HAMILTON BIOLOGICAL

June 23, 2010

Mr. George Schtakleff
Project Manager
Mackone Development, Inc.
2244 Beverly Boulevard
Los Angeles, CA 90057

SUBJECT: SUMMARY REPORT, NESTING BIRD SURVEY BURTON CHACE PARK, MARINA DEL REY

Dear Mr. Schtakleff,

Between March 1 and May 15, 2010, Hamilton Biological surveyed for nesting birds at Burton Chace Park, located in Marina del Rey, Los Angeles County (County). This work was conducted in conjunction with the renovation of the park's existing walkways. I provided weekly updates to you and relevant staff at the County of Los Angeles, California Department of Fish and Game, and U.S. Fish and Wildlife Service. This summary report briefly reviews the methods and results of our surveys, and provides recommendations based upon our findings.

SURVEY METHODS

I conducted all but one of the surveys; biologist Nathan Mudry monitored on March 11. The park was surveyed by the observer walking slowly under the trees, looking for nest structures, listening to the vocalizations of birds in the trees, and watching their behaviors. Observers looked on the ground for guano ("whitewash") that is typically present beneath heron nests. Upon locating bird nests, these were marked them on an aerial photo and an attempt made to determine the species that built them and whether they were active or left over from last year.

The surveys typically started at 7:00 a.m. and continued through the end of work, which was typically around 2:00 to 3:00 p.m. From March 8 to 15, sound pressure levels were recorded using hand-held digital decibel meters (Radio Shack brand). In order to provide the most relevant information on the potential effects of sharp, startling sounds on nesting birds, these meters were set to "C" weighting, "Lmax" measurement, and "fast response."

316 Monrovia Avenue · Long Beach, CA 90803 · 562-477-2181 · Fax 562-433-5292

From March 17 to 24, sound pressure levels were recorded using a more advanced decibel meter system. The new meter allowed for placement of the microphone at nest level, recorded both "Lmax" and the more sensitive "Lpeak" measurements, recorded levels using both "A" and "C" weighting (dBA and dBC), and logged all data automatically for later downloading to computer. Where possible, this report provides noise data as dBA Lmax.

Observers kept field logs specifying (1) the dB level registered when different construction activities, or other sources of noise, occurred in and around the park; (2) the observed response of nesting birds, if any; and (3) the time of observation. Once the new sound meter was put into use, the decibel level associated with different sources was obtained by reading the output (using computer software) and matching up the time with the observations recorded in the field log for that date. Monitors used video to document loud noises, meter readings (before the data-logging unit was available to us), and the general lack of response from the nesting and roosting BCNH.

RESULTS

Black-crowned Night-Herons

The main focus of monitoring consisted of nests belonging to 12 pairs of Black-crowned Night Herons (*Nycticorax nycticorax*; BCNH) that were active during March; see Figure 1, below.

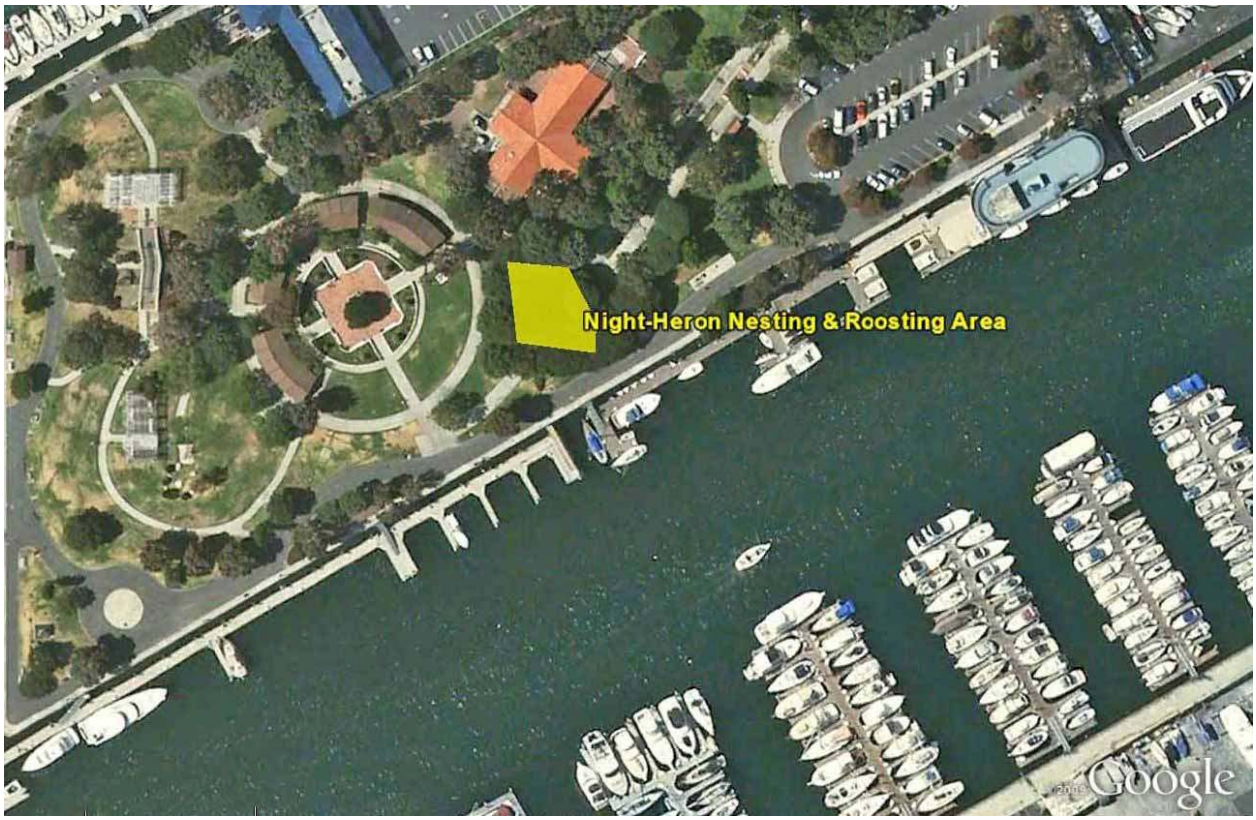

Figure 1. Location of the colony containing 12 pairs of Black-crowned Night-Herons at Burton Chace Park during March 2010. All of the nests were 25-30 feet up in Aleppo Pines (*Pinus halepensis*) and New Zealand Christmas Trees (*Metrosideros excelsa*).

Typical noise levels at Burton Chace Park, resulting from normal use of the park and normal maintenance activities, were in the approximate range of 50–70 dBA Lmax. Readings occasionally rose above 80 dBA Lmax due to noise sources that included boat horns, large boat motors, and crying babies.

Seven of the 12 BCNH nests were abandoned during the period of March 8–12, the first week of monitoring. This was apparently due to predation by a Raccoon (*Procyon lotor*) that was observed at four of these nests on March 9 (Figure 2). The Raccoon was first seen sleeping in Nest 4, and later that day it was seen moving to Nest 1, 2, and 5. One of the adult BCNH at that nest scolded it for a couple minutes, but the heron did not try to attack the Raccoon. In the early afternoon, the Raccoon moved to Nest 5 by way of Nests 1 and 2, and was sleeping there when monitoring ceased that day. BCNH never returned to those nests, or to two other nests in the northern half of the colony. The Raccoon did not get into nests in the southern half of the colony during that week, and all of those nests remained active through the week.

Figure 2. This Raccoon was observed sleeping in BCNH Nest 4 on the morning of March 9, and it stayed there the entire morning. The presence of this egg-eating mammal appears to have caused the abandonment of all but one BCNH nest in the northern half of the colony during the week of March 8–12.

On May 8 (skipping ahead two months) I photographed what was presumably the same Raccoon, again sleeping in the abandoned BCNH Nest 4 (Figure 3).

Figure 3. Presumably the same Raccoon, photographed as it slept in BCNH Nest 4 on the morning of May 8.

On the afternoon of March 22, the BCNHs at Nest 8 were subjected to vibrations and very loud noises from the breaking of concrete approximately 40 feet away (Figure 4):

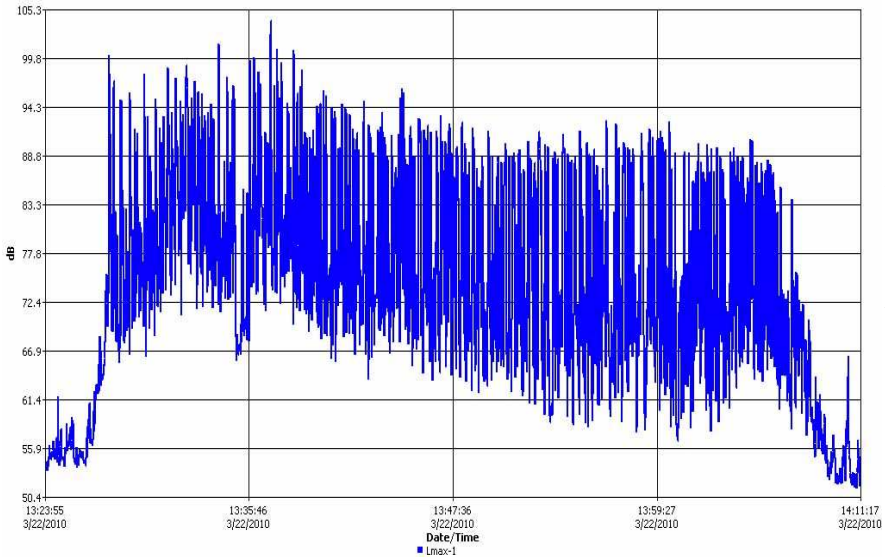

Figure 4. Graph showing noise levels (dBA Lmax) on March 22 between 1:24 and 2:11 p.m. During this period, levels were generally in the range of 85–95 dBA, and in a few instances exceeded 100 dBA.

This was the most intense construction activity the nesting herons experienced during the project. My contemporaneous notes state:

> Attending adult BCNH looked up quickly at the first impact of the pneumatic hammer, and then bobbed its head a few times before assuming an alert, but still, posture; later, the bird preened, perhaps nervously, and stood up in the nest, but remained hunched over the young in the nest; the noise was very loud and sudden, and quite close to the nest, so this was close to a "worst-case scenario" in terms of construction activity below a nest site; by outward appearances, the attending adult BCNH was definitely concerned about the activity, but not disturbed enough to either vocalize, stretch its wings, or leave the nest.

It is important that the adult did not jump up, flap, vocalize, fly, or exhibit other responses that could potentially endanger eggs or young, either by dislodging them from the nest or by exposing them to crows or other opportunistic predators. Figure 5 shows the adult BCNH at the nest that afternoon, after it had become accustomed to the nearby work:

Figure 5. Photo taken at 1:57 p.m. on March 22, showing the adult BCNH sitting on Nest 8 while concrete was being broken approximately 40-80 feet away.

I wrote the following at the end of the monitoring period that day:

> BCNH sitting quietly on nest after standing and preening for a little over an hour; photo showing this; one nestling barely visible in nest; birds not vocalizing or behaving as if disturbed.

The following morning, March 23, the nest had been predated; I arrived that day to find an adult BCNH standing next to the empty nest. It is hard to be certain, but the nest looked slightly disheveled, as though a predator had messed it up somewhat. I do not believe the predation was related to project activities since the attending adult heron stayed on the nest even during the most intensive work on March 22, which I closely monitored. As noted previously, the Raccoon that I observed predating several nearby BCNH nests on March 9 was again observed sleeping in a heron nest in this area on May 8.

Other Bird Species

Figure 6, below, shows several other native bird nests that I observed during the course of this project.

Figure 6. Locations of nests of species other than BCNH and American Crow observed at Burton Chace Park during spring 2010.

American Crows were common and conspicuous throughout the park, and several pairs were seen engaging in courtship or nest-building behaviors. I did not monitor crow nests, however, since this species is recognized as being urban-adapted and is not prone to being disturbed by human activities.

The nest of Allen's Hummingbird (*Selasphorus sasin*) was being incubated by a female from March 10–12, but was empty as of Monday morning, March 15. Since no project activities had occurred over the intevening weekend, this nest failure did not appear to be related to the repair project.

I observed a pair of House Finches (*Carpodacus mexicanus*) building a nest on the side of the park administration building on April 13. This nest was never completed, however. The House Finch is highly adapted to living with humans and would not have been affected by project activities.

Two pairs of Green Herons were found nesting in the park during April and. Nest 1 fledged at least two or three young during May (see Figure 7, below). Nest 2 was built in the grove of trees that had hosted the failed BCNH colony and the nest-predating Raccoon, and that pair of Green Herons did not appear to get much past the nest-building stage.

Figure 7. Three Green Heron chicks at "Nest 1" in an Aleppo Pine on May 8. Two large young were seen here on May 15, and it is suspected that the third had already fledged by that date.

Discussion & Conclusion

The results of monitoring indicated that birds nesting at Burton Chace Park are well-adapted to the human activities and noises endemic to this location, but they may also be quite vulnerable to urban-adapted predators such as American Crows and especially Raccoons. The baseline human impacts include exercise classes that involve groups of people running beneath the nesting trees, walking of dogs beneath nesting trees, park maintenance activities that include hosing down the walkways beneath nesting trees using

a high-powered nozzle, the operation of two boat yards across the marina to the east, racing boats motoring past the park, sportfishing boats equipped with loudspeakers, occasional concerts, and jets flying over from nearby Los Angeles International Airport. Over numerous days of close monitoring, we did not observe any overt reactions of BCNH to any of these routine human activities, which occurred as close as 20–25 feet below heron nests.

The only project-related noises that were substantially louder than what is normally encountered at Chace Park occurred on the afternoon of March 22, when a concrete walkway was broken up as close as 40 feet from an active BCNH nest. This activity yielded noise readings in the range of 85–95 dBA Lmax for a period of 37 minutes, with a few spikes over 100 dBA. Even at these levels, the herons appeared to tolerate the work activity with only minor indications of disturbance. Had the attending adult BCNH at Nest 8 jumped off of the nest or otherwise exhibit marked "startle" behaviors, work would have been halted immediately in order to avoid potential predation of the nest by crows. This did not occur, and so work was allowed to proceed. Nest 8 was predated some time later that day, or early on the morning of March 23, following the predation of 11 other BCNH nests that had been active in this colony during the previous two weeks. During this period, I documented that a Raccoon was moving among the herons' nests, and even sleeping in them, and also that the herons would not attack the Raccoon even when they returned to find the animal occupying their previously-active nest. American Crows are also abundant in the park, and may have been responsible for some of the predation. Other possible nest-predators, such as the Great Blue Heron (*Ardea herodias*), Black Rat *(Rattus rattus*), and Virginia Opossum (*Didelphis virginiana*), also occur in the local area.

Two years ago, biologists from the Chambers Group documented that dozens of herons and egrets nesting at nearby Yvonne Burke Park and at other sites along Admiralty Way "successfully breed in situations that regularly exceed 110 dB."[1] In recognition of the apparent adaptability of colonial waterbirds to human disturbance in Marina del Rey, the current draft of the Conservation and Management Plan for Marina del Rey (prepared by Hamilton Biological in conjunction with Cooper Ecological Monitoring) contains the following recommendations for construction work near potential heron or raptor nesting sites:

> Typically, the project biologist should conduct an initial reconnaissance survey to determine whether any active waterbird or raptor nesting sites exist within 300 feet of proposed construction activities. The survey should include inspection of the ground for the guano stains typically present below waterbird nesting sites, but also careful inspections of all trees where nests might be placed.
>
> If an active waterbird or raptor nest is found within 300 feet of construction, the following measures are recommended:

[1] Chambers Group. 2008. *Results of the Baseline Breeding Bird Nesting Survey and Noise Assessment for the Los Angeles County Department of Public Works Oxford Basin Low Flow Diversion Project Site in the City of Marina del Rey, Los Angeles County, California.* Letter report dated 29 July 2008 from Kris Alberts to Reyna Soriano, Los Angeles County Department of Public Works.

1. The project biologist should either possess noise-monitoring equipment or work in conjunction with a noise-monitoring consultant to measure noise levels at active nesting sites.

2. The project biologist/noise monitor should be present at all weekly construction meetings and during all activities with potential to generate noise over a threshold of 85 dB at any nest site. This includes such activities as hardscape demolition, pile-driving, and the use of chainsaws. The purpose of monitoring should be to ensure that nesting birds are not disturbed by construction related noise. Thus, the monitor should watch for any behaviors associated with noise disturbance, including flushing or other startle movements, changes in foraging or reproductive rituals, interrupted feeding of young, or nest abandonment. If any such behaviors are observed, the monitor should have the authority to stop work immediately so that measures may be taken to avoid any further disturbance.

3. As a guideline, noise levels from construction, measured at the nest, should not exceed 85 dB. Monitoring should be especially careful and intensive, and observations should be recorded in detail, when noise levels approach this level. Nevertheless, given that levels in excess of 100 dB have been recorded at heron and egret nests near Oxford Basin with no apparent adverse effects (Chambers Group 2008), there is no empirical evidence proving that 85 dB is a valid threshold above which birds nesting in an urban environment experience substantial disturbance. Still, the burden of proof should be placed upon the project proponent to demonstrate that a higher noise level can be safely tolerated. If constant, detailed monitoring of noise levels above 85 dB demonstrates that the birds show no evidence of being disturbed, construction should be allowed to continue. In such cases, the final monitoring report should contain relevant details about (a) the types, intensities, and duration of noises the birds were subjected to, (b) any observations of stress behaviors in response to noises or other disturbances, and (c) the nesting success of those birds *relative to other birds in the nearby area that were not subjected to the same elevated levels of construction noise*. If it turns out that birds subjected to elevated noise levels appear to possibly experience reduced nesting success despite a general lack of evident stress behaviors, the project proponent should not be subject to any penalties, but the monitoring results should be incorporated into a revised construction monitoring policy that takes these important results into account. Without detailed monitoring of this nature, we will never know the actual thresholds at which different nesting bird species experience substantial disturbance at urban locations such as Marina del Rey.

4. If stress behaviors are observed from nesting birds in response to any construction activity, the project biologist should be authorized to call for the implementation of such mitigation measures as sound shields, blankets around smaller equipment, mixing concrete batches off-site, use of mufflers, and minimizing or eliminating the use of back-up alarms. If these sound mitigation measures do not reduce noise levels enough to eliminate the observed stress behaviors, construction within 300 feet of the nesting trees shall cease and shall not recommence until either new sound mitigation can be employed or until nesting is complete. To the extent possible, the biologist's monitoring report should specify the sound levels at the nest at which the birds demonstrated stress behaviors.

5. Construction staging areas or equipment should not be located under any nesting trees.

6. Construction employees should be prohibited from bringing pets (e.g., dogs and cats) to the construction site.

7. Any lights used during construction should be shielded downward.

8. Although these recommendations refer specifically to waterbirds and raptors (because they tend to be most sensitive to disturbance), virtually all native birds are legally protected from disturbance while actively nesting. Therefore, the biological monitor should take all necessary steps to ensure that no native bird species are disturbed by construction activities.

These draft recommendations were generally followed in the case of the Chace Park repair project, and this project provided additional evidence that herons can tolerate noise levels exceeding 85 dBA, at least later in the nesting season, when the birds have already invested considerable time and resources into the nesting effort (disturbances earlier in the season, before eggs are laid, could produce different results). Given that the BCNH colony failed due to predation apparently unrelated to the repair project, however, the findings concerning the effects of loud noises on this colony were less definitive than could be hoped for. These recommendations are subject to change before the draft Conservation and Management Plan is finalized later this year, but I believe that the observations made at Chace Park during the repair project attest to the appropriateness of this general approach. As noted in (3) above, additional monitoring of projects like this will provide a body of credible information upon which to base future decisions about how best to proceed when construction projects have the potential to affect nesting colonies in Marina del Rey and elsewhere.

One recommendation that will be added to the draft Conservation and Management Plan (at the request of the County Department of Regional Planning) is to improve the handling of trash at Chace Park and elsewhere in Marina del Rey. Early in the morning on some days, I observed gulls and crows feeding on trash that they obtained from open trash cans. On one occasion the can was on its side (perhaps the work of a Raccoon) and gulls had ripped open the trash bag to access the contents. Such encouragement of scavengers has considerable potential for adverse effects upon nesting birds. Thus the provision of secure, covered trash containers may represent a worthwhile conservation measure for nesting bird populations in Marina del Rey.

If you wish to review any matters, please call me at (562) 477-2181 or send e-mail to robb@hamiltonbiological.com.

Sincerely,

Robert A. Hamilton
President, Hamilton Biological, Inc.
http://hamiltonbiological.com