

## **Elliott Coues Award, 2008**

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## ELLIOTT COUES AWARD, 2008

P. DEE BOERSMA

P. Dee Boersma holds the Wadsworth Endowed Chair in Conservation Science at the University of Washington, Seattle. Her scientific career began on Fernandina Island in the Galápagos archipelago, where her pioneering research demonstrated the profound effects of the 1972 El Niño event on seabirds far from the coast of South America. The first to demonstrate how these radical changes in ocean productivity dramatically shape the breeding biology of a seabird—the Galapagos Penguin (*Spheniscus mendiculus*)—she went on to show that Magellanic Penguins (*S. magellanicus*) are affected by similar events in the South Atlantic Ocean. Penguins are sentinels of the marine environment because they depend on and respond to variability in regional productivity

patterns. A seminal publication of Boersma's that appeared as the cover article of *Science* in June 1978 highlighted the connection between oceans, climate, and seabird reproduction.

Using natural history as a guide, Boersma's long-term studies have greatly enhanced our view of seabird biology, ecology, and conservation. Her work on Fork-tailed Storm-Petrels (*Oceanodroma furcata*) on the Barren Islands, Alaska, showed their amazing adaptations to a variable marine environment. Adaptations include incubation periods twice as long as expected because of egg neglect, incubation temperature among the lowest for birds, chicks that grow faster with intermittent large feedings than with regular small feedings, and chicks that survive torpor with temperatures down



P. Dee Boersma and a Magellanic Penguin, 5 February 2008, Punta Tombo, Argentina.  
(Photograph by Jeffrey R. Smith.)

to 10°C. Analyzing the stomach contents that Fork-tailed Storm-Petrels eject as a defensive mechanism, she was able to detect pollution events as far as 150 km from the breeding colony.

In the contentious aftermath of the *Exxon Valdez* oil spill in Prince William Sound, Boersma continued work on seabirds in the Barren Islands (the largest seabird colony in the path of the spill). She showed that although seabirds suffered substantial mortality, there was neither a dramatic reduction in colony attendance nor substantial reproductive failure of remaining Common Murres (*Uria aalge*) in the years following the spill. Fork-tailed Storm-Petrels grew more slowly in the 1980s than in the 1990s, which suggests large changes in the ecosystem unrelated to petroleum pollution.

For the past 25 years, Boersma and her students have studied Magellanic Penguins at Punta Tombo, Argentina, the site of the species' largest breeding colony and one of Argentina's foremost ecotourist destinations. With funding from the Wildlife Conservation Society, Boersma's long-term study resulted in a Japanese company forgoing harvesting Magellanic Penguins for gloves, meat, and oil. Her data drew public attention to the serious consequences of dumping of petroleum-contaminated bilge water at sea by oil tankers and resulted in Provincial law shifting tanker lanes 40 km farther from the Argentine coast.

Boersma and her Argentine colleagues and students have established a model of how to integrate science, public interactions, and public policy to further the development of national and international interest in avian conservation. Her papers on penguin biology, behavior, and responses to human disturbance, both in popular and scientific journals, include studies of habitat and nest-site selection, aggression, physiological responses to stress, and effects of oil pollution.

Boersma received her Ph.D. from Ohio State University in 1974 under the direction of Paul Colinvaux and has been at the University of Washington since then. In 2003, she received an honorary D.Sc. from Central Michigan University. As president of the Society of Conservation Biology (SCB) from 1997 to 1999, she led a study that resulted in changes in the U.S. Fish and Wildlife

Service's planning process for recovery of endangered species. During her SCB tenure, she also founded the popular and award-winning magazine *Conservation* and remains its executive editor.

Among her many prestigious awards and honors are the Grace Hopper Award for Outstanding Achievement (2008), the Kellogg National Leadership Fellowship (1982), the University of Washington Distinguished Teaching Award (1993), a Pew Fellowship in Marine Conservation (1997–2000), Matrix Table Women of Achievement (1983), Top 10 Outsiders of the Year Award (1987), and an Aldo Leopold Fellowship (2000). She is an elected fellow of both the American Association for the Advancement of Science (2000) and the AOU (1994). Scientific societies, charitable foundations, and conservation organizations recognize Boersma's leadership skills. She has served on the board of directors or governing boards of the Peregrine Fund, Bullitt Foundation, Ecological Society of America, Society for Conservation Biology, Islandwood, Zero Population Growth, Central Michigan University, and Washington Nature Conservancy.

Boersma is an active researcher of marine birds with a passion for conservation of the natural world. She has played a vital role as model and mentor for colleagues and students in North and South America. Her students continue in her tradition of using science in support of conservation. A class project she initiated resulted in a 2006 book, *Invasive Species of the Pacific Northwest*. It was described in a review as a volume that "enlarges our concept of invasiveness and informs our sense of responsibility." For her outstanding discoveries and long-term studies using seabirds as sentinels of the environment, the AOU is pleased to award P. Dee Boersma the Elliott Coues Award for 2008.

*Award criteria.*—The Elliott Coues Award recognizes extraordinary contributions to ornithological research. There should be no limitation with respect to geographic area, discipline(s) of ornithology, nor the time course over which the work was done. The award consists of a medal and an honorarium provided through the endowed Ralph W. Schreiber Fund of the American Ornithologists' Union.