Post Point Heron Colony

2010 Monitoring - Annual Report

prepared for:

The City of Bellingham
Department of Public Works
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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 on the nearshore bluff southwest of the Post Point Waste Water Treatment Facility. The colony is situated on City property, adjacent to a 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 area and unique location within the urban area.

Habitats used by the Post Point herons include upland forest, grassland field, freshwater, estuarine and nearshore marine areas. All of these essential habitats are located in close proximity to the Post Point colony and form a habitat mosaic supporting staging, nesting, roosting and foraging. The heronry is situated on a nearshore bluff 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 congregations in the same contiguous forest occupied by the colony. The Post Point herons are unique in their use of upland human structures for staging at the Post Point wastewater treatment facility. Herons forage along the intertidal shoreline of Post Point, the lagoon and Padden Creek estuary as well as shoreline areas of Bellingham Bay, Chuckanut Bay and Portage Bay.

The results of the 2010 Post Point Great Blue Heron Colony Annual Monitoring are detailed in this annual update. The colony breeding season spanned 6 months between February and July 2010. A total of 33 site visits were made to the colony and nearby foraging area, including post-season colony checks, nest counts and site assessments. The breeding season monitoring schedule was intensified over previous years due to the colony’s previous instability resulting in complete nest failures in 2008 and 2009. The 2010 nesting season however, proved both productive and successful, but low nest numbers persisted.

The Post Point nesting season usually spans six to seven months from February to August. The season includes staging, colony reoccupation, nest building and breeding, egg laying, incubation, hatching, rearing and fledging. As in previous years, the 2010 herons returned to the site in February. Following nesting, the fledging of young was relatively early, with most young and adults leaving their nests by July 1st and dispersing from the colony by August 1st. However, some young and adults remained in the vicinity of the colony to roost and forage into autumn.

A total of 13 nests were active and productive in 2010. Up to 2007 the heron colony had grown and expanded annually at a rate of approximately 35%. In 2007 the colony declined approximately 27% from 2006 – this was attributed to higher than normal winter mortality. In 2008 and 2009 the decline in returning adult heron continued, and failure to fledge any young threatened the viability of the colony. The primary factor influencing the colony’s decline was Bald Eagle depredation of young and repeated flushing of adults off nests. Other potential contributing factors included human disturbance at feeding areas, reduction in food supply, disease and/or systemic changes within the regional ecosystem.

Recovery of the Post Point colony in 2010 was attributed, in part, to the lack of Bald Eagle incursions and early nesting schedule, with most young fledging before July 1st. Although returning heron numbers did not change significantly, the number of active nests did increase
and two new nest trees were utilized, expanding the colony footprint toward the Post Point Wastewater Treatment Plant. Productivity of nests also proved excellent, averaging three young per nest. Overall, the colony appeared to have adequate food and access to foraging grounds.

The planned expansion of the Post Point Waste Water Plant adjacent to the heron colony was proposed and approved by Bellingham City Council. The expansion design includes construction of a new clarifier within 100 feet from the colony core and significant changes to the current colony buffer. Discussions with the City of Bellingham Department of Public Works, Planning and Washington State Department of Fish and Wildlife were included in the 2010 work related to Post Point Heron Colony Monitoring and Management. An account of the consultation with the City of Bellingham the Post Point Heron Colony is included in this report.

The Post Point Heron Colony continues to be active as the only nesting colony in the City of Bellingham. Rebounding from complete nest failures in 2008 and 2009, the colony was productive in 2010, but did not recover heron breeding numbers. Several successful breeding seasons will be needed to fully recover to pre-2007 numbers. Due to the colony’s unique occurrence within Bellingham, protection of the nesting area and associated habitats are imperative to the heronry’s continued existence. The Great Blue Herons of Post Point represent one of the City’s greatest natural features and most sensitive wildlife areas.
INTRODUCTION

The Post Point Great Blue Heron Colony Annual Report details the 2010 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 heronry is the only known heron nesting site in the City of Bellingham and is considered a sensitive breeding and habitat area. The colony is small, yet unique and has been strategically important to the area’s heron population. Unfortunately, the colony, over the past two years has failed to produce young due to a mid-season abandonment.

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 requiring the protection of both the herons and their habitat. Heron colonies are sensitive to human disturbance and in most cases require special management to maintain their stability and productivity.

Due to the sensitivity of the Post Point Great Blue Heron Colony Heron Colony and its uniqueness, the City of Bellingham Public Works has supported the conservation of the 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.

Monitoring of the Post Point Great Blue Heron Colony usually includes three primary components: general monitoring, focusing on colony activity, breeding chronology, predation and disturbance; productivity, which focuses on nestling numbers and fledgling success; and nest survey updating the number of nests and nest trees utilized during the breeding season. Heron foraging observations are also made to document foraging activity. Monitoring usually spans six months during the breeding season, plus post breeding documentation. In 2010 monitoring was intensified and extended, whereas in 2008 and 2009 the monitoring was foreshortened due to the mid-season colony abandonment.

Implementation of monitoring, including on-site field observation and data collection was conducted by Jaime Welfelt and Ann Eissinger of Nahkeeta Northwest Wildlife Services based in Bow, Washington. Ms Eissinger has over twenty years experience monitoring Great Blue Herons and is expert in heron ecology, behavior, colony dynamics and stewardship. Her 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 2006-2007 prepared for the Puget Sound Nearshore Partnership is available online at: http://pugetsoundnearshore.org/technical reports.htm This technical report, serves as the general reference for heron life history and breeding information used in this annual update.

Ann 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, Public Works Department. 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.

Periodic progress reports were submitted to the City documenting the heron’s nesting activity and any observed disturbances. The point of contact for this project at the City of Bellingham Department of Public Works is Larry Bateman, Post Point Operations Supervisor.
Figure 1
Post Point Heron Colony Location
GENERAL MONITORING

General monitoring includes on-site visits and observations made from various locations in close proximity to the colony. Monitoring includes early season, breeding/nesting and foraging. Post-season monitoring takes place following the fledging of young from nests and range from foraging observations, colony checks, nest counts and map updates. Due to the location and associated vegetation around the nesting area, views of certain nests maybe obscured following leaf-out. All visible nests are therefore utilized for observation throughout the season.

General monitoring of the colony commenced early in the year, beginning in February, and colony observations extended through July 2010. The primary nesting season was documented from late February to early-July, with one nest remaining active to late July. In 2010, a total of 28 on-site monitoring visits were made during the breeding/nesting season, plus one pre-season assessment of the colony site and four post nesting site visits following the herons fledging from the colony. A few credible citizen reports, based on on-site observations, were also incorporated into the monitoring record. Added monitoring effort this season was made during Ski to Sea Festival to observe and document any disturbance to the colony or at the Marine Park race finish line located at the heron foraging area.

Monitoring of the colony included four primary objectives: 1) documentation of the nesting cycle or breeding chronology and related behavior; 2) observe and record disturbance including natural predators, human disturbance and other natural or unnatural disturbances; 3) document nest success and productivity; 4) record and map habitat utilization. The results of the monitoring observations are detailed below.

Early Season Assessment

The winter of 2009-10 was anticipated to be warmer and drier than normal in the Pacific Northwest due to the expected development of a moderate El Niño. According to the Office of the Washington State Climatologist, the winter was warmer and drier than normal, however, extremely low temperatures in early December set records for parts of western Washington while mild conditions in January were warmer than normal. Winter-like storms also moved through the area in March and April, with increased precipitation and cooler temperatures. Overall weather patterns for the region were irregular and at times extreme. Great Blue Heron response to extreme weather events and winter survival is not well documented and prey availability following sea surface changes is also not known.

At Post Point, no winter storm damage was observed, most nests and nest trees appeared to be intact from 2009. The colony’s location on the lee-side of a forested marine bluff, provides protection from most storms. As of February 2nd, 11 nest structures remained intact at the colony and heron were present on clarifiers at the Post Point Waste Water Treatment Plant, but no heron were present in the colony. A total of 8 heron were observed staging on a clarifier on the west side of the facility and no heron were observed foraging. Heron began moving into the colony by late February, with heron occupying nests February 20, based on a citizen report (Alan Fritzberg, email).

A pedestrian trail, which was created by residents from Shorewood, through the forest understory along the east side of the colony was reestablished, despite efforts to close that access by the City of Bellingham. The trail was not permitted and located in the colony which is a sensitive area. The trail was therefore reported and subsequently blocked again by City
personnel with fence and signs. Presence of humans and human traffic through the colony is a source of potential disturbance to the herons.

Breeding/Nesting Season Summary

Field visits to the Post Point heronry started in mid-February. A total of 8 staging heron were observed on February 5, 2010. Colony occupation was first documented by a citizen February 20 reporting herons in the colony and providing photos of heron carrying nest material during a repeat visit February 25. The biologist confirmed nesting activity March 6, with 11 nests visible and 5 nests occupied, a similar number as 2009.

By March 13 the colony had increased to at least 7 occupied nests, 5 by mated heron pairs. A total of 13 nests were visible, so 6 nests were not occupied, however unpaired herons were present. Paring and breeding activities were well underway in March. By March 19, a total of 14 nests were visible, at least 10 nests were occupied.

Incubation commenced March 19, with adults incubating at two nests. This date was on par with 2009. Egg laying and Incubation of eggs continue through March.

Early April brought typical spring storms, high winds, heavy rain and occasional hail. The colony remained stable with 10 visible nests occupied and all incubating eggs. No additional nests were visibly occupied; however, visibility had decreased due to full leaf-out. Incubation continued through April.

The first hatching of young was detected April 27, at which time 6 nests were confirmed with hatched young. The actual hatching date is likely earlier since some of the young were visible in the nests. This hatching is earlier than 2009, but similar to years previous. Note, breeding chronology varies by about 3 weeks +/-.

Although cool spring weather conditions continued, the heron colony appeared stable and productive. Reports from other parts of Puget Sound are mixed regarding heron colony stability and these will be watched closely. The status of other heron colonies in Whatcom County is not known.
Mild temperatures (50-60°F) and spring weather continued through May. Incubation and early hatching in April gave way to rearing in May and a few early fledglings. By May 1st at least 7 of the 11 visible active nests had young, and young could be heard throughout the colony. The heron colony continued to be very active through May as young grew and become more active. Nests contained 2-5 young, most with 3 young. In the last week of May one nest contained a dead young along with its siblings.

Fledging of young from Post Point was particularly early. At the end of May, a photo sent to the Biologist of foraging heron near Marine Park included a heron that appeared to be a juvenal. Some young in the nests were also actively flapping to exercise their wings – a common behavior prior to fledging. Usually young are in the nest for about eight weeks, however this observation would indicate fledging at about six and no more than seven weeks or earlier onset of nesting by two weeks.

In June the colony continued to be active and productive. No visible active nests appeared to have failed and the young were growing and actively preparing to fledge. By the end of June some young had left the colony while other young were preparing to fledge. The success of the colony with healthy, fledging young, was a positive turning point for the 2010 season, unlike the colony failure suffered in both 2008 and 2009.

By July 4th the colony had fledged nearly all young. One nest appeared to remain active into July, possibly a result of late nest onset or second clutching. Five dead young found under nests in the late season indicate limited mortality. One nest remained occupied with two heron present on the last site visit of the breeding season on July 26, 2010.

Post Point Heron Nesting Chronology Summary 2010

- **February**: Early staging on clarifiers at Post Point waste water facility, reoccupation of the colony and nest repair and building
- **March**: Courtship, onset of nesting, egg laying and early incubation
- **April**: Incubation and early hatching
- **May**: Hatching, brooding and rearing of young – possible early fledging
- **June**: Rearing and fledging of young – fledglings and adults roosting and foraging near colony
- **July**: One nest remains active – fledglings and adults roosting and foraging near colony
In addition to the seasonal chronology, a historic chronology was also developed for this colony. The historic chronology outlines the annual colony activity, nest count results and other pertinent occurrences for that year related to the herons. The historic chronology is included as an addendum to this report.

**Predation and Disturbance**

During each field visit to and in the vicinity of the heronry, 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. However, crows have been known to enter the colony following Bald Eagle incursions, presumably to scavenge on the spoils. A mature pair of Bald Eagles is common in the vicinity of the heron colony and regularly perches nearby, it is only when eagles prey on heron that the nesting is disrupted and herons could abandon their nests.

During the 2008 and 2009 breeding seasons, the local pair of Bald Eagle were observed in the vicinity of the heron colony at the onset of nesting. However, it was not until young had hatched and were ~3 weeks old that eagles were observed entering and disrupting the heron colony. Numerous eagle incursions were observed or reported, and it is likely Bald Eagle were the primary cause of the colony failure in both 2008 and 2009. In 2009, the local Bald Eagle pair was also reported to nest and have young, contrary to 2009 annual report. A Bald Eagle nest, situated in a large Douglas fir tree located approximately 62 feet southeast of the heron colony, was active in 2009 based on post-season reports from neighbors. Food demands by young eaglets likely caused the adult eagles to enter and prey on heron during that season.

In 2010, the local Bald Eagle were observed in the vicinity of the heronry, however no eagle incursions or disturbances were observed or reported during the entire heron nesting season. No other predators or related incursions were observed or reported.

The Bald Eagle was delisted from the Federal Endangered Species Act in 2007, however they remain protected under the Bald Eagle Protection Act and Washington State Endangered Species Act. Nests are also protected under State regulations and require a Bald Eagle site management plan. The Bald Eagle nest located near the heron colony was recorded by the Washington Department of Fish and Wildlife’s Region 6 Bald Eagle Specialist Julie Stofel in 2006.

![Immature Bald Eagle preying on Great Blue Heron nest](image.png)
A special effort was made at the end of May 2010 to observe the colony during the Ski to Sea Race festivities. Three site visits were made prior to, during and after the event festivities. With the finish line located at Marine Park, the potential for disturbance the foraging herons and the colony were possible. The results of the observations were negative for disturbance to the colony, but indicated that the event had disturbance to foraging herons. Herons were not utilizing all of the foraging area due to festival related human activities in the nearshore. Herons were seen feeding in eelgrass beds about 200 feet away from the finish line, yet heron closer were flushed. A limitation around feeding areas at this critical period is notable.

Ski to Sea Race Finish Line at Marine Park
(beach and primary heron foraging area in background)
Photo by Jaime Welfelt

A persistent pedestrian trail, constructed in 2009, was cleared and actively used again in 2010. Earlier in the season, despite signage and fencing the trail was. The trail was reported to the City of Bellingham and the trail entry points were blocked, parts of the trail obliterated and “no trespassing” signs were posted. A public education effort is needed to inform citizens and neighbors of the sensitivity of the heron colony and to safeguard the colony during the nesting season. Now, it seems acceptable by some neighbors to use the trail, despite the efforts to discourage its use.
HABITAT UTILIZATION

The habitats utilized by the herons of Post Point include upland mixed forest, nearshore bluff, marine estuary, shoreline, intertidal and human structures. The upland mixed forest is situated along the nearshore bluff at Post Point and provides the structural substrate for seasonal nesting and year-round roosting. Within close proximity of the colony are marine shoreline, protected lagoon, estuary and intertidal area with eelgrass meadows.

Post Point Heron Habitat: field, forest, fenced buffer and lagoon.

The upland forest where the nest colony is located is situated along a historic shoreline bluff. The bluff line allows the herons separation and elevation above the shoreline park and nearby municipal facilities. The forest is mixed second growth containing mature conifer and deciduous trees. The tree species utilized by the herons for nesting have in the past included Pacific paper birch (*Betula papyrifera*), big-leaf maple (*Acer macrophyllum*) and red alder (*Alnus rubra*). The nest stand is dominated by alder and Douglas fir (*Pseudotsuga menziesii*). Many of the old nest trees are mature and have died or blown over during the past ten years. As a result, the current nesting only occurs in alder. Douglas fir define the bluff and provide a critical overstory and wind break for the colony; they also serve as the primary roost trees for herons and bald eagles.

Although field habitat is present adjacent to the heron colony at Post Point and a vole population is available for foraging, heron observed using of the fields is rare. However, vole casting have been observed in the colony and vole tunnels were documented in the immediate field (see photos below). Since 2008 the fields both inside and outside the fence remained fallow (unmowed) which is beneficial for the voles. The creation of more field or grassy habitat margins adjacent to the lagoon has been recommended as part of restoration efforts. These grassy margins are important as supplemental foraging and open loafing habitat for herons.
Herons in other locations both stage and feed in shoreline coastal wetlands, saltmarsh, upland fields – particularly fallow margins along fields, wetlands and shoreline. Fields are also used as diurnal or day-time roosts. The heron’s use of the Post Point lagoon has been limited, but appears to be gradually increasing as eelgrass restoration takes hold. The lagoon serves as an important and safe habitat area for newly fledged young from the colony. Further restoration of the lagoon and restriction from human access would likely increase heron use.

Heron at Post Point Lagoon
Photo by Jaime Welfelt

The heron’s use of the Post Point Waste Water Treatment Facility is unique. Herons utilize the top of the clarifiers during staging and occasionally during the breeding season, fledging and winter roosting. Herons standing on the clarifier structures provide separation from the colony, but not without the risk of human disturbance. It is also a sunny and potential warmer area that the north-facing forest where they normally roost.

Post Point water treatment clarifiers with heron staging
Photo by Gary Gilfillen
FORAGING

Foraging habitats for herons include field, freshwater, estuaries and marine intertidal areas. The most productive 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 reports.

Foraging surveys are conducted by the monitoring Biologist during each breeding season. Since 2008, herons from the Post Point colony are staying close to the colony for foraging, unlike previous years. Primary foraging is concentrated to Post Point/Marine Park and immediate shoreline. Other foraging areas include Chuckanut Bay shoreline and intertidal area. Use of the Post Point lagoon is becoming more frequent as eelgrass fills in from restoration efforts. The lagoon is particularly favored by newly fledged young.

The most productive foraging areas for heron are shallow Intertidal with abundant native eelgrass (*Zostera marina*) where prey species reproduce and concentrate. Eelgrass is abundant along the Post Point shoreline and heron use of the area is essential for successful feeding of young and maximum fledging. The Post Point/Marine Park shoreline was used daily by the Post Point herons and served as the primary foraging area in 2010. Use of the eelgrass area was limited only by tide and competition with recreating humans.

Other known foraging areas utilized by the Post Point herons in previous seasons include, Padden Creek estuary, Portage Bay, Lummi Shore Drive shoreline, Nooksack River delta and suitable locations along the Bellingham Bay shoreline.

*Herons foraging in eelgrass near Marine Park*  
Photos by Alan Fritzberg
PRODUCTIVITY

The productivity of the visible nests within the heron colony is monitored annually and is measured during on-site visits in May and June prior to fledging. Productivity within the colony is an important indicator of the health of the colony, and was particularly important this year given that the colony failed to produce young over the past 2 years.

The Post Point herons successfully produced young in 2010. Herons lay four to five eggs per nest and may fledge a maximum of five young, but normally fledge one to three.

In 2010, young were successfully fledged. Based on observations in 2010, between 2 and 5 young were documented for the 13 nests. Visibility obscured certain nests resulting in an average of 3 young per nest. This number was derived from a sample of 8 of the 13 active nests. This was an excellent result and reflects good health and success on the part of the remaining adults and locally viable food source.

NEST SURVEY & MAPPING UPDATE

The annual nest count is the standard method for determining the number of nests within the heronry and indicates the number of nests and active breeding heron pairs utilizing the site during that year. Autumn allows maximum viewing of the whole heronry following leaf drop, and is the most accurate count of the year for large colonies. However, in colonies that were not fully utilized, a count of nests at the end of a breeding season can misrepresent actual numbers of active nests, so colony monitoring during the breeding season is essential.

A record of nest tree locations and nest numbers is also made or updated in the autumn of each year. New nest trees and nests are added to an index of nest trees, all of which are tagged and identified. A map illustrating the nest trees and locations in the heronry is updated year to year.

For 2010, an autumn nest count was conducted in October. From this count, a total of 9 nest trees with 13 nest structures were recorded. Of these, two nests and nest trees were new for 2010. It is likely that all of the nests were utilized during the 2010 nesting season, although one of the nests was very small and sparse. A total of 11 nests were observed and tracked during the nesting season and provided the source for productivity and other information. All of the
active nest trees were alder, the birch have died, blown-down or are no longer structurally sound to hold nests and the big-leaf maple, once a major nesting tree, is not active.

In review of previous years (Table 1), 19 nests were active in 2004, two of which may not have supported young. In October 2005, the annual nest count was conducted resulting in a total of 31 nests counted in 10 nest trees. Of the nests counted in 2005, 13 were new for that year. In 2006 a new high of 37 nests were recorded. For 2007 the nest count totaled 27 nests in 12 trees, and one new nest tree. The 2007 season marked the first decline in breeding numbers since the colony established in 2000. The total nest count for 2007 was a 10 nest decline from 2006 and dropped below the 2005 total of 31 nests. Storm damage accounted for the loss of five nest trees and at least seven nests. In 2008, a total of 17 nests in 9 nest trees were recoded as active, and 2009, 11 nests were confirmed active and 2 were not visible, but assumed active.

A colony map update was completed in November 2010, by Chris Behee of the City of Bellingham and Jaime Welfelt, Nahkeeta Northwest. The colony maps (Figures 3-4) illustrate the colony, its location on the landscape, the core area, nest tree location and number of nests per tree.

The colony core area, as indicated on the maps, constitutes the actual nesting area and is calculated 50 foot from the base of the nest trees in order to accommodate GPS variance and tree canopy. The core area is about 1 acre in size. A 100 foot buffer is illustrated as the non-disturbance area around the colony. This buffer is recommended as the minimum no-entry area during the breeding season. This also represents an area in which the colony could move over time, so no vegetation should be removed.

The 2010 maps for the colony illustrate the two new trees (598 and 599). These new trees expanded the 50' colony core area & disturbance area buffers by about 25' on the northwest edge, and the more precisely mapped location for tree number 600 contracted the boundaries by about 14' on the east edge (C. Behee, COB GIS).

Also mapped are, heron roosting and foraging areas, as well as the bald eagle nest near the colony and property boundaries are indicated on the map. Although the colony is situated on City property, many of the nests are bordering private property which is proposed for development.

During the annual nest count, each nest tree is tagged or existing tags are read, and tree condition is noted. New nest trees were recorded and tagged. The number and size of nests are recorded as well as the presence of egg shell, remains or blown down nests. A database of nests and nest trees is maintained and updated annually.
The following is a summary of nests and nest trees since 2000.

Table 1: Post Point Heron Colony Annual Nest Count

<table>
<thead>
<tr>
<th>Year</th>
<th>Total number of nests</th>
<th>Total number of nest trees</th>
<th>Percentage change (# of nests)</th>
</tr>
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<tr>
<td>2000</td>
<td>6</td>
<td>5</td>
<td>----</td>
</tr>
<tr>
<td>2001</td>
<td>8 estimated</td>
<td>6 estimated</td>
<td>+33%</td>
</tr>
<tr>
<td>2002</td>
<td>10</td>
<td>6</td>
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<tr>
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<td>2007</td>
<td>27</td>
<td>12</td>
<td>-27%</td>
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<td>2008</td>
<td>17 active</td>
<td>9</td>
<td>-37%</td>
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<td>2009</td>
<td>11 active at onset</td>
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<tr>
<td></td>
<td>9 active nesting</td>
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<td></td>
</tr>
<tr>
<td>2010</td>
<td>13 active</td>
<td>9</td>
<td>+44%</td>
</tr>
</tbody>
</table>

Post Point herons preparing nest 2010
Photo by Alan Fritzberg
Figure 2: Colony Map 2010 Update

POST POINT HERON COLONY 2010

KEY:
- 2010 Active Nest Trees
- Previous Nest Trees
- Roost Area
- Bald Eagle’s Nest Observed in Fir Tree
- Colony Core Area
- 100ft Non-Disturbance Buffer

0 100 200 Feet

2010 Pictometry/Air Photo
City of Bellingham
December 2010
Figure 3: Colony Map 2010 Update

POST POINT HERON COLONY 2010

KEY:
- Red Circle: 2010 Active Nest Trees
- Green Circle: Previous Nest Trees
- Yellow Icon: Roost Tree
- Black Icon: Bald Eagle's Nest (Fir Tree)

Note: 2010 Active nest trees & counts labeled. Only 9 nest trees were active in 2010.
COLONY GROWTH and DECLINE

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, the colony failed to fledge young. In 2010, the colony rebounded.

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 in 2008-2009 were related in-part to depredation by Bald Eagles, but other factors were likely also involved, including weather, water temperature, prey availability, and adult heron health/fitness. 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 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.

Figure 4: Post Point Heron Colony Trend
POST POINT WASTE WATER PLAN EXPANSION

The City of Bellingham Public Works Department is in the process of expanding the Post Point Waste Water Plant. The Post Point facility has provided secondary treatment of waste water since 1993 and processes up to 72 million gallons daily, with treated discharge piped directly to Bellingham Bay. Due to the city’s population growth, the plant has reached its capacity and requires expansion to handle the increase in flow and load, and maintain treatment within federal and state standards. This and more detailed information is available on the web: http://www.cob.org/government/departments/pw/projects/wastewater-treatment-facilities-planning.aspx

The expansion of the Post Point Waste Water Plant requires the addition of several new structures and enlargement of its existing footprint. Although most of the new construction is situated within the current facility boundary, defined by fencing and vegetative screening, three new structures will be built outside that defined space (Figure 5 Carollo Engineers). Two structures, including the Secondary Clarifier and AS Basin No. 4, as depicted in the August 2010 project layout, will be built within line of sight and close proximity of the Post Point heron colony.

The expansion of the Post Point facility directly affects the Post Point Great Blue Heron Colony, due to its close location and structural scale. The proposed project will require site prep, excavation and construction, using heavy equipment and associated lighting, cranes, and personnel, resulting in increased noise, lighting and human activity resulting in permanent physical changes to the landscape. The close proximity of the Post Point heron colony to the waste water plant and the proposed addition of a structure (Secondary Clarifier) within 100 feet of the active nests, will pose both temporary disturbance and potential permanent impact to the colony. Gradual migration of colony northwest toward the proposed clarifier in 2010 is also noted (Figure 6).

In May 2010, the City of Bellingham, Public Works Department requested an informal consultation with Ann Eissinger, Wildlife Biologist and heron specialist with Nahkeeta Northwest, to provide feedback on the proposed project and mitigation suggestions to off-set disturbance to the herons. Ms. Eissinger participated in one project-specific public meeting and two meetings with COB personnel and consultants. With City Council approval in March 2010, the project was to proceed with expansion to the south - Alternative 1B. This design alternative locates a new clarifier within 100 feet from the edge of the heron colony, and will require mitigation to help offset impacts to the herons and other wildlife.
In October 2010, a meeting to review and discuss environmental considerations related to the Post Point expansion project emphasized wetland and wildlife mitigation. The meeting was facilitated by ESA Adolfson of Seattle and attended by representatives of City and State agencies, and project-associated consultants involved in the project or some aspect of environmental permitting. The Post Point Heron colony was included as a meeting topic, but a detailed discussion was not possible due to time constraints. Jennifer Bohannon, Washington Department of Fish and Wildlife (WDFW) Biologist, provided an overview of Great Blue Heron protection and management as a State Priority Species. Materials and information related to the Post Point herons were provided at the meeting and is included as an addendum to this report, including primary heron management considerations. Specific recommendations for mitigation of the heron colony were to be further developed by consultants and WDFW.

Possible mitigation area on lagoon shoreline proposed by ESA Adolfson

Photo by A. Eissinger
Figure 6: Waste Water Plant Expansion Overlay

POST POINT HERON COLONY 2010

KEY:
- 2010 Active Nest Trees
- Previous Nest Trees
- Roost Area
- Bald Eagle's Nest Observed in Fir Tree

Colonies Core Area

100' Non-Disturbance Buffer

New clarifier, building, & re-routed footpath. Impact to wetlands = 8,334 sq ft. Impact to Heron Colony 100' non-disturbance buffer = 8,250 sq ft.
MANAGEMENT AND STEWARDSHIP RECOMMENDATIONS

Recommendations for 2011 management and stewardship of the Post Point Great Blue Heron colony are as follows:

1. Continue weekly monitoring of the heron colony and nearby foraging areas.
2. Develop a mitigation plan and protection guidelines for Post Point Wastewater Treatment Plant Expansion (see attached recommendations).
3. Fully protect associated upland habitat around the colony – maintain naturally vegetated buffers and purchase adjacent undeveloped land.
4. Protect the Post Point nearshore foraging habitat from human recreational disturbance by posting signage between May and August - including the lagoon and outershore intertidal and eelgrass area.
5. Collaborate with other agencies or institutions to survey foraging sites around Bellingham Bay and document heron prey species and concentrations in foraging areas.
6. Conduct outreach and education to the user groups of the Post Point and Marine Park shoreline including: kayakers, kiteboarders, shellfish gatherers, Bellingham Parks and Ski to Sea organizers.
7. Monitor Bald Eagle activity and determine location of any active eagle nest.
8. Support active public education and volunteer involvement in consultation with the Biologist.
9. Provide neighborhood education outreach in the Shorewood/Edgemoor area.

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. The recommendations in 2003 need to be revisited. Therefore, it is recommended that the Post Point Heron Colony Management Plan, be updated to reflect the current status of the colony and its sensitivity.

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. 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 can be better explained.

Public education, particularly for shoreline user groups, Sea to Ski organizers is needed to inform them of sensitive heron feeding areas and the role they can play to protect these areas for herons and other wildlife.

Expansion of the Post Point Waste Water Plant over the next few years, requires planning and mitigation for herons and other environmentally sensitive areas. Developing an effective mitigation plan and backing that up with monitoring is needed for the full duration of the project.
CONCLUSION

The Post Point Heron Colony was established in 2000. The colony has grown, and successfully produced and fledged young for eight consecutive nesting seasons. In 2007 the colony began to decline. Nesting numbers dropped by over half during 2008 and 2009 and the colony experienced mid-season failures. The colony has rebounded in 2010, with successful nesting, fledging and a slight increase in active nests. This success of the colony is a hopeful sign that the colony is recovering.

Monitoring of the colony during the 2010 nesting season revealed early breeding, but continued low returning adult numbers to breed. Unlike 2008-09 no disturbances were observed in the colony and no Bald Eagle incursions were reported. A special effort to intensify monitoring during the season included observations made over Ski to Sea weekend. The only disturbance to herons related to race festivities was at the finish line near the foraging grounds, which limited the area accessible by feeding herons.

The Post Point Great Blue Heron Colony was active in 2010 and supported 13 nesting pairs in 9 nest trees. The colony successfully fledged young in June and one nest remained active in July. Active nest number increased 44% from 2009. Nests consisted of 2 to 5 young indicating good productivity. Compared to previous years, this year proved pivotal in reversing the failures of 2008 and 2009. The colony needs to be carefully monitored to ensure the continuation of success and viability.

Due to the sensitivity and notable decline of the Post Point heron colony, emphasis on the colony's protection and conservation is greatly needed through 2011. Intense monitoring, protection of habitat, particularly primary feeding areas is also highly recommended. This protection includes the education of used groups and the posting of signage. Mitigation of habitat and protective measures during the Post Point Waste Water Plant expansion is also needed. A detailed protection plan should be developed for the project in 2011.

Finally, Nahkeeta Northwest would like to extend our gratitude to Larry Bateman and the staff of the Post Point Waste Water Treatment Facilty for their assistance in this monitoring effort. 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. We greatly appreciate photographs of the Post Point herons provided by Alan Fritzberg and the support of neighbors who shared useful information related to the heronry.
ATTACHMENTS

- Post Point Heron Colony Primary Management and Mitigation Considerations: for Post Point Waste Water Treatment Plant Expansion

- Post Point Great Blue Heron Colony Annual Chronology

Inside the Post Point Heronry
Photo by A. Eissinger
Post Point Heron Colony Primary Management and Mitigation Considerations: for Post Point Waste Water Treatment Plant Expansion

- Design and location of new structures – avoid infringement on colony buffer and flyway to feeding grounds.
- New structure location, height, noise and lighting should all be considered in design to minimize disturbance and hazards to herons.
- Timing – avoid construction disturbance during breeding season February 1 – August 1.
- Distance from construction – maintain maximum distance from colony, roosting areas and feeding grounds to avoid disturbance and colony abandonment. 100 foot no entry zone should be maintained as a minimum requirement.
- Develop light, noise and human disturbance abatement measures prior to staging or construction.
- Mitigate disturbance using timing restrictions, alternate design options, planting vegetative buffer and enhancing and expanding habitat areas: nesting, roosting and foraging.
- Minimizing human recreation disturbance at feeding grounds during optimal feeding and fledging periods is strongly recommended: May 1-August 1
- Monitor heron colony intensely during and post construction.
- Develop mechanism to communicate with contractor and potentially alter construction activities or plans if herons are exhibiting signs of stress or react to disturbance.
- Form an oversight committee to deal with management and mitigation planning, tracking and response.
- Develop mitigation plan that enhances heron habitat and provides protective screening around nesting area.
- Improve lagoon habitat by providing shallow foraging, increased eelgrass and protected shoreline loafing areas – exclude human access.
- Work with WDFW and COB to include PHS and Critical Area requirements.
- Recommend that heron management and monitoring for Post Point be conducted cooperatively to maximize efficiency, consistency and avoid duplication.
- Public education.

Recommendations provided by Ann Eissinger, NNW 10/2010
Post Point Great Blue Heron Colony
Annual Colony Chronology (2010 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 5th 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 6th 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 7th 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 8th year.
- ~54 breeding adults.
- Colony reoccupied Feb. 18
- Incubation started March 12
- Hatching confirmed April 26
- 21 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 9th 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 10th 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 11th year.
- Staging Feb 5
- Colony reoccupied March 6
- 26 breeding adults – 13 nests active
- 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 new nests and nest trees
- 44% increase in active nests from 2009 – 100% change in nest productivity!