

ITEM 22

Riparian Area Condition

OBJECTIVE: Ensure compliance with Forest Plan standards for fisheries, water, and wildlife.

DATA SOURCE: Interdisciplinary team reviews and monitoring information from resource specialists.

FREQUENCY: Annually

REPORTING PERIOD: 1996

VARIABILITY: Deviation from riparian area and fisheries objectives.

EVALUATION:

Forest Plan objectives for fish and riparian areas center around preventing adverse effects on fish habitat by maintaining riparian flora, fauna, and water quality. This monitoring item discusses activities and monitoring associated with timber harvest, fire management, construction, grazing, and restoration in riparian areas. Although fire is a natural process on the landscape, it can have temporary adverse effects on fish habitat and so is considered here. The Forest Plan does not acknowledge the role of fire in riparian areas, or specify the effects of fires and fire suppression on fisheries and riparian areas. These issues need to be analyzed in the Forest Plan revision. Recreation also has the potential to alter riparian areas, and what monitoring did occur is discussed in Items 2, 28, and 29 and the Selway-Bitterroot Wilderness monitoring section.

Previous monitoring reports have documented the need to address various riparian issues, including describing desired conditions for riparian areas, determining how to measure livestock impacts, and establishing thresholds for impacts. A system of assessing riparian health, called "Proper Functioning Condition," was developed by the Bureau of Land Management and is being adopted by the Forest Service nationally. This direction is expected to help us address some of the questions regarding riparian management that we have identified.

MONITORING RESULTS:

Timber Harvest

Timber harvest occurred in riparian areas associated with two sales on the West Fork District. The West Fork Administrative Sale included removing blowdown from a creek and harvesting some material from riparian zones in order to reduce hazards along the highway and a power line. In the Flat Hughes Sale, one unit was harvested for aspen release and a portion of another unit involved removing timber from a riparian area. These sales were monitored by the sale administrator while they were occurring. Follow-up monitoring by an interdisciplinary team is needed to determine the effects of harvest on the riparian areas.

In 1996 timber harvest occurred in a riparian area along Larry Creek as part of a research study. This demonstration project involved removing a thicket of understory trees and thinning the overstory. The treatment, which covers only a few acres, is restoring historical forest conditions to the site. The harvest occurred over the snow and had little impact on soils, shrubs, or herbaceous plants. Over time, shrubs are expected to respond to the treatment with increased growth and vigor. The project was monitored as it occurred. In response to monitoring, extra trees were retained along the stream, and some trees were dropped into the stream to provide woody debris. Effects on the riparian area are expected to be positive.



Fire Management

The Willow Creek Fire Complex, a 398-acre wildfire, burned over riparian areas associated with several small tributaries of Willow Creek in 1996. Riparian shrubs and other vegetation resprouted except in the most intensely burned areas. The primary concerns for aquatic systems as a result of the fire are stream sedimentation and flooding, both of which could threaten fisheries. Rehabilitation to reduce the likelihood of these negative impacts included drainage crossing improvements, sediment traps in stream channels, sediment traps on intensely burned uplands, and seeding.

The Swet and Warrior Fires burned 44,189 acres primarily in the Frank Church-River of No Return Wilderness. Post-fire reconnaissance indicated that high intensity burns occurred in two tributaries of Deep Creek, the Wilkerson Creek drainage, and Surprise Creek. Riparian vegetation was killed along most of the severely burned streams. Fish populations in the Wilkerson and Surprise Creek drainages were probably profoundly changed, but within the overall fire perimeters it is expected that populations will recover quickly. These fires, while extensive, are thought to be within the range of pre-settlement fire pattern and severity (see Fire Management section). No riparian restoration was prescribed for these wilderness fires. (Swet Fire Burned Area Recovery Report, Draft, 10/96; Warrior Fire Burned Area Recovery Report, 9/96)

Prescribed management-ignited fires were designed to avoid riparian areas, and no effects were observed from this source. Managers have generally avoided running prescribed management-ignited fires through riparian areas to prevent adverse effects on fisheries, but it is becoming clear that many of these areas burned historically. Future fire management on the Bitterroot NF will need to consider using prescribed fire in riparian areas to restore natural disturbance patterns.

***** RESEARCH NOTE *****

A University of Montana graduate student is researching the importance of riparian areas to bird diversity on the Bitterroot NF and in the Bitterroot Valley. Results are demonstrating that landscape conditions adjacent to riparian areas, particularly agricultural lands versus coniferous forests, have different effects on birds. The study is also analyzing how parasitism and predation alter bird populations.

Construction

A Forest-wide monitoring trip reviewed rehabilitation work along the Bass Creek Trail. The trail was used to move equipment to the Bass Lake Dam for repair work, and following that work the trail was rehabilitated. The project had the potential to affect the riparian area along Bass Creek since the trail is located next to the stream. The review indicated that drainage conditions on the trail were improved, which should reduce the amount of sediment reaching the creek from the trail. The new drainage dips will probably require fairly frequent maintenance to remain effective. This could be a problem with low funding levels for trail work. There was some concern that the drainage dips might provide minor access paths to the stream. This could have some impact on the streambanks if it occurs. Effects on riparian shrubs and other vegetation during this project involved some crushing of plants by machinery. We expect this will be a short-term effect and that the vegetation will soon resprout. A natural slump occurred along the trail in November of 1995. This area was recontoured in 1996 to reduce the slope angle and limit soil movement into Bass Creek. A crew also placed rocks and slash below the slump to provide a filter area between the exposed soil and the stream. The work here was judged to be highly effective. Placement of straw and mats, as well as seeding, are planned to further reduce the impacts of the slump on the riparian system.

The work on the Bass Creek Dam itself did produce a two-day flush of very fine material into Bass Creek. There was deposition below the dam, which was caught by woody debris for the most part. The review team discussed that these effects could be reduced by requiring further drawdown prior to dam repairs. Monitoring during the project indicated that portions of the stream used for equipment crossings showed little impact, primarily due to the cobble substrate.

Storm events in 1996 caused damage to several roads and trails across the Forest. Approximately 30 such sites were identified, and many of these affected riparian areas. Teams of engineers, hydrologists, and fisheries personnel reviewed each site, and emergency repairs to minimize damage to streams were implemented. In addition, long-term solutions have been planned, most of which will be implemented in FY 1997. Monitoring of two slump areas on Forest Service roads in the Skalkaho Basin indicated that sediment was in one case localized near the failure, and in the other case a riparian buffer prevented sediment from reaching the stream.

Grazing

Meadow-Tolan Allotment. In accordance with an interdisciplinary plan developed in 1995, a fence was constructed to eliminate cattle access to portions of Meadow Creek. This project was completed in the spring of 1996 and monitored in September during one of the Forest's annual monitoring trips. Findings were that the fence is effectively limiting where cows can cross the stream. We intended to build the fence before the cows came into the area, but construction was delayed. We will continue to monitor the effectiveness of the fence and changes in riparian conditions. Further improvements are planned for FY 1997, which include gravelling exposed soil adjacent to the creek.

Camp-Reimel Allotment. Streambank trampling was monitored on Reimel Creek by the South Zone hydrologist. Current direction is that when 30 percent of the area is trampled, cattle are to be moved out. At the time of monitoring, trampling was 40 percent after five days of use. The cattle were removed immediately. It appears that the monitoring needs to take place a little sooner after cattle enter the area, and steps will be taken to ensure proper timing in 1997. The reduced duration of cattle use since 1991 is resulting in improved riparian vegetation along Reimel Creek.

Main Sleeping Child Allotment. An inspection of this allotment was conducted to determine if the Inland Native Fish Strategy (INFISH) was being met. No measurable impacts to fish habitat were found.

Gold Creek Allotment. Monitoring was completed on the No Name Creek portion of the allotment by the North Zone fisheries biologist in September of 1996. Overall, riparian conditions improved slightly compared to the 1995 grazing season, although livestock maneuvered around the drift fence. A section of fence constructed in 1996 was not breached, and successfully blocked at least two cattle trails to the creek. Some portions of this riparian area are still receiving impacts from cattle, but No Name Creek appears to be slowly re-establishing its channel and gravel substrate. A muddy hiking trail crossing near Gold Creek has been repaired with a new culvert and gravel. Fencing is effectively excluding cattle from Muddy Springs, an adjacent stream in this allotment.

Restoration

Work began in the Hughes Creek drainage on the West Fork District to rehabilitate a riparian area impacted by an inactive placer mine. The project involves restoring the area to a vegetated wide valley bottom and moving the stream channel to a more natural position in the middle of the valley. Rocks and woody debris will be used to increase channel stability and improve aquatic life and fish habitat. The project is scheduled for completion in FY 1997.