



Alagnak

Aniakchak

Katmai

Kenai Fjords

Lake Clark

Bald Eagle

Resource Brief
October 2011

Importance

Bald eagles (*Haliaeetus leucocephalus*) are keystone predators of seabirds and fish in marine and freshwater ecosystems in SWAN park units. Potential threats to eagle breeding populations include oil spills and exposure to environmental contaminants, increasing human visitation, incidental trapping of wintering birds, altered food supply, and potential climate change effects. Breeding success is also influenced by natural variation in food availability and spring weather. Bald eagles are an indicator of numerous environmental conditions that affect other species. As such, they have been selected as a "vital sign" for monitoring throughout SWAN. The objective is to develop a rigorous survey design for long-term monitoring that will standardize data collection and facilitate comparisons of eagle nest occupancy and productivity between Katmai NPP (KATM), Kenai Fjords NP (KEFJ), and Lake Clark NPP (LACL).



Status and Trends

In 2009, work began in KEFJ to field test an updated protocol for monitoring bald eagle productivity based on USFWS methods. Surveys were reinitiated in KATM in spring 2011 based on the KEFJ methods. LACL has conducted surveys for the past 20 years, and has plans to modify survey methodology in 2012 to facilitate comparison with KATM and KEFJ. In 2011, coastal areas of LACL had lower nest success, but higher mean productivity (42% success) than interior nests (55% success). In KEFJ and KATM nest success was 60% and 62%, respectively. Productivity metrics were indicative of stable populations in KATM and KEFJ, whereas productivity results in LACL indicate populations maybe less stable.

Discussion

Indications are that bald eagle populations within SWAN generally meet minimum productivity metrics required for stability; however, productivity rates exhibit considerable annual variability (Figures 1 & 2). Regular surveys of breeding eagles are critical to monitoring the health of this important indicator species. Efforts should also be put forth to understand factors affecting variations in productivity to better understand productivity declines in the future. Changes in bald eagle nest success over time may indicate that natural or human-caused changes are occurring within ecosystems within SWAN park units.

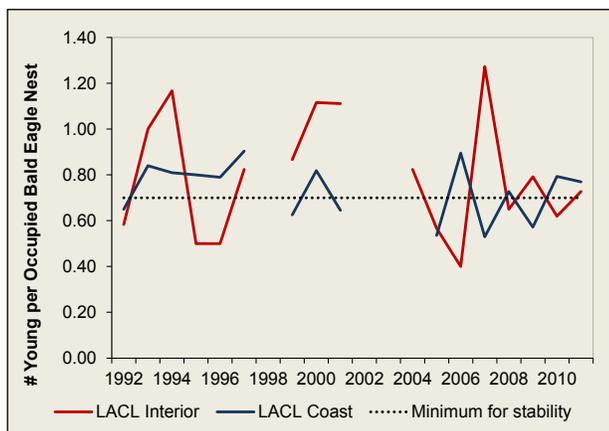


Figure 1. Bald eagle productivity (mean number of young per occupied nest) in coastal and interior LACL from 1992-2011. Breaks in data indicate years in which surveys were not conducted (1998, 2002, and 2003).

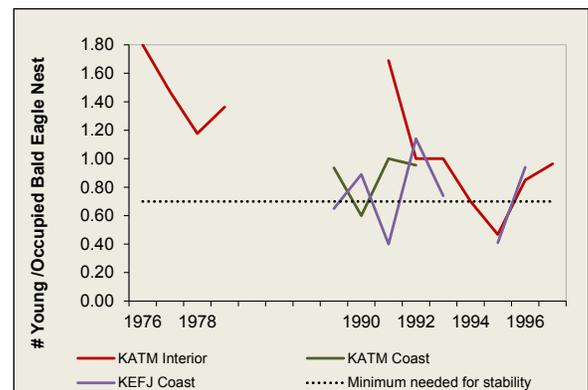


Figure 2. Bald eagle productivity (mean number of young per occupied nest) in KATM and KEFJ. Surveys were conducted in KATM from 1976-1979, 1989-1997 and 1989-1992, and in KEFJ from 1989-1996.

Contacts

Buck Mangipane, NPS-LACL, Buck_Mangipane@nps.gov
 Laura Phillips, NPS-KEFJ, Laura_Phillips@nps.gov
 Sherri Anderson, NPS-KATM, Sherri_Anderson@nps.gov