



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620
(814) 359-5237 Fax: (814) 359-5175

December 21, 2007

**IN REPLY REFER TO:
SIR# 24419**

Scott Bush
Conestoga-Rovers & Associates
410 Eagleview Boulevard, Suite 110
Exton, Pennsylvania 19341

**RE: Tertiary Species Impact Review (SIR) - 24419
PNDI Search No. 20061205067481
CRA Reference No. 048382
HSP Gaming L.P. - Sugarhouse Casino
City of Philadelphia, Philadelphia County, Pennsylvania**

Dear Mr. Bush:

The staff of the Natural Diversity Section reviewed your recent correspondence dated December 18, 2007. Based on records maintained in the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files, the state threatened red-bellied turtle (*Pseudemys rubriventris*) is known from the vicinity of the project site.

The red-bellied turtle is one of Pennsylvania's largest native aquatic turtles. This turtle species is known to inhabit relatively large, deep streams, rivers, ponds, lakes and marshes with permanent water and ample basking sites. Red-bellied turtles are restricted to the southcentral and southeastern regions of the Commonwealth. The existence of this turtle species is threatened by habitat destruction, poor water quality, and competition with aggressive non-native turtle species that share its range and habitat (e.g., red-eared slider, *Trachemys scripta elegans*).

Red-bellied turtles are known to inhabit the Delaware River. During the winter the turtles burrow into soft substrates for brumation (hibernation), and could be disturbed by any instream excavation. Therefore, all in-stream activity should be conducted between May 1 and October 15 (with the exception of pile driving activities) in order to avoid adverse impacts during the inactive season of the turtle. Additionally, during any in-stream construction activities conducted during the inactive season, a qualified biologist should inspect the project work area for the presence of red-bellied turtles in order to minimize take. I have enclosed a list of recognized/qualified surveyors for your convenience. If any turtles are observed within the project area, the biologist should notify this office within 24 hours and provide us with information on the specific location where the turtle was found, its gender, the length and width of the carapace, and any unique markings. Following collection of this information, any turtles encountered should be immediately released unharmed in a location outside of the project area. An approved erosion and sedimentation control plan should be strictly implemented and maintained for the duration of all project activities.

Our Mission:

www.fish.state.pa.us

To provide fishing and boating opportunities through the protection and management of aquatic resources.

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Upon completion of the red-bellied turtle survey work, the herpetologist is to forward a report showing the surveyor's results to this office (Natural Diversity Section) for our review and comment. Reports should include photographs and maps of appropriate suitable habitat. Threatened and endangered species observed in the survey should be photographed, aged, sexed, measured as to their size, and areas they were observed/captured should be mapped accordingly. The surveyor should also report other herpetofauna seen while conducting the surveys.

Staff received a mitigation/monitoring plan and figures you submitted to our office on December 18, 2007. Our offices discussed the mitigation/monitoring plan on December 20, 2007. Based on this discussion, the mitigation plan was revised and submitted to our office for review and concurrence on December 21, 2007. This mitigation plan was reviewed and accepted by the Commission. This mitigation plan includes the creation of a tidal wetland complex with the following features and specifications:

1. The mitigation pond/wetland complex will occur on the Philadelphia Water Department's Baxter Water Treatment Plant property, which occurs approximately 8 miles upstream on the western bank of the Delaware River between Pennypack Avenue and Linden Avenue, Philadelphia.
2. The pond/wetland mitigation will be comprised of permanent open water areas (1.54 acres) and nesting habitat adjoining the Delaware River. A control structure (rock berm) will be placed in the opening between the river and mitigation that allows the tide to flood and exit the mitigation area, leaving a minimum of 3 feet of permanent open water during low tide.
3. One foot of alluvial silt will be placed on the bottom of the pond/wetland complex, to provide hibernation habitat for turtles.
4. Basking logs will be placed to ensure basking opportunities during both high and low water elevations.
5. Nesting habitat will be created by the placement of suitable nesting substrate (loamy sand, 10% rounded river gravel between 0.25 and 1.5 inches in diameter) along the edges of openwater/wetland habitat.
6. A vegetative buffer, using native plant species, will be planted around the mitigation site.
7. A qualified red-bellied turtle biologist will need to oversee the construction of the mitigation pond/wetland complex (including excavation, placement of alluvial soils and basking structures).

Additionally, a monitoring plan needs to be implemented. The following monitoring plan was reviewed and accepted by the Commission:

1. The mitigation site will be monitored by a qualified red-bellied turtle surveyor for a period of five years after the site has been constructed, during which wildlife utilizing the habitat and invasive species will be monitored.
2. Monitoring will be conducted 4 times per year, once a month in May, June, July, and September. The monthly field inspections will include:
 - a. Inspection of the mitigation site including the inlet/outlet to the Delaware River to assess the structural stability of the site and a determination if any erosion problems were present
 - b. An assessment of the hydrology of the site to determine if the site hydrology is functioning as intended
 - c. A botanical survey of the aquatic and terrestrial habitats in the mitigation area. The assessment will include the species present and an estimate of the extent of any invasive species present
 - d. A turtle basking and nesting surveys. The basking survey will note and record the species and age classes present in the mitigation area and will note if invasive species are using the site. The nesting survey will inspect the site for signs of nesting (adult female turtles nesting, false and true nests, egg fragments, presence of turtle hatchlings)

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- e. A qualitative wildlife survey. This survey will be comprised of a general visual survey of fauna use of the site. This survey will need to pay particular attention to the presence of turtle nest predators.
8. If any significant hydrological, erosion, or invasive species are noted during the monitoring visits, the monitoring report will include a corrective action plan to address these issues. Corrective actions must be implemented within a year they are noted.
9. A monitoring report to be submitted annually to PFBC by December 31.

We concur that these mitigation/monitoring measures will adequately compensate for the loss of red-bellied turtle habitat from the proposed project. Provided that the aforementioned avoidance measures and mitigation/monitoring plan are implemented for this project, I do not anticipate adverse effects to the red-bellied turtle, or any other species under PA Fish and Boat Commission jurisdiction.

Note that this office performed no field inspection of the project area. Consequently, comments in this letter are not meant to address other issues or concerns that might arise concerning matters under Pennsylvania Fish and Boat Commission jurisdiction or that of other authorities. Please contact Chris Urban at 814-359-5113 if you have any additional concerns regarding this response. Thank you for your cooperation and attention to this matter of threatened and endangered species conservation.

Sincerely,



Christopher A. Urban, Chief
Natural Diversity Section

CAU/NTW/dmc

cc: R. Brown, DEP SERO
PFBC SE Regional LE Office