



TREMENDOUS OPPORTUNITIES EXIST TO IMPROVE THIS HISTORICALLY MINED STREAM

Placer Mine Reclamation Jack Wade Creek Project



THE BUREAU OF LAND MANAGEMENT

Exploring new techniques to improve placer-mined stream recovery

by Matthew Varner

The Bureau of Land Management (BLM) is developing a stream design/reclamation project within the Fortymile Wild and Scenic River corridor. This multi-year project will explore new techniques for reclamation of placer-mined streams. The goal is to improve stream reclamation to ultimately provide healthy fish and wildlife habitat. The project is being constructed under a cooperative agreement with the Salcha-Delta Soil and Water Conservation District.

The project is designed to accelerate the recovery of in-stream and riparian habitats in a historically mined area. The techniques used on this project will take into account major limiting factors that are unique to Alaska, such as significant ice accumulation and short growing seasons, both of which have contributed to stream reclamation

failures in the sub-Arctic. The project will serve multiple purposes, including:

- The creation of an outdoor laboratory for miners, consultants, agency staff, and the public to analyze the effectiveness of various reclamation techniques and explore how to incorporate them into existing mining operations.
- The establishment of a testing ground for various stream bank stabilization methods and riparian vegetation rehabilitation.
- The opportunity to evaluate recovery rates of a designed stream toward the BLM Performance Standards in the 43 CFR 3809 regulations.
- Training for BLM staff on data collection methods and the use of the data in the design,

construction, and monitoring of a stream reclamation project.

- Ensuring the sustainability of the mining industry by providing for recovery of public lands.
- The re-establishment of floodplain connectivity, healthy riparian areas, improved habitat heterogeneity, and reduced sedimentation and erosion in the project area.

The project area has a history of mining, but is now only open to recreational gold panning. Within the project area, the stream is in a degraded state with poor floodplain connectivity and limited riparian vegetation. Instream habitats are homogenous with few quality pools. Compared to reference streams in the region, the density and biomass of Arctic grayling within the project area is well below expected levels.

A Three Part Project

Training, Planning and Design

In 2012 and 2013, BLM staff attended workshops on stream reclamation, including sessions on the Stream Functions Pyramid, a method of classifying how well a stream functions, data collection techniques, and natural channel design. The final workshop to develop the stream channel design for this project area and to model sediment transport was held in December 2014. In early 2015, staff created documents required by the National Environmental Policy Act and obtained the needed permits.

Construction

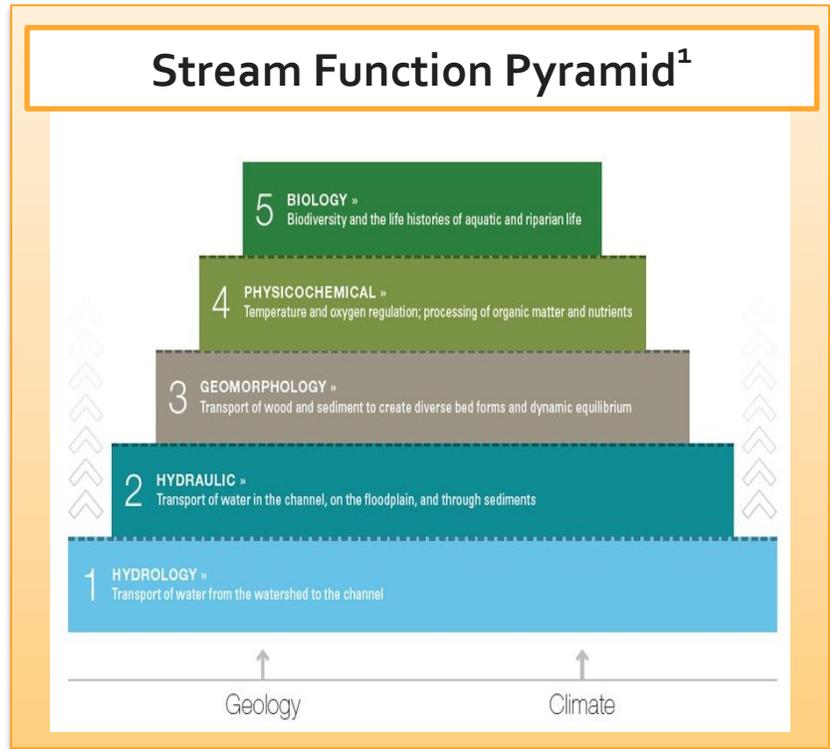
Work is being done in summer 2015.

Evaluation and Monitoring

Post construction, BLM will evaluate the reclamation efforts and monitor the site to observe how ice scouring and flooding affects the reclamation.

The demonstration project site (below) shows the effects of past mining. The creek is cutting through the tailings and the stream is disconnected from the floodplain.

Downstream sites on Jack Wade Creek, like the one pictured below, will serve as a reference for the potential of the site.



¹Harman, W., R. Starr, M. Carter, K. Tweedy, M. Clemmons, K. Suggs, C. Miller. 2012. A Function-Based Framework for Stream Assessment and Restoration Projects. US Environmental Protection Agency, Office of Wetlands, Oceans, and Watersheds, Washington, DC EPA 843-K-12-006.