Post Point Heron Colony

2024 Monitoring – Annual Report

prepared for:

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Executive Summary

First documented in 2000, the Post Point Heron Colony is the City of Bellingham's only known great blue heron nesting site. The colony is located in a city-owned forest patch in Bellingham's Fairhaven and Edgemoor Neighborhoods between the Post Point Resource Recovery Plant (PPRRP) and Shorewood Drive. In the fall of 2021 and spring of 2022, the city approved purchase of undeveloped parcels along Shorewood Drive considered critical buffer for the protection of the colony.

Due to the colony's location and sensitivity of heron colonies to human disturbances, in 2003 the City of Bellingham commissioned a management plan and in 2004 adopted a resolution affirming the importance of conserving and protecting the colony (https://cob.org/wp-content/uploads/2004-10-heron-resolution.pdf). A scientific baseline study of the colony followed in 2005 to analyze reproductive success, nesting tendencies, nearby habitat use and the status of the colony. Annual monitoring of the colony has been conducted every year since 2005 to further document colony productivity and success. The 2003 management plan was updated in 2019 and both documents along with all the annual reports are available online at Post Point Heron Colony Resources.

Results from the 2024 Post Point Heron Colony Annual Monitoring are provided in this annual report. Monitoring began on February 16th and ended on August 14th when it was determined that all the young had left the colony. A total of 27 site visits were needed for the 2024 nesting season, including a site visit during the Ski to Sea Race event at Marine Park.

In 2024, 48 active nests (42 were successful) were counted in 25 nest trees (2 active nest trees from 2023 fell at some point during 2024 and may or may not have been active this year) with a total of 103 young observed throughout the nesting season and 99 young fledged. Bald eagles were observed flying over and perching in the colony, but no predation events were documented in 2024 or reported by the public to monitors.

Introduction

The Great Blue Heron (*Ardea herodia*) is a widely dispersed species that can be found throughout North America and is a year-round resident of western Washington. Washington Department of Fish and Wildlife (WDFW) categorizes herons as a Priority Species and their colony sites as Priority Areas. A heron colony is considered a Priority Area by WDFW due to heronries being vulnerable to human disturbance. Due to the Priority Species status of the heron colony, the City has protected it under the Critical Areas Ordinance as a Fish and Wildlife Habitat Conservation Area. The 2012 WDFW Management Recommendations for Great Blue Heron provides management guidelines and life history information pertaining to potential projects and activities near colonies.

The City of Bellingham has been proactive in supporting, researching, and monitoring the colony since it was first observed in 2000 and passed a resolution affirming the importance of conserving and protecting the colony in 2004 (https://cob.org/wp-content/uploads/2004-10-heron-resolution.pdf). The City funded the management plan of 2003, the scientific baseline study in 2005, the update to the management plan in 2019, and annual monitoring of colony since 2005.

The City of Bellingham also purchased the adjacent 1.72 acres along Shorewood Drive in 2022 to provide a buffer to the colony from residential development.

Priorities for the 2024 Post Point Heron Colony monitoring included:

- General monitoring that focused on behavior, in-colony activities, and nesting chronology.
- Disturbance monitoring for recording disturbances to the herons in or near the colony.
- Productivity monitoring documenting nesting and fledging success of young.
- Nest and nest tree survey for updating and mapping the colony for 2024.
- Foraging observations documenting the use of nearby foraging habitats and disturbances to herons while feeding.

Monitoring for 2024 was carried out by Jordan Riggins of Hamer Environmental over the course of 6.5 months beginning in February and ending in August. Hamer provides environmental consulting services to government, private industry, tribal corporations, and non-profits throughout the Pacific Northwest and Pacific Islands. Hamer has offices in Portland, Oregon, Mount Vernon, Bellingham and Seattle, Washington, and in the Pacific islands.

Jordan was primarily responsible for conducting field visits to the colony and collecting nesting data. Case Wyatt provided monitoring guidance, data compilation, organization and analysis, and report preparation. Matt Reed was the lead biologist primarily providing project management expertise, some colony observation, assistance, and oversight in report preparation.

Adult heron foraging in Post Point Lagoon

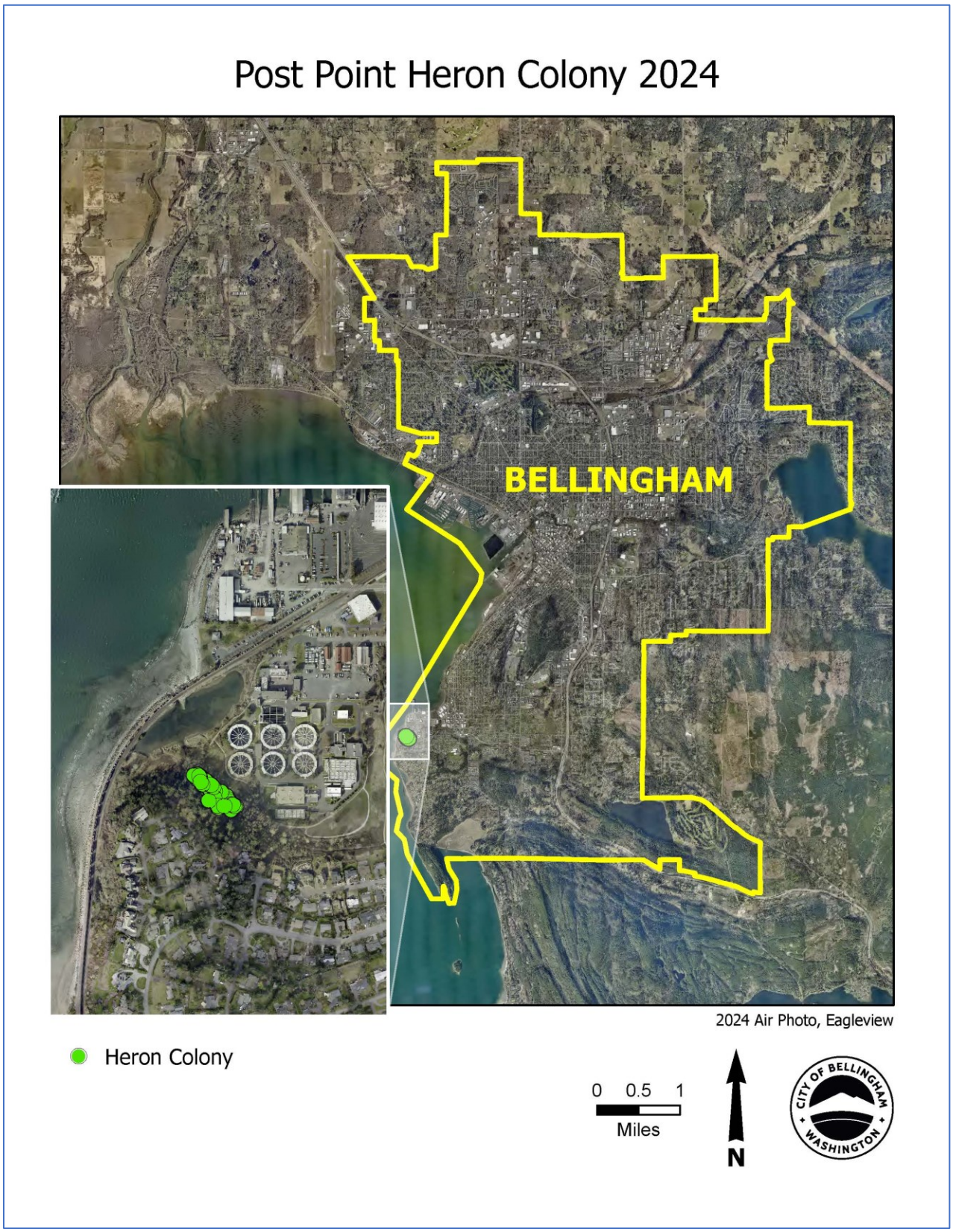

Figure 1: Post Point Heron Colony

Site Description

The Post Point Heron Colony is located near Post Point spanning the boundaries of Bellingham's Fairhaven and Edgemoor Neighborhoods (Figure 1). A forested slope extending to the south and west of the colony provides protection from prevailing winds and weather. The native mixed forest along the bluff has provided a buffer to the colony from residential and urban development. The proximity of the colony to Bellingham Bay provides direct access to foraging areas during the nesting season.

In 2022, the Bellingham City Council authorized the purchase of 1.72-acres in the Edgemoor Neighborhood adjacent to the property the colony is located on, increasing the city-owned site to almost 32 acres including forest, grass, shrub and marine habitats. The city-owned portion of the forested area the colony is situated in is approximately 9 acres. In 2023, the City created a Forest Management Plan to guide management actions on the City-owned portion of the forested area. The BNSF railroad causeway west of the lagoon separates the inland habitats from Bellingham Bay. The colony is situated between the residential neighborhood on Shorewood Drive to the southwest and the PPRRP to the northeast (Figure 2). The Lower Padden Park Trail borders the colony between it and the PPRRP.

The City maintains educational signs along the Lower Padden Park Trail and at Marine Park informing the public about herons, the nesting colony and how to avoid disturbing them. Between the end of the 2022 nesting season and the beginning of the 2023 nesting season, the City of Bellingham installed cottonwood trees to assist with forest regeneration; the success of those trees will be continuously monitored with any mortality replaced. In 2024 the City removed one hazard tree near the northern boundary of 8 Shorewood Drive on the eastern edge of the Forest Nest Stand. Native trees and shrubs plantings are scheduled to be installed on 8 Shorewood Drive in 2025 to expand and enhance the Forest Nest Stand.

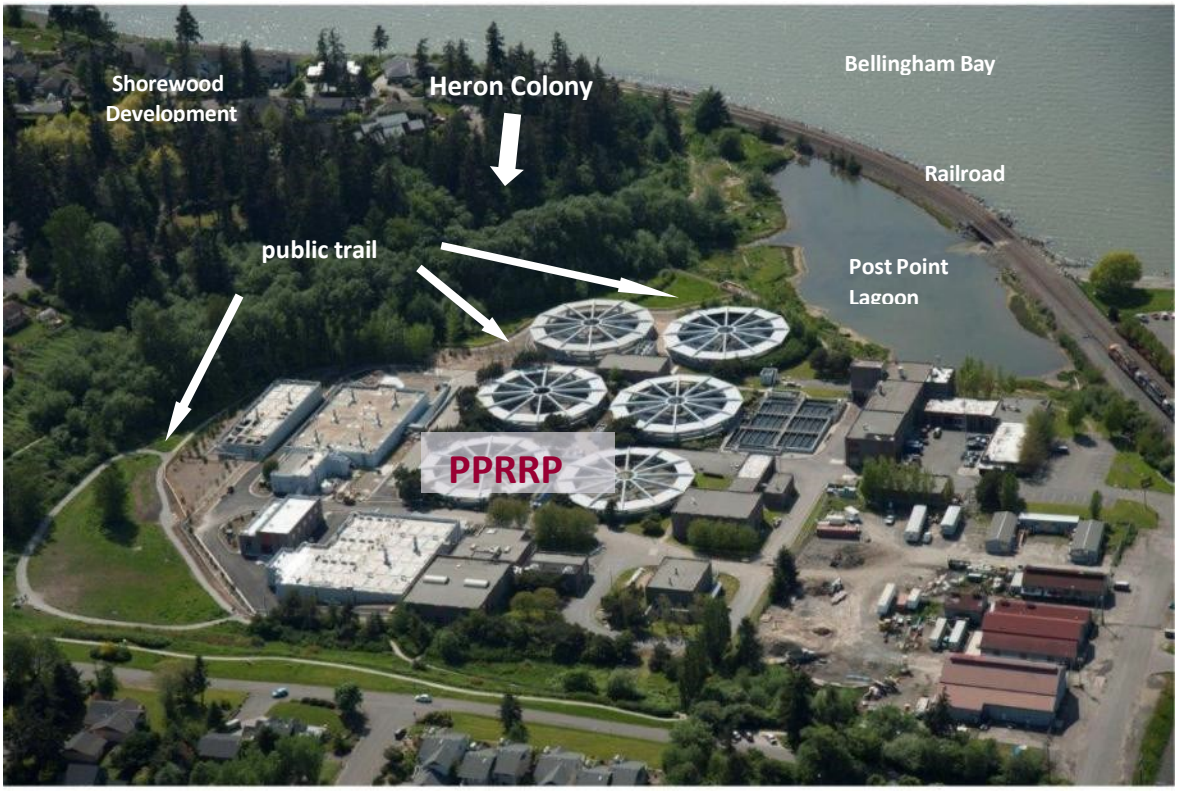

Figure 2: Post Point Resource Recovery Plant (PPRRP). (City of Bellingham Photo, 2014)

Heron Habitats

The area surrounding the colony provides a mix of habitat accessible to herons from mixed forest, wetland meadow, estuary, and marine shoreline. The buildings and clarifiers on the PPRRP grounds are occasionally used by the herons prior to nesting for staging. These habitats provide various benefits and uses for the heron colony throughout their nesting cycle.

The nest stand itself and the surrounding forest is a mixed age forest that provides the structure and material for the nests, the screening from wind, weather, and human activity. Red alder (*Alnus rubra*) and big-leaf maple (*Acer macrophyllum*) provide suitable support and material for large nests. Douglas fir (*Pseudotsuga menziesii*) provide screening and protection to the colony. Outside the nucleus of the colony, the forest provides cover for herons to loaf, roost, preen, stage, and collect nest materials.

Wetland meadow habitat found adjacent to the nest stand is the grassy margins near the lagoon that provide valuable foraging habitat for upland prey species, specifically meadow voles (*Microtus townsendii*). Herons are sometimes observed using this area throughout the nesting season.

Post Point Lagoon is a pocket estuary fed by surface water runoff and an unnamed seasonal stream that drains into Bellingham Bay under a BNSF railroad causeway bridge. The shoreline

and salt marshes along the edges of the estuary are used for loafing and foraging. Eelgrass (*Zostera marina*) growing in the lagoon improves foraging opportunities for herons. The estuary also serves as a fledging spot as young herons start exploring outside the colony.

Bellingham Bay provides nearby marine shoreline habitat of eelgrass meadows and open intertidal areas suitable for heron feeding year-round. At low tide, the shoreline area at Marine Park provides access to a wide margin of suitable foraging habitat. While herons use other areas for foraging, this is the nearest marine foraging area to the heronry.

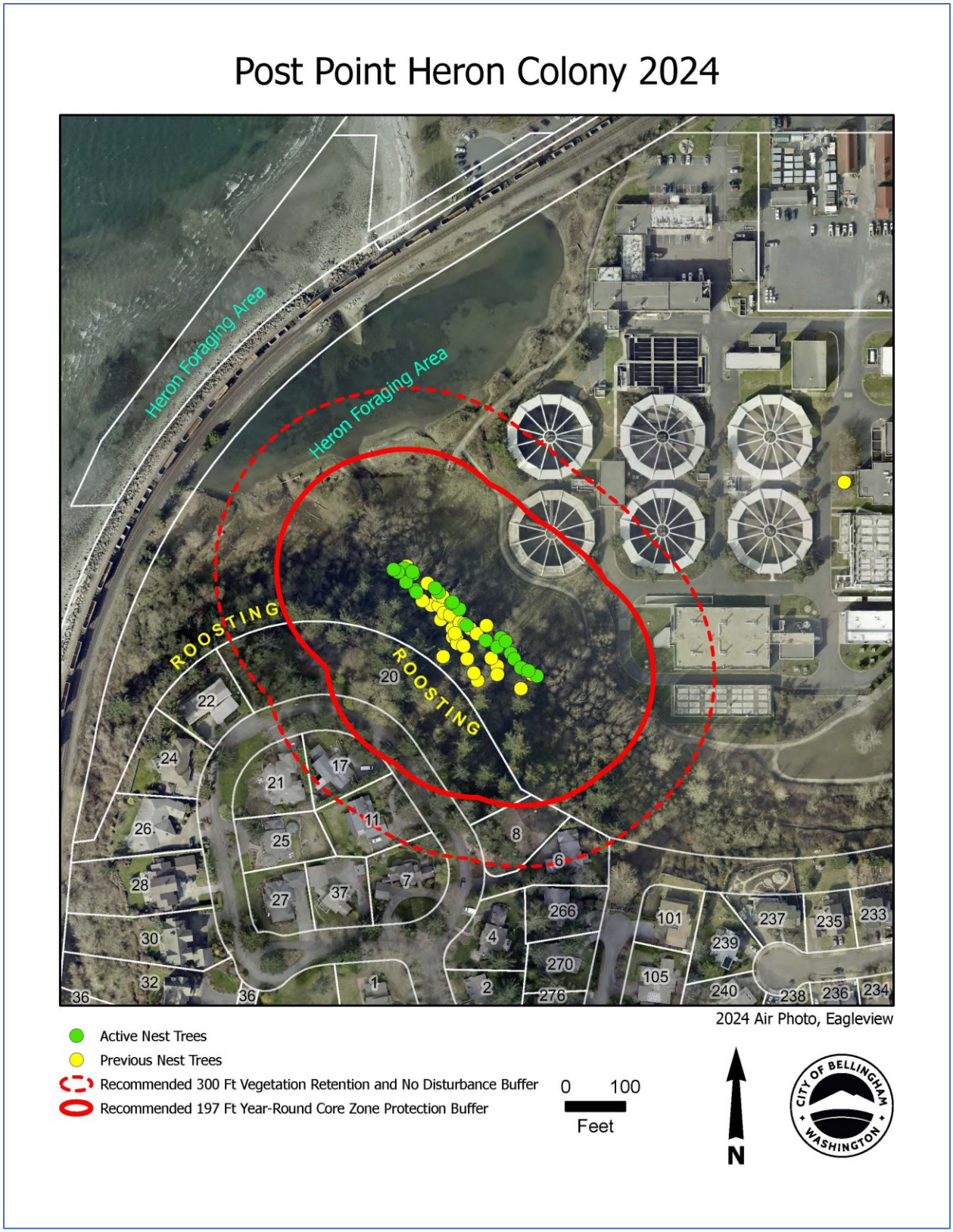

Figure 3: Overview of the Post Point Heron Colony and the Post Point Resource Recovery Plant

Monitoring Methods

Continuous monitoring of the colony since 2005 has provided an ongoing record of the colony's status, productivity, and health. The 2024 monitoring methods for the Post Point Heron Colony were a continuation of the 2022 monitoring methods that were developed based on Ann Eissinger's long-time monitoring of the colony and in part based on the Heron Working Group - Survey Protocol (Vennesland/Norman 2006).

Weekly on-site visits to the colony from February to August involve collecting data based on visual and audible observations of heron behavior, nests and nest trees, and potential disturbances or predations in the colony. Binoculars are the primary visual tool for observing herons perched in or near nests. Data is collected on standardized field forms and each visit compiled into a colony tracking spreadsheet. All visible nests are tracked throughout the nesting season and new nests are recorded as they are constructed. Any incidents or reports of disturbances were noted during weekly visits.

The timing of the visits throughout the monitoring season encapsulates the 6 stages of the nesting season.

- **Staging** near the colony in February as the herons prepare for reoccupation.
- **Colony reoccupation** in March as large concentrations of herons were active in the colony.
- **Courtship, mate selection** and **nest construction** coincided with colony reoccupation in March and remained active into May.
- **Egg laying** which takes each heron approximately 7 days and **Incubation** of the eggs that takes 28 days.
- **Hatching** of the nests and **Brooding/Rearing** of the young.
- **Fledging** is when young leave the nest typically around 8 weeks old.

2024 Monitoring Results

Monitoring for the 2024 Post Point Heron Colony nesting season began on February 16th and ended August 14th. Monitoring occurred on a weekly basis.

Staging and Colony Reoccupation

Two visits to the colony were conducted in February to determine if staging was occurring. Two herons were observed resting on a PPRRP clarifier on February 20th. Reoccupation of the colony was first observed on March 1st with 8 herons standing in or near nests in the colony. Heron nesting activity within the colony increased throughout March culminating in 54 herons observed actively constructing or standing in nests on March 27th. Visits in April steadily maintained 45 to 55 adult herons observed in the colony each week.

Adult herons improving a nest on a visit in March.

Egg-laying and Incubation

Egg-laying and the onset of incubation at the Post Point Heron Colony in 2024 began in March, with two herons observed in a horizontal position in nests on March 20th. This posture is often indicative of egg laying or incubation in herons and would increase in April with a high of 31 herons horizontal on the nest during a visit on April 10th.

Herons will lay 4-5 eggs asynchronously but not all of those will survive to fledging. Incubation follows egg-laying and is also indicated by herons taking a horizontal posture on the nest. Egg-laying continued throughout April and May. Young herons hatch over several days after approximately 28 days of incubation. By mid-May, many of the nests had heron young and only three nests showed signs of ongoing incubation by the end of May.

Hatching and Rearing

May is typically the busiest month for young hatching in the Post Point Heron Colony. Since 2005, young have been documented in the colony by May 9th in 17 out of the 20 nesting seasons. The 2008 nesting season failed completely while the 2011 and 2023 nesting seasons had delayed starts resulting in the first young being documented in early June. The 2024 nesting season returned to this late April/early May pattern with the first young seen in a nest on May 1st and 5 other nests showing signs of adults brooding young. Throughout May, young were increasingly observed in nests throughout the colony culminating into 30 nests with young on the May 26th visit. The hatching of young begins the onset of the 8-week rearing period.

The young will be brooded while adults continue to incubate unhatched eggs in the nest. Young are most susceptible to predation, heat and cold in the first few weeks of their life. They start out covered only by sparse downy fuzz but will be completely covered by feathers within three weeks. One adult will remain near the nest for the first 4 weeks of rearing to provide the young with protection from predators.

Adult heron brooding a young in the nest.

Fledging

The last stage for young herons as they leave the nest is fledging. Most young will fledge at about 8 weeks in age. To prepare to fledge, young are observed exercising their wings by flapping them, exploring limbs near the nest, and eventually taking test flights around the colony. As young explore further out from the colony nucleus, they can be seen loafing or foraging in the Post Point Lagoon or on its shoreline. Nests will fledge over the course of a week or more as the older young of a brood leave to follow adults to better foraging grounds first.

Pre-fledging behaviors were first observed on June 19th with young seen flapping their wings and venturing out onto nearby limbs. A couple nests were considered fledged by June 19th with pre-fledging behavior not documented during the monitoring visit. Flights through the colony from young herons were increasingly common through the end of June and into early July. Most of the fledging of young occurred between June 25th and July 31st. The remaining young fledged throughout July with the last six young fledging between the July 31st and August 7th visits.

2024 Colony Fledging Progression

- On June 25th, 9 nests out of 45 active nests had fledged (18%).
- By July 9th, 26 nests out of 45 active nests had fledged (64%).
- By July 31st, 38 nests out of 42 active nests had fledged (91%; 3 nests had failed/been abandoned).
- From July 31st to August 7th the final 4 nests fledged (9%)

The majority of the colony's young, 64%, had fledged by the 2nd week of July. In 2024, most of the young had fledged the colony before the first documented fledging in 2023, which was on July 21st. All the young had fledged the colony by August 7th, which was over a month earlier than 2023.

Post Point Heron Nesting Chronology Summary 2024

2024 was another successful nesting season for the Post Point Heron Colony. A chronology of the season is summarized below:

- February 20: two herons observed staging on the PPRRP clarifier
- March 1: eight herons observed reoccupying the colony
- March 13: active nest construction and potential copulation
- March 20: 6 herons observed horizontal in nests indicating that egg-laying has started
- April 10: herons are horizontal on 31 nests indicating egg-laying and incubation are occurring
- May 1: the first heron young is documented
- May 14: 54 adults and 48 young are recorded in the colony
- May 20: there are more young herons (68) in the colony than adult herons (47)
- June 11 – June 19: peak period for total young in the colony (91 total young observed on one visit)
- June 19: the first nests are documented as fledged
- June 25 – July 8: fledging of young peak during this period
- August 7: all young herons are considered fledged

Total duration for the 2024 Post Point nesting period was just over 23 weeks from when herons were first seen near the colony in February and the last heron young left in August.

Productivity

Visible nests in the Post Point Heron Colony are monitored annually for productivity which is determined by each on-site visit prior to fledging. This measure has been an important indicator of the health and stability of the colony. While herons have the potential to fledge a maximum of five young, nests are most likely to produce two to three surviving young.

Productivity surveys for the Post Point Heron Colony are measured by counting the number of young in every visible nest each visit. The best time to observe young in the nest generally corresponds to an adult feeding. The counting of young is then divided by number of nests to express colony productivity in 1 of 3 ways:

Throughout 2024, 48 nests were located without intruding into the colony. No new nests were observed compared to 2023. One nest was active on March 13th with two adults in the nest but fell out of the tree before the March 20th visit. This nest failed before the on-set of egg-laying and incubation. Another nest failed on April 17th after showing signs of egg-laying on the April 10th visit. Two nests remained inactive for the entire nesting season, and one started in early May but was abandoned before the adult herons laid eggs. Three nests were active and may have fledged young but were too concealed by leaf cover to determine number of young. Including the three concealed nests and three failed nests during the season, the number of active nests was 48 with 42 nests considered successful. Weekly observations of the 42 successful nests observed determined 103 young in the colony. Out of the 103 total young, 99 were estimated to have survived until fledging. The carcasses of 1 heron young was located under some nest trees during the annual nest tree count in November, in the vicinity of nest tree 600.

Two young close to fledging on September 12, 2023.

Productivity of active nests is calculated by dividing the number of young counted by the number of active nests. Failed nests were included in this calculation, but concealed nests were not. The productivity of successful nests is calculated by dividing the number of young fledged by number of successful nests. The three concealed nests were also not included in this calculation. Productivity rates for the Post Point Colony in 2024 were 2.06 per active nest and 2.36 per successful nest. The number of successful nests remained in the 40s for the 3rd straight year and the number of active nests has been equal to or greater than 40 for each nesting season since 2017.

Table 1: Post Point Productivity since 2018

Year	Number of active nests	Number of successful nests	Number of young counted	Number of young fledged	Number of young per active nest	Number of young per successful nest
2024	48	42	103	99	2.06	2.36
2023	45	43	88	85	1.95	1.98
2022	46	45	100	93	2.17	2.08
2021	42	39	104	95	2.47	2.4
2020	40	37	103	94	2.51	2.54
2019	40	38	103	103	2.57	2.7
2018	44	41	97	97	2.2	2.3

Disturbance

Monitoring potential disturbances to the colony during the nesting season is an important objective of on-site monitoring annually. Disturbance, by definition, is an adverse behavioral and/or physiological response to a natural or man-made event (Sutherland 1996, Walker et al. 2006). Repeated disturbances to the colony can cause declining productivity, failure to reproduce or may even cause fragmentation, abandonment, or relocation.

Any disturbances to the colony or disruptions to herons within the colony or using habitats near the colony are documented. In 2024, no direct disturbances or disruptions by human activities were observed within the colony or surrounding habitats. Human/heron interactions of herons along the shoreline of Marine Park were documented between herons and beachgoers, dogs, and water-sports enthusiasts. Other potential passive disturbances to the colony include the BNSF train and aircraft flying over. The colony and herons were observed closely when any of these events occurred to see how the herons would respond to the intrusion.

The Ski to Sea Race returned to Marine Park on May 26th in 2024 and colony monitoring was conducted to overlap with the event activities that day. For May 26th, low tide was -2.4 feet at 1:45 PM resulting in ideal foraging conditions along the Marine Park shoreline for much of the duration of the Ski to Sea Race events. During peak afternoon event times, tide levels met ideal foraging conditions being between -2.4 and 0 feet until 4:00 PM. The City coordinated with the Port of Bellingham and event organizers to place signs and temporary fencing along the shoreline to educate and deter eventgoers from venturing into foraging habitat during low tide. Event organizers informed the media of the no-fly area for drones surrounding the PPRRP and the heron colony. Temporary protection signs were posted along the wooden fence on the trail adjacent to the colony. The event also had a volunteer posted in the park attempting to educate and deter beachgoers from wandering down the shoreline. The noises emanating from the event such as music, bell wringing, and announcers were only slightly louder than the background noise at the colony. Herons attempted to utilize the shoreline during low tide and were observed flying away or further down the shoreline when people approached and then sometimes returning to the area once the people left. There were no signs of distress from the adults or young at the colony.

Activity along the shoreline during the Ski-to-Sea event (5/26/2024).

Bald Eagles (*Haliaeetus leucocephalus*) are the greatest predatory threat to the Post Point Heron Colony. Bald Eagles can disturb the colony by consuming unhatched eggs, preying on the young or flushing flightless young from the nests. Some eagles may even attempt to prey on adult herons. Bald Eagles are a common sight flying over the colony or perching nearby. Most of the Bald Eagle flights over or near the colony elicit no response from the herons. On three visits in May, Bald Eagles were observed flying over the colony or perching in tops of Douglas Fir trees nearby. On one more occasion on June 19th, a Bald Eagle was observed flying over the colony. There were no observed instances of a Bald Eagle preying on a young in the colony or causing herons to flush.

Other raptor and corvid species are seen in the area with crows nesting near the colony. Crows were seen mobbing a Turkey Vulture that flew over the colony on one visit and there have been instances in previous nesting seasons of crows harassing Bald Eagles.

Bald Eagle perching in Douglas Fir near heron colony.

Foraging

Foraging surveys were conducted during the nesting season to document how the Post Point Herons are using the nearby foraging options at the Post Point Lagoon and along the Marine Park shoreline. During the height of rearing season, additional monitoring was conducted at Marine Park during low tides when herons would most likely be accessing eelgrass meadows for foraging.

Herons were observed actively using the forage location on 6 out of the 6 foraging survey days. Each of these visits occurred on negative tides with three of the visits occurring around -2 to -2.5

feet. On one visit on July 3rd, 15 herons were observed along the Marine Park shoreline and another 2 were seen foraging in the Post Point Lagoon. Herons were often seen loafing and foraging along the shoreline of the Post Point Lagoon which is a popular area for young herons to use when they begin fledging.

Heron foraging on the edge of the waterline near beachgoers on June 5, 2024.

Nest Survey and Map Update

Conducting an annual nest count at the Post Point Heron Colony is an important tool for defining the overall health of the colony. Annual variation and/or fluctuation in nests may point to a change in the available nesting habitat, predation pressure, or abundance of prey resources in relation to the colony itself. Tracking nests throughout the nesting season can be difficult as nests are often

masked by the leaf cover provided by the nesting habitat. The best time to assess the annual number of nests at the colony is in the fall after leaves have fallen from the nesting trees.

In 2024, the annual nest count was conducted by Hamer Environmental on November 19th. A follow-up nest count was also conducted on January 17. A total of 42 successful nests were counted in 25 nest trees. At least six nests suspected of being active in 2024 (these nests are included in the successful nest count above) were confirmed to have fallen to the ground at the time of the nest count and two active nest trees from 2023 had also fallen at the time of the nest count (fallen nest trees were not included in the nest tree count above). No new nest trees were successfully used in 202 compared to 2023. Data collected during the annual nest count included the nest tree # (if the nest tree was identified in previous years), tagging and GPSing new nest trees using a sub-meter GPS receiver, and the number of heron nests found in each tree. Other incidental information is also recorded, including the presence of eggshells, fallen nests, and deceased herons.

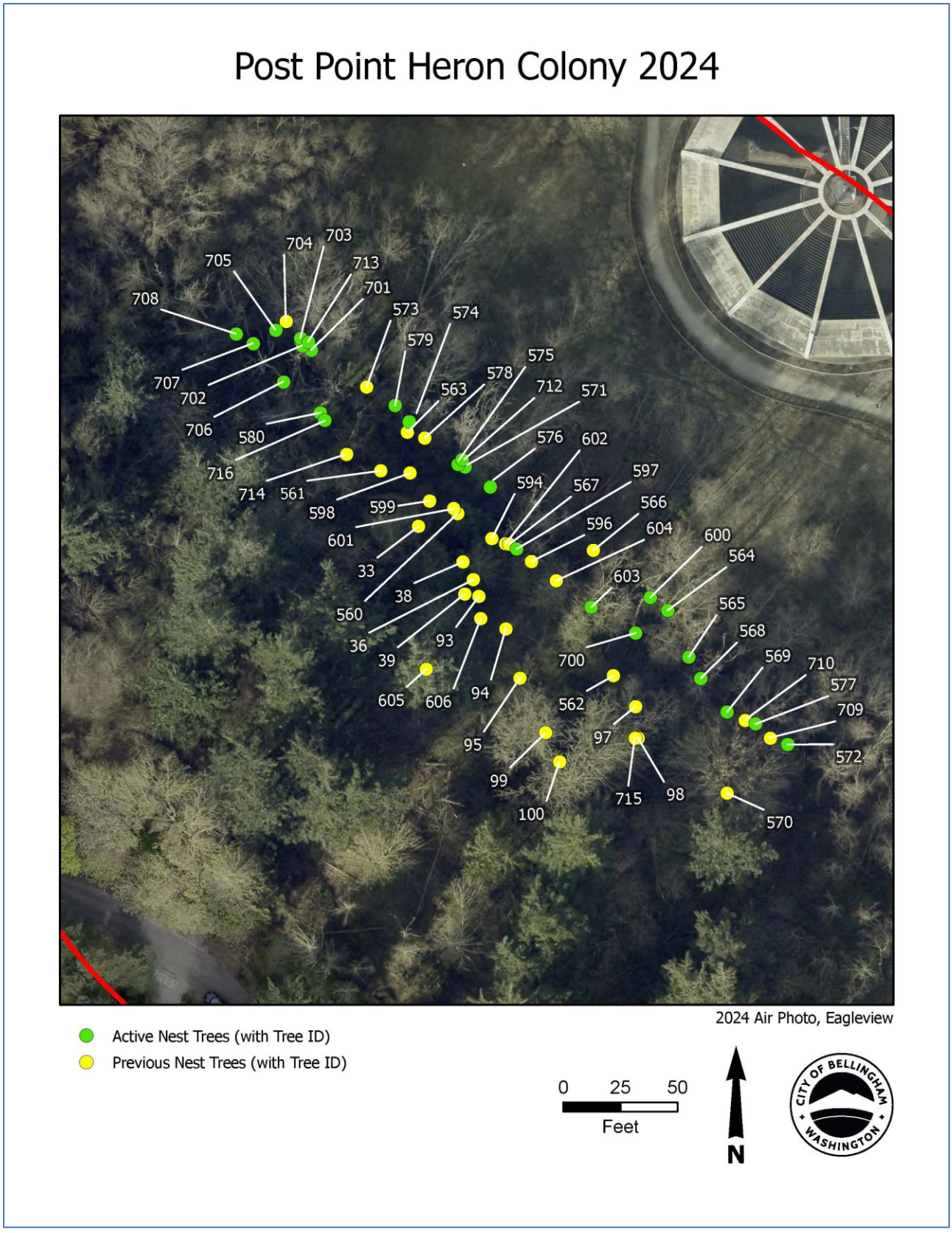

Figure 4: 2023 Post Point Heron Colony Nest Tree Map

Conclusion

The Post Point Heron Colony is important to the health and stability of the Great Blue heron population in the Salish Sea. It serves as a glimpse into nature for many local residents as they stop along the trail to watch in fascination as the herons take twigs for nest construction or feed their young. This is the 25th season of herons returning to nest demonstrating a high level of fidelity to the colony and resilience to remain in an urban landscape.

In 2024, 48 total heron nests were noted from observing the colony from the nearby Lower Padden Trail. Out of those 48 nests, three nests would fail during the season, and two would remain inactive for the whole season leaving 42 successful nests. A total of 103 young herons were counted in the 45 successful nests visible from the trail. The colony would fledge 99 young starting in mid-June and continuing until the end of July.

The 2024 nesting season at the Post Point Heron Colony was different from the 2023 nesting season where nesting activities began in March, reverted to staging in early April with only a few herons present in the colony and then recommenced in mid-April. The 2024 nesting season was much more representative of the stages of nesting that have been observed over the other 23 seasons. Recolonization in February and March, on-set of egg-laying and incubation in mid-March, first young observed in early May, the first nests fledging beginning in mid-June, and the colony entirely fledged by early August. Colony productivity in 2024 improved from 2023, with 2.06 young per active nest and 2.36 young per successful nest. The number of active nests and successful nests have consistently remained in the 30's and 40's every year since 2017. Therefore, the 2024 nesting season was another successful nesting season for the Post Point Heron Colony.

Acknowledgements

Hamer Environmental would like to show appreciation to the City of Bellingham for supporting the continued conservation of the colony and all the assistance provided for the last three nesting seasons. We also want to acknowledge the passion that so many of the citizens in the neighborhood continue to demonstrate for the colony. Finally, we want to express our gratitude to Jordan Riggins for the amazing effort that she put into monitoring the colony in 2024.

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