TO: **Ms. Meghan Lally, Chair, Inland Wetlands & Watercourses Commission Town of Andover, 17 School Road, Andover, CT 06232**

FROM: **Hank Gruner, Herpetologist**

RE: **IWWC20-23, 57 Hendee Road - New residential construction modification of a floodplain**

DATE: **July 14, 2020**

At the request of the Andover Inland Wetlands and Watercourses Commission (IWWC) I conducted a review of a proposed new residential development located at 57 Hendee Road. In reference to section 10.2(a) of the IWWC regulations relating to the consideration of potential impacts from a proposed activity on a wetland or watercourses' capacity to support fish and wildlife, among other values, the focus of this review was to determine if there are any probable ecological impacts from the proposed project on nearby wetlands or watercourses, and to identify options that would avoid or mitigate any potential impacts.

To facilitate the review, I participated on an IWWC site walk that was conducted on June 13, 2020 and have reviewed the preliminary site plan prepared by Bushnell Associates LLC on May 1, 2020.

Background

The proposed new residential construction would occur on a parcel of land that is situated at the confluence of the Skunkamaug River and Hop River. Both of these rivers are identified as "Areas of Special Concern" in Andover's IWWC regulations (Section 1.6). The Hop River has been identified as "the town's greatest natural resource" in the town's Plan of Conservation and Development, and the Hop River corridor has been mapped as a priority area for open space preservation (Chapter 8: Protecting Natural Resources – An Open Space Plan).

The Hop-Skunkamaug River system supports a robust population of the wood turtle, *Glyptemys insculpta*, a state-listed special concern species, and a species of regional conservation concern in the northeast (CTDEEP 2015; NEPARC 2010). Studies of wood turtles on the Hop River have identified areas of critical habitat along the stretch of river in the vicinity of the 57 Hendee Road, including floodplain habitat located on the parcels associated with 57 Hendee Road (Gruner *unpublished data*).

In addition to providing seasonal habitat for resident turtles, because these habitats are situated at the confluence of the Hop and Skunkamaug rivers, they are critical in facilitating the movement of wood turtles and many other species of wildlife among the two riverine systems. Dispersal of individuals among ecosystems is important for maintaining long-term population sustainability and genetic health.

The Proposed Project and Ecological Impacts

Potential ecological impacts associated with the proposed project fall into two categories. The first are impacts associated with site preparation and construction. The proposed activities will not result in the <u>direct</u> loss of critical habitat for wood turtles or other species of wildlife of

conservation concern. Although indirect impacts (e.g., invasive species introductions, subsidization of predators such as raccoons, chemical introductions) on ecosystems associated with surrounding development are difficult to completely avoid, the location of the proposed new residential structure in the eastern section of the site, which is greater than 500 feet from critical floodplain habitat along the Hop River (greater than 800' from the river), and 100 feet from the Skunkamaug floodplain wetlands (160' from the river), helps buffer against indirect impacts to these systems.

The excavation of 600 cubic yards of fill is proposed for an upland area located in the western section of parcel 2 that lies immediately adjacent to critical floodplain habitat along the Hop River. Due to this close proximity and the proposed disturbance, it is critical that appropriate sediment and erosion control measures be established and monitored, and that a plan to control the spread of invasive plants is implemented, to prevent potential impacts to the surrounding floodplain habitat.

An important focus during site preparation and construction is on avoiding injury or mortality to individual wood turtles. Because of their reproductive life history, the loss of individual turtles can have a significant impact on a population. While it is generally not a single source of injury/mortality that contributes to this impact, the cumulative loss of individuals from a variety of sources such as, road kill, agricultural operations, collection, etc. can lead to declines (Klemens et al *in press*). The installation of exclusionary fencing can be used as a method to successfully prevent turtles from accessing areas where heavy machinery is being used. This is especially important when female turtles are moving throughout the uplands from late May through early July seeking nesting sites. Nesting turtles are often attracted to areas of disturbed soil which can exacerbate the problem at construction sites located along rivers and wetland systems.

The second category of potential impacts are associated with on-going activities within areas of critical floodplain habitat located on the site. The open canopy floodplain habitat located adjacent to the Hop River and extending to its confluence with the Skunkamaug River provides important seasonal basking and nesting habitat for wood turtles, as well as habitat for a variety of early successional habitat-dependent wildlife. In recent years, mowing to maintain open fields and gardening activities have been among the land uses in this area. While these activities are not completely incompatible with wood turtles and other wildlife, they can result in significant impacts. Ideally, this floodplain habitat should be left to remain in a natural state, with minimal disturbance (i.e., foot paths, small gardens or clearings). However, if more intensive land use activities involving mowing are planned, it is important to employ best management practices (BMPs) to minimize or avoid impacts.

Recommendations

The objectives of the proposed conservation recommendations are: 1) maintain the quality of critical floodplain habitat located on the site, 2) prevent barriers to movement of turtles and other wildlife along the Skunkamaug and Hop river floodplain corridors, and 3) avoid injury or mortality to individual wood turtles.

- Exclusion fencing (sediment and erosion control fencing) should established around the northern and western perimeter of the already cleared area proposed for fill excavation (western section of parcel 2). The post-excavation re-seeding plan for this area should be carefully reviewed to ensure that only a native seed mix is utilized.

- Prior to site preparation or construction activities for the proposed residential structure to be located on the eastern section of the site, exclusion fencing should be installed at the extent of clearing along the northern (river-facing) perimeter of the area. Standard sediment and erosion control fencing and installation design can be used to serve this purpose. If timing of the project results in the site preparation and construction work occurring in this area during the spring months (March-June), exclusion fencing should be extended along the western extent of clearing along the existing pathway to prevent turtles from attempting to nest in recently cleared areas.

- The unimproved path/roadway that extends into the floodplain following along the embankments of the Skunkamaug and Hop rivers should be allowed to naturally re-vegetate. If it is necessary to maintain this path/roadway, it should remain in an unimproved state (no paving or gravel). Any vehicular access in this area should be restricted to the dormant season (November 1-March 1).

- Allow the floodplain habitats to remain in a natural state with minimal disturbance. Any mowing for pathways, or agricultural activities within the herbaceous floodplain should be restricted to the dormant season (November 1-March 1) and not located within 30 feet of the river. If mowing is determined to be necessary during the active season, it is recommended that the following best management practices be employed: a) delay mowing until after June, b) mow in a pattern that progresses from the interior towards the river, c) maintain a 30-foot buffer along the riverbank, d) utilize a sickle-bar style mower rather than a rotary blade mower which has been shown to reduce mortality, and d) set the blade height to greater than seven inches (Erb and Jones 2011).

References Cited

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