

Post Point Heron Colony

2020 Monitoring - Annual Report

prepared for:

The City of Bellingham
Department of Public Works

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EXECUTIVE SUMMARY

The Post Point Heron Colony is the only known heron nesting site in the City of Bellingham. The colony was first documented in 2000, at its present location in south Bellingham's Fairhaven district, adjacent to the Post Point Resource Recovery Plant. The colony is located in a forest patch on City owned property, situated between the wastewater plant and privately owned undeveloped land.

Due to the sensitivity of the heronry and its uniqueness within the city, Bellingham Public Works requested a management plan (2003), followed by a scientific baseline study of the colony in 2005 to document breeding chronology, nesting activities, colony status and habitat use. Following these efforts, annual monitoring of the colony has been employed as a conservation measure due to the colony's local significance as a critical habitat area, and unique natural feature within the urban area.

In 2019, the City of Bellingham Department of Public Works commissioned an updated management document. The [Post Point Heron Colony Management Recommendations Update 2019](#) was completed and available online along with annual reports and other documents.

Habitats used by the Post Point herons include upland forest, fallow grass field, freshwater, estuarine and nearshore marine areas. All of these essential habitats form a habitat mosaic supporting staging, nesting, roosting and foraging. The Post Point heron nesting area is situated on a nearshore slope in mixed forest. The herons utilize this habitat for both nesting and roosting and are present seasonally in large concentrations to nest, and in smaller year-round roosting aggregations in the same contiguous forest as the colony. Herons forage along grassy margins and the intertidal shoreline of Post Point, Marine Park, Post Point lagoon and Padden Creek estuary, as well as shoreline areas of Bellingham Bay, Chuckanut Bay and Portage Bay.

The results of the 2020 Post Point Heron Colony Annual Monitoring are detailed in this annual update. Monitoring of the site spanned just over 7 months and included 28 site visits from February 6 to September 21, 2020. It should be noted that the on-site surveys were conducted by one biologist using safe distancing practices during the Covid-19 pandemic.

In 2020 there were 23 nest trees, 40 active nests with 37 nests successfully fledging young, and a total of 103 young produced. For the first time since formation, the colony appears to have reached an equilibrium and possible carrying capacity. There was no change in the number of nest trees, nests or young from 2019 and little change from 2018. However the configuration of the colony did change slightly.

Bald Eagle presence and activity around the colony was more frequent than the 2 previous years and 4 incursions into the colony were observed. Related eagle damage was minor and one of the incursions may have been scavenging.

Passive human related disturbance to herons may occur in the colony due to an unauthorized foot path through the core area. At Marine Park on low tides, people crowd herons attempting to feed, and herons are occasional flushed by the nearby trains.

Overall, the 2020 nesting season for the Post Point Heron Colony was a success.

INTRODUCTION

The Post Point Heron Colony Annual Report details the 2020 heron colony monitoring results and provides a comparison with previous years. The Post Point heronry is located near Fairhaven in south Bellingham, Washington (T37N/R2E/Section 2) (Figure 1). This is the only known heron nesting site in the City of Bellingham and is considered a sensitive breeding habitat area. This nesting colony is moderate in size, is unique within the city, and is important for sustaining the area's heron population.

The Great Blue Heron (*Ardea herodias*) is a year-round resident in western Washington, and recognized as a Priority Species by Washington Department of Fish and Wildlife (WDFW). Heron colony sites are also considered Priority Areas by WDFW, and as Critical Areas in many jurisdictions, including the City of Bellingham. Heron nesting colonies are sensitive to human disturbance, requiring special management to maintain their stability and productivity.

The City of Bellingham Public Works Department has supported the conservation of the Post Point Heron Colony site by developing a management plan 2003, establishing a scientific baseline 2005, and funding professional monitoring of the colony, which has been ongoing since 2005. The [WDFW Management Recommendations for Great Blue Heron](#) 2012 provides heron life history information and management guidelines to inform planned projects and activities near heron colonies. The [Post Point Heron Colony Management Recommendations Update 2019](#) provides site-specific management guidelines and detailed background information.

Monitoring of the Post Point Heron Colony includes four primary components:

- **general monitoring**, focusing on heron in-colony activity, nesting chronology and related behavior;
- **disturbance monitoring**, observing and documenting any disturbances to the herons within the colony or feeding areas;
- **productivity monitoring**, tracking nesting activity, number of young/nest and fledging;
- **nest and nest tree survey**, updating the number of nests, nest tree location and utilization during the breeding season and assess overall forest health. Mapping of the colony also provides vital critical area information.

In addition to the colony monitoring, heron foraging observations are also made in the immediate area during the nesting season, to document feeding activity and habitat use.

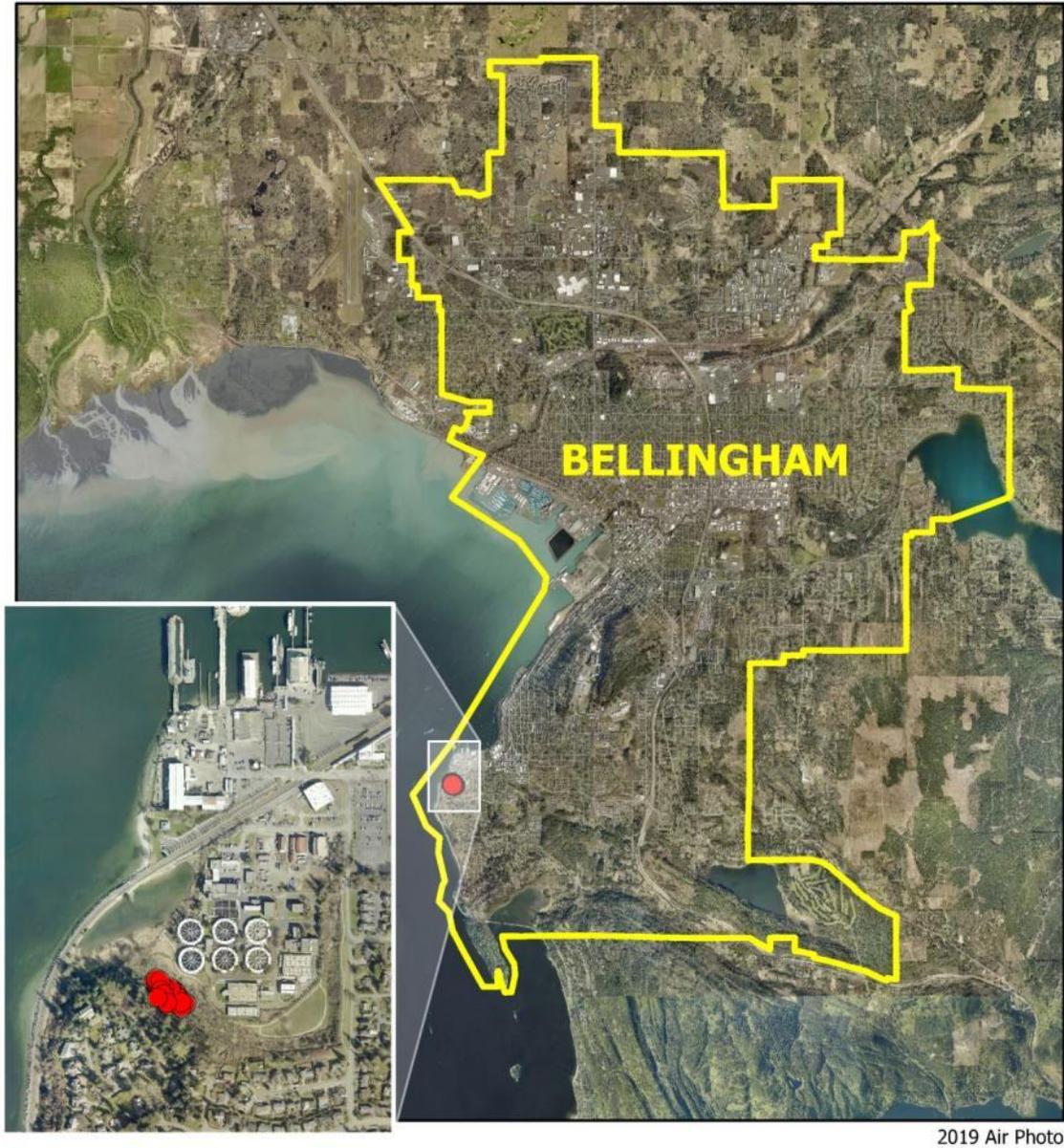
Bald Eagle (*Haliaeetus leucocephalus*) occurrence and activity in the vicinity of the colony is also recorded during monitoring site visits, due to their role as the heron's primary predator.

Monitoring usually spans six months but may vary, depending on nesting season duration.

Planning and implementation of monitoring in 2020, including on-site field observation and data collection, was conducted by Tami DuBow and Ann Eissinger of Nahkeeta Northwest Wildlife Services. Ms. DuBow has 13 years experience and provides field reconnaissance and data compilation. Ms. Eissinger has 30 years experience and is lead biologist, providing project management, data organization, analysis, and report preparation.

Figure 1
Post Point Heron Colony Location

Post Point Heron Colony 2020



2019 Air Photo

● Heron Colony

0 0.5 1
Miles



SITE DESCRIPTION

Historically, Great Blue Heron would gather and roost year-round in the forested nearshore area of Post Point (Figure 1). This forest habitat has provided protection from prevailing south/southwest winds and weather, with the exception of wintery northeasters. The site occupies a patch of native mixed forest situated on a historical shoreline bluff, buffered from growing residential and urban development, and provides direct access to foraging areas and associated habitats. In 1999, a group of herons were displaced from their nesting colony along Chuckanut Drive during construction of the Blue Heron Estates, and the following year the herons settled to nest in their present location at Post Point. This heron colony has been present and active for 20 years, since 2000.

The Post Point Heron Colony is located on a 30 acre site owned by the City of Bellingham. This site includes a 7.4 acre forest on a north facing slope (part of which is privately owned). The area below the slope is shrub and grassy margins approximately 1.6 acres, with the Post Point Lagoon - a 3 acre pocket estuary - to the northwest. Adjacent to the lagoon west, is the BNSF railroad causeway which separates the lagoon from Bellingham Bay. The colony is situated between a public trail and the Post Point Resource Recovery Plant (PPRRP) to the north and residential development to the south (Figure 2).

Figure 2
Post Point Heron Colony and Post Point Resource Recovery Plant (PPRRP)



PPRRP view from northeast to southwest - June 2014 COB Photo

HERON HABITAT and HABITAT UTILIZATION

The Post Point habitats utilized by herons include: mixed forest, wet meadow, estuary and marine shoreline. The uses include nesting, roosting, loafing, foraging and staging. Each habitat and associated use is described below.

Forest or Nest Stand

The colony's forest or nest stand is mixed second growth containing large conifer and deciduous trees. The dominant overstory species are red alder (*Alnus rubra*), big-leaf maple (*Acer macrophyllum*), and Douglas fir (*Pseudotsuga menziesii*). Emerging western red cedar (*Thuja plicata*) are also present. The forest provides a suitable substrate for large nests, and the material for nests. The forest also provides protection from wind and weather and screening from human activity. Currently the heron nest trees are red alder and big-leaf maple.

The heron's primary use of the forest stand is for nesting, although the nesting area or colony nucleus only occupies 0.3 acre, they also require space outside the colony for roosting, loafing, preening and pre-nesting staging.

Wet Meadow

Wet meadow or fallow field habitat, is limited to small patches near the lagoon. These grassy margins are important habitat for upland heron prey, particularly meadow voles (*Microtus townsendii*), which serve as a vital food source for herons during winter and early nesting season. In addition to foraging areas, this habitat is also used for loafing, sunning and occasional staging.

Estuary

The estuarine habitat is Post Point Lagoon, is a pocket estuary that is fed by surface water runoff and connected to Bellingham Bay through a gap in the railroad causeway. The Post Point Lagoon shoreline and salt marsh edges serve as loafing and foraging habitat. The lagoon supports eelgrass (*Zostera marina*) which was enhanced in 2008. The lagoon also serves as a fledging site for young heron exploring outside the colony. This area is used year-round.

Marine Shoreline

The marine shoreline habitat of Bellingham Bay provides eelgrass meadows and open intertidal areas for herons to concentrate and forage during the nesting season and year-round. The shoreline area from Marine Park to Post Point includes low gradient intertidal habitat that extends over 300 feet from the rip-rap edge out into the bay, providing a wide margin of foraging area during low tides. This is the closest marine foraging area to the colony and is important for that reason. The herons also utilize other areas described later in this report.

One unique habitat feature of the Post Point site is the man-made structures used by the herons. Clarifiers and buildings located on the PPRRP grounds are occasionally used for pre-nesting staging.

An aerial photograph of Post Point in Figure 3 (below) provides an illustrated view of the heron colony, nest trees, colony buffers, roosting areas and important features near the colony, such as the PPRRP, the railroad, Post Point lagoon and marine shoreline feeding areas. Management buffers are also displayed.

More detailed descriptions and maps of heron habitat and management areas at Post Point is provided in the [Post Point Heron Colony Management Recommendations Update 2019](#)

Figure 3

Post Point Heron Colony 2020



- Active Nest Trees
- Previous Nest Trees
- - - Recommended 300 Ft Vegetation Retention and No Disturbance Buffer
- Recommended 197 Ft Year-Round Core Zone Protection Buffer

0 100 200
Feet



GENERAL MONITORING - Methods

Annual Monitoring of the heron colony is a vital component of conservation and provides an ongoing record of the colony's status, health and productivity. The monitoring methods utilized at the Post Point Heron Colony were developed by the lead Biologist, Ann Eissinger and are in part based on the [Heron Working Group - Survey Protocol](#) (Vennesland/Norman 2006). These methods have been adjusted over time to accommodate site-specific conditions and monitoring needs at Post Point.

General monitoring of the Post Point Heron Colony includes weekly on-site visits and observations made from various locations in close proximity to the colony. Monitoring occurs during the nesting season from February to July or August, and includes both visual and audible observations. Visual tools include binoculars and spotting scope, while sound readings are measured using a smart phone-app.

Post-season monitoring takes place following the fledging of young from nests, and includes a nest count and mapping update in cooperation with the City of Bellingham GIS staff.

Data is collected on standardized field forms and transferred to individual spreadsheets which are used for tracking specific focal points. These include: nesting and behavior, trees and nests, Bald Eagle occurrence/depredation, and foraging. Due to the size of the Post Point colony, all visible nests are tracked through the season. Disturbance is assessed from all records. All vertebrate species observed in the vicinity of the colony are also recorded as part of the monitoring protocol. Reports from neighbors and other observers are considered separately. Results for the season are analyzed and summarized in the annual report.

Monitoring of the colony includes four primary objectives:

- 1) documentation of the nesting cycle or breeding chronology, and related behavior;
- 2) observation and recording of disturbances including natural predators, human and other natural or unnatural sources;
- 3) documentation of nest success and productivity;
- 4) recording and mapping of habitat utilization.

Monitoring of the colony captures 6 stages of the herons nesting season.

- Staging (1 week +/-)
- Colony Reoccupation (varies)
- Nest building, Mate selection, Courtship (varies)
- Egg laying (5 days +/-) and Incubation (28 days)
- Hatching and Rearing (8+ weeks)
- Fledging (young leave the nest usually at 8 weeks of age, but can vary)

In addition to colony monitoring, observations at nearby foraging sites are also made.

The total duration of the nesting season is usually about 6 months, but can vary. In the event that nests fail and herons lay a second clutch of eggs, and subsequently rear those young to fledging, the season may then be extended by 3 to 4 weeks. By contrast, the season may be condensed to about 4-5 months, which was the case for the 2018 and 2019 nesting seasons.

2020 MONITORING RESULTS

The 2020 Post Point Heron Colony monitoring began February 6 and ended September 21, 2020. Monitoring is conducted on a weekly basis. Due to the extended season in 2020, site visits were intermittent in August and September.

For this 2020 report, monitoring is divided into phases of the nesting season:

- Early Season (condition in the colony and staging),
- Colony Reoccupation (arrival and courtship),
- Egg-laying and Incubation,
- Hatching and Rearing of young,
- Fledging of young.

This monitoring report will provide a summary for each phase of nesting activity in the colony.

The weather is an important factor influencing the Post Point heron colony dynamics, conditions and productivity. Weather related notes will be dispersed throughout this report. The information provided is from the [Office of the Washington State Climatologist](#).

Prior to the 2020 nesting season, the fall/winter of 2019-2020 resulted in irregular weather patterns that ranged from severe wind storms in September and November, to record precipitation in October and from late January to February, irregularly warm-dry conditions in November and December, and a major winter storm with subfreezing temperatures, high winds and snow in January. A final winter storm hit briefly in March 2020 with high northeast winds and subfreezing temperatures.

The most severe weather impacting the colony occurred in September 2019 which changed the colony structure for the 2020 nesting season. A detailed description of this storm and related damage is provided in the 2019 Annual Report. Greater weather details are provided in the 2020 bi-monthly progress reports.



This photo, looking south from the public trail to Shorewood Dr., shows the tree blow-down resulting from the September 2019 windstorm. The high wind cut through the colony creating a gap in the core nesting area for 2020. Additional trees were also lost in the 2019-2020 winter – including nest trees.

Due to the loss of nest trees, new nests were established in trees on the west side of the colony (to the right) or west of the gap in 2020.

Photo by T. DuBow 2/9/2020

Early Season Assessment

Hérons began returning to Post Point in early February 2020. Unlike the past 3 years, no severe winter storms were experienced in February, which allowed the herons to return to the colony at a normal time, based on the colony's chronology. Although a cold snap occurred in mid-March with high velocity northeast wind, the herons remained in the colony and continued nesting activities at Post Point.

The first visit to the Post Point Heron Colony took place on February 6 and no herons were present. On February 9, a total of 4 individual herons were observed in the colony and one on a clarifier at the PPRRP. This early group of herons were staging prior to commencing nesting activities.

An assessment of the colony nest trees and a nest count was also conducted on February 9. A total of 28 nests in 17 nest trees were counted. These totals reflect the loss of 10 nests and 4 nest trees over the winter. Of the 4 nest trees, 2 (#601 & 604) were broken off during the fall-winter of 2019-2020 and the status of 2 (#560 & 602) is unknown, although #560 was dead in 2019. Most of the nest trees currently being used appear to be in good health except 3, one of which was dead. The loss of 4 nest trees and 10 nests during the fall/winter was relatively high, but the extreme wind events were clearly the cause of blow-down, and the nests can be rebuilt as needed. However, the wind damage to the colony from both 2018 and 2019 has changed the nesting area and buffer by creating a gap through the core area. This gap reduces nesting substrate and screening, opening the core area to visual and wind exposure for the 2020 nesting season.

Colony Reoccupation, Courtship and Early Nesting

The 2020 reoccupation of the Post Point Heron Colony began in late February, a month earlier than 2019. Although herons were observed in the colony on February 9, the following week the colony was deserted. Occupation of the colony and nesting activities did not commence in earnest until the week of February 23, when 12 herons were present, and both pairing/courtship and nest building had begun.

By March 1, at least 18 of the 28 nests were occupied and courtship and nest building was underway. On March 7, 3 new nests had been built and egg laying was noted at 4 nests. Incubation had started by the following week. Meanwhile more herons were arriving and new nests were under construction through the month.



Colony reoccupation February 2020. Photo by Alan Fritzberg

At the end of March, 36 nests were visible and all were occupied. Of those nest, 6 nests were located in 5 new nest trees to the west of the blow-down "gap", so the colony had exceeded full saturation of existing nests and was expanding.



Heron gathering nest material at Post Point Heron Colony (above)



Cooperative nest building (right)

photos by Nancy Downing 2/29/2020

Egg-laying and Incubation

For 2020, the heron's egg-laying and onset of incubation at the Post Point Heron Colony overlapped with the colony reoccupation in March. By the second week of March, egg-laying was assumed by the horizontal posture of herons in nests, followed by the onset of incubation. By March 30, herons in 11 nests were incubating or about 30% of the nests in the colony. Incubation requires 4 weeks and hatching of young is asynchronous.

The primary activity in the heron colony for April was incubation. As of April 5, 37 nests were occupied and most were incubating eggs. Although an eggshell was found under tree #603 on April 12; it is likely the egg was depredated by a Bald Eagle, not a result of hatching.

Hatching and Rearing

May is generally the month of hatching young and the onset of the rearing period. The hatching period varies at each nest continues over a few days, since eggs hatch asynchronously. The young are brooded while unhatched eggs continue to be incubated. Although 4-5 eggs are laid in each clutch, normally only a portion of these produce young that survive to fledging age.



Photo by Alan Fritzberg

At Post Point, the onset of hatching for 2020 was April 26, with eggshells observed under 2 of the 40 active nests. This was 9 weeks following the reoccupation of the colony. By May 4, at least 50% of active nests had hatched young. By May 11 hatching was nearly complete; however 2 nests were not confirmed and 1 nest was significantly late.

From hatching, rearing of young begins which requires 8 weeks. During this time, young are restricted to the nest and are completely dependent on both parents for all food and liquids. The young will start out with sparse downy fuzz, and need brooding by a parent for warmth and protection. Feathers grow quickly and cover the body within three weeks. Both adults attend the nest and young during the rearing period, trading off to feed and forage. During the first 4 weeks of rearing, 1 adult remains in attendance at the nest for protection. Rearing of young continued through May, June, into early July for most nests.

The rearing of young at Post Point for the 2020 season was relatively smooth, however certain events did contribute to stress and some mortality within the colony. Due to full sun and unseasonable hot temperatures (up to 81°F) the week of May 10, many heron adults were observed shading their still downy young by standing with their backs to the sun and spreading their wings to providing the shading of the nest and nestlings.

By June a total of 41 nests were visible and 40 were active. However, during June, 2 nests fell from their trees (562a and 599) and the 3 young in each nest perished. Both trees were dead, so the branches holding the nests broke off and winds up to 30 mph likely contributed to the loss. At least 2 other nests were observed with one dead young in the nest on July 12, 2020. Dead young in nests are relatively common, since on average only half of the five eggs layed will result in a fledged young. However, one nest at Post Point did successful raise 5 young in 2020.

Two nests (568d and 603b) appeared to be active during the season, and one downy young was observed (568d), but no large young were observed or fledged. It is assumed that these nests failed.

One new nest (562e) was first observed on June 2. Two young in the nest were first detected on July 27, and 3 young were observed August 11 at which time they appeared to be about 3 weeks old. On August 22, 4 young were recorded. On September 14, one heron was observed leaving the colony and assumed to be associated with nest 562e. On Sept. 21, no herons remained in the colony. Fledging of the young is estimated to have occurred between September 10 and 15. This is the latest fledging date for the Post Point colony.



Large young near fledging age food begging.
Photo by Nancy Downing 6/19/2020

Feldging

Fledging is the final stage in the nesting period and usually occurs when young are about 8 weeks of age. In preparation to fledge, young heron exercise their wings while in the nest, followed by walking up limbs near their nests, and then taking test flights around the colony or nearby. The older young of a brood leave the nest first, so there may be a progression of young leaving the nest over the course of a week or more. When young actually leave the colony they may return following feeding or disperse from the colony for the season.

For the 2020 season, the fledging of heron young was first noted June 28 and the last nest to fledge was about September 15. A total of 41 nests were active during the 2020 season, and of those 36 nests fledged young.

2020 colony fledging progression:

- July 6, 9 nests fledged = 25%
- July 12, 16 nests fledged = 44%
- July 19, 7 nests fledged = 19%
- July 27, 3 nests fledged = 8%
- Aug. 11, 1 nest fledged = 2%
- Sept. 15, 1 nest fledged = 2%

From these results, the majority of young, or nearly 70% fledged, from the colony the first 2 weeks of July and 96% by August 1, 2020.

Failed Nests:

- 599 – nest fall out of tree with 3 young 6/28/2020
- 562a - nest fall out of tree with 3 young 7/2/2020
- 568d - 1 downy young 6/28/20, then abandoned 7/12/2020
- 603b - no young observed

Post Point Heron Nesting Chronology Summary 2020

In brief, the herons returned to Post Point and nesting was successful. The chronology of the 2020 nesting season includes the following dates of note:

- February 6: first monitoring visit no heron present
- February 9: colony assessment – staging underway in and out of the colony nucleus
- February 23: reoccupation of the colony
- March 1: courtship and nest building
- March 7: egg laying, continuation of courtship and nest building
- March 16: incubation underway
- April 26: onset of hatching
- May 11: hatching complete (most nests)
- April 26 to June/July rearing of young - requires 8 weeks
- June 28: onset of fledging
- July 19: 88% nests complete fledging
- July 27: 3 nests remain active – 2 fledge soon after
- August 11 – September 15: one nest remained active and fledged 4 young

The total duration of the nesting period at Post Point in 2020 was 22 weeks as of July 27. One nest continued to be active into September. The season duration if including the late nest is 28 weeks, the latest a nest has successfully continued and fledged young. As compared to previous nesting seasons, the second longest season was 25 weeks in 2015.

A historical accounting of nesting periods and chronology is available in previous annual reports.



PRODUCTIVITY

The productivity of the visible nests within the Post Point Heron Colony is monitored annually, and measured during on-site visits prior to fledging. Productivity within the colony is an important indicator of the health, fitness and adequate food for a heron colony. It may also indicate mortality or reproductive failure. Herons lay four to five eggs per nest and may fledge a maximum of five young, but normally fledge two to three young per nest.

Productivity is measured by counting young in each nest (small colonies) or by using a sample of nests (large colonies >100 nests). The count is completed late in the season prior to fledging. At Post Point all the young are counted at each visit, as soon as they are visible, particularly when being fed, and this provides an accurate count based on visibility of the nest.

For 2020, the Post Point Heron Colony had a total of 44 nests for the season. Of those total nests, 40 were active and with young, and 37 successfully fledged young. One nest appeared to have only adult herons present so was not included as a active nest with young.

Based on season-long weekly observations of the colony and tracking of the active nests, a total of 103 young were counted (same as 2019). Of the total young recorded 94 survived to fledging age. In 2019 103 fledged, 2018 – 97 and in 2017 - 89 young were fledged.

The observed loss of 2 occupied nests and recorded mortality of young in 2020 was a change from previous years.

The 2020 productivity for Post Point was within a normal range for the colony. The productivity for 2020 was 2.51 per active nest, and 2.54 per successful nest. The productivity declined slightly compared to 2019, but was still an improvement over 2018. In 2019 productivity was 2.57 per active nest and 2.7 per successful nest, compared to 2018 which was 2.2 per active and 2.3 per successful nest.

Mean productivity for a colony may be expressed in 3 different ways.

1. Per successful nest = total young divided by nests that fledged young, which does not account for inactive, lost, depredated or abandoned nests within the colony.
2. Per active nest = total young divided by all active nests for a given season, which does not account for inactive nests.
3. Per total nests = total young divided by all nests within a colony, which skews productivity results depending on the number of inactive nests.

For the Post Point heronry, young in all nests have been counted since 2013, so productivity for all active and successful nests can be calculated. Between 2010-2012 counts were taken from samples of nests that were clearly viewed. In 2008-2009 the colony failed, and prior to that productivity was also based on sampling.

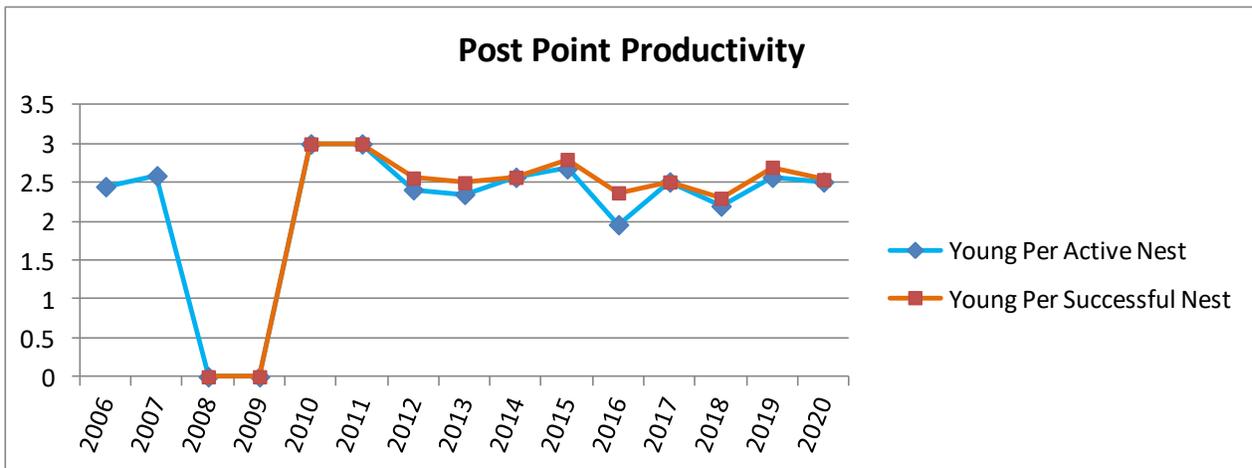
Productivity for Post Point has been above the normal range for this region based on published data. The comparable references include 1998-1999 averages for south-coastal of British Columbia which range from 1.24 per active nest to 2.15 per successful nest (Butler and Vennesland 2004) and 2000 averages in King County of 1.77 per active nest and 2.42 per successful nest (Stabins et.al. 2006). Based on these figures mean productivity is 1.5 per active nest and 2.28 per successful nest.

For the Post Point Heron Colony the mean productivity for a period of 8 years, 2013-2020 is: 2.41 for active nests and 2.52 for successful nests.

Table 1: Post Point Productivity 2013-2020

Year	No. active nests	No. successful nests	No. young total/fledged	No. young per active nest	No. young per successful nest
2020	40	37	103/94	2.51	2.54
2019	40	38	103	2.57	2.7
2018	44	41	97	2.2	2.3
2017	35	35	89	2.51	2.5
2016	29	24	56	1.96	2.3
2015	25	24	67	2.68	2.8
2014	21	21	54+/-2	2.57	2.57
2013	17	16	40	2.35	2.5

Figure 4



Note: the Post Point Heron Colony was active but abandoned mid-season and failed to fledge young in 2008 and 2009.

NEST – TREE SURVEY and MAPPING UPDATE

The annual nest count is the standard method for determining the number of nests within a heron colony. Autumn nest counts, following leaf drop, allows maximum viewing of the whole heronry, and is used to attain a total nest count.

In most heron colonies not all nests are active or successful in fledging young, so although the autumn nest count provides a total, it does not represent active nests. A count of active nests needs to be conducted during the nesting season or immediately following the fledging of young.

Due to the size of the Post Point Heron Colony and regular monitoring, visible nests are counted and tracked throughout the season as well as in the autumn.

During each annual nest count, each nest tree is tagged or existing tags are read, recorded and tree condition is noted. New nest trees are located with GPS, recorded and tagged. The number and size of nests are recorded as well as the presence of egg shell, remains or blown down nests. All information is recorded on a spreadsheet. A map, illustrating the nest trees and locations in the heronry, is updated annually by the City of Bellingham (Figure 6).

For 2020 a colony assessment was made November 18, by the consultant and City of Bellingham personnel. All nest trees and nests were evaluated and recorded. A total of five new nest trees were tagged and the locations of nest trees were updated with GPS.

The results of the 2020 colony assessment are:

- Total nest trees = 23
- Total new nest trees = 5 (all located west side of colony)
- 21 nest trees = red alder
- 2 nest trees = big-leaf maple
- Total nests counted Nov 2020 = 34

For the most part the nest trees are in good or excellent condition. The nest trees that had died in the winter of 2018-2019 have either fallen or broken off.

Changes during 2020 season:

- Nest tree loss = 1 top broke off
- Total nests in colony during nest season = 44
- Total nest with young = 40 (same as 2019)
- Nests lost during nest season = 5
- Nests lost Sept-Nov = 5 (likely blown out of trees)

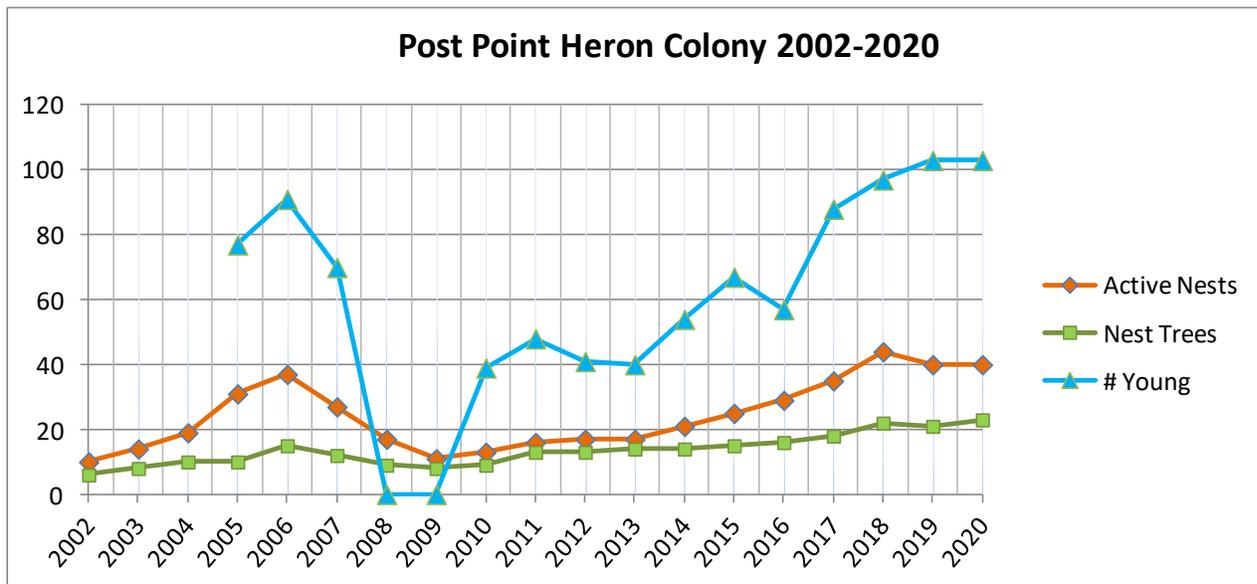
The total number of nest trees changed by 1 from 2019 and 2018.



Similar to the past three years, a high nesting concentration in certain trees has continued. In 2020 55% of the nests were located in 6 trees. In 2019 and 2018 50% of nests were located in only 5 nest trees, and 2017 - 74% of nests were located in 8 trees. This concentration increases the density of the core nesting area.

The graphic summary of nests, trees and young over the past 19 years is provided in Figure 5.

Figure 5: Post Point Heron Colony Trend



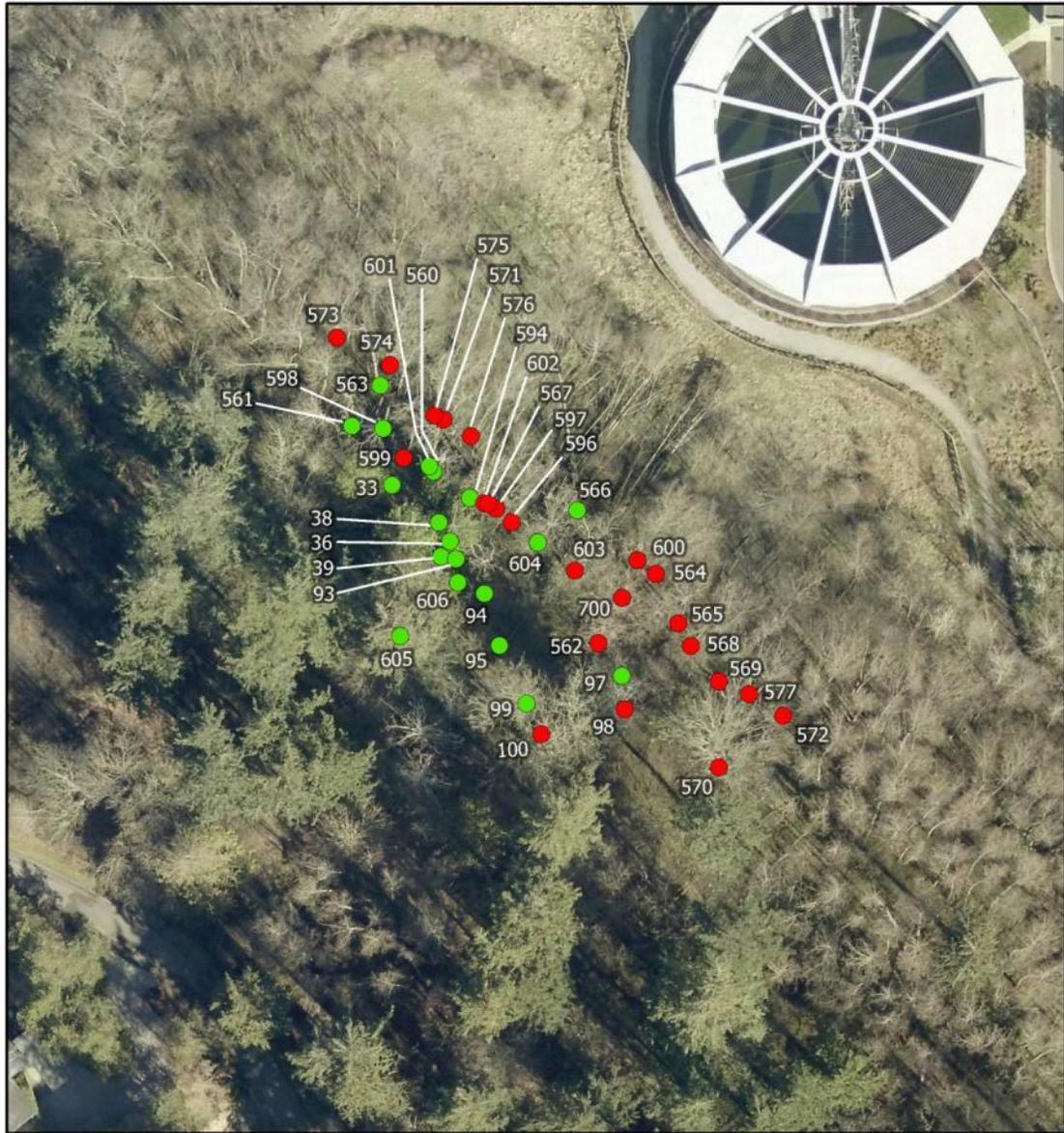
Note: No productivity data 2001-2004. Colony mid-season failure 2008 and 2009.

Colony Mapping

The 2020 colony map (Figure 6) illustrates all nest trees in the colony, including those used in past years (green) and those active in 2020 (red). The location of nest trees is determined by GPS and then mapped by the City of Bellingham. A tree location update using GPS was conducted in November 2020. Note - trees on northern buffer that blew down 2018-2019 are visible on the underlying aerial photo.

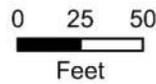
Figure 6: Colony Map 2020 Detail

Post Point Heron Colony 2020



2019 Air Photo

- Active Nest Trees (with Tree ID)
- Previous Nest Trees (with Tree ID)



FORAGING OBSERVATIONS

One major contributor to productivity and the success of the heron's reproduction each year is foraging access and food supply. Herons depend on live prey from marine and fresh water systems, and terrestrial areas. Although the heron's prey species are known, no local data exists for these species, occurrence, seasonality, distribution, or abundance. A local assessment is needed to better define feeding areas, seasonality, and the prey available in each of those areas.

Basic foraging surveys are conducted during each nesting season and coincide with colony site visits. Heron numbers are recorded at the most immediate foraging grounds., Post Point Lagoon and the Marine Park shoreline south to Post Point where eelgrass meadows provide optimal habitat (Figure 3). Heron observed utilizing upland habitats for feeding are also recorded. The Post Point herons also feed in other areas, refer to the [Post Point Heron Colony Management Recommendations Update 2019](#) for more detail and maps.

Of the total 28 site visits during the 2020 season, 13 were during favorable* foraging periods. Of these favorable foraging visits, 9 resulted in herons observed foraging along the marine shoreline or the lagoon. The table below provide foraging results by month for 2020.

Table 2: 2020 Foraging Survey Summary by month

Month 2020	# site visits w/ favorable foraging	# site visits w/ herons observed	# heron observed on Marine Park shoreline per visit	# heron observed at post point lagoon per visit
Feb	0	1	1 (2.5 ft. tide)	0
March	2	1	0, 3	0
April	1	1	2	0
May	3	3	1 (2.3 ft tide), 5, 2,	0
June	3	1	2	0
July	4	2	6, 2	0
August	no foraging obs	-	-	-
TOTAL	13	9	23	0

*Favorable foraging periods are at tidal stages 3 feet or below for the outer shoreline from Marine Park south, or when herons are present. The lagoon area is utilized for feeding and loafing, so herons may be present at any tidal stage.

Adult herons are also regularly observed flying across Bellingham Bay to access foraging areas near Portage Island and the Nooksack River estuary. During the 2020 season, heron flights from the colony were frequently observed to these locales, indicating their use as primary foraging areas. Chuckanut Bay is also used and heron were observed flying from the colony to Chuckanut Bay in March 2020.

The results of 2020 foraging surveys were mixed. Low heron numbers along the shoreline during optimal conditions (minus tides) coincided with high human use of the shoreline (see photo below). Overall there were fewer herons observed utilizing the shoreline than in 2019 or 2018. Considering the size of the colony, there should be from 40 to 80 adult heron foraging during optional feeding periods, however, heron numbers on the Post Point shoreline are low. A comprehensive foraging survey is needed to determine current use patterns and locations throughout Bellingham and Chuckanut Bays.



Marine Park looking south over heron foraging area dominated by people 5/26/2020 -1.8 low tide photo by T. DuBow

Other Species

During the monitoring season, species occurring in the nest stand and vicinity are recorded. Over 60 species of birds have been observed in or near the Post Point Heron Colony including the shoreline areas. For 2020 there are 3 additional species are notable.

Unique to this season was the occurrence of Black Oystercatchers (*Haematopus bachmani*) at the Post Point Lagoon on June 14, 2020. Oystercatchers are usually associated with rocky shorelines where they feed on mollusks. The status of this species in the Salish Sea is poorly understood, with only 210 active nest sites within the region during 2005/06 (Golumbia et.al. 2009).

Another unusual observation was what appeared to be a juvenal marine rock fish, possibly a greenling (*Hexagrammos sps*) or Pacific cod (*Gadus macrocephalus*) in the heron colony, dropped during feeding.

Within the intertidal area of Marine Park, the non-native Asian mudsnail (*Batillaria attramentaria*) has been observed. This species has been present in Padillia Bay and Samish Bay, and is now numerous in Bellingham Bay. New research was recently launched at the Padilla Bay National Estuarine Reserve to determine the role of Batillaria in the local ecosystem and determine if it is deleterious and should be considered an invasive species.



Possible greenling or Pacific cod in heron colony



Batillaria at Marine Park Photos by T. DuBow 2020

DISTURBANCE

Disturbance to heron colonies is a common cause of colony abandonment. Disturbance may be the result of natural or unnatural causes, and is defined as an adverse behavioral and/or physiological response from at least one individual (Sutherland 1996, Walker et al. 2006). Repeated disturbances may result in, reduced food intake, reduced productivity or reproductive failure. Disturbances over time may cause the nesting colony to fragment, abandon or relocate.

One objective of on-site monitoring is to record disturbances or disruptions to the herons and supporting habitat. Any loss of heron, young or eggs, or repeated disturbance to the colony or feeding area is documented. The City of Bellingham is informed when causes are identified and can be corrected with further action. Unfortunately, weekly monitoring is limited and maybe inadequate to witness disturbances in real-time, so monitoring is supplemented by reporting by neighbors, citizens and PRRRP staff.

For 2020, observed direct disturbances to the heron colony were limited to Bald Eagle incursions. Unintentional or passive disturbances include an unauthorized trail next to the colony, recreationalists on the marine shoreline/foraging grounds and the BNSF train. The passive disturbances will be discussed first followed by the Bald Eagle accounts.

The unauthorized trail originating on Shorewood Drive, continues to be used and cuts through the forest immediately east of the heron colony. This trail is in full view of heron nests and is within the colony's core area. Disturbance to the herons is possible particularly in the early season. The City has attempted to block the trail and post signs, however the trail continues to be used and should be permanently blocked and restored.

An ongoing issue has been human/heron interactions along the shoreline at Marine Park south. This area is an important foraging site for herons and is also a very popular shoreline use area for people, dogs and water-sports enthusiasts, thus creating conflicts during certain tidal stages.

In an effort to educate the general public and reduce interactions between beach users and herons, per the [Post Point Heron Colony Management Recommendations Update 2019](#), the City of Bellingham posted signs on a fence by the railroad at Marine Park and on the public trail near the heron colony. The signs were posted June 25, 2020. The signs illustrate a shaded area associated with heron use including the nest stand, trail, lagoon and intertidal shoreline. The readers are asked to:

- Keep dogs on leash
- Maintain a distance of 300 feet from feeding herons
- Avoid flying drones, kites, or using kiteboards
- Limit noise

No systematic observations were conducted to determine the efficacy of the signs or if people were reading them prior to reaching the beach. However photos taken on site showed recreationalists utilizing all parts of the shoreline and coming close to herons both on land and water.



Unauthorized trail next to colony



Sign posted at Marine Park
Photos by T. DuBow 2020

Due to Covid-19 no Ski to Sea Race activities occurred at Marine Park and no Fourth of July fireworks were displayed over Bellingham Bay. However, the park, shoreline and trails associated with Post Point were busy with pedestrians particularly during nice weather and low tides.

Railroad train activity along the BNSF rail next to the Post Point Heron Colony has increased over the past several years, with increased frequency, longer loads and noise. As a result, improvements to the tracks and increased maintenance activities have also occurred. Train whistles or horns, braking and other associated noise is at times pervasive, and measured in 2020 ranging from 76 to 88.8 decibels (dB) at the colony, while the average ambient noise level at the colony is 50-60 dB. Although the train noise does not have an observable disturbance to heron in the colony, train related flushing of heron from feeding along the shoreline has been observed. According to the BNSF website, train horns are estimated to be 96 to 110 dB, and are sounded multiple times when approaching a road crossing or if there are safety concerns. A quiet zone for Bellingham is in process according to the City Engineer. However, since there are five at-grade crossing within the Fairhaven Quiet Zone, and two are planned to be upgraded by the end of 2021, all will need to be completed before the quiet zone will take effect. This is a multi-year process and no date for completion for the Fairhaven segment has been determined.

Drones and helicopters are a concern near heron colonies. Disturbance to herons may occur, and in the case of helicopters damage may result from downwash. In the past drones and helicopters have been reported flying over or in the vicinity of the Post Point Heron Colony. In 2020, 1 helicopter was observed flying over the colony with noise level measured at 70.2 dB, no disturbance to the herons or colony was noted.

Another type of disturbance, or more of a disruption, is extreme weather. Although no abnormally extreme weather events were recorded for the 2020 nesting season, there were periods of irregularly heavy rain and gusty winds. Nest trees that had died in the winter of 2018-2019 have been falling, breaking off and this season limbs containing active nests broke off resulting in the loss of 2 active nests and at least 6 young. This sort of natural disruption will continue until the dead nest trees have all fallen or are no longer used for nesting.

Bald Eagles *Haliaeetus leucocephalus* pose one of the greatest threats to the success of heron reproduction by disturbing colonies, eating unhatched eggs, and both preying on young heron and flushing flightless young out of nests. More aggressive eagles also threaten and prey on adult herons. However there is also clear evidence that Bald Eagles nesting near a heron colony have a beneficial effect on the heron colony productivity because the eagles repel other eagles from their nest territories thus limiting the depredation (Jones et al 2013).

Only Bald Eagles have been known to directly disturb or prey on the Post Point herons. Other raptor and corvid species occur in the area, but do not disturb the herons. Crows nest near the colony and attempt to chase eagles and away from the colony.



Resident Bald Eagle Pair
Photo by Andrea Warner 5/14/2020

Bald Eagles are common near the Post Point Heron Colony. One or occasionally 2 eagles may be seen regularly perched above the colony or to the west. The most common occurrence is the mature male eagle, which seems to favor perching above the colony with its view over the bay. The eagle's passive presence does not disturb the herons.

During each monitoring visit to and in the vicinity of the heron colony, any observations of Bald Eagles are recorded. Of the 28 monitoring visits to the colony in 2020, 16 were positive for Bald Eagle presence. Of these sightings, most were benign, i.e., 5 were of a solitary eagle perched above the colony, and 1 was of an adult pair, 2 were of a eagles perched to the west in a large fir and 4 were of eagles flying over, interacting over the lagoon or calling to one another. Unlike recent seasons, eagles were observed in the colony and at least 2 incursions were observed. These observations include the following.

- February 6: Young eagles were observed interacting with the adults near the colony and one young eagle was observed perched in the colony.
- March 1: A 1 year old eagle flew low over the colony and flushed a few herons from the nesting area.
- April 12: A 1 year old eagle flew low repeated passes over the colony, upsetting the herons. Crows tried to fend off the eagle. One heron eggshell found under nest tree #603 – possibly predated.
- July 12: Three adult eagles were observed, 1 eagle was near nest #600a eating something, which could have been a scavenged dead young, since all of the young in that nest were accounted for following the incident.

No heron nests were abandoned in 2020 as a result of eagle incursions or disturbances.

Bald Eagles nest near the heron colony. A pair of Bald Eagles, once nested next to the heron colony (alternate nest tree), but relocated to a nest site on Hawthorn Rd. approximately ½ mile southeast of the colony. The current nest site was active between 2014 and 2016 as well as 2020. Activity at the nest was not observed in 2017-2019, however young eagles were in the

vicinity in 2018 and 2019, and neighbors recently reported that the Hawthorn nest was active and fledged young in 2019.



In 2020, the Bald Eagle nest on Hawthorn Rd. was confirmed to be active and produced 1 young. The nest was regularly monitored by a volunteer citizen who shared updates and photos of the nesting pair and young.

Adult Bald Eagle feeding young at the nest

Photo by Andrea Warner 6/10/2020

The status of Bald Eagles in this region is not known, due to the discontinuation of Bald Eagle monitoring by WDFW. Bald Eagles were removed from the Federal Endangered Species Act in 2007, and down listed to “Sensitive” in Washington State in 2008. However, Bald Eagles and their nests, remain protected under the [Bald and Golden Eagle Protection Act](#) (federal), and local Critical Area guidelines.

CONCLUSION

This Annual Report provides the final summary of the 2020 heron nesting season and results of all monitoring activities. A total of 28 monitoring visits were made to the colony this season.

During 2020, the Post Point Heron Colony completed a successful nesting season, producing young and contributing to the perpetuation of this species in the Salish Sea. For the 21st season, the heron’s return and successful productivity are testament to the heron’s high site fidelity and resilience in an urban environment.

The 2020 nesting season started in February. A total of 40 nests were active, with 37 nests successfully fledging a total of 94 young for an average of 2.54 young per successful nest. Although some trees were lost in winter wind storms, 5 new nest trees were used for a total of 23. The season concluded with most young fledging and heron dispersed in July, however nesting continued through August and one nest successfully fledge young in mid-September, the latest nesting recorded at Post Point.

No significant disturbance or disruption to the colony was observed or reported during the 2020 nesting season. Bald Eagles were present near the colony and a few incursions occurred, but did not affect productivity. Human related issues persist in and near the colony, including: use of an unauthorized pedestrian trail in the colony core area, human use of heron foraging areas at low tide causing passive disruption of feeding activity, and loud train noise and frequent passage of trains which occasionally flush herons from feeding areas.

Due to Covid-19 restrictions, the Ski to Sea race and the annual Fourth of July fireworks display on Bellingham Bay were cancelled, reducing potential disturbances to the nesting herons.

Overall, the 2020 was a successful breeding season for the Post Point Heron Colony.

Looking ahead to 2021, it is recommended that the pedestrian trail in the colony core area be blocked and restored. Also, the tentatively scheduled 2021 Ski to Sea race on May 30 will coincide with a particularly low tide (-2.15 ft.) at 2:51pm and the peak of incoming tides to Marine Park. This is also a very favorable tide and time for heron foraging, and all productive nests will have young in the nest to feed. It is therefore recommended to keep crowds off the intertidal shoreline area south of Marine Park to reduce disturbance to the herons.

Habitat protection in and around the heron colony, and foraging areas, remain a priority. Please refer to the [Post Point Heron Colony Management Recommendations Update 2019](#) for more information.



Post Point heron young in a nest - photo by Nancy Downing
2020

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