

BEAR CREEK WATERSHED ANALYSIS

FORESTED VEGETATION

CHARACTERIZATION

The analysis area (as with the entire Caribou Subsection) is characterized by a vegetation pattern of a dry area (Figure 3, Forested Vegetation). Tree cover is scattered and generally tree stand size (Figure 1, Forested Vegetation) is small in acres. However, stand size is larger than the more dry drainages to the north. Continuous stands can be found along the main Bear Creek drainage and some of the tributaries. Open brush slopes are intermixed throughout the area. South and west slopes support brush vegetation and scattered conifers (Figure 2, Forested Vegetation). Wetter aspects (north and east) support more dense vegetation forests. Growing conditions for the existing stands improve versus the stands to the north. Tree height increases suggesting better soils and climate conditions for conifer growth. Tree composition is very similar throughout the Caribou Subsection, which are made up of generally lodgepole pine (early succession species) and Douglas fir (mid succession species). However examination of the understory in many of the stands show that later succession tree species (alpine fir and Engelmann spruce) are now invading the sites. Some later successional species such as alpine fir can be found in the under story. Spruce typically can be found only on the wetter location along Bear Creek, while alpine fir is wide spread throughout the analysis area. Aspen stands are also common through out the analysis area. However, conifer encroachment is nearly complete for many aspen stands and only remnant aspen trees can be seen within the conifer stands. Douglas fir and lodgepole stands make up the bulk of the timber vegetation of the area. Alpine fir trees are replacing some Douglas fir stands and lodgepole stands. Most of the analysis area is nonroaded, making harvesting very unlikely. Timber harvesting may have occurred in parts of the area in the past, but there is very little evidence remaining that would show any harvesting had occurred. Future logging is unlikely because of the high cost of access. Alternative harvest methods may be useful, but will not add to harvest, possibly because of economic restrictions for most of the area. Tree age has not been determined but insect activity would indicate that most trees have reached the optimum growth. Insect activity is increasing as witnessed by the number of dead and dying trees in the watershed. Timber harvesting or salvage harvesting would be environmentally difficult and expensive in the entire analysis area. With the exception of a few areas around the existing road system, timber harvesting is unlikely for many years at best.

ISSUES AND KEY QUESTIONS

The vegetation pattern is indicative of a dry area. Tree cover is scattered and generally tree stand size is small in acreages. Wetter aspects support tree cover (north and east) while south and west aspects are sagebrush/grass and scattered conifer. Alpine fir occurs in some forest understories and, in some cases, are beginning to dominate some Douglas fir stands.

1. How do we obtain the optimum growth on the suitable tree stands and still meet the needs of the public on other resource activities?
2. How do we deal with the increased growth in the insect populations? Many areas are inaccessible.
3. How do we deal with the increasing age of the trees and still maintain Forest Health?
4. How has composition and stand size changed from historical size?
5. How has exclusion of fire affected tree distribution, age class changes, stand size and other growth characteristics?
6. How have aspen stands been changed over time and management practices?
7. Are we achieving desired conditions by letting the stands go towards climax species.

CURRENT CONDITIONS

While the analysis area does contain forested areas and commercial quality wood, most of the analysis area is outside of the identified suitable land types in the Revised Targhee Forest Plan. This means that only a small portion of the timber is managed for wood production. The part that is within the suitable land type is in the upper reaches of Bear Creek along the Brockman road. Stand make up is scattered lodgepole pine. Tree age is mature for most of the stands.



Figure 1
Chaparral Canyon
Scattered Tree Stands



Figure 2
Red Ridge Skyline
Open Tree Stands



Figure 3
Warms Springs Vegetation Pattern
Growing sites for Tree Stands



Figure 4
Vegetation near Warms Springs Trail

PAST CONDITIONS

Comparison of 1960 aerial photos with current (1995) aerial photos indicates that the distribution of early seral species such as aspen was more extensive 35 to 40 years ago. From field inspection made during this review, remnant stands of aspen were visible within the heavier stand of conifers. Tree succession has moved from early/mid succession trees species to mid/late succession species. Stand size also appears to be enlarging over time. Alpine fir is wide spread in the understory of most Douglas fir stands and is in the overstory of many stands. Lodgepole pine stands are scattered throughout the area but Douglas fir is the dominant species at this time. Aspen stands can be seen on south and west slope aspects. However brush and scattered conifers make up the bulk of the vegetation composition of these areas. There is no evidence of past timber harvesting activities for most of the study area due to limited or no access. Along the few miles of roads some past firewood cutting can be observed.

TRENDS

Timber stands, including aspen, continue to age. Natural cycles for the stands mortality including insect/disease, and fire, can be expected. Stand composition will continue shifts towards later successional species, i.e. Douglas fir and alpine fir. On a landscape bases, timber stands including aspen will move away from Properly Functional Conditions as defined by Region 4 PFC Plan. This would be particularly true as to stand structure and compositions. Most aspen stands are starting to fall apart because of age and invading conifers. This trend in stand condition is expected to continue until some event reverse the direction of the aging process. Since most of the analysis area is not in timber suitable lands, as defined by the Forest Plan, these trends will not affect future timber opportunities.

Insect population can be expected to grow with an aging stand and increase stress from dry water years. This situation is already evident in the conifer stands as the Douglas fir Bark Beetle is attaching more and more Douglas fir patches. Without some management actions mortality levels will increase.

Disease activity will likely remain similar to current conditions, but may also see a slight increase as drought stress occurs to the timber stands in the analysis area.

Although slight, water yield will decrease as conifers invade aspen sites. A conifer tree creates more transpiration than a similar aspen tree, hence more water is drawn from the soil from a conifer stand than aspen stand. Soil characteristics will change as conifers invade aspen sites. Soil will then favor the invading conifer stand.

Conifers will continue to encroach on sage and grasslands over time.

Stands within the analysis area are mature and over mature in age class. The Targhee National Forest Management Plan states that 96% of stands on the forest are mature to over mature in age class. The analysis area fits that statistic. Stands are currently past culmination of mean annual increment. Continual loss of optimum growth of the stand can be expected.

RECOMMENDATIONS

Restoration/Protection

1. Continue to allow firewood gathering along existing roads in the analysis area.
2. Although very limited, conifer removal should be encouraged where accessible and where resource damage is minimal to include small harvest sales to improve forest health.
3. Use of fire treatment for aspen self-regeneration should be encouraged.
4. Encourage treatment activities that will take stands back to early to mid succession stages.
5. Recommend that a Wildland Fire Management Plan be developed for the analysis area.

Inventory/Monitoring

1. Continue to monitor insect activities in the area. Look for areas where management actions could be taken to slow or protect the stand.
2. Monitor annually the insect build up around the development areas of the analysis area, particularly around private summer homes.
3. Complete stand exam inventories for analysis area. (Low priority)