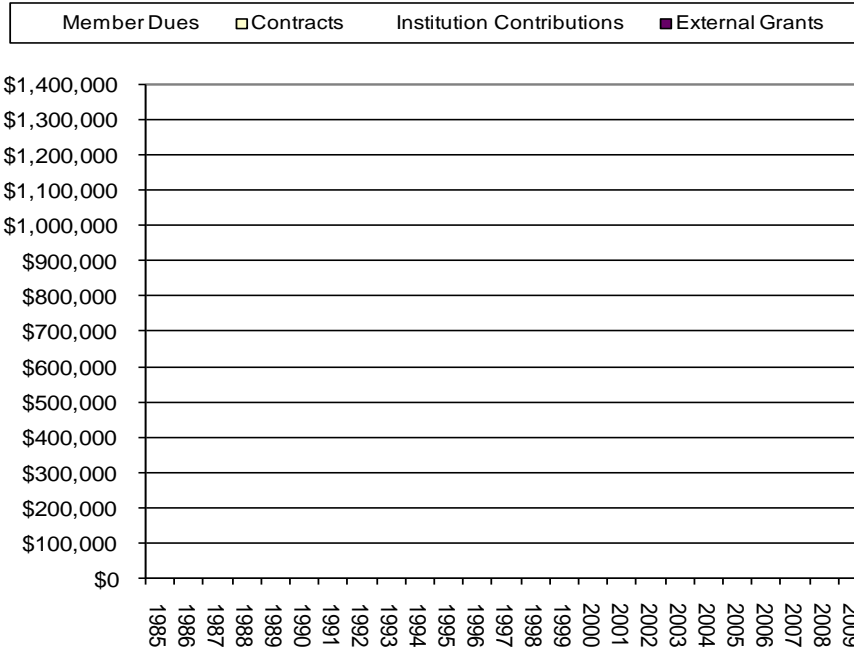


SMC ACCOMPLISHMENTS

(Jan 1 –Sept 1, 2009)

I. Budget (1985-2009): \$19.6 million



- 60% landowner member dues
- 20% institutional members
- 2% member contracts
- 18% external grants

Members:

- Forest Systems no longer operating in PNW
- Stimson Lumber Co. joined the SMC

II. Installation Field Work and Database

- **08/09 field work:** Full measurements on 11 type I's, 0 type II's, 6 type III's, 3 Type IV's (GGTIV's), and 28 Type V's. Also, 30 Type I plots were RD checked and 9 were marked for thinning. 5 Type III 's were marked and thinned. In addition 5 "Carry-over" installations, and 2 contract installations will be measured. 1 Type I installation (3 plots) and 28 Type V's installations will be fertilized. Will install additional new Type V installations
- **Summer Field Crew:** Paul Footen, Kim Littke, Ryan Reith, Carol Shilling, & Gonzalo Thienel.

- ✓ Vegetation and habitat assessments on 97 plots in 6 installations, includes 66 plots on the 3 GGTIV installations planted in 2005
 - ✓ 6 soil pits at 3 installations; concurrently did DF pitch moth resurveys in 11 plots at these 3 installations
 - ✓ soil sample at installation 808; a type II harvested for the NDT study with a questionable site index call
 - ✓ one soil pit at SMC 930/931/932 installations near Forks, WA for the August 28-29 Northwest Forest Soils Council Field Tour.
 - ✓ Paired-tree fertilization study: set up and instrumentation completed on 19 new installations. In total soil pits sampled and sensors installed on 53 installations. Others installed will bring the total to 66.
- **Database:**
 - ✓ Updated SMC database delivered in June
 - ✓ Expect integrated database for the NDT study to be completed in December
 - ✓ Database design for Intermountain Forest Tree Nutrition Cooperative started in July

III. Publications

A. Theses:

1. Kantavichai, R. 2009. Effects of Silviculture and Climate on Wood Specific Gravity of a 55 year-old Douglas-fir Stand in Western Washington. Master's Thesis. Univ. of Washington. 62p

B. Journal & Proceedings Articles

In Print

1. Briggs, D. 2009. **Research Cooperatives Serve the Forestry Community.** Western Forester. 54(4):1-4
2. Briggs, D. 2009. **PFC Brings High Tech Tools to Forestry Sector.** Western Forester. 54(4):10
3. Footen, P. W., Harrison, R. B., and B.D. Strahm., 2009. **The long-term effects of nitrogen fertilization on understory vegetation in Douglas-fir plantations in the Pacific Northwest.** Forest Ecol. Manage. (2009). Doi:10.1016/j.foreca.2009.02.033.
4. Strahm B. D., Harrison, R. B., Terry, T. A., Harrington, T. B., Adams, A. B., Footen, P. W., 2009. **Changes in dissolved organic matter with depth suggest the potential for postharvest organic matter retention to increase subsurface soil carbon pools.** Forest Ecol. Manage. (2009), doi:10.1016/j.foreco.2009.03.014.

Accepted

1. Flint, C.M., R.B. Harrison, B.D. Strahm, A.B. Adams. **Nitrogen leaching from Douglas-fir forests following urea fertilization and impacts on water quality.** Journal of Environmental Quality
2. Harrison, R.B., T.A. Terry, C.W. Licata, B.L. Flaming, R. Meade, I.A. Guerrini, B.D. Strahm, D. Xue, A.B. Adams, M.R. Lolley, A. Sidell, G.L. Waggoner, D. Briggs, E.C. Turnblom **Biomass and stand characteristics of a highly-productive mixed Douglas-fir and western hemlock plantation in coastal Washington.** Western Journal of Applied Forestry

In-review

1. Hill, Andrew, E.C. Turnblom. **Improving modeled predictions of short-term Douglas-fir growth in eastern Washington, USA by incorporating local weather information.** Forest Science
2. Hill, Andrew, E.C. Turnblom. **Using local short-term weather and long-term climate information to improve periodic diameter growth prediction for Douglas-fir growing in pure and mixed stands in eastern Washington USA** Canadian Journal of Forest Research
3. Strahm, B.D., and R.B. Harrison. **Mineral and organic matter controls on the sorption of macronutrient anions in variable-charge soils.** Soil Science Society of America Journal
4. Kantavichai, R. D. G. Briggs, E. C. Turnblom **“Effect of Thinning, Biosolids, and Weather on Annual Ring Specific Gravity and Carbon Accumulation of a 55 Year-old Douglas-fir Stand in Western Washington”** Can. J. For. Res.
5. Briggs, D.G. **Enhancing Forest Value Productivity Through Fiber Quality,** Journal of Forestry
6. Langum, C.E., V. Yadama, and E.C. Lowell. **Physical and Mechanical properties of young-growth Douglas-fir and western hemlock from western Washington.** For. Prod. J.
7. Todoroki, C.L., E.C. Lowell, D.P. Dykstra. **Automated knot detection on Douglas-fir veneer images** Computers in Engineering and Agriculture
8. Kantavichai, R. D. G. Briggs, E. C. Turnblom **“Modeling effects of soil, climate, and silviculture on growth ring specific gravity of Douglas-fir on a drought-prone site in Western Washington”** Forest Ecology & Management.
9. Footen, P. W., Harrison, R. B., 2009. **Carryover Effects on Above and Below Ground Carbon and Nitrogen Storage in Douglas-fir Plantations in the Pacific Northwest.** Northwest Forest Soils Council Spring Meeting; March 9, 2009.
10. Briggs, D.G., R. Kantavichai, E. C. Turnblom. **Predicting the Diameter of the Largest Breast-height Region Branch of Douglas-fir Trees in Thinned and Fertilized Plantations.** For. Prod. J.

C. Technical Reports, Working Papers, etc.

IV. Conferences, Symposia, Workshops

A. Presentations:

1. Footen, P. W., Harrison, R. B., 2009. **Effects of N fertilization Carryover on Above and Below Ground Carbon and Nitrogen Storage in Douglas-fir Plantations in the Pacific Northwest.** University of Washington, College of Forest Resources, Graduate student Symposium; March 6, 2009
2. Footen, P. W., Harrison, R. B., 2009. **Effects of N fertilization Carryover on Above and Below Ground Carbon and Nitrogen Storage in Douglas-fir Plantations in the Pacific Northwest.** Northwest Forest Soils Council Spring Meeting; March 9, 2009
3. Footen, P.W. **Effects of Silvicultural Harvesting on Soils:** Guest Lecture for ESRM 323 Silviculture. At the University of Washington College of Forest Resources, Spring 2009.
4. Kantavichai, R. 2009. **Timber and bioenergy planning with effects of silviculture treatment.** 13th Symposium on System Analysis in Forest resource, Charleston, SC, May 26, 2009.
5. Kantavichai, R. 2009. **Effect of Thinning, Biosolids, and Weather on Annual Ring Wood Density and Carbon Accumulation of a 55 Year Old Douglas-fir stand in Western Washington.** 2009 Western Forest Mensurationists Meeting, Vancouver, WA. June 21,2009.
6. Ceder, Kevin R., 2009. **Vegetation Composition and Succession in Managed, Coastal Douglas-fir Ecosystems: Toward a set of compatible prediction and projection models.** NCASI Western Wildlife Group Meeting. Stevenson, WA. 15 April 2009.
7. Ceder, Kevin R. **Comparative Silviculture Lab.** Guest lecture/lab session for ESRM 323. University of Washington College of Forest Resources, Spring 2009.

B. Posters:

1. Footen, P. W., Harrison, R. B., Strahm, B. D., 2007. **Long-Term Effects of N Fertilization on Productivity of Douglas-fir Forests in the Pacific Northwest.** Soil Science Society of America International Convention, Houston, TX Oct. 5-9, 2008.

V. Grants & Student Support

A. Grants

1. **\$350,000 (70,000/yr, 2009-2014).** UW Membership in the Center for Advanced Forest Systems (CAFS). National Science Foundation. D. Briggs, R. Harrison, L.M. Moskal, S. Toth, E. Turnblom
2. **\$ 7,600 NSF I/UCRC (1 yr) CAFS Undergraduate student research supplement.** (Moskal, Briggs). For Work on terrestrial Lidar

B. Student support (UW/CFR scholarships, etc.)

1. Corkery Family Chair (\$73,000 for 2009 summer field crew)
2. Gessel Scholarship Fund
3. UW Teaching Assistantships in support of SMC students

VI. Meetings, Seminars, Field Tours

1. Northwest Forest Soils Council Summer Field Tour: Soils and Forestry on the Northwestern Olympic Peninsula. Forks/Sappho, WA. Aug 26-28.

VII. Students

1. **Graduated:** Rapeepan Kantavichai (MS)
2. **Current Graduate Students:**
 - Kevin Ceder (PhD, Turnblom)
 - ✓ Converted to PhD student after over eight years as research staff with the Rural Technology Initiative at the UW College of Forest Resources with research focusing on developing dynamic models for understory vegetation development in young, managed Douglas-fir and western hemlock forests.
 - ✓ Resident developer/expert for the Landscape Management System, a forest management simulation and analysis system.
 - ✓ Strong background in software development with my most recent project building the software to support Washington Department of Fish and Wildlife's Landscape-Level Wildlife Assessment project. This software package includes a nearest-neighbor imputation algorithm for data imputation, interfaces with external programs including ArcGIS and Netica, a Bayesian Belief Network package, and numerous calculation routines to support wildlife habitat assessments.
 - ✓ Extensive experience with forest growth and yield models including all variants of FVS and ORGANON.
 - ✓ Enjoys all things wood. When not working with virtual trees and ecosystems I can be found messing about in wooden boats.
 - Paul W. Footen (MS, Harrison)
 - ✓ Researching the carryover effects of nitrogen fertilizer. After completion of the MS I plan on continuing to work on a PhD with Rob Harrison on a PhD at the College of Forest Resources focusing my efforts on carbon sequestration in soils on managed forests in the Pacific Northwest.
 - ✓ During winter and spring quarters I mentored Corey O'Shea, a high school student taking part in a senior research thesis project through her school. We prepared and

- analyzed vegetation and soil samples and discussed the results of these analyses. I'm currently working on a manuscript for Forest Science.
- ✓ Fourth year as lead of the summer field crew.
 - ✓ Awards:
 - 2008 Fall Best paper of Session at Soil Science Society of America
 - 2009 Spring Exemplary Teaching Assistant/Research Assistant, CFR
 - ✓ **TA:**
 - 2009 Spring ESRM 100/ENVIRO 110 – Intro to Environmental Science (Harrison)
 - 2009 Winter ESRM 311/507 - Soils and Land Use (Harrison)
 - 2008 Fall ESRM 210/510 - Introduction to Soils (Zabowski)
- Rapeepan Kantavichai (PhD, Briggs)
 - ✓ Fourth year Ph.D. track in Forest Management and Biometrics.
 - ✓ Analyzing effects of annual specific gravity from silviculture and climate influences
 - ✓ Modeling the stem biomass in allometric relationship from SMC sample disk data
 - ✓ Researching and modeling the environment factors effecting growth of stem biomass.
 - ✓ **TA:**
 - 2009 Spring QSCI 292 - Analysis for Biologists II (Johnson J.A.)
 - 2009 Winter QSCI 291 - Analysis for Biologists I (Johnson J.A.)
 - Kim Littke (PhD, Harrison)
 - Third year Ph.D. student, teaching assistant, and research assistant with Dr. Robert Harrison.
 - Working on the Paired Tree Fertilization Trials with the Stand Management Cooperative.
 - Working with the following undergrads to sample soils in Washington and Oregon: Afton Grider, Mallorree Weinheimer, and Jennifer Perkins.
 - Have sampled soils installed & maintained moisture sensors on 53 Paired Tree Installations.
 - Maria Petrova (MS, Turnblom)
 - Ben Shryock (MS, Harrison)
 - Carol Shilling (PhD, Harrison)
 - ✓ Research Assistant working with Dr. Robert Harrison of the University of Washington and Timothy Harrison of the United States Forest Service on Long Term Site Productivity studies of 5th year growth of Douglas-fir at Matlock, Washington and Molalla, Oregon sites.
 - ✓ Teaching Assistant for Environmental Science 100
 - ✓ College of Forest Resources Nomination for Distinguished Teaching/Research Assistant Award.
 - Gonzalo Thienel (PhD, Briggs)
 - ✓ Second year Ph.D. student (Sustainable Marketing) and research assistant with Dr. D. Briggs.

- ✓ Third year as a member the summer field crew.
 - ✓ **TA:** 2009 Spring and Winter ESRM 100/ENVIRO 110 – Intro to Environmental Science (Harrison)
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- Nick Vaughn (PhD, Turnblom)