

Hardwood Silviculture Cooperative
Summer Management Committee Meeting Minutes
July 14-15, 2015

Tues July 14, 2015:

Attendees: Andrew Bluhm, Glenn Ahrens- OSU; Ralph Johnson, Brian Morris, Mike Olson, Kyle Galloway, Chris Hankey, Jeffery Dietrhc, Bea Robson, Greg Anderson, Jeremy Porter, Andrew Johnson, Peter Hurd, Dylan Tripp, Phil Roberts, Joe Magnuson, Brandon Larsen- WA DNR; George McFadden- Bureau of Land Management; Katie Bryant, Michael Johnson- Hancock Forest Management; Robert Deal- USFS PNW Research Station; Ray Taipale- Shorebird Properties; Neil Hughes- Northwest Hardwoods Canada; Paul Kriegal- Goodyear Nelson.

- Please refer to the associated handouts/files for further information.

We started the meeting at 8:30 AM at the WA DNR Northwest Region Office in Sedro Wooley, WA.

The morning session started with welcomes from the new HSC program leader, Glenn Ahrens. As many are aware, Dave Hibbs has retired and Glenn has a long history with red alder and with the HSC. 24 people were in attendance.

The first presentation of the day was given by Andrew Bluhm titled “HSC Red Alder Upper Stem Measurement Project”. This analysis was a continuation of the ongoing project investigating how well the red alder taper equation predicted DIB and thus volume. Previous analyses were performed on thinned natural alder stands (30+ years old), whereas this analysis was for five plantations that were 22 years old. Results include:

- DIB is under predicted above DBH.
- DIB under predictions increase with increasing measurement point height
 - At 32ft, DIB was under predicted by 0.5in (relative bias = -5.5%)
 - At HLC (42ft), DIB was under predicted by 0.8in (relative bias = -12.2%)
- No consistent or significant differences in observed vs. predicted DIBs by treatment
- Merchantable tree volume was consistently under predicted (mean = 1.0ft³, relative bias = -6.8%).
- Log volume was also consistently under predicted (mean = 2.0ft³, relative bias = -10.9%).

These results, although not ideal, at least put a number on the error associated with the original equation. All agree that the equation needs to be updated with data from bigger trees and refit. Andrew will keep collecting these data and Glenn and Andrew will explore options for refitting the taper equation.

Next, Glenn Ahrens presented to the group two potential research topics. The first concerns some files and maps that Glenn has had in his possession for decades on mixed red alder/Douglas-fir plantations on the Siuslaw National Forest that were pre-commercially thinned in the early 1980's when the stands were about 10 years old. Glenn and Andrew have tracked down some of these sites and so far have identified about 50 sites. The general prescription was to thin the Douglas-fir to 14'*14' spacing and leave scattered alder where present at 35'*35'. It is Glenns

idea to see what can be learned from some of these earlier practices with alder/Douglas-fir mixtures.

The next topic was an update on the status of the health of the HSC Type 2 plantation "Humphrey Hill". Back in the summer of 2010, the HSC visited this site and looking at the plantation it was immediately obvious that a large majority of it suffered from some ailment. There were many downed trees, and canopy openings. Suggestions of potential damaging agents included: *Armillaria*, low root development due to a hardpan, and freeze/severe weather damage. Well, Scott McLeod, the WA DNR representative to the HSC, kindly arranged for the DNR pathologist (Amy Ramsey) and entomologist (Glenn Kohler) to visit the site to see what was going on. They found that the stand was infected with *Anthonomus* root disease. This agent was likely the primary driver of mortality in the stand. The root disease causing fungus can spread by root to root contact among infected and healthy trees and will likely continue to spread and cause tree mortality as time progresses. Management of this disease in a single species stand can be challenging, since it is impossible to eradicate this disease and reduce tree damage. Other observed damaging agents included the alder bark beetle (typically a secondary agent that attacks weakened or newly killed alders), and green alder sawfly (GAS). The "shothole" pattern in alder leaves that may indicate GAS feeding was seen throughout the canopy. GAS is a non-native insect from Europe and North Africa recently introduced to the Pacific Northwest some time before the mid-1990s. The HSC will continue monitoring the health of this stand to since there are no recommended control measures for *Anthonomus* and GAS.

Electronic copies of these presentations are included.

Next up was a presentation titled "Growing and Managing Alder in BC, a 17 Year Update" by Neil Hughes with Northwest Hardwoods Canada. His talk focused on three things: an overview his business, alder silviculture that past eight years, and some impediments to managing alder in BC. Some results are as follows:

- Management/Silviculture
 - The alder business in BC has shrunk- harvested volume has declines and 2 of the 4 mills are shut down. However, log prices are back up.
 - Current licensees recognize the value of alder but few manage it because 1) not legally mandated, not in their business model, 3) they focus on higher volume stands.
 - Alder planting is slowly being accepted but currently at a very low level.
 - In the early 2000s alder management was accepted by the government in the Coast Forest region. Things were going well but the economic crash in 2008 basically stopped everything. By 2014, only about 3560acres of alder have been established under licences.
 - Since 2012, about 600 acres per year of alder are planted by all licensees.
 - Past seedling success has been achieved with plug ½ seedlings. However, this stock type is not currently produced. Plugs are now used.
 - Like elsewhere damage agents to young plantations include; alder bark beetle, voles, elk, frost, brush competition, heat stress.
 - Stocking scenarios include:
 - 450tpa for a 40-50 year rotation
 - 525tpa for a 35 year rotation
 - 600tpa for a 25 year rotation
 - PCT is carried out where/when feasible/possible.

- Challenges/Opportunities
 - The Conifer bias Culture
 - A perceived lack of suitable sites
 - Lack of knowledge and understanding
 - Lack of available seed for some areas
 - Potential low value from poor quality wood
 - Low volumes per hectare = low stumpage
 - Who will pay for the spacing / pruning?

An electronic copy of this presentation is included.

After a break, Andrew then presented the group with another test on how well the RAP-ORGANON growth model predicts the stand conditions of the HSC's older plantations. Like the taper equation testing, this is an ongoing effort and is a continuation of what Andrew presented at the 2011 and the 2013 HSC Annual Meeting.

This current effort had two main objectives:

- To compare RAP-ORGANON output with CIPS Red Alder Growth Simulator, and to
- Check to see how well RAP-ORGANON predicted individual plot data.

This analysis used 22 year old data from 11 Type 2 sites, "grew" trees for the 525tpa control plot and for a 525tpa plot that was thinned to 230tpa at about age 9, and compared the following five variables: TPA, DBH, H100 (height of the largest 110 trees/acre), stand basal area and stand volume.

The main results are as follows:

- Though not providing the exact same predictions, the CIPS Red Alder Growth Simulator predictions were very similar to the DOS-based RAP-ORGANON predictions for all five variables.
- TPA predictions were very close to observed values for both the control and thinned treatment.
- DBH was slightly under predicted for the control plot while the under predictions were greater for the thinned plot.
- H100 was consistently under predicted for both the control and thinned plots.
- Stand basal area was slightly under predicted for the control plot and significantly under predicted for the thinned plot.
- Stand volume was consistently under predicted for both the control and thinned plots.

Please see the attached presentation for more detailed results.

Andrew then moved on to HSC business with a review of last years' fieldwork, the coming years' fieldwork and an overview of the data collection schedule for all three installation types. Please see the associated handouts.

Last year (Winter 2014/15) had very little fieldwork- less than the HSC has had in over a decade. Only 3 installations needed measuring. Fieldwork included:

- Blue Mtn (3206, WHC), Hemlock Creek (5204, WHC), and Mohun Creek (4203, BCMIN) had their 22nd year measurement.

This upcoming year (Winter 2015/16) will have an average amount of fieldwork.

A total of 9 installations need either a measurement or a treatment. Fieldwork includes:

- Six Type 2 installations needed fieldwork.
- Humphrey Hill (4201, GYN) will be the first installation needing its 27th year measure.
- Five Type 2 installations- Lucky Creek (1202, BCMIN), Cape Mtn. (2204, SNF), Siletz (2205, Stimson), Dora (3207, BLM) and French Creek (4205, BCMIN) need their 22nd year measurement.
- Of these installations there are up to 6 various pruning and thinning treatments needed.
- Three Type 3 installations- Monroe-Indian (2301, Stimson), Turner Creek (4301, GYN), and Holt Creek (4303, BCMIN) need their 17th year measurement.

As fall approaches, Andrew will contact each HSC member to provide specific on the activities and schedule the fieldwork. In theory, all sites have cooperator support, but depending on the status of Goodyear Nelson, there may not be a crew available to conduct the 27th year measurements on Humphrey Hill. Therefore, it was decided for Andrew to stay in touch with Paul Kriegal, and if there is no support, to possibly have an HSC winter work party this coming winter to complete the measurements.

Wed July 15, 2015:

Attendees: Andrew Bluhm, Glenn Ahrens- OSU; Brian Morris, Mike Olson, Jeremy Porter, Andrew Johnson, Ralph Johnson- WA DNR; Katie Bryant- Hancock Forest Management; Ray Taipale- Shorebird Properties; Neil Hughes- Northwest Hardwoods Canada; Paul Kriegal- Goodyear Nelson.

After meeting once again at the DNR office in Sedro Woolley, the group went to out conduct upper stem (taper) measurements on the HSC Type 2 installation “Clear Lake Hill” (4202). This is one of the oldest HSC plantations at 26 years old. First, while waiting for stragglers, Glenn presented 22 year old data that Andrew complied summarizing the DBH, height, and volume growth by treatment through age 22 and forecasted to age 30 (volume only). Please see the associated handout.

After that we collected data on additional trees to add to the growing taper database. The day prior to the meeting, Glenn and Andrew chose then felled 12 buffer trees (3 trees each from the 230tpa Control, 230tpa Prune, 525tpa Control, and the 525tpa 1st thin treatment). Then with everyone’s help, we completed the taper measurements. The meeting concluded eating lunch at the scenic Clear Lake Hill viewpoint overlooking the Puget Sound and the San Juan Islands.