

**Reintroduction Proposal for the Magnificent Ramshorn (*Planorbella magnifica*)  
into a NCWRC-Owned Pond**



Photo Credit: Ivanna Knox

Written by North Carolina Wildlife Resources Commission

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Approved by the NCWRC Habitat, Nongame, and Endangered Species Committee

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**Magnificent Ramshorn:**

**Federal Status:** Endangered

**State Status:** Endangered

**State Range:** Currently presumed extirpated from the wild (USFWS 2019)

**Objective:** Reintroduce Magnificent Ramshorn snail into a pond owned by the North Carolina Wildlife Resources Commission (NCWRC) in Brunswick County.

**Need:**

Establishing a Magnificent Ramshorn population in Brunswick County will reintroduce the species to its presumed historical range within the Cape Fear River Basin and decrease its risk of extinction. Currently, all known populations of Magnificent Ramshorn occur in captivity. Reestablishing a population in the wild will increase the redundancy of the species and aid in its recovery.

The Magnificent Ramshorn is assumed to be endemic to southeastern North Carolina, historically known from only four sites in the lower Cape Fear River Basin: Greenfield Lake (New Hanover County) and Orton Pond, Sand Hill Creek Pond, and McKinzie Pond (Brunswick County) (USFWS 2011) (Figure 1). The populations at these sites appear to be extirpated. Historical records suggest that the species may have always been rare and localized (Bartsch 1908).

The species was last documented in the wild in 2004 and appears to have no extant wild populations after failure to detect species in surveys in its historical habitat and suitable habitat in surrounding areas (USFWS 2019). Captive populations are being held at three separate locations in North Carolina. To restore Magnificent Ramshorn to its historical range in North Carolina and mitigate the risk of extinction, reintroductions through propagated animals are required.

**Approach:**

Stocking will occur in one NCWRC-owned pond in Brunswick County. The pond has suitable conditions that fit the restricted habitat criteria of the Magnificent Ramshorn. Life history and habitat tolerance work conducted by NCWRC Aquatic Wildlife Diversity (AWD) and Conservation Aquaculture Center staff in 2020 and 2021 indicated that snails would survive in the target pond but not in any of the surrounding waters due to insufficient water quality. Therefore, inadvertent spread beyond the pond is very unlikely.

The NCWRC Land and Water Access Division (LWA) oversees the management of the property. AWD and LWA staffs are collaborating on management activities for the pond. In the Fall of 2021, LWA staff re-sloped the pond banks, reducing the depth at one end to provide appropriate habitat for vegetation. In August of 2022, NCWRC staff planted spatterdock and white waterlily into the re-sloped area, providing essential vegetation required by Magnificent Ramshorn for feeding and egg-laying. In addition, lime will be added to the pond to buffer against pH fluctuations. Ongoing coordination will ensure that use of the pond is congruent with maintaining the Magnificent Ramshorn population.

NCWRC staff have coordinated restoration activities at this site with the Military Ocean Terminal at Sunny Point (MOTSU), NC Natural Heritage Program, and U.S. Army Corps of Engineers.

The number of snails stocked annually into the pond will depend on propagation success. NCWRC AWD staff have collected genetic samples of all captive populations to inform management decisions and prioritize which broodstock should be used for propagation and reintroduction efforts. Magnificent Ramshorn will be produced by the NCWRC's Marion Conservation Aquaculture Center and the North Carolina State University's College of Veterinary Medicine and Department of Applied Ecology.

The pond will be sampled annually to assess the survival of reintroduced snails and production of offspring.

**Literature Cited:**

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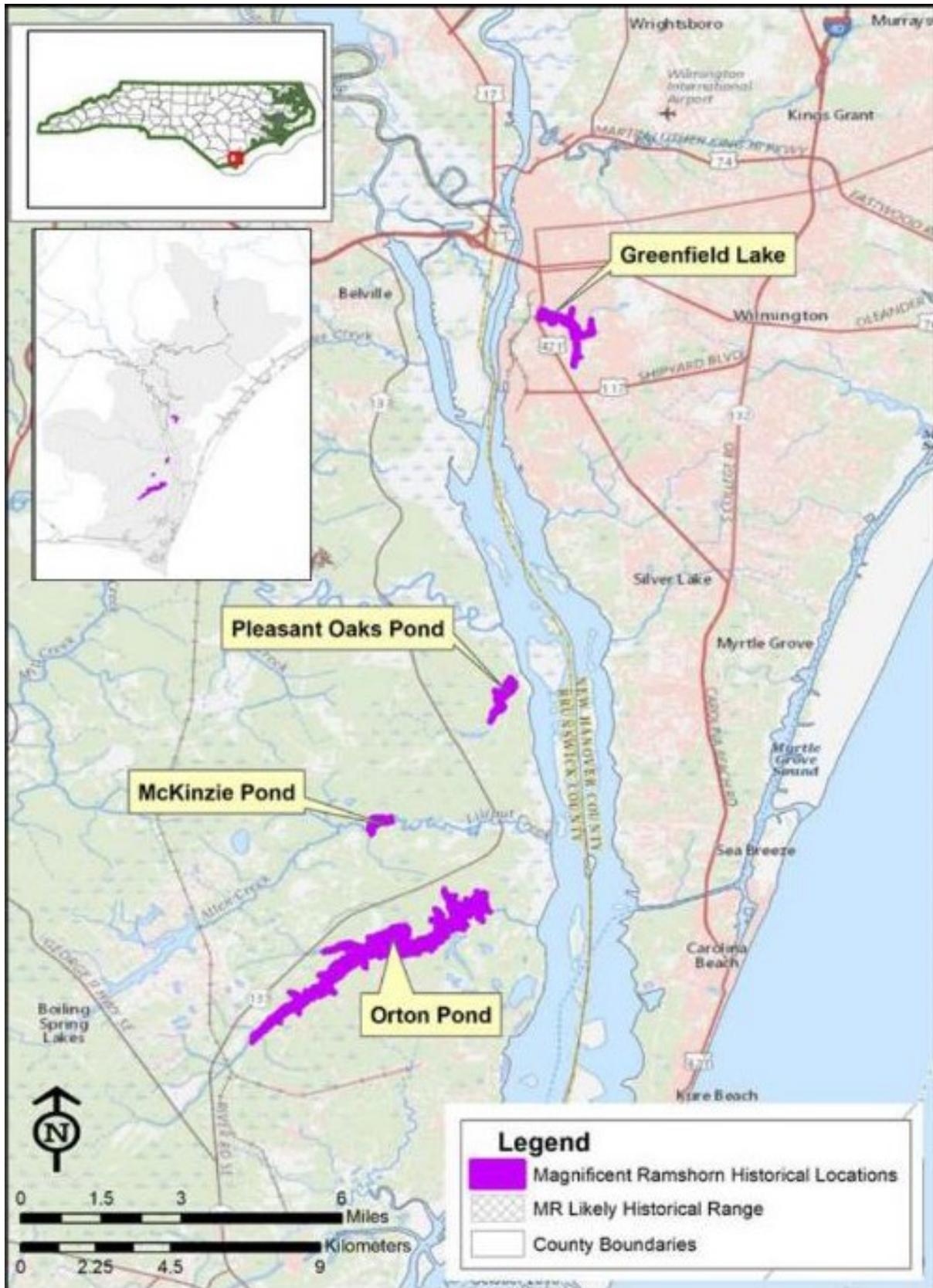


Figure 1. Historical range of the Magnificent Ramshorn (USFWS, 2019)

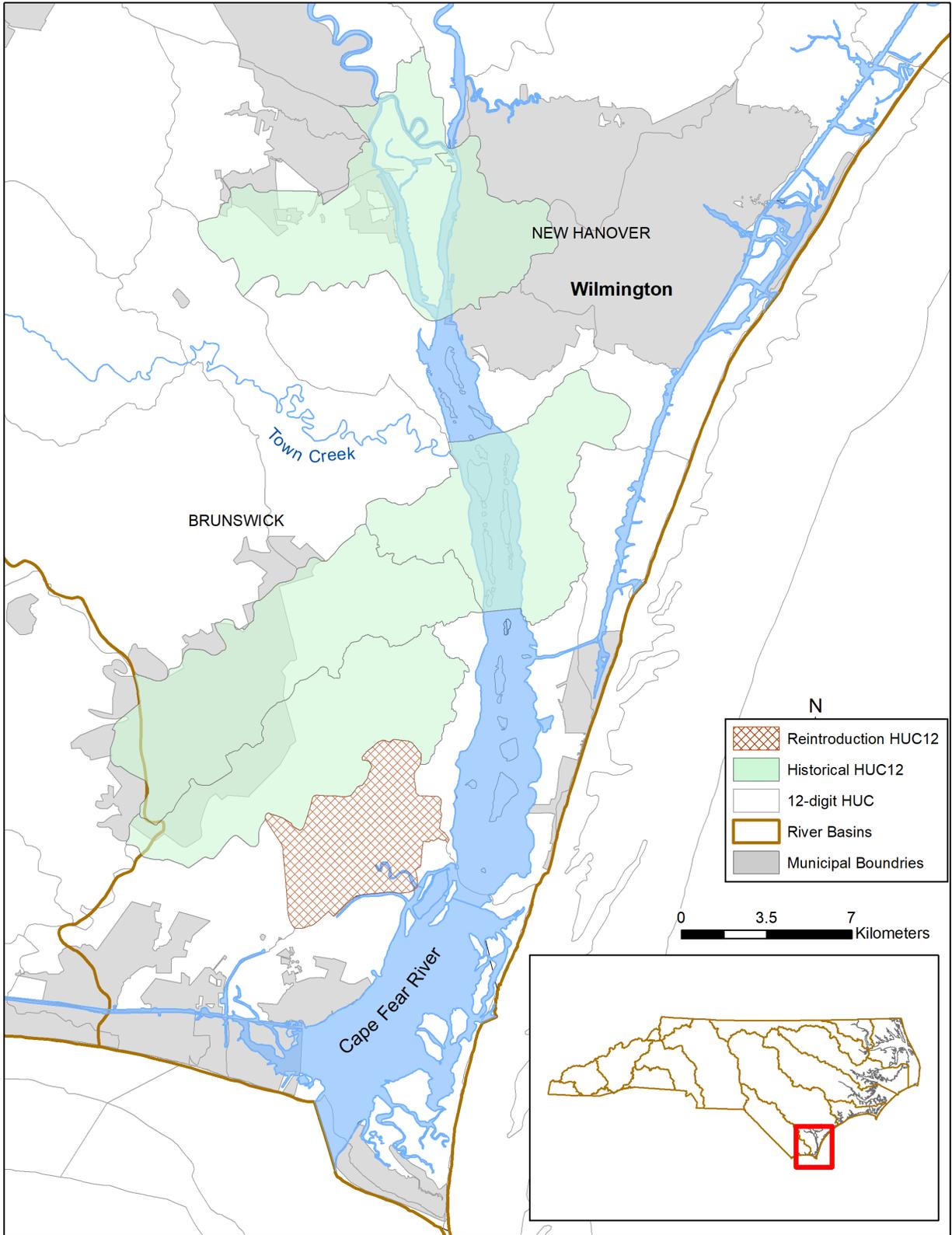


Figure 2. Overview of proposed reintroduction area for Magnificent Ramshorn.