

Stream Fire Study: Year 3 Report

In 2003, we collected information on amphibians, macroinvertebrates, vegetation, burn severity, and stream habitat conditions across several watersheds in Idaho, Montana, and Oregon.

To understand stream community responses to wildland fire, we sampled 31 burned and 29 unburned streams across 8 watersheds in Idaho, Montana, and Oregon from May to September 2003. We sampled 11 burned (2000 Diamond Peak Fire Complex) and 10 unburned streams in central Idaho, 11 burned (2000 Bitterroot Valley Fire Complex) and 5 unburned streams in western Montana, and 9 burned (2001 Quartz Fire and 2002 Biscuit Fire) and 14 unburned streams in southeastern Oregon. As part of the prescription burn studies, we continued to collect pre-fire data on 10 streams on the Payette NF and 7 streams located near Grayback Mountain on the Siskiyou NF. On the Payette NF, 2 streams are within a burn-area planned for spring 2004 and 1 stream is within a burn-area planned for fall 2004. On the Siskiyou NF, 4 streams flow through an area planned for prescription burning in 2004.

In 2003, we sampled 1,827 one-meter transects to quantify the density of stream amphibians, invertebrates, and stream habitat conditions. We captured 3,142 tailed frog tadpoles across 3 states, 902 giant salamander larvae, mostly in Oregon and a few in Idaho, and 47 torrent salamanders in Oregon. Preliminary results from our retrospective wildland fire study suggest that tailed frogs have low reproductive success one year post-fire, followed by several years of highly variable tadpole survival. Giant salamander populations appear to be less affected by fire. To better understand amphibian responses to post-fire habitat changes over time, we plan to continue sampling these streams in 2004 and additional years if funding is available. Macroinvertebrate samples were collected in 5 streams in Oregon and 13 streams in Idaho. These samples are still being processed. Periphyton will be collected in a subset of streams in 2004. We recorded standard stream habitat metrics in all streams and collected water samples for major ion analysis at a subset of streams in Idaho. Complete analysis of amphibian, macroinvertebrate, periphyton, water chemistry, and habitat data is planned for fall of 2004.