

Post Point Heron Colony

2008 Monitoring - Annual Report

prepared for:

The City of Bellingham
Department of Public Works
2221 Pacific Street
Bellingham, WA 98226



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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 2008 Post Point Great Blue Heron Colony Annual Monitoring are detailed in this report, however abbreviated due to the mid-season abandonment of the colony. The colony monitoring spanned five months between February and July 2008. A total of 13 site visits were made by a professional wildlife biologist who recorded observations at both the colony and nearby foraging area.

The nesting season usually spans six to seven months from February or March to August. The season includes staging, nest building and breeding, egg laying, incubation, hatching, rearing and fledging. In previous years, herons started returning to the site in February, and August marked the dispersal of heron adults and juvenals from Post Point. However, in 2007 the nesting season contracted to only five months, beginning in mid-February and fledging by the end of July. The 2008 season appeared to start normally, but failed mid-season, prior to the fledging of any young.

Up to 2007 the heron colony has been productive and expanding 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, since no other causes were identified and no new colonies were reported in the area. However, the occurrence of a dead heron at Post Point in early 2008 indicate possible other factors influencing heron decline, including reduction in food supply, disease or systemic changes in the inland marine ecosystem.

In 2008, herons nesting at Post Point abruptly deserted the colony in June, leaving young and eggs in the nests. Although 17 nests had been occupied during the 2008 season, no young successfully fledged. The cause of this unusual mid-season abandonment is not known. However, Bald Eagle incursions in the colony and recreational disturbance in the foraging areas were likely contributing factors to the abandonment of the colony.

The abandonment of the colony in 2008 has renewed the need to take direct action to protect the heron colony and associated habitats. Recommendations to the City of Bellingham for conservation of the Post Point Heron Colony are identified in this report and include an updated management plan, careful monitoring, landuse review and conservation, seasonal protection of foraging areas and public education.

The Post Point Heron Colony continues to be active and currently requires additional protection and attention in order to remain productive. Due to the colony's unique occurrence within the City of Bellingham, protection of the nesting area and associated habitats are imperative to the heronry's continued health and longevity. 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 2008 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 strategically important to the area's heron population.

The Great Blue Heron (*Ardea herodias*) is a resident or year-round species in this region and recognized as a Priority Species by Washington Department of Fish and Wildlife (WDFW). Heron colony sites are also considered 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 need 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 2008 the monitoring was foreshortened due to the mid-season colony abandonment.

Periodic progress reports were submitted to the City documenting the heron's nesting activity and reported desertion of the colony in 2008.

Implementation of monitoring, including on-site field observation and data collection was conducted by Ann Eissinger of Nahkeeta Northwest Wildlife Services based in Bow, Washington. Ms Eissinger has over fifteen years experience monitoring Great Blue Herons and is expert in heron ecology, behavior, colony dynamics and stewardship. Her recent 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

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, 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.

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. Due to the location and associated vegetation around the nesting area, views of certain nests are obscured following leaf-out. A representative sample group of visible nests are therefore utilized for observation throughout the season.

General monitoring of the colony commenced early in the year, beginning in February, and extended to July 2008. The breeding season was documented from February 18 to July 1 at total of 19 weeks. In 2008, a total of 13 on-site monitoring visits were made during the breeding/nesting season, including the recovery of a dead heron from the lagoon early in the season and one post-abandonment assessment of the colony.

Monitoring of the colony included three primary objectives: 1) documentation of the nesting cycle or breeding chronology and related behaviour 2) observe disturbance including natural predators, human disturbance and other natural or unnatural disturbances 3) habitat utilization. The results of the monitoring observations are detailed below.

Early Season Assessment

Following a relatively mild winter, air and marine water temperatures remained unseasonably cool. At Post Point, restoration work of the lagoon was ongoing over the winter including reshaping portions of the lagoon edge and extensive plantings around the lagoon riparian area. In the heron colony, no winter storm damage was observed, unlike 2007 in which 2 trees and a total of 6 nests were lost due to storms. As of February 18th at least 5 adult herons were beginning to stage on the clarifiers of the Post Point water treatment facility.

A report of a dead heron was received and the body recovered February 18, 2008.

Washington Department of Fish and Wildlife was contacted to report the occurrence. Permission was granted to examine the body and no further tests were authorized or requested. A gross necropsy of the heron was made by a local veterinarian. The heron appeared to be in full breeding plumage, was fully intact and had no obvious injuries or trauma. The cause of death was not definitive; however the heron was emaciated and had experienced mass wasting resulting from starvation.

Examination of the internal organs found only one obvious anomaly which was a 1 cm lesion on the right lung lobe. The lesion was likely the result of a fungal infection and may have occurred in the herons' weakened state. The other organs appeared normal. No further pathology or toxicology tests were made. It is possible that the heron starved, but it is not clear why, unless prey (both marine and terrestrial) were scarce. Changes to the lagoon during restoration work, where the heron was found, may have contributed, but it is unclear why the heron did not simply move to another area to feed.



Dead heron at Post Point lagoon

Another report of dead heron was received in March and was investigated. Two dead western grebes were found that had likely been prey of a Bald Eagle. The area was closely watched for other ailing herons and other birds with negative results.

Breeding Chronology

Mid-February marked the early return of heron to Post Point in 2008 with staging near the colony at the Post Point water treatment facility. However, by March 1st no heron were observed and were thought to have temporarily dispersed, which delayed the onset of nesting. On March 6th heron were first observed in the colony with a total of 10 nests occupied. This date is a full two weeks later than 2007, however the 2007 mid-February reoccupation was the earliest date recorded for this colony. The reoccupation date in 2008 is, by comparison, aligned with 2006.

By March 15th the colony had increased to approximately 15 occupied nests, with 4 visible nests remaining unoccupied. These numbers represented about 80% of the available nests occupied. Incubation of eggs appeared to be occurring at 2 nests. By April 1st, at least 14 nests were visibly occupied, with 10 incubating and two pair still in the early stages of courtship and breeding. Incubation continued through April and no additional nests occupied, however visibility was becoming limited by vegetation. Some nests remained unoccupied which was unusual for this site.

Hatching was first recorded April 26th, with one nest observed with very young hatchlings estimated to be only one week old. Early hatching was recorded on the same date in 2007, yet the young were estimated to be about 2 weeks old. Overall the breeding season was approximately 2 weeks later than 2007 with 55% nest occupancy. Timing however was aligned with 2006 but nest occupancy was only 40% by comparison.

Cooler than usual air and water temperatures continued through April and were of concern that these conditions could affect eelgrass growth and prey availability in the nearshore areas. Unfortunately, following many scientific contacts, these data were not available to compare from previous years as few areas are sampled for nearshore fish species and heron prey species are not specifically targeted. Many of the region's other heron colonies were also delayed in startup in 2008 and this delay may be linked to systemic changes or unseasonably cold conditions.

Through May the colony remained active, however the robust vocalizations associated with large numbers of young were not audible and low activity combined with increased vegetation reduced visibility to actually view young in nests. Hatching of young continued through May, as did late incubation of certain nests. By the end of May certain nests had failed and both young and general nesting activity appeared depressed. Poor weather, consisting of lower than normal temperatures, persistent precipitation and cold marine water temperatures, which seemed to play a role in reducing the level of heron activity in the colony.



In June only 10 visible nests remained active and the number of incubating nests increased, indicating failed nests and new egg clutches laid. The cause of nest failure and loss of 4-5 week old nestlings is not known, however low temperatures and the possible lack of food earlier in the season may have contributed to the loss. Low activity in the colony persisted. Young heard in the colony were faint and young heard from one nest were estimated to be 1-2 weeks old which is unusually young for June. Although the heron colony appeared to be depressed, the eelgrass and upland meadows appeared lush and heron were observed feeding well along the nearby shoreline.

On the first of July the colony was determined to be vacated. Follow up visits resulted in no observed herons in the colony, foraging or roost areas.

Post Point Heron Nesting Chronology Summary 2008

- February: Early staging on clarifiers at Post Point waste water facility
- March: Reoccupation of colony, onset of nesting, egg laying and incubation
- April: Some nests remain unoccupied, incubation and first hatch of young
- May: Incubation, hatching, brooding and rearing of young
- June: Incubation of second clutches, hatching, brooding/rearing of young
- July 1: Colony abandonment documented

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 attachment of this report.

Predation

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. No predator incursions were observed by the Biologist, however, significant Bald Eagle disturbance was reported by Larry Bateman of the Post Point water treatment facility. The observed incursions in June included eagles repeatedly entering the heron colony and likely preying on young. During one incursion June 25th, the observer reported that an eagle's entry into the colony flushed herons off nests and out of the colony. This is the first time such a severe disturbance has been observed in the colony and reported.

Aggressive incursions by Bald Eagles in heron colonies can be very disturbing and may cause abandonment. The reported eagle incursions at Post Point indicated a severe disturbance and likely predation of young. No heron carcasses or signs of dead young were found under nests, but some egg shells appeared to have been predated. Bald Eagle disturbance this season has clearly been the source of disturbance and likely contributed significantly to, or precipitated the early desertion of the colony.

Bald Eagle activity around Post Point is carefully monitored. Bald Eagles have been generally common in the past, particularly a mature pair, the male of which is regularly perched near the colony and has had little or no effect on the herons. A Bald Eagle nest situated in a large Douglas fir tree, located approximately 62 feet southeast of the heron colony does not appear to be active. An active eagle nest is likely located somewhere in the

vicinity as indicated by a juvenal eagle food begging from an adult in 2007. Adult Bald Eagles persist near the heron colony, usually perched in large Douglas fir trees, feeding on the shoreline or flying over. The resident adult eagles have had little observed impact on the heron colony, so it is likely that non-resident subadult eagles are the cause of disturbance and predation in the colony.



Immature Bald Eagle preying on Great Blue Heron nest



predated heron egg

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.

Disturbance

Monitoring of the heron colony for disturbance resulted in no significant observations by the Biologist, however, disturbance caused by Bald Eagles in June were reported from other sources as described earlier. No human related disturbance was observed or reported in or near the heron colony. The heron colony and area on City property is protected from direct human disturbance, and the area above the colony is private is relatively natural. A public trail and off lease area for dogs is located directly north and east of the heron colony, however, a fenced field separates the public trail by 100 feet from the colony perimeter. This area appears to provide adequate buffering from people and dogs, since the colony is set on a forested hillside and is screened from most of the activity below and protected from intrusion. An illegal single-tent camp was found in the forest adjacent to the colony, however no direct disturbance was noted. Herons have shown no response at any point during the breeding season to people and dogs in the off leash area, including loud barking during the monitoring visits.

Activity in and around the Post Point Waste Water Treatment Facility appears to have little effect on the nesting herons. During the late winter herons were staging on the clarifiers at the water treatment plant and were occasionally flushed by plant personnel.

Disturbance on nearby shoreline areas or feeding grounds was also monitored. Observations were made by both the Biologist and a Western Washington University student Amy Strohm. All disturbances displacing or flushing herons from their feeding areas were recorded. Interactions with humans, pets and other wildlife were also recorded. Observed disturbances included: beachcombers, a photographer, kayakers, clam diggers, trains and Bald Eagle fly-over.

In early 2008, a barrier was constructed to restrict access and human use of Post Point lagoon during shoreline restoration activities. Although no public access was allowed, restoration crews did work along the perimeter of the lagoon and observed only one heron during their work. Habitat improvements in and around the lagoon included some regrading, planting of marine eelgrass and terrestrial native plants which will benefit herons and other wildlife.

The marine shoreline, outside of the lagoon, is used by the herons for foraging and has experienced an increase in human use. Recreational use of the shoreline includes beach combing, clam digging, kayaking and in June 2008 a new sport of kiteboarding appeared to add to the use of the nearshore, particularly shallow areas including eelgrass beds. The Post Point herons are dependant on access to this shoreline for feeding and the increased use by humans has created unanticipated disturbance.



Kiteboarding and Kayaking in Post Point heron foraging area

Kiteboarding is a watersport growing in popularity on Bellingham Bay. The use of small surfboards and parasails on long tethers makes for very fast movement across the water surface and overhead erratic darting of sails. The combined sail and fast movement easily frighten herons and other waterbirds that frequent the shallow shoreline area. Kiteboarders prefer shallow water and utilize some of the major heron feeding areas around the Bay. This sport is of concern since launching at Marine Park, just north of Post Point, was first

observed in June and kiteboarders were clearly using the shoreline extending west including the eelgrass foraging area closest to the heron colony. During these observations, at peak feeding periods, no herons were present. This area is considered a primary feeding area for the Post Point herons and displacement from this area may have contributed to the abandonment of the colony due to the inability of the herons to access food efficiently.

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.

Post Point Heron Habitat: field, forest and fenced buffer

Heron Colony



Fallow Coastal Meadow and Vole Tunnels: potential heron foraging habitat

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 include 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*). 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 use of the fields is rarely observed. However, vole casting were observed in the colony and vole tunnels were documented in the immediate field (see photos below). In 2008 the fields both inside and outside the fence remained fallow (unmowed) which is beneficial for the voles. The creation of more field – grassy habitat adjacent to the lagoon has been encouraged as supplemental foraging and loafing habitat for herons. Herons in other locations both stage and feed in shoreline coastal wetlands, saltmarsh, upland fields – particularly fallow fields and occasionally roost in these field habitats during the day.

Herons roosting



Post Point Lagoon Adjacent to Heron Colony and Bellingham Bay



Post Point water treatment clarifiers with heron staging



**Heron sunbathing
along Post Point Lagoon**

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 without the risk of human disturbance. It is also a sunny and potential warmer area than the north-facing forest where they normally roost.

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 prey necessary to nourish young over an eight week rearing period. The foraging areas for the Post Point herons in and around Bellingham Bay were surveyed and mapped in 2006. Follow up surveys were conducted by the Biologist during the nesting season in 2007 and in 2008 detailed observations were made at Post Point and Chuckanut Bay by Ann Eissinger and Amy Strohm. Immediate - primary foraging areas utilized by the Post Point herons (juvenals and adults) include Post Point and Chuckanut Bay shorelines and intertidal areas. Use of the Post Point lagoon is minimal by adults, but is an important dispersal area for fledglings. Intertidal areas most frequented were areas of native eelgrass (*Zostera marina*).

Figure 2
HERON FORAGING AREAS



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

PRODUCTIVITY

The productivity of the heron colony is measured by counting the number of young per nest, when the young are large and active enough to observe. More than one count is usually made beginning in June. In 2008, June productivity counts were inconclusive due to the low activity of young and large number of nests requiring second attempts due to failed first clutches. The productivity survey was again attempted in early July, but the colony had abandoned the site for the season. Therefore, no productivity survey was possible for 2008 and based on hatching dates, failed nests and colony abandonment, it was determined, no young fledged from Post Point in 2008.

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 2008, following the abandonment of the colony, a survey was conducted to determine activity in the colony and estimate the number of active nests prior to abandonment. Although, much of the colony is visible from viewing outside the colony, additional data collected inside the colony confirmed active nest trees and nest numbers.

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 recorded. These trees showed signs of use and many had eggshells directly under nests. Although more nests were observed in the colony, they were not utilized in 2008.

A colony map update was completed in December 2008, by Kate Newell of the City of Bellingham. 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. In addition, heron roosting and foraging areas are identified as well as the bald eagle nest near the colony. Property boundaries are also 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.

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.

During the annual nest count, each nest tree is tagged or existing tags are read, and tree condition is noted. 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

Year	Total number Number of nests	Total number 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	9	-37%



Kate Newell, COB GIS Specialist
Heron Colony Mapping



Heron nest tree tag

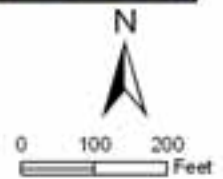
Figure 3

POST POINT HERON COLONY 2008



KEY:

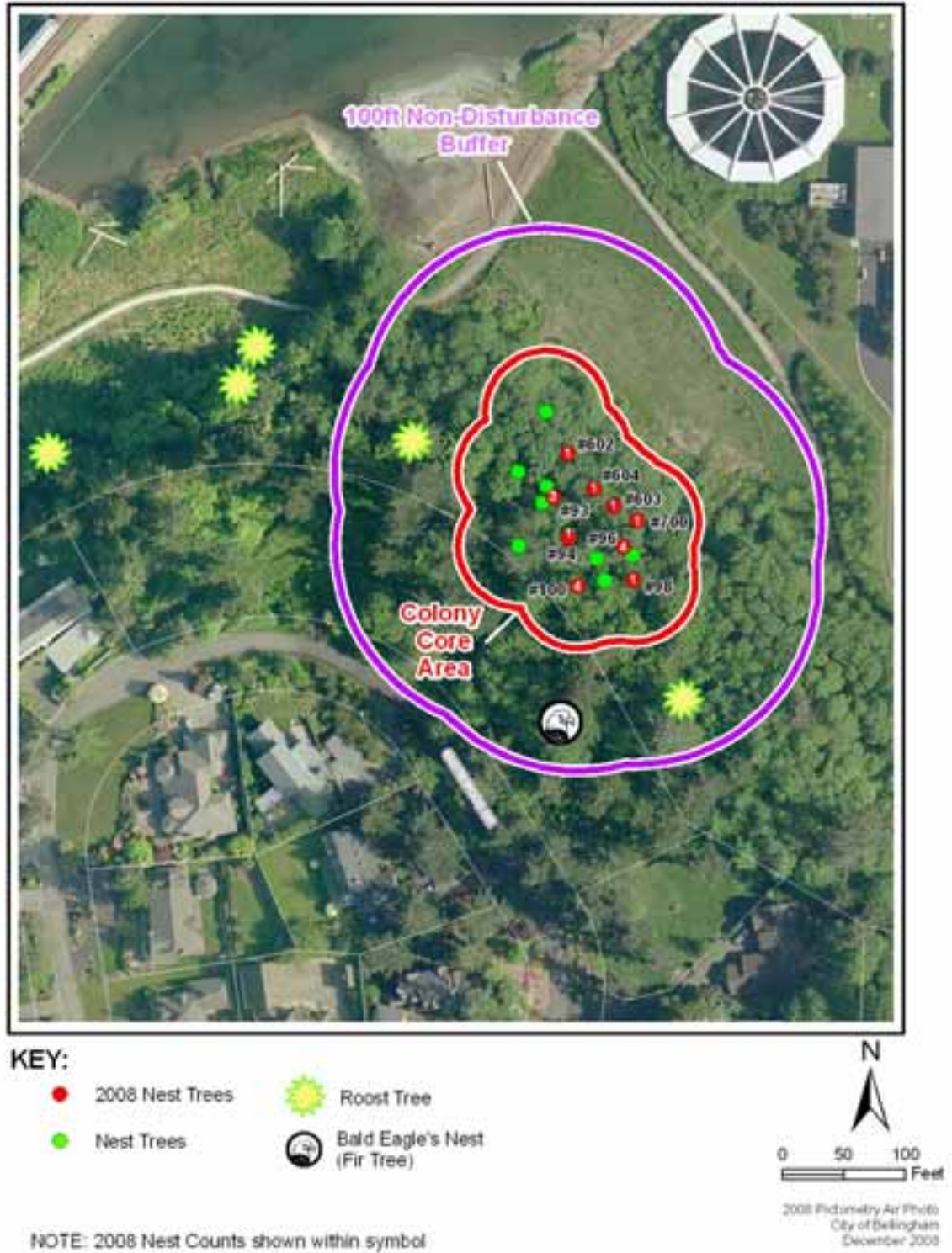
- 2008 Nest Trees
- Nest Trees
- ★ Roost Area
- Bald Eagle's Nest Observed in Fir Tree
- Colony Core Area
- 100ft Non-Disturbance Buffer



2008 Pictometry Air Photo
City of Bellingham
December 2008

Figure 4

POST POINT HERON COLONY 2008



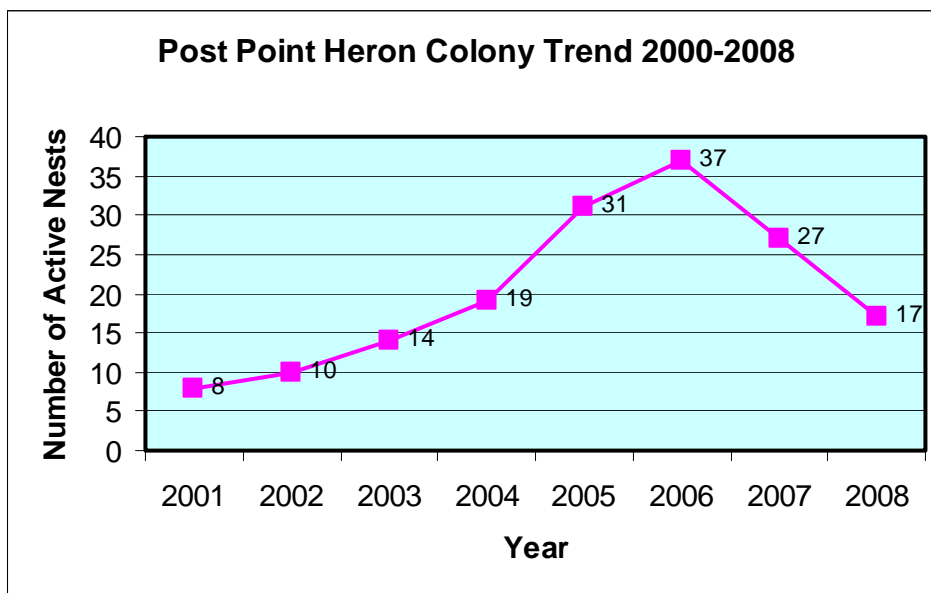
COLONY GROWTH and DECLINE

The Post Point Heron Colony experienced significant growth in its first seven years. Since 2000, the colony expanded from 6 to 37 nests peaking in 2006. During this period the growth rate was approximately 36% annually. In 2007 the colony declined and that trend continued into 2008.

The cause of the decline is not known. Previous growth of the colony indicated the annual influx of new breeding adults and likely return of previous fledglings to breed once reaching maturity. 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. The decline in breeding numbers in 2007 was likely related to high winter mortality resulting in harsh conditions and hurricane force winds experienced during 2006-2007 winter months as well as other environmental stressors impacting heron fitness and survival.

In 2008, the continued decline of returning heron at Post Point had little explanation. Declines at other colonies throughout the Salish Sea were also reported in 2008 and it is now thought that these declines are related to wide-spread changes or systemic impacts related to the El Niño/La Niña cycle over the past two or more years. Cold spring conditions including the second coldest April on record, according to Washington State Climatologist, were part of this cycle and represented colder than normal air and water temperatures into June. Similar declines in heron colonies and unexplained nest abandonment were also reported during the previous El Niño/La Niña cycle in 1998-1999.

Figure 5
Post Point Heron Colony Trend



MANAGEMENT AND STEWARDSHIP RECOMMENDATIONS

The abandonment of the colony in 2008 has renewed the need to take direct action to protect the heron colony and associated habitats. Recommendations to the City of Bellingham for conservation of the Post Point Heron Colony include:

1. Closely monitor the colony and foraging areas.
2. Update the 2003 Post Point Heron Management Plan applying the 2005 baseline and subsequent monitoring information.
3. Review Post Point Wastewater Treatment Facility expansion plans in consultation with the heron biologist and WDFW.
4. Fully protect associated upland habitat around the colony – maintain buffers and purchase adjacent undeveloped land.
5. Protect the Post Point nearshore foraging habitat from human recreational disturbance by posting a no entry/use zone between March and July - including the lagoon and outershore intertidal and eelgrass area.
6. Collaborate with other agencies or institutions to survey and document heron prey species and concentrations in foraging areas
7. Conduct outreach and education to the user groups of the Post Point shoreline including: kayakers, kiteboarders, shellfish gatherers, Park manager and Ski to Sea organizers.
8. Determine location of active Bald Eagle nest and monitor eagles near colony.
9. Support active public education and volunteer involvement in consultation with the Biologist.
10. 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.

Annual monitoring of the colony is recommended to continue. Monitoring is important for this colony for several reasons: annual growth and large number of herons within an urban setting, sensitivity to disturbance, proximity to public use area and planned residential development and facility expansion.

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.

Public education, particularly for shoreline user groups, is needed to inform individuals of sensitive areas and the role they can play to protect these areas for herons and other wildlife. Finally, public acquisition of the adjacent undeveloped upland area upslope of the heronry and bald eagle habitat is highly recommended.

CONCLUSION

The Post Point Heron Colony was established in 2000 and has actively and successfully produced and fledged young for eight consecutive nesting seasons. Unfortunately, in 2008 the colony failed mid-season. Monitoring of the colony during the 2008 nesting season revealed early season instability, failed nests, Bald Eagle incursions and disturbance of heron feeding areas. Full colony abandonment occurred in late June, resulting in no fledged young for 2008.

The Post Point Great Blue Heron Colony was active in 2008 and supported 17 nesting pairs up to its mid-season desertion. Compared to previous years, this is a decline from 27 active nests in 2007, and the colony peak of 37 active nests in 2006. The cause of these declines is not well defined; however, weather conditions are thought to be a contributing factor. Declines at other colonies throughout the Salish Sea were also reported in 2008 and it is now thought that these declines are related to wide-spread changes or systemic impacts related to the El Niño/La Niña cycle over the past two or more years as well as increased Bald Eagle incursions in heron colonies. A dead adult heron recovered from Post Point early in 2008 showed signs of starvation and may have been a victim of changes in the nearshore and declines in prey species.

Disturbances by Bald Eagle in the colony and humans at feeding areas were likely contributors to colony failure. Bald Eagle incursions and significant disturbance was reported at the Post Point colony. Prior to the abandonment of the colony, eagles entering and flushing heron off nests and out of the colony were observed. Human disturbances at primary foraging areas were observed both on and off the water. Herons were flushed from feeding by human use of the shoreline. A new sport "kiteboarding" also contributed to human disturbance in heron feeding areas.

As of 2008, the Post Point heron colony is unproductive and exhibiting signs of stress. The combined stresses caused by the predation by Bald Eagles in the colony, unusually cold spring weather and disturbances at key foraging sites likely contributed to the colony's failure. Due to the sensitivity and tenuous nature of the Post Point heron colony, close monitoring of the colony in 2009 is needed. Protection of habitat, particularly primary feeding areas is also highly recommended. This protection includes the education of used groups and the posting of signage.

Finally, Nahkeeta Northwest would like to extend our gratitude to Larry Bateman and the staff of the Post Point Waste Water Treatment Facility for their assistance in this monitoring effort. We would also like to express a special thank you to Kate Newell, GIS Specialist with the City of Bellingham, for providing nest locations, mapping and excellent maps for this report.

ATTACHMENT

Post Point Great Blue Heron Colony Historic Chronology



Inside the Post Point heronry

Post Point Great Blue Heron Colony

Colony Chronology (2008 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
- Nesting/fledging completed July 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

Prepared by: Nahkeeta Northwest 12/27/08
