Chewaucan Biophysical Monitoring Accomplishments 2007

The 2007 Chewaucan Biophysical Monitoring Team (CBMT) consisted of 13 participants:

Clair Thomas – project lead (6 years)
Lee Fledderjohann – web master (4 years)
Jordan Aney – team lead through mid July (4 years)
Caity Machado – data management & team lead July – September (4 years)
Zach Hollars – crew boss (base maps, photo points, helps all protocols) (3 years)
Alex Plato – base maps through June (6 years)
Tynan Grandberg – soils through June (6 years)
Brittany Cramer – vegetation (2 years)
Jacinda Thomas – vegetation (2 years)
Nathan Patla – canopy through July (1 year)
Rachel Honor – web page, data (1 year)
Ben Whitman – soils (apprentice – 1st year)
Neil Hanson – canopy (apprentice – 1st year)

The focus of the CBMT this year focused on the following Topics:

1. Carbon Sequestration in Bull Prairie and Auger Creek areas. Thirteen plots in the Bull Prairie were added to the existing plots set up last year and 26 plots were established in the Abe timber sale around Auger Creek. In addition to the standard data collected, measurements were also taken on downed woody debris (DWD). At each site DWD was collected from three decomposition classes and clip plots were collected. These samples were mailed into Oregon State University Research Labs for analysis.
2. Post harvest stand inventories in the Bull Stewardship area were collected and entered into Landscape Management System, a computer modeling program developed by the University of Washington and the Northwest Forest Research Station. Data was collected from 20 harvest units establishing more than one hundred, 1/50 acre plots. The response of the canopy and landscape to timber harvest and resulting release will be modeled and measured to improve the model.
3. Aspen stand enhancement encouraged by the removal of conifers in the riparian areas in the Bull Stewardship area. Six, 1/10 acre plots were established and base-line data was collected.
4. Juniper treatment. Twenty-one juniper sites were revisited. 14 of these were burned this year and another 7 were recently cut. Special attention is being given to soil conditions and chemistry under live, cut and burned juniper compared to open areas.
5. Slash Bust treatment near Cox Flat. Thirteen sites were revisited since the areas were burned and planted this spring. Special attention is being given to compaction, tree release, vegetation response and soil chemistry. Soils were collected from control sites as well as from unburned and burned sites in slash-busted areas.

6. Beetle Kill in the Upper Chewaucan. Four, tenth acre plots and 18 1/50 acre plots were established in the Winter Rim area where Mountain Pine beetles are killing the lodgepole pine and much of the ponderosa pine. In addition to regular transect data, data was also collected on tree moisture, number of pitch pockets per tree from the ground to 1.3 meters, and the average number of un-pitched beetle burrows per square inch at 1.3 meters on opposite sides of the trunk. Data will be placed in pivot tables and analyzed for relationships.

In all 33 new permanent 1/10 acre and 157, 1/50 acre plots were established, and 45 old sites were revisited. Each site records a minimum of 10 points of information on each of 30 indicators in addition to plot location maps, canopy maps, photo points and measurements from surveys unique to each site such as tree regeneration, plots for LMS, and tree health. More 90,000 individual points of data from major parameters and unique surveys were collected throughout the summer.

1. Soils: temperature, moisture, depth, rhizome depth, litter duff, compaction, chemistry; ammonia, nitrate, nitrite, phosphorus, potassium, pH
2. Canopy: stand inventory, stand stocking, stand health, canopy succession, canopy map, snags, downed woody debris and orientation, invasive weeds and location
3. Plot/Canopy may: shows locations and orientations of trees, woody debris, shrubs, boulders, disturbances, and sites of samples.
4. Vegetation: 30m line intercept for all vegetation, cover, density, dominance, frequency, importance, percent noxious weeds, quadrant surveys for species diversity and abundance.
5. Photo-points: All sites contain established photo-points of the tenth acre permanent plot, a 360º panorama, and all quadrats.
6. Location: Each location is hand mapped with a map and compass from semi-permanent landmarks. GPS coordinates are also taken for each transect.

The protocols for each set of measurements can be found in the CBM portion of the website.

Continuing changes from 2006.

- Many new changes were implemented last year as the emphasis of the monitoring effort began to focus on matched pair and before/after studies. These changes were beneficial and are being perfected. These can be referenced in the 2006 summary on the web page.

New to 2007:

- The web site has a new look, thanks to Rachel Honor. The use of tabs and queries are explained and the web pages are set up to make them easier to use. We will continue to work on these features as we receive input.
- A student research page is being constructed to allow student research using CBM data to be posted for review.
- The report section is being expanded to include:
    - regeneration surveys,
    - soil data from all sites, separated and graphed,

- LMS modeling including the Bull Stewardship, Kava and ABE areas,
- Carbon sequestration data from the Bull Stewardship, and ABE areas
- Winter Rim beetle kill data.