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**Ed Bowlby and Jeff Ward – co-Leads for the 2019 Clallam County Pigeon Guillemot  
Monitoring Project**

**Clallam County Marine Resources Committee**



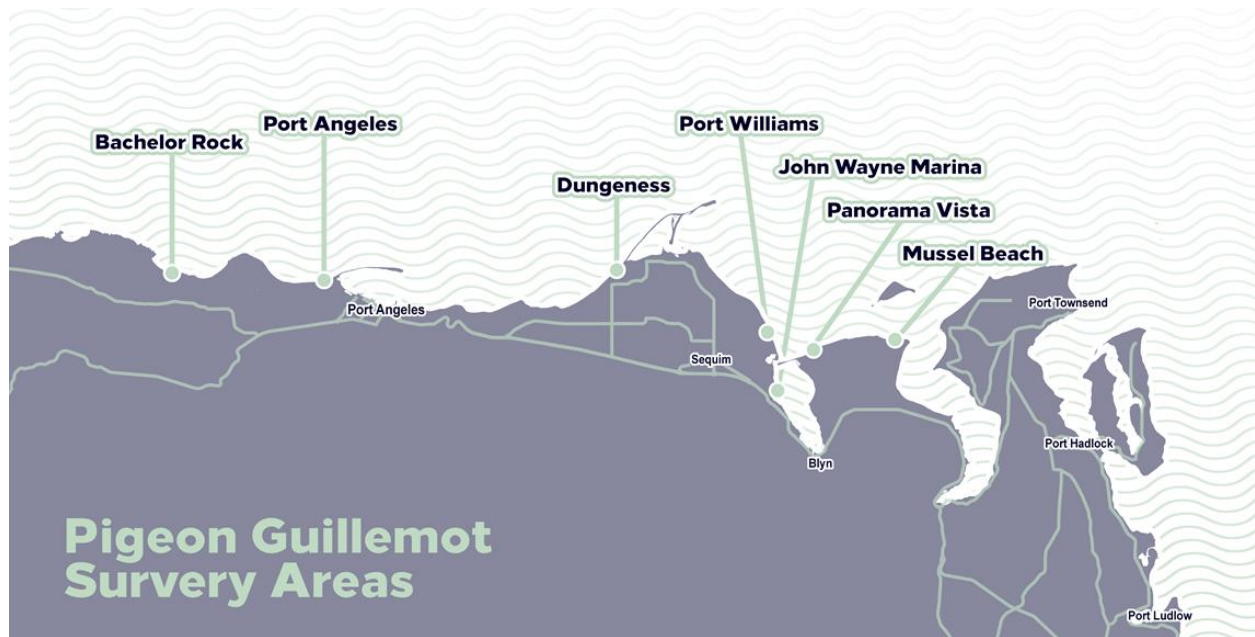
Pigeon guillemots (*Cepphus columba*) have been used as an indicator species of nearshore ecosystem health in the Salish Sea for many years (Puget Sound Partnership [www.psp.wa.gov/vitalsigns/birds.php](http://www.psp.wa.gov/vitalsigns/birds.php)). This monitoring effort was initiated on Whidbey Island in 2009, expanded to South Puget Sound in 2013, and a pilot project started in Clallam County in 2015. Beginning in 2016, Clallam County Marine Resources Committee (CCMRC) adopted this effort as one of its citizen scientist monitoring projects. All of these regional monitoring programs have continued as annual efforts and in 2019 it has expanded to Kitsap. This regional program is part of the Puget Sound Ecosystem Monitoring Program's Marine Birds Workgroup.

In 2019 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 CCMRC and Olympic Peninsula Audubon Society via their website announcements and from recruitment rosters at outreach events. Twenty-one people, both new and returning volunteers, were able to make the half-day classroom training session on May 9 at the Dungeness River Audubon Center (Table 1). Jeff Ward and Ed Bowlby (both representing CCMRC) were the co-trainers for the 2019 training, which included the history of the program and explanations on the monitoring protocols and field data forms. A refresher site visit for volunteers at the Port Williams' colony occurred on June 5 due its beach length requiring 6 monitoring teams.

Volunteer teams began monitoring colonies on June 10. Six geographical areas were monitored in 2019 (Figure 1). Port Angeles was not covered in 2019 due to insufficient number of volunteers and Port Williams, due its length and complexity required 6 teams. The last site requiring monitoring ended on September 10.

**Table 1.** Pigeon Guillemot Volunteers 2019

<b>First Name</b>	<b>Last Name</b>	<b>E-mail Address</b>	<b>Phone</b>	<b>At Training</b>
Ed	Bowlby	edbowlby2@gmail.com	683-5611	Y
Mary Sue	Brancato	msbrancato@gmail.com	683-5611	Y
Coleman	Byrnes	swampdog0001@gmail.com		Y
Gail	Clark	kayakgbc@gmail.com	509-531-3296	
Kathy	Cooper	katcooplend@gmail.com	683-4849	Y
Carolyn	Depperschmidt	<a href="mailto:deppercd@gmail.com">deppercd@gmail.com</a>	208-709-3612	Y
Jack	Depperschmidt	<a href="mailto:depperjd@gmail.com">depperjd@gmail.com</a>	208-313-3424	
Susan	Dvorak	kenfineart1@gmail.com	683-0172	Y
Sara	Farinelli	sfarinelli@yahoo.com	460-5774	Y
Stacey	Fradkin	fstacey3@msn.com		
Marie	Grad	<a href="mailto:mlgrad53@gmail.com">mlgrad53@gmail.com</a>	360-620-4035	Y
Clare	Hatler	hatlerclare444@gmail.com	360-582-6451	Y
Paul	Howard	pjhoward48@yahoo.com	460-4948	Y
Sue	Nattinger	snattinger@hotmail.com	360-406-0648	Y
Marjorie	Palmer	grblheron@wavecable.com	417-9574	
Bob	Phreaner	phreaner@aol.com		Y
Rick	Rodlend	bikehike48@gmail.com	683-4849	Y
Madison	Saiz	08madison@gmail.com	360-808-1736	Y
Dan	Stahler	dan_stahler@yahoo.com		Y
Barb	Vanderwerf	<a href="mailto:bnb@olypen.com">bnb@olypen.com</a>	683-2206	Y
Adrian	Villaruz	rotorcrash@msn.com		Y
Jeff	Ward	jaward@olypen.com	461-9604	Y
Carol	Young	<a href="mailto:carolyoung@pacbell.net">carolyoung@pacbell.net</a>	683-4266	Y
Sonia	Zachman	sezrocks40@yahoo.com	253-820-6710	Y
Miguel	Reabold	miguelreabold@yahoo.com		



**Figure 1.** Pigeon guillemot colony monitoring sites for Clallam County in 2019.

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, South Puget Sound and new sites in Kitsap. Clallam field data sheets are shown in Appendix A. The monitoring datasheets is provided in a separate file.

A student intern, Shae Pozarzycki assisted in performing online data entry into the regional database, which can be accessed at: <http://pigeonguillemotdata.org/clallam/2019/> Prey deliveries for colonies in Clallam revealed the majority were gunnels/pricklebacks (Figure 2), followed by sculpins, and the remainder were in other categories.



**Figure 2.** Pigeon guillemots with gunnels/pricklebacks before delivering them to burrow chicks.

**Acknowledgements.** We wish to thank all of our dedicated volunteers for their citizen science monitoring efforts in 2019, to our co-sponsor, Olympic Peninsula Audubon Society and the continued collaboration of Frances Wood of the Guillemot Research Group. Also to recognize Shae Pozarzycki for his internship and data entry. We also appreciate the population modeling efforts by Amanda Warlick of the University of Washington. Supplemental funding from the Northwest Straits Commission 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 11<sup>th</sup>. 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](http://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

<b>Colony Site</b> _____	<b>Survey Date</b> _____	<b>Start Time</b> _____ Survey time 1 hr.
<b>Team lead name and email:</b> _____	<b>Tide in feet @ start of survey</b> _____	
		<b>Incoming / Outgoing</b> _____
<b>Observers:</b> _____	<b>Total Volunteer Time **</b> _____	
<b>PIGU Counts</b>	<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;">             Highest Count Before 9:00           </div> <div style="text-align: center;">             Beginning Survey           </div> <div style="text-align: center;">             Middle Survey           </div> <div style="text-align: center;">             End Survey           </div> </div>	

(\*\*1.0 hour survey + round trip travel time to site + settling in time + data entry+ website entry from lead)

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

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

Other Notes  
Re. These  
Burrows

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

Other Notes  
Re. These  
Burrows

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

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

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

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

Any additional comments about this colony