

KNOWLEDGE BASE

Wildlife Diseases



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Wildlife diseases work in mysterious ways. That's certainly how it seemed to me as I listened to the experts speaking at the annual meeting of The Wildlife Society last September in Monterey, California.

In a session on marine mammals, scientists were relating the mysterious die-offs of sea otters along the California coast that commenced in the 1990s. Pathologists found that the otters were suffering from encephalitis, or brain infection, as evidenced by severe convulsions and death. Most infections were the work of two parasitic protozoans, *Toxoplasma gondii* and *Sarcocystis neurona*. What really puzzled the scientists was, how did those parasites get into sea otters? Although many birds and mammals can harbor *T. Gondii*, only cats are known to shed the parasite's eggs in their droppings. The other parasite, *Sarcocystis neurona*, is a common parasite of the opossum, which lives in the wild along California's coast. It's conceivable that cat-owning Californians might be improperly disposing of litter box contents in sufficient numbers to explain the occurrence of *T. Gondii* in offshore waters. The opossum-to-ocean pathway is not so clear for *S. neurona*. But in both cases, it must be that eggs of the parasites are carried into the ocean in freshwater runoff.

A subsequent study of 233 live and dead sea otters from Santa Barbara to Half Moon Bay provided further evidence on the parasites' travel routes. The researchers found that 76 percent of otters collected near storm drains and other outflows had evidence of *T. gondii* exposure. An individual's susceptibility appears linked to diet. Otters with a fondness for filter-feeding shellfish are the most prone to suffer affliction. The likely explanation is that filter feeders concentrate the protozoans in their tissues, thus offering a toxic snack to foraging otters.

I share this example because it is both fascinating and indicative of the growing challenges that wildlife diseases pose to wildlife and to the people who study them (for more, see this column in Spring 2008 *Fair Chase*). In the case of game species, diseases present a variety of management problems as well as concerns for hunters and others who handle wild game. And of course, serious

public health issues today stem from wildlife diseases—avian influenza, Hanta virus, Lyme disease, and West Nile virus, to name a few. It's no wonder that more and more attention and resources are being focused on issues relating to wildlife diseases.

A key figure is the Wildlife Disease Association (WDA), formed in 1951 by 28 U.S. and Canadian scientists who called themselves the Wildlife Disease Committee. This became the Wildlife Disease Association in 1952 and since has grown into a robust international organization of wildlife professionals, veterinarians, epidemiologists, ecologists, pathologists, and others whose work and interests involve wildlife diseases and related fields. The WDA publishes the *Journal of Wildlife Diseases* and holds an

to minimize the harmful effects of wild animal diseases on Canadian and international societies." This document, the Canadian National Wildlife Disease Strategy (www.cws-scf.ec.gc.ca/cnwds/index_e.cfm) is based on six goals:

1. Prevention of the emergence of new diseases
2. Early detection of new wildlife diseases
3. Rapid response to new wildlife diseases
4. Effective disease management
5. Education and training; and,
6. Communication

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annual conference that attracts diverse disciplines for the exchange of research findings and management information.

While wildlife diseases are being addressed on many fronts in the U.S., I am not aware of efforts to develop a national strategy. North of the border, a strategy was launched in 2008 to engage governments at all levels to "seek

With its genetic studies on deer wrapping up (see this column in Spring 2009 *Fair Chase*), the Boone and Crockett Club selected wildlife diseases as the new theme for the Conservation Research Grants Program. We had good response to an October letter inviting proposals, and the proposals then went to wildlife disease experts for technical evaluation. Future issues of *Fair Chase* will report the progress and findings of the selected projects. As it has since 1948, the Boone and Crockett Club continues its role in growing the knowledge base to support scientific game management and our hunting heritage. ■

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Sea otter floating on its back in the waters of Moss Landing, California.

