County: Island
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PROJECT TITLE: Island County Marine Resource Committee Operations & Projects

TASK NUMBER: 2.4 Pigeon Guillemot Monitoring

DELIVERABLE: 2.3 Copy of Pigeon Guillemot long-range study results as aggregated data

PERIOD COVERED: 2014

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Text and graphics presented on poster “Prey Selection by Pigeon Guillemots on Whidbey Island, Washington” by Frances Wood, Govinda Rosling, Kristen Kreamer, Kelly Zupich, Phyllis Kind and presentation “Pigeon Guillemot: Results for 2014” by Kelly Zupich

Abstract

Pigeon Guillemots are a good indicator species for the health of the Salish Sea because they nest throughout the area, they are found here all year and they are near the top of the food chain. Since 2008, members of Whidbey Audubon Society have monitored the 25 colonies of guillemots nesting on Whidbey Island. During the breeding season, 40-50 volunteers spent one hour per week at each colony observing the birds. They began no later than 9 a.m. and counted the number of adults in the colony, the number of occupied burrows (defined as burrows an adult has entered), the number of burrows with chicks (defined as burrows to which an adult has delivered prey) and the type of prey delivered. In addition, paid interns monitored selected colonies for 5 hours per day each week. They made the same observations as the volunteers as well as documented the activities with photographs and videos. Since they were at the site for a prolonged period, they also estimated the number of burrows that fledged chicks, defined as burrows that have received prey for at least 3 consecutive weeks. Over this six year period the populations appeared to be stable. The mean number of adults was 1038 ± 33, of occupied burrows was 233 ± 16 and of burrows with chicks 168 ± 14. The fledgling success was more variable, from a high of 81% of burrows with chicks to a low of 55% with a mean of 68% ± 11%. Prey were identified as gunnels, sculpins or other (including unidentified prey and other prey such as perch or cod). Over the 6 year observation period, 3543 gunnels, 1720 sculpin and 1031 other prey were delivered. Gunnels were the predominant prey delivered each year. Prey deliveries began in the middle of June, reached a peak in the middle of July and ended by the last week of August.

This six year study supported by the Island County Marine Resources Committee and Whidbey Audubon has established a solid baseline of guillemot breeding success and the prey fed to young. We plan to continue this study yearly into the future.

Methods

Time Period: Late June through the end of prey delivery in late August. Each volunteer observed for one hour weekly. Interns observed for up to 25 hours weekly.

Volunteers: Volunteers arrived at their assigned colony before 8:45 a.m. During their visit, they counted the adult birds, identified occupied burrows and noted prey delivered to those burrows. They also recorded any disturbances such as Bald Eagles, dogs running on the beach or walkers.

Intern: Interns monitored 5 colonies (one each day of the week) in 2009 and 2010. Funding constraints reduced the number of colonies monitored by interns to 3 in 2011 to 2013 and 2 in 2014. Colonies were chosen to represent different habitats on Whidbey Island. Interns arrived at the colony within ½ hour of sunrise and observed for 5 hours. They counted the adult birds, identified occupied burrows and the prey delivered to those burrows. They documented their findings by still and video photography. They also recorded any disturbances.

Burrows: Burrows were designated as occupied if the researcher observed a bird entering a burrow. They were designated as a burrow with at least one chick if prey was delivered to the burrow.

Counts: Adults birds were counted every half hour by the interns and at the arrival and after a half hour by the volunteers. In this report the maximum counted at any one time at each colony is recorded. Counts were low on days with fog or high wind and waves making an average count unreliable.

Aggregated Data

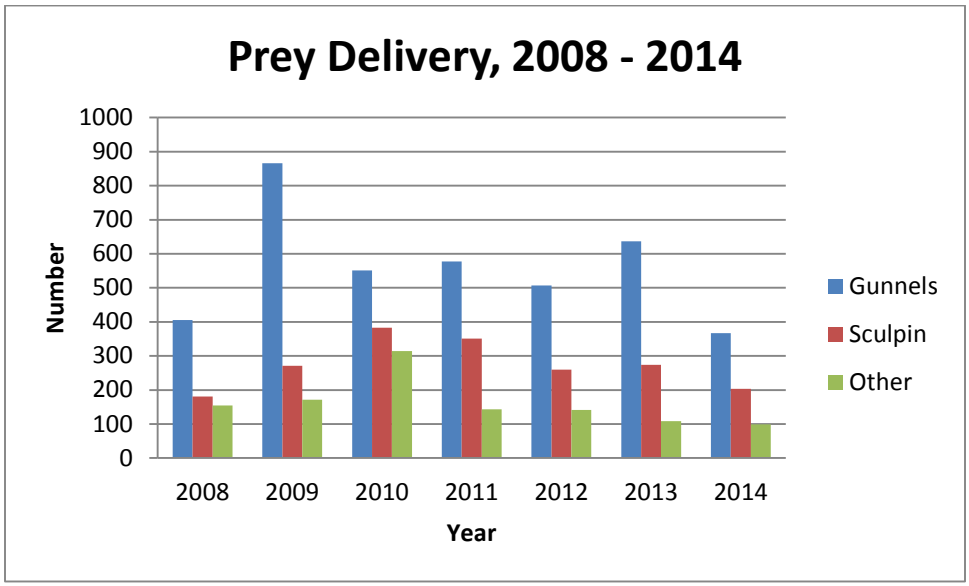

Figure 1. Prey Delivery, 2008-2014. Prey delivered to the chicks was primarily gunnels and sculpins.

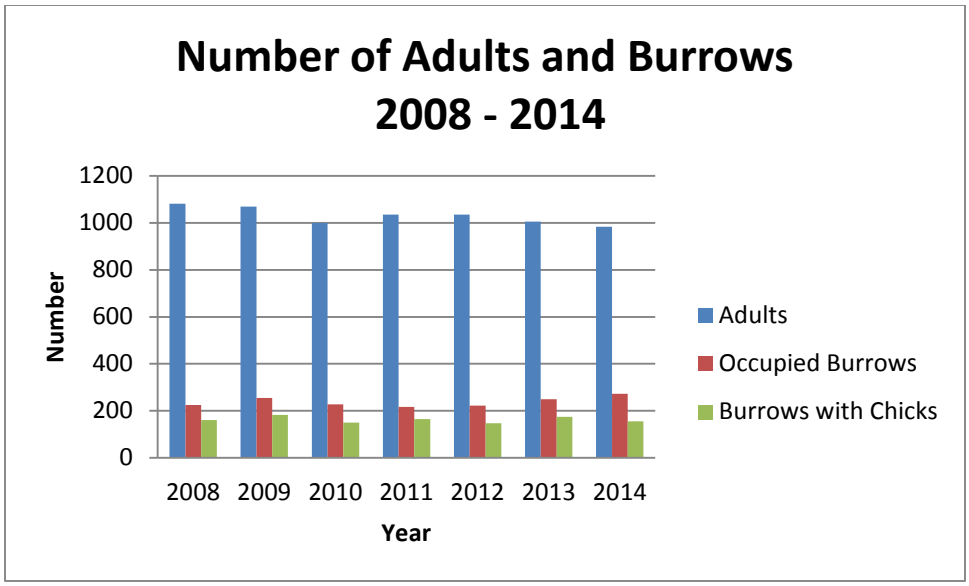

Figure 2. Number of Adults and Burrows 2008 to 2014. This graph shows the most recent seven years of data from the combined Whidbey guillemot colonies. The study has revealed a consistent pattern of overall population, number of active burrows and number of burrows with chicks.

Figure 3. Pigeon Guillemot Colonies on Whidbey Island. For the 11 years of this study the pigeon guillemot colonies on Whidbey Island have remained fairly consistent. We've tracked 24 or 25 colonies (depending on ability to access) and although the individual colony population numbers and active burrows may fluctuate, the overall population remains at around 1,000 birds. The colonies range in size from under 10 birds to over 100 birds and are distributed around Whidbey Island with more colonies on the west side of the island.