# Pigeon Guillemot Monitoring

A group of people standing on a hill with a body of water behind them

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MRC project lead Ed Bowlby speaking to assembled Port Williams volunteers, including OPAS co-lead Bob Phreaner and Clallam MRC alternate Lance Vail.  Photo credit Silas Crews.

#### Project Reporting Period 10/01/23 – 9/30/24 Task 2.9

*Grant Reporting Period 10/01/23 – 9/30/25*

#### SEANWS-2023-CLCoCD-00005

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## Abstract

Pigeon guillemots (*Cepphus columba*) have been used as an indicator species of nearshore ecosystem health in the Salish Sea for many years. A dedicated monitoring effort was initiated on Whidbey Island in 2004, 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 (Clallam MRC) adopted this effort as one of its citizen scientist monitoring projects and has continued as such to this current year. This regional program is part of the Salish Sea Guillemot Network (<http://www.pigeonguillemot.org/>), which is part of the Puget Sound Ecosystem Monitoring Program’s Marine Birds Workgroup. The project is also co-sponsored by the Olympic Peninsula Audubon Society, with project lead Bob Phreaner.

This monitoring project consists of volunteer teams gathering weekly monitoring data at a designated group of pigeon guillemot colony sites through the summer season. Pigeon guillemots nest in bluffs beginning in early summer, and deliver prey to their young in the burrows throughout summer. In 2024, 9 nesting colonies across 7 geographic areas were monitored by volunteer teams. This year, prey deliveries to young at some pigeon guillemot colonies extended into September. This is a well-established and successful project for the Clallam MRC, and pigeon guillemot monitoring efforts will continue in the 2025 season.

## Project Goals

The goals of this project, as established in the 2024 Quality Assurance Project Plan, are:

* Goal 1: Expand the monitoring area in the Salish Sea.
  + The monitoring capacity for pigeon guillemots was historically low, with WDFW seabird surveys unable to effectively monitor the birds due to winter timing. A pilot effort was established to monitor pigeon guillemots on Whidbey Island in 2004, and the Clallam MRC has aimed to expand this capacity into Clallam County since it established its pigeon guillemot project in 2016.
* Goal 2: Document pigeon guillemot breeding colonies in Clallam County beaches using established protocols that will provide data comparable across monitoring years and across study areas.
  + This goal primarily refers to the use of the protocol established by the Salish Sea Guillemot Network, used regionally by multiple groups.
* Goal 3: Involve, educate, and train citizen scientists to monitor the guillemot breeding sites.
  + This is a core function of the project, as monitoring takes place weekly and is done entirely by volunteers.

None of these goals were altered during the course of the project in this reporting period.

## Project Engagement

This project stands out as a successful long-term effort for the Clallam MRC thanks to MRC member champions Ed Bowlby and Mary Sue Brancato, strong partnerships with regional organizations such as the Olympic Peninsula Audubon Society, with Bob Phreaner as co-lead, and a large crew of volunteers. Citizen volunteers that have stayed committed to this project year-over-year, finding enjoyment in watching the birds and interest in the long-term health of specific colonies, have been key to its success. The Salish Sea Guillemot Network provides online training and an organized protocol that enables the MRC project lead to train these volunteers and recruit new ones.

### Partners/Organizations

* The Salish Sea Guillemot Network is a regional research group that coordinates the monitoring effort, establishes the shared protocol, and provides online training for both established and new volunteers each year.
* The Olympic Peninsula Audubon Society is the co-sponsor of this project along with the Clallam MRC. OPAS co-lead Bob Phreaner works with MRC project lead Ed Bowlby to coordinate volunteers and sites. OPAS also assists with volunteer recruitment, through their website and network of birding enthusiasts.

### Participants

42 volunteers participated as citizen science monitors of pigeon guillemot colonies in the 2024 monitoring season.

## Project Methods/Actions

This monitoring project consists of volunteer teams gathering weekly monitoring data at a designated group of pigeon guillemot colony sites through the summer season. In 2024, 9 colonies across 7 geographic areas were monitored by volunteer teams.

Many volunteers returned for another season in 2024, while some were new recruits. Recruitment was posted on the Clallam MRC Facebook page and website. Several hundred people were reached through Facebook and many people engaged in the post. Olympic Peninsula Audubon Society (OPAS), co-sponsor of the project, also posted the recruitment information on their website. Volunteer training took place through an [online webinar](http://www.pigeonguillemot.org/survey123-data-system-training.html), which included the history of the program and explanations of the monitoring protocols and field data forms. New volunteers were teamed up with experienced monitors whenever possible, and some volunteers acted as substitutes when others were on vacation.

Each team of volunteers monitored their assigned colony weekly, beginning in June of the field season and extending until prey deliveries to young guillemots are no longer observed in any burrows. Each weekly monitoring session took place in the early morning for one hour, as close as possible to the same time and day as tides allowed. A [standardized protocol](http://www.pigeonguillemot.org/uploads/1/1/0/3/110361247/survey_protocol_version_05_11_2024.pdf) was observed, maintained by the Salish Sea Guillemot Network. This protocol includes the documentation of active burrows, bird behavior, fish deliveries, total birds present, disturbances (e.g. passersby walking on the beach), and any additional notes. A blank data sheet is available as Appendix 1. The protocol was revised in 2023 to better accommodate population modeling by University of Washington PhD candidate Amanda Warlick and the Washington Department of Fish and Wildlife’s new Survey123 database. Mary Sue Brancato, secondary MRC project lead, performed the online data entry for all Clallam field data sheets into the regional database (Survey123). This data is still preliminary, pending QAQC process by the [Salish Sea Guillemot Network.](http://www.pigeonguillemot.org/)

A bird flying over water

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A pigeon guillemot taking off with a gunnel in its mouth, likely about to deliver the prey to its nesting young. Photo credit Peggy McClure.

## Results

All below results are preliminary, as QAQC is still being conducted by the Salish Sea Guillemot Network. A summary export of the season’s data from the Survey123 database is available in Appendix 2.

### Data Summary

Volunteers conducted a total of 110 surveys. Late nesting into the first two weeks of September required late-season monitoring, so monitoring took place over a total of 15 weeks in 2024. The population of guillemots at each colony is estimated as the maximum observed in any one survey, and the total population across all nine colonies was estimated at 258 individuals in 2024.

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Figure 1. A map of the 7 geographic areas surveyed, with proportional point symbols representing the relative sizes of the pigeon guillemot populations observed at each in 2024. For ease of visualization, the three Port Williams colonies are combined into one total population on this map. Port Williams has the highest population (total 127 birds), while Panorama Vista had the lowest population (total 8 birds).

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Figure 2. A line graph of the total population of pigeon guillemots observed by week in the 2024 monitoring season, combined between all nine colonies monitored in Clallam County. Fluctuations throughout June and July gave way to a steep decline during August, and only a few guillemots remained at nesting sites as the last surveys continued in September.

Chart, line chart

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Figure 3. A line graph of burrow visits by pigeon guillemots observed during surveys by week in the 2024 monitoring season. Volunteers recorded whether a guillemot visiting a burrow brought a prey item (green line) or not (orange line). There is a larger number of non-prey visits in early summer that give way to prey deliveries in late summer. This is indicative of birds first building up their nests and waiting for eggs to hatch, then transitioning to delivering prey as young begin to require it. This graph represents this trend as a whole across the nine colonies surveyed within Clallam County.

### Outcomes

* Goal 1: Expand the monitoring area in the Salish Sea.
  + This goal was accomplished. Clallam MRC took on this project in 2016 to add pigeon guillemot monitoring sites to the regional effort, and it has continued to monitor sites with active nesting birds in 2024. Additionally, two sites that were added in 2023 in the Port Angeles area were once again monitored in 2024.
* Goal 2: Document pigeon guillemot breeding colonies in Clallam County beaches using established protocols that will provide data comparable across monitoring years and across study areas.
  + This goal was accomplished throughout the monitoring season, using the established protocol from the Salish Sea Guillemot Network. All volunteers followed this protocol, and data are currently going through a QAQC process.
* Goal 3: Involve, educate, and train citizen scientists to monitor the guillemot breeding sites.
  + This goal was accomplished this year, with the involvement of 42 citizen scientist volunteers. Some volunteers returned for a subsequent season due to their positive experience with the project, and some were newly trained with the protocols and paired with an experienced volunteer for their first season.

### Outputs

* 42 volunteers engaged in monitoring
* 705 volunteer hours contributed
* 110 hour-long surveys conducted over 15 weeks
* 9 colonies monitored, with a total estimated population of 258 guillemots
* 151 deliveries of prey to nesting young observed

### Results in context

As a preliminary summary, results that we have observed this year show birds nesting later. Consequently, fledging of young pigeon guillemots has occurred later in the season, and prey deliveries to young are continuing later.

## Project Highlights, Innovations & Stories

Collaboration is the key to this project’s success. We wish to thank all of our dedicated volunteers for their citizen science monitoring efforts in 2024; our co-sponsor, Olympic Peninsula Audubon Society; and the collaboration and support from staff at the Salish Sea Guillemot Network. Funding from the Northwest Straits Commission helped to make this another successful monitoring year. Of course, new and returning community and MRC volunteers are the core of this project.

## Lessons Learned

Prey deliveries extended late into the season in 2024, requiring a heavy lift from volunteers to continue monitoring and from MRC member Mary Sue Brancato to process data using Survey123 at the end of the season. In future years, the MRC will continue to keep in mind that this late-season effort is a possibility, and continually plan for volunteer capacity with this in mind.

## Next Steps

Monitoring data are reported regionally through project partners, the Olympic Peninsula Audubon Society and Salish Sea Guillemot Network. As pigeon guillemots are an excellent indicator species of nearshore health, these data may be used both for research into guillemots themselves as well as in larger nearshore monitoring contexts. The Clallam MRC plans to continue collaborating on this project next year, expecting many dedicated volunteers to return to the project.

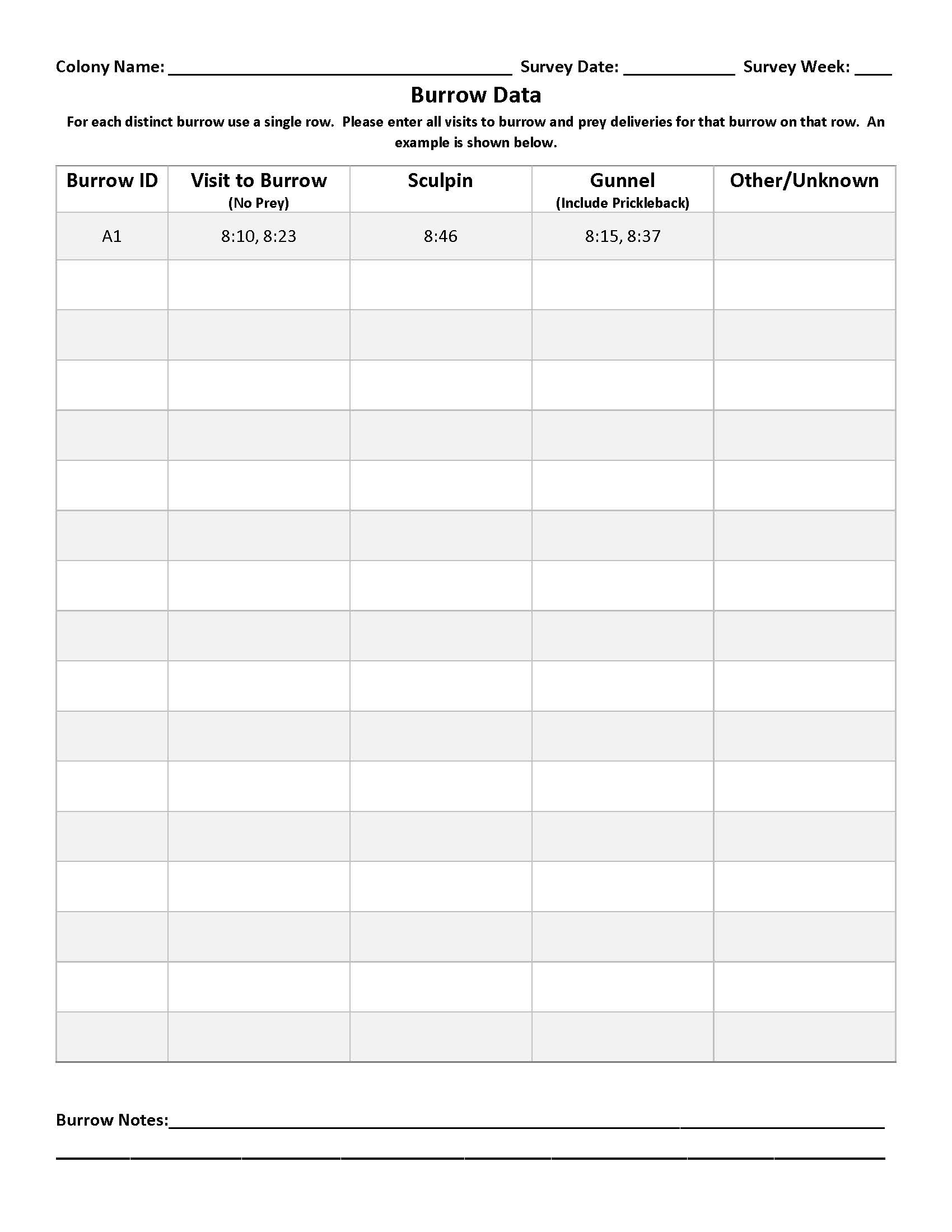
A person sitting in a chair next to a sign

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MRC project lead Ed Bowlby seated for monitoring at Port Williams, with pigeon guillemot signage in the foreground.  Photo credit Silas Crews.

# Appendix 1: Blank Data Sheet





# Appendix 2: 2024 Data (Export from Survey123 Database) Graphical user interface, table Description automatically generatedTable Description automatically generated