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# Wetlands Analysis and Evaluation, BMP 11.05

## Meadow Protection During Timber Harvest, BMP 14.16

### Objectives

- 1) To maintain wetland functions.
- 2) To avoid the impacts to soil and water associated with the destruction or modification of wetlands, bogs, and wet meadows.

Specific objectives were identified for Unit 7 as follows:

- 1) To establish a new age class composed of western larch, Ponderosa pine and lodgepole pine for one third of the area.
- 2) To provide growing space for the new trees, and reduce stress and fire-hazard to the existing stand.
- 3) To improve current insect and disease resistance.

### Site Description

Unit 7 of the Cave Helo Timber Sale is located on the east side of Road 602, ¼ mile from the junction of Cottonwood Lakes Road. The site is on the Seeley Lake Ranger District, of the Lolo NF in Section 22, Township 16N, Range 13W. LSI (Land Systems Inventory) soil classification is 700A.

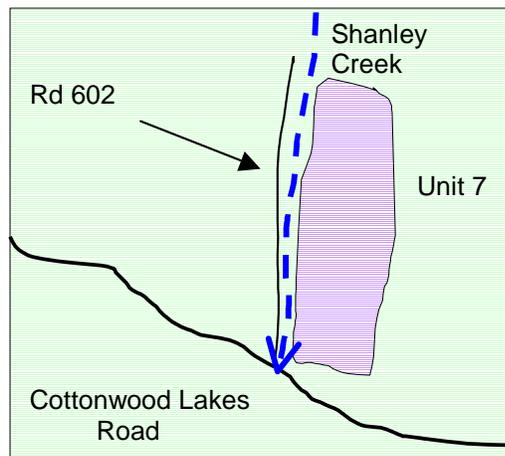


Figure 1

### Narrative

A special harvest prescription that allowed skidding equipment through a wet meadow to restore early seral stand structure, composition and age class diversity was arranged for Unit 7. Because harvesting in streamside areas and wet meadows is typically not permitted by the Montana Streamside Management Zone Law, an “Alternative Practice Authorization” was sought from Montana Department of State Lands (MT-DSL), with consultation from Forest Service specialists, including the Forest Hydrologist, and Fisheries and Wildlife Biologists.

Harvest was approved with the following mitigation conditions stipulated by the MT-DSL.

- 1) The sale administrator must approve crossing sites, to avoid locations where skidding equipment might disturb wet areas and overflow channels and cause damage to banks. The main channel of Shanley Creek would not be crossed.
- 2) Excess slash remaining from skidding activities must be removed by spring runoff (April 1<sup>st</sup>).
- 3) Landings would not be located in the streamside management zone of Shanley Creek.
- 4) According to Section 26.6.603(1) of the Montana SMZ law, broadcast burning would not be allowed unless further approval was gained. Hand piling and burning would be allowed in the openings created from the logging.
- 5) No equipment operation or harvesting would be allowed within 50 feet of Shanley Creek.

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- 6) Harvesting would be permitted only on higher terraces and prohibited in the overland flow channels or adjacent to them, and only on higher terraces.
  - 7) Snow must be a minimum of 2 feet deep or the ground must be frozen for equipment operations to be authorized in the wet meadow.
  - 8) Other state BMP laws must be followed.
  - 9) State SMZ laws must be complied with unless otherwise specified.

Shanley Creek has been historically impacted by road construction and maintenance, timber harvesting and grazing. However, according to current WATBAL modeling, sediment yields have returned to normal. As a result of the applied mitigation measures, monitoring indicated that the stream and meadow were not adversely impacted.

### **Observations and Measurements**

Mitigation measures were successful at preventing adverse impacts to soil and water quality. During periods of high water and flooding, the stream has a tendency to expand into overflow channels. Special care was taken to prevent damage to the stream bank and channel at all overflow crossings.

Harvest equipment did not cross the main Shanley Creek channel. Slash was burned away from the riparian area, and the remaining slash was piled near the road to be burned at a future date (photo 1). Landing sites were constructed more than 100 feet from the SMZ, and are easily accessed from the main road. At the time of operation, 2½ to 3 feet of snow was on the ground as stipulated in condition 7, to protect the soil from impacts. Through a combination of snow depth and soil composition, monitoring



Photo 1

showed no discernible compaction. Approximately 10 percent of the site was covered with vegetation. Grass and shrubs were well established on skid trails after harvest. Erosion or displacement was not found (photo 2).



Photo 2

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## Effectiveness

Examination of the stream showed no increase in sediment below the unit, compared to above the unit. Winter harvest prevented the increases in erosion and sedimentation that can occur during standard harvest practices. The 50-foot riparian buffers effectively filtered excess sediment and protected the stream from erosion and sedimentation. In addition, the stream channel and meadow were protected during timber harvest. BMP's 11.05 and 14.16 were successful in meeting the desired objectives.

