Gulls follow ducks to find dinner

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The Common Pochard is one of three diving duck species involved in a food interaction between gulls and diving ducks on Szczecin Lagoon. Credit: M. Kowalewski

Gulls have learned to follow diving ducks and take the bottom-dwelling mussels that the ducks bring to the surface, a food source that would otherwise be inaccessible to them. Gulls are one of the most adaptable

groups of birds, able to exploit a wide variety of food resources and respond to new opportunities, and a study forthcoming in *The Auk: Ornithological Advances* documents this previously unrecognized behavior in Herring Gulls (*Larus argentatus*) and Mew Gulls (*Larus canus*) on a brackish lagoon on the Germany-Poland border.

Ducks wintering on Szczecin Lagoon dive to the bottom to forage on zebra mussels, bringing clumps of mussels to the surface and regularly losing fragments in the process. To determine whether the gulls on the lagoon take advantage of this or if their presence while the ducks are foraging is only a coincidence, Dominik Marchowski of Szczecin University and his colleagues observed the behavior of the birds between October 2013 and November 2014, watching three species of duck—the Common Pochard (*Aythya ferina*), Tufted Duck (*A. fuligula*), and Greater Scaup (*A. marila*)—through spotting scopes. They recorded how intensely the ducks were foraging and whether any gulls were present, and they also collected gull pellets to confirm what they were eating.

The more ducks in a flock were foraging, the more likely gulls were to be present. Gulls' behavior toward the ducks fell into two categories: They picked up mussel fragments that the ducks lost, a form of one-way symbiosis called commensalism, but also stole fragments from the ducks directly, which is called kleptoparasitism. Both methods allowed the gulls to gain access to food that, being poor divers themselves, they wouldn't have been able to reach otherwise. Pellet analysis confirmed that the diet of the gulls at the lagoon changes dramatically when the ducks show up for the winter, shifting from mostly fish to mostly mussels.

"Gulls were initially on the margins of our research. Initially, their interaction with the ducks seemed obvious, but after analyzing the available literature, it turned out that little is known about it," says Marchowski. "The marginal study became major, and we developed

behavioral studies of birds and an analysis of pellets to confirm the scale of the phenomenon. In our opinion, these studies show that it's worth watching the seemingly obvious behavior of birds more closely, because they can hide interesting interactions."

"This investigation provides rare and convincing evidence that demonstrates how interspecific feeding interactions between Larus gulls and diving ducks influence community structure in the vicinity of the Baltic Sea," adds Dr. Timothy White of NOAA's Biogeography Branch, an expert on sea duck foraging. "It is gratifying to see how meticulous fieldwork, focused on behavioral observations and prey analysis, is continuing to broaden our understanding of community patterns, seabird feeding ecology and social interactions."

More information: "Newly demonstrated foraging method of Herring Gulls and Mew Gulls with benthivorous diving ducks during the nonbreeding period" will be available November 4, 2015 at www.aoucospubs.org/toc/tauk/133/1

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