

Wilderness Watch

Restoration Efforts at Apetowun Creek

Reconstruction efforts at Apetowun Creek near Hinton are now complete following the devastating flood of coal mining wastewater which was released following a tailings pond collapse in October 2013 at the Obed Mountain coal mine. The restoration project – led by a team from Hatfield Consultants – began in 2018, following a legal settlement against Prairie Mines and Royalty who pleaded guilty in June 2017 to two counts of violating Canada's *Fisheries Act*.

The project components include the remediation of 4.4 kilometres of aquatic and riparian habitat within the impacted portion of Apetowun Creek downstream of the tailings pond failure, the construction of a barrier to fish passage in the upper portion of the watershed, the relocation of genetically pure Athabasca rainbow trout above that barrier, and 10 years of ongoing monitoring to assess the effectiveness of the remediation work.

AWA conducted site visits to Apetowun Creek in both 2020 and 2021 to observe and report on the restoration efforts, and we recently checked in with the team at Hatfield Consultants for an update on their progress since our visit last year.

Stream remediation activities were completed shortly after AWA's last visit in September 2021. During that visit, we had the opportunity to observe electro-fishing efforts to recapture genetically pure Athabasca rainbow trout which would then be reintroduced to their new home above the fish passage barrier. The barrier is intended to provide a dedicated refuge habitat for at-risk populations of native Athabasca rainbow trout and prevent competition and hybridization with non-native trout species. The original intent was to capture and relocate 50 breeding pairs of mature adult fish (i.e., 100 fish in total), however only 77 fish were successfully moved in 2021. Following consultations with both Fisheries and Oceans Canada and Alberta Environment

and Parks, it was decided that 77 fish would be sufficient for remediation purposes, and the recapture component is now completed.

The next step in the restoration project is the implementation of the Long-Term Monitoring Program which requires 10 years of ongoing aquatic (and overwintering) habitat assessments, spring spawning surveys, fish community surveys, benthic invertebrate monitoring, and water quality assessments.

2021 was the first year of post-remediation aquatic habitat assessments, which is necessary to establish post-remediation baseline conditions, against which to compare newly collected data in subsequent years of monitoring. Establishing baselines is necessary for long-term monitoring in order to understand the effectiveness of the restoration work and to assess the recovery of the ecosystem. Future monitoring will help determine whether the 77 relocated Athabasca rainbow trout is a suitable size to support a self-sustaining population, but the Hatfield team are confident that the remediation of Apetowun Creek has improved fish habitat characteristics such as reducing direct sun exposure, increasing cover, minimizing barriers to fish movement, and re-establishing riparian vegetation.

From our discussion with Hatfield, the activities conducted in 2022 have included a spring spawning survey, an assessment of the benthic invertebrate community – the primary food source for Athabasca rainbow trout – as well as a fish community survey. The results of these monitoring activities are still being analyzed and are to be published in Hatfield's Annual Report, which is expected sometime in early 2023.

- By Phillip Meintzer



During AWA's site visit in September 2021, we were given a tour of the reconstruction efforts at various sections of Apetowun Creek that had been washed out by the coal mine spill, including the creation of artificial stream banks (pictured). Reconstruction efforts are now complete. Photo © P. Meintzer