

## In This Issue

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### SPECIAL FEATURE: CONNECTIONS FOR HEALTH, ECOSYSTEMS, AND SOCIETY

This issue of *EcoHealth* coincides with the International Association for Ecology and Health's 5th Biennial Conference in Montreal, Canada. The editorial by **Saint-Charles et al.** sets the scene for the special feature, reflecting on the importance of “connections for health, ecosystems, and society” as a theme for the EcoHealth 2014 conference, and also for the evolution of ecohealth as a field. The special feature includes contributions that explore the theme of connections from a range of perspectives – which move across concepts and contexts, consider health dynamics among different species and span different types of knowledge. The forum by **Romanelli et al.** profiles health and biodiversity connections, reporting on the lessons learned from the first two workshops initiated by the World Health Organization and the Secretariat for the Convention on Biological Diversity, and proposing an emerging framework for action in the context of the emerging post-2015 development agenda. A second forum by **Saint-Charles et al.** examines connections within the developing field of ecohealth, focusing on processes to create supportive environments and to enable the evolution of diverse partnerships and forms of collaboration. Connections are also evident in the **News from IAEH**: the dialogue initiated by **Berbés-Blázquez and Feagan** highlights the importance of heuristics as tools to gain insights into complex inter-relationships within ecosystem approaches to health.

Two original contributions profile the urban context for connections among health, ecosystems and society: **Rostami et al.** examine the role and importance of historic Persian gardens as contemporary Iranian urban green spaces for inhabitants' health status and well being, while **Carter and Horwitz** note significant relationships between

perceptions of green space and self-reported health in research from Western Australia. By showing that green spaces are integral to identity and health, these findings strengthen the demand for collaboration across planning, economics and public health to design green urban spaces to improve health outcomes.

Connections among humans and other species are examined in three original contributions focused on zoonoses. A study of campylobacteriosis by **Navarro-Gonzalez et al.**, who look at the prevalence of *Campylobacter spp.* in game ungulates (wild boar and Iberian ibex) and free-ranging cattle in Northeastern Spain, finding that cattle and wild boar appear to have their own predominant *Campylobacter* species while the Iberian ibex do not seem to play an important role as reservoir. **Aenishaenslin et al.** address rabies epidemiology in Nunavik, northern Québec by using a ‘One Health’ approach, bringing together veterinary and health human data. To address knowledge gaps about brucellosis in Mongolia **Zinsstag et al.** conducted a representative survey in two provinces, identifying significant seroprevalence in humans, cattle, sheep, goat, camels and dogs. As well as highlighting underreporting of brucellosis, the study provides Mongolian authorities with better diagnostic algorithms for rural populations and recommends a strict monitoring of livestock mass vaccination campaigns.

Connections that emerge across different knowledge cultures, are profiled by **Balilla et al.** who use an ethnographic approach in the Philippines to collate data from a community health survey and field notes while living with the Aeta Magbukún in an isolated mountain forest. This study identifies ways in which traditional healers have chosen to integrate Western medicine and healthcare services into their traditional healthcare system. Addressing a different kind of emergence, the scoping review by

**McKellar et al.** examines evaluation frameworks for communities of practice and knowledge networks, evaluating the influences and effectiveness of these approaches to ecohealth among other fields. The **Book Review** by **Cole** offers another perspective on connections, identifying synergies and areas for future ecohealth interactions in relation to Rayner and Lang's new book on Ecological Public Health.

In combination with the rest of the issue, the themes of this Special Feature draw attention to the internal and external connections that are an ongoing feature of *EcoHealth*. The **Cover Art** and **Cover Essay** by **Waltner-Toews and Banessia** exemplify this, bringing our gaze to specific moments and opportunities that confront us with connections, offering reminders of the intimate links among humans, other species and the planet we share, and the need for creating spaces and conversations that foster understanding and action, across health, ecosystems and society.

## PHYSIOLOGICAL STRESS IN AUSTRALIAN FLYING-FOX POPULATIONS

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Fruit-bats of the genus *Pteropus* are the natural host of Hendra virus a zoonotic virus responsible for mortality or morbidity in horses and humans in Australia. Previous studies have suggested physiological stress as a risk factor for infection in flying-foxes. Urine and plasma samples collected from free-living flying-foxes were assayed for cortisol using a commercially available enzyme immunoassay. **McMichael et al.** report a robust approach to the measurement and interpretation of urinary cortisol values in flying-fox populations that will enable definitive determination of the role of stress in henipavirus infection and transmission dynamics, and which has broader application to other species.

## INVASIVE AMERICAN MINK: LINKING PATHOGEN RISK BETWEEN DOMESTIC AND ENDANGERED CARNIVORES

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Introduced species can alter multi-host interactions between domestic species and wildlife. In this original contribution, **Sepúlveda et al.** studied domestic dogs, invasive American minks and endangered river otters in southern Chile and determined that mink can act as a potential host

bridge for CDV transmission risk between dogs and otters. The group detected rural dog interactions with mink around farms associated with mink attacking poultry. In riparian habitats, the interactions were indirect and frequent between minks and river otters by mink selecting otter latrines. CDV exposure was determined in dogs and minks, making the potential pathogen risk to otters a conservation concern.

## AEDES AEGYPTI AND DENGUE

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**Capinha et al.** focus on the importance of macroclimate in shaping the distribution of *Aedes aegypti*—a domestic mosquito that is the main vector of dengue, a highly prevalent disease. Using a correlative model, they show that much of the species range outside tropical regions is sustained by man-made environments but that the boundaries of this range are set by macroclimate barriers. This suggests that global climate change may have profound effects on the future distribution of this important disease-vector.

In another study by **García-Betancourt et al.**, an innovative intervention was designed and concerted with the community of Girardot, Colombia to control and prevent dengue. Water-containing covers using long-lasting insecticide-treated nets were designed, manufactured, and installed by members of the community with the support of local health authorities and stakeholders. Active participation of community leaders and the community itself is crucial in the implementation of Ecohealth strategies to ensure acceptability and eventually guarantee sustainability.

## Q FEVER RISK IN CENTRAL KENYA

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Following reports of Q fever in different parts of Kenya, **DePuy et al.** set out to characterize livestock-associated exposure to *Coxiella burnetii*, the causative agent of Q fever. Based on 214 serosamples collected from the four main livestock species (cattle, camels, goats, and sheep), a distinct seroprevalence gradient was found. Cattle had the lowest seroprevalence (4%), camels had a significantly higher seroprevalence (46%), whereas sheep and goats had intermediate levels. In interviews of stakeholders, professionals were highly concerned about Q fever whereas local pastorists revealed no knowledge.

## OPPORTUNITY FOR CHANGE

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**Keith Martin** looks at the events that threaten population security and outlines areas where environmental sustainability and human security connect in an effort to develop lasting impacts. One way is to include ecosystem services in future planning since these are of greater value than what is currently recognized. Urban planning that incorporates green structures, mass transit, and recycling practices can

reduce the incidence of non-communicable diseases and produce positive effects for the environment. Construction of energy efficient buildings and reduction of urban sprawl will reduce greenhouse gas emissions. In order to address environmental sustainability and human security the author states that a cultural shift and incentives need to be implemented.