

Scientists monitor the Middle Fork year round.

Researchers snorkel in the Middle Fork looking for fish.



Benefits of River Restoration

Salmon and steelhead are important to the Pacific Northwest's economy, recreation, and culture.

Habitat restoration affects more than just fish. Restoration efforts can:

- Improve air and water quality
- Improve a community's ability to withstand floods and droughts
- Create habitat for fish and wildlife
- Create jobs and increase local spending

Restoration in the Middle Fork IMW created 213 jobs and brought \$16.9 million dollars into the local economy.



Crews catch and relocate fish to prevent them from being harmed by construction of a restoration project.

Want to Learn More?

For more information, visit our website:

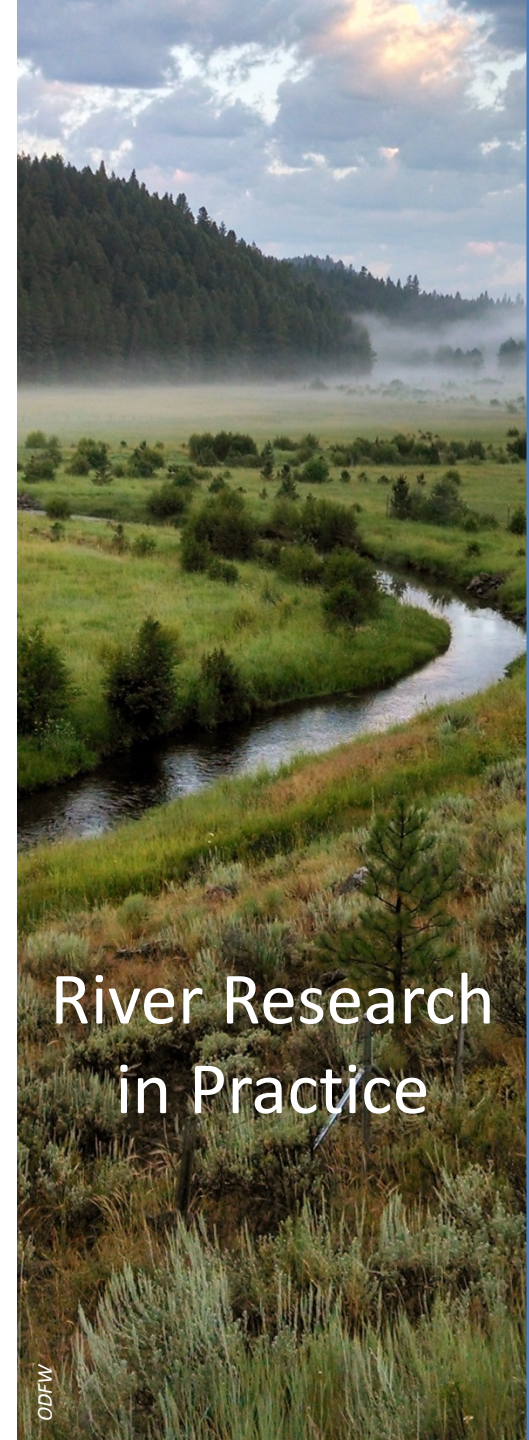
www.middleforkimw.org

Or email us:

info@middleforkimw.org



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River Research in Practice

What is an Intensively Monitored Watershed?

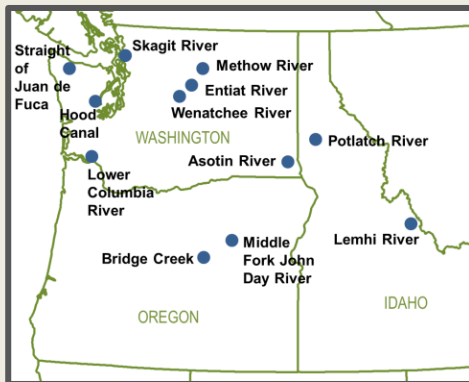
Intensively Monitored Watersheds (IMWs) are long-term research projects designed to deepen our understanding of how fish populations respond to habitat restoration.



Threatened steelhead trout are being monitored in the Middle Fork IMW.

The guiding principle behind IMWs is to learn what works to recover salmon, steelhead, and their habitat by concentrating rigorous, coordinated monitoring efforts across watersheds.

IMWs are strategically located across the Pacific Northwest to maximize what we can learn. In the long-term, IMWs will help communities focus stream restoration on the places and projects that provide the greatest benefit to fish.



Middle Fork of the John Day River

Why Study the Middle Fork?

For generations, the Middle Fork of the John Day River has played an important role in the lives of Native Americans, miners, loggers, ranchers, hunters and fishermen, outdoor recreationists, residents and visitors. Given all these uses, the river has been altered from historic conditions. Efforts are now underway to restore the Middle Fork to a more natural condition.

The Middle Fork became an IMW in 2008. The Middle Fork is home to both steelhead trout and Chinook salmon. Steelhead are listed as threatened under the Endangered Species Act. Chinook numbers are also a concern.

Since 2008, more than 100 restoration projects have been implemented in the Middle Fork watershed.

Scientists are monitoring the Middle Fork to understand how these restoration projects affect fish populations and habitat. Scientists will continue to work with landowners to monitor and track changes over time.

What We Did

- Fish Passage: 122 miles opened/ improved
- Channel reconfiguration: 35 miles improved
- In-stream habitat: hundreds of complex wood structures
- Flow: 6 cfs instream increase
- Streamside fencing: 21 miles
- Streamside plantings: 15 miles

Habitat construction underway on the Middle Fork.



What We Learned

- Stream temperatures are still the main limiting factor for steelhead and Chinook salmon in the Middle Fork.
- Fish habitat improved but fish populations did not increase, probably due to high stream temperatures that require longer-term recovery.
- Lack of shade is the primary reason for temperature gains in the mainstem.
- The mainstem is cooled more by cold water tributaries than by groundwater.
- Bank-building and erosion-controlling vegetation improved when livestock were absent.
- Even when livestock were absent, deer and elk browsing limited growth of newly planted trees and shrubs.