

Restoring Functional, Sustainable Floodplain and Watershed Processes: Grande Ronde Subbasin Rock Creek and Bird Track Springs Projects-2018

Allen Childs, Jake Kimbro, Ian Wilson, Travis Dixon, Dave Mack
CTUIR Department of Natural Resources, Grande Ronde Habitat Project, La Grande, OR

Introduction

Northeast Oregon's Grande Ronde River and many of its tributaries historically supported viable and productive native fishery resources. Anthropogenic alteration of the watershed has decreased habitat quality, quantity, and fishery productivity.

The Rock Creek and the Bird Track Springs Fish Habitat Enhancement Projects were identified as having high potential for fishery productivity. Planning and design teams focused project development to address habitat limiting factors using the CTUIR's River Vision (Figure 1) as a guide to restoring watershed process and function that support aquatic First Foods (Figure 2).

Project goals and objectives focused on increasing habitat suitability for all life stages of salmon and steelhead. Actions included habitat protection, streamflow conservation, improved passage, restored floodplain connectivity, and natural channel morphology. Additional actions included enhanced habitat complexity, side channels, and riparian/wetland communities.

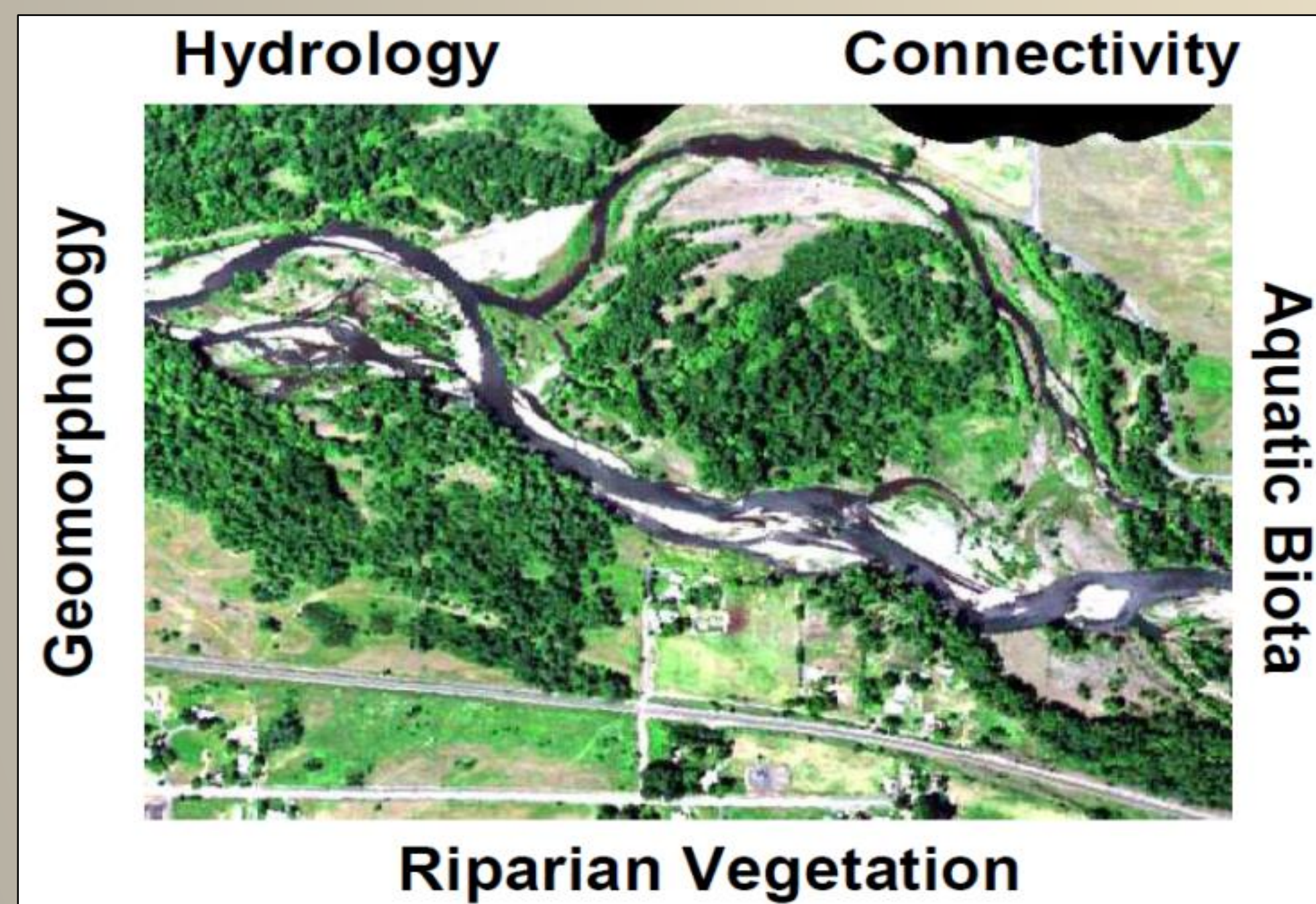


Figure 1: CTUIR's River Vision (Jones et al. 2008) identifies physical and ecological processes of a highly functional and dynamic river system integral for providing water quality and fish habitat that supports aquatic First Foods.



Figure 2: CTUIR First Foods.

Rock Creek Phase 3 Construction



Rock Creek pre-project photo April 4, 2018 (looking upstream).



Rock Creek post-project photo November 20, 2018 (looking upstream).

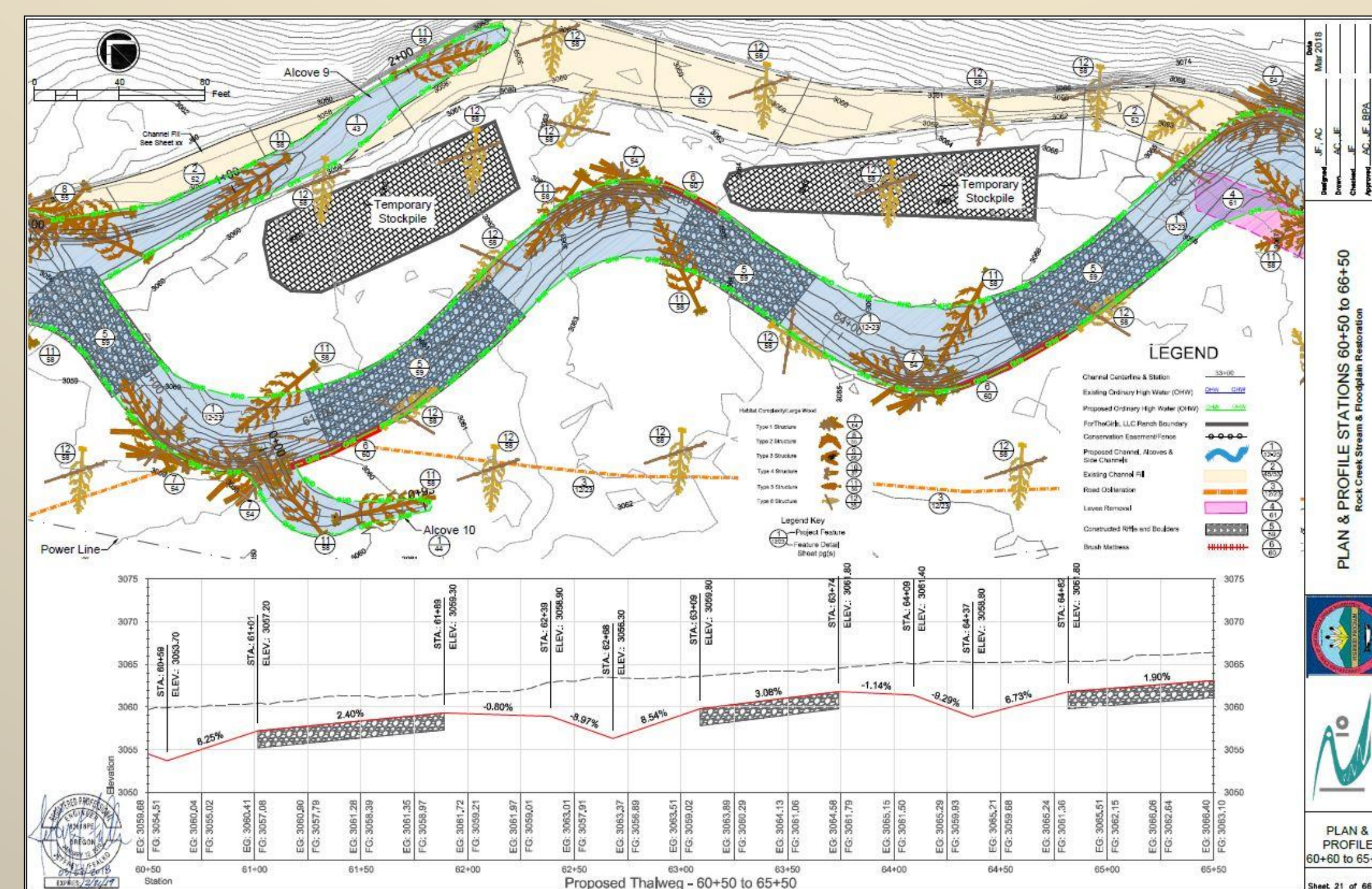


Rock Creek riffle construction, September 6, 2018 (looking upstream).

- 36 large pools created
- 4300 feet of new channel
- 462 feet of new side channel
- 1500+ large wood pieces
- 1833 feet of levee removed

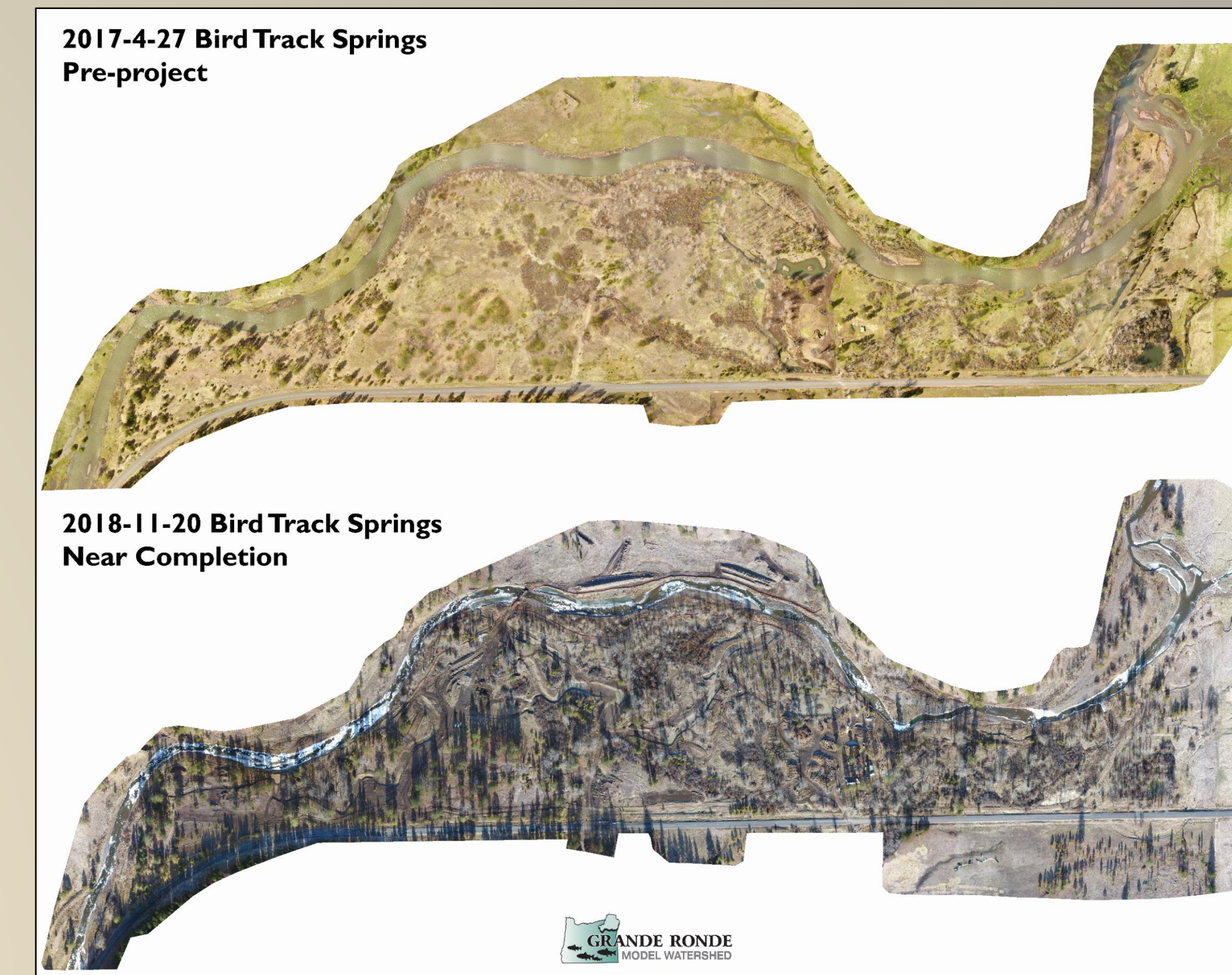


Adult Steelhead (*O. mykiss*).

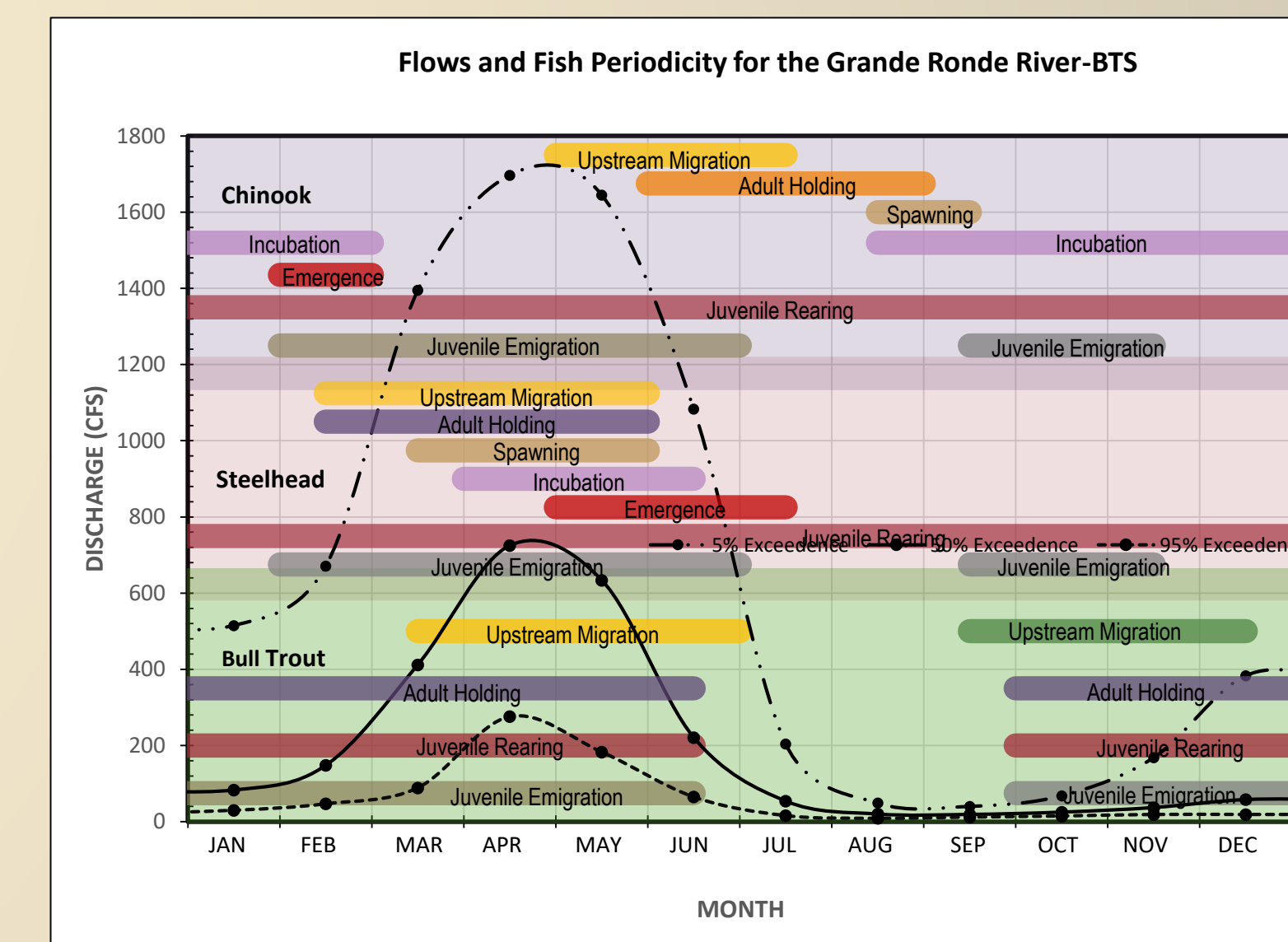


Rock Creek Phase 3 Plan and Profile at stations 60+50 to 66+50.

Bird Track Springs Phase 1 Construction



Bird Track Springs pre-project April 27, 2017 and near-completion of Phase 1, November 20, 2018.



Bird Track Springs flows and fish use (periodicity) chart.



Completed large wood fish habitat structures on the Grande Ronde River.

Discussion

- Innovative, extensive use of GPS machine control allowed more efficient channel, swale, and floodplain grading and precise placement of key members within large wood structures.
- Collaboration, scale, and nested stream restoration projects create synergistic value for species at high risk and may prove to be more resilient to climate change compared to single projects.
- Monitoring efforts will be ongoing, using Action Effectiveness Monitoring (AEM) protocols.

Acknowledgements

