

**Correspondence with  
Virginia Department of Game  
and Inland Fisheries (VDGIF)**

## Giglio, Patrick

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**From:** Ewing, Amy (DGIF) [Amy.Ewing@dgif.virginia.gov]  
**Sent:** Monday, March 08, 2010 9:37 AM  
**To:** Giglio, Patrick  
**Subject:** ESSLog# 30636\_Potomac Radio\_tower construction  
**Attachments:** USFWS tower recommendations.doc

Patrick,  
I have reviewed the subject project that proposes to install three telecommunications towers and associated infrastructure at a site in the Broad Run floodplain in Loudoun County, VA.

It appears the site for the proposed construction is located approximately 700 ft from the great blue heron colony located just north of the site. Assuming that activities to develop the proposed site do not encroach upon the 600 ft no-disturbance buffer around the colony we do not anticipate this project to result in primary impacts upon the colony. To avoid secondary impacts upon the birds in the colony resulting from disturbance during construction, we recommend that all construction and ground clearing activities within 1,400 feet of the colony adhere to a time of year restrictions from March 15 through July 31 of any year.

In addition, we document state Threatened upland sandpiper from the project area. It appears this project site contains suitable habitat for this species. Assuming adherence to the above-mentioned time of year restriction from March 15 through July 31 on all construction and ground clearing activities, we do not anticipate adverse impacts upon this species. If the applicant cannot adhere to the recommended time of year restriction, we recommend coordination with our agency to ensure protection of this listed species.

To minimize overall impacts to wildlife and our natural resources, we offer the following comments about development activities: We recommend that the applicant avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable. Avoidance and minimization of impact may include relocating stream channels as opposed to filling or channelizing as well as using, and incorporating into the development plan, a natural stream channel design and wooded buffers. We recommend maintaining undisturbed wooded buffers of at least 100 feet in width around all on-site wetlands and on both sides of all perennial and intermittent streams. We recommend maintaining wooded lots to the fullest extent possible. We generally do not support proposals to mitigate wetland impacts through the construction of stormwater management ponds, nor do we support the creation of in-stream stormwater management ponds. We are willing to assist the applicant in developing a plan that includes open-space, wildlife habitat, and natural stream channels which retain their wooded buffers.

We recommend that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.

We recommend that all tree removal and ground clearing adhere to a time of year restriction protective of resident and migratory songbird nesting from March 15 through August 15 of any year.

We recommend adherence to erosion and sediment controls during ground disturbance.

In addition, we recommend adherence to the attached USFWS communications tower guidance.

We appreciate the County's cooperation in protecting the great blue heron colony located in the Broad Run floodplain. If we can be of further assistance, please do not hesitate to contact us.

Thanks, Amy

Amy M. Ewing  
Environmental Services Biologist  
Virginia Dept. of Game and Inland Fisheries

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## **RECOMMENDATIONS TO AVOID ADVERSE IMPACTS TO MIGRATORY BIRDS, FEDERALLY LISTED SPECIES, AND OTHER WILDLIFE FROM COMMUNICATION TOWERS AND ANTENNAE**

Wireless communication towers and antennae have greatly increased in number in recent years. Cumulatively, communication towers have a potentially significant impact on wildlife, especially migratory birds. All communication towers and antennae requiring authorization from the Federal Communications Commission (FCC) are subject to the environmental review procedures required by Section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) and by the National Environmental Policy Act (NEPA) of 1969 (83 Stat. 852; 42 U.S.C. 4321 *et seq.*). The U.S. Fish and Wildlife Service (Service) routinely reviews proposed communication projects and provides recommendations to project proponents and the FCC to avoid adverse impacts to federally listed or proposed endangered and threatened species, migratory birds, and other wildlife.

All native migratory birds (e.g., waterfowl, shorebirds, songbirds, hawks, owls, vultures, falcons) are afforded protection under the Migratory Bird Treaty Act (MBTA) of 1918 (40 Stat. 755; 16 U.S.C. 703-712). Migratory birds are a federal trust resource responsibility, and the Service considers migratory bird concentration areas environmentally significant. Bird concentration areas include traditional migratory flight corridors (e.g., ridges, shorelines, river valleys); rookeries and other bird breeding areas; stopover, staging, or resting areas (e.g., land bounding large bodies of water, wetlands, forests, and natural grasslands); wildlife preserves (e.g., National Wildlife Refuges; State Parks, Forests, Wildlife Management Areas, and Natural Areas; private sanctuaries); and seasonal flight paths (e.g., between feeding and nesting or roosting areas).

Communication towers pose a collision hazard to birds in flight, especially some 350 species of night-migrating birds. Cumulatively, communication towers kill an estimated four to five million birds per year nationwide (Manville 2000). The risk of bird collisions is related to tower height, design, lighting, and location relative to migratory bird concentration areas. Most documented bird kills at communication towers involve tall, lighted structures, and birds migrating at night during inclement weather. During these events, birds attracted by the lights congregate and circle around the tower, with mortality resulting from collisions with guy wires, other birds, and the ground, or from exhaustion. However, occurrences of bird collision mortality at communication towers have also been documented during daytime and fair-weather conditions.

The Service recommends the following steps to avoid or minimize adverse impacts to migratory birds, federally listed or proposed endangered and threatened species, and other wildlife from communication towers and antennae:

1. Collocate communication antennae and other equipment on existing structures whenever possible to avoid new tower construction. Antennae have been mounted on rooftops; flagpoles; bell, cross, and clock towers; road signs; silos; and water and power line towers. Where attachment to an existing non-tower structure is not feasible, collocate antennae on existing communication towers. Depending on tower load factors, multiple (6-10) providers may collocate on a single communication tower. Although usually a preferred option, collocation on certain structures may be restricted, such as historic sites, or silos on farms under State or county deed restriction for farm preservation, which may prohibit non-agricultural activities.

2. Construct new towers only if collocation is not feasible. Design new towers to allow for multiple transmitters to be collocated on a single new tower, no more than 199 feet above ground level (AGL), without lights or guy wires. (Towers taller than 199 feet are normally required by the Federal Aviation Administration [FAA] to employ aircraft warning lights.)
3. Consider the impacts of new towers to migratory birds, federally listed species, and other wildlife, cumulatively as well as individually when siting and designing networks of towers and antennae.
4. Site towers away from wetlands; areas with a known high incidence of fog, mist, and low cloud ceilings; and habitats supporting threatened or endangered species.
5. Construct taller (>200 feet AGL) towers only if collocation and shorter towers are not viable options. Use the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA. Use only white (preferable) or red strobe lights at night unless otherwise required by the FAA, and employ the minimum number, minimum intensity, and minimum number of flashes per minute (longest duration between flashes) permitted by the FAA. Avoid solid red or pulsating red warning lights at night. (Current research indicates that solid or pulsating (beacon) red lights attract night-migrating birds at a much higher rate than white strobe lights. Red strobe lights have not yet been studied.)
6. Construct guyed towers only if other tower designs (e.g., monopoles, lattice towers) are not viable options. Locate guyed towers away from known raptor and waterbird concentration areas and daily movement routes, and away from major diurnal migratory bird movement routes and stopover sites. If a guyed tower must be located in or near such an area, employ daytime visual markers on the wires. Do not use artificial lighting to increase visibility of the structure or guy wires; instead use reflective paint or materials, large balls, or other available technology. (For guidance on markers, see Avian Power Line Interaction Committee 1994 and 1996.)
7. Avoid or minimize habitat loss within and adjacent to the "footprint" of new towers and associated facilities. (However, a larger tower footprint is preferable to the use of guy wires.) Minimize road access and fencing to reduce or prevent habitat fragmentation and disturbance, and to reduce above-ground obstacles to birds in flight.
8. Avoid siting towers in or near known bird concentration areas (discussed on page 1); known bird migration or daily movement flyways; and areas known to be used habitually by significant numbers of breeding, feeding, or roosting birds. If such areas cannot be avoided, avoid construction during seasons of high bird activity.
9. Design new towers structurally and electrically to accommodate the applicant's antennas and comparable antennas for at least two additional providers, for a minimum of three providers for each tower, to reduce the number of towers needed in the future (unless such a design would require the addition of lights or guy wires to an

otherwise unlighted and/or unguyed tower).

10. Down-shield security lighting for on-ground facilities and equipment to keep light within the boundaries of the site.
11. Allow Service personnel and affiliated researchers access to proposed and existing tower sites upon request to evaluate bird use; conduct dead-bird searches; place net catchments below the towers but above the ground; and place radar, Global Positioning System, infrared, thermal imagery, and acoustical monitoring equipment as necessary to assess and verify bird movements and to gain information on the impacts of various tower sizes, configurations, and lighting systems.
12. Provide for tower decommissioning, including removal, in any license application submitted to the FCC. Remove towers no longer in use or determined to be obsolete within 12 months of cessation of use.

### LITERATURE CITED

- Avian Power Line Interaction Committee. 1994. Mitigating bird collisions with power lines: The state of the art in 1994. Edison Electric Institute, Washington, D.C. 78 pp.
- \_\_\_\_\_. 1996. Suggested practices for raptor protection on power lines. Edison Electric Institute/Raptor Research Foundation, Washington, D.C. 128 pp.
- Manville, A.M. II. 2000. The ABCs of avoiding bird collisions at communication towers: the next steps. Proceedings of the Avian Interactions Workshop. Electric Power Research Institute. 15 pp.

### FURTHER INFORMATION

- Bibliography of bird kills: <http://migratorybirds.fws.gov/issues/towers/review>
- Federal Communications Commission, Wireless Telecommunication Branch - Siting Issues  
<http://www.fcc.gov/wtb/siting>
- Federal Communications Commission Telecommunications Act of 1996  
<http://www.fcc.gov/telecom.html>
- General Information: <http://migratorybirds.fws.gov/issues/towers/abcs.html>
- Ogden, L.J.E. 1996. Collision Course: The hazards of lighted structures and windows to migrating birds. World Wildlife Fund Canada and the Fatal Light Awareness Program. Toronto, Ontario, Canada. 46 pp.
- Towerkill.com. <http://www.towerkill.com>
- U.S. Fish and Wildlife Service Endangered Species Home Page. <http://endangered.fws.gov>
- U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Bird Issues.  
<http://migratorybirds.fws.gov/issues/tblconthtml>
- U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Service Guidelines.  
<http://migratorybirds.fws.gov/issues/towers/comtow.html>

## Giglio, Patrick

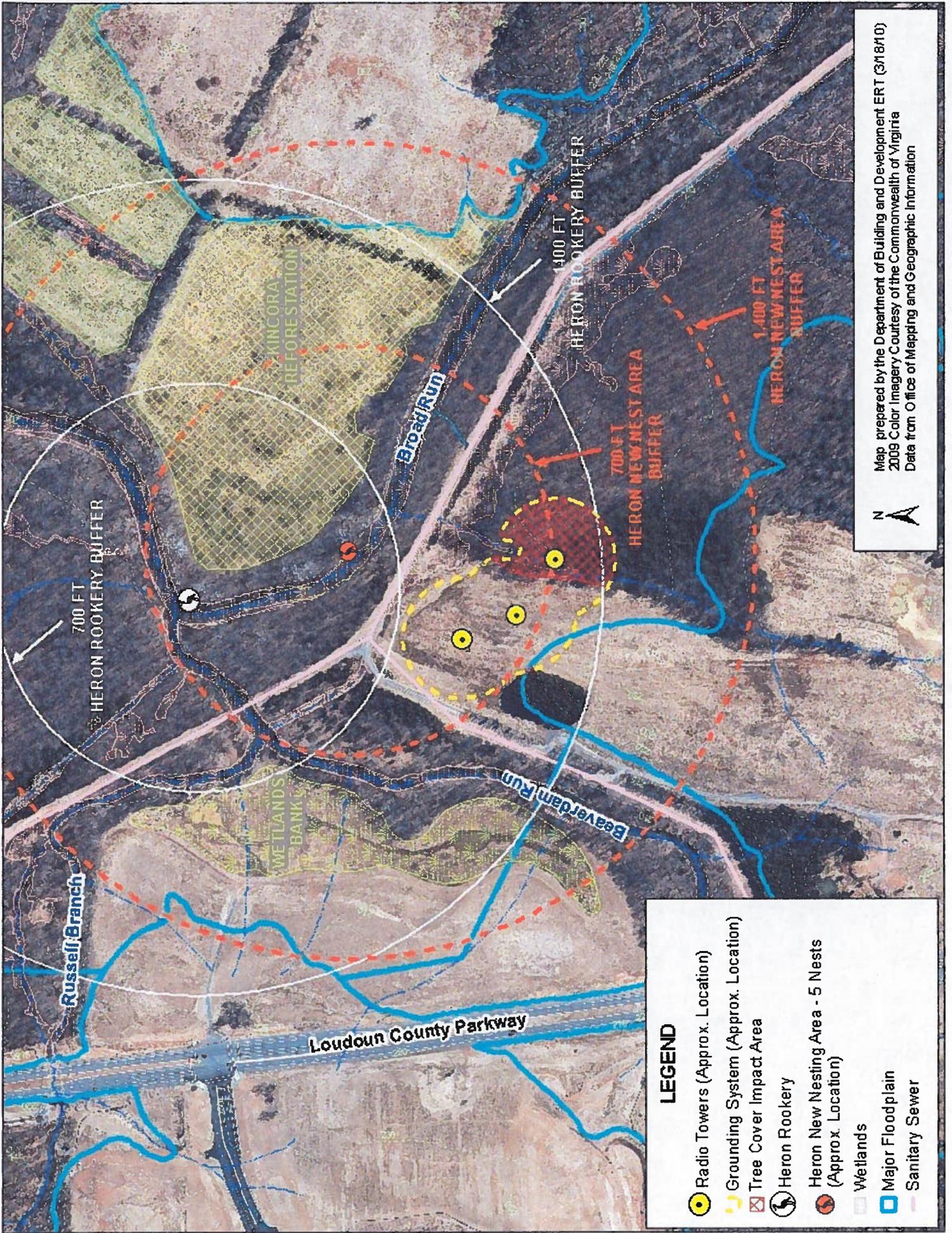
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**From:** Giglio, Patrick  
**Sent:** Thursday, March 18, 2010 4:15 PM  
**To:** 'Ewing, Amy (DGIF)'  
**Cc:** Taylor, Todd  
**Subject:** ESSLog# 30636\_Potomac Radio\_tower construction  
**Attachments:** Potomac\_Radio\_New\_Nest\_Area.JPG; Potomac Radio-Heron.pdf

Amy

Thank you for your response dated March 8, 2010. During a site visit this week we noted five occupied Blue Heron Nests on the east bank of the Broad Run in two sycamore trees in close proximity to the proposed radio tower site (see map & photos). These five nest are some distance from the main Rookery which is estimated to consist of 40+ nests located further to the north. We believe these nest may have been established during the 2008 or 2009 breeding seasons, so they were not considered by VDGIIF during the review of the Kincora SPEX application. We note that other large sycamore trees exist in proximity to the five occupied Blue Heron Nests and may provide habit for other nesting birds in the future. Enlight of this new information regarding the proximity of the five nests to the proposed radio tower site can you provide additional input regarding potential impacts and mitigation strategies.

Pat Giglio, Planner III  
Loudoun County Department of Planning  
703-777-0246 (office)  
703-737-8563 (direct)



**LEGEND**

- Radio Towers (Approx. Location)
- Grounding System (Approx. Location)
- Tree Cover Impact Area
- Heron Rookery
- Heron New Nesting Area - 5 Nests (Approx. Location)
- Wetlands
- Major Floodplain
- Sanitary Sewer



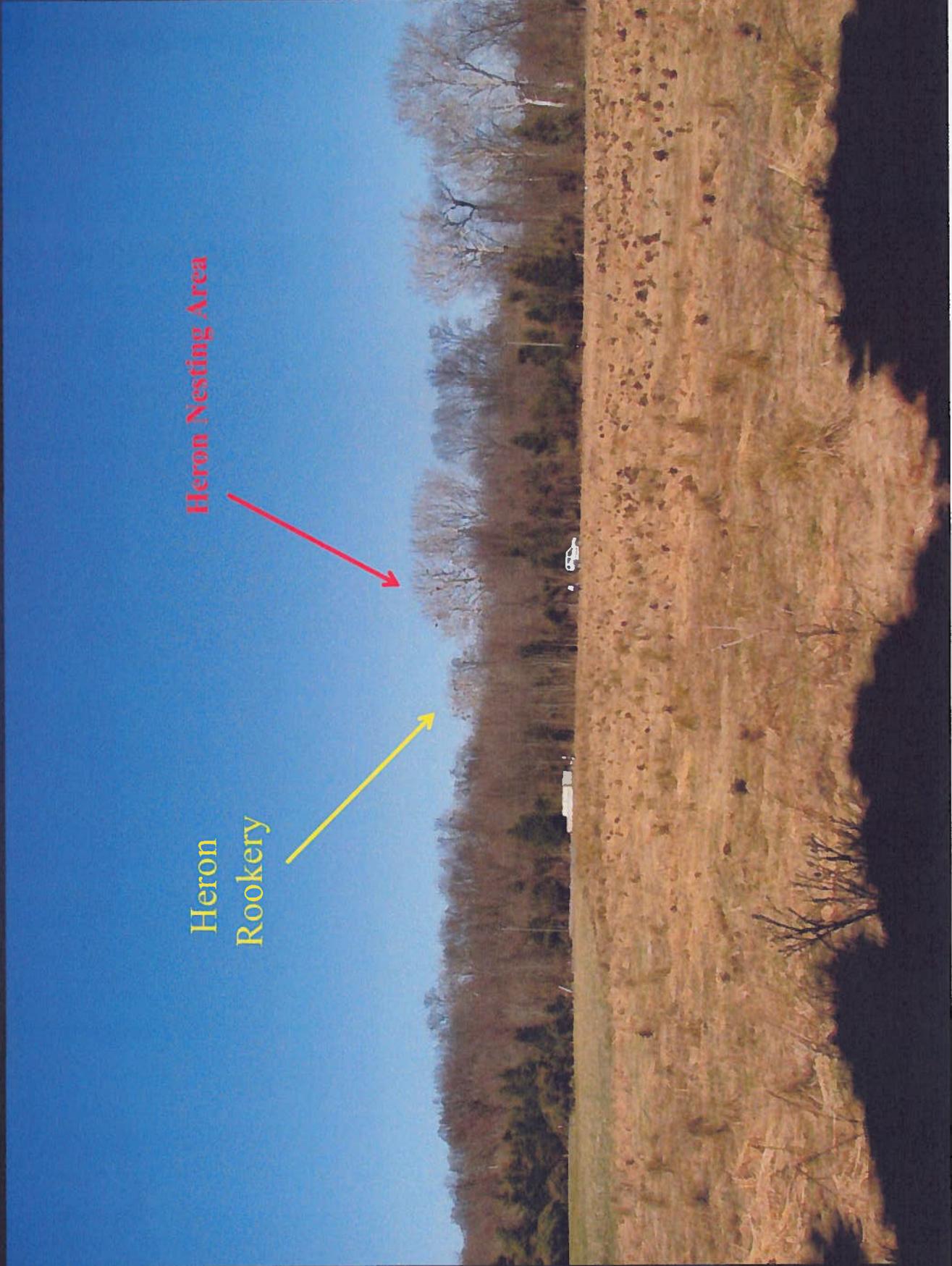
Map prepared by the Department of Building and Development ERT (3/18/10)  
 2009 Color Imagery Courtesy of the Commonwealth of Virginia  
 Data from Office of Mapping and Geographic Information

POTOMC RADIO, CMPT 2009-0002 / SPEX 2009-0029



# V I C I N I T Y

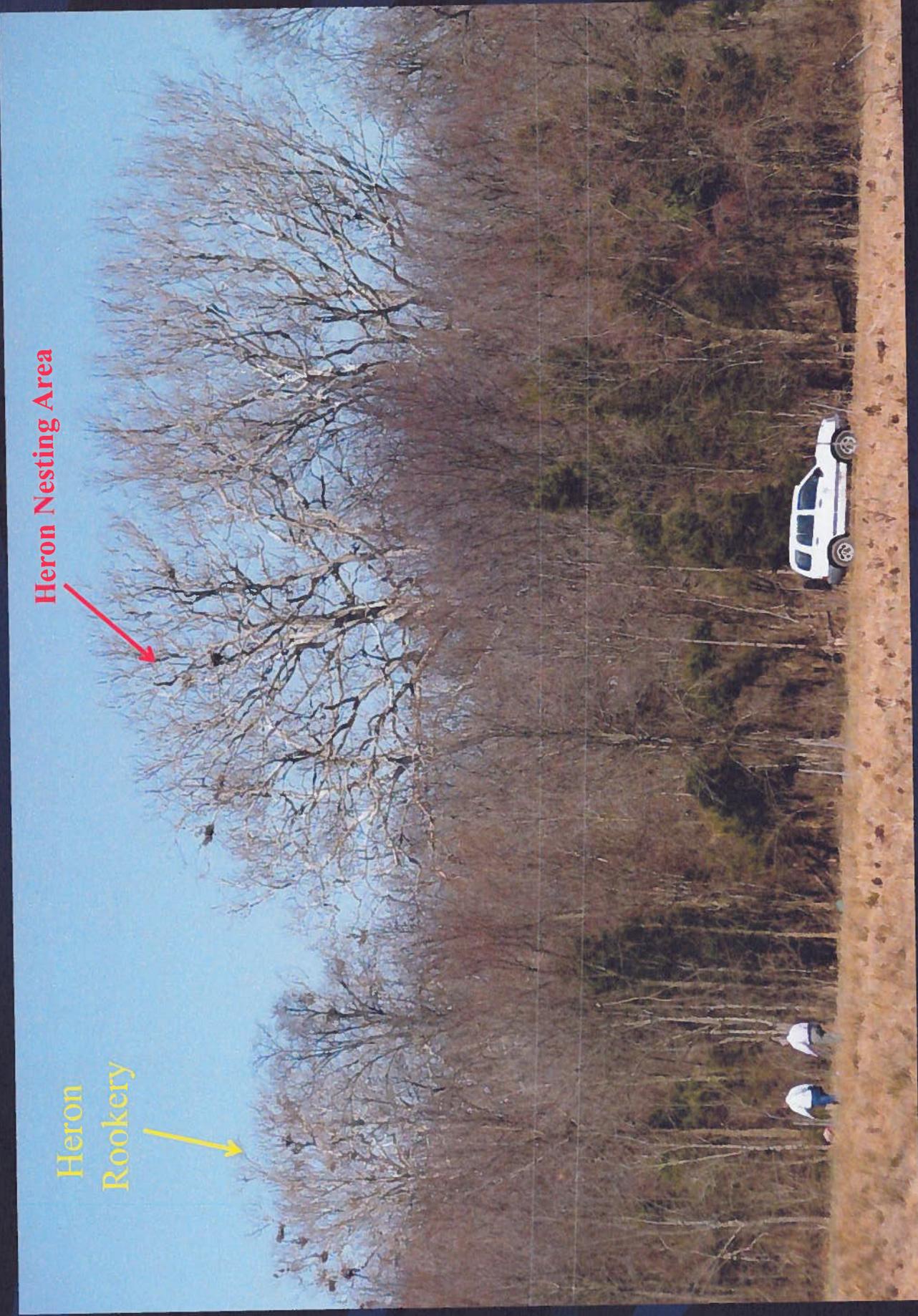
POTOMAC RADIO, CMPT 2009-0002 / SPEX 2009-0029



Heron  
Rookery

Heron Nesting Area

POTOMC RADIO, CMPT 2009-0002 / SPEX 2009-0029



Heron Nesting Area



Heron Rookery



## Giglio, Patrick

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**From:** Ewing, Amy (DGIF) [Amy.Ewing@dgif.virginia.gov]  
**Sent:** Friday, March 19, 2010 9:37 AM  
**To:** Giglio, Patrick  
**Cc:** Taylor, Todd; Harding, Sergio (DGIF); Cooper, Jeff (DGIF)  
**Subject:** RE: ESSLog# 30636\_Potomac Radio\_tower construction  
**Attachments:** ESSLog# 30636\_Potomac Radio\_tower construction

Hi Patrick,

Thanks for the information and map. This is very helpful to us in updating our waterbird colony data. We will extend the boundaries of the colony to include the new nesting sites.

When it comes to protecting heron colonies, we recommend a two-step approach:

- **Maintain an undisturbed, naturally vegetated buffer of at least 500 ft\* around the colony:** It appears that between the new nesting sites and the project site, the vegetation has already been cleared. So, adherence to this recommendation is not possible. Although, we recommend removing as little additional vegetated buffer as possible and consideration of planting the buffer where possible.
- **Adhere to a time of year restriction from February 15 through July 31 for all construction activities within 0.25 mile\* of the rookery:** We recommend that all construction activities, including additional ground clearing, associated with the installation of the towers adhere to this time of year restriction. This serves to protect nesting birds from disturbance allowing them to brood their eggs, feed their young, etc. Once the young have successfully fledged, the construction activities are less likely to interrupt successful reproduction and rearing of young.

\*When Andy Zadnik first coordinated the protection of this colony with Loudoun County, I believe a 600 ft no-disturbance buffer was placed on the colony and a 1,400 ft time of year restriction buffer was also placed. It is fine to use those numbers to maintain consistency since that is what I recommended in my previous email (attached) about this project. They are just slightly more protective than what we typically recommend.

We continue to support all other comments and recommendations included in the attached email from March 8, 2010.

Thanks, Amy

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[amy.ewing@dgif.virginia.gov](mailto:amy.ewing@dgif.virginia.gov)

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**From:** Giglio, Patrick [mailto:Patrick.Giglio@loudoun.gov]  
**Sent:** Thursday, March 18, 2010 4:15 PM  
**To:** Ewing, Amy (DGIF)  
**Cc:** Taylor, Todd  
**Subject:** ESSLog# 30636\_Potomac Radio\_tower construction

Amy  
Thank you for your response dated March 8, 2010. During a site visit this week we noted five occupied Blue Heron Nests on the east bank of the Broad Run in two sycamore trees in close proximity to the proposed radio tower site (see map &

photos). These five nest are some distance from the main Rookery which is estimated to consist of 40+ nests located further to the north. We believe these nest may have been established during the 2008 or 2009 breeding seasons, so they were not considered by VDGIF during the review of the Kincora SPEX application. We note that other large sycamore trees exist in proximity to the five occupied Blue Heron Nests and may provide habit for other nesting birds in the future. Enlight of this new information regarding the proximity of the five nests to the proposed radio tower site can you provide additional input regarding potential impacts and mitigation strategies.

Pat Giglio, Planner III  
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## Giglio, Patrick

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**From:** Giglio, Patrick  
**Sent:** Wednesday, March 31, 2010 8:36 AM  
**To:** 'Ewing, Amy (DGIF)'  
**Subject:** Potomac Radio, PC Questions  
**Attachments:** PC Questions.docx; Potomac\_Radio\_Heron\_Map\_033010.JPG

Amy

Please find attached questions from the Loudoun County Planning Commission (PC) that were raised at their March 24, 2010 Public Hearing for Potomac Radio to be addressed at a future work session on the application. Your assistance and advice in answering these questions pertaining to the Heron Rookery would be gladly appreciated.

Attached is an updated map depicting the 500 feet undisturbed buffer and location of proposed emergency generator. Also I would like to note that as of last week there is now 11 nesting pairs located in the sycamores adjacent to the subject site. Give me a call if I can provide any additional information.

Pat Giglio, Planner III  
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**Potomac Radio**

Questions from Planning Commission Public Hearing, Wednesday March 24, 2010

What type of activities can occur in the 500 ft. "do not disturb" area defined by VDGIF in proximity to the Heron Rookery?

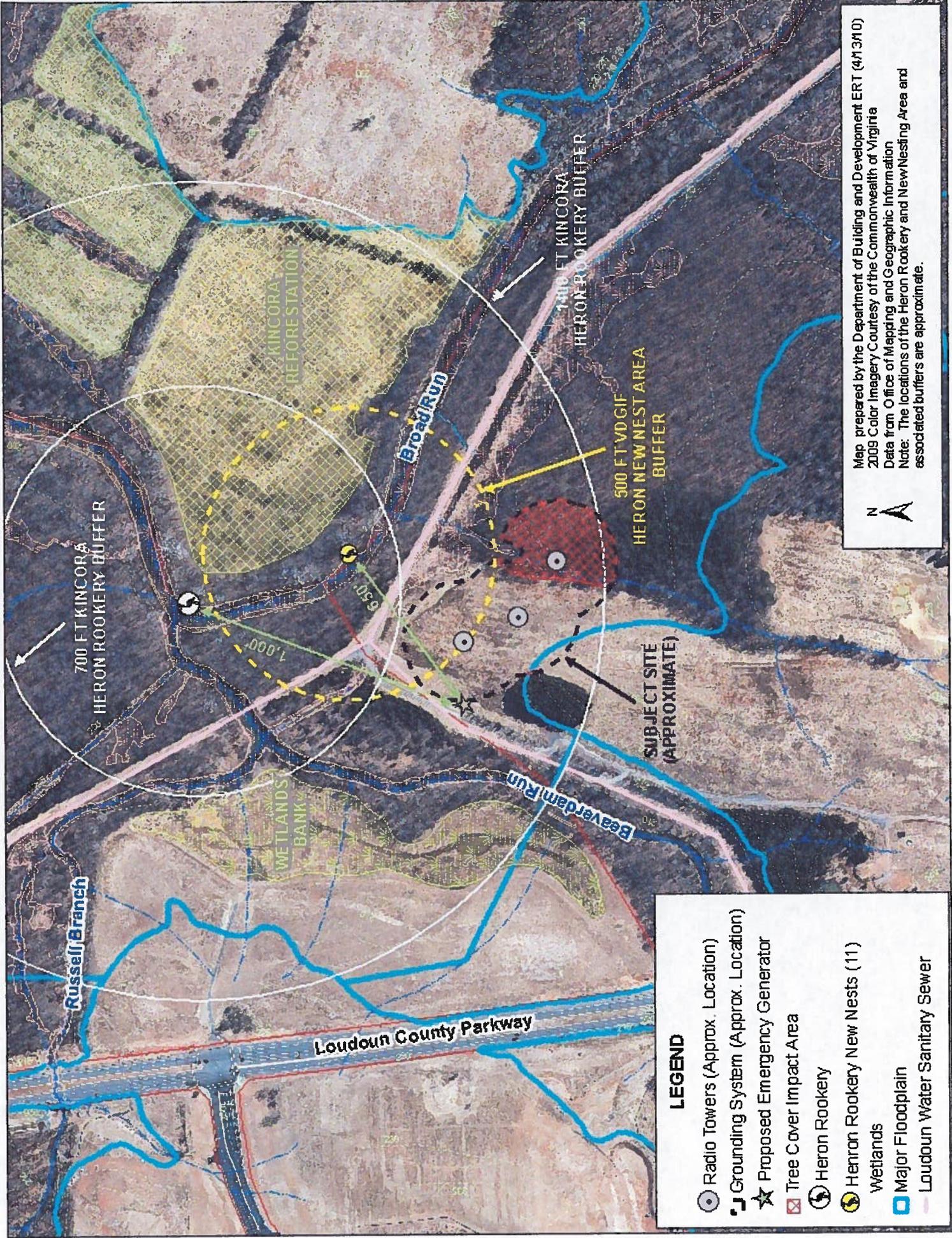
What is the effect of the construction and/or presence of tall structures in proximity to Heron Rookeries based on case studies?

What effect does noise (ie. emergency generator at 70 decibels) have on the Heron Rookery and what are acceptable levels?

What is the life style habit and nesting time frame for Herons?

What provides the best riparian buffer on the subject site the existing tree cover or the proposed Planting Plan?

What trees species provides the best survivability and growth rates within the floodplain on the subject site and would it be advantageous to add hardwoods into the mix of trees species in addition to the loblollies proposed with the Planting Plan?



- LEGEND**
- Radio Towers (Approx. Location)
  - ⬛ Grounding System (Approx. Location)
  - ★ Proposed Emergency Generator
  - ▣ Tree Cover Impact Area
  - ⊙ Heron Rookery
  - ⊙ Heron Rookery New Nests (11)
  - Wetlands
  - Major Floodplain
  - Loudoun Water Sanitary Sewer

Map prepared by the Department of Building and Development ERT (4/13/10)  
 2009 Color Imagery Courtesy of the Commonwealth of Virginia  
 Data from Office of Mapping and Geographic Information  
 Note: The locations of the Heron Rookery and New Nesting Area and associated buffers are approximate.



## Giglio, Patrick

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**From:** Ewing, Amy (DGIF) [Amy.Ewing@dgif.virginia.gov]  
**Sent:** Thursday, April 01, 2010 11:46 AM  
**To:** Giglio, Patrick  
**Subject:** RE: Potomac Radio, PC Questions  
**Attachments:** PC Questions\_dgif.docx

Hi Patrick,  
Please see our responses in blue in the attached document.

Let me know if you need anything further.

Amy

Amy M. Ewing  
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**From:** Giglio, Patrick [mailto:Patrick.Giglio@loudoun.gov]  
**Sent:** Wednesday, March 31, 2010 8:36 AM  
**To:** Ewing, Amy (DGIF)  
**Subject:** Potomac Radio, PC Questions

Amy  
Please find attached questions from the Loudoun County Planning Commission (PC) that were raised at their March 24, 2010 Public Hearing for Potomac Radio to be addressed at a future work session on the application. Your assistance and advice in answering these questions pertaining to the Heron Rookery would be gladly appreciated.

Attached is an updated map depicting the 500 feet undisturbed buffer and location of proposed emergency generator. Also I would like to note that as of last week there is now 11 nesting pairs located in the sycamores adjacent to the subject site. Give me a call if I can provide any additional information.

Pat Giglio, Planner III  
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## Potomac Radio

Questions from Planning Commission Public Hearing, Wednesday March 24, 2010

What type of activities can occur in the 500 ft. "do not disturb" area defined by VDGIF in proximity to the Heron Rookery? We recommend that a 500-ft undisturbed, naturally vegetated buffer be maintained on the nest. We recommend no disturbance within this buffer during the nesting season and no alterations to this vegetated buffer at any time. The purpose of the buffer is to provide line of sight protection as well as a physical barrier from human disturbance. In addition, it allows for some expanse of the colony if needed.

What is the effect of the construction and/or presence of tall structures in proximity to Heron Rookeries based on case studies? Based on the experience of our bird experts, Jeff Cooper and Sergio Harding, we do not anticipate the presence of the radio towers to negatively impact the heronry. They may actually provide additional substrate for the birds to nest on. More impactful than anything is simply increased urbanization in the area.

What effect does noise (ie. emergency generator at 70 decibels) have on the Heron Rookery and what are acceptable levels? We do not believe the noise from the generator will adversely impact the birds. The level of the noise is really rather small (same as a typical vacuum cleaner or TV) and it will be periodic.

What is the life style habit and nesting time frame for Herons? The nesting season for great blue heron is typically February 15 through July 31.

What provides the best riparian buffer on the subject site the existing tree cover or the proposed Planting Plan? With respect to riparian buffers, we typically recommend undisturbed, naturally vegetated riparian buffers of at least 100-feet on both sides of streams and up to 300-ft if the stream is known to support sensitive species. The larger the buffer, the better the protection of the water quality and wildlife habitat. We recommend maintaining mature woody vegetation (trees), not mowed grass or other regularly maintained landscapes along streams and wetlands. In any situation, we recommend the use of native species for all plantings.

What trees species provides the best survivability and growth rates within the floodplain on the subject site and would it be advantageous to add hardwoods into the mix of trees species in addition to the loblollies proposed with the Planting Plan? We cannot speak to tree survivability, you would need to contact someone that performs stream buffer plantings/restoration to speak to that. There are certainly trees that thrive in floodplain environs. In terms of wildlife habitat, a mix of tree species (soft and hardwoods) is best and we typically recommend that native hardwoods which provide hard and soft mast be included in the planting mix.