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# Anne McIntosh

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## EDUCATIONAL EXPERIENCE:

### **M.S. in Forest Science** (September 2000 – August 2003)

Oregon State University, Corvallis, Oregon

- Thesis title: “Forest canopy structure in western Oregon: characterization, methods for estimation, prediction, and importance to avian species”. Co-advisors: Drs. Steven Garman and Andrew Gray. Cumulative GPA: 3.94.

### **B.Sc. with Honors in Biology and Chemistry** (September 1992- May 1996)

University of British Columbia, Vancouver, B.C., Canada.

- Undergraduate Honors Thesis: “Variation in polyphenolic levels in the brown algae *Hedophyllum sessile*.” Advisor: Dr. Robert DeWreede. Cumulative average: 80% (A-).

## WORK EXPERIENCE:

### **Forest Ecology Research Associate - Canopy Database Project** (November 2003 - present)

The Evergreen State College, Olympia, WA.

- Organize and synthesize the literature concerning forest canopy structure; contact canopy researchers, gather, document, and analyze relevant datasets on forest canopy structure and function diversity, work with computer programmers to develop specifications for, and test informatics tools, and carry out other tasks as needed. Design and implement further field studies on the thousand-year-chronosequence of stands in the southwestern WA Cascades. Manage work-study students in the forest canopy lab.

### **Summer Faculty – Instructor of “Forest Ecology of the Pacific Northwest”** ( July-September 2005), The Evergreen State College, Olympia, WA.

- Designed and implemented a 5-credit upper-division undergraduate science/4-credit graduate course on forest ecology:
  - Focuses of study included tree and shrub taxonomy, population ecology, community ecology, forest types of the PNW, productivity, nutrient cycling (biogeochemistry), physical determinants within ecosystems including solar radiation, temperature, wind, fire, soils, forest dynamics and succession, disturbance and ecological issues currently facing PNW forests (e.g., post-fire management).
  - Class time was divided among lecture (5 hours per week), discussion of a peer-reviewed forest ecology journal article (1 hour per week) and field-based labs (4 hours per week).
  - There was one 3-day 2-night field trip to visit multiple forest structure types on the West and East sides of the Cascades in Washington and Oregon.

**Database Developer and Data Analyst**, (November 2004), Worked with USDA Forest Service – Sisters Ranger District, Bend, OR

- Data input development included developing an interface in MS Access so that Forest Service personnel could easily input data into the database. This was for both vegetation transect and fuel transect data for the Santiam White Fir Study Administrative Project.
- Data analysis included determining percent vegetation cover for each 10 m transect (153 transects total), percent vegetation cover by species, and percent vegetation cover by forbs, grasses, and shrubs. SAS data analysis programs provided so that USFS can conduct future data analysis using same technique.

**Summer Faculty – Instructor of “Forest Ecology of the Pacific Northwest”** ( July-September 2004), The Evergreen State College, Olympia, WA.

- Designed and implemented a 4-credit upper-division undergraduate science course on forest ecology:
  - Focuses of study included tree and shrub taxonomy, population ecology, community ecology, forest types of the PNW, productivity, nutrient cycling (biogeochemistry), physical determinants within ecosystems including solar radiation, temperature, wind, fire, soils, forest dynamics and succession, disturbance and ecological issues currently facing PNW forests (e.g., post-fire management).
  - Class time was divided among lecture (3 hours per week), discussion of a peer-reviewed forest ecology journal article (1 hour per week) and field-based labs (4 hours per week).
  - There was one overnight field trip to visit multiple forest structure types on the West and East sides of the Cascades in Washington and Oregon.

**Graduate and Faculty Research Assistant** (September 2000 – October 2003)

Department of Forest Science, Oregon State University, Corvallis, OR.

- Planned and implemented a three-month field study comparing four canopy-closure estimating techniques (line-intercept, moosehorn, spherical densiometer, and hemispherical photography) in five Douglas-fir/western hemlock structure types in the western Oregon Cascades. (Summer 2001).
  - Organized all logistical components of the study including hiring a field assistant from large applicant pool, selecting and locating field sites, transportation requirements, data entry and quality control, and managing the project budget.
  - Trained and supervised one field assistant.
  - Analyzed 1800+ hemispherical canopy photographs using Canopy™ software package.
  - Compared ground-based methods with canopy cover predicted using the Forest Vegetation Simulator (FVS) equations using Anova statistics.
- Conducted detailed analyses of the USDA Forest Service Forest Inventory and Analysis Program (FIA) western Oregon canopy database for 934 plots:
  - Characterized canopy structure of a chronosequence of forests in western Oregon, including total percent cover, cover by line-intercept layer, shade-tolerant cover, and understory cover.
  - Predicted percent canopy cover and vertical canopy diversity from standard forest measurements collected by the FIA inventory, using an information-theoretic analytical approach.
  - Applied the predicted vertical diversity measures I created to existing bird-habitat association models using logistic regression models.

**Oregon Plan Data Compiler:** (April - September 2000)

Oregon Department of Fish & Wildlife, 28655 Hwy 34, Corvallis, OR, 97333.

- Tested a pilot database for documenting upper fish presence surveys

- Manipulated and entered essential salmonid habitat documentation for the Rogue Watershed District into a MS Access relational database.
- Created posters using GIS showing USGS quad map layouts with mapped upper fish distribution points.

**Habitat Data Technician:** (January – April 2000)

Oregon Watershed Enhancement Bureau, 28655 Hwy 34, Corvallis, OR, 97333.

- Entered over 1000 OWEB Watershed Restoration Inventory projects into OWEB's Restoration Inventory MS Access Relational database.
- Mapped project locations using Streamnet GIS mapping tool. Coverages were then used to display restoration sites across Oregon.

**Spawning Ground Surveyor:** (October 1999 – January 2000)

Oregon Department of Fish & Wildlife, Tillamook, OR, c/o 28655 Hwy 34, Corvallis, OR, 97333.

- Surveyed for salmonids, redds, and spawning habitat, in coastal streams along the northern Oregon coast (Kilchis, Wilson, and Trask rivers).

**Natural Resource Specialist I:** (June – October 1999)

Oregon Department of Fish & Wildlife, c/o 65495 Alder Slope Road, Enterprise, OR 97828.

- Monitored fish passage at Little Goose Dam, WA, under contract to US Army Corps of Engineers.
- Sampled 500 - 1000 juvenile fish daily (species, rearing type, markings, etc.).
- Completed daily inspection of the juvenile fish facilities (orifices and gatewells), and twice weekly inspections of the adult fish facilities.
- Completed a weekly report of operations and collection overview for distribution to several government agencies. Assisted in completion of the annual report.

**PUBLICATIONS:**

- McIntosh, A.C.S., Cushing, J.B., Nadkarni, N.M., and Zeman, L.. In press. Database design for ecologists: composing core entities with observations. *Ecological Informatics*.
- Cushing, J.B., N.M. Nadkarni, M. Finch, A.C.S. Fiala, E. Murphy-Hill, L. Delcambre, and D. Maier. 2007. Component-based end-user database design for ecologists. *Journal of Intelligent Information Systems*.
- Cushing, J.B., T. Wilson, A. Borning, L. Delcambre., A. Fiala, M. Frame, J. Fülöp, K.Gergely, C. Hert, E. Hovy, J. Jones, E. Landis, D. Maier, D. Roth, C. Schweik, and S. Young. *Eco-Informatics for Decision Makers: Advancing a Research Agenda* Edited by Judith Cushing and Tyrone Wilson. Report of an NSF- and USGS/NBII-sponsored Workshop on Eco-Informatics for Resource Management Decision Makers held at The Evergreen State College, Olympia, Washington, December 13-15, 2004, and organized by EPA, NASA, NSF, USDA Forest Service, and USGS/NBII. <http://www.evergreen.edu/bdei/documents/finalReport.pdf>
- Fiala, A.C.S., Gray, A. and Garman, S. L. "Comparisons among five canopy-cover estimating methods in five Douglas-fir/western hemlock structure types in western Oregon" *Forest Ecology and Management*. 232 (2006) 188–197.
- Fiala, A.C. S. 2003. Master of Science Thesis. Forest canopy structure in western Oregon: characterization, methods for estimation, prediction, and importance to avian species. Oregon State University. 335 pp.

- Olson, D. H., Sheridan, C. D., Hollen, B.A., Hagar, J.C., Rundio, D.E., Nonaka, E., Fiala, A.C., Slauson, K.M., Wessell, S.J., McDade, K.A. and Stoddard, M.A. 2003. Book Review: Johnson DH, O'Neil TA, managing directors. 2001. Wildlife-Habitat Relationships in Oregon and Washington. Corvallis, OR: Oregon State University Press. 736 p. + CD-ROM. *Northwestern Naturalist* 84:47-50.
- (In preparation)McIntosh, A.C.S., Garman, S. L. and Gray, A. “Characterization and prediction of forest canopy structure in western Oregon.” Possible journal outlets: *Forest Ecology and Management*, *Journal of Northwest Science*.
- (In preparation) McIntosh, A.C.S., Gray, A. and Garman, S. L. “Use of vertical canopy diversity indices to improve existing wildlife habitat models“. Possible journal outlets: *Journal of Northwest Science*

## PRESENTATIONS:

### Oral:

- Ecoinformatics workshop: Part I. DataBank - Database design tools for forest ecologists, and Part II. Data Visualization, Statistical, and Archival Tools for Forest Ecologists, at the [North American Forest Ecology Workshop](#), in Vancouver, B.C., June 19, 2007.
- Guest Lecturer – Presented a two-hour lecture on Forest Structure to the Temperate Rainforests Program at The Evergreen State College, Olympia, WA, November 2, 2005.
- Fiala, A.C. et al. – Anne Fiala presented a half-day workshop on ecoinformatics as part of the 4<sup>th</sup> International Canopy Conference, Leipzig, Germany, July 16, 2005, <http://scidb.evergreen.edu/leipzig-workshop/>
- Guest Lecturer – Presented a lecture and lab on Structured Query Language (SQL) to a Database Applications in Business Class (BUSA 377) at Pacific Lutheran University, Tacoma, WA, October 26, 2004.
- Fiala, A.C. MS Thesis findings: Forest canopy structure in western Oregon: characterization, methods for estimation, prediction, and importance to avian species. Seminar presented to employees of the Forestry Sciences Laboratory, Portland, OR, October 15, 2003.
- Fiala, A.C. MS Thesis Defense. Forest canopy structure in western Oregon: characterization, methods for estimation, prediction, and importance to avian species. Oregon State University, August 26 2003.
- Guest Lecturer – Presented a lecture on riparian dynamics to a Forest Biology (FOR 240) class, Oregon State University, May 30, 2003.
- Fiala, A.C., Garman, S. L. and Gray, A. “Comparisons among four canopy-cover estimating methods in five Douglas-fir/western hemlock structure types in the western Oregon Cascades”. Annual meeting of the Northwest Scientific Association, Forks, WA, March 27, 2003.
- Fiala, A.C., Gray, A., and Garman, S. L. “Characterization and prediction of forest canopy structure in western Oregon”. 3<sup>rd</sup> International Canopy Conference, Cairns, Australia, June 27 2002.

### Poster:

- Cushing, J.B., A.C.S. Fiala, M. Finch, N. Kaplan, E. Melendez-Colom, N.M. Nadkarni, K. Ramsey, K. Vanderbilt, and J. Walsh. 2004. Database tools for ecological data integration and synthesis. Poster presented at the Ecological Society of America 89th Annual Meeting, Portland, OR, August 1-6 2004.

- Fiala, A.C.S., Gray, A., and Garman, S.L. “Patterns of canopy structure across a successional gradient for the dominant forest types of western Oregon” Poster presented at the Ecological Society of America 89th Annual Meeting, Portland, OR, August 1-6 2004. Fiala, A.C.S., Garman, S. L. and Gray, A. “The diversity of canopy structure across a successional gradient for three forest types in western Oregon” North American Forest Ecology Workshop, Corvallis, OR, June 17, 2003.
- Fiala, A.C., Garman, S. L. and Gray, A. “Characterization and prediction of forest canopy structure in western Oregon.” Annual meeting of the Northwest Scientific Association, Boise, ID, March 29, 2002.

### PROFESSIONAL MEMBERSHIPS:

- International Canopy Network (2003-present).
- American Fisheries Society (2001-2003).
- Northwest Science (2003-present).
- Ecological Society of America (2003-present).
- Xi Sigma Pi Honors Society – Zeta chapter member (2003-present).

### AWARDS:

- Outstanding Forest Science Masters Student Award, College of Forestry, OSU (June 2003).
- Jack & Bobbie Saubert Scholarship, College of Forestry, OSU (2002-2003).
- OSU Forest Science Department Travel Grant (June 2002).
- Rutherford Scholarship Recipient (1992).
- U.B.C. Entrance Scholarship Recipient (1992).

### SERVICE ACTIVITIES:

- **International Canopy Network, Board of Directors Member** (2005-present)
- **Stream Team Salmon Steward:** Participate in seasonal outreach to the public at sites where Chinook and chum salmon are returning to spawn.(2004-present).
- **Oregon Chapter-American Fisheries Society Webmaster** (<http://oregonstate.edu/groups/orafs>) (2000-2003). Posted quarterly newsletters, posted information for the annual meeting, maintained current pages, and advertised fisheries-related jobs.
- **Forest Science Graduate Student Representative** (2001-2002). Assisted in developing and facilitating the orientation for Fall 2002 for incoming Forest Science graduate students, assisted with organizing of the Spring Seminar Series on Forest Health, attended several faculty meetings, increased departmental recycling facilities, and organized the annual Forest Science Spring Picnic.
- **Volunteer with *Equitopia*** - Therapeutic horseback riding program, Oregon State University (2001-present). Work weekly with an 8-yr-old girl with cerebral palsy.
- **Volunteer tutor** (2003) – Assisted a Natural Resources undergraduate student with class work.
- **Volunteer Reviewer** – I have read through fellow students’ class papers, poster presentations, and dissertations in order to provide grammatical and content feedback. Also reviewed for

**ADDITIONAL SKILLS:**

- Computer Skills: SAS 8.0-8.2 (including building macros), MS Office (Access, Excel, Word, Powerpoint), R, SPlus, Sigmaplot, PC-ORD, Arcview 3.2, ERDAS Imagine, Canopy (program for analyzing hemispherical canopy photographs), Gap Light Analyzer, Macromedia Dreamweaver, and HTML.
- GPS, map reading, and navigational skills.
- Occupational First-Aid Level I.
- Tree-planting: planted 500-2000+ trees per day in clear-cut and selection harvest sites in northern British Columbia during six seasons: 1995-1997.

**INTERESTS:**

- Outdoors: Organized Forest Science Intramural women's soccer team, bicycle commuter, completed Avenue of Giants marathon (May 4 2003), row, hike, surf, mountain bike, snowboard, rock-climb.
- Travel: Most recently visited Egypt (January 2007), Thailand (September 2006), Baja Peninsula (December 2005), Germany (July 2005 – International Canopy Conference), Costa Rica (April 2005 – conduct research with Dr. Nadkarni in Monteverde), toured United Kingdom and Ireland (2003), Australia (2002) and Switzerland (2001). Traveled extensively throughout Central America (October 1996-January 1997).
- Pottery.

**REFERENCES:**

Available upon request