

Pigeon Guillemot Census

Pigeon Guillemot Census in Skagit County

2006 & 2007

WSU Skagit/Snohomish Beach Watchers



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Introduction

In 2006, volunteers with the WSU Skagit/Snohomish Beach Watchers Program initiated a census of pigeon guillemots in Skagit County. The purpose of this study is to better understand what is happening to the pigeon guillemot population in this county. The idea to initiate this research came from the minutes of a meeting in 2005 where the Sea Doc Society brought together 34 scientists and resource managers to review the status of the sometimes drastic decline in sea bird numbers (Gaydos 2005). They pointed out the need for increased research and public education.

Pigeon guillemots belong to a group of birds called alcids that, as a group, use their wings for swimming underwater. Guillemots are small black birds with a pigeon-shaped head, white wing patches, and bright red feet and legs. They are the only marine bird species that breeds in Skagit County. Guillemots nest in cavities in dirt cliffs in many areas around Puget Sound including the south shore of Guemes Island; but in Skagit County many more of these birds nest in crevasses in rocky cliffs and between rocks on rocky shores. They are an ideal bird to count because of their habit of gathering at the nesting sites starting in early May. In the early morning hours, they are found either chasing each other or roosting near their nesting holes. Later in the day, they leave the colony nesting site and are found foraging, sometimes at great distance from the colony. Any attempt to count them at that time would lead to an inaccurate count.

Between the years of 1992 and 1999, biologists at the Washington State Department of Fish and Wildlife (WDFW) conducted aerial surveys of pigeon guillemots as part of the Puget Sound Ambient Monitoring Program (PSAMP). This study indicated a steady or slightly declining population of pigeon guillemots (Nysewander et al. 2001). Then, in 2000 to 2002, the WDFW conducted boat surveys of pigeon guillemots, developed a new protocol for the study, and discovered and located many new colonies (Evenson et al. 2003).

In 2003, a group from Western Washington University (Bower 2005) conducted a census of marine birds in Northern Puget Sound. They repeated some of the aspects of the 1978-79 Marine Ecosystems Analysis Puget Sound Project (MESA), a work that is considered the baseline study for the population of marine birds (Wahl et al. 1981). The WWU study showed that many of the marine bird numbers were declining drastically while the pigeon guillemot population increased 124% (Donovan et al. 2004).

This new Beach Watcher study will provide both research data and a certain amount of public education since all the participants are local volunteers eager to share their experiences with their neighbors. The study will show the population trend of pigeon guillemots over a five-year span in Skagit County using the protocol developed by the WDFW. Our study continues to use volunteers both as bird counters and boat drivers. Additional sponsors are the Skagit Marine Resources Committee and the Skagit Audubon Society. This research was funded in part by a grant from the Skagit MRC.

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Methods

This census follows the protocol developed by the WDFW. Joe Evenson, a biologist who studies pigeon guillemots, provided us with worksheets for collecting data that include charts with the waypoints for pigeon guillemot colonies located by WDFW (Appendix #1). In May, the guillemots gather together at colony nesting sites and begin pair bonding. The protocol requires that counting occur from 15 minutes after sunrise until three hours later and with seas at \leq Beaufort 3. A difficulty in Skagit County is that most of the colony sites are on rocky islands with steep cliffs accessible only by boat and not by foot as in Island County. Some 40 sites were identified by WDFW and we used their GPS coordinates to locate the colonies. Each site was visited once a week for three weeks starting the first week in May. In several instances, the counters had to return in the 4th week because of high wind or fog prohibiting an accurate count in one of the first three weeks. Some of the WDFW sites were vacant the first year. Observers were on the lookout for new colonies. It was not possible to count all the sites in the county. The farthest northern sites were too far for us to reach in the three-hour time limit and Homeland Security would not allow us access to the refinery docks in 2006. In 2007, one count was made at each of the two refinery docks. Volunteers conducted all the work.

Summary of results

- 40 sites visited/year - 8 were vacated - 32 active colonies
- Each site was visited 3 times for a 2 year total of 240 visits. The highest count of the 3 was used as the colony size.
- Total number of pigeon guillemots in the study area was 1890 in 2006 and 1939 in 2007.

Hot spots in Skagit County:

- 300+ birds in the Deception Pass Area
- 150 at Burrows, Allen, & Williamson Rocks
- 200 + on east side of Guemes - PETA Rocks & Jack Island
- 450 near Cone Islands - area between Cypress, Guemes, & Sinclair Islands
- 216 at Strawberry Island near Cypress Island

Miscellaneous Information

- Estimated 75 hours of boat time
- 2 new colonies were located
- Search for new colonies included circumnavigation of Cypress, Guemes, Sinclair, Burrows, & Allen Islands at least on two separate weeks/year
- 20 volunteers participated
- 9 boats were used
- Two years of data have been collected
- Cost was < \$200

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Discussion

Table 1 shows the number of birds counted by the WDFW in 2000, 2001, and 2002 (Evenson et al 2007) with our counts in 2006 and 2007. To discover the location of a particular colony on the map, find the last three numbers of the colony on Table 1 and match them with the numbers on the map. The years 2006 and 2007 show fewer birds counted. The decline shown is not great if compared with the 2001 count, but is 396 if compared with the 2002 count, a 17% drop. The next three years' counts will be important in determining if a serious decline is taking place. However, what is obvious is that the large increase of 124% reported by Bower's group at WWU (Donovan et al. 2004) has not taken place in our study area. It is important to note that the other studies covered a much larger part of Northern Puget Sound, whereas our study was limited to Skagit County. Pigeon guillemots abandon colonies and start new ones. They fly over county lines. They are difficult to count when in large numbers. We think it is important to continue our yearly count using the WDFW method of counting from boats at dawn.

The difficulty of making comparisons can be understood by examining Table 1. In 2000, no count was made at the Sinclair Island colony, but it was still in the range of the next two years' count. In 2006, we did not count the March's Point refinery piers by boat. However, a land count was made of the Tesoro Pier and a binocular count was made of the Shell Pier. This at least avoids leaving that colony blank, and it tends to even out the two years.

In summary, our data indicates a small drop in the pigeon guillemot population in Skagit County in 2006 and 2007 as compared to the WDFW data from 2000-2002. Whether this is significant or not will be determined in the next three years of this study. This research could be used as a model of citizen science. It is an efficient way of gathering data both effectively and inexpensively.

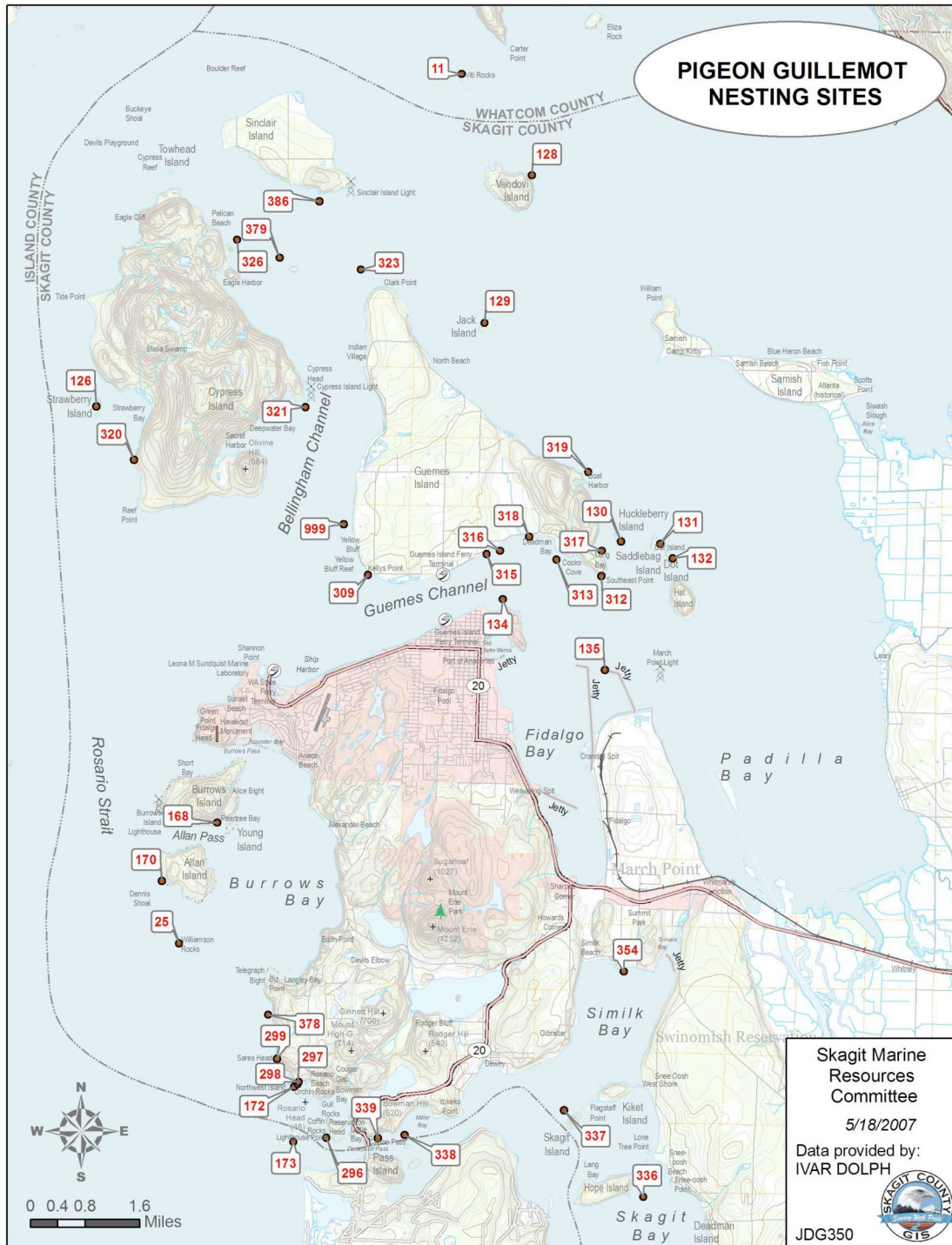


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	LOCATION	May-00	May-01	May-02	May-06	May-07
156011	Viti Rocks	28	25	46	31	28
156025	Williamson Rocks	152	186	158	91	121
156379	Cone Island Complex (N,S,E)	494	331	626	407	444
156126	Strawberry Island	153	242	286	180	154
156128	Vendovi Island	46	27	44	31	47
156129	Jack Island	192	165	114	155	192
156130	Huckleberry Island	1	2	1	0	0
156131	Saddlebag Island	4	2	11	0	0
156132	Dot Island	14	8	28	4	11
156134	Anacortes, Waterfront	29	11	14	14	14
156135	March Point, Piers	68	63	82	52+	89
156168	Burrows Island	58	42	0	31	23
156170	Allen Island	12	10	4	10	6
156172	Northwest Island	0	0	2	0	0
156173	Deception Island	6	18	18	11	13
156296	Lighthouse Pt. E. of Dcptn. Is	15	8	10	8	9
156297	Rosario Beach	26	2	0	35	24
156298	Cliff NE of NW Island	1	22	24	0	2
156299	NW Island to Sayres Head	0	0	2	15	55
156378	South of Biz Point #1,2,3	56	58	54	78	9
156309	Yellow Bluff, Guemes Is.	25	14	34	17	13
156312	SE Pt. Guemes Is.	19	27	23	20	24
156313	S. Guemes Is. #2	1	2	6	0	0
156315	S Guemes, Central Shore	117	59	42	41	8
156316	S. Guemes Is. #3	83	86	83	50	35
156317	Eastern Guemes Is. S.	0	0	4	0	0
156318	S Guemes, E of 153	15	24	23	9	70
156319	Guemes Is. PETA Cliffs	51	51	66	46	26
156320	Cypress Is. S. of Strawberry I	33	33	35	40	38
156321	Cypress Is. S of Cypress Head	10	7	2	8	8
156323	Clark Pt. Guemes	0	1	2	0	1
156326	Cypress Is. near Cone Is.	31	20	5	44	13
156336	West end Hope Island	38	24	4	13	11
156337	West Skagit Island	18	24	22	50	55
156338	East Island, E. Deception Pass	70	69	72	93	79
156339	N. Channel, Deception Pass	129	232	220	221	253
156353	Anacortes, W. of 156134	4	4	6	0	0
156354	E. of Similk Beach	42	37	0	3	8
156386	Sinclair Island, South Side		130	113	69	48
156998	New Colony, Cap Sante				3	3
156999	New Colony, N of Yellow Bluff				10	5
	Total # of pigeon guillemots	2041	2066	2286	1890	1939

Table 1. Skagit Pigeon Guillemot Census 2000,2001,2002,2006,2007

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Map 1. Skagit Pigeon Guillemot Colony Locations Match numbers with the last three numbers on Table 1 to find the number of birds at each site.

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Acknowledgements

This project was completed by the following volunteers who braved meeting at sunrise to spend many hours looking for pigeon guillemots from small boats. Without their energy and enthusiasm this project would not flourish. Apologies to anyone left off the list.

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Appendix 1. Sample data sheet provided by Joe Evenson of WDFW.

WASHINGTON PIGEON GUILLEMOT NESTING COLONY SURVEY FORM

Date		Crew			
Start Time		End Time		Location #	
Survey #		Latitude		Longitude	
Environmental Conditions					
Visib. (NM)	Bft.	% Cld. Cov.	Precip.	Count Qual.	% Cnt. Cov.
		%			
Count		Count		Count	
Location		Location		Location	
Count		Count		Count	
Location		Location		Location	
Count		Count		Count	
Location		Location		TOTAL	
Habitat: Rocks, Rock Cliff					
% of habitat shored by bulkheads		0% Bulkhead Type: None			
# Bald Eagles			# Peregrine Falcons		
Notes:					

Return Data form to: Joseph R. Evenson, WDFW, PSAMP, 600 Capitol Way North, Olympia, WA 98501

