

Pigeon Guillemot Study – Protocol

1. The four foci of this study are:
 - a. Three point-in-time counts of the birds: beginning, middle, and end of survey.
 - b. The number of active burrows.
 - c. The type and number of fish delivered.
 - d. Colony wide response to a known or unknown event. (see Disturbances, below.)
2. The Protocol and Beach Data Sheet have been revised to reflect changes in procedures. Please recycle all old Beach Data Sheets. All regions should copy and use the Beach Data Sheet available in this toolbox: <http://www.pigeonguillemot.org/survey-toolbox.html>
3. **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. Consider the tide before going, to make sure you won't get stuck or have to wade through water.
4. **The earlier you can get to your colony** the better the chance of seeing more activity. Begin your one-hour survey no later than 8:00 am. We need three counts of birds (beginning, middle and end) before 9:00. Arrive early and let the birds settle into normal behavior (approximately 15 minutes) before you begin the survey. (The settling period can be skipped when there are absolutely no PG present within the visual range of the entire colony.) All volunteers at one colony should begin at the same time. It is expected that for each weekly data sheet record you will sit quietly at your study area for exactly **one hour** and observe the activity.
5. We ask that you **visit your site at least ten times this season.** One visit should fall during **every** calendar week (Sunday-Saturday) beginning with the first designated week for your colony. Ideally visits will be on the same day each week, however, when tides or schedules make it difficult to get out for a survey, you may adjust the timing by one or two days. Continue visiting your site for 10 consecutive weeks. If, prior to the completion of the ten weeks there are two consecutive weeks with no burrow activity, contact the Colony Contact to determine if you should continue the survey. Once the 10 consecutive weeks of the survey have passed, you may stop the survey as long as you have two consecutive weeks with no burrow activity and no birds are congregating near the bluffs.
6. **First locate and identify the active/occupied burrows.** Make a drawing or take a photo so that you can locate, number/letter, and remember the burrows. Make a duplicate drawing or photo to have available for substitutes and/or your Colony Contact so that we can understand your colony more completely. A copy of your colony map will be uploaded to the data system, once all your active burrows have been identified.
7. 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.) However, only count a bird emerging from a burrow if you did not see it first fly into the burrow, to prevent the same visit from being double counted. If you observe a bird flying into a burrow and then see it leave a burrow a few minutes later, that is considered only one visit.
8. For each active/occupied burrow, **document the times of each activity** observed. These will include **Visit to Burrow (No Prey)**, fish deliveries of **Sculpin, Gunnel** or **Other/Unknown**. Record the time for each activity.
9. **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 training 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.

10. **Substitute surveyors:** All substitutes must be trained and have received site orientation by a member of the coordinating team. Substitutes may be assigned by the Volunteer Coordinator.
11. **Pet Policy:** No pets may accompany you on the beach.
12. **Make a decision:** Question marks or number ranges are not acceptable.
13. Either before or after your survey walk under the burrows and look for dead chicks, eggshells, 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 Colony Lead and/or the Colony Contact assigned to your site immediately.** For a planned vacation, please let your Colony Lead 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.
15. **Review data sheets** for completeness and clarity when you finish your survey.
16. **Carry information brochures** to share with interested or curious people you meet on the beach. Be courteous and answer questions but refrain from engaging in extended conversations if you are in the middle of a survey.
17. **Be respectful if crossing private property.** Move quickly and quietly to the beach so as not to disturb property owners and neighbors.
18. **Compile data and enter into Survey123 on a weekly basis** to allow for reporting throughout the survey season.

Additional Notes to Protocol:

Population counts: Only include the guillemots that are associated with your colony. These are the birds that gather in the water in front of the bluffs. The birds may spread out and fly around, but they'll return and form loose groupings. Do not count birds off in the distance that are not part of the colony. Also count the birds associated with the colony that may be sitting on the bluff and the beach. It is important to count the guillemots at exactly the beginning, middle and end. If more birds are present outside of these times, do not include them.

Disturbances: A disturbance should be recorded if a majority of the birds change their normal behavior by flying off shore and/or retreating away from the bluffs. The beginning and end time of the disturbance should be recorded. (End time may be difficult to determine since the birds tend to return gradually to the area near the bluffs. When the majority of the birds have returned, you may consider the disturbance ended.) Make note if the birds are still disturbed when your one-hour survey is over.

Burrow Identification: Each burrow must have a unique identification. These IDs can be changed and updated yearly, but they must remain in place for the entire summer survey season. The burrow ID can be no more than three spaces. Numbers or letters may be used. If letters are used, they must be capital letters. Do not use special characters or spaces.