



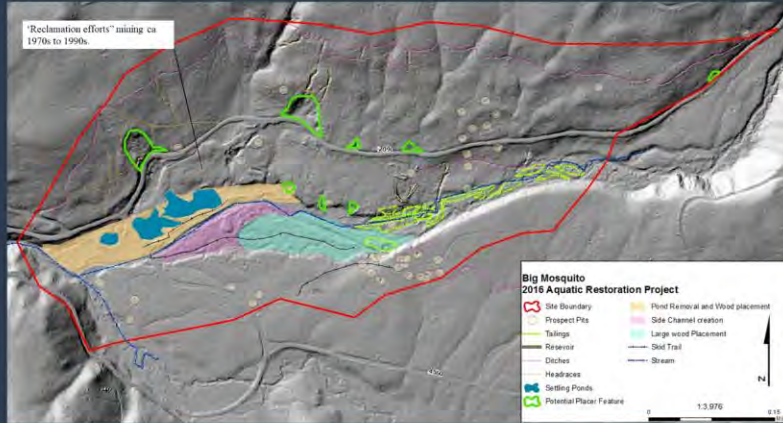
# Sink or Swim- Archaeology and Aquatic Restoration on the Malheur National Forest



Emily Modelski, Archaeologist  
Blue Mountain Ranger District, Malheur National Forest

## Abstract

The Forest Service is a multi-use agency that works to maintain and improve the health, diversity, and productivity of the nation's forests. This requires collaboration with other federal agencies and resource specialists to plan and implement projects on Forest Service managed lands. Sometimes this means protecting archaeological resources through avoidance and sometimes it means mitigation. This poster looks at some of the Aquatic restoration projects on the Malheur National Forest, reinstating floodplain function and resiliency, and how we as archaeologists protect our cultural resources or mitigate for potential effects to Historic Properties. In the past, restoration has included heavy equipment use, tree tipping, removal of sections of railroad grades, and planting riparian plants. While site avoidance is preferable during these projects, it isn't always possible, and mitigation provides an opportunity to meet restoration goals and adhere to the National Register of Historic Places (NHPA) Section 106. This includes identifying contributing and non-contributing elements to the NRHP, consulting with the State Historic Preservation Office (SHPO) and allowing removal of non-contributing elements while protecting contributing elements for avoidance. This may also include site testing and/or funding for archaeological research projects on the Forest. The goal of this poster is to provide an example of what working for a federal agency as an archeologist looks like and how we collaborate with other specialists to reach our mutual goals while representing our resources.



## Project Example



- Before:
- A railroad grade reduces the size of the floodplain
  - The channel has been simplified and there is a less productive riparian system
  - The lack of vegetation provides little to no shade, not maintaining cool water temps

- Post-implementation:
- The railroad grade has been removed and the floodplain opened
  - Large wood has been placed to inundate the floodplain, catch sediment, and create complexity
  - Native Riparian plants have been planted to create shade

- Next spring:
- Water has inundated the entire floodplain
  - The river channel is becoming more complex with the added water during spring melt
  - Riparian plants have established roots and will come out of dormancy

## Historic Impacts



Railroad grades and mining features represent some of the largest and most common barriers to waterways and threatened fish species on the forest.



## Project Design

Above is a proposed aquatic restoration project that falls within a large mining complex site. The site includes both early 20<sup>th</sup> century mining as well as more recent mining from the 1970s to 1990s. Avoiding the site was not an option for this project. So where do we go from here? Let's start with some questions:

- Is the site eligible for the National Register of Historic Places?
- What components within the site contribute to the site eligibility?
- What actions does the project propose and how will these affect the site?

Once we have looked at the project proposal and answer the questions above, we can create Project Design Criteria (PDCs). These are "rules" set-in place for the duration of the project to protect the resources. For example:

- Pre-implementation inspection and implementation monitoring will be conducted to ensure significant features and subsurface artifacts are located and avoided
- All significant features and artifact concentrations will be flagged for avoidance and a map will be provided to the Project lead of their location



In the photo above, the feature marked in pink was flagged for protection before work and an archaeological monitor was in place while machinery worked around the feature

## Mitigation

Mitigation is required when eligible or potentially eligible sites are impacted during a project. When this happens, the Forest Service works with the State Historic Preservation Office (SHPO) to create a Memorandum of Agreement (MOA). This document outlines the goals and expectations of mitigation.

There are many different types of mitigation that can occur including site testing, educational outreach, interpretive signs etc. as well as documentation to record the mitigation actions.

For the Camp Creek project pictured to the right, mitigation included a drone flyover of the Oregon Lumber Company railroad camp site.



These photos feature volunteers from the 2021 Passport in Time (PIT) project performing site testing on another Malheur FS site. Projects like this one can be funded as part of mitigation.



Mitigation also provides an excellent opportunity to include partners such as universities, museums, or our consulting Tribes. The Malheur NF has had many partners throughout the implementation of these projects.

## Partners - Thank you!

