Black Oystercatchers

The black oystercatcher is a common and conspicuous member of rocky intertidal marine communities and is thought to be important in structuring nearshore ecosystems. Black oystercatchers are completely dependent on nearshore marine habitats for all critical parts of their life cycle including foraging, breeding, chick-rearing, and resting. Because of their complete reliance on nearshore marine habitats, they are also highly susceptible to human disturbance. The black oystercatcher is considered a Management Indicator Species by the Chugach National Forest and a species of concern by the Alaska Shorebird Working Group. It is widely recognized as a species representative of nearshore habitats and therefore particularly amenable to long-term monitoring.

NPS/Nina Chambers

A black oystercatcher on the coast of Katmai National Park and Preserve.

Active Nest Density

Black oystercatcher transects were analyzed at the regional level for nest density (nest/km) and productivity (chicks + eggs/nest) by year in Katmai National Park and Preserve, Kenai Fjords National Park, and western Prince William Sound. Although highly variable in all three regions, active nest density continues to be similar across time with little evidence of a trend (Figure 1).

Nest Productivity

Nest productivity (the number of eggs and chicks per nest) also tends to be highly variable across all regions (Figure 2). Because we only visit a nest once a year in our monitoring program, results reflect productivity at the time of the survey, adding to the variability in the results.

Chick Diet

We collected 17,898 prey items, representing at least 26 different prey species, at 154 black oystercatcher nest sites between 2006 and 2017. Three species of limpets (*Lottia pelta*, *L. persona*, and to a lesser extent *L. scutum*) and the Pacific blue mussel (*Mytilus trossulus*) were the predominant prey items found at nest sites (Figure 3). Together, these four species represented 84, 92, and 97% of prey items found at Katmai National Park and Preserve, Kenai Fjords National Park, and western Prince William Sound, respectively, for all sampling years.

Prey remains collected from nests indicate that limpets (predominantly *Lottia* sp.) and mussels (*Mytilus trossulus*) continue to be the dominant food source for black oystercatchers in all three regions. We observed a decrease in the proportion of mussels in black oystercatcher diet over time, concurrent with changes in mussel availability. Changes in prey abundance and how those changes potentially affect black oystercatcher populations is a question our long-term monitoring data are designed to answer.

Methods

We have been monitoring black oystercatchers in collaboration with the U.S. Geological Survey and other partners annually in Katmai National Park and Preserve since 2006, annually in Kenai Fjords National Park since 2007, and in western Prince William Sound since 2007 (annual sampling started in 2010). Boat-based surveys are conducted in early summer to determine breeding density. Nests are located on foot and examined for presence of chicks or eggs to determine productivity. Prey remains are collected and identified to species to determine chick provisioning habits.
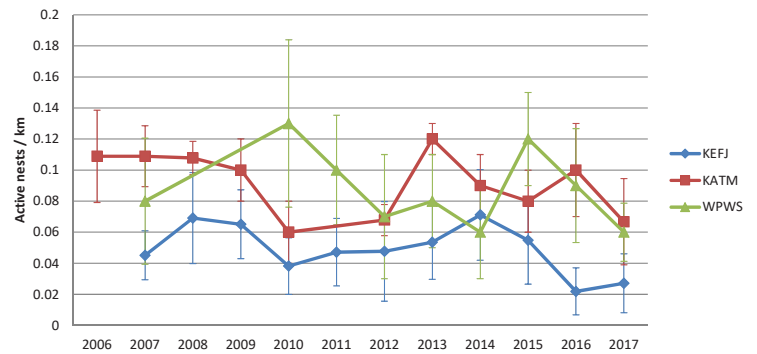

Figure 1. Number of active black oystercatcher nests/km in Katmai National Park and Preserve (KATM), Kenai Fjords National Park (KEFJ), and western Prince William Sound (WPWS) during 2006-2016. Error bars indicate ± 1SE.
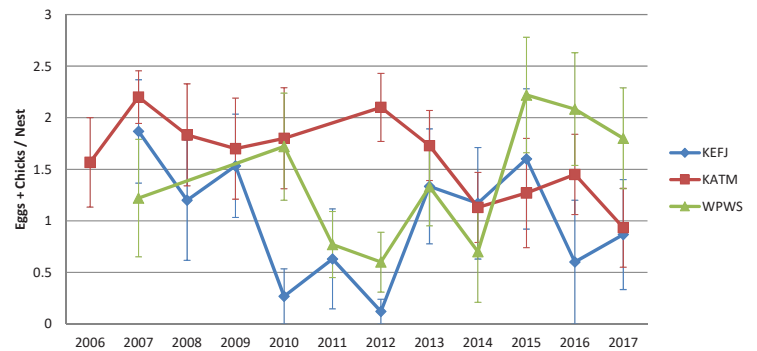

Figure 2. Productivity (eggs + chicks/nest) of active black oystercatcher nests in KATM, KEFJ, and WPWS during 2006-2016. Error bars indicate ± 1SE.
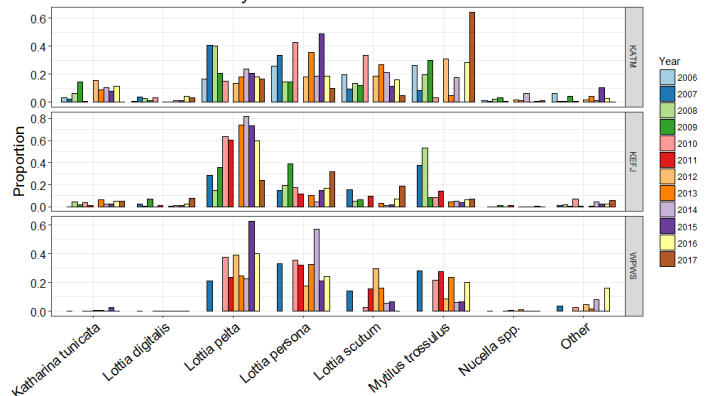

Figure 3. Species composition of prey items collected at active black oystercatcher nests in KATM, KEFJ, and WPWS during 2006-2016. KATM was not sampled in 2011. KEFJ was not sampled in 2006 and 2012. WPWS was not sampled in 2006, 2008, and 2009.