

## Executive Summary

Wolf Mountain Ranch (the Ranch) is located approximately 20 miles west of Steamboat Springs and 4 miles east of Hayden, in Routt County, Northwest Colorado. The Ranch consists of various parcels amounting to 18,547 acres. The Wolf Mountain Ranch is a unique and ecologically important property in our local landscape. It is recognized by the Rocky Mountain Elk Foundation and the Colorado Division of Parks and Wildlife as an important corridor for elk migration, and as important habitat for mule deer, elk, grouse and other wildlife species. Approximately 14,732 acres of the ranch are subject to several conservation easements owned by the Nature Conservancy and the Rocky Mountain Elk Foundation. These conservation easements represent a substantial investment of public funding and reflect a strong local and state level of public interest in the conservation values of the Ranch. The proposals in this plan are consistent with the purposes of the easements and should contribute to the diversity and protection of the resource.

This plan divides the Ranch into three management zones to facilitate the discussion on planning and implementation on this relatively large landscape. The three management zones are based on watersheds, general access, use, and, to a lesser degree, vegetation. The western zone consists of the Goose Creek and Yampa River drainages; the central zone consists of Wolf Creek and Tow Creek drainages; and the eastern zone consists of the Deep Creek, Salt Creek and Hot Springs Creek drainages.

Fire behavior within the Ranch is influenced by the topography of the area. A series of ridges run north to south, with a slight east to west orientation as well. The predominant winds are from the west and southwest, but it is possible for a wind driven fire event to line up well with the orientation of the predominant ridges. The local fire history reflects the broader fire history happening on our landscape, with bigger and more intense fires, and a widening fire season, exacerbated by drought and warmer temperatures.

Prescriptions designed to mitigate for fire often result in benefits to forest ecosystem and watershed health and to agricultural, ranch operations and wildlife. Conversely, prescriptions primarily designed to benefit wildlife and forest health may also result in reducing the risk of wildfire. This forest management plan with a fuel reduction focus addresses mainly the forested areas assessed, and its recommendations for vegetation treatments are generally limited by access and slope and defined by values at risk, mostly found in the central management zone. The forest types are mainly mix conifer, aspen and oak, all with varying degrees of overall health. It is important to consider the desired future condition for these forests in the face of warmer and drier weather conditions, and manage them where feasible.

The proposals and recommendations fall into four broad categories:

### **Prescriptions to Reduce or Change Fuels Structure for Fire Mitigation**

This plan focuses on treating, through mastication, the mixed montane shrubland component for a fire mitigation strategy that produces the most effective results for the money. The mixed montane shrubland is the largest cover type on the Ranch, comprising over 7,400 acres, and Gambel oak (*Quercus gambelii*) is the predominant species within this cover type. Gambel oak does not burn readily except under favorable conditions, such as during continued drought or in the fall or early spring when vegetation dries out. Late spring frosts that kill the leaves can cause extreme fire behavior later in the summer; the dead leaves have a tendency to cling to the stem and act as dry aerial fuels<sup>1</sup>. When Gambel oak does burn it is capable of producing explosive and difficult to control fires. The plan prioritizes specific treatment areas

---

<sup>1</sup> Gambel Oak Management, CSU Extension 6.311



that concentrate on expanding road buffers and thus creating safer access and egress while enhancing fuel and firebreaks.

The sagebrush shrubland that is common in the western portion of the Ranch also represents an opportunity to treat significant acres to promote a mosaic of vegetation that breaks up fuel continuity, increases age class diversity, and widens firebreaks along roads. Fire in the sagebrush and grass can be fast moving and dangerous, but is usually more readily controlled than fire that gets established in the mixed montane shrubland. Treatment in both the mixed montane and sagebrush shrublands are usually beneficial to overall wildlife habitat sustainability and maintenance/improvement of grouse habitat through increased production of grasses and forbs, and re-sprouting from woody shrubs.

The plan places a lower priority on treatments within the forest acres of the Ranch for fire mitigation purposes. Although the largest fire on the WMR in recent years (Deep Creek 2017 - 4,222 acres, 1,906 acres on WMR) occurred in the forest, these forests usually burn on a much wider time interval than the adjacent shrubland cover types. Aspen has a lower fire potential than conifer types and can provide effective firebreaks, although that may be less so in drought conditions. Some management is recommended in the plan for the aspen forest type, and some treatments will serve to reduce or mitigate fuels. Some selective harvesting is recommended in the mixed forest type/spruce-fir type where subalpine fir decline is present, while retaining as many trees as possible in the residual canopy. This will serve to reduce fuel loading but might not make much difference in the event of a stand replacement fire.

#### **Prescriptions to Promote Forest Health/Wildlife**

Aspen forests in the west are managed for wildlife habitat, livestock forage, watershed protection, aesthetics, and recreation, and these align well with goals of the Ranch. Treatment recommendations are based on maintaining aspen on favorable sites and increasing age class diversity throughout the forested acres. Aspen stands should be managed through even-age silviculture, using total overstory removal within the desired acreage. This can generally be achieved through mastication (if trees are small and mostly dead) or a whole tree harvest mechanized operation in stands of larger trees.

Spruce-fir forests on the Ranch are important for water capture and retention, and they provide important habitat for an array of wildlife species. Both spruce and fir are present. These are shade tolerant and fire intolerant species, and they can grow easily together in multi-aged or multi-storied forests or as climax species (fire return interval 100-800 years). In some cases, management actions can result in drastic changes of the environment, drying out the understory and affecting potential regeneration, even increasing fire risk. The aim of management should be to increase the spatial variability and age class diversity.

Both uneven and even age silvicultural systems can be used in spruce-fir forests, but not all harvest methods are applicable to every stand. These forests are very susceptible to windthrow, so wind direction and location of stand within the broader landscape should be considered when making management decisions. Aspect should also be considered. Treating north facing slopes can increase snow water equivalence and decrease snowmelt rate. The broad management recommendation for the Ranch is to do selective cutting where appropriate.



### **Point Protection Recommendations to Mitigate Built Values at Risk**

The plan contains individual assessments of identified built values at risk on the Ranch, and makes individual recommendations based on those assessments and utilizing the “Home Ignition Zone” concept. Most of these recommendations are simple, low cost, common sense, and effective in the event of a wildland fire. Related measures for the Ranch to consider include improvement of access to key water sources for fire response, dry hydrant installation, and sprinkler installation for high value assets.

### **Preplanned Response Procedures**

The plan recommends a simple written ranch emergency preparedness plan that includes basic emergency response protocols. This would be intended to be shared with staff, visitors, and residents. Some of the items in an emergency preparedness plan might include:

- Evacuation routes, including alternate routes
- One or several safe meeting locations to assist in accounting for people in an event
- Plans for livestock management during an event, gates to open, etc.

Fire is a natural part of the landscape in which we live, and its occurrence is not a question of “if” but rather “when”. Different vegetative cover types have different fire return intervals, and those return intervals may be changing due to warmer and drier conditions. No plan or action can prevent the eventuality of wildland fire occurring, but the recommendations in this plan will assist in mitigating the impacts of any such fire and help the Ranch adapt to living with fire.

