

In This Issue

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AMERICAN ENVIRONMENTAL WRITING & HEALTH

Linking environmental change to public health has been shown to make it more relevant to the general public. To examine how links between the environment and health have historically been imagined in American culture, **Aoyama & Hudson** analyze an anthology of US environmental writing. They found that health has been an important issue in American environmental writing since Henry David Thoreau. The writings of Aldo Leopold were especially important in linking the health of the land and ecological systems with the well-being of human communities.

ECONOMICS AND EPIDEMIOLOGY OF INFECTIOUS DISEASE

In the last few decades, the growth of global trade and travel has been implicated in the spread of many human, animal, and plant infectious diseases. In recent years, work at the boundary between ecology, epidemiology, and economics has shed new light on the way behavior affects the spread of pests and pathogens. **Perrings *et al.*** introduce the approach, referred to either as economic epidemiology or as epidemiological economics. They also show how it is changing our capacity to predict and manage epidemics by improving understanding of how people manage disease risks, and the incentive effects of public disease control policy.

IMPROVING DRINKING WATER QUALITY IN ARGENTINA

In this paper, **Molinos-Senante *et al.*** propose an economic framework to determine the economic feasibility of

improving the drinking water quality in Argentina by taking into account costs, health effects, and environmental impacts. Impacts with and without market value have been included in the assessment of the economic feasibility. Subsequently, an empirical application has been carried out to evaluate the feasibility of reducing the contamination of arsenic in a rural area of Argentina. Uncertainty has been considered by involving two discount rates, three environmental correction factors, and a tolerance level in the benefits. The application of the proposed framework would provide authorities with more complete information to support decision processes when planning water investment interventions.

PSYCHOSOCIAL IMPACT OF ENVIRONMENTAL DAMAGE

Environmental distress is a psychosocial problem suffered by people who live in areas that have undergone extensive environmental degradation. Previous research investigated the environmental distress of people living near mining activity and in drought situations. This study by **Warsini *et al.*** describes environmental distress among survivors living in an extensively damaged environment after a volcanic eruption. Data were collected two years post eruption and demonstrates that natural disaster survivors who live in environmentally damaged areas are affected by environmental distress. This result evinces that environmental distress not only occurs due to man-made environmental degradation but also in a natural disaster setting.

MENTAL HEALTH IN WESTERN AUSTRALIA

Previous studies found a relationship between dryland salinity and mental health. This study by **Fearnley *et al.***

assessed a possible relationship between environmental degradation (measured by dryland salinity, land surface temperature, and vegetation) and women's mental health in rural Western Australia. Unlike previous studies, the current study found no association between environmental conditions and individual women's mental health.

HEAT & HEALTH IN NYC

In this manuscript, **Sheridan & Lin** assess changes in the heat–health relationship over time for New York City by comparing both mortality and morbidity responses to heat events from 1991–2004. Results show an increase in mortality and morbidity during hot weather with some categories of death and hospitalization, but not others. Critically, results suggest that in the latter half of the period of study heat-related mortality may have declined, while hospitalizations increased.

CORAL DISEASE

Coral reefs are among the most diverse ecosystems on the planet but are declining globally because of human impacts and disease. Corals are unique in wildlife health in that the animal is the environment, but we know little about what causes coral disease. **Work & Meteyer** suspect this is because of a lack of understanding of what is killing corals at the cellular levels. Their conclusions are supported by quantifications of methods used to study coral disease that are biased towards molecular approaches and field surveys. Animal disease specialists, notably absent in this arena, could make important contributions to enhance marine conservation.

ANTHROPOGENIC LAND USE CHANGE & INFECTIOUS DISEASES

Anthropogenic land use change has been linked with the emergence and increased transmission of infectious pathogens in humans, domestic animals, and wildlife. In this study, **Gottdenker et al.** provide a systematic review of literature from the 1970s to 2012 relating to anthropogenic land use change and infectious disease transmission, identifying common patterns and analyzing the disease responses observed in response to anthropogenic change. They also summarize mechanisms by which anthropogenic

land use change alters pathogen transmission, discuss findings of their review, and provide suggestions for future avenues of research in this rapidly emerging field in the ecological health sciences.

HABITAT FRAGMENTATION & HANTAVIRUSES

Habitat fragmentation can change small mammal community structure, which may influence hantavirus dynamics, a zoonosis of increasing concern. **Rubio et al.** conducted a meta-analysis to assess general effects of the responses of small mammal communities to habitat fragmentation for their potential influence on hantavirus transmission among hosts in the Americas. The results showed that a reduction of patch area by habitat fragmentation generally produces an increase in the reservoir host abundances, while it causes a decrease in small mammal richness. In consequence, habitat fragmentation in the Americas may increase risk for hantavirus transmission to humans.

BEYOND BUSHMEAT

In sub-Saharan Africa, bushmeat is considered the primary risk factor for human–wildlife contact and zoonotic disease transmission. However, **Paige et al.** examine human–animal interaction beyond the bushmeat paradigm. They describe patterns of injuries from animals and contact with primates, and identify risk factors associated with human–animal interaction. Nearly 20% of participants reported either being injured by an animal or having contact with a primate over their lifetimes. Multivariate logistic regression analysis indicated that men who live adjacent to forest fragments are at higher elevated risk of animal contact and specifically primate contact, providing an alternate scenario for subsequent emerging zoonoses surveillance.

VIRUSES IN CAPTIVE AND FREE-RANGING BIRDS

Quaglia et al. evaluated the prevalence of West Nile virus and St. Louis encephalitis virus neutralizing antibodies in captive and free-ranging raptors from Argentina by plaque-reduction neutralization test (PRNT). Eighty plasma samples from 12 species were analyzed. Only one captive adult Crowned Eagle was WNV seropositive while two captive

Crowned Eagles were SLEV seropositive. These findings expand the geographic distribution of WNV and SLEV and confirm their activity in central and northeastern Argentina. West Nile virus activity in Argentina may represent a potential threat to Crowned Eagles and other endangered raptors in the country.

CHLAMYDIOSIS IN BRITISH GARDEN BIRDS

The significance of *Chlamydia psittaci* as a cause of garden bird mortality, and the role of wild passerine birds as a source of *C. psittaci* infection in humans, is unknown. **Beckmann et al.** found that tissues from 21 of 40 garden birds found dead from 2005 to 2011 were tested positive for *C. psittaci*: passerines had genotype A and collared doves had genotype E. There was *C. psittaci*-associated disease in at least ten of the positive cases. These findings show that wild passerines are a potential source of psittacosis in humans.

MYCOBACTERIUM TUBERCULOSIS IN HUMANS & CATTLE

Tuberculosis is a major disease of major public health significance especially in developing countries. In Zambia, the World Health Organization estimates an incidence of 444/100,000. While *Mycobacterium tuberculosis* is a causative agent of tuberculosis in humans, a study by **Malama et al.** shows that *M. tuberculosis* can be found in cattle as well. This finding could pose a threat to the control of tuberculosis infections in humans since cattle have proved to be a potential reservoir of the tuberculosis pathogen.

BACTERIA IN SNAKES, WORMS, & ADDERS

A survey by **Schmidt et al.** revealed that common viral pathogens of captive snakes and lizards are absent in common free-living snakes and slow worms from the island Hiddensee. Prevalence of bacteria in healthy free-living snakes and lizards included in this survey is not influenced

by age, gender, or habitat. Presence of certain bacteria in apparently healthy individuals indicates that free-living snakes and lizards harbor potential human pathogenic microorganisms. Accordingly, it can be concluded that Gram-negative as well as Gram-positive bacteria are common in healthy reptiles and are part of the physiological cloacal bacterial flora of those reptiles.

RANAVIRUS IN WOOD FROGS

Amphibian declines and extinction have been attributed partly to the disease chytridiomycosis but ranavirus may also contribute given the reoccurring mass die-offs. **Earl & Gray** examined whether ranavirus could cause extinction of closed wood frog populations using a population model. Extinction was most likely when the larval or metamorph stage was exposed under frequent intervals in smaller populations, and never occurred when the egg stage was exposed. In natural populations, die-offs occur in the larval stage and can reoccur in subsequent years, indicating that our simulations represent possible scenarios. The results suggest that ranavirus could cause declines, especially for susceptible species and closed populations.

BD IN COSTA RICA

Distribution models for the fungus *Batrachochytrium dendrobatidis* (Bd) and the presence of the extirpated species *Craugastor ranoides* in the hot and dry Santa Elena Peninsula, suggest that environmental conditions might restrict the growth and development of Bd. **Zumbade-Ulate et al.** conducted surveys to detect and quantify the pathogen in samples from 15 species of tropical dry forest. They detected extremely low levels of infection in ten individuals from four species, including one individual of *C. ranoides*. These results suggest that Bd is at the edge of its distribution in these dry environments and support the existence of climatic refuges from chytridiomycosis-driven extinction.