Post Point Heron Colony

2009 Monitoring - Annual Report

prepared for:

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

prepared by:

Ann Eissinger
NAHKEETA NORTHWEST WILDLIFE SERVICES
PO Box 176
Bow, WA 98232
(360) 770-6012
nahkeeta@fidalgo.net

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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 2009 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 four months between February and June 2009. A total of 33 site visits were made to the colony and nearby foraging area, plus one post-season nest count and site assessment. The breeding season observational schedule was intensified over previous years due to colony instability resulting in nest failure in 2008.

The Post Point nesting season has become irregular. 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 in late June, prior to the fledging of any young. The 2009 season began slowly, with fewer adults returning than previous years, yet nesting commenced in March, with most nests failing abruptly in late May and the colony abandoning in early June.

The Post Point heron colony has been experiencing instability for two seasons and failed to produce young during that time. 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. In 2008 and 2009 the decline in returning adult heron continued and failure to fledge young has greatly reduced the colony's productivity, threatening the viability of the colony over time. Factors influencing the colony's decline, include Bald Eagle depredation of young and

repeated flushing of adults off nests, also human disturbance both in the colony and at feeding areas. Other potential contributing factors include reduction in food supply, disease and/or systemic changes within the regional ecosystem.

In both 2008 and 2009, herons nesting at Post Point deserted the colony in mid-season, leaving remaining young and eggs in the nests. Although nests had been occupied during the 2009 season, no young successfully fledged. This repeated mid-season abandonment of the colony has renewed the need to take direct action to protect the heron colony and associated habitats and carefully observe the colony during the breeding season to better define and understand the causes of disturbance and loss of productivity.

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, intensified monitoring, landuse conservation, seasonal protection of foraging areas and public education.

The Post Point Heron Colony continues to be active as a nesting site, however it has suffered significant setback in reproduction over the past two years and currently requires additional protection and attention in order to remain viable. 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 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 2009 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 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.

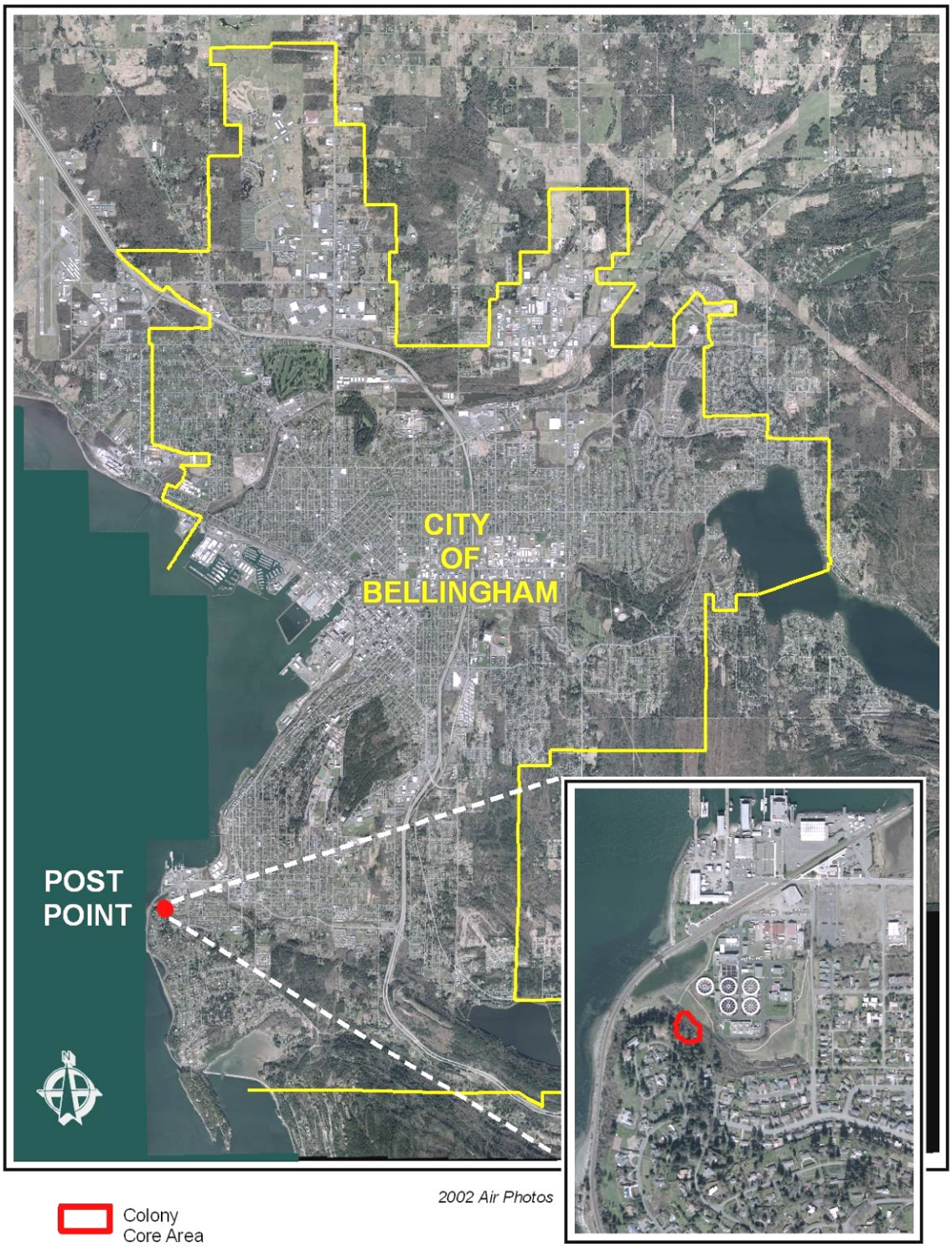
Monitoring of the Post Point Great Blue Heron Colony usually includes three primary components: general monitoring, focusing on colony activity, breeding chronology, predation and disturbance; productivity, which focuses on nestling numbers and fledgling success; and nest survey updating the number of 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 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 Amy Strohm and 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.

Periodic progress reports were submitted to the City documenting the heron's nesting activity, observed disturbances and reported desertion of the colony in 2009. 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 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 extended into June 2009. The breeding season was documented from February 20 to June 7. In 2009, a total of 33 on-site monitoring visits were made during the breeding/nesting season, plus one pre-season assessment of the colony site and two site visits following the herons vacation of the site.

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) record habitat utilization. The results of the monitoring observations are detailed below.

Early Season Assessment

Following a dynamic winter of high rainfall, extended periods of freezing and high snowfall, the weather pattern stabilized by February and the colony site was unaffected. At Post Point, restoration work and revegetation of the lagoon has provided a functional buffer around the lagoon and has restricted access to the lagoon water's edge. Vegetation in the area continues to be maintained with removal of invasives and planting of natives. In the heron colony, no winter storm damage was observed. As of February 18, no heron were present in the colony.

The only significant change in the colony, was a new pedestrian trail, which was created by residents from Shorewood, through the forest understory. The trail was not permitted and located in the colony which is a sensitive area. The trail was therefore reported and subsequently blocked by the City of Bellingham with fence and signs. Presence of humans and human traffic through the colony is a source of disturbance to the herons and fortunately the trail access points were blocked prior to the onset of the herons nesting season.

Breeding Chronology

Mid-February marked the early return of heron to Post Point in 2009 with staging near the colony at the Post Point water treatment facility. Personnel reported and photographed 5 heron staging on clarifiers February 20 and 21. By the end of February heron were first observed roosting in the colony. Heron nests were not occupied until March 6, with a total of only 3 nests occupied. This date is consistent with 2008.

By March 10 the colony had increased to approximately 7 occupied nests, with 8 visible nests remaining unoccupied. These numbers represent approximately one half of the nests occupied at the same time in 2008. Reoccupation of the colony was slow, and numbers were low. By April 3, at least 9 nests were visibly occupied, with 4 or 5 incubating. Of the

visible nests, all were occupied. Two nests were occupied by single adults who failed to attract mates and eventually left the colony.

Incubation continued through April with a total of nine visible nests occupied, however, visibility of nests became limited by vegetation. No incidence of disturbance or major change occurred in the colony during that period.

Hatching was first recorded May 3, which is approximately one week later than 2008. Occupancy of the 9 visible nests remains stable. Hatching and brooding continued into May.

The Post Point heron colony remained active with hatching and rearing of young into mid-May. Similar to 2008, the robust vocalizations associated with large numbers of young were not audible and low activity combined with increased vegetation reduced visibility to assess or view young in nests.

Between May 22 and 27, 2009, the colony transformed from what appeared to be a stable viable condition to a state of exodus. Abandoned nests, multiple Bald Eagle incursions and flushing of adult heron from the colony were observed. By the end of May all but 2-3 nests had failed and both young and general nesting activity appeared depressed.

In June, the number of viable nests had dropped significantly and gradually the colony failed. By June 12, all nests had failed and heron had abandoned the colony. In 2008, the colony also failed and the heron vacated the colony by the first of July.

The exact cause of nest failure, loss of 3-4 week old nestlings and abandonment of the colony, is not known. However, Bald Eagle incursions and flushing of adults off nests indicate the likelihood of predator involvement. Human disturbance is also possible.

Follow up visits to the colony through June resulted in no additional nesting attempts and observed herons in the colony or foraging. One heron was observed roosting near the colony.

Post Point Heron Nesting Chronology Summary 2009

- February: Early staging on clarifiers at Post Point waste water facility
- March: Reoccupation of colony, courtship and onset of nesting
- April: Some nests remain unoccupied, egg laying and incubation
- May: Incubation, hatching, brooding and rearing of young
- June: Few active nests remain – possible second nesting attempt – colony abandonment documented

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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. Although 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.

In 2009, 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 May 27, and it is assumed the single adult eagle observed was depredating young heron. The eagle certainly flushed adult heron from their nests and it is likely Bald Eagle were the primary cause of the colony failure.

In 2008, eagles were also observed repeatedly entering the heron colony and likely preying on young. During one eagle incursion June 25, when the young were ~4 weeks old, 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. Similar flushing events were also observed in 2009. In both cases too, the young were of similar age. During years of study, it has been observed that adult heron do not leave the nests unattended until the young are at least 4 weeks old and in the case of the 2008 Post Point, the adults were still present with young 4 weeks old. So the Bald Eagles were acting boldly and had to also deal with adults present at the nests, or there was some other destabilizing factor or disturbance.

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. A heron carcass, likely of a young was found in the colony, some egg shells appeared to have been depredated. 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 was not active. An active eagle nest located elsewhere in the vicinity with young to feed would explain the adult eagles' motivation to raid the heron colony.

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

depredated heron egg

Disturbance

Monitoring of the heron colony for disturbance resulted in the early-season discovery of a pedestrian trail, response to Coast Guard gunning practice and the previously described Bald Eagle incursions. Other observed disturbances were human related flushing of heron from feeding areas along the shoreline and possible unobserved event related disturbance.

The heron colony and area located on City property is protected from direct human disturbance, and the area above the colony is private is relatively natural. The creation of an illegal pedestrian trail through the heron colony forest stand was identified and blocked by City personnel prior to the onset of nesting. Signage was placed at both ends of the path to both inform the public of the sensitivity of the area and keep people from entering the area. Barrier fencing was also placed to deter pedestrian entry.

The illegal trail was created by neighbors as a shortcut to the public trail and off lease area for dogs is located directly north and east of the heron colony. This area is well defined with gravel trails and 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. With the closure of the lagoon to access, activity along the trail is limited to pedestrians and dog walking. 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.

On April 9, 2009, concerned neighbors observed a significant disturbance response by the heron to a gunning exercise conducted offshore near the colony. The U.S. Coast Guard was conducting a practice firing of loud discharges of undisclosed type off Post Point and heron were reported flushed from the colony and acting in a disoriented fashion during the exercise. Following calls to emergency services, the discharging ceased, however it is not known how long the heron were off their nests.

Regular human 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, but returned unaffected.

In early 2009, restoration crews did work along the perimeter of the lagoon and associated upland areas removing blackberries and planting native vegetation. No disturbance was observed. Habitat improvements in and around the lagoon 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. Disturbance on these nearby shoreline areas and feeding grounds was also monitored. Recreational use of the shoreline includes beach combing, education, clam digging, kayaking, kiteboarding, etc. Although, heron feeding along the Post Point shoreline was limited, when heron and people were sharing the shoreline, the heron were flushed. 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, kayakers, clam diggers, trains and educational group. The Post Point herons are dependant on access to this shoreline for feeding and the increased use by humans has created unanticipated disturbance.

Other potential disturbances to both the Post Point feeding area and colony may occur outside of our monitoring schedule, primarily over Memorial Day weekend. During this weekend, the annual Ski to Sea race stages its finish line and associated activities at Marine Park. With hundreds of people both on the shoreline and area associated with the finish line, loud speakers and intense activities in the foraging grounds and in direct site of the colony, it is likely, some heron disturbance occurs, the degree of which is not known. The date of the Ski to Sea race happens to coincide with the period of nest failure in the colony in both 2008 and 2009. To rule out disturbance related to Ski to Sea, it would be reasonable to monitor the colony over this weekend in the future.

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, 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 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).* Some of these 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 use of the fields was not observed in 2009. However, vole casting have been observed in the colony and vole tunnels were documented in the immediate field (see photos below). In 2008 and 2009 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 encouraged 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.

Post Point water treatment clarifiers with heron staging

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 that 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 both adults and 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 and are available in previous reports. Follow up surveys were conducted by the monitoring 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. 2009 observations were limited to Post Point and adjacent shoreline areas. 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 occasional to rare by adults, but has been an important dispersal area for fledglings in past years. Intertidal areas most frequented by heron through the region are areas of native eelgrass *(Zostera marina)*. Although eelgrass is abundant along the Post Point shoreline, heron use of the area was limited in 2009 and when heron were present, they were also competing with humans for use of the area.

Other known 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.

Herons foraging in eelgrass near Marine Park (www.bellingham.net)

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 at 4-6 weeks of age. More than one count is usually made beginning in June of each breeding season. In 2009 the heron colony had begun to fail prior to young becoming visible in the active nests. The colony was reduced to 2-3 active nests in June and by June 12 the heron had abandoned the colony. As a result of the colony failure prior to the fledging of any young, the colony failed to produce any young in 2009. In 2008 the colony also failed to produce young, resulting in two consecutive years of zero productivity from the Post Point colony.

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.

Kate Newell, COB GIS Specialist Mapping Heron Colony

For 2009, an autumn nest count was conducted in October. From this count, a total of 12 nest trees with 20 nest structures were recorded. Of these, several nests were remnants and/or determined to be inactive during the nesting season. Therefore, a total of 8 active nest trees and 11 active nests were recorded for 2009. Of the 11 active nests, 2 were occupied by single adults and subsequently abandoned after being unsuccessful in attracting a mate. A total of 9 active nests were observed and tracked through the nesting period. 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 pervious 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.

A colony map update was completed in December 2009, 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. One new nest tree was recorded in 2009 and was only flagged. 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.

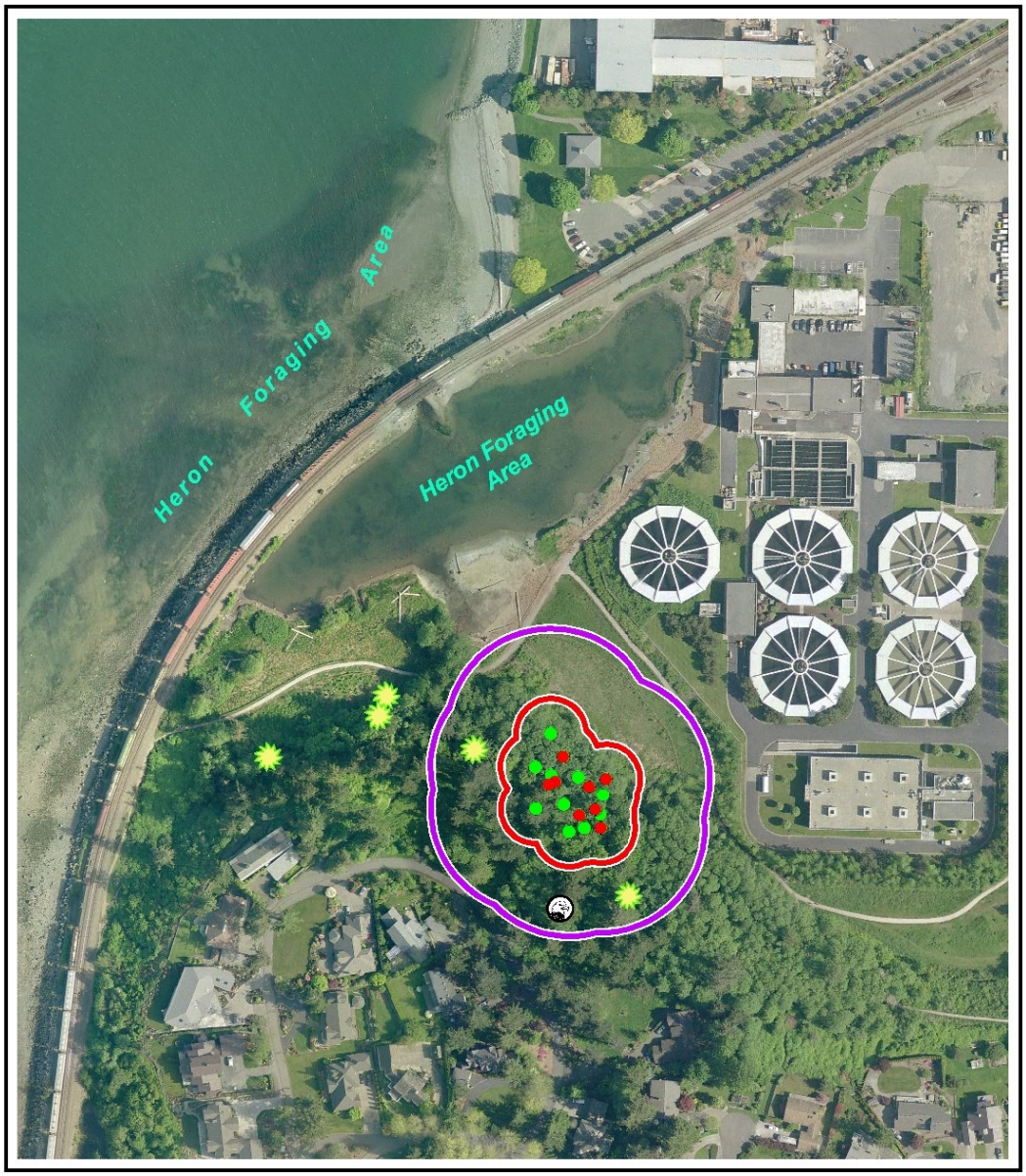
The following is a summary of nests and nest trees since 2000.

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 active	9	-37%
2009	11 active at onset 9 active nesting	8	-35%

Figure 2

POST POINT HERON COLONY 2009



KEY:

- 2009 Active Nest Trees
- Previous Nest Trees
- Roost Area
- Bald Eagle's Nest Observed in Fir Tree
- Colony Core Area
- 100ft Non-Disturbance Buffer

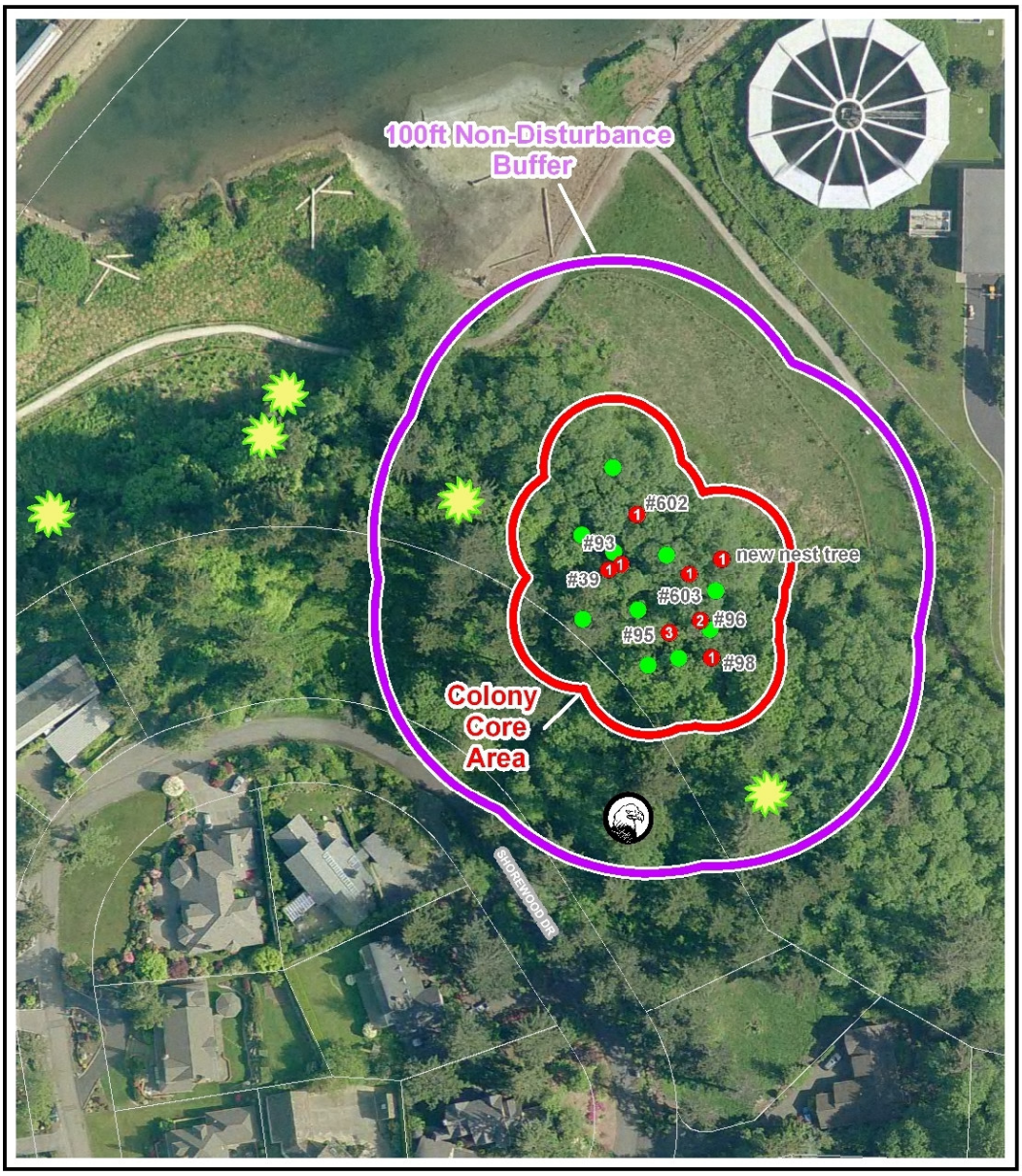
N

0 100 200 Feet

2008 Pictometry Air Photo
City of Bellingham
December 2009

Figure 3

POST POINT HERON COLONY 2009



KEY:

- 2009 Active Nest Trees
- Previous Nest Trees
- Roost Tree
- Bald Eagle's Nest (Fir Tree)

N

0 50 100 Feet

2008 Pictometry Air Photo
City of Bellingham
December 2009

Note: 2009 Active nest counts shown within symbol.
Only 8 nest trees were active in 2009

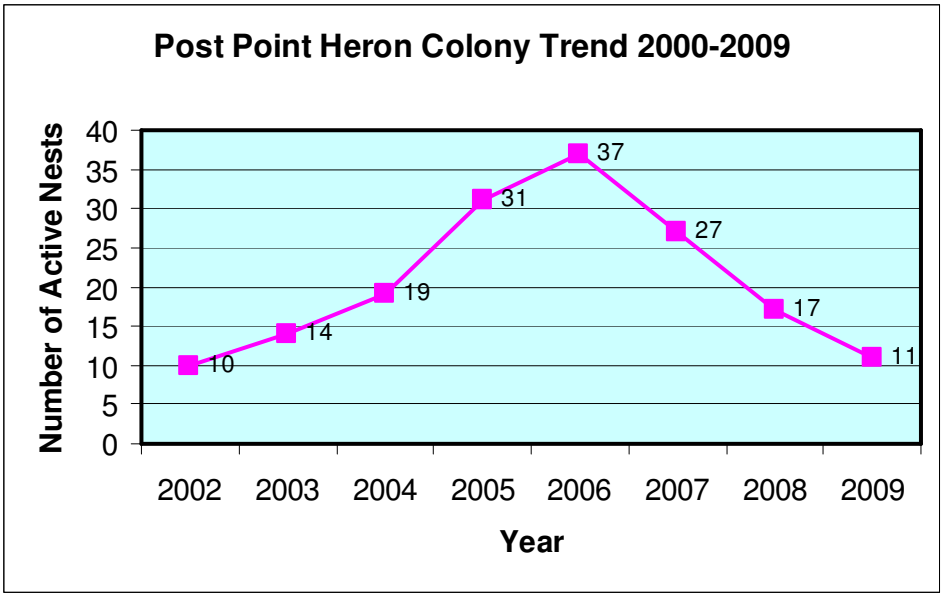
COLONY GROWTH and DECLINE

The Post Point Heron Colony experienced significant growth in its first seven years. 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 has continued through 2009. Although the colony has been active in 2008 and 2009, the numbers of active nests have declined, and the colony has failed to fledge young.

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 (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.

In 2008 and 2009, the continued decline of returning heron to Post Point has little clear explanation. Declines at other colonies throughout the Salish Sea were also reported in 2008 and status of colonies in 2009 is not known. Without consistent region-wide monitoring of heron colonies, systemic failures are difficult to document. Possible factors affecting the Post Point colony are: climate and weather, water temperature, prey availability, adult heron health/fitness, and predation.

Figure 4
Post Point Heron Colony Trend



MANAGEMENT AND STEWARDSHIP RECOMMENDATIONS

The mid-season abandonment of the Post Point Great Blue Heron colony in 2008 and 2009 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. Intensify monitoring of the heron 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 naturally vegetated 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 foraging sites around Bellingham Bay 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 and intensified due to disturbances, low occupation and recent nest failures. Monitoring is important for this colony due to the sensitivity of herons within an urban setting, proximity to public use and industrial areas and planned residential development and waste water 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.

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, 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 both the 2008 and 2009 nesting seasons, the colony has experienced mid-season failures. Monitoring of the colony during the 2009 nesting season revealed low returning adult numbers to breed, some heron unable to attract mates, significant disturbances during the nesting season and mid-season abandonment of the colony. Disturbances included loud discharge of weapons, Bald Eagle incursions and disturbance of heron feeding areas. Initial nest failure occurred between May 22 and 27, followed by complete colony abandonment in early June, resulting in no fledged young for 2009.

The Post Point Great Blue Heron Colony was active in 2009 and supported 9 nesting pairs up to its mid-season desertion. Compared to previous years, this is a significant decline over two years, since 2007, of nearly 60%. The cause of these declines in active nesting pairs is not known. However, contributing factors may include, high winter mortality, lack of prey availability, disease and/or relocation.

Disturbances by Bald Eagle in the colony and humans near the colony and feeding areas were likely contributors to colony nesting failure. Bald Eagle incursions and significant disturbance was reported at the Post Point colony. Both human and eagle activities were cause for heron flushing from nests. Human disturbance were also observed at foraging areas. Unobserved disturbances were also likely.

As of 2009, the Post Point heron colony continues to be active, but is unproductive and declining in numbers of active nesting pairs. The combined stresses caused by Bald Eagles in the colony, human disturbances and disturbances at key foraging sites likely contributed to the colony's failure to produce young. Due to the sensitivity and tenuous nature of the Post Point heron colony, emphasis on the colony's protection and conservation is greatly needed through 2010. Intense monitoring, protection of habitat, particularly primary feeding areas is also is 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 and Gary Gilfilen for photographs. 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 updated maps for this report. We greatly appreciate the efforts of concerned citizens and neighbors of the colony to contact us with useful information and reports of disturbance in and near the colony.

ATTACHMENT

Post Point Great Blue Heron Colony Historic Chronology

Inside the Post Point heronry

Post Point Great Blue Heron Colony

Colony Chronology (2009 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

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

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