

FEATURE ARTICLES

COLONY MAPPING: A NEW TECHNIQUE FOR MONITORING CREVICE-NESTING SEABIRDS

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Abstract. Monitoring populations of auklets and other crevice-nesting seabirds remains problematic, although numerous methods have been attempted since the mid-1960s. Anecdotal evidence suggests several large auklet colonies have recently decreased in both abundance and extent, concurrently with vegetation encroachment and succession. Quantifying changes in the geographical extent of auklet colonies may be a useful alternative to monitoring population size directly. We propose a standardized method for colony mapping using a randomized systematic grid survey with two components: a simple presence/absence survey and an auklet evidence density survey. A quantitative auklet evidence density index was derived from the frequency of droppings and feathers. This new method was used to map the colony on St. George Island in the southeastern Bering Sea and results were compared to previous colony mapping efforts. Auklet presence was detected in 62 of 201 grid cells (each grid cell = 2500 m²) by sampling a randomly placed 16 m² plot in each cell; estimated colony area = 155 000 m². The auklet evidence density index varied by two orders of magnitude across the colony and was strongly correlated with means of replicated counts of birds socializing on the colony surface. Quantitatively mapping all large auklet colonies is logistically feasible using this method and would provide an important baseline for monitoring colony status. Regularly monitoring select colonies using this method may be the best means of detecting changes in distribution and population size of crevice-nesting seabirds.

Key words: *Aethia pusilla, Bering Sea, colony mapping, crevice-nesting seabird, Least Auklet, population monitoring.*