United States Department of Agriculture | Forest Service | Gallatin NF

REPLY TO: 2520 Watershed Protection
2630 Habitat

Date: 7/21/94

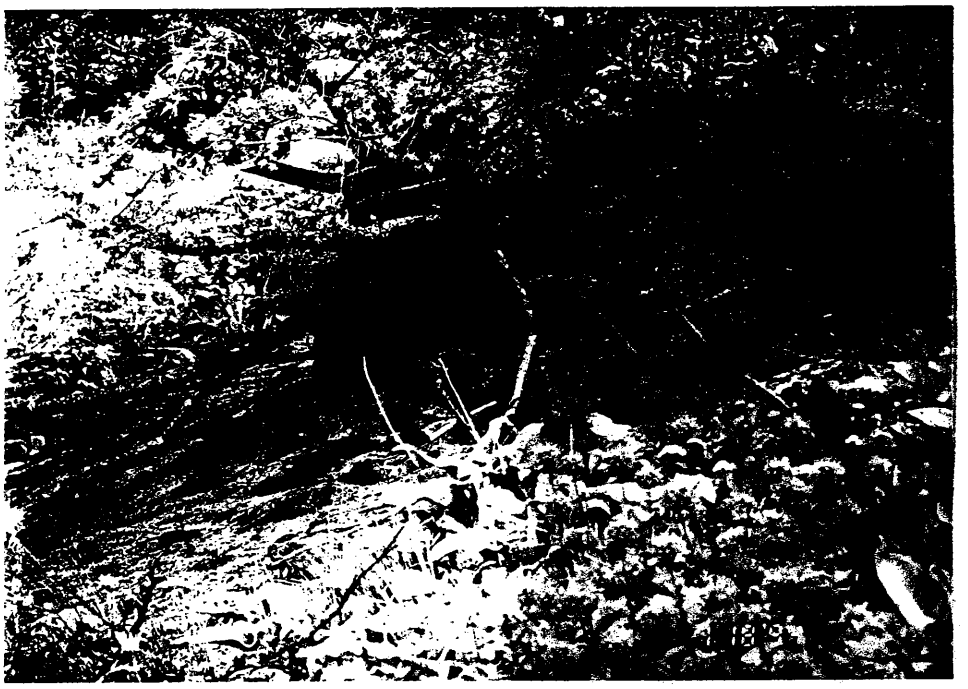
SUBJECT: BMP Review, Hyalite Wildlife Burn

TO: Bozeman District Ranger

On July 18, 1994, Ron Krager and Mark Story conducted a BMP review of the Hyalite Wildlife Burn. This project was approved in the Decision Memo (2/14/94) and intended to improve understory herbaceous plants, regenerate aspen, regenerate shrubs (particularly chokecherry), reduce fuel loadings, and provide an example of an EM type project which could be implemented in a municipal watershed without soil or water damage.

Ron Krager estimates that 105 acres were burned (see enclosed photo) when the project was implemented on 3/15/94. Since Hyalite Creek is a municipal watershed for the City of Bozeman, and classified as an A-1 (non-degradation) water quality by the Water Quality Division (Administative Rules of Montana, SURFACE WATER QUALITY STANDARDS, 16.20.608) an important constraint was to not increase sediment supply to Hyalite Creek. A 100' no burn strip was therefore included as a BMP mitigation measures to maintain sediment filtration.

Ron Krager's 7/19/94 (2630) memo documents the satisfactory accomplishment of the wildlife habitat goals of the project. No evidence of surface erosion was observed in the treatment area, even in the most intensively burned areas (see photo below). Although the removal of surface vegetation left the area vulnerable to sheet and rill erosion the 1994 snowpack was well below average (60% of normal) and spring rains moderate in intensity. Evidently surface vegetation re-established quickly to the increased nutrients and soil moisture. The subsequent watershed protection was tested during July 5-7 when a large cold front system dumped 2-3 inches of rain on the site.



Surface burn intensity was light and resulted in no soil damage. The only areas where revegetation was not vigorous were under the canopies of trees and shrubs where acidic accumulations of conifer needles retarded pre-burn vegetation (upper photo). In the left photo revegetation has not yet occured in the higher burn intensity micro-environment of a log on the ground. In summer wildfires soil effects are much more pronounced.

A no burn strip was retained approximately 150' above the Hyalite road which when combined with the addition distance of the road prism and stream riparian zone provided about a 250' buffer from Hyalite Creek. It was evident that the erosion and sedimentation effects of the burn were zero.

Chokecherry resprouting within the burn area.

Aspen stand which was regenerated in unit 2. Ron Krager estimated that regeneration density of aspen shoots was 20,000 to 30,000 per acre.

From a watershed perspective the Hyalite Wildlife Burn had no short term adverse erosion or sedimentation effects and was well within compliance with the Hyalite A-1 water quality designation.

In the future such habitat projects can be beneficial to maintain a more vigorous and dense shrub and herbaceos understory which contributes significantly to watershed protection. In addition, the associated fuel reduction reduces the risk and intensity of wildfire which poses substantial potential for adverse watershed impacts and sedimentation/water quality change.

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