

APPENDIX C – VEGETATION TYPE DESCRIPTIONS AND PLANT LIST

Information in this appendix has been adapted from, and is consistent with, Phase II of the Fire Plan (Land Stewardship Associates 2002), the Little Snake Field Office and Brown's Park National Wildlife Refuge Environmental Assessment (BLM 2000), and the Fire Effects Information System (USFS 2003). The first section describes the vegetation types in the Phase III planning area. The second section provides a list of the common plant species in the Phase III planning area and their scientific names.

VEGETATION TYPES

Most of the vegetation in the Phase III planning area has been influenced over time by natural fire, although fire has not shaped barren land, rock outcrops, agricultural fields, and surface water. In recent history, vegetation has been affected by fire suppression and manipulation of fuels through livestock grazing and fuel treatments such as brush beating and use of herbicides. The three most common vegetation associations in the Phase III planning area are sagebrush shrublands, pinyon/juniper woodlands, and mountain shrublands. These associations are characterized by large areas where the structure and composition of species are similar. Salt desert shrub, aspen, lodgepole pine, spruce/fir, riparian, and grassland associations are also common in the Phase III planning area but occupy significantly smaller areas. Most associations lack a natural distribution of diversity in structure and composition, primarily from recent influences such as grazing and fire suppression. Each of these vegetation associations is discussed below.

Sagebrush

The sagebrush association is a mixed low- to high-growing shrub community dominated by various species of sagebrush. The overstory varies from open to completely closed with density and diversity in the understory species inversely related to overstory closure. The association is influenced by many interacting and independent ecological factors, such as climate, soils, topography, fire history, and grazing history. Stands below 7,000 feet in elevation are generally dominated by Wyoming big sagebrush and often contain a component of bitterbrush, shadscale, winterfat, or rabbitbrush. Stands above 7,000 feet are generally dominated by mountain big sagebrush and are often mixed with species that are also common in the mountain shrub association. Stands on deep soils in valley bottoms are dominated by basin big sagebrush and support a component of rabbitbrush or greasewood in some areas. Small, isolated stands of black sagebrush and three-tip sagebrush are scattered at lower elevations.

Pinyon/Juniper

The pinyon/juniper association covers a variety of vegetation types that contain pinyon pine and various species of juniper. The primary species of juniper found in the Phase III planning area is Utah juniper. The association characteristically occurs on dry ridge tops with shallow soils. It has a competitive advantage over other vegetation types and is the climax association on these sites. The pinyon/juniper association varies from open to closed in the overstory and supports a highly variable understory of shrubs, grasses, and forbs. Mountain mahogany and bitterbrush are common in the understory. Understory production varies inversely with overstory closure. The association exists on a wide range of soils, elevations, and exposures. Juniper dominates the association at lower elevations and on dryer south slopes, while the pinyon component increases with elevation and on more mesic north slopes. The association is found from about 5,200 to 8,000 feet in elevation, corresponding to a general range of precipitation of 10 to 20 inches per year.

Mountain Shrub

The mountain shrub association is a mosaic of large- to medium-sized deciduous shrubs with a mixed understory of younger shrubs, grasses, and forbs. The overstory varies from open to dense, and the density and diversity of understory species reflects an inverse relationship to overstory closure. Common shrub species include Gambel oak, serviceberry, mountain mahogany, snowberry, mountain big sagebrush, chokecherry, and bitterbrush. In some areas, the mountain shrub association appears to support the highest herbaceous production and species diversity of any plant association in the Phase III planning area. The association occupies higher elevations on east, west, and north slopes, but extends into lower elevations on north slopes.

Salt Desert Shrub

The salt desert shrub association occurs on the most xeric soils and at the lowest elevations in the Phase III planning area. The association consists of several species of saltbush, with limited areas of Wyoming and basin big sagebrush on inclusions of more productive soils. The salt desert shrub vegetation type is commonly found on broad floodplains and drainage bottoms with heavy, saline soils. Shrubs that commonly occur in this plant community include greasewood, shadscale, four-wing saltbush, and occasionally rabbitbrush.

Aspen

The aspen association occurs as small, isolated patches at middle elevations and as larger, continuous stands at higher elevations, primarily in the northeastern and southeastern portions of the Phase III planning area. Aspen stands typically develop on moist, deep soils and are early seral in nature, eventually being replaced by conifer species in the absence of disturbance. Aspen stands typically have a diverse and productive understory of grasses and forbs.

Lodgepole Pine

The lodgepole pine association grows at higher elevations in the northeastern and southeastern portions of the Phase III planning area. It can be found on a wide variety of soils but grows best on moist, medium-textured soils derived from granitic, shale, or coarse-grained parent materials. Stands of lodgepole pine typically occur at high stem density, with a closed canopy and little understory.

Spruce/Fir

The spruce/fir association is found at middle to upper elevations in the northeastern and southeastern portions of the Phase III planning area. It generally occupies sites with a short growing season characterized by cold winters, cool summers, frequent summer frosts, and heavy snow pack. It is most common on moister, north-facing slopes. It increasingly occupies westerly and easterly aspects with increasing elevation and may occupy all aspects close to timberline. Subalpine fir and Engelmann spruce are the two most common tree species in spruce/fir, but as defined here, this association may also include Douglas-fir, white fir, and small amounts of aspen and lodgepole pine. Spruce/fir stands typically have a closed canopy. Older stands, or those affected by insect infestations, can contain a large amount of dead and down fuels.

Riparian

The riparian association includes a variety of communities, such as herbaceous wet meadows and wetlands, willow shrublands, and cottonwood forests along streams and rivers. This association is supported by abundant groundwater and surface water and has very high productivity. This association is found at all elevations in the Phase III planning area and is best developed along the major drainages, such as the Yampa River. Disturbed areas often include a substantial component of non-native species, such as Russian olive and saltcedar.

Grassland

The grassland association occurs throughout the full range of elevations in the Phase III planning area. Components of this association can be divided into two communities: a community maintained by fire, and a community that is not influenced by fire. The grasslands that are maintained by fire are generally associated with early seral sagebrush or pinyon/juniper woodland types that have recently been burned or mechanically treated. Cheatgrass is common, especially in areas that have experienced repeated fires and in openings in the salt desert shrub community. Western wheatgrass and bluebunch wheatgrass are typical cool-season perennial grasses in the area. After burns or mechanical treatments, a variety of cool-season species including crested wheatgrass, intermediate wheatgrass, and Russian wild rye have been seeded in the treated areas. Grasslands that are not influenced by fire are typically located on shallow soils, wind-swept ridges, or low-elevation desert grasslands. Typical species in these areas include needle-and-thread and Sandberg bluegrass.

PLANT LIST

Table C1 lists the common and scientific names of some of the common plant species in the Phase III planning area.

TABLE C1 COMMON PLANT SPECIES IN THE PHASE III PLANNING AREA.			
Common Name	Scientific Name	Common Name	Scientific Name
Aspen	<i>Populus tremuloides</i>	Needle-and-thread	<i>Hesperostipa comata</i>
Basin big sagebrush	<i>Artemisia tridentata</i> ssp. <i>tridentata</i>	Pinyon pine	<i>Pinus edulis</i>
Bitterbrush	<i>Purshia tridentata</i>	Rabbitbrush	<i>Chrysothamnus nauseosus</i>
Black sagebrush	<i>Artemisia nova</i>	Russian olive	<i>Elaeagnus angustifolia</i>
Bluebunch wheatgrass	<i>Pseudoroegneria spicata</i>	Russian wild-rye	<i>Psathyrostachys juncea</i>
Cheatgrass	<i>Bromus tectorum</i>	Saltcedar	<i>Tamarix ramosissima</i>
Chokecherry	<i>Prunus virginiana</i>	Sandberg bluegrass	<i>Poa secunda</i>
Cottonwood	<i>Populus</i> spp.	Serviceberry	<i>Amelanchier alnifolia</i>
Crested wheatgrass	<i>Agropyron cristatum</i>	Shadscale	<i>Atriplex confertifolia</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>	Snowberry	<i>Symphoricarpos rotundifolius</i>
Engelmann spruce	<i>Picea engelmannii</i>	Subalpine fir	<i>Abies bifolia</i>
Four-wing saltbush	<i>Atriplex canescens</i>	Three-tip sagebrush	<i>Artemisia tripartita</i>
Gambel oak	<i>Quercus gambelii</i>	Utah juniper	<i>Juniperus osteosperma</i>
Greasewood	<i>Sarcobatus vermiculatus</i>	Western wheatgrass	<i>Pascopyrum smithii</i>

TABLE C1 COMMON PLANT SPECIES IN THE PHASE III PLANNING AREA.			
Common Name	Scientific Name	Common Name	Scientific Name
Intermediate wheatgrass	<i>Elytrigia intermedia</i>	White fir	<i>Abies concolor</i>
Lodgepole pine	<i>Pinus contorta</i>	Willow	<i>Salix</i> spp.
Mountain big sagebrush	<i>Artemisia tridentata</i> ssp. <i>vaseyana</i>	Winterfat	<i>Krascheninnikovia lanata</i>
Mountain mahogany	<i>Cercocarpus montanus</i>	Wyoming big sagebrush	<i>Artemisia tridentata</i> ssp. <i>wyomingensis</i>