April 1, 2015

All Wildlife Diseases, All Conservation, All One Health, All the Time!

NEWS ON ARTICLES FROM JOURNAL OF WILDLIFE DISEASES 51(2)

Health of wildlife, domestic species and human beings, and the environments that support them (One Health), has been a focus of the Wildlife Disease Association for more than 50 years. The April 2015 Journal of Wildlife Diseases (JWD) issue 51(2) has several articles with particular conservation and wildlife management significance that we would like to make you aware of. The first 3 (below) deal with the transport of pathogens from terrestrial to aquatic environments.

Human activities may introduce new fungal species and mobilize endemic fungal organisms in soils that get into watercourses and the ocean. In **Coccidioidomycosis and Other Systemic Myocoses of Marine Mammals Stranding Along the Central California, USA Coast: 1998–2012** researchers from 3 marine mammal stranding centers supported by government and university groups report findings on over 7,000 dead marine mammals. The infected animals included 18 California sea lions, 20 southern sea otters, 2 Pacific harbor seals, 1 Dall's porpoise, and 1 northern elephant seal. Of these, 36 had coccidioidomycosis, 2 had zygomycosis, 2 had cryptococcosis, 1 was systemically infected with *Scedosporium apiospermum*, and the first known infection with the pathogen *Cryptococcus gattii* in a wild marine mammal is reported. Several of these organisms are significant human pathogens and humans that examine dead marine mammals are at particular risk of exposure.

The coccidian parasite *Toxoplasma gondii* infects humans and warm-blooded animals worldwide but its ecology in marine systems is poorly understood. In **Epidemiology and Pathology of *Toxoplasma gondii* in Free-ranging California Sea Lions** the authors lead by **Daphne Carlson-Bremer** report 5 confirmed and 4 suspected cases of toxoplasmosis from 1,152 sea lions examined from 1975-2009. Disseminated *T. gondii* infection in aborted fetuses confirmed vertical transmission in sea lions. Findings suggest less frequent exposure lower susceptibility to clinical disease in California sea lions as compared to sympatric southern sea otters.

In **Risk Factors for *Toxoplasma gondii* Exposure in Semiaquatic Mammals in a Freshwater Ecosystem** a group from **University of Illinois** and **USDA-ARS** lead by **Adam Ahlers** examined mink and muskrats in east-central Illinois, a region has extensive drainage systems that could potentially transport *T. gondii* oocysts into the watershed. Antibodies to *T. gondii* were detected in 18 (60%) of 30 muskrats and 20 (77%) of 26 mink, infection rates were ≥1.7 times higher than those typical for mammals in upland habitats in this region.

Other important articles in JWD 51(2) include:

In **Antemortem Diagnosis of *Mycobacterium bovis* Infection in Free-ranging African Lions (*Panthera leo*) and Implications for Transmission, Michele Miller** and colleagues describe a technique to obtain respiratory samples from live, free-ranging lions to detect bovine TB organisms under field conditions. Six percent (8/134) of lions tested in Kruger National Park were shedding viable *M. bovis,* and thus could serve as maintenance hosts.

Modeling the Environmental Growth of *Pseudogymnoascus destructans* and its Impact on the White-Nose Syndrome Epidemic. Researches from **University of Akron** and **University of Tennessee**, lead by **Hannah Reynolds**, report that the *Pd* fungus is not reliant on its host for survival and is capable of environmental amplification that could contribute to rapid progression and long-term persistence of WNS in the hibernacula of threatened North American bats.

Daniel Tripp and a team from **Colorado Division of Wildlife,** the **USGS-National Wildlife Health Center** and **University of Wisconsin** report **Apparent Field Safety of a Raccoon Poxvirus-Vectored Plague Vaccine in Free-Ranging Prairie Dogs, Colorado, USA**. Ninety percent of prairie dogs and 78% of associated small rodents consumed baits. No evidence of prairie dog decline after poxvirus vaccine exposure, nor morbidity, mortality, or gross or microscopic lesions were observed. This helps open the way for large-scale plague vaccine testing in areas where black-footed ferrets and prairie dogs suffer periodic epidemics.

Abstracts of these and other articles in JWD 51(2) are available on the WDA website (www.wildlifedisease.org) under Publications. If are interested in getting access to the full article contact wda.manager@gmail.com