

Ed Bowlby and Jeff Ward – co-Leads for the 2018 Clallam County Pigeon Guillemot Monitoring Project

Clallam County Marine Resources Committee



Pigeon guillemots (*Cepphus columba*) have been used as an indicator species of nearshore ecosystem health in the Salish Sea for many years (Puget Sound Partnership www.psp.wa.gov/vitalsigns/birds.php). This monitoring effort was initiated on Whidbey Island back in 2009, expanded to South Puget Sound in 2013, and a pilot project started in Clallam County in 2015. All of these regional monitoring programs have continued as annual efforts.

In 2018 over 50 people responded that they were interested in being citizen scientist volunteers for the pigeon guillemot monitoring project in Clallam County. This was through the combined recruitment campaigns of the primary co-sponsors (Clallam Marine Resources Committee and Olympic Peninsula Audubon Society) via their website announcements and from recruitment rosters at outreach events. Thirty-one people, both new and returning volunteers, were able to make the half-day training session on May 31 at the Dungeness River Audubon Center (Table 1). Govinda Rosling of the Guillemot Research Group was the primary trainer (Figure 1) and Ed Bowlby (Clallam MRC) coordinated and facilitated the event. A brief site visit to the Port Williams' colony occurred immediately afterwards (Figure 2).

Volunteers began monitoring colonies on June 11 and the last sessions ended on September 4. Seven colony sites were monitored in 2018 (Figure 3). Two were new sites (Mussel Beach and John Wayne Marina) and extra teams were added to the largest and most complex colony at Port Williams to expand its coverage.



Figure 1. Govinda Rosling training volunteers at the Dungeness River Audubon Center.

Table 1. Pigeon Guillemot Volunteers 2018

First Name	Last Name	E-mail Address	Phone	At Training
Ed	Bowlby	edbowlby2@gmail.com	683-5611	Y
Mary Sue	Brancato	msbrancato@gmail.com	683-5611	Y
Coleman	Byrnes	swampdog0001@gmail.com		
Alan	Clark	alankayaks@q.com	360-912-2081	Y
Gail	Clark	kayakgbc@gmail.com	509-531-3296	
Debbie	Clymer	dclymer100@gmail.com	683-8528	Y
Kathy	Cooper	katcooplend@gmail.com	683-4849	Y
Carolyn	Depperschmidt	deppercd@gmail.com	208-709-3612	Y
Jack	Depperschmidt	depperjd@gmail.com	208-313-3424	
Chelsea	Drum	cgilldrum@gmail.com		
Don	Dryden	don.dryden@gmail.com	425-869-0134	
Ken	Dvorak	kenfineart1@gmail.com	683-0172	Y
Susan	Dvorak	kenfineart1@gmail.com	683-0172	Y
Sara	Farinelli	sfarinelli@yahoo.com	460-5774	Y
Carol	Fleming	norafleming99@gmail.com		
Rose	Forbes	squimrose@gmail.com	360-582-9777	Y
Stacey	Fradkin	fstacey3@msn.com		
Bruce	Fryxell	bfryxell@wavecable.com		Y
Marie	Grad	mlgrad53@gmail.com	360-620-4035	Y
Clare	Hatler	hatlerclare444@gmail.com	360-582-6451	Y
Samuel	Hornack	Samdegbomack@gmail.com		
Paul	Howard	pjhoward48@yahoo.com	460-4948	Y
Carrol	Hull	cahull@msn.com		Y
Carol	Jacobs	cedjacobs56@gmail.com	256-603-8846	Y
Naomi	Johnson	naomi_2001@icloud.com	360-912-3262	Y
Richard	Klawitter	klawitterrichard@yahoo.com	457-5760	Y
Kit	Kleinschmidt	kitkleinschmidt@gmail.com		Y

Liz	Lamereaux	jawarskiliz5@gmail.com		
Saiz	Madison	08madison@gmail.com	360-808-1736	
Peggy	McClure	pmmccclure@outlook.com		
Mike	McComb	garagesailor@live.com		
Lori	Moilanen	lori_moilanen@wavecable.com	651-245-0262	Y
Sue	Nattinger	snattinger@hotmail.com	360-406-0648	Y
Marjorie	Palmer	grblheron@wavecable.com	417-9574	
Heidi	Pedersen	pedersen.heidi@gmail.com		
Bob	Phreaner	phreaner@aol.com		
Debbie	Ritter	debbier@eclipse.net		
Rick	Rodlend	bikehike48@gmail.com	683-4849	
Madison	Saiz	08madison@gmail.com	360-808-1736	Y
Nina	Sarmiento	nsarmie2@gmail.com	914-837-8772	
Carl	Siver	cgsiver@outlook.com	253-486-4929	
Dan	Stahler	dan_stahler@yahoo.com		Y
Barb	Vanderwerf	bnb@olypen.com	683-2206	Y
Adrian	Villaruz	rotorcrash@msn.com		Y
Bob	Vreeland	bvreeland@tfon.com	971-336-2027	Y
Jeff	Ward	jaward@olypen.com	461-9604	Y
Kari	Williamson	skagitlight@netscape.net	360-775-4757	Y
Iris	Winslow	wordywinslow@gmail.com	360-808-9220	Y
Carol	Young	carolyoung@pacbell.net	683-4266	Y
Sonia	Zachman	sezrocks40@yahoo.com	253-820-6710	Y



Figure 2. Volunteer site visit to Port Williams.

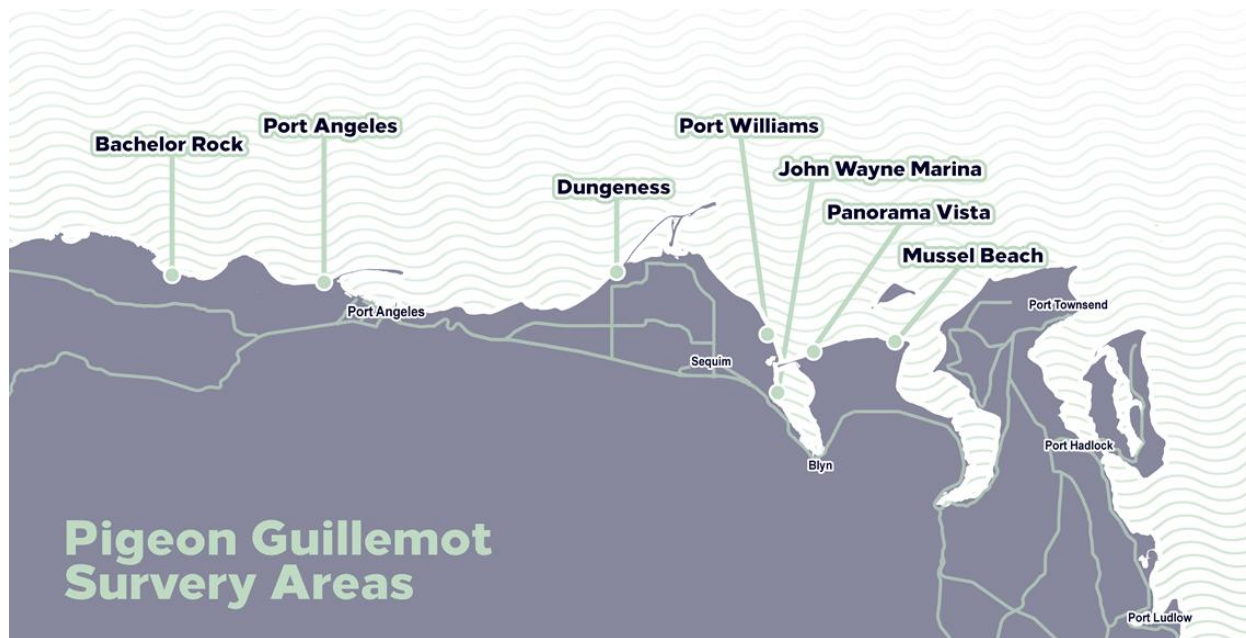


Figure 3. Pigeon guillemot colony monitoring sites in 2018.

Standardized protocols were followed (Appendix A) that included slight revisions from previous years to better accommodate population modeling by University of Washington PhD candidate Amanda Warlick.

This regional collaborative effort included not only volunteer monitors in Clallam County, but also Whidbey Island and South Puget Sound. Clallam field data sheets are shown in Appendix A.

Clallam County's citizen scientist volunteer hours in 2018 totaled 502.55 hours. Also a student intern, Christopher Reis (Figure 4) assisted in coordinating volunteer effort and performing online data entry into the regional database, which can be accessed at: <http://pigeonguillemotdata.org/clallam/2018/> Prey deliveries for colonies in Clallam revealed that 52% were gunnels/pricklebacks (Figure 5), 26% were sculpins, and 17% were in other categories.



Figure 4. MRC 2018 Christopher Reis at Port Williams' pigeon guillemot colony.



Figure 5. Pigeon guillemots with gunnels/pricklebacks before delivering them to burrow chicks.

Acknowledgements. We wish to thank all of our dedicated volunteers for their monitoring efforts in 2018. Also to recognize Christopher Reis for his internship coordination and data entry, and continued collaboration of Govinda Rosling and Frances Wood of the Guillemot Research Group. We also appreciate the population modeling efforts by Amanda Warlick of the University of Washington. Supplemental funding from the Northwest Straits Commission, Olympic Peninsula Audubon Society, and Washington Audubon helped to make this another successful monitoring year.

Appendix A

Pigeon Guillemot Study -- Procedures for 2018 season

1. The procedures and field card have been revised for 2018 to reflect changes in procedures. Please discard any old field cards.
2. Safety is our first priority. If you can't go with a partner, take a cell phone and/or be sure someone knows you are on the beach and when you're planning to return.
3. It is expected that for each field card record you will sit quietly at your study area for exactly **one hour** and observe the activity. Arrive early and let the birds settle into normal behavior before you begin the survey. All volunteers at one colony should begin at the same time.
4. The earlier you can get to your colony the better chance of seeing more activity. You may begin your survey no later than 8:45 am. We need a total count of birds before 9:00.
5. We ask that you visit your site at least **ten** times this season. One visit should fall during each week beginning with the week of June 11th. Continue visiting your site for 10 weeks. After the 10 weeks, if there are two consecutive weeks with no burrow activity you may stop the survey.
6. The focus of this study is to determine five things:
 - a. The maximum birds present before 9:00 am.
 - b. Three point-in-time counts of the birds: beginning, middle, and end of survey.
 - c. The number of active burrows.
 - d. The type of fish delivered.
 - e. Colony wide response to a known or unknown event. (Disturbances.)
7. First locate and identify the active/occupied burrows. Make a drawing or take a photo so that you can locate, number, and remember the burrows. Make a duplicate drawing or photo and send it to Jeff, so that we can more easily fill in substitutes and so that we can understand your colony more completely.
8. A burrow is considered "active/occupied" when: You see a bird disappear into or emerge from the burrow. (A "ledge sit" is not valid, nor is fresh guano.)
9. For each active/occupied burrow, tally the behaviors noted. These will include **No Prey** (a burrow visit without prey), fish deliveries of **Gunnel**, **Sculpin**, or **Other/Unknown**. Note time for each activity.
10. **Guest Policy:** The survey coordinators carefully assign volunteers to colonies taking into account the number of volunteers needed to adequately cover the burrows. We expect all volunteers to attend volunteer trainings so that the quality of our data remains high. A guest may accompany you on the survey provided that he/she remains quiet and does not interfere with the birds' activity. Guests may not serve as data collectors.
11. **Pet Policy:** No pets may accompany you on the beach.
12. **Make a decision.** Question marks or number ranges are difficult to interpret.
13. Either before or after your survey walk under the burrows and look for dead chicks, egg shells, rejected prey, etc. We encourage you to mark down any unusual behavior or anything that seems noteworthy.
14. **If for any reason you must miss a week, or your plans change and you are not able to complete the study, contact the co-ordinator assigned to your site immediately. For a planned vacation, please let your site contact know at least one week ahead of your absence so that a substitute can go out with you and shadow your survey to learn about the colony.**

Directions for filling out field card:

Section 1 -- Colony Wide Activity

Fill in the **Colony Name**, **Survey Date**, **Team Lead** and e-mail, **Names of Observers**.

Total volunteer time: This includes one hour of survey, settling in time prior to the survey, travel time for all volunteers. Also include data entry time.

Survey Start time: Must be prior to 8:45.

Tide in feet at start of survey: Consult tide charts or apps.

Incoming or Outgoing: Circle appropriate answer.

PIGU Counts:

A) **Highest Count before 9:00:** As you conduct the survey frequently count the birds *associated with your colony*. Include birds seen on the water, beach and bluff. Record the largest count noted at anytime during the survey, as long as it is before 9:00 am.

B) **Count at beginning:** After the birds have settled and you begin the survey take a point count of birds seen.

C) **Count in middle:** 30 minutes into the survey take and record a second point count.

D) **Count at end:** At the one hour mark take and record final point count.

Section 2 -- Burrow Activity

Record **Burrow Identifier** for each burrow where activity is observed.

For a visit to the burrow with **no prey** mark the time in the box. Subsequent burrow visit times can be added separated by a comma.

Most fish delivered will be either **gunnels** or **sculpins**. Mark the times of each fish delivery in the appropriate box. If you can't identify the prey, record the time in the box marked **Other/**

Unknown. (Identify the prey if possible. For example, if you see a perch, cod or shrimp mark that under "Other/Unknown" along with the time.)

Section 3 -- Response to Disturbances

Occasionally disturbances will occur that cause the birds to fly away from the beach, vacate the burrows, or retreat offshore and away from the colony.

Record the time of the disturbance next to the listed cause. **Monitor the birds' colony wide reaction** to the disturbance and select the approximate length of reaction. **NO** for no or minimal disturbance 0-1 minutes. **Small** for 2-10 minutes. **Medium** for 10-30 minutes, **Large** for 30 minutes or longer. If the disturbance extends to the end of the survey, mark "end".

Record survey data in web site: www.pigeonguillemotdata.org. shortly after survey.

Please snail mail field cards within three weeks of your survey. Send to:
Jeff Ward P.O. Box 138, Sequim, WA 98382

Thank you for your time and effort given to this study. It is deeply appreciated.

2018 Pigeon Guillemot Survey Data Sheet Clallam County

Colony Site _____	Survey Date _____	Start Time _____ <small>Survey time 1 hr.</small>
Team lead name and email: _____	Tide in feet @ start of survey _____	Incoming / Outgoing _____
Observers: _____	Total Volunteer Time ** _____	
PIGU Counts	<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="border: 1px solid black; width: 100px; height: 50px; display: flex; align-items: center; justify-content: center;"> <p style="font-size: 0.8em;">Highest Count Before 9:00</p> </div> <div style="text-align: center;"> <p style="font-size: 0.8em;">Beginning Survey</p> </div> <div style="text-align: center;"> <p style="font-size: 0.8em;">Middle Survey</p> </div> <div style="text-align: center;"> <p style="font-size: 0.8em;">End Survey</p> </div> </div> <p style="font-size: 0.8em; margin-top: 5px;">(**1.0 hour survey + round trip travel time to site + settling in time + data entry+ website entry from lead)</p>	

BURROW ACTIVITY: Times of visits w/or w/o prey

	Burrow ID: _____	Burrow ID: _____	Burrow ID: _____
No Prey (Visit to Burrow)		No Prey (Visit to Burrow)	
Gunnel/ Prickleback		Gunnel/ Prickleback	
Sculpin		Sculpin	
Other/ Unknown		Other/ Unknown	

**Other Notes
Re. These
Burrows**

	Burrow ID: _____	Burrow ID: _____	Burrow ID: _____
No Prey (Visit to Burrow)		No Prey (Visit to Burrow)	
Gunnel/ Prickleback		Gunnel/ Prickleback	
Sculpin		Sculpin	
Other/ Unknown		Other/ Unknown	

**Other Notes
Re. These
Burrows**

BURROW ACTIVITY: Times of visits w/or w/o prey

Burrow ID	Burrow ID	Burrow ID
No Prey (Visit to Burrow)	No Prey (Visit to Burrow)	No Prey (Visit to Burrow)
Gunnel/ Prickleback	Gunnel/ Prickleback	Gunnel/ Prickleback
Sculpin	Sculpin	Sculpin
Other/ Unknown	Other/ Unknown	Other/ Unknown
Other Notes Re. These Burrows		

Response to Disturbances: Select event, record time and response code to disturbance

Event	No(or minimal)response 0-1 minute; Small = 2-10 minutes; Medium =10-30 minutes; Large = 30+ min.
Eagle	
Beach Walker	
Walker w/ Dog	
Motorized Boat	
Non- Motorized	
Unknown	
Other Cause	

Any additional comments about this colony