

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Predicting ecosystem response to the removal of the Elwha River dams, Washington State

**Type of Project:** Research

**Funding Agency:** National Park Service, NOAA,

**Other Partners/Cooperators:** University of Montana

**Effective Dates:** 6/1/2004 - 12/31/2005

**Funding Amount:** \$31,079

**Investigators and Agency Representative:**

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Investigator: Ric Hauer, University of Montana, Flathead Lake Biological Station, 311 Bio Station Lane, Polson, MT 59860-9659, (406) 982-3301 x232, ric.hauer@umontana.edu

#### **Project Abstract:**

Dr. Hauer will be responsible assisting in the development of baseline ecosystem data for the Elwha River dam removal study. Dr. Hauer will utilize new technology, hyperspectral imagery and Acoustic Doppler Processing, to expand our current habitat inventory in the Elwha, as well as increase its overall accuracy and repeatability. Hyperspectral imagery coupled with Acoustic Doppler velocity Profiler (ADP) field data will provide a more robust, accurate, precise, and cost-effective tool to categorize aquatic and riparian habitats in large river systems. We will use this data to compare differences in the accuracy, precision, repeatability, and cost between remote sensing and traditional habitat survey techniques and in order to help make such efforts more efficient. The effort will occur for one week during the summer of 2004 and Dr. Hauer will be responsible for data collection, reduction, analysis, interpretation of results, synthesis, and publication of the remote sensing component of this exercise.

#### **Outcomes with Completion Dates:**

Peer-reviewed publishable paper comparing techniques that identify stream habitat types (12/31/2005).

**Keywords:** habitat inventory, Elwha River, dam removal, hyperspectral imagery, Acoustic Doppler Processing, Olympic National Park, University of Montana, NOAA, riparian habitat, salmonids

#### **For Administrative Use Only:**

Date Annual Report Received:

Date Final Report Received:

Publications, etc. on file: