

# Post Point Heron Colony

## 2016 Monitoring - Annual Report

*prepared for:*

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Post Point Great Blue Heron Colony Annual Chronology

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## EXECUTIVE SUMMARY

The Post Point Great Blue 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 Wastewater Treatment 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.

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 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 2016 Post Point Great Blue Heron Colony Annual Monitoring are detailed in this annual update. Monitoring of the site spanned 6 months and included 27 site visits through the nesting season. Between late January and late July the herons reoccupied the colony, nested, hatched and reared young to fledging.

Following a rough start to the nesting season, with a temporary desertion of the colony, the herons returned to nest in March and young were successfully fledged in July. A total of 29 nests were active in 2016, five of which failed during the nesting season resulting in 24 successful nests, same as 2015. Two new nest trees were added. However, productivity was lower overall. Bald Eagle presence around the colony was infrequent and also peaceful this season, with no incursions in the colony reported. No major disturbances were observed or reported in the colony or foraging area. In general 2016 was a successful nesting season for the Post Point heron colony.

## INTRODUCTION

The Post Point Great Blue Heron Colony Annual Report details the 2016 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). This is the only known heron nesting site in the City of Bellingham and is considered a sensitive breeding habitat area. The colony is small, yet unique within the city and is important to 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 Habitats by WDFW, and as Critical Areas in many jurisdictions, including Bellingham, requiring the protection of both the herons and their habitat. Heron nesting colonies are sensitive to human disturbance, requiring special management to maintain their stability and productivity. The [WDFW Management Recommendations for Great Blue Heron](#) provides the necessary guidelines and important life history information to inform planned projects and activities near heron colonies.

The City of Bellingham Public Works Department has supported the conservation of the Post Point Great Blue Heron Colony site by developing a management plan (2003), establishing a scientific baseline (2005), and sustaining professional monitoring of the colony, which has been ongoing since 2005. However, due to the 2014 completion of the Post Point Wastewater Treatment Plant expansion, resulting in subsequent major landscape changes and infringement of buffers, and updates to the WDFW Management Guidelines for heron colonies, the original management plan (2003) has become obsolete and requires updating.

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 trees utilized during the breeding season and assess overall forest health.

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

Bald Eagle activity in the vicinity 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 year to year.

Planning and implementation of monitoring in 2016, including on-site field observation and data collection, was conducted by Tami DuBow and Ann Eissinger of Nahkeeta Northwest Wildlife Services based in Bow, Washington. Ms. Eissinger has over twenty five years experience monitoring Great Blue Herons and is expert in heron ecology, behavior, colony dynamics and

stewardship. Her 2007 publication provides the most up-to-date synopsis of heron life history and status as a valued ecosystem component in Puget Sound - [Great Blue Herons in Puget Sound: Technical Report 2007-06](#) prepared for the Puget Sound Nearshore Partnership. This technical report, serves as the general reference for heron life history and breeding information used in this annual update.

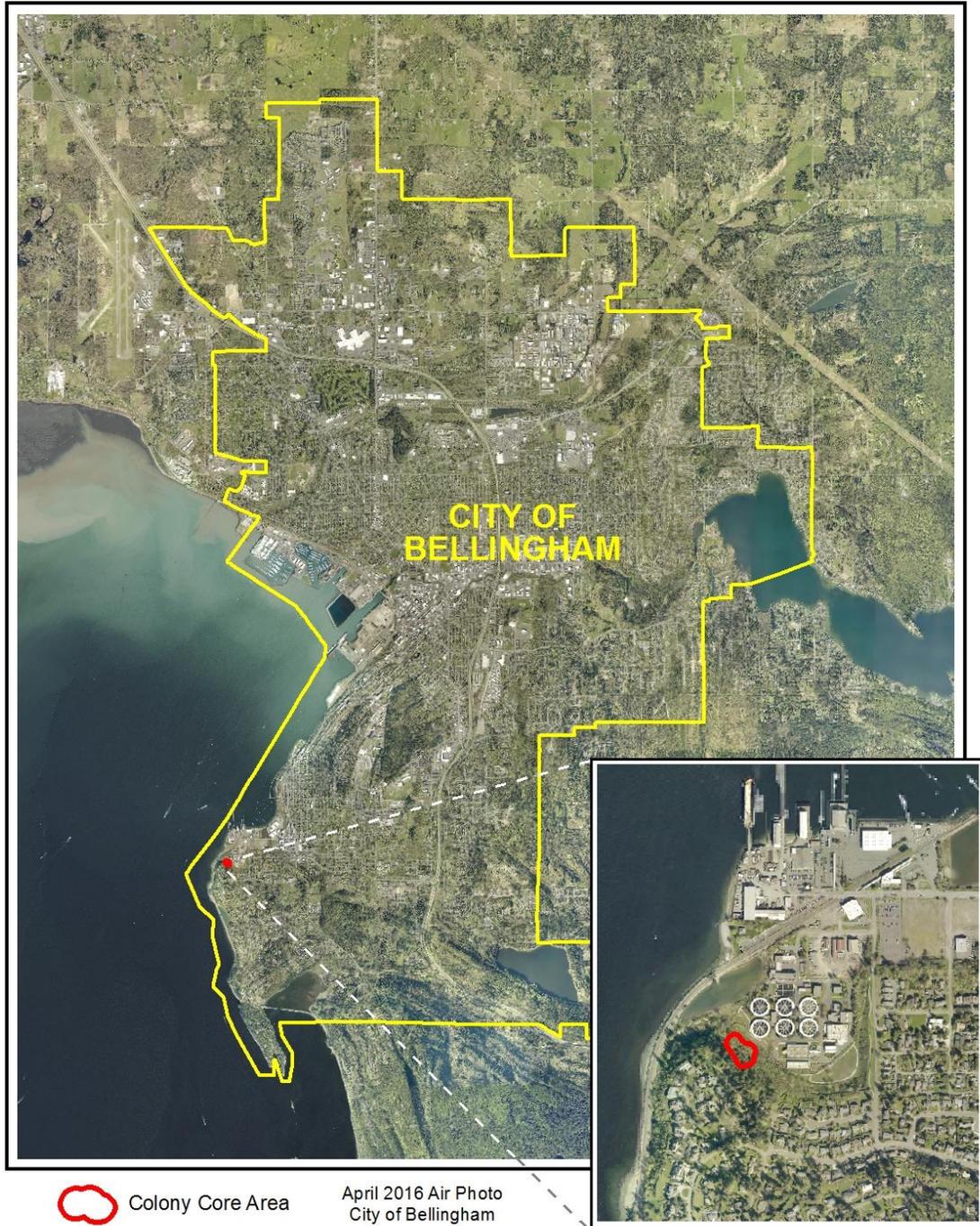
Ms. Eissing is also the author of the 2003 Post Point Heron Colony Management Plan and 2005 Post Point Heron Colony Baseline Study prepared for the City of Bellingham, Department of Public Works. In addition, the Biologist has assisted in the development of interpretive displays and public education materials for Post Point and has provided public educational programs featuring the herons of Post Point and elsewhere around Puget Sound.

Progress reports submitted to the City of Bellingham during the nesting season document the heron's nesting activity and any observed disturbances. The point of contact for this project is the City of Bellingham Department of Public Works Post Point Wastewater Treatment Plant Operations Supervisor, Karl Lowry.



Figure 1  
Post Point Heron Colony Location

### POST POINT HERON COLONY



## HERON HABITAT, HABITAT UTILIZATION and CHANGES

Historically, Great Blue Heron would gather and roost year-round in the forested nearshore area of Post Point. This forest habitat has provided protection from prevailing winds and weather, with the exception of wintery northeasters. This site occupies a patch of natural forest buffered from growing residential and urban development, providing direct access to foraging areas and field 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 since 2000.

### Upland Habitat

Up to 2012, habitat and conditions had remained stable in and around the Post Point heron colony. Improvements were made to buffer the nesting colony to the north from passive human recreation, and to expand estuarine habitat in the nearby lagoon. However, following the 2012 nesting season, the City of Bellingham began the expansion of the Post Point Wastewater Treatment Plant (PPWTP) adjacent to the heron colony and associated habitats. With the plant expansion, the immediate wet meadow habitat was greatly reduced as the footprint of the PPWTP was expanded; including a large permanent clarifier structure built just over 100 feet from the nesting colony. In addition to the structure, a public trail was also constructed between the clarifier and the heron colony, allowing public access nearly 60 feet from the nearest nest. Fencing and some vegetation provides the only barriers between the public trail and nesting area.

The habitats utilized by the herons of Post Point include upland mixed forest, nearshore bluff, marine estuary, shoreline, intertidal eelgrass, and occasionally human structures. The upland mixed forest, situated along the nearshore bluff at Post Point, provides the structural substrate for seasonal nesting and year-round roosting. Within close proximity of the colony is favorable habitat including small patches of grassy fallow field, marine shoreline, protected lagoon, estuary and intertidal area with eelgrass meadows. There is also human development and a major railroad corridor situated between the colony and Bellingham Bay.

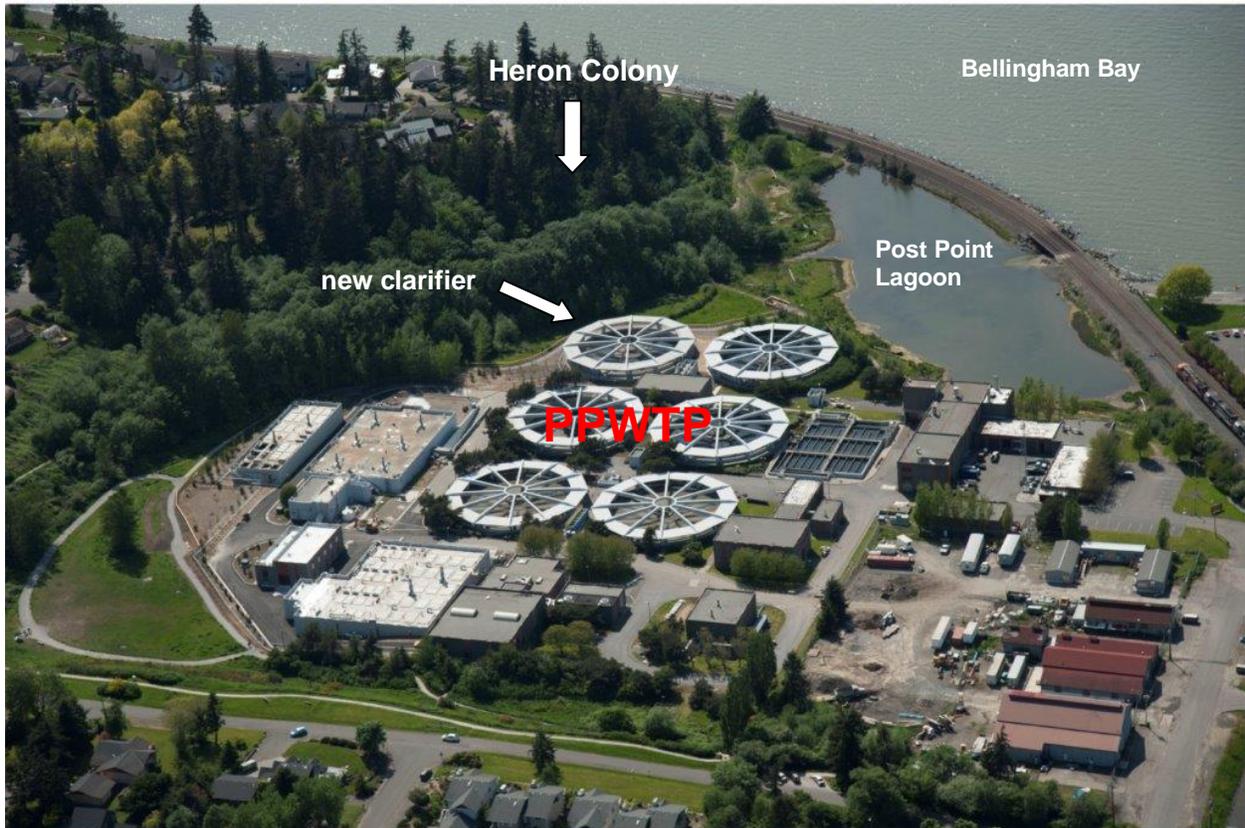
The upland forest, where heron nesting occurs, is located along a historic shoreline bluff and bluff toe. The bluff line allows the heron separation and elevation above the shoreline park and nearby industrial facilities. Immediately upslope from the colony are well vegetated undeveloped residential lots.

The colony's forest is mixed second growth containing mature conifer and deciduous trees. The tree species utilized by the herons for nesting have changed over time from a mix of Pacific paper birch (*Betula papyrifera*), big-leaf maple (*Acer macrophyllum*) and red alder (*Alnus rubra*) to only alder. The nest stand is dominated by alder and Douglas fir (*Pseudotsuga menziesii*). Many of the older nest trees are mature and have died or blown over during the past ten years. The birch may have succumbed to birch blight and have died, and not regenerated. Large Douglas fir trees define the bluff and provide a critical overstory, screening and wind break for the colony; they also serve as the primary roost trees for herons and Bald Eagles.

Fallow field habitat, present now only in small patches below the heron colony, is an 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 the field, the Post Point Lagoon and salt marsh edges also serve as loafing and occasional foraging habitat. The lagoon also serves as a fledging site for young heron exploring outside the colony.

Although these habitats were identified as important to the herons, the expansion of the Post Point Wastewater Treatment Plant and construction of a new clarifier removed approximately 8,300 square feet of wetland habitat and part of that is existing wet meadow or field. Mitigation for lost wetland and meadow habitat is described in the [Post Point Wastewater Treatment Plant Expansion Mitigation Plan](#) dated 2011.

**Figure 2**  
**Post Point Heron Colony and Post Point Wastewater Treatment Plant (PPWTP)**



Completed Expansion June 2014 COB Photo

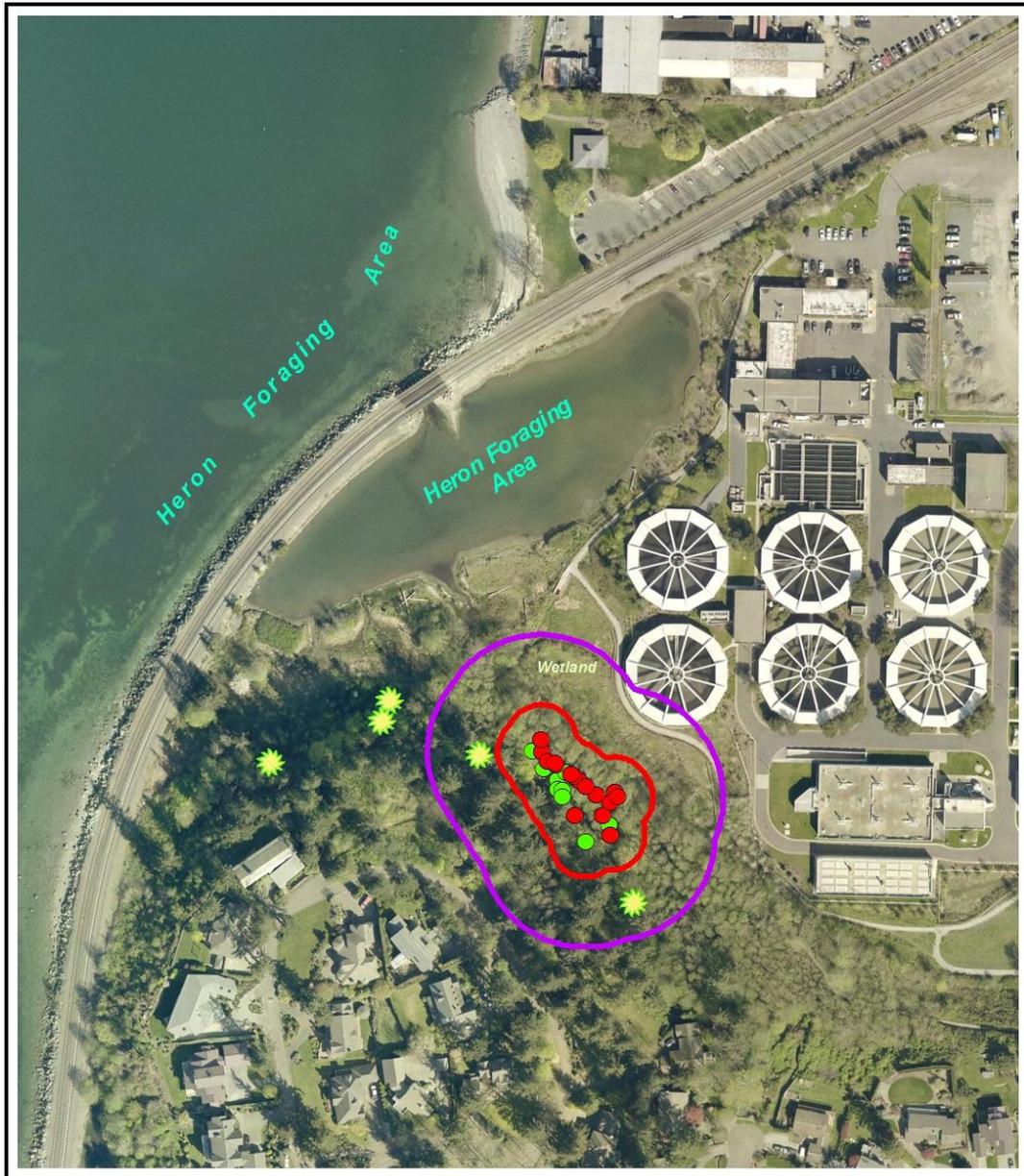
The proximity of the Post Point Wastewater Treatment Plant to the heron colony has not appeared to infringe on, or negatively affect the heron's activity over the years. In fact the heron's use of the PPWTP has been unique. Herons have utilized the top of the clarifiers during staging and occasionally during the breeding season, fledging and winter roosting. A break in this use occurred during 2012, 2013 and 2014, and was likely due to the PPWTP expansion and related construction activities in and around the facility. In early 2015 and 2016 herons were once again observed roosting on the clarifiers. During the temporary desertion of the colony in February 2016, many herons were observed on the clarifiers (below).



Photos by Tami DuBow 2/8/2016 (above) and Sandie Starr 2/21/2016 (below)

Figure 3

### POST POINT HERON COLONY 2016



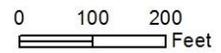
**KEY:**

- 2016 Active Nest Trees
- Previous Nest Trees
- ★ Roost Trees

- Colony Core Area
- 100ft Non-Disturbance Buffer



April 2016 Air Photo  
City of Bellingham



## Railroad

Separating the Post Point uplands and lagoon from Bellingham Bay is a man-made causeway built for railroad use. This segment of railroad curves along the shoreline and used daily by Amtrak passenger trains and BNSF trains transporting freight, coal, and crude oil.

This railway was originally built by the Great Northern Railroad in the early 1900's for local a regional transport of goods. The rail was placed along the marine shoreline and over-water in places using wooden trestles. Most of the wood trestles were replaced by rock riprap in the early to mid-1900's leaving only the Chuckanut Bay trestle locally and a few short bridges to allow tidal waters to continue to flow to and from the larger shoreline lagoons, including Post Point and Padden Lagoons. Other smaller lagoons were permanently cut off from tidal flow and thus eliminating foraging opportunities for herons.

Increased use of the railway over the past 10 years has also increased disruptions both during the day and at night. These include noise, vibration and pollution. Due to the close proximity of the heron colony to the railway, potential disturbance and negative effects on heron reproduction is a concern.

## Heron Foraging Habitat

Foraging habitats for herons include: field, freshwater, estuaries and marine intertidal areas. The most productive marine foraging areas are frequented during the breeding season and provide the essential prey necessary to nourish both adults and young. The foraging areas for the Post Point herons in and around Bellingham Bay were surveyed and mapped in 2006 and are illustrated in previous annual reports. Foraging areas utilized by the Post Point herons include, Chuckanut Bay, Padden Creek estuary, Portage Bay, Lummi Shore Drive shoreline, Nooksack River delta and suitable locations along the Bellingham Bay shoreline. The Post Point lagoon also provides some foraging habitat.

The most productive foraging areas for heron are shallow intertidal with abundant native eelgrass (*Zostera marina*) where prey species reproduce and concentrate. Eelgrass is plentiful, but patchy, along the Post Point shoreline and heron use of the area is essential for successful feeding of young and maximum survival.



Other foraging habitat utilized by the herons include terrestrial fields, wet meadows, and freshwater systems including streams, wetlands, lakes and estuaries, which are important for small mammals, amphibians, and small fish as prey. Freshwater, wetland and terrestrial habitats are important year-round foraging areas due to their non-tidal nature and abundant prey base. Grassy fields and margins in particular harbor voles and other small mammals which provide a vital protein source during winter and early spring prior to egg laying during the early stages of nesting.

The foraging areas utilized by the Post Point herons were documented 10 years ago. A survey update and documentation of current foraging areas is needed.

## GENERAL MONITORING

Annual Monitoring of the heron colony is a vital component of conservation and provides an ongoing record of the colony's health and productivity. General monitoring of the Post Point heron colony includes 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 early season, breeding/nesting and foraging observations. Post-season monitoring takes place following the fledging of young from nests and include foraging observations, colony checks, nest counts and mapping updates. Both visual and audible monitoring is used. Due to the location and associated vegetation around the nesting area, views of certain nests may be obscured following tree leaf-out. All visible nests are therefore utilized for observation throughout the season.

The 2016 monitoring of the Post Point heron colony began February 2 and ended August 3. Monitoring was conducted on a weekly basis.

Monitoring of the colony included 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. All data is collected by onsite observation and recorded on standardized data sheets. A monitoring tracking system is also maintained in a database. Results for the season are then assembled in an annual report.

Monitoring of the colony captures the 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)

The total duration of the nesting season is usually approximately 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, such as in 2013 to just slightly over 5 months.

In addition to monitoring the actual nesting period, monitoring also includes preseason or early assessment to document the condition of the colony and habitat prior to the heron's arrival, post-season assessment and nest count to document the colony condition count nests following the nesting season. There is also a colony nest map that is updated each year. With consistent, repeatable methods applied annually, the colony can be accurately tracked over time and results compared.

In addition to the primary monitoring objectives, observations are made of any potential disturbances, including predators, human activity, loud noises, low-flying aircraft or other. Sound level is incidentally measured at each site visit using a cell phone app.

In addition to the Great Blue Heron, Bald Eagles (*Haliaeetus leucocephalus*) were also monitored for their potential nesting activity, presence near the colony, and possible depredation of, or disturbance to herons.

All vertebrate species identified in the vicinity of the colony are also recorded.

## 2016 MONITORING RESULTS

For this report monitoring is divided into 4 phases: Early Season, Colony Reoccupation and Early Nesting, Mid-Season (incubation, hatching and rearing of young) and Late-Season (fledging of young and post-nesting). This monitoring report will provide a summary for each period with detail provided for the immediate stage of nesting activity.

### Early Season Assessment

The winter of 2015-2016 was warmer than average due to a strong El Nino event in the Pacific which was impacting weather throughout the western United States according to the Office of the Washington State Climatologist. Due to relatively mild winter conditions, no storm damage was observed in the Post Point heron colony nest stand, resulting in all of the nest trees remaining intact from the 2015 nesting season.

Bellingham's January was warmer and drier than normal, with temperatures at 2°F above normal and precipitation 67% of normal. In February, temperatures were even warmer, with 5.2°F above normal and once again setting records, including 61° F in Bellingham on the 9th. However, February also brought higher than normal rainfall throughout western Washington, including an "atmospheric river" event, with precipitation at 184% of normal, and a record setting 1.64" in Bellingham on February 15. In March, the weather was very active, with a series of storm fronts for the first half of the month with high winds and rain. Winds with gusts up to 67mph hit Bellingham, downed trees and caused wide spread damage throughout western Washington. Due to the location of the Post Point Heron Colony on the lee-side of the bluff and with large Douglas Fir trees serving as wind break to the south, the colony did not sustain serious storm damage, but a few nests were dismantled or blown out of trees.

Early season monitoring at Post Point commenced February 2, 2016. The first weekly site visit was to determine the condition of the colony, record the onset of staging and colony reoccupation. A total of 18 nest structures remained in the colony, out of 25 from the 2015 season. During this early season visit, herons were already occupying the colony, with 9 herons present, each standing at a nest.

## **Colony Reoccupation, Courtship and Nesting**

The reoccupation of the Post Point heron colony began earlier than normal this season, with herons likely entering the colony in late January. Herons remained in the colony up to the second week of February, at which time 9 nests were occupied, with a few herons paired off and displaying courtship behavior. The herons were described as “jumpy” and flushed from the colony on Feb. 11 twice during the site visit. However, no cause for disturbance was detected. Sometime following the Feb. 11 visit the herons left the colony. As of Feb. 18, no herons were in the colony, however several heron were observed standing on a clarifier at the wastewater treatment plant.

The departure of the herons from the colony remained unexplained following discussions with neighbors and Post Point Wastewater Treatment Plant staff. No Bald Eagle activity was reported. Low flying aircraft, particularly helicopters were reported, and concern for possible drones in the area was also suggested by local observers. A later report was made of drones being flown from Marine Park in mid-February, but no confirmation of drones over or in the colony. Any low-flying aircraft, particularly helicopters, will cause direct disturbance to nesting birds and should be avoided. Drone use is increasing and could pose a threat and potential disturbance to the heron colony. A no-drone zone around the colony would be useful to protect the herons during the nesting season.

For the rest of February, herons were reported flying in and out of the colony without staying, then finally resettled following a two week absence. On March 2<sup>nd</sup>, 15 herons were present in the colony and 11 nests were occupied. During the first couple of weeks of March the weather was unsettled with a series of strong storm fronts and gusting winds, however the herons remained in the colony. No nest trees blew down. At least two or three nests were impacted by the winds and one was blown out of its tree. These nests were repaired or rebuilt.

The Post Point herons settled into pairing and courtship, followed by nesting by the second week of March.

## **Egg Laying and Incubation**

Egg laying and the onset of incubation occurs following courtship and usually takes place in late March. In 2016, the herons began laying eggs by the 23<sup>rd</sup>. By the end of March, a total of 24 nests were occupied and incubation had started.



In the heron colony, the onset of incubation in late March continued into April. April is usually a quiet month in the colony with incubating as the primary activity. On April 7, 26 nests were active, and of those, 13 were incubating eggs. The following week nearly all of the nesting pairs were incubating. Incubation requires 28 days to the hatching of young.

During April the number of active nests increased with new arrivals, up to 29. However by the end of April, at least 2 nests had fallen apart and those herons had abandoned their nest attempt.

The month of April was abnormally warm and dry. April weather is known to be cool, wet and unsettled, however this year it was relatively dry with periods of higher than normal temperatures, with a record set on April 18<sup>th</sup> at 83°F. Temperatures moderated throughout the month with most average temperatures in the mid 50's to low 60's. Precipitation was sporadic, with only 2.44 inches for the month.

### **Hatching and Rearing**

Hatching usually starts the first of May, however in 2015 and 2016 hatching has been reported earlier. On April 21, the first young were heard in the colony and egg shells were observed under nests. About 9 nests had newly hatched young. Hatching in 2015 was one week earlier.

In May 2016 weather was much warmer than April overall, with several days in the 70's and relatively dry. The wind remained calm for the first part of the month, to moderate with occasional gusts the second half of the month. High winds may dislodge nests, and require greater effort for adults foraging for food.

The herons continued to hatch and brood their young through May. By mid-May adult herons started leaving the young in the nest alone while foraging, indicating that the young had reached 4 weeks old. A total of 26 nests were active.

Rearing of young requires 8 weeks in the nest. 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. Adults also provide shading of young when necessary. At four weeks of age the young are large enough to be on their own in the nest, so both parents may be away from the nest foraging for food. Over the eight weeks of rearing, young will grow feathers, including a full set of flight feathers, and will reach adult size.

With the hatching and rearing of young in the colony well underway the last week of April, the expected onset of fledging was expected to be late June.



### **Fledging**

Fledging of young from the colony usually begins with individuals walking up limbs near their nests, then taking test flights around the colony or nearby. When young actually leave the colony they may return following feeding or disperse from the colony.

Fledging of young from the colony began in late June. Not all young fledge at the same time, however, between July 1 and 9 over 40% of the active nests fledged all or remaining young, with both young and adults dispersing from the colony.

On July 15, a pedestrian using the trail at Post Point reported a young heron wandering near the trail and was concerned it had fallen out of a nest and could not fly. Karl Lowery, Supervisor at the Post Point Wastewater Treatment Plant contacted the biologist and a field visit was made the same day to search for the young heron. A total of 7 young heron were observed in 4 nests, but no young or adults were found on the ground in or near the heron colony. It is likely the young was newly fledged and searching for small prey such as voles in the field near the colony. The colony was also visited 2 days later and no young were observed on the ground.

By July 23 all young had fledged and left the colony, except 1 adult and 1 young observed foraging on the shoreline, and one dead juvenal hanging from a nest.

A final visit to the heronry on August 3 confirmed that all heron, young and adults, had dispersed from the colony.



Young heron in the nest about 6 weeks old

## Post Point Heron Nesting Chronology Summary 2016

**Late January – Early February:** heron began to return, and occupy the colony and nests.

**Mid-Late Feb:** herons desert colony for ~2 weeks – cause unknown, possible disturbance.

**March:** herons return to colony, nest selection, pairing, courtship, nest enhancement, onset of nesting, egg-laying and some incubation.

**April:** late arrivals to colony, nest enhancement, egg laying and incubation, early hatching.

**May:** hatching, brooding and rearing of young.

**June:** rearing, early fledging begin late June.

**July:** fledging peak first week of July, fledging continue to July 15.

**Late-July:** 4 nests remain occupied, nesting season completed July 23.

The total duration of the nesting period at Post Point in 2016 was about 22 weeks, which does not include the initial 2 week occupancy, followed by the 2 week desertion of the colony in February. Prior nesting periods were 25 weeks in 2015, 22 weeks in 2014 and 19 weeks in 2013.

In addition to the seasonal chronology, a historic chronology was developed for this colony. The historic chronology outlines the annual colony activity, nest count results and other pertinent occurrences for each consecutive year. The historic chronology is included as an addendum to this report.



## PRODUCTIVITY

The productivity of the visible nests within the 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 of the colony. 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.

The Post Point herons successfully produced young from 24 nests in 2016. The colony's success over the past 3 years is notable and the lack of known predatory incursions is likely a beneficial factor.

In 2016, young were successfully fledged. Based season-long weekly observations of the colony and tracking of the active nests, accounted for a total of 56 young. The number of active nests changed during the season with a high count in mid-April of 29 nests, to 26 active nests in May and 24 active nests in June-July at that time of fledging. Two nests were abandoned early in the season, prior to egg-laying. The loss of activity/productivity at 3 nests mid-season was a result of nest degradation and inability to hold young, an event that also occurred in 2015. Usually adult herons are very fastidious about their nest structure and contents, continually adding to it during the first month or two of nesting season creating a very strong structure. This lack of nest structural integrity is unusual in heron colonies.

Of the 24 successful nests, a total of 2.3 young per nest were recorded for the 2016 season. This is a drop in nest success and productivity from the past six years. The cause of this drop in productivity is not known, but will be closely monitored.

Table 1: Post Point 3 Year Productivity 2013-2015

Year	No. active nests	No. successful nests	No. young	No. young per nest
2016	29	24	56	2.3
2015	25	24	67	2.8
2014	21	21	54+/-2	2.57
2013	17	16	40	2.5

In prior years (below) the productivity was based on a sample of clearly viewed nests and their young. Results from three of these years are provided in the following table.

Table 2: Post Point 3 Year Productivity 2010-2012

Year	No. active nests	No. nests sampled	No. young/sample	No. young per nest
2012	17	10	24	2.4
2011	16	14	42	3
2010	13	13	39	3

Based on research of heron colonies in the Strait of Georgia (The Great Blue Heron by Butler, 1997), productivity averaged 2.5 young per nest. The Post Point levels of productivity have exceeded that average until this year. It is assumed that the 2016 results are still within the regional norm over time, but may indicate otherwise. Productivity is a good measure of health, fitness and adequate food, but may be adversely affected by numerous external factors.

One major contributor to productivity and the success of the heron’s reproduction each year is 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, their occurrence, seasonality, distribution, or abundance. Study is needed to better define feeding areas, seasonality, and the prey available in each of those areas.

## FORAGING OBSERVATIONS

Basic foraging surveys are conducted near the Post Point heron colony by the monitoring biologist during each nesting season. Documentation of heron numbers at the most immediate foraging grounds and feeding habits are recorded, however, the herons are known to fly several miles in search for food. Foraging area preferences vary and are likely based on tides, currents and favorable habitat access, seasonal prey availability, water temperature, and other conditions including waves and disturbance factors.

**Hérons foraging in eelgrass near Marine Park**

Photos by Alan Fritzberg 2010



The Post Point/Marine Park shoreline is the nearest feeding area to the Post Point heron colony (figure 2). This shoreline is used frequently during favorable tides and even daily for foraging during the peak nesting season. Shoreline observations made at each site visit during the 2016 season were recorded. Of a 27 total site visits during the 2016 season, 16 were during favorable foraging periods, based on tidal stage for Post Point. Of these favorable foraging visits, 7 resulted in herons observed foraging along the marine shoreline or the lagoon. The total number of heron observed during any single visit ranged from 1-6 in 2016 as compared with 1 to 4 in 2015 or 1 to 11 in 2014. The tables below provide foraging results by month for years 2014-2016.

**Table 3: 2016 Foraging Survey Summary by month**

Month 2016	# 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	0	0	0
March	2	0	0	0
April	2	0	0	0
May	4	2	3,0,0,5	0
June	4	3	3,6,6,0	0
July	3	2	4,0,1	0
August	1	0	0	0
TOTAL	16	7	28	0

**Table 4: 2015 Foraging Survey Summary by month**

Month 2015	# 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	1	0	0	0
March	5	0	0	0
April	3	0	0	0
May	2	2	1,4	0
June	5	3	1,2,1	0
July	3	3	1,1	1
TOTAL	19	8	11	1

**Table 5: 2014 Foraging Survey Summary by month**

Month 2014	# 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	5	2	0	1,2
March	3	1	2	0
April	9	5	2,1,1,6	1
May	8	6	1,5,1,8,11	1
June	8	5	5,5,6	2,1
July	3	2	2	1
TOTAL	36	21	55	9

Note: 2014 sites visits were twice weekly

The heron's use of the Post Point shoreline is limited by tidal stage (exposed intertidal area and water depth), prey availability, wave conditions and human activity. Eelgrass, which grows in the intertidal area, provides habitat for most of the heron's marine prey species. Eelgrass meadows are light sensitive and regenerate every year, with maximum growth in May or June. The foraging area at Post Point and Marine Park is limited due to substrate and gradient, so use of this area by herons coincides with the eelgrass growth cycle, abundance of prey, and increased need by the herons to feed young, which normally peaks from late May through June, during the last stages of rearing young.

Adult herons are also regularly observed flying across Bellingham Bay to access foraging areas at Portage Bay and the Nooksack River estuary. During the 2016 season, heron flights from the colony were frequently observed to these locales, indicating their use as primary foraging areas. Chuckanut Bay is also thought to be used, but has not been surveyed in recent years. During the heron's rearing period, following hatching, heron concentrations at Post Point increase during favorable tides.

Foraging observations for 2016 were sparse – similar to 2015. Heron numbers were low at Marine Park and nonexistent at Post Point lagoon. Compared to 2014, foraging numbers and occurrence during high-demand months were also low. There is no explanation for this apparent reduced use of Marine Park shoreline and the nearby lagoon.

Disturbance at or near the foraging areas occur frequently and are related to various sources, including people and dogs on the beach, trains, boats and boat wakes and predators. In 2016, individuals flying drones were also observed. In an effort to limit encounters between heron and human, human related disturbances or dogs, the City of Bellingham, has in the past posted signs to alert shoreline users at Marine Park to the sensitivity of the eelgrass and lagoon areas and requested that people not disturb herons. However, signage is no longer posted. Citizens, recreationalists, and in some cases educational groups, utilizing the shoreline continue to walk toward herons in the intertidal area, and subsequently flush heron from feeding areas. Kayakers also use the area, but appear to provide a wide berth around herons if present. It is recommended that new signage be designed and strategically placed at Marine Park to be effective for all users of the beach and shoreline areas.



Mike Hamilton photo

## DISTURBANCE

Disturbances to Salish Sea heron colonies may range from predators, human activities and/or intrusion into the colony, cutting of nest trees or nearby timber harvest, development, to low-flying air craft (manned and unmanned), adverse weather, and toxins. Any natural or unnatural cause of stress, changes in normal behavior, or flushing from nests, roosts or feeding grounds is considered a disturbance. In some cases, intentional human-caused disturbance would be considered harassment and could be an enforceable offense. 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 all disturbances, including those observed and reported by other sources. Outside reports are followed up on in the field. Any loss of heron, young or eggs, or repeated disturbance to the colony or feeding area is taken very seriously, and remedies to counter the disturbance are explored and implemented where possible. Unfortunately, weekly monitoring is usually inadequate to witness disturbances in real-time, so monitoring is supplemented by reporting by neighbors, citizens and PPWTP staff.

With the completion of the Post Point Wastewater Treatment Plant expansion in 2014, close attention was paid to the heron's response to the alteration of habitat, new clarifier and associated public trail, both located within 100 feet of the colony. Over the past two years, no disturbance or negative reaction by the herons has been noted.

During the 2016 heron nesting season, no significant disturbances were observed or reported. However, early in the season, following the reoccupation of the colony in late January, an unexplained incident(s) occurred, causing the herons to desert their nests and the colony. On February 18 the colony was deserted and herons were reported in and out of the colony for nearly 2 weeks prior to resettling in the colony in early March. In the past, extreme weather events, such as blizzards or fierce storms have caused herons to temporarily leave the colony in the early season, but this year no such weather event occurred. Following queries with neighbors, PPWTP staff, and others, the only unusual occurrences noted were sightings of herons circling over the colony but landing elsewhere, and a large black low-flying helicopter flying over the colony on 2/22. Neighbors also complained of increased train traffic and loud horn blasts day and night.

In addition, a reporter visiting Post Point in mid-February for a story on the herons noted a couple of people flying drones from Marine Park. The drones were being used for videography and could have been flown near or over the colony. As drones become more commonly used, particularly for photography, it is a real possibility that someone could fly a drone into the heron colony causing significant disturbance during nesting.

Discussions with biologists have suggested that drones may be perceived as a predator by the herons and this could cause herons to flush off their nests, leaving eggs or young exposed. This concern was communicated to the City of Bellingham for their consideration and possible action to protect the colony from drones during the nesting season. Communication with WDFW Biologists has also revealed that any drone use in or near heron colonies during the nesting season is strongly discouraged and would likely be considered harassment of the herons. WDFW is in the process of developing drone policies.

Although our investigation did not identify a specific disturbance or cause for the herons to leave the colony in mid-February, it is possible that a combination of events unsettled the herons enough to result in a temporary desertion of the colony at that time.



**Resident Bald Eagle pair near heron colony.**

Photo by Jack and Sandi Starr 2/10/14

### **Bald Eagles and Other Predators**

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. During each monitoring visit to and in the vicinity of the heron colony, observations are made of potential predators, such as Bald Eagles, Red-tailed Hawks, Crows and Ravens.

Only Bald Eagles have been known to directly disturb or prey on the Post Point herons. Crows have been known to enter the colony following Bald Eagle incursions, presumably to scavenge on the spoils, however this year the nest stand had at least one friendly Crow nest on the perimeter of the colony and all coexisted effectively, with resident Crows mobbing any potential predator that came close including Bald Eagles.

Bald Eagles are common near the Post Point heron colony. One or occasionally 2 eagles may be seen regularly perched above the colony in a large Douglas Fir or to the west also in a large fir. The most common occurrence is the mature male eagle, which seems to favor this particular perch above the colony with its view over the bay. The eagle's presence in the big fir does not disturb the herons.

A mature pair of Bald Eagles, once nested near the heron colony, but has relocated to a nest site to Hawthorn Rd. approximately ½ mile southeast of the colony. The new nest location relative to Post Point is illustrated in Figure 4. This nest site is active and the eagles produced at least one young in 2016, which was observed by the biologist through the month of July.

In 2016 Bald Eagles were scarce in the vicinity of the heron colony, similar to 2015. Only one adult Bald Eagle was occasionally observed perched above the colony or by the Post Point lagoon. One immature eagle was also observed flying over the colony. Of these observations, no eagles were observed disturbing herons or entering the colony.

In the past, Bald Eagle incursions in the heron colony, particularly during hatching and soon after, were predictable. In 2008 and 2009 the herons experienced severe depredation by Bald Eagles, to the point of abandoning the colony at mid-season. Remarkably, the colony rebounded in 2010 and experienced no eagle incursions, but the colony size had been greatly

reduced. In 2011, Bald Eagle depredation of the Post Point heron colony recurred, repeatedly over a few days with the loss eggs and young, however the heron remained in the colony and re-layed eggs. In 2012 and 2013, the colony was spared serious eagle depredation, with only two minor incidents reported. Starting in 2014, a trend of reduced or no eagle incursions had begun and continues through 2016 for Post Point, unlike other colonies in the region that continue to suffer frequent Bald Eagle depredation.

The issue with eagles raiding heron nests is not isolated to Post Point. It is known to occur throughout the Salish Sea. As Bald Eagle populations have recovered since their low numbers in the 1960's and 70's, their primary prey species have declined, including coastal salmon, herring and seabird/seaduck populations. Consequently, eagles have resorted to preying on heron and other large bird colonies. Every year, colony observers around the Salish Sea report eagle depredation, and in some cases, causing herons to abandon their nests for the year.

Due to the success of the Bald Eagle population, the species was delisted from the Federal Endangered Species Act in 2007, followed by down listing 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 under the Washington State Bald Eagle Protection Rules (WAC 232-12-292) and local Critical Area guidelines.

Figure 4: Bald Eagle Nest Location and Heron Colony

### POST POINT HERON COLONY 2016



**KEY:**

● 2016 Active Nest Trees

● Previous Nest Trees



Colony Core Area



100ft Non-Disturbance Buffer



Bald Eagle Nest Location



April 2016 Air Photo  
City of Bellingham

0 250 500  
Feet

## **Other Disturbance**

For the 2016 nesting season, no significant disturbances in the colony or at the foraging areas were observed by the biologist or reported. However, there is always some human/heron interaction along the shoreline at Marine Park and in other foraging areas. Herons using the shoreline of Marine Park and Post Point are vulnerable to people, dogs and water-sports enthusiasts utilizing this area. It is difficult to determine the impact these interactions have on the herons, however, with greater public education serious impacts can be avoided.

Every Memorial Day weekend, the Ski to Sea Race, an international competitive event, finishes at Marine Park and stages associated festivities in Fairhaven. This multi-leg relay race event involves 350 teams and 1000 volunteers. As a result, the Post Point, Marine Park area is inundated with people, temporary structures and equipment on race day.

A disturbance to herons foraging along the shoreline at Marine Park during Ski to Sea is possible due to the sea kayak leg ending on the beach of Marine Park, and hundreds of race-day fans watching from the shoreline. However, direct disturbance to herons is dependent on tidal stage and access to the intertidal area for feeding. For the past two years, 2015 and 2014, the low or favorable tide was in the morning, prior to the race finisher's arrival. With higher tides in the afternoon and early evening, conflicts between heron and race-goers were avoided. In 2016 however, the optimal tide for the herons occurred at the same time racers are arriving at Post Point.

On May 29, 2016, Tami DuBow, monitoring biologist was on-site to make observations and record any disturbances. With a moderately low tide that afternoon, there were concerns about human-heron conflict. Also, the use of drones for photography was a concern both for the colony and for herons flying over the race course on their way to and from feeding areas. The race activities were relatively contained at Marine Park and no conflicts involving herons were observed or reported at the foraging grounds or in the colony.



Ski to Sea Finish at Marine Park May 29, 2016 - photo by Tami DuBow

## Other Species

During the course of the monitoring season, species occurring in the nest stand and in the vicinity are identified and noted. Although no new species were reported in 2016, Green Heron (*Butorides virescens*) were observed flying near the colony in previous years, and thought to be nesting nearby. In June 2016, Joe Meche a local bird expert and photographer documented Green Heron nesting in trees at Marine Park. Two nests were identified with 4 young each.

Green Heron are related to Great Blue Heron, but much smaller and have a rich velvet-green back, dark crown, streaked-chestnut neck and yellow legs. The Green Heron nests in trees near water and requires about 2 months for a nesting cycle unlike the Great Blue Heron that requires nearly 4 months to reproduce. Their eggs are similar to great blues, but smaller.

Little is known about Green Heron in this area due to their secretive nature. Similar to the Great Blue Heron, Green Heron are a Washington State Monitor Species, but do not have defined management directives. This report and photos are valuable documentation of this unusual species in Bellingham.



Adult and young Green Herons at Marine Park, Bellingham - Photos by Joe Meche 2016

## NEST SURVEY & MAPPING UPDATE

The annual nest count is the standard method for determining the number of nests within a heron colony. Autumn, following leaf drop, allows maximum viewing of the whole heronry, and most accurate nest count. In colonies that were not fully utilized, a simple count of nests at the end of a breeding season can misrepresent actual numbers of active or successful nests, so colony monitoring during the nesting season is an essential complement.

A record of nest tree locations and nest numbers per tree is also made and updated in the autumn of each year. All nest trees are assessed, tagged and then added to a database of nest trees present in the colony. A map, illustrating the nest trees and locations in the heronry, is updated annually (Figure 5).

The autumn nest count and colony assessment was conducted on October 19, 2016.

The total number of active nests in 2016 was 29. The 29 nests were situated in 16 nest trees, 2 of which were new for 2016. Nesting concentration in certain trees has increased with 3, 4, and 5 nests in single trees, and 4 trees with 2 nests each. This concentration increases the density of the core nesting area. All active nest trees are red alder.

All 29 nests were active; however 2 additional nests were occupied by a single adult in February, but abandoned soon after. Other failed nests included 3 nests that fell apart during the nesting season and failed, and 2 nests that failed to fledge any young. The net result was 24 successful nests in 2016.

For perspective, in 2015, 25 nests were active. One nest fell apart during the nesting season and disappeared along with its young. A total of 15 nest trees were recorded with one new nest tree for the season. All of the active nest trees are alder.

During the annual nest count, each nest tree is tagged or existing tags are read, 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 in a database.

In review of previous years (Table 5), the colony started in 2000 with 6 nests in 5 nest trees and grew for the next 6 years to a high of 37 nests. In 2007 the colony declined slightly, followed by two years of complete colony failure. The failures of 2008-2009 were mid-season following the reoccupation and nesting of the herons. This was likely due to Bald Eagle depredation.

Following two failed nesting seasons, in 2010, the colony rebounded with 13 active nests, all of which fledged young and the colony has gradually grown since that time to the current 29 active nests, with the successful fledging of young each season.



The following is a summary of nests and nest trees since 2000.

**Table 6: Post Point Heron Colony Annual Nest Count**

Year	Total number of nests	Total number of nest trees	Percentage change (# of nests)
2000	6	5	----
2001	8 estimated	6 estimated	+33%
2002	10	6	+25%
2003	14	8	+40%
2004	19	10	+36%
2005	31	10	+63%
2006	37	15	+19%
2007	27	12	-27%
2008	17 active but failed mid-season	9	-37%
2009	11 active but failed mid-season	8	-35%
2010	13 active	9	+44%
2011	16 active, 1 not active	12	+23%
2012	17 active, 1 not active	13	+6%
2013	17 active, 1 not active	14	0
2014	21 active – all active	14	+23%
2015	25 active -24 successfully fledge young	15	+19%
2016	29 active – 24 successfully fledge young	16	+16%

## Colony Mapping

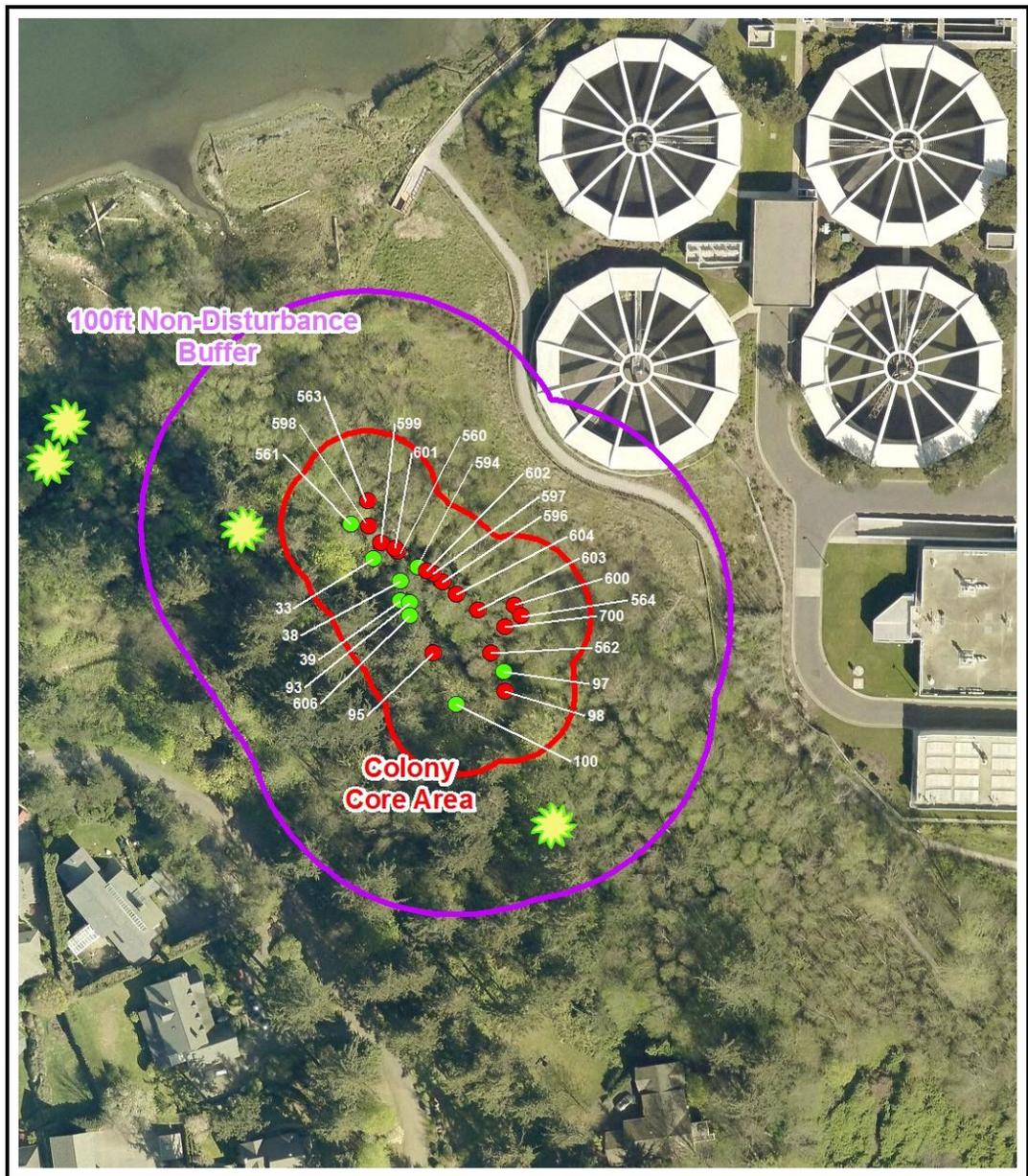
A colony map update was completed in December 2016, by Chris Behee, GIS Specialist for the City of Bellingham. The colony maps (Figures 3 & 5) illustrate the colony, its location on the landscape, the core area, nest tree location and nest tree number. The base used for these maps are the most recent 2016 aerials.

The colony core area, as indicated on the maps, constitutes the actual nesting area and is calculated 50 feet laterally from the base of the outermost nest trees. This core area accommodates the variance in tree canopy and varied nest locations within that canopy area. GPS readings of each tree are taken at the base of the main stem. The core area is about 1 acre in size, but may vary year to year. A 100 foot buffer measured from the core area is illustrated as the non-disturbance area around the colony. This buffer was created as the minimum no-entry/ no disturbance area during the breeding season (2003 Post Point Heron Colony Management Plan). This buffer however does not represent or conform with current WDFW buffer or setback requirements for construction or development.

In 2016 the heron colony increased in both the number of nests, the addition of 2 new nest trees and overall nest density. Little change occurred between 2014 and 2015 with only the addition of one new nest tree. The 2016 map (figure 5) illustrates all nest trees in the colony, including those used in past years and those active in 2016. The colony perimeter was adjusted to accommodate the new nest trees.

Figure 5: Colony Map 2016 Update

### POST POINT HERON COLONY 2016



**KEY:**

- 2016 Active Nest Trees
- Previous Nest Trees

 Roost Trees



April 2016 Air Photo  
City of Bellingham

0 50 100  
Feet

Note: All tagged tree locations were re-surveyed in January 2013 by PW Survey Staff.

## COLONY DYNAMICS

Looking back, the Post Point Heron Colony experienced growth in its first six years, then for unknown reasons declined, failed, and then rebounded in 2010. Between 2000 and 2006, the colony expanded from 6 to 37 nests. During this period the growth rate was approximately 36% annually. In 2007 the colony declined and that trend continued through 2009. Although the colony was active in 2008 and 2009, adult heron abandoned the colony and failed to fledge young. In 2010, the colony rebounded and in 2011 and 2012 the colony continued to be successful with incremental growth. However in 2013 no change occurred. Following 7 years of instability the colony is growing again with incremental annual growth and successful fledging of young between 2014 and 2016.

The early growth of the colony indicated the annual influx of new breeding adults and likely return of previous fledglings to breed once reaching maturity (2-3 years of age). Based on 2005 fledging numbers, the predicted return of 30 young breeders did not occur, instead approximately 20 heron failed to return to the colony to breed in 2007. In 2008, the return of adult heron to the colony was only half of the previous year and that repeated in 2009. The decline in breeding numbers in 2007 was likely related, in part, to high mortality resulting from harsh conditions and hurricane force winds experienced during 2006-2007 winter months, as well as other environmental stressors impacting heron fitness and survival. Declines and failures in 2008-2009 were related in-part to depredation by Bald Eagles, but other factors were also likely involved, including weather, water temperature, prey availability, and adult heron health/fitness. Known declines at other colonies in the Salish Sea were also reported in 2008 and reflect the need for region-wide reporting and tracking of colonies.

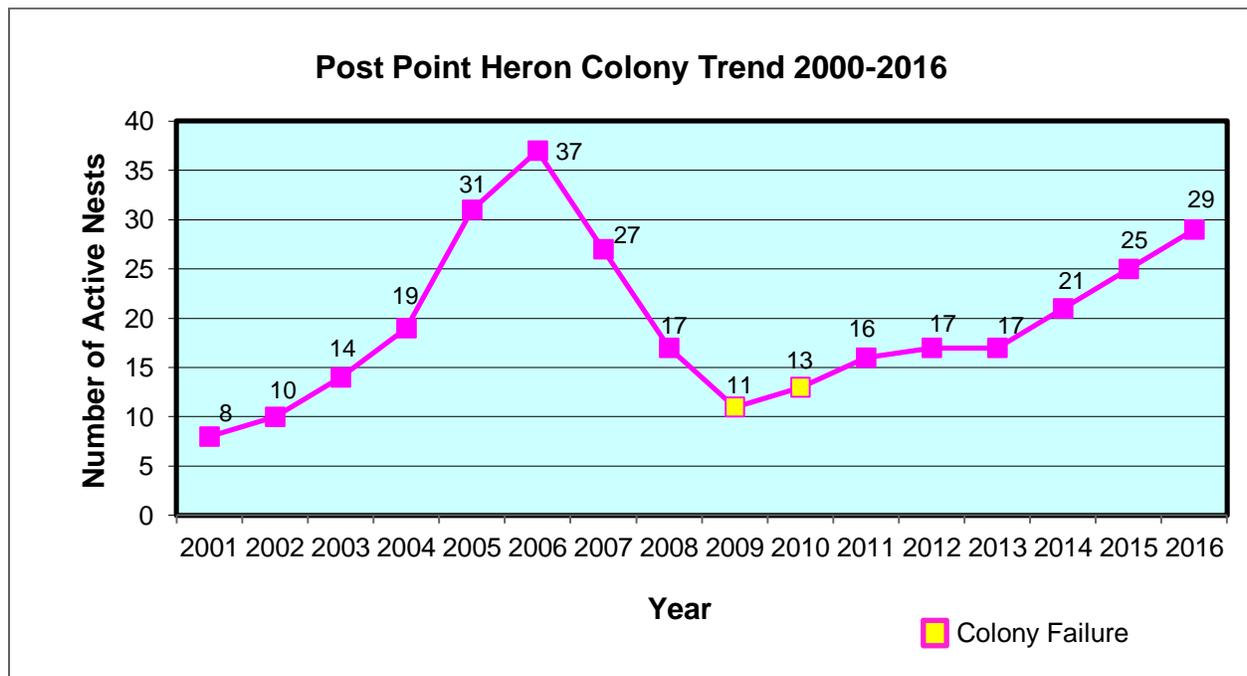
2010 to 2012 marked a positive rebound for the Post Point heron colony. A minor increase in the number of nests and successful fledging of young proved to be an important turn around for the colony. The lack of Bald Eagle incursions during the 2010 season contributed to the nesting success. The mid-season loss of viable eggs and young from eagle depredation in 2011 was expected to be devastating to an already stressed colony, however, the colony rebounded with a second nesting attempt and successfully fledged young from all active nests. With no depredation or other problems in 2012, the colony stabilized and produced young.

In 2013 through mid-2014, the nearby PPWTP construction, increased noise and large scale landscape changes and general human disturbance. Declines at the colony were expected. Instead, the colony maintained productivity during both seasons and fledged young in condensed nesting seasons. Growth in the colony in 2014 showed promise.

Last year - 2015, proved to be a successful year with growth, high productivity and successful fledging of young. Starting from a mild winter, the herons returned and nested in larger numbers than the past 8 years. The lack of construction disturbance and absence of Bald Eagle depredation proved favorable for the herons. As a result the heron colony grew by 19% in 2015 and exhibited higher productivity at 2.8 young per nest.

This year, 2016, the colony grew by 16% with 29 active nests and added 2 new nest trees. However, 5 nests failed to fledge young (3 as a result of nest structural failure) reducing the number of successful nests to 24, the same as 2015. Although the season was successful in fledging young, the number of young per nest dropped to 2.3, the lowest productivity since the colony failed in 2009. These results are cautionary.

Figure 6: Post Point Heron Colony Trend



## MANAGEMENT AND STEWARDSHIP

The Post Point Heron Colony was established in 2000. Herons have occupied and nested at this site for 17 seasons. During this time, the heron colony has grown, declined, abandoned and rebounded and has produced young for 15 out of the 17 years. The continued management and stewardship is vital to maintaining this critical wildlife area in the City of Bellingham.

With the Post Point Wastewater Treatment Plant Expansion completed, a new clarifier and public trail are now located within 100 feet from the nest area. In addition to a new built environment in close proximity of the heron colony, the expanded habitat around the lagoon and reduced public access provides important buffer to the west. Above the colony to the south, the habitat remains intact to Shorewood Dr., providing vital screening and wind protection.

Recommendations for 2017 management and stewardship of the Post Point Great Blue Heron Colony are as follows:

- Continue routine annual monitoring of the Post Point Heron Colony.
- Record and report any disturbance to herons in the colony or foraging areas.
- Limit disturbance to, or loss of, associated forest and upland habitat around the colony.
- Purchase or permanently protect additional forest buffer and habitat area associated with the colony, particularly vital buffer above the colony to Shorewood Dr.
- Protect the Post Point nearshore foraging habitat from human recreational disturbance by posting educational signage at Marine Park during nesting season - including the lagoon and outer shoreline intertidal and eelgrass area.

- Repeat a comprehensive foraging survey around Bellingham Bay and Chuckanut Bay to document current heron foraging areas.
- Monitor Bald Eagle activity near the colony.
- Request that the City of Bellingham install and maintain a webcam in the colony for on-going education and future monitoring.
- Define the Post Point Heron Colony as a no-fly-zone for drones.
- Update Post Point Heron Colony Management Plan

In 2003, the Post Point Heron Colony Management Plan was prepared for the City of Bellingham. The plan provided background information, regulatory overview, status of the colony and recommendations. This plan is now outdated and does not reflect WDFW management guidelines or CAO requirements. Given the age of the management plan and more recent 2012-2014 PPWTP construction and changes to the heron habitat, this management plan requires updating.

An assessment of foraging areas and documentation of prey species and seasonal occurrence is needed to better understand their relationship with the heron colony. No survey of nearshore heron prey species in Puget Sound has been made and is needed to understand the heron/prey dynamic. Documentation of prey concentrations would also help direct conservation of foraging areas. Continued observation of foraging areas during the breeding season is also essential due to the dependence of the colony's success on these areas.

In addition, inclusion or support for regional heron colony monitoring would contribute significantly to the understanding, determination of trends and tracking of the heron population as a whole. With this additional information, individual heron colony fluctuations and effects on nearby colonies can be better understood and tracked over time.

With the growing use of drones, by both professionals and the general public, has created an urgent need for public agencies to set rules of use and define areas where drones should be restricted. Heron colonies, such as Post Point, are vulnerable to disturbance by drones and their use should be restricted in these areas. It is requested that the City of Bellingham establish a drone no-fly-zone around the Post Point heron colony.

The City of Bellingham's cooperation in efforts to educate and inform the public particularly for neighbors, shoreline user groups, and Sea to Ski organizers is needed as an on-going effort to inform users and user groups of sensitive heron habitat, and the role they can play to protect these areas for herons and other wildlife.

## CONCLUSION

This Annual Report provides the final summary of the 2016 heron nesting season and results of all monitoring activities. A total of 27 monitoring visits were made to the colony this season.

In 2016 the Post Point Great Blue Heron Colony has succeeded in producing young and contributing to the perpetuation of this species in the Salish Sea. For the 17<sup>th</sup> season, the heron's return, growth, and productivity are testament to the heron's tenacity and high site fidelity.

The Post Point herons got off to a rough start in 2016, with an early season desertion of the colony due to an unknown cause. The herons initially returned to the colony in late January and were reoccupying nests when in mid-February the herons abruptly left the site. The herons were unsettled until March at which time they reoccupied the colony and began nesting in earnest.

The 2016 nesting season, beginning in early March, proceeded into July without disturbance or further disruption. The Post Point heron occupied 16 nest trees and a total of 29 active nests, with 5 nests failing, 3 due to structural deficiency. Active nests supported a total of 56 young, averaging 2.3 young per nest, which is below the normal range for this region. The majority of the heron, adults and young, dispersed from by July 15, with the exception of 3 late nests that fledged about July 23.

Nahkeeta Northwest would like to extend our gratitude to the City of Bellingham for supporting the conservation of the Post Point Great Blue Heron Colony and the individuals that have supported monitoring of the colony site. A particular thank you is extended to Larry Bateman PPWTP Supervisor, for his many years of support for the herons and our monitoring efforts. Following Larry's retirement, Karl Lowry, the new Supervisor, has proven both helpful and cooperative in our efforts.

We would also like to express a special thank you to Chris Behee, GIS Specialist with the City of Bellingham, for providing nest locations, mapping and excellent updated maps for this report. A particular thank you is also expressed for the special report and photos of the Green Heron by Joe Meche. We greatly appreciate photographs of the Post Point herons provided by Alan Fritzberg and others by Mike Hamilton, and the Starr Family. Finally, we acknowledge the support of neighbors who shared useful information related to the herons and heronry.



Photo by Alan Fritzberg

## ATTACHMENTS

### Post Point Great Blue Heron Colony Annual Chronology



**Inside the Post Point Heronry**  
Photo by A. Eissinger

# Post Point Great Blue Heron Colony

## Colony Chronology (2016 update)

### **Pre 1999:**

- Post Point bluff utilized by herons for roosting and possible nesting
- Post Point Lagoon and nearby shoreline utilized for foraging

### **1999**

- Neighbors report heron nesting activity at Post Point (1-2 nests unconfirmed)
- Chuckanut heron colony abandon from Heron Estates
- Herons reported attempting to build nests in cottonwood north of Viewcrest, nesting attempt failed

### **2000**

- Herons establish nesting colony in present location at Post Point
- Total 6 nests in 5 trees and successfully fledge young

### **2001**

- Herons continue to nest at Post Point (no data available - 8 nests estimated)
- Pedestrian trail moved away from base of colony to 111 feet northeast

### **2002**

- Herons continue to nest at Post Point increasing to 10 nests in 6 trees
- 66% growth from 2000 (estimated 25% annual growth from 2001)

### **2003**

- Herons nesting at Post Point increase to 14 nests in 8 nest trees
- 133% growth from 2000 (40% annual growth from 2002)

### **2004**

- Herons successfully nesting at Post Point for 5<sup>th</sup> year with 19 nests in 10 nest trees
- 216% growth from 2000 (36% annual growth from 2003)

### **2005**

- Herons successfully nesting at Post Point for 6<sup>th</sup> year.
  - 56-58 breeding adults.
  - Staging reported February 11 with nesting commencing February 23.
  - Hatching confirmed April 19
  - Nesting/fledging completed August 26.
  - 28 week breeding cycle.
  - Productivity: mean 2.5 young per nest = estimated 77 young fledged
  - Total of 31 nests in 10 nest trees (including 1 blown down nest)
  - 416% growth from 2000 (63% annual growth from 2004)
  - Average growth rate = 39.4% annually over 5 years.
-

## 2006

- Herons successfully nesting at Post Point for 7<sup>th</sup> year.
- 72-74 breeding adults.
- Staging reported March 1 with nesting commencing March 15.
- Hatching confirmed May 3
- Nesting/fledging completed August 11.
- 23 week breeding cycle.
- Productivity: mean 2.6 young per nest = estimated 91 young fledged
- Total of 37 nests in 15 nest trees
- 19% annual growth from 2005
- Average growth rate = 36% annually over 6 years.

## 2007

- Winter storm damage: loss of 5 trees and 7 nests
- Herons successfully nesting at Post Point for 8<sup>th</sup> year.
- ~54 breeding adults.
- Colony reoccupied Feb. 18
- Incubation started March 12
- Hatching confirmed April 26
- Nesting/fledging completed July 26.
- 22 week breeding cycle.
- Productivity: mean 2.6 young per nest = estimated 70 young fledged
- Total of 27 nests in 12 nest trees
- 27% nesting decline from 2006
- Average growth rate = 35% annually over 7 years.

## 2008

- Herons return to nest at Post Point for 9<sup>th</sup> year.
- Colony reoccupied March 6
- ~34 breeding adults
- Incubation started March 15
- First hatching confirmed April 26
- Early nests failed late-May
- Second nesting attempt June
- Colony failure late-June
- Colony abandonment confirmed July 1 – no young fledged
- Total of 17 nests in 9 nest trees
- 37% nesting decline from 2007 – no productivity

## 2009

- Herons return to nest at Post Point for 10<sup>th</sup> year.
  - Colony reoccupied March 6
  - ~18 breeding adults - 11 nests active (2 unable to attract mates)
  - Incubation started April 1
  - First hatching confirmed May 3
  - Bald Eagle depredation observed May 27
  - 2-3 nests remain active May 29
  - Colony abandonment confirmed June 12 – no young fledged
  - Total of 9 nests utilized in 8 nest trees
  - 35% nesting decline from 2008 – no productivity
-

## 2010

- Herons return to nest at Post Point for 11<sup>th</sup> year.
- Staging Feb 5
- Colony reoccupied March 6
- 22 breeding adults – 13 nests active (max. 15 nests visible)
- Incubation started March 19
- First hatching confirmed April 27
- Productivity ~3 young/nest
- No Bald Eagle depredation observed or reported
- Fledging late June – early July, fledging complete July 12
- Total of 13 active nests utilized in 9 nest trees
- 2 added nests, positive change from 2008-09 – 100% change in nest productivity!

## 2011

- Herons return to nest at Post Point for 12<sup>th</sup> year.
- Staging in colony February 10 – 5 nests occupied by single adult
- Winter storm and snow force heron out of colony February 25
- Staging on clarifiers March 3
- Colony reoccupied March 7 – 7 nests occupied
- Early Incubation started March 19
- Total 16 nests active (max. 17 nests visible) April 9
- Bald Eagle incursions April 26-27 eggs and young viability lost
- Re-nesting begins May 1 – 16 nests remain occupied
- Egg laying/incubation underway May 5
- No Bald Eagle incursions observed or reported
- First hatching confirmed June 1
- Rearing June/July
- Productivity ~3 young/nest
- Fledging late July – early August, fledging complete August 14 (one month later than 2010)
- Total of 16 active nests utilized in 13 nest trees (2 new nest trees)
- 3 added nests, positive change from 2010 = +23%

## 2012

- Herons return to nest at Post Point for 13<sup>th</sup> season.
  - Staging in colony February 3-22, w/ 1-5 nests occupied by single adults
  - Winter storm and snow force most heron out of colony February 29
  - Colony reoccupied March 3 – 7 nests occupied, 15 nests visible
  - Pairing, courtship begin March 8
  - Incubation started March 23
  - Total 16 nests active (max. 11 nests visible) April
  - Possible Bald Eagle incursion April 25, no impact observed
  - Late April – very poor weather obscuring views and extending brooding
  - First hatching approximately May 1
  - Rearing May-June
  - First fledglings observed June 26
  - Productivity ~2.4 young/nest
  - Total of 17 active nests utilized in 13 nest trees (2 new nest trees)
  - 3 added nests, positive change from 2011 = +6%
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## 2013

- Post Point Waste Water Treatment Facility expansion underway, construction occurring 100+ feet from colony edge.
- Herons return to nest at Post Point for 14<sup>th</sup> season.
- Staging in fir tree west of colony 8-10 herons Feb 1.
- Colony Reoccupation: February 26, w/ 10 nests occupied by single adults.
- Pairing, courtship begin March 1.
- Onset of egg laying/incubation March 14.
- Bald Eagle incursion March 22, possible egg loss 1-3 nests impacted.
- Total 16 nests active April.
- First hatching approximately April 15.
- Rearing April-May-June
- First fledgling observed June 10, most fledging June 25-July 10.
- Productivity 2.37 young/nest
- Total of 17 active nests utilized in 14 nest trees

## 2014

- Post Point Waste Water Treatment Facility expansion construction continued, occurring 100+ feet from colony edge, plus a new trail <100 feet.
- Herons return to nest at Post Point for 15<sup>th</sup> season.
- Colony Reoccupation: February 20-26, w/ 4-9 nests occupied.
- Late winter storm – heron abandon site
- March 3, heron begin to reoccupy colony
- Pairing, courtship begin March 15, 11 nests occupied.
- Early egg laying/incubation March 17 (2 nests only).
- Available nests saturated (17 nests occupied) March 27
- Onset of egg laying/incubation 10+ nests April 1
- New nest added – total 21 active nests April 17
- First hatching approximately April 21.
- Rearing late April-May-June
- PPWTP Expansion Completed June 1
- First fledgling observed June 11, most fledging July 1-15.
- Season End August 1
- Productivity 2.5 young/nest
- Total of 21 active nests utilized in 14 nest trees (1 new nest tree)
- 4 new nests, positive change from 2013 = 24%

## 2015

- Herons return to nest at Post Point for 16<sup>th</sup> season.
  - Colony Reoccupation: February 9, w/ 11 nests occupied.
  - Pairing, courtship begin February 15 (one month earlier than 2014), 11 nests occupied.
  - Early egg laying/incubation March 16 (5 nests), 20 nests occupied.
  - Onset of incubation March 29.
  - New nests added – April – May, total nests 25.
  - First hatching approximately April 12.
  - Rearing April-May-June-July
  - Peak fledgling June 27-July 9.
  - All young fledged July 9, except 3 nests. Final nest fledged after Aug. 2.
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- Productivity 2.8 young/nest
- Total of 25 active nests utilized in 15 nest trees (1 new nest tree)
- Positive change from 2014 = 19%

## 2016

- Herons return to nest at Post Point for 17<sup>th</sup> season.
- Heron return to colony January 30, and then leave abruptly mid-February.
- Colony Reoccupation: March 2 w/ 11 nests occupied.
- Pairing, courtship begin March 11, 17 nests occupied.
- Early egg laying/incubation March 23 (3 nests), 19 nests occupied.
- Onset of incubation March 30.
- New nests added – April, total active nests 29.
- First hatching approximately April 21.
- Rearing late April-May-June-July
- Peak fledgling July 1-July 9.
- All young fledged July 15, except 3 nests. Final nests fledge July 17-23.
- Productivity 2.3 young/nest
- Total of 29 active nests utilized in 16 nest trees (2 new nest trees) – 24 nests successful in fledging young
- Positive change from 2015 = 16%



**Heron Flyover**  
Photo by Mike Hamilton

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