**SBEADMR Big Park pre-treatment field trip notes; 8/8/19**

***STOP 1:***

**Area overview:**

This area sees heavy recreational use (OHVs, horses, fishing, hiking) and particularly heavy hunting use in the fall

Previous treatments in the area include shelterwood, sanitation, and group selection; the proposed project area had treatments in the 1990s (thinning and shelterwood), and a lot of the previously thinned stands have relatively light impacts from spruce beetle

**Planned treatments:**

USFS will use a mix of prescriptions:

* Canopy thinning
* Group selections (groups of 0.25 – 1 acre in size)
* Variable retention (the opposite of group selection – cut the matrix and leave patches of 1/3 – 1 ac in size; will be used in areas of higher SB impacts)

Generally we’ll be using the footprint of past management for most of this area.

We also hope to include some trailhead improvement in this treatment – One unit is adjacent to the Fall Creek TH/parking lot; we’ll remove everying >8” DBH, which will reduce hazard trees. We also plan to install a pipe fence aound the parking lot in order to protect surrounding meadows, and possibly a composting toilet as well. GMUG will likely need to implement an area closure for the unit adjacent to the TH (likely will begin in early July for ~ 1 month)

*Answers to questions from public:*

The Montrose mill does take subalpine fir, and fir will be included in this timber harvest

Engelmann spruce is shallow-rooted and easily blown down, so we’ll only take 25% of standing basal area at one time (this may be tweaked slightly to make sure it is operable for harvesters)

Timber harvest can have hydrologic impacts; we avoid negative hydrological response at the watershed level by calculating equivalent clearcut acres (ECAs) and insuring we are <20% for ECAs for any watershed. Currently we are not even close to that 20% threshold anywhere on the GMUG.

**Spruce Beetle**

SB is a native insect that has co-evolved with spruce dominated forests. It has a 2-year life cycle; usually exists at endemic levels, but under the right conditions we will have large scale outbreaks. Trees die from a combination of girdling (beetle galleries cut off nutrient flow through the phloem) and fungal infections that often co-occur with beetle attacks.

Warming temperatures can potentially push the 2-year life cycle to a 1-year life cycle. We would need extremely cold (multiple days < - 40 F) winter temperatures to kill off beetles because they create their own antifreeze in the winter. Moderate cold snaps in the spring or fall are more likely scenarios for temperature-caused SB death.

The 2002 drought combined with wind events in the Weminuche Wilderness created a perfect storm for spruce beetles to initiate an outbreak. Avalanche pathways from the winter of 2018-2019 will likely facilitate further expansion.

Debarking down trees can help mitigate beetle expansion in blowdown/avalanche areas. Debarking dries out the cambium so the SB doesn’t have a readily available food source. (Telski uses this technique a lot with good success)

We don’t have an anti-aggregant pheromone developed for spruce beetle (like MCH for Douglas fir beetle). Some people have used MCH for spruce beetles with mixed success. Insecticide is not really a viable option because you would have to completely cover the entire trunk of the tree (so not really practical)

***STOP 2:***

*Answers to questions about planned timber harvest:*

The bulk of previous harvest within the planned treatment area is from the 1990s, with one unit from 2005. Typically we would retreat these areas after 30 years, so at ~25 years we are a little early, but our hand was forced somewhat due to SB activity).

We will achieve the desired CWD tons/acre by working with operators – if needed they can have skidders return to sale area to spread coarse wood. Generally the coarse wood we leave behind is the older dead trees, tree tops (<8” diameter), and some cull material. We don’t leave large green material to avoid encouraging additional spruce beetle activity. CWD provides multiple benefits, including organic material for nutrient cycling, microsites for spruce regeneration, and wildlife habitat.

One planned unit of this sale was dropped because it had high DHC (dense horizontal cover) due to abundant advanced regeneration and lots of trees with cavities (important for cavity-nesting birds).

We sometimes plant post-harvest, but don’t always need to. Depends on the amount of natural advanced regen and post-treatment seedling establishment.

Leave patches are designed around bigger, healthier cone producers when possible. We consider shape and prevailing winds for leave groups. Some blowdown is expected and is generally left on site.

Timber harvest breaks up crown density and can help mitigate future fire spread. The natural fire return interval in spruce-fir forests is long – typically 200 – 500 years; and fuels in these forests are naturally dense. Interactions between spruce-beetle outbreaks and subsequent fire are complex, and likely depend on time since outbreak and geographic location.

The scope of SBEADMR is forestwide, but in specified priority treatment areas within the suitable timber base. Not all GMUG timber sales fall under SBEADMR (~75% do currently). Normal operating season for timber harvest in spruce-fir is typically 7/15 – 10/15, but can vary based on conditions.

In Region 2 (incl. GMUG) proceeds from timber sales do not offset the cost of the sale. Green treatments bring in more money than salvage does, and SBEADMR has created some cost savings due to increased efficiencies.

**Science Team**

Thus far the science team has tackled early concerns about salvage treatments and lack of regeneration and/or impacts on advanced regeneration. Results have not indicated a need to change any planned management so far, and are helping to paint a picture of where the broader landscape is going. Work this summer has focused on co-locating temp loggers with FIA plots, doing a “quick protocol” on intensive monitoring plots in the Slumgullion area, and forest inventory plots in the four watersheds surrounding the Crested Butte area. Crews found many more seeds in seed traps this year than in 2018, reflecting the high temporal variability in seed production.

As the GMUG transitions from salvage to green treatments, the Science Team also plans to transition their focus to green treatments as well as planting (i.e. should we consider planting species adapted to hotter & drier climate conditions in addition to spruce?)

Additionally, CFLRP science has informed the silvicultural prescriptions used in SBEADMR (in terms of leaving behind coarse woody debris to provide microsites for spruce regeneration).

The socioeconomic side of the science team will help to measure how well we are meeting one of the three SBEADMR goals as stated in the ROD – the “recovery” or economic utilization piece of SBEADMR