

**Project Title:** Effects of wildland fire and prescribed fire on amphibians and aquatic habitats in the Northern Rocky Mountains

**Project Leader:** David S. Pilliod

**Participating Research Contacts:** Steve Corn, USGS, Missoula; Terrie Jain, RMRS, Moscow; Carol Miller, ALWRI, Missoula

**Participating Forests/Grassland Contacts:** Sam Hescoock and Mary Faurot, Krassel RD, Payette NF

### **Funds**

**Total Project Cost:** \$150,000

**Timeframe:** 2001-2005

**2002:** \$58,887

**2003:** \$87,073

**2004-2005:** \$0

### **Progress in 2003:**

The goal of the project is to quantify the effects of wildland fires and prescription burning on stream communities and habitats on the Payette National Forest, Idaho.

#### *Wildland Fire Study:*

In 2003, we sampled for stream amphibians and measured habitat conditions in 21 streams (10 within watersheds that burned in the 2000 Shellrock/Diamond Peak Fire and 11 in unburned watersheds). We collected benthic macroinvertebrate samples in 13 of these streams. We collected water samples for major ion analysis in 8 streams and measured hourly water temperatures in 15 streams.

#### *Prescribed Fire Study:*

We continued to monitor amphibian populations and habitat conditions in 10 streams and macroinvertebrate communities in 8 streams as part of an experimental before-after-control design that will examine the effects of prescription burning to reduce fuel loads in areas of the South Fork Salmon Sub-basin. Two spring burns (Reegan and Parks) and 2 fall burns (Fitsum and Dutch Oven) have been scheduled for 2004 (originally scheduled for 2003).

### **Plans for 2004:**

In 2004, we will use existing Joint Fire Science Program Funding (JFSP-01-1-3-12) to monitor stream amphibian populations and habitats in 21 streams and macroinvertebrate communities in 16 streams on the Payette National Forest. The 10 streams included in the prescription burn experiment will be sampled more intensively (e.g., immediately before and after the fires). For example, we will take additional water samples to determine changes in water chemistry during and after the fire, we will place additional temperature recorders in the streams to determine increases in water temperature, and set up sediment traps to record inputs of sediment. Amphibians and invertebrates will be sampled after the spring burns and before the fall burns. Canopy cover and woody debris and other habitat characteristics will be recorded at amphibian and invertebrate sampling locations.

**Products and/or tech transfer expected in 2004:**

We will be presenting preliminary results to Forest biologists and fire management personnel on the Payette National Forest. We will be writing up a portion of the wildland fire results for publication in a peer-reviewed journal and presenting this paper at regional meetings. As information and reports become available, we update our project web site: [http://leopold.wilderness.net/staff/projects/project\\_003.htm](http://leopold.wilderness.net/staff/projects/project_003.htm)

**Issues that need discussion with the R1/R4/RMRS Steering Group?:** (list)

Due to 1-2 year delays in the prescription burns, we will be unable to complete the project as proposed. However, Payette National Forest has been funded and approved to complete their planned fuel reduction projects associated with this study in 2004. Therefore, we would like to extend the prescribed fire portion of this project for an additional 2 years (2005-06). We have submitted a proposal to the Joint Fire Science Program to fund this extension so that we can provide information on the effects of fuel reduction projects on stream ecosystems to Payette Forest. This information will improve fuel management decisions, planning, and NEPA assessments and evaluations on the Payette Forest and have broad applicability to Regions 1 and 4. If not funded by JFSP, we would like to request additional funding from R1/R4 National Fire Plan Adaptive Management and Monitoring Program to complete this project.