STAND MANAGEMENT COOPERATIVE FALL MEETING

Wisteria Hall, Washington Arboretum, Seattle, WA

September 22, 2016

	AGENDA	
22 Sept	**BUSINESS MEETING**	
8:30	Registration, coffee & rolls	
9:00	Welcome & Introductions	Candace Cahill, outgoing Policy Committee Chair Gareth Waugh, incoming Policy Committee Chair
9:10	Opening Remarks from UW College of the Environment	Dean Lisa Graumlich
9:40	Election of new Policy Committee Vice-Chair	Gareth Waugh, PC Chair, PBTF
9:50	Announcements & Accomplishments ✓ 2016 at a Glance ✓ New Measurement Crew Personnel ✓ NSF CAFS update—funded projects	Eric Turnblom
10:10	Director's Introductory Preface: SMC Budget and Research ✓ Policy Advisory Committee Meeting Summary ✓ Budget Projection and Dues Vote	Eric Turnblom
10:30	**BREAK**	
	TECHNICAL SESSION **SMC Ongoing Research**	
10:50	Overview of Modeling Project	Dave Marshall
10:55	Overview of Wood Quality Project	Eini Lowell
11:00	Overview of Silviculture Project	Eric Turnblom
11:05	Overview of Nutrition Project / Status of Type V's	Kim Littke
11:10	Late-Rotation Fertilization update	Kim Littke
11:30	Yield Performance of SMC Type I, II, and III Installations – $(SMC)^2$ Analysis	Jason Cross
12:00	**LUNCH**	
	TECHNICAL SESSION (cont.)	
1:00	PCT Analysis Project Status	Eric Turnblom
1:20	Appraisal of Rotation-age Tree & Stand Characteristics ✓ Tree and log quality ✓ Non-Destructive Testing relationships ✓ Soil Properties ✓ Biomass models ✓ IRC timeline update	 Eric Turnblom Eric Turnblom Kim Littke Maguire / Mainwaring Jason Cross
2:20	Modeling Competition Effects on Tree Growth and Stand Development: Assembly and Exploratory Analysis of a Spatially Explicit Dataset	Jeff Comnick
2:40	**BREAK**	
3:00	NRSIG – DNR Project	Luke Rogers
3:20	Present and Future of VMRC Research	Carlos Gonzalez-Benecke
3:40	2017 Research Plan of attack 1. SMC Ownership Survey Update? 2. Early winter TAC meeting 3. Installation Review Committee 4. Spring meeting date/location 5. Meeting Wrap-up	
4:00	Adjourn	

Minutes SMC Annual Fall Meeting
September 22, 2019, 9:00 am - 4:00 pm
Washington Arboretum, Seattle, WA

PRESENT

ORGANIZATION	REPRESENTATIVE(S)
American Forest Management Inc.	Jesse Saunders
B.C. Ministry of Forest (Teleconference)	Catherine Bealle Statland, Dave Goldie, Monty Locke, Patrick Martin
Campbell Global, LLC	Dave Hamlin
Cascade Timber Consulting	John Jayne
Green Crow	Jenny Knoth
Green Diamond Resource Co.	Eric Schallon, Amber Mount
Hampton Affiliates	Dale Claassen
Hancock Forest Management	Florian Deisenhofer
Lewis & Clark Tree Farms (Teleconference)	Kathryn Olson
Lone Rock Timber Co.	Tim Drake
Olympic Resource Management	Ryan Schlecht, Elijah Allensworth
Oregon State University	Carlos Gonzalez-Benecke (VMRC) Doug Mainwaring (CIPS)
Port Blakely Tree Farms	Gareth Waugh (Vice Chair), Eric Cohen
Quinault Indian Nation	Jim Plampin
Rayonier US Forest Resources	Candace Cahill (Chair), Kirk McEachern
Roseburg Resources	Tony Powell, Eric Dinger
Stimson Lumber Company	Margaret Banks, Roger Van Dyke
TimberWest Forest Corporation	Shawn McLennan
University of British Columbia	Valerie LeMay
University of Washington, SEFS	Dean Lisa Graumlich, Eric Turnblom SMC Director, Jeff Comnick, Jason Cross, Bob Gonyea, Rob Harrison, Kim Littke, Megan O'Shea, Mason Patterson, Luke Rogers, Pranjal Dwivedi, Fletcher Harvey
Washington DNR (Teleconference)	Scout McLeod
Weyerhaeuser NR Company	Scott Holub, Dave Marshal, Nathaniel Osborne, Eric Sucre

ABSENT

ORGANIZATION	REPRESENTATIVE(S)
Bureau of Land Management	George McFadden
Oregon Department of Forestry	Tod Haren
Pacific Denkmann Co.	Allen Staringer

CALLED TO ORDER

Candace Cahill, 2015 Policy Committee Chair welcomed attendees after which Eric Turnblom introduced CoENV Dean Lisa Graumlich who shared her vision and goals for the School of Environmental and Forest Sciences, (SEFS).

The Dean's number one goal for SEFS is reaccreditation of the Master of Forest Resources (MFR) in Forest Management under Forestry standard, accreditation of existing Sustainable Forest Management (SFM) option

within the B.S. degree program in Environmental Science and accreditation of new Natural Resource and Environmental Management (NREM) within the B.S. degree program in Environmental Science and Terrestrial Resource Management major under Natural Resources and Ecosystem Management standard.

Our College has a long history of offering an accredited educational program in forest management; the proposed MFR program has been designed to continue this history in a contemporary environment. SEFS future success is greatly influenced by SMC's collaborating research.

NEW BUSINESS:

- Two new members, Green Crow and Lewis & Clark Tree Farms
- Policy Committee Vice-Chair Gareth Waugh (Blakely Tree Farms) elected Policy Committee Chair
- Ryan Schlecht (Olympic Resource Management) elected Policy Committee Vice-Chair
- motion passed (17/yes, including BLM by proxy, 0/no and 3/abstaining), to keep dues the same for 2017
- task force set up to examine dues structure and level

SMC DIRECTOR'S REPORT

BUDGET

Shifts in memberships and land reclassifications will generate a loss of $50,000 in 2017's dues. These shifts include Plum Creek's acquisition by / merge with Weyerhaeuser NR ($27,000). BLM's acreage was reduced under their new RMP but have agreed to keep 2016's and 2017's dues at 2015's rate of $83,000. Dues for 2016 totaled $643,720; dues in 2017 will total $542,019. On the plus side, we've welcomed 2 new members, Green Crow and Lewis & Clark Tree Farms and secured $325,052 in external funding.

Of the 3 approved research projects currently underway, the Type I Sunset project is in an analyze-report-modify stage; no installations are staged for harvests therefore no new funds committed. The late rotation fertilization project's budget is evolving ($26,685 over two years is committed). We'll be monitoring progress on the 2nd Generation western hemlock trials and banking $51,665 in committed funding.

FIELD WORK

Field measurements completed for 2016. Bob Gonyea will train new field crew hire Mason Patterson and assist training contract measurement crews through the fall / winter.

DATA BASE

We developed procedural efficiencies decreasing time to check and upload field measurements into database down to about ½ -hour and the next database update (2015) will have tables linked per the schema (database dictionary) to make queries easer, currently in the process of validating data table cross-references. Tree List Generation Database now has five configurations.

SMC ONGOING RESEARCH

MODELING TAC

- Type I
    - helped orchestrate (hire & administer contractors) for 722 sunset, performed initial data cleaning on taper, hitman, and branch measurements, delivered to SMC 1st quarter
    - assisted in designing Late Rotation Fertilization study plans
    - continue to assist generally with Nutrition Wood Quality, and Silviculture TAC projects

WOOD QUALITY TAC

- focused on design and implementation of the wood quality phases of the Type I sunset protocol
- will continue to assist in developing a sunset protocol for western hemlock installations

NUTRITION TAC

- Type V's:
  - final 6-year measurements fall 2016
  - no future measurements planned unless interest from the cooperators
    - noted: once SMC field crew is on site, costs to re-measure are low-1hr field crew time
  - developed two - and four-year response models using linear discriminant analysis
  - 10 journal articles published
- Type VI's
  - still looking for late rotation stands in BC, OR and WA
  - Weyerhaeuser put in "pre plots" which helped compare TPA, basal area and qmd
- Late-rotation Fertilization project
  - finalized study plan for stand and tree responses

SILVICULTURE TAC

- PCT Analysis Type III
  - Next step, write up Type I 'late-rotation yield results in 1st working paper and Type I 'at-rotation' yield results in 2nd working paper
  - repeat for Type III installations
  - link to PYC
- Modeling Competition Effects on Tree Growth and Stand Development
  - Methods were developed to reduce error in spatially locating dead trees not present at time of stem mapping
  - Methods were developed for "mirroring" tree and stand characteristics in the plot buffers so growth on plot edge trees could be modeled
  - Various representations of "growing space" were investigated, included various modifications of Dirichlet polygons; Solar insolation (given lat/long, local slope & aspect, stem maps and tree crown characteristics promises to be quite useful
  - Preliminary analysis steps included selection of the Variogram methodology for disentangling microsite effects from spatial interaction effects
  - Weather / climate variables to be considered come from a variety of sources, investigating transformations and others
  - SMC-ORGANON was refit to the more limited stem-mapped plot database for the base model
  - In process of adding weather, climatic, spatial and microsite effects to the base model
- Yield Performance of SMC Type I-III-$(SMC)^2$
  - solved issue in estimating asymptotic yield
  - finalizing coding of Plantation Yield Calculator
  - reverse-weighted TPA with age (issues in ingrowth with Type I/II installations)
  - ensured that weights for each of the three variables standardized to equal weighting
  - fits of the full model completed, currently running bootstrap model reductions
  - applied predicted merchantable ratios to predicted total yield
  - limit predictions to within observed age ranges (<60 years Type I/II, < 30 years Type III's)
  - BA and QMD models are now included

- Effects of Nitrogen Fertilization and Thinning Treatments on Subsurface Soil Carbon and Nitrogen
    - sampled soil to 3 m at 16 sites and evaluated the long term effects of fertilization on soil C, N, and pH
    - evaluating the long term effects of thinning and fertilization treatments on soil carbon, nitrogen, and pH to a depth of at least 1m
- Type I Sunset Project – Appraisal of Rotation-age Tree & Stand Characteristics
    - waiting for x-ray densitomentry cores and strip data
    - no DF or Hemlock plots scheduled for harvesting in 2017
    - increment core sampling down from 2 to 1 at breast height
    - completed data entry / cleaning of volumetric & weight determinations on disks
    - continued examination of treatment differences using available variables
    - working on summary report and working paper
    - need to choose next installation

STUDENTS

- 6-PhD and 3-MS

PUBLICATIONS

1. Todoroki, C.L. and Lowell, E.C. 201x. Validation of models predicting modulus of elasticity in Douglas-fir trees, boles, and logs. New Zealand Journal of Forestry Science.
2. Hoibo, O., E. Turnblom. 2016. Modelling vertical profiles of knot characteristics in young coastal U.S. Douglas-fir. Forest Products Journal.
3. James, J., K. Littke, T. Bonassi, and R. Harrison. 2016. Exchangeable cations in deep forest soils: Separating climate and chemical controls on spatial and vertical distribution and cycling. Geoderma 279: 109-121.
4. Littke, K.M., R.B. Harrison, and D. Zabowski. 2016. Determining the Effects of Biogeoclimatic Properties on Different Site Index Systems of Douglas-fir in the Coastal Pacific Northwest. For. Sci.

OTHER REGIONAL RESEARCH

PRECISION FORESTRY COOPERATIVE SYNERGISTIC PROJECTS: ANDREW COOK AND LUKE ROGERS

Precision Forestry Cooperative Synergistic Projects

1. Inventory Sampling Design & WETSAG Riparian Monitoring
2. CMER Stream Typing Model
3. Ecology Wetland Mapping
4. Waste 2 Wisdom

VMRC: CARLOS GONZALEZ-BENECKE

Current Projects

1. Assessments of carbon stock and net primary productivity responses of four coniferous species on Long-term vegetation management studies in the PNW
2. Assessing interactions between soil, climate and vegetation management treatments
3. Integrated analysis: VM Effects on stand canopy dynamics
4. Factorial combinations of vegetation control

Future Projects

1. G x E Interactions: Site-specific interactions of genetics, site and regeneration treatments
1. Sustainability of regeneration treatments: Long-term effects on water and nutrient dynamics, biodiversity

1. Mid-rotation vegetation management: Thinning, pre-harvest stock-type x VM Interactions: WH / WRC
2. Ecophysiological modeling: 3-PG for young stands
3. Operational/specific studies: Test new herbicide Cleantraxx

SMC 2017

- SMC Ownership Survey update
- Meetings 2017
    1. TAC February 20th, Vancouver or Olympia (tbd)
    2. PAC last week in March (tbd)
    3. Annual Spring Meeting April 5 – 6, 2017 (location tbd)
        - include discussion on cost and structure for DF sunsetting in 2018
    4. Installation Review (IRC) Committee (teleconference) July 13th
    5. Budget Task Force November (tbd)
- PFC's Symposium on Systems Analysis in Forest Resources-August 27-31, 2017

Meeting adjourned at 4:00 PM.