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Make way for eels: New fish passage restores access to 1,000 miles of previously blocked North Carolina habitat

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By Responsible Seafood Advocate

More than 600 eels passed through the innovative eelway design structure in spring 2023

According to NOAA Fisheries, updates at the Blewett Falls Hydroelectric Project now allow American eel and other fish species to access previously blocked upstream riverine habitat.

In 2015, the Federal Energy Regulatory Commission issued a new license to Duke Energy to operate the Yadkin-Pee Dee Project. Through the relicensing process as part of the Federal Power Act, NOAA Fisheries and partners requested fish passage at both the Blewett Falls and Tillery Projects.

NOAA and the Federal Energy Regulatory Commission have been working with Duke Energy on major upgrades to fish passage facilities along hydropower dams in North Carolina. These upgrades are reopening access to hundreds of miles of upstream spawning and rearing habitat for American eel, American shad and blueback herring.



The permanent eelway (enclosed stainless steel structure) at Blewett Falls Dam is built into a retaining wall (the concrete structure with metal screening) on the southern bank of the Pee Dee River. As juvenile American eel approach the dam, they are attracted into the eelway entrance by favorable flows, and the scent of other eels in the holding tank at the top. Photo credit: Justin Dycus/Duke Energy.

At Blewett Falls, the original dam builders had created a fish ladder, but it was non-functional due to an ineffective design. There were no fish passage structures at Tillery. Through coordination with NOAA Fisheries and partners, Duke Energy began work on fish passage and facility upgrades in 2020.

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Instead of attempting to wend their way up an open concrete fish ladder, the eels now move 95 feet up a custom-designed stainless-steel enclosure. The redesign features an attraction flow, or a stream of water with a set speed and turbulence, which draws the eels in.

To further entice the eels, the attraction flow contains the scent of eels that have already navigated the eelway. The eels move up the enclosure and land in a collection barrel. From there, staff truck them to a secluded cove in a reservoir above the dam and release them into the 1,000 miles of newly reopened habitat. The eelway became fully operational in March 2023, and that spring, more than 600 eels passed through the structure.



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Fish passage efforts are also underway for other species, such as American shad, blueback herring and striped bass. These fish travel upriver to spawn in the spring when high stream flows tend to occur. To facilitate this migration, dam operators installed inflatable gates across the length of Blewett Falls Dam to control downstream flows. Unlike the previous gate design, inflatable gates allow for more controlled spills during high flows, lower reservoir level fluctuations, and fewer drawdowns of the reservoir for repairs during the year. A newly cut notch in the dam also allows passage for downstream migrating fish.

Additionally, Duke Energy and NOAA biologists monitored the movements of adult American shad in the river for eight years. This information helped them to determine that the best place to build a trap and transport area to later move the fish upriver was in the Blewett Falls tailrace near the powerhouse.

Construction has been ongoing since 2021 and Duke Energy expects the facility to be completed by fall of 2024. After a testing period later that year, it should be fully operational in 2025. Duke Energy will then begin moving adult American shad and blueback herring from the trap and transport area into the reservoir above the dam. This will allow them to continue their upriver migration. Once fish passage improvements are complete at the Blewett Falls Project, partners will begin work on measures for the Tillery Project.

[Read more about the initiative here \(https://www.fisheries.noaa.gov/feature-story/new-fish-passage-facility-restores-access-1000-miles-habitat-north-carolina\)](https://www.fisheries.noaa.gov/feature-story/new-fish-passage-facility-restores-access-1000-miles-habitat-north-carolina).

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