

**Reintroduction Plan for the Roanoke Logperch (*Percina rex*)
in the Mayo River (Rockingham County)**



Written by North Carolina Wildlife Resources Commission

7/1/2022

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

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Approved by the US Fish and Wildlife Service

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Roanoke Logperch Status:

Federal Status: Endangered

State Status: Endangered

State Range: Dan River Basin

Objective: Reintroduce Roanoke Logperch into the upper section of the Mayo River in North Carolina (Rockingham County).

Need: Re-establishing a Roanoke Logperch population in the upper section of the Mayo River 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 federal delisting.

Historically, the Roanoke Logperch was thought to only exist in Virginia, where it occurred in the Roanoke and Chowan rivers. Since the federal listing of the Roanoke Logperch in 1989, seven genetically distinct populations have been found in Virginia and North Carolina (Roberts, 2017) (Figure 1). In 1992, a population was found in the Smith River, upstream of Philpott Reservoir in Virginia, over 75 miles from the Dan River. In 2008, populations were discovered in the Dan, Smith, and Mayo rivers in Rockingham County. In 2009, more fish were discovered in Big Beaver Island Creek near the Town of Madison, Cascade Creek near the North Carolina and Virginia state line, and Wolf Island Creek near the Rockingham and Caswell county line in North Carolina. In 2016-2019, more Roanoke Logperch were discovered throughout long sections of the Dan River in Rockingham County. A genetic study conducted by Dr. Jamie Roberts at VA Polytechnic Institute and State University in 2017, showed that the population in the Dan River sub basin (including the Smith River, Dan River, Mayo River, and Big Beaver Island Creek) are considered one genetically distinct population with moderately low genetic diversity, relative to other populations of Roanoke Logperch. This reduced genetic diversity indicated a recent population bottleneck likely from the construction of the Philpott Dam on the Smith River. However, the effective population size of the Dan metapopulation is estimated to be quite large (1,025 individuals) suggesting that the population is recovering from recent bottlenecks, growing in abundance, and likely expanding in range.

Despite natural population expansion, several threats, such as sedimentation, channel modification, and instream barriers, continue to limit the species ability to recolonize all streams within its historical range. Currently in North Carolina, the greatest obstacle for full Roanoke Logperch recovery are dams. In 2021, Lindsey Bridge Dam near Madison was lowered, and multiple fish weirs were installed, opening 50 river miles for natural recolonization throughout the upper Dan River in Stokes County. However, two adjacent dams on the lower Mayo River (Washington Mill and Avalon) prevent Roanoke Logperch from migrating back to their natural habitats in the upper Mayo River.

Since 2019, the U.S. Fish and Wildlife Service (USFWS), Conservation Fisheries Inc (CFI), Virginia Division of Wildlife Resources (VADWR), and North Carolina Wildlife Resources Commission (NCWRC) have worked to propagate and augment existing populations of Roanoke Logperch. CFI has successfully propagated individuals from broodstock collected in 2019 and 2020 from the Mayo River in North Carolina, Smith River in North

Carolina and Virginia, and Town Creek in Virginia. In 2020, 114 juvenile Roanoke Logperch were stocked into Big Beaver Island Creek near the confluence with the Dan River in North Carolina. In 2022, an additional 240 juveniles were stocked into the Dan River near Lindsey Bridge and 168 were released into lower Big Beaver Island Creek in North Carolina. To date, partners have only augmented existing populations. Reintroduction of this species above the Washington Mill and Avalon dams will further aid in the recovery of the species.

Approximately 10 miles of high-quality habitat exists in the upper Mayo River upstream of the dams. Restoration of the Roanoke Logperch in this reach would help promote the recovery and increase the redundancy of this species, offsetting the historic population declines.

Approach: The proposed area for reintroduction is the upper Mayo River in North Carolina (HUC 12-03101030408 and 03101030409). The primary site is located downstream of Anglin Mill Road adjacent to the Mayo River State Park property near the “Boiling Hole.” This section has the highest quality habitat in the upper Mayo River. This location is approximately nine miles upstream of the Washington Mill and Avalon dams, and it is anticipated that by stocking this far upstream, the juveniles will remain in the upper Mayo River and not wash downstream over the dams. The next upstream dam above the proposed reintroduction site is in Stuart, VA, therefore, the NCWRC will coordinate with VADWR on the reintroduction of Roanoke Logperch into the upper Mayo River in North Carolina.

Wild Roanoke Logperch are present downstream of Washington Mill Dam (HUC 12-03101030409) in Mayodan, NC. Juveniles will be stocked upstream, adjacent to the Mayo River State Park property. The NC Department of Parks and Recreation owns over four river miles of property within this reach, and Mayo River State Park staff have expressed interest in partnering with the NCWRC in restoring this fish species.

In 2019, USFWS contracted with CFI to propagate Roanoke Logperch for the North Carolina portion of the Dan River Basin. Brood fish have been collected from the lower Mayo River, the Smith River in North Carolina and Virginia, and Town Creek in Virginia.

Approximately 300 Roanoke Logperch will be stocked annually depending on propagation success. A small subset of stocked fish (3-5 fish) will be fin clipped in order to genetically track the cohort through time and identify recaptured fish in subsequent monitoring surveys.

In partnership with the Mayo River State Park staff, a monitoring plan will be implemented at the reintroduction site and downstream to assess the status of the stocked fish. The reintroduction site will be surveyed annually via backpack-electrofishing, seining, and/or with visual observations via snorkel and mask. The restoration site will be monitored annually in the Fall, given appropriate sampling conditions. The continued presence of Roanoke Logperch at the site will constitute success for this proposed project in reestablishing a population of Roanoke Logperch within the species historical range.

Since Roanoke Logperch is listed as Federally Endangered, 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 VADWR.
- Conduct outreach to stakeholders and the public.

Literature Cited:

Roberts, J. H. and G. S. Strickland. 2017. Population genetics of Roanoke logperch in North Carolina. Final Report.

U.S. Fish and Wildlife Service. 2022. Species Status Assessment Report for the Roanoke Logperch (*Percina rex*), Version 1.1. April 2022. Gloucester, VA.

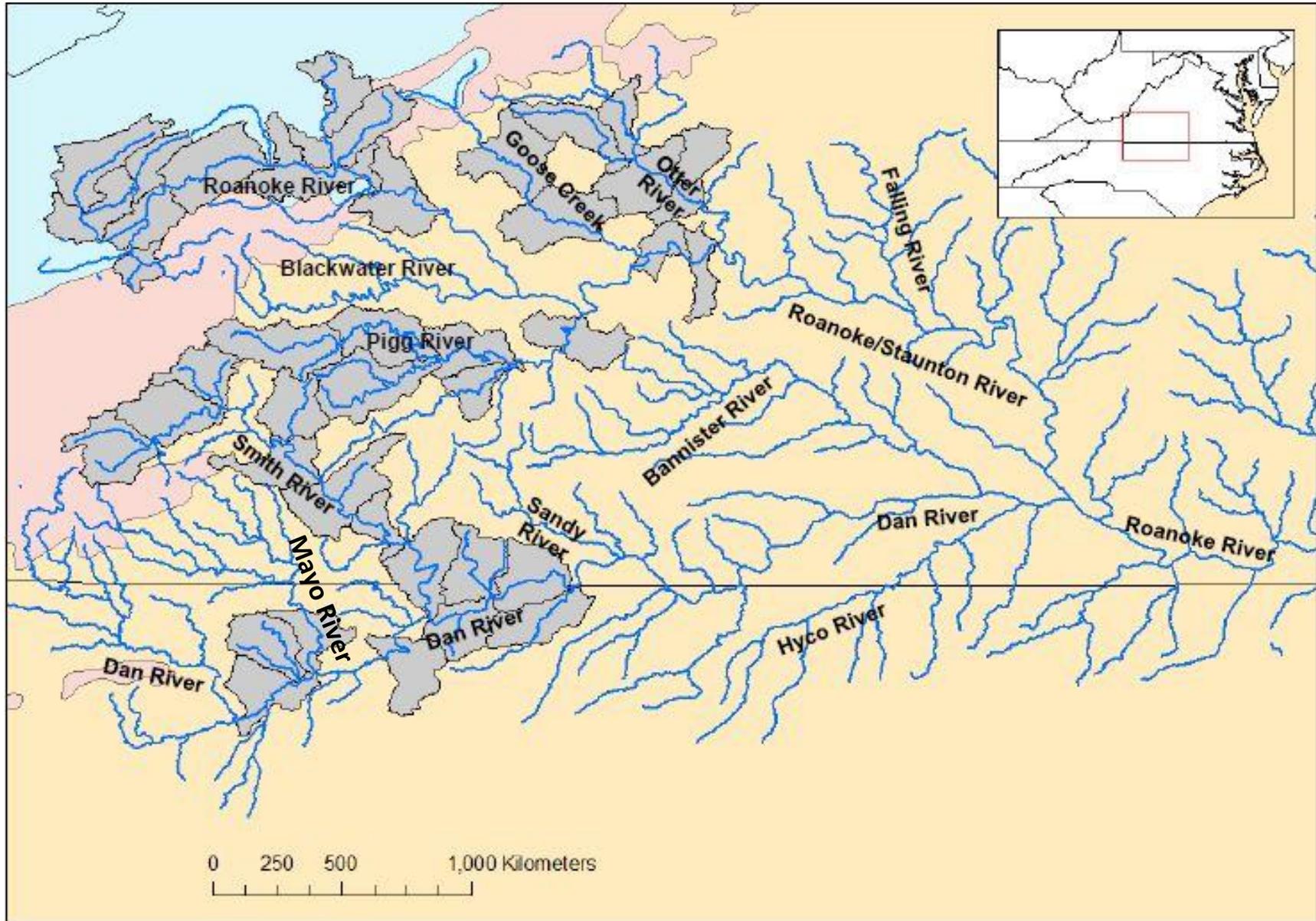


Figure 1: Current known occupied areas from Roanoke Logperch. The gray polygons indicate HUC-12 watersheds with at least one Roanoke Logperch collection record during 1990-2019 (USFWS 2022).