



NONPOINT SOURCE SUCCESS STORY

Idaho

Addressing Erosion Improves the Lower South Fork Payette River

Waterbody Improved

The presence of eroding access roads on National Forest land prompted the U.S. Department of Agriculture's Forest Service to identify Idaho's South Fork Payette River as not meeting the desired future condition goals (physical and biological) outlined by the Boise National Forest Plan. As a result, the 24-mile-long lower South Fork Payette assessment unit was added to Idaho's 1994 Clean Water Act (CWA) section 303(d) list of impaired waters for sediment. In an effort to reduce sediment loading into the river, the Forest Service closed some erosion-prone roads and fixed eroding areas on other roads. Recent data show that sediment levels have dropped, but until biological data are collected, the Idaho Department of Environmental Quality (DEQ) will be unable to conclusively say that this segment is supporting its beneficial uses. As resources permit, DEQ will collect biological data to confirm that the assessment unit has been restored.

Problem

The 813-square-mile South Fork Payette River sub-basin begins in the Sawtooth Mountains and joins the Middle Fork Payette River near Garden Valley, Idaho (Figure 1). Most of the subbasin is in Boise County. The primary land use is forest; the subbasin is owned and managed almost entirely by the Forest Service (Boise and Sawtooth national forests).

Over the years, numerous roads were constructed for resource extraction and used for backcountry access and recreation. As they eroded, many of these roads contributed excess sediment to the South Fork Payette River (Figure 2). In 1990 the Forest Service developed the Boise National Forest Plan. At that time, a segment of the main stem of the South Fork Payette River was determined to be water quality-limited on the basis of exceedances of the Boise National Forest Plan standards and guidelines, as well as best professional judgment. As a result, South Fork Payette River assessment unit ID17050120SW001_05 (a 23.98-mile-long, fifth-order river segment stretching from the Deadwood River to the Middle Fork Payette River) was added to the 1994 CWA section 303(d) list for not fully supporting its cold water aquatic life beneficial use because of the presence of excess fine-grained sediment.

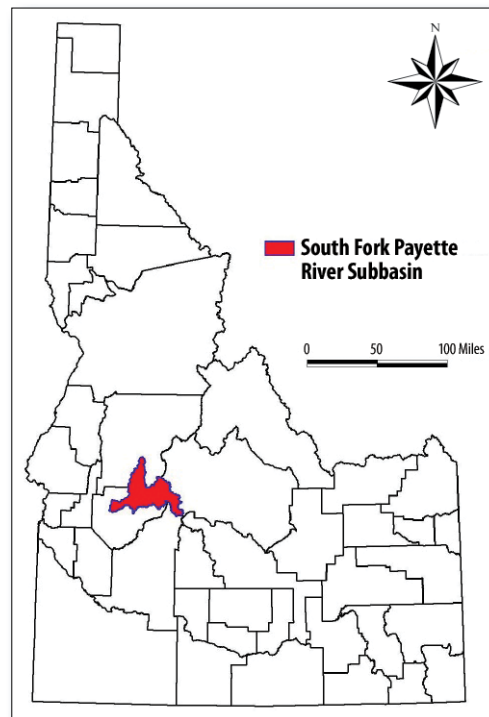


Figure 1. The South Fork Payette River subbasin is in west-central Idaho.

Project Highlights

The Forest Service outlined water quality improvement goals in its 1990 Boise National Forest Plan. (The plan has since been updated; a 2010 version is available.) To help achieve those goals, the Forest Service has implemented numerous projects in South Fork Payette River subwatersheds to reduce sediment loads entering the South Fork Payette River. Work in the South Fork Payette headwaters (upstream of the impaired assessment unit) has included closing 18 miles of road (2004, 2006 and 2009), performing road maintenance on 70 to 100 miles of road annually (2005–2013), closing six dispersed campsites to minimize impacts on riparian areas (2006 and 2008), stabilizing a 0.10-mile-long road cut (2007), replacing one stream crossing (2008), stabilizing one eroding streambank (2008), capping and revegetating 5 acres of fine-grained mine tailings (2007 and 2009), and replacing one culvert to improve fish passage (2011). Work occurring directly along the South Fork Payette River fifth-order assessment unit has included replacing four culverts to improve fish passage and to reduce erosion from the streambanks and roads.

Results

Recent monitoring results indicate that sediment levels in the South Fork Payette River have declined. Data collected in 2008 by the U.S. Geological Survey (USGS) showed that turbidity levels were low, ranging from 1 to 25 nephelometric turbidity units (NTU). Idaho's turbidity standard requires that turbidity levels not exceed background levels by more than 50 NTU instantaneously or more than 25 NTU for more than 10 consecutive days. South Fork Payette River data showed that the highest measurement of 25 NTU (on May 22, 2008) occurred at high flows of 3,940 cubic feet per second. This is far below the instantaneous standard and would also comply with the 10-consecutive-day standard.

In addition, in 2009 DEQ measured 14.8 percent depth fines in pool tailouts (the areas just above or below rapids) in the fifth-order assessment unit. This meets the monitoring target of a 5-year depth fines mean of 27 percent or less with no individual year being greater than 29 percent (a target adapted from the South Fork Salmon River Subbasin Assessment, which was developed in 2005 and updated in 2009).

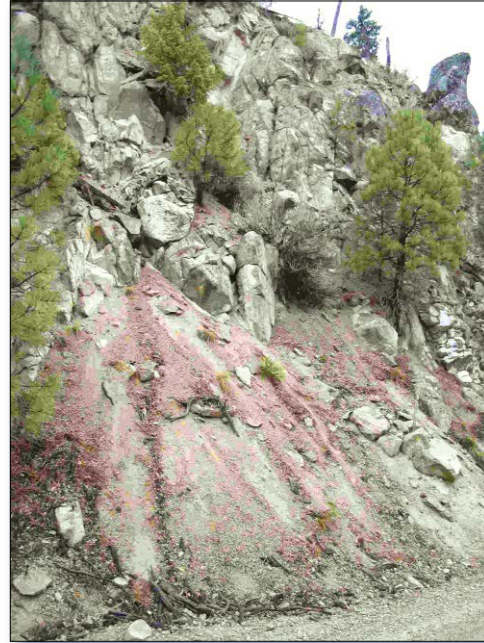


Figure 2. An eroding road cut in the South Fork Payette subbasin (photo by USDA Forest Service).

Collectively, these data indicate that assessment unit ID17050120SW001 _ 05 has improved. To confirm beneficial use support, DEQ will collect biological data in the near future. The assessment unit will remain in Category 5 (on the state's CWA section 303(d) list) until monitoring is completed.

Partners and Funding

Key watershed partners include the Boise and Sawtooth national forests, the Federal Highway Administration and the Idaho Department of Transportation. DEQ and USGS collected monitoring data. Partners have invested more than \$1.2 million on restoration and fish passage projects along the fifth-order assessment unit, including funds from the Forest Service (maintenance and Legacy Road funding) and the Federal Highway Administration (Highway Transportation for Aquatic Organism Passage [HTAP] program funds). Between 2011 and 2013, partners spent more than \$1.5 million within the upstream fourth-order assessment unit, using funds from HTAP, the Idaho Transportation Department and the Forest Service.



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