VERNTAFLAT WILDFIRE

Rehabilitation Plan

I. Background

A. Identification

The fire was located on the Hanford Reach National Monument/Saddle Mountain National Wildlife Refuge, located in T 14 N, R 25 E sections 21,22,27 and 28 in Grant County, W Ajust north of State Highway 24. Using GPS data collected around the perimeter of the fire, 119.2 acres burned. The fire was lightning caused and the point of origin was an observed lightning strike.

Soils are sandy, with the majority of the area considered silt loam, sandy loam, or sand.

The topography is generally flat. Elevation ranges from 500 to 850 feet. The general aspect is northeast, but a portion of the fire has a southeast aspect.

Climate is arid with approximately seven inches of rainfall annually. Summers are hot (highs about 85-100 ?) and dry (minimum relative humidity in the teens). This area is subjected to strong winds (averaging 10 mph while the average maximum windspeed is 25 mph) throughout the season. Wind velocity is strengthened by the channelization effect in the river valley.

The vegetation consists of big sagebrush and rabbit brush with a Sandberg's bluegrass and cheatgrass in the understory. The cheatgrass component of the burned vegetation had already gone to seed and has probably deposited seed onto the ground that probably survived the fire. There are also pockets of bitter brush with sand drop seed, and Indian rice grass in the sandier soils.

This fire burned during two periods. The initial bum followed ignition at 4:30 AM and was contained by 7 AM. At approximately 5 PM, a dust devil spread embers outside the containment line causing additional burning. The second area was contained by approximately 8 PM. The early morning fire burned with low intensity, leaving a mosaic of partially burned plants and areas of near complete consumption. Although the second area burned with higher intensity, a mosaic remains on the bum site.

The area burned drains into the Columbia River, which is approximately 1.5 miles away. The sandy soil types promotes infiltration of most moisture. The fire did not bum hot enough to create a hydrophobic layer in the soil. No increased runoff is expected from the fire event. Therefore, the effect of the fire on the local hydrology should be insignificant.

This fire is entirely on the Saddle Mountain unit of the Hanford Reach National Monument, which is owned by the Department of Energy, and managed by the U.S. Fish and Wildlife Service.

B. Resource uses

The burned area is closed to the general public.

Little resource use occurs in the burned area.

II. Evaluation and Analysis

A. Physical factors

Sagebrush does not tolerate fire. Sagebrush regenerates only from seed. Because sagebrush typically flowers in the autumn and produces seed in the late autumn/early winter months, the current seed crop had not yet been produced. Seed remaining in the seed bank is from previous seasons and may not be viable nor have high germination following the fire.

Sagebrush provides a variety of habitat components including vertical structure, thermal and hiding cover, and a food source. The fire destroyed these components and redevelopment will take years.

Ecosystem structure (sagebrush with a bunchgrass understory) may be compromised by the loss of vegetation:

- Allows for the potential colonization and spread of invasive plants and noxious weeds. Invasion of non-native plants can permanently alter the ability of the area to re-establish a functional native plant community.
- Exposes the surface to wind erosion.
- Finally, the tracks and trails created by fire fighting vehicles have also created a large disturbed area. These track exposed bare soil and disturbed the microbiotic crust of the soil.
- Left untreated, the post-fire environment will lead to the unacceptable degradation of the soils, plant community, and ecosystem function. Seeding with native grasses and planting sagebrush seedlings would provide a locally adapted group of plants that would provide the best protection of these values over the long term.

B. Facilities

The refuge was protected by a 4-stand barbed wire fence with wooden posts. This area is closed to public access.

One mile of fence was affected by the fire .

- Of the posts affected by fire, 330 need to be replaced.
- Additionally, the barbed wire loses its tensile strength due to heat. 21,120 feet of barbed wire (4 strands*5,280 feet) was affected by the fire.
- The fence was cut in two places during the suppression operations to let vehicles through to conduct suppression activities. All of the fence affected by the fire will need to be replaced.

C. Off site factors

Regionally, a decline in both the quantity and quality of sagebrush steppe habitats has occurred. Within the Columbia Basin, in excess of 60% of the pre-settlement sagebrush steppe has been converted to other land uses, and much of what remains has been severely degraded by over grazing of livestock. Further, the changes in the fire regime within these ecosystems (more frequent and intense fires) due to the invasion of non-native plants has significantly decreased the amount of mature sagebrush stands region wide.

Loss of even a small amount of sagebrush has an impact to the local diversity and abundance of native plant and animal species. There are no longer large reservoirs of habitat which native species can disperse from, and small isolated areas are often separated by inhospitable habitat.

Therefore, perturbations of even a small size may result in local declines of certain species. Also, disturbed areas may not be able to recover without intervention of land managers.

D. Effects on wildlife

Locally, several species of wildlife are considered "sagebrush steppe dependant" species, meaning that all or part of their life-cycle is tied to the presence of sagebrush steppe habitat. Several of these species are considered priority species of concern by the state of Washington due to rapidly declining trends in their populations. These species include; both white and black-tailed jack-rabbits, Washington ground squirrel, burrowing owl, sage grouse, loggerhead shrike, sage sparrow which were likely to occur on the Saddle Mountain National Wildlife Refuge.

Elimination of the sage brush cover would have detrimental effects on local populations of all of these species. We expect that the fire potentially caused a decrease in the local abundance of these species.

III. Rehabilitation Needs and Objectives

A. Rehabilitation alternatives

Allow normal post-fire community development. We anticipate only weeds to invade the site during the summer. These weeds will prevent native plants from becoming re-established during the next growing season. And, over the long-term will prevent the former native plant community from developing and will permanently alter ecosystem function.

Seed area with native grass. This alternative puts seed on the ground to maximize the amount of germinating plants for the upcoming growing season. Following germination of grasses, plant sagebrush seedlings within the fire area to increase the rate of sage establishment. This does not attempt to eliminate the competition from non-native plants.

Treat noxious annuals with the herbicide Round-up@ or Oust@ and seed with native grass. This treatment requires a long time of exposure since the native seeds should not be placed on the site until the Oust@ has had six months to treat the annuals. The native grass then would be sown during the second growing season with the expectation that most of the annuals had been

eliminated during the first growing season. After grasses become established plant with sagebrush seedlings to increase the rate of sagebrush re-estab lishment

No action
B. Recommendation: Rehabilitation and stabilization of the site. Minimize the success of cheatgrass germination success by application of herbicide followed by native grass seeding. Follow with planting of sagebrush seedlings

IV. Environmental Considerations

A. The time of the year minimizes the likelihood of success for immediate vegetation. We expect the cheatgrass to germinate in October and November. An application ofRound-up @ or Oust@ in early October will treat the emerging cheatgrass plants. Seeding with native plant seed needs to be early enough in the winter to allow germinating plant to utilize the moisture and become established before the summer dormant season, early January.

B. Rehabilitation plan compliance with fire management plan

V. Resource Needs and Costs Summary

A. Estimated costs for native plant seed. Seeding rates should be approximately 5-10 lbs. per acre. Seeds cost (Hanford derived seed) appro x $90 acre for a native seed mix. Estimated cost for herbicide treatment is approximately $8 acre. Labor cost and equipment cost for spraying, and planting would range from $ 50-75 per acre (this could be lower if Service equipment and personnel were used). Seedling sage are planted at a density of 300-400 per acre. Seedlings cost $ 0.20 bare-root and $0.33 to plant using tree-planting crew. Post planting monitoring would require installing a transect and surveying annually, at GS-5 biological technician for a week of labor (annual cost) (~$10/hour x 40 hours). The total cost per acre is approximately $300 per acre, plus annual monitoring cost of approximately $400. The total cost is estimated to be $36,160 annually.

B. Fence costs $8/linear foot to be replaced for both parts and labor. Total cost for fence replacement is $42,240 ($8*5,280 feet)

C. Grand total for rehabilitation is $78,400.