

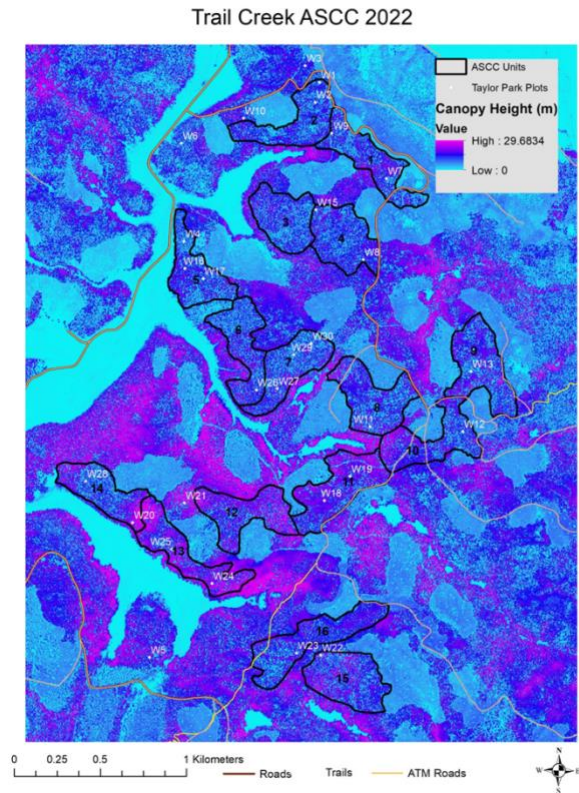
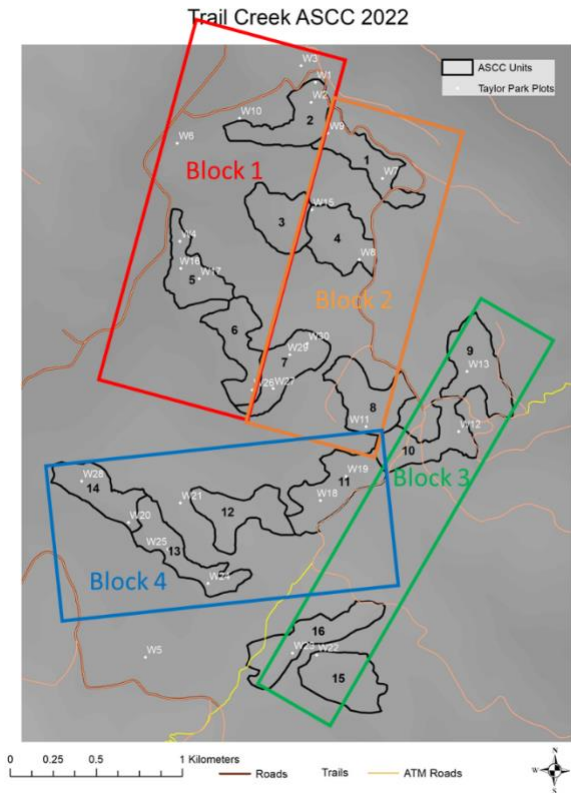
Taylor Park Applied Silviculture for Climate Change Workshop 2022

Current Stand Conditions

The proposed Taylor Park ASCC project site is located in the north-central portion of the Taylor Basin, west of the upper Taylor River and south of Trail Creek on the Gunnison Ranger District of the Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests. Elevation is between 3050 and 3200 m (ca. 10,000-10,500') and slopes are generally shallow (0-20 degrees). This area is composed of a mosaic of older forests, regenerating clearcuts and a regenerating wildfire from the 1980's on uplands, and meadows and fens in lower landscape settings. The ASCC site comprises 466 acres divided into sixteen polygons, ranging in size from 25-35 acres, hereafter referred to as treatment units for the ASCC installation. These correspond broadly with timber harvest under the Taylor Park Vegetation Management Project EA. These polygons are grouped into four blocks with similar topographic characteristics and forest composition and structure.

Data on forest structure, composition, health, and regeneration were collected from 28, 1/5-acre nested plots (with 1/10-1/300-acre subplots) distributed across this area during the summer of 2021. These data, along with ancillary datasets (e.g., DEMs, LiDAR maps of canopy height, other stand data from Taylor Park) allow a characterization of current conditions.

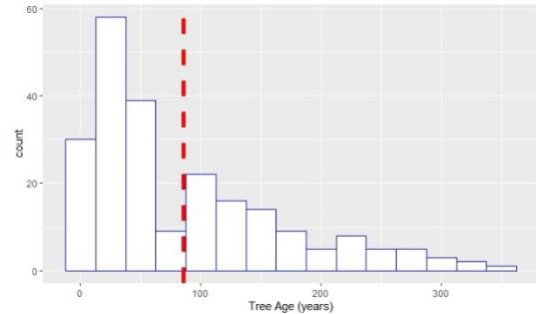
Block	Number of samples
1	8
2	8
3	5
4	7



Forests are composed of lodgepole pine (*Pinus contorta*; 93% of all trees sampled) with a very minor component of Engelmann spruce (*Picea engelmannii*, 6%) and subalpine fir (*Abies lasiocarpa*, <1%). Across treatment units and blocks, there are relatively minor differences in forest composition, with samples from treatment units in Block 3 consisting entirely of lodgepole pine, and treatment units in Block 4 containing a greater proportion of spruce. While tree diversity is very low, treatment units are not homogenous in terms of structure. All treatment units exhibit fine-scale heterogeneity that includes dense patches of younger trees, more open patches of older trees, and small openings. Below, we summarize some key statistics on stand conditions across our samples.

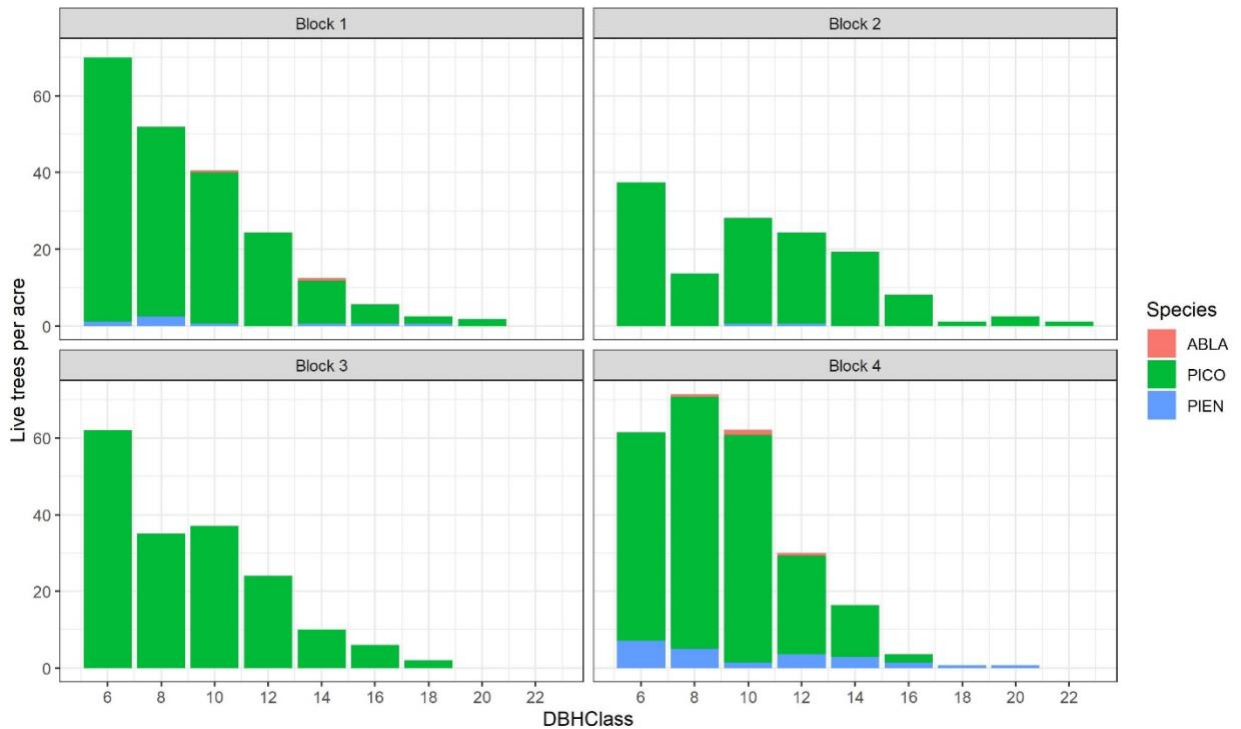
Stand age

- We collected increment cores from 225 trees, stratified across size classes. Ages ranged from 1 to 353 years, with a mean of 85 years. There was not a single, dominant age class, as would be expected if the study area originated following a single severe disturbance occurring in recent history.

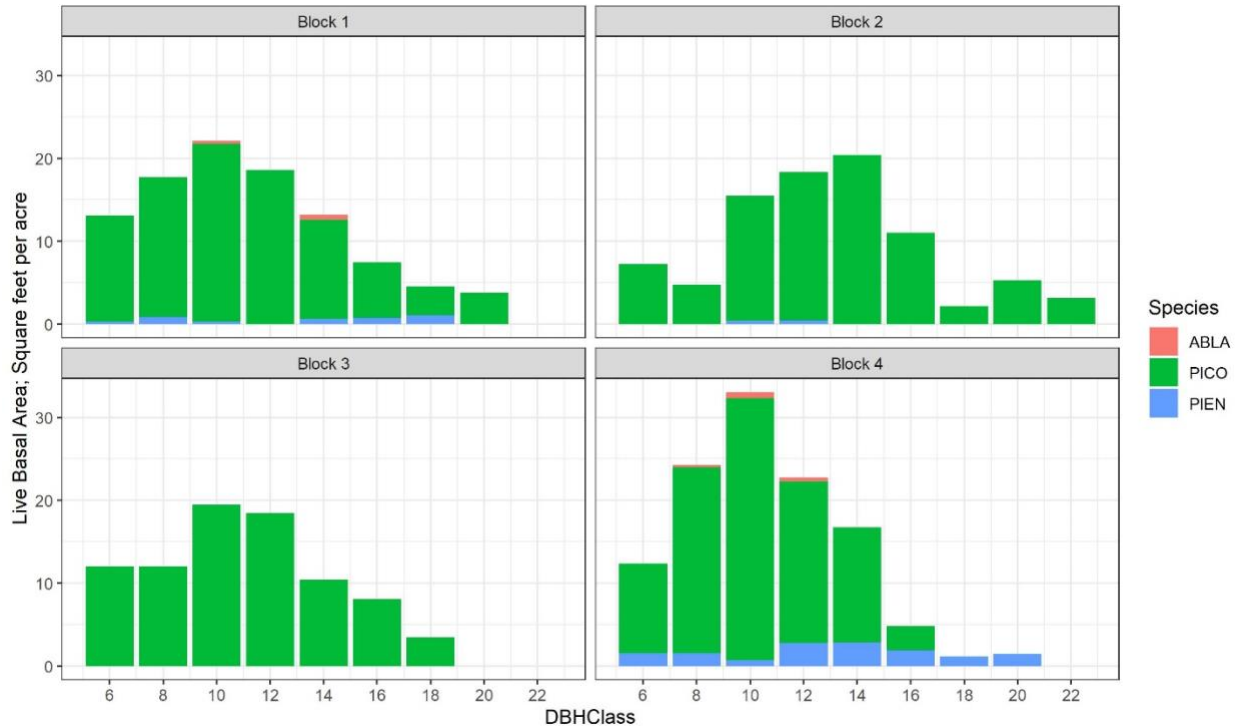


Stand density, basal area, and cubic volume

- Forests in the study area display considerable fine-scale heterogeneity in density, but which tends to average out over the scale of the treatment units and blocks. Size class distributions reflect a reverse-J shape, indicative of an old stand with abundant and continuous regeneration. Tree density (>2" DBH) averaged 634, 1185, 794, and 819 trees per acre in Blocks 1-4, respectively.



- As with the age distribution, there is wide variation in tree size classes across the project area. Total basal area averaged 107, 100, 92, and 125 ft²/acre in Blocks 1-4, respectively. Most basal area is concentrated in the 8-14" DBH classes.



- Patterns of cubic volume (ft³/acre) broadly mirror those of basal area and density. Averages were 2306, 2068, 1759, and 2807 in Blocks 1-4, respectively.

Tree health

- In contrast to many of the forests of the southern Rockies, stands in the Taylor Park ASCC project area are essentially unaffected by bark beetles, and most trees are in a relatively healthy condition. However, mountain pine beetle activity has been increasing over the last few years in lodgepole pine forests ~15 miles downcanyon of the project area.
- Lodgepole pine in the project area is, however, heavily affected by dwarf mistletoe (*Arceuthobium americanum*). 60% of sampled mature trees (≥ 6 " DBH, N = 920) exhibited dwarf mistletoe, with an average Hawksworth DMR (scale of 1-6) of 3.3, or more than half of the tree canopy affected. Though slightly less frequent, dwarf mistletoe was also observed on saplings and seedlings.

Regeneration

- Recent regeneration in the form of lodgepole pine tree seedlings (stems ≤ 1 " DBH) is abundant across all units (mean 432 stems/acre).

Heavy fuels

- All treatment units are characterized by high loadings of dead and down fuels, which is expected given stand ages. Average values (tons/acre) were 26, 23, 20, and 18 in Blocks 1-4, respectively.