

**Reintroduction Proposal for the Spotfin Chub (*Erimonax monachus*)
in the Little Tennessee and French Broad River Basins**



Photo Credit: Luke Etchison, NCWRC

North Carolina Wildlife Resources Commission
Habitat, Nongame, and Endangered Species Committee

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Spotfin Chub Status:

Federal Status: Threatened

State Status: Threatened

State Range: Widespread in the Hiwassee, Little Tennessee, French Broad, and Watauga river basins.

Objective: Reintroduce Spotfin Chub into the upper French Broad River (2 HUC-12 watersheds in Transylvania County), Swannanoa River (1 HUC-12 watershed in Buncombe County), South Toe River (1 HUC-12 watershed in Yancey County), and Tuckasegee River (3 HUC-12 watersheds in Swain County) in North Carolina.

Need: Re-establishing Spotfin Chub populations in the French Broad and Little Tennessee river basins in North Carolina will add to the redundancy of this species and decrease the chances of extinction. Restoring historical populations contributes to the ongoing recovery of the species and ultimately will lead to the federal delisting. This effort will also benefit stream communities by establishing an additional host fish species and improving mussel populations.

The Spotfin Chub was federally listed as threatened in 1977. It is known from four major river drainages including the Buffalo River System (TN), Upper Little Tennessee River (NC), Emory River System (TN) and the Lower North Fork Holston River (TN and VA) (USFWS 2014). Since the federally listing decision, existing populations have expanded, most notably in the North Fork Holston River drainages and the Emory River in Tennessee. In North Carolina, the species is considered stable in the Cheoah and Little Tennessee rivers (Doll et al. 2020a; Doll et al. 2020b), but barriers to expansion (e.g. dams) eliminate the potential for upstream and downstream expansion into other waterways in North Carolina. Widespread damming and poor land use throughout Western North Carolina in the early 19th century, resulted in the geographic isolation of species and the loss of individuals. To restore Spotfin Chub to its historical range in North Carolina, reintroductions through propagation and translocations are needed.

Approach: While potential reintroduction locations range across the Hiwassee, Little Tennessee, French Broad, and Watauga river basins, four priority reintroduction areas have been selected (Figure 1). The areas include: the Upper French Broad River (HUC 12-060101050201 and 060101050203) (Figure 2); the South Toe River (HUC 12-060101080205) (Figure 3), Swannanoa River (HUC 12-060101050705) (Figure 4), and Tuckasegee River (HUC 12-060102030405, 060102020505, and 060102030402) (Figure 5). These HUC 12 watersheds were prioritized based on the abundance of Spotfin Chub habitat (e.g. bedrock, high water quality, suitable water temperatures), availability of willing partners in the watershed, and presence of the Federally Endangered Appalachian Elktoe nearby. In addition, reintroduction areas with multiple streams were selected to allow flexibility in final stocking locations based on property owner participation interest.

Beginning in 2023, staff from the NC Wildlife Resources Commission (NCWRC) and Conservation Fisheries Inc. (CFI) will collect broodstock from the Little Tennessee River in North Carolina, between Fontana Lake and Emory Lake. This population will be used for all reintroductions because it is the most robust population in the entire range of Spotfin Chub and the only naturally occurring Blue Ridge physiographic province population. Since 2009, NCWRC and CFI have collaborated to translocate and propagate Spotfin Chub. To date, more than 5,000 have been released into the eight-mile flowing

stretch of the Cheoah River. The Cheoah River is now considered a self-sustaining population estimated at more than 9,000 individuals (Doll et al. 2020a) and is recognized as one of the greatest reintroduction success stories of any fish in the Southeast.

In the spring and summer of 2023, CFI will spawn captive Spotfin Chub to produce multiple lots of juveniles. Juveniles will be stocked in the Fall if propagation efforts are successful. Dependent on propagation success, staff will target stocking a minimum of 500 individuals annually. If the hatchery does not have a successful year, adult Spotfin Chubs will be translocated to the active reintroduction site(s), the total will be determined with the guidance from the U.S. Fish and Wildlife Service (USFWS).

Reintroduction sites will be monitored using visual snorkel survey methods developed by Doll et al. (2020a) to evaluate success of the first five years of stocked fish. Following evidence of survival and recruitment, active reintroduction sites will be monitored on a rotating schedule. The reintroduction sites will be surveyed annually in the Fall, given optimal sampling conditions, via backpack-electrofishing units, seining, and/or with visual observations via snorkel and mask. The continued presence of Spotfin Chub at the site(s) will constitute success for this proposed project in reestablishing Spotfin Chub within its historical range.

Since Spotfin Chub is listed as Federally Threatened, this proposed reintroduction will be pursued under the Programmatic Safe Harbor/Candidate Conservation Agreement with Assurances for 21 Aquatic Species in North Carolina (Permit # ESPER0041144) issued to the NCWRC on October 21, 2022 by the U.S. Fish and Wildlife Service under the authority of Section 10(a)(1)(A) of the Endangered Species Act.

Additional Requirements before Stocking:

- Submit a reintroduction plan to the USFWS for review and adoption.
- Engage local property owners and develop at least one Property Owner Management Agreement (POMA) and Certificate of Inclusion (COI) with a non-federal property owner.
- Receive concurrence from the Tennessee Wildlife Resources Agency.
- Conduct outreach to stakeholders and the public.

Literature Cited:

Doll, J. C., Etchison, L., & Owensby, D. 2020a. Population estimate of the state and federally threatened Spotfin Chub using underwater observations. *North American Journal of Fisheries Management*, 40(2), 342-353.

Doll, J. C., Etchison, L., Russ, W. T., & Fraley, S. J. 2020b. Long-Term Population Dynamics and Habitat Association of the Federally Threatened Spotfin Chub in the Little Tennessee River. *Transactions of the American Fisheries Society*, 149(5), 587-599.

USFWS. 2014. Spotfin Chub, *Erimonax monachus*, 5-Year Review: Summary and Evaluation.

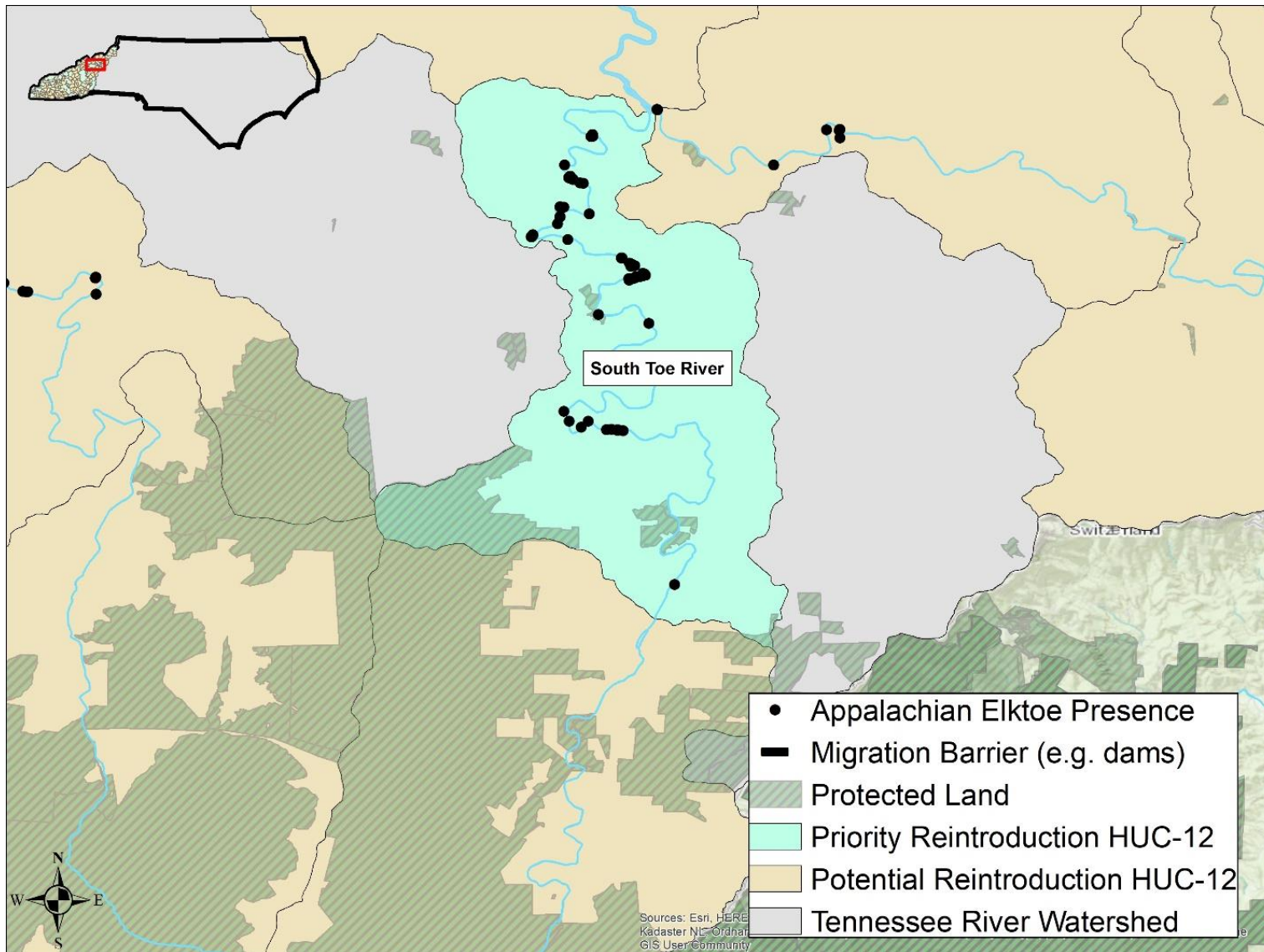


Figure 3. Map of the South Toe River reintroduction HUC-12 watershed for Spottfin Chub.

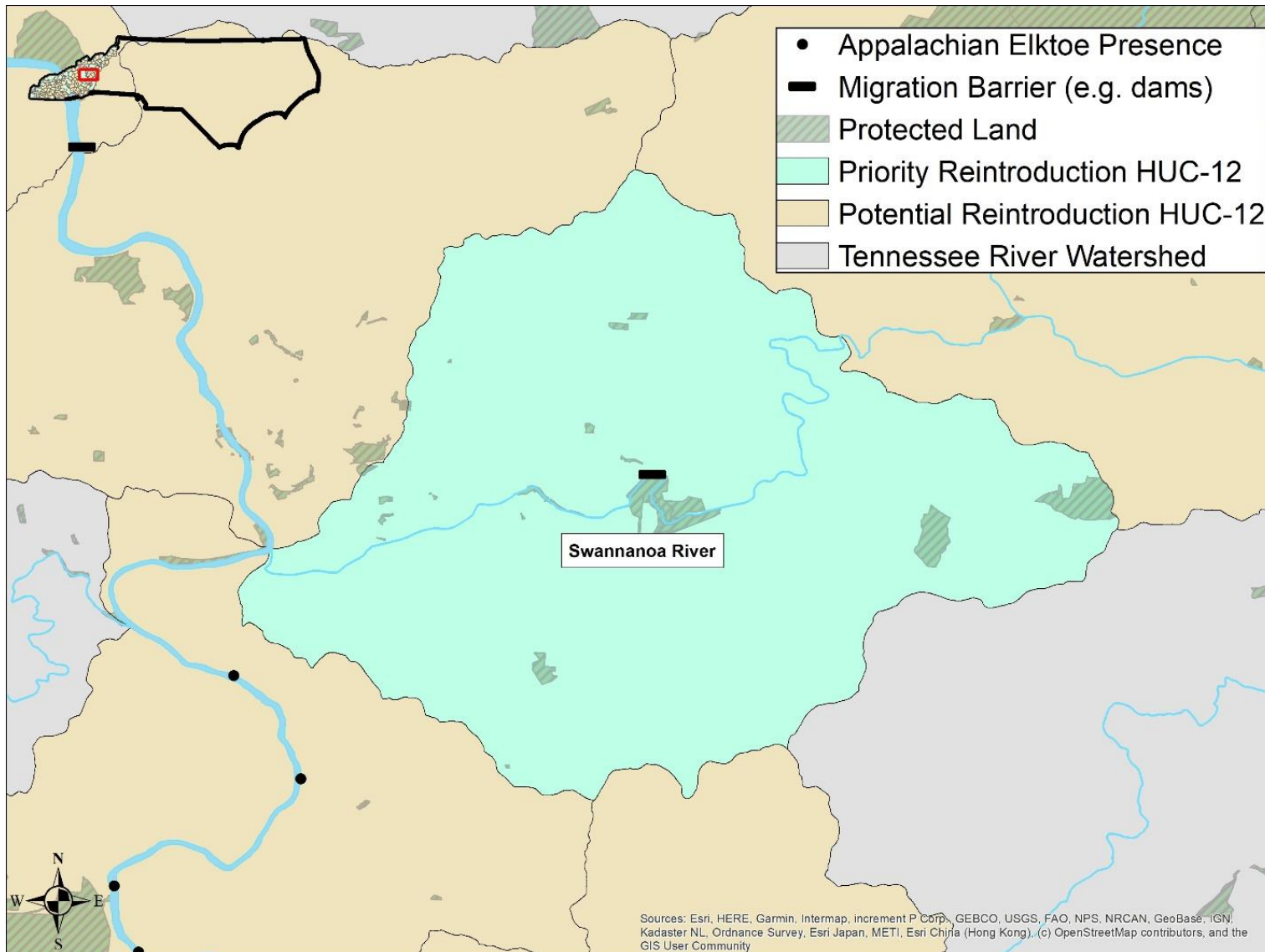


Figure 4. Map of the Swannanoa River reintroduction HUC-12 watershed for Spotfin Chub.

