# MILL CREEK/ROCKY FLATS FISH PASSAGE PROJECT

Impact Report
Prepared for the Lyndhurst Foundation
By
The Nature Conservancy in Georgia
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## Section I. Budget

Lyndhurst and Riverview grant funds were critical in leveraging a 100K National Fish and Wildlife Grant. Together, these funds allowed the Mill Creek Fish Passage Project to be completed in a timely manner. See the Mill Creek Culvert Project Financials below for a breakdown of line items. Lyndhurst and Riverview funds were used on every line item.

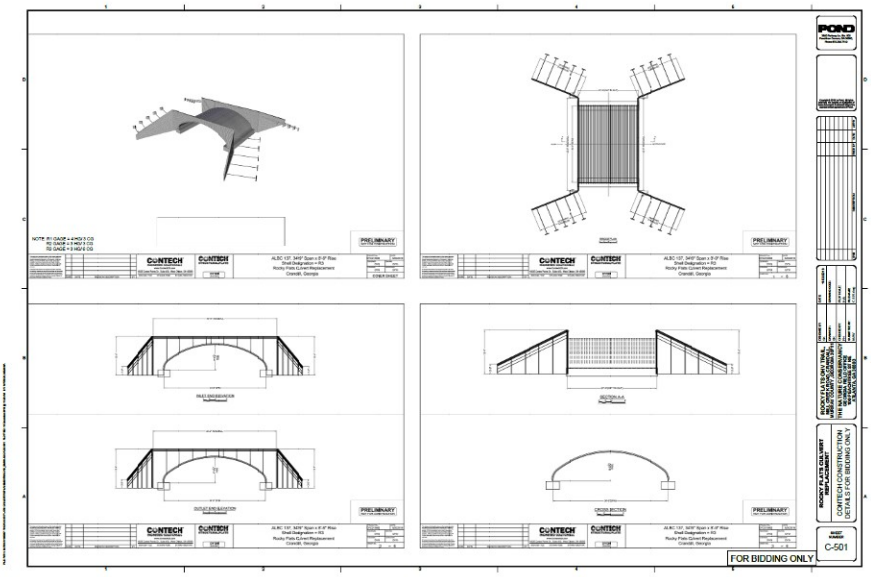
### Mill Creek Culvert Project Financials

| Vendor | Price |
|---|---|
| **Contech—Structure** | $110,076 |
| **R&R Trucking—Rock** | $23,400 |
| **Ace Hardware—Guardrails** | $747 |
| **Lumber—Guardrails** | $3,642 |
| **Colonial Acres—Trees** | $746 |
| **Construction and Equipment Rental** | $130,035.52 |
| **Total** | $268,646.52 |

## Sections II/III. Narrative Summary and Evaluation

DESIGN:

TNC worked with Pond and Company Engineering and the U. S. Forest Service throughout late 2018 on a design for the Rocky Flats/Mill Creek crossing. The final design called for a bottomless Aluminum Box Culvert (ALBC 137, 34'-9" Span x 8'-9" Rise, Shell designation = R3 structure with express footings). TNC ordered the bottomless structure from Contech in March 2019 and it was delivered in June 2019.




SAMPLING:

In July 2019 TNC and Georgia DNR conducted pre-construction fish sampling at four sites in Mill Creek. Sampling was conducted at two lower sites, approximately 2.5 and 4 miles downstream from the collapsed culverts. Sampling was also done just below and just above the culvert.

Species diversity was about three times greater downstream of the culvert. Upstream sampling found a low abundance of more traditionally robust species like the Creek Chub (*S. atromaculatus*).

CONSTRUCTION:

The United States Fish and Wildlife Service (USFWS) Southeast Fish Habitat Team removed the two failing pipe culverts on September 5, 2019. On September 10, 2019, volunteers from The Nature Conservancy and the U.S. Forest Service worked with the USFWS crew to assemble the new culvert, screwing in hundreds of nuts and bolts. The crew finished installing the new Contech Aluminum Box Culvert on September 23, 2019.

When TNC submitted the Lyndhurst and Riverview grants we were expecting to have to cover the cost of a contractor in addition to the new structure and materials needed to install it. Having USFWS as a partner in this fish passage project was an incredible savings and allowed TNC to cover the full cost of the bottomless culvert and all the materials needed to put the culvert in place. It also allowed TNC to develop a good working relationship with the USFWS Fish Habitat Team, who is now eager to collaborate on more fish passage projects in the Conasauga Watershed.

The biggest challenge of the Rocky Flats project was navigating large heavy equipment up the mountainous Forest Service roads. All the partners worked together to find the best routes and, while it was a slow process staging equipment at the site, impacts to the local roads and flora were minimal.

# MILL CREEK/ROCKY FLATS FISH PASSAGE PROJECT

To date, the fish passage portion of the Mill Creek/Rocky Flats project is complete, and the removal of this barrier has immediately opened-up an additional six miles of stream habitat to aquatic species downstream of Rocky Flats.

This project also stabilized sediment that was previously washing into Mill Creek as a result of the sinkhole created by the collapsed culverts. Mountain stream habitats, like Mill Creek, are highly sensitive to sedimentation which can have a number of direct and indirect effects on aquatic communities. Direct effects can range from loss of spawning sites to gill clogging, while indirect effects include loss of habitat through homogenization and even oxygen depletion. This habitat homogenization, which ultimately leads to homogenization of fish assemblages, is a key threat to these watersheds and the highly specialized species that rely on the habitat diversity of the Upper Conasauga Watershed. Diffuse sediment inputs, like that of Rocky Flats, degrade stream ecosystem function which is why reduction of sedimentation is listed numerous times throughout the Georgia State Wildlife Action Plan as a high priority conservation action.

Aquatic species expected to utilize the additional six miles of habitat in this watershed include:

| Species | Common Name | Federal Status | State Status |
|---|---|---|---|
| ***Cyprinella caerulea*** | Blue shiner | Threatened | Endangered |
| ***Etheostoma trisella*** | Trispot darter | Proposed Threatened | Endangered |
| ***Percina kusha*** | Bridled Darter | Endangered | Endangered |
| ***Hamiota altilis*** | Finelined Pocketbook | Threatened | Threatened |
| ***Pleurobema georgianum*** | Southern Pigtoe | Endangered | Endangered |
| ***Pleurobema hanleyianum*** | Georgia Pigtoe | Endangered | Endangered |
| ***Ptychobranchus foremanianus*** | Rayed Kidneyshell | Endangered | Endangered |
| ***Villosa umbrans*** | Coosa Creek Shell | - | - |
| ***Villosa nebulosa*** | Alabama Rainbow | - | - |

Additionally, numerous, more common fishes, mussels, and crayfish endemic to the Upper Coosa River Basin will benefit from this project. The GA DNR has documented 18 fish species in the reach below the Mill Creek culverts within the last five years.

In addition to improving fish passage, the installation of the Rocky Flats bottomless culvert reopened access into over 1,000 acres of Chattahoochee National Forest. This is important not only for public access, but also for management. Rocky Flats provides the only access into a 1,172 acre prescribed burn unit. Allowing prescribed burns to take place every few years keeps the leaf litter in the forest down, which prevents catastrophic wildfires and improves overall habitat for terrestrial wildlife.

TNC and the Forest Service will finish up work at Mill Creek with a tree planting on Saturday, February 29th, 2020 in order to provide long term shading for aquatic species adjacent to the new culvert. TNC and DNR will also complete post project fish monitoring in the spring of 2020 in order to capture fish movement data.

## Section IV. Appendix

*Fig. 1. Baseline: Two perched culverts, with the one on the right collapsed in the center. By the time we started construction the collapse had blocked all flow through that culvert and there was significant scour downstream.*


*Fig. 2. Staff from USFWS, USFS, and TNC gathered to help assemble the new bottomless culvert. This workday was a great way for people to contribute to the project and gave many a chance to see the site for the first time.*

*Fig. 3. September 23, 2020 - Immediately after installation was complete.*

*Fig. 4. February 20, 2020 - Mill Creek and Rocky Flats crossing.*