

SHORT COMMUNICATIONS

USING THE RISK-DISTURBANCE HYPOTHESIS TO ASSESS THE RELATIVE EFFECTS OF HUMAN DISTURBANCE AND PREDATION RISK ON FORAGING AMERICAN OYSTERCATCHERS.

KIMBERLY A. PETERS^{1,3} AND DAVID L. OTIS²

¹South Carolina Cooperative Research Unit, Clemson University, Clemson, SC, 29634

²Iowa Cooperative Fish and Wildlife Research Unit, Iowa State University, 124 Science II, Ames, IA 5001

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³Present address: 160 Winsor Avenue, Watertown, MA 02472-1483. E-mail:

kapeter@clemson.edu

Abstract. The risk-disturbance hypothesis asserts that animals perceive human disturbance similar to nonlethal predation stimuli, and exhibit comparable responses in the form of optimization tradeoffs. However, few studies have examined how natural predation risk factors interact with human-disturbance stimuli to elicit such responses. We observed American Oystercatcher (*Haematopus palliatus*) vigilance behavior from September–December 2002 on the Cape Romain National Wildlife Refuge, South Carolina. A set of models was constructed based on 340 focal-animal samples and models revealed relationships between vigilance behavior, predator density, and boat activity. Oystercatchers increased vigilance in response to aerial predators, particularly late in the season when predator species composition was dominated by Northern Harriers (*Circus cyaneus*). At a broader temporal scale, oystercatchers exhibited the highest vigilance rates during simultaneous peaks in boating disturbance and Osprey (*Pandion haliaetus*) activity. Due to this temporal overlap of stimuli, it is difficult to interpret what may have been driving the observed increased in vigilance. Foraging rates appeared to be primarily driven by habitat and tidal stage indicating that time lost to vigilance did not effectively reduce intake. Taken together, these findings provide some support for the risk-disturbance hypothesis, underscore the sensitivity of disturbance studies to temporal scale, and draw attention to the potential confounding effects of natural predation risk.

Key words: American Oystercatcher, boats, disturbance, *Haematopus palliatus*, risk-disturbance hypothesis, vigilance.