CFRTAC
Clark Fork River
Technical Assistance Committee

June 2026

Clark Fork Cleanup Then & Now

Lessons Learned and the Challenges & Opportunities Ahead

It's been sixteen years since the first truckloads of contaminated soils were removed from the Upper Clark Fork floodplain. The scale and complexity of this massive project has few parallels, requiring creativity, patience, and a willingness to learn and adapt. What are the key lessons, how have strategies changed, and how can we ensure the best results possible for the work ahead?

Cleanup and restoration of Reach A of the Upper Clark Fork (UCF) corridor - from Warm Springs to Garrison - began in 2010 and is expected to continue at least through 2038. Reach A is divided into 22 phases, of which 9, plus several areas in Deer Lodge, have been completed as of June 2026. Phase 7 (near Racetrack Pond) was completed in December 2025, with wetlands to be constructed in 2026, and sampling and other preparatory work is underway for the next scheduled phases, including 13/14 (includes Arrowstone Park), and 10 - 12 (between Sager Lane and Deer Lodge). No new cleanup-related construction is expected in 2026.

As the Montana Dept. of Environmental Quality (DEQ) and Montana Natural Resource Damage Program (NRDP) begin work on the next five phases, we're looking at how the process has evolved, and how the lessons of the past can inform cleanup and restoration designs of the phases ahead. Here are some of the key issues we're tracking:

River & floodplain connection

Then: One risk of cleanup is that the extreme disturbance caused by construction can leave the floodplain vulnerable to high water events that could damage or destroy still-recovering banks and wash away seeds and plants. To prevent this, banks were rebuilt to a conservative (high) elevation and were reinforced with "double vegetated soil lifts" consisting of two layers of coconut husk "coir logs" (see photo) and willow cuttings. This conservative design limited how often the river can inundate the floodplain, which in turn can inhibit plant regeneration and reduce the dispersal of nutrients and native seeds, slowing recovery.

Stream bank rebuild in 2013 in Phase 1 (near Warm Springs). The coir logs just below the soil line are no longer used for bank construction, replaced by brush matrices in later phases.

Now: More recent designs balance short-term risk reduction with long-term improvements in floodplain function and vegetation establishment. Bank heights in phases 3, 4, & 7 (near Galen and Racetrack) were designed to allow for flooding twice every 3 years on average. This is a positive change. However, lower banks may also limit aquatic habitat development by reducing scouring and sediment transport (though the significance of this effect is unclear). They also increase the risk that floodwaters could remobilize remaining contaminants. ***Balancing floodplain connectivity and healthy habitat with stability during high flows is a central challenge of the cleanup, and requires continuous monitoring and design adjustments.***

Quality of aquatic & terrestrial habitat

Then: The goal of the cleanup is to remove toxic soils and tailings that continually erode into the river. Before the cleanup, some of the contaminated areas in the early phases included deep undercut banks, which provided some of the best trout habitat in those reaches of the river. As this material was removed and replaced with coir logs (which decompose slowly in this climate and provide limited habitat complexity), that habitat was lost. Early revegetation efforts also relied on widespread use of containerized plants, which were expensive and had low survival rates, and seed mixes that included non-native plants (alfalfa), which could be weedy and limit the success of desired native plants.

Riparian plants in Phase 1. Lowering banks to improve floodplain connection and using brush matrices will help plants regenerate faster and promote plant growth further across the floodplain

Now: DEQ and NRDP have made several important changes that address these issues. Coir logs were replaced with matrices of brush and live dormant willow cuttings that provide shade, undercut banks, wildlife habitat, and "roughness" to dissipate flow. Large woody debris, root wads, and log structures are now more frequently incorporated into bank design, which improves habitat and promotes pool development. Some bank features are left in place to preserve microhabitats that provide shade and shelter for fish. To promote natural revegetation of native riparian trees and shrubs, designs emphasize native seed mixes and local willow cuttings in addition to some containerized plants. DEQ and NRDP are prioritizing brush-matrix treatments, though they may not be feasible everywhere. Thus far results are promising where they have been used. ***We strongly encourage continued use of these strategies in future designs.***

Wetland Design

Then: Wetlands are extremely important for birds passing through the UCF, as it is a major migration corridor in the Pacific Flyway. DEQ and NRDP have developed (or preserved and/or improved) multiple wetlands in completed phases, typically sited in depressions where either contaminated or clean soils have been removed. These have aided floodplain recovery and are used by many birds and wildlife, though they were not generally designed to account for waterfowl habitat needs that differ by species, seasons, and life stages.

Now: In recognition of the fact that restoration of the Clark Fork represents one of the largest wetland creation projects in Montana's history, NRDP designed the wetlands in Phase 7 with input from waterfowl experts (including CFRTAC board member, Mark Mariano) to more intentionally include features benefitting migrating, breeding, nesting, and overwintering waterfowl. These include: 1) both emergent and submerged aquatic vegetation to provide diverse food sources; 2) variable water depth to diversify habitat and increase biodiversity; 3) promotion of seasonal, fluctuating water levels; and 4) woody debris, loafing bars, and nest boxes. We are also advocating for a design modification to ensure the coldest water from the wetland returns to the river. Big game, pollinators, reptiles, and amphibians will also benefit from these and other features, and the wetlands will help filter sediment and nutrients in the larger river system. Further, these benefits may promote economic development for Upper Clark Fork communities, as birders comprise the largest outdoor recreation growth in the country and waterfowl enthusiasts have already noticed the increased hunting opportunities in the region. ***Phase 7 wetland construction is expected in 2026.***

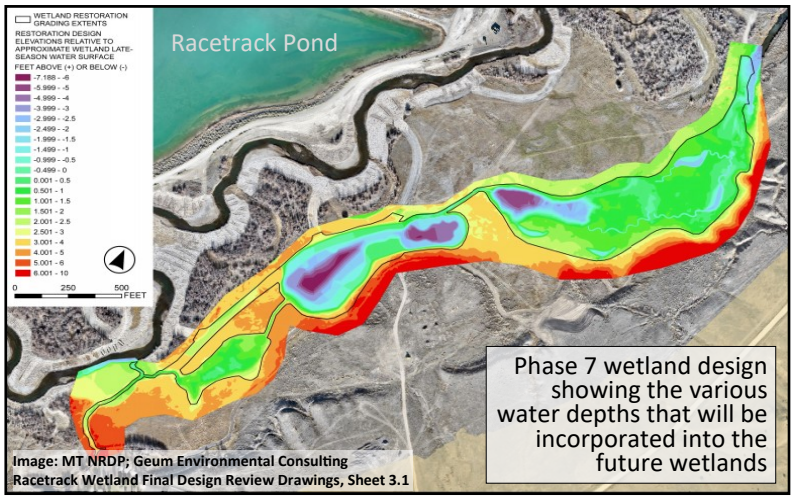

Image: MT NRDP; Geum Environmental Consulting
Racetrack Wetland Final Design Review Drawings, Sheet 3.1

Phase 7 wetland design showing the various water depths that will be incorporated into the future wetlands

The Elephant in the Floodplain

As noted in the 2023 Clark Fork River Operable Unit Strategic Plan, more than half of the funds for cleanup and restoration had already been spent by Sept. 2022, and "insufficient funds would remain" to complete the then-remaining 15 phases without design changes. The biggest change has been to reduce the amount of contamination being removed from the floodplain from a conservative buffer zone to a narrower buffer that is "less conservative but still protective." Budget constraints also limit the extent to which preferred bank treatments, revegetation strategies, and wetland designs can be applied.

How do we ensure there's enough money to finish the next 13 phases? Is a less optimal design worth it if means more money to clean up Arrowstone Park? There's no shortage of tough questions. DEQ and NRDP will release projections for future work and remaining phases this summer. An update to the strategic plan is still in the works.

CFRTAC is encouraged by and supportive of the positive changes being implemented. We understand that there are many questions and hurdles ahead. No matter the results, we will continue to work to ensure the best outcome possible for people, wildlife, and the river.

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Helping local communities learn about and engage in Superfund remediation and restoration of the Clark Fork River

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