests that eastern finches are either more resistant to infections or have high mortality from them, leading to the appearance of low prevalence.

MONITORING IN MADAGASCAR

Globally, amphibians are threatened by a number of factors including a fungal disease caused by *Batrachochytrium dendrobatidis*, which may cause extirpations and extinctions. Amphibians in Madagascar form one of the largest endemic communities of amphibians anywhere in world. Because the fungus is expanding its distribution and has not yet reached Madagascar, **Weldon et al.** have pioneered

the development of a pre-emptive national monitoring plan aimed at early detection in the event of disease introduction. The selection processes followed for site and species identification may be extrapolated and customized

to other countries or regions where *B. dendrobatidis* has not been detected.

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