

DARRELL A. HERBERT

Curriculum vitae

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EDUCATION

Ph.D. Agronomy and Soil Science, University of Hawaii, Manoa, 1990 - 1995.
Major: Agronomy and Soil Science with forest ecosystem emphasis.
Minor: Botany.

M.S. Botany, University of Hawaii, Manoa, 1982 - 1984. Marine ecology emphasis.

B.S. Biology, Seattle Pacific University, 1978 - 1982.

RESEARCH INTERESTS

Theoretical and experimental approaches to linking key ecosystem functions, metabolic characteristics and competitive interactions of plants and soil organisms, and constraints associated with critical resources. My focus is on changes in the functioning of ecosystems subjected to natural disturbance, land-use conversion including nutrient loading from adjacent or upstream areas, and altered species composition.

PROFESSIONAL APPOINTMENTS

2003 – present, Assistant Professor, Boston University, College of General Studies, Natural Sciences Division, 871 Commonwealth Ave., Boston, MA, 02215

1999 – 2003, Staff Scientist, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA

1996 – 1999, Post-Doctoral Scientist, The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA

1990 – 1995, Research Assistant, Agronomy and Soil Science, University of Hawaii, Manoa, Honolulu, HI

1989-1990, Computing Consultant, University of Hawaii Summer Session Program, Honolulu, HI

1989-1990, Computer Course Instructor, Office of Community Service, Kapiolani Community College, Honolulu, HI.

1989, Instructor & Field Guide, Wildlands Studies Program Hawaii, “Ancient Cultures and Wild Environments” (<http://www.wildlandsstudies.com/>).

1987-1989, Computing Consultant, Amfac Corporation, Honolulu, HI

1986, Research Assistant, The Nature Conservancy Heritage Program, Honolulu, HI

1985, Research Assistant, East-West Center, Environment & Policy Institute, Honolulu, HI

1983-1984, Teaching Assistant, University of Hawaii Biology Program and Botany Department. Prepared laboratory exercises, delivered introductory lectures, and guided students through courses including General Biology, Cell Biology, Vegetation Ecology.

1979-1982, Teaching Assistant, Seattle Pacific University Biology Department. General Biology, Vascular Plant Taxonomy, Marine Botany, and Genetics.

FIELD RESEARCH: ECOSYSTEMS AND LOCATIONS

Temperate and Tropical Seagrass Ecosystems: Washington State, Hawaiian Islands, Palau.
Tropical Forest Ecosystems: Hawaiian Islands, Tapajos National Forest in Para, Brazil.
Arid Grassland Ecosystems: Hawaiian Islands.
Arctic Ecosystems: Toolik Lake LTER, Alaska.

LIST OF PUBLICATIONS

- Herbert, D. A., E. B. Rastetter, L. Gough and G. R. Shaver 2004. Species diversity across nutrient gradients: an analysis of resource competition in model ecosystems. *Ecosystems* 7:296-310.
- Herbert, D. A., M. Williams, and E. B. Rastetter 2003. A modeled analysis of N and P limitation on carbon accumulation in an Amazonian forest site after alternate land-use abandonment. *Biogeochemistry* 65:121-150.
- Williams, M., Shimabokuro, Y., Herbert, D. A., Pardi Lacruz, S., Renno, C., Rastetter, E. B. 2002. Heterogeneity of soils and vegetation in eastern Amazonian rain forest: implications for scaling up biomass and production. *Ecosystems* 5:692-704.
- Rastetter, E.B., P.M. Vitousek, C. Field, G.R. Shaver, D.A. Herbert, and G.I. Ågren, 2001. Resource optimization and symbiotic N fixation. *Ecosystems* 4:369-388.
- Herbert, D. A. 2000. *Metrosideros polymorpha*. Contribution in: CAB International, 2000. Forestry Compendium Global Module. Wallingford, UK. CAB International
- Herbert, D.A., E.B. Rastetter, G.R. Shaver, and G.I. Ågren. 1999. Effects of plant growth characteristics on biogeochemistry and community composition in a changing climate. *Ecosystems* 2:367-382
- Herbert, D.A. and J.H. Fownes. 1999. Forest productivity and efficiency of resource use across a chronosequence of tropical montane soils. *Ecosystems* 2:242-254.
- Herbert, D.A., J.H. Fownes and P.M. Vitousek. 1999. Hurricane damage to a Hawaiian forest: Nutrient supply rate affects resistance and resilience. *Ecology* 80(3):908-920.
- Rastetter, E.B., L. Gough, A.E. Hartley, D.A. Herbert, K.J. Nadelhoffer and M. Williams. 1999. A revised assessment of species redundancy and ecosystem reliability. *Conservation Biology* 13:440-443.
- Herbert, D.A. and J.H. Fownes. 1997. Effects of clumping in a broad-leaf canopy on estimates of leaf area index by the gap-fraction method. *Forest Ecology and Management*. 97:277-282.
- Vitousek, P.M., O.A. Chadwick, T.E. Crews, J.H. Fownes, D.M. Hendricks, D.A. Herbert. 1997. Soil and ecosystem development across the Hawaiian Islands. *GSA Today* 7:1-8.
- Yost, R., R. Caldwell, M. Constantinides, D. Herbert, and J. Fownes. 1997. The sustainability of agriculture and forestry production systems on soils with low pH. pp 29-38 In: Plant-Soil Interactions at Low pH (A. C. Moniz et al., eds.) Brazilian Soil Science Society. Brazil.
- Herbert, D.A. and J.H. Fownes. 1995. Phosphorus limitation of forest leaf area and net primary production on a highly weathered soil. *Biogeochemistry* 29:223-235.
- Crews, T.E., K. Kitayama, J.H. Fownes, R.H. Riley, D.A. Herbert, D. Mueller-Dombois, and P. Vitousek. 1995. Changes in soil phosphorus fractions and ecosystem dynamics across a long chronosequence in Hawaii. *Ecology* 76:1407-1424.
- Herbert, D.A. 1986. Growth dynamics of *Halophila hawaiiiana*. *Aquatic Botany* 23:351-360.
- Herbert, D.A. 1986. The staminate flowers of *Halophila hawaiiiana*: description and notes on its ecology. *Aquatic Botany* 25:97-102.

Manuscripts in Preparation

Herbert, D. A., and E. B. Rastetter. Plant-attribute diversity and stability of ecosystem function.

Web-based publications

Friday, J. B. and D. A. Herbert 2005. Species Profiles for Pacific Island Agroforestry Ecological, Economic, and Cultural Renewal: *Metrosideros polymorpha*. USDA Sustainable Agriculture Research and Education project. The Traditional Tree Initiative hosted by Agroforestry.net <http://www.traditionaltree.org/>.

RECENT SEMINARS AND SYMPOSIA

- Boston University, College of General Studies, March 16, 2005. A green barometer: the relationship between plants and climate change.
- Florida International University, Environmental Studies, February 20, 2004. Interview Seminar. Title: Linking plant growth characteristics with ecosystem function.
- Yale University, Forestry and Environmental Studies, January 17, 2002. Linking plant growth characteristics with ecosystem function.
- LBA (Large-Scale Biosphere-Atmosphere experiment in Amazônia) Scientific Conference, Atlanta, GA, 2001. Paper presented: A model analysis of N and P limitation on carbon accumulation in secondary forests.
- Ecological Society of America 85th Annual Meeting, Snowbird, UT, 2000. Paper presented: A modeled analysis of N and P limitation in disturbed tropical forests
- Ecological Society of America 84th Annual Meeting, Spokane, WA, 1999. Poster presented: Plant-attribute diversity and stability of ecosystem function.
- The American Society for Horticultural Science Annual Meeting, Minneapolis, MN, 1999. Invited participant. Paper presented in absentia: Resistance and resilience of native forests to disturbance by Hurricane Iniki.
- The Ecosystems Center, Marine Biological Laboratory, Woods Hole, MA, March 1999. Invited seminar. Title: Plant growth characteristics affect biogeochemistry and community composition in a changing climate.
- Ecological Society of America 83rd Annual Meeting, Baltimore, MD, 1998. Poster presented: Hypothetical species diversity-productivity relationships driven by nutrient and light competition interactions.
- University of New Hampshire May 8, 1997. Invited seminar. Title: Nutrient limitation and resource use efficiency in Hawaiian Rainforests.
- Harvard Forest, Harvard University, May 9, 1997. Invited seminar. Title: Nutrient limitation and resistance to disturbance in Hawaiian Rainforests
- Ecological Society of America 82nd Annual Meeting, Albuquerque, New Mexico, 1997. Links between species characteristics, carbon and nitrogen cycling, and invasibility of plant communities.
- Swedish University of Agricultural Sciences, Uppsala Sweden, April 1996. Invited seminar. Title: Resource-use efficiency in forests on a chronosequence of tropical montane soils.

CONTACT LIST

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