Hallowat Creek Fish Habitat Restoration

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In the summer of 2005, River Design Group, Inc., Montana Fish, Wildlife & Parks and the Flathead National Forest implemented an in-channel large wood reintroduction project for Hallowat Creek, an important bull trout stream in the North Fork Flathead River drainage near Big Creek, Montana. The project was an effort to re-establish stable habitat-forming large wood structures that were compromised by fire suppression efforts associated with the Moose Fire on the western flank of Glacier National Park in 2001. Fire suppression activities included cutting large wood in the stream corridor with the intention of using Hallowat Creek as a fire break. Subsequent runoff events mobilized the cut large wood, leading to habitat simplification, localized channel scour, and spawning gravel loss.

Habitat enhancement project goals included constructing large wood complexes to promote spawning, juvenile rearing and adult cover habitats for bull trout and other aquatic species. Structures were built with green trees harvested from the adjacent floodplain, dead trees from the channel and floodplain, and burned trees imported from off-channel donor sites. Four types of structures were built with varying degrees of interaction with the stream. Post-project monitoring has been completed to track structure stability and stream channel response to the structures. Monitoring results suggest the most stable structures were ones that were comprised of an existing natural large wood jam that was augmented with additional wood. Pool habitat increased in the three monitoring reaches, with expansion of pool habitat related to both large wood structure locations as well as channel hydraulics unrelated to installed large wood. On-going bull trout spawning monitoring completed by Montana Fish, Wildlife & Parks will assess bull trout productivity in the drainage. To date, the number of spawning redds have mirrored trends in reference streams in the Flathead Basin.

All photos courtesy of River Design Group, Inc, 2010

***Hallowat Creek** bounded the western edge of the Moose Creek Fire, a large wildfire that burned portions of Glacier National Park and the Flathead National Forest in 2001*

A helicopter and spyder excavator were used to build large wood structures designed to provided bull trout habitat, trap spawning gravels, and increase channel complexity

An example large wood habitat structure following construction (above) and three years after construction (right). This structure accumulated more wood and generated channel scour, providing cover for juvenile bull trout and other species.