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Bridge, the LRAC
seeks to connect
people to the river.

Photo by Ecophotography

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Wiswall Falls Fish Ladder Construction

Background:

In 2011-2012, the fish ladder at Wiswall Falls in Durham was constructed. This project began as a job to address safety issues with the Wiswall Dam. Dam work is expensive and complicated, but the Town of Durham saw an opportunity to repair the dam and construct a badly needed fish ladder at the same time under the same permitting cycle. The Natural Resources Conservation Service (NRCS) provided a grant to fund about half of the \$1.9 million price tag.

The New Hampshire Department of Fish and Game was consulted and engineering plans were drawn up for the dam repair and fish ladder. The process was looking good and moving forward. Because Wiswall Falls is listed on the Register of Historic Places both in New Hampshire and federally, personnel from the NH Bureau of Historic Resources were invited to review the plans and do a site visit. This visit was when the original plan met its first major obstacle. The planned fish ladder would have permanently obscured and obliterated the historic sawmill foundation along the river. This was deemed unacceptable and the plan was rejected.

Through many revisions and delays, the final plan detailed needed dam repairs and a new fish ladder that would leave the remaining sawmill corner along the river untouched and protected. This section of granite foundation became known as "the corner of historic significance".

The Process:



Photo by Dave Cedarholm.

This photo shows the site before construction began. Note the blocks of granite along the river bank. These blocks formed what is left of the sawmill foundation. The "corner of historical significance" is behind the tree in the center back.



Photo by Dave Cedarholm.

This photo shows the initial footings of the fish ladder and the rough cut through the dam. The rusty steel coffer dam keeps most of the water out of the work site.



Photo by Dave Cedarholm.

In this photo, workers have completed making the dam cut-away smooth and ready for more fish ladder construction. Construction of the support gate tower on the far right is almost complete. Note the water in the work area, a nearly constant problem of leakage through the coffer dam due to an irregular and mixed-material river bottom.



Photo by Dave Cedarholm.

This shows a wider perspective of the dam cut-away and lots of water from an unexpected fall flood. The fish ladder tower is next to the "corner of historic significance".



Photo by Dave Cedarholm.

The worker is standing atop what will become part of the fish ladder entry gate at the base of the dam. The secondary coffer dam clearly is not holding back the water.



Photo by Dave Cedarholm.

This shows the plunge pool cut-away on the opposite shore from the historic corner and the fish ladder. The plunge pool lets fish to get over the dam in a series of smaller steps than if they were to go over the top of the dam.



Photo by Dave Cedarholm.

Most of the fish ladder construction is complete. The coffer dams have been removed and water is flowing over the repaired dam. Fish will enter at the base of the dam, swim up the first stage of the ladder, turn and head back toward the dam, and then out over the top of the dam.



Photo by S. Petersen

This view is from above the bridge looking down on the dam. Note the three gates: the left most gate releases water into the fish ladder, the two gates below and just left of the pole with the red sign are flood gates.



Photo by S. Petersen.

These are the flood gates on the up-river side of the dam. Unlike the old flood gates, these can be opened remotely from the shore.



Photo by S. Petersen

This shows the base of dam where the fish are funneled into the fish ladder (under the grating).



Photo by S. Petersen.

These are the flood gates on the down-river side of the dam. The fish ladder entry is just to the right of the flood gates.



Photo by S. Petersen.

The wood frames below the grating are baffles in the fish ladder. The baffles help to slow the flow of water through the ladder and provide refuges where the river herring can rest.



Photo by S. Petersen

Attendees at the ribbon cutting ceremony enjoy the completed fish ladder and a repaired, safe dam. May 3, 2012.

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