

## Peter D. Vaux

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### **Education**

Ph.D. (Ecology), 1985, University of California, Davis, U.S.A.  
B.Sc. (Zoology, honors), 1974, University of London, England

### **Professional Experience**

- *Associate Research Professor*: University of Maine, Orono. (September, 2004 to present)
- *Research Scientist / Director, ME Aquatic Biodiversity Project*: The Nature Conservancy. (2000-2004)
- *Research Scientist*: Harry Reid Center for Environmental Studies, University of Nevada. (1990-1995)
- *Assistant Director, Limnological Research Center*: University of Nevada. (1987-1990)
- *Research Assistant*: University of California, Davis.
- *In-Country Research/Project Director, Honduras*: Ecological Research Associates, Davis, CA. (1980-1983)
- *Research Assistant*: University of California, Davis. (1978-1980)
- *In-Country Research Director / Field Coordinator, Nigeria*: Ecological Research Associates, Davis, CA; Motor Columbus Consulting Engineers, Baden, Switzerland. (1977-1978)
- *Fisheries Scientist*: Ministry of Agriculture and Natural Resources, Kwara State, Nigeria. (1974-1977)

### **Research Interests**

Aquatic ecology; fisheries biology/ecology; limnology; landscape ecology; synthesis and integrative analysis of multi-disciplinary environmental databases; information transfer, translation and access.

### **Grant-Funded Research (as P.I. or co/P.I.) & Consulting Projects**

- Diadromous species research coordination network. 2008-2013. (National Science Foundation) (P.I.: D. Hart, Univ. Maine)
- *Resource stewardship strategies for Boston Harbor Islands National Park Area*. 2008-2009. (National Park Service)
- *Assessment of natural resource conditions for Boston Harbor Islands National Park, Cape Code National Seashore, and Saugus Ironworks National Historical Site*. 2007-09. (National Park Service)
- *Atlas of biodiversity and other data from Acadia National Park*. 2009. (Acadia National Park) [http://cgtechnosoft.in/csvmap\\_latest/index.php](http://cgtechnosoft.in/csvmap_latest/index.php)  
[http://cgtechnosoft.in/csvmap\\_latest/admin/](http://cgtechnosoft.in/csvmap_latest/admin/) (development site – to be moved to NPS server in April 2009.)

- *Research opportunities catalogue, Boston Harbor Islands*. 2007-09. (National Park Service)
  - *Sustainable lake management in Maine's changing landscape*. 2007-10. (US EPA) (P.I.: K. Bell, Univ. Maine)
- Development of KnowledgeBase Web site for Acadia bibliographic data. 2007-2009. (Acadia National Park, with supplemental funding from Gulf of Maine Council on the Marine Environment) <http://references.pearl.maine.edu/kb/search.asp>
- *PEARL: On-line forum for serving environmental information in Maine. Site management and development*. 2004-09. (ME Dept. Environmental Protection) [www.pearl.maine.edu](http://www.pearl.maine.edu)
  - *Kenduskeag watershed, Maine: data management and website development*. 2007. (National Fish & Wildlife Foundation)
  - *Key attributes for sustainable water use: a map-based bulletin board*. 2007-08 (USGS) <http://atlas.ume.maine.edu/mwa>
  - *Maine woods: an on-line compilation of information about forest lands in Maine*. 2007. (UMaine Forest Bioproducts Research Initiative / EPSCoR / NSF)
  - *Watershed condition assessment, Acadia National Park*. 2006-07. (National Park Service)
  - *Hydrogeomorphic lake classification system for refining lake assessment at multiple spatial scales*. 2005-2007. (US EPA) (P.I.: Soranno, Michigan State Univ.)
  - *Enabling PEARL for Atlantic salmon watersheds data*. 2004-07. (Atlantic Salmon Commission)
  - *Fisheries data integration project*. 2004-06. (ME Dept. Inland Fisheries & Wildlife)
  - *Integrating biological and streams data into PEARL*. 2004-06. (USGS)
  - *SPARC: Website development for environmental information from National Parks*. 2005-2006. (National Park Service, University of Maine)
  - *Penobscot River Synthesis*. 2004-2006. (USGS)
  - *Maine Aquatic Biodiversity Project*. 2001-2004. (The Nature Conservancy, Maine Outdoor Heritage Fund, ME Dept. Inland Fisheries & Wildlife, ME Dept. of Environmental Protection)
  - *Environmental impact study, aquatic ecology program), Chad-Cameroon oil pipeline project*. 1997-1999. (The World Bank)
  - *Environmental Monitoring & Assessment Program, lake fish surveys and indicator development*. 1992-1995. (U.S. EPA)
  - *Fisheries enhancement in Lake Mead (Nevada-Arizona) using large-scale nutrient additions*. 1988-1992. (National Atmospheric and Oceanic Administration [NOAA], Nevada Dept. of Fish and Wildlife)
  - *Evaluation of heavy metal loads in the human population of the Lake Yojoa basin, Honduras*. 1993. (University of Nevada)
  - *Development of environmental management strategies for Lake Yojoa basin, Honduras*. 1993. (U.S. Agency for International Development)

- *Evaluation of environmental impact study, Pangué hydroelectric project, Chile.* 1992. (International Finance Corporation / World Bank)
- *Watershed management program, feasibility study, El Cajón reservoir Honduras.* 1990. (Interamerican Development Bank, Organization of American States)
- *Zooplankton community structure and population dynamics, Lake Powell, Arizona.* 1988-1989. (Arizona Dept. of Game and Fish)
- *Ex-post environmental evaluations of 5 large tropical impoundments: Dominican Republic, Guatemala, Guyana, Panama, Honduras.* 1988 – 1989. (Interamerican Development Bank; Tropical Research & Development, Inc.)
- *Lake and pond management: multiple projects.* 1987 – 1988. (Land-Tech Environmental Consultants, CT.)
- *Development of program of applied environmental research for El Cajón reservoir (Honduras).* 1986. (Empresa Nacional de Energía Eléctrica, Honduras)
- *Trophic ecology of Lake Titicaca (Peru) fish species.* 1984. (National Science Foundation)
- *Trophic ecology of rainforest stream fishes (Costa Rica).* 1984. (Organization for Tropical Studies)

### **Publications & Technical Reports**

- Hunter, M.L., C. Burns, P. DeMaynadier, L. Incze, W. Krohn, P. Vaux and B. Vickery. 2009. Biodiversity. Pages 3-33 in: Jacobsson, G.L., I.J. Fernandez, P.A Mayewski and C.V. Schmitt (eds.). *Maine's climate future: an initial assessment.* University of Maine, Orono. 70 pp.
- Vaux, P., S. Nelson, N. Rajakaruna, G. Mittelhauser, K. Bell, B. Kopp, J. Peckenham and G. Longworth. 2008. Assessment of natural resources in and adjacent to Acadia National Park, Maine. Natural Resource Report NPS/NRPC/WRD/NRR-2008/069. National Park Service, Fort Collins, Colorado. 256 pp.  
[http://www.nature.nps.gov/water/technicalReports/Northeast/ACAD\\_RCA\\_112508\\_FINAL.pdf](http://www.nature.nps.gov/water/technicalReports/Northeast/ACAD_RCA_112508_FINAL.pdf)
- Webster, K., P. Soranno, K. Spence Cheruvellil, M. Bremigan, J Downing, P. Vaux, T. Asplund, L. Bacon, and J. Connor. 2008. An empirical evaluation of the nutrient color paradigm for lakes. *Limnology and Oceanography* 53(3): 1137-1148.
- Wagner, T., P. Soranno, K. Spence Cheruvellil, W.H. Renwick, K.E. Webster, P.D. Vaux and R.J. Abbiitt. 2008. Quantifying sample biases of inland lake sampling programs in relation to lake surface area and land use/cover. *Environmental Monitoring and Assessment* 141(1-3): 131-147.
- Vaux, P., D. Kramar and R. Hallsworth. 2006. PEARL site development for Atlantic salmon data: Phase 2. Final report to Atlantic Salmon Commission. 24 pp.
- Vaux, P. D. Kramar and R. Hallsworth. 2006. PEARL site development and management. Report to ME Dept. Environmental Protection. 14 pp.
- Nelson, S.J., P. Vaux, A. Grygo, R. Hallsworth and D. Kramar. 2005. Searchable Park Access to Research Catchments (SPARC). Final report to National Park Service. 17 pp.

- Vaux, P. 2005. Freshwater Biodiversity in Maine: an assessment of aquatic systems and their ecological communities. Final report, Maine Aquatic Biodiversity Project. The Nature Conservancy, Maine Department of Environmental Protection, Maine Dept. Inland Fisheries & Wildlife. 299 pp. + app.
- Vaux, P. 2005. PEARL site development for Atlantic salmon data: Phase 1. Final report to Atlantic Salmon Commission. 31 pp.
- Vaux, P. 2005. Integrating biological and streams data into PEARL. Report to USGS. 42 pp.
- Vaux, P., T. Whittier, G. DeCesare and J. Kurtenbach. 2000. Evaluation of a backpack electrofishing unit for multiple-lake surveys of fish assemblage structure. *North American Journal of Fisheries Management* 20: 168-179.
- Vaux, P., L. Paulsen, R. Axler and S. Leavitt. 1995. Water quality implications of artificially fertilizing a large desert reservoir for fisheries enhancement. *Water Environment Research* 67(2): 189-200.
- Vaux, P., D. Baepler, R. Jennings, D. Soden, E. Galvez, J. Discua and E. Vargas. 1993. Environmental evaluation of Lago de Yojoa and its watershed. Report prepared for USAID. 124 pp. + app. (In Spanish)
- Vaux, P. 1992. Management of Colorado River reservoirs. *Ingeniería Hidráulica en México* 7(2/3): 122-131. (In Spanish)
- Vaux, P. 1992. "Evaluación de Impactos Ambientales Relevantes del Proyecto Pangue, Chile": A review and critique. Report prepared for International Finance Corporation / World Bank. 35 pp.
- Vaux, P. 1991. Conflicts in the multiple-use management of lakes and reservoirs, with an emphasis on fisheries management. Proc. International Conference on Fisheries and Limnology, Morelia, Mexico.
- Vaux, P. 1990. Application of limnology in the tropics. Proc. International Limnology Seminar, Guadalajara, Mexico. (In Spanish)
- Vaux, P. 1990. Development of the fisheries resources of the El Cajón basin, Honduras. Report prepared for Organization of American States and the Interamerican Development Bank. 91 pp. (In Spanish)
- Vaux, P. 1990. Watershed management from the perspective of aquatic ecosystems. In: C. Potter (ed.). *Planning for sustainable watershed management: environmental and institutional assessments*. USAID, Washington D.C.
- Vaux, P. and C. Goldman. 1990. Dams and development in the tropics: the role of applied ecology. pp. 101-123 in: R.J. Goodland (ed.). *The Race to Save the Tropics*. Island Press.
- Vaux, P. and L. Paulson. 1990. Lake Mead nutrient enhancement project. Final report submitted to National Oceanic and Atmospheric Administration, and Nevada Department of Wildlife. 193 pp.
- Vaux, P. 1989. Managing Central America's lakes and reservoirs. *Lake Line* 9(3): 4-5.

- Vaux, P. and A. Byers. 1989. The El Cajón hydroelectric project, Honduras: an ex-post evaluation. Report prepared for Interamerican Development Bank. Tropical Research & Development, Inc.
- Vaux, P., R. Schlemmon and J. Dickinson. 1989. The Chixoy hydroelectric project, Guatemala: an ex-post evaluation. Report prepared for Interamerican Development Bank. Tropical Research & Development, Inc.
- Byers, A. and P. Vaux. 1989. The Tavera-Bao-Lopez multipurpose hydroelectric project, Dominican Republic: an ex-post evaluation. Report prepared for Interamerican Development Bank. Tropical Research & Development, Inc.
- Byers, A. and P. Vaux. 1989. The Abary drainage and irrigation project, Guyana: an ex-post evaluation. Report prepared for Interamerican Development Bank. Tropical Research & Development, Inc.
- Solberger, P., P. Vaux and L. Paulson. 1989. Investigation of the vertical and seasonal distribution, abundance and size structure of zooplankton in Lake Powell, Arizona-Utah. Report prepared for Arizona Game and Fish Department. Lake Mead Limnological Research Center, University of Nevada – Las Vegas. 71 pp.
- Vaux, P., E. Vargas, A. Diaz and A. Flores. 1988. The El Cajón reservoir: developing management strategies for a tropical impoundment. *Lake and Reservoir Management* 4(2): 199-211.
- Vargas, E. and P. Vaux. 1988. Limnological and ecological considerations for hydropower development in Honduras. *Lake and Reservoir Management* 4(2): 213-220.
- Axler, R., L. Paulson, P. Vaux, P. Sollberger and D. Baepler. 1988. Fish aid – the Lake Mead fertilization project. *Lake and Reservoir Management* 4(2): 125-135.
- Vaux, P., W. Wurtsbaugh, H. Trevino, L. Marino, E. Bustamante, J. Torres, R. Alfaro and P. Richerson. 1988. Ecology of the pelagic fishes of Lake Titicaca (Peru-Bolivia). *Biotropica* 20(3): 220-229.
- Reuter, J., P. Vaux and C. Goldman. 1987. Ecological impacts of sediment transport to tropical reservoirs. Pp. 1235-1242 in: *Water Forum '86*. American Society of Civil Engineers.
- Pringle, C., P. Paaby, P. Vaux and C. Goldman. 1986. Nutrient limitation of periphyton populations in a lowland tropical stream. *Hydrobiologia* 134: 207-213.
- Vaux, P. and C. Goldman. 1985. El Cajón hydroelectric project, limnology and fisheries program. Final Report, Volume 2: Fisheries. Ecological Research Associates, Davis, CA; Motor Columbus Consulting Engineers, Baden, Switzerland. 286 pp.
- Vaux, P. 1986. The ecology of the freshwater fishes of central Honduras. Ph.D. dissertation. University of California, Davis. 258 pp.
- Goldman, C.R. and P. Vaux. 1984. El Cajón hydroelectric project, limnology and fisheries program. Final Report, Volume 1: Limnology. Ecological Research Associates, Davis, CA; Motor Columbus Consulting Engineers, Baden, Switzerland. 575 pp.
- Vaux, P., C. Knud-Hansen and E. Vargas. 1984. Recent development of limnology in Honduras, Central America. *Verh. Internat. Verein. Limnol.* 22: 1271-1276.

Vaux, P. 1979. Water quality and fisheries. In: C.R. Goldman. Makurdi hydroelectric project environmental impact report. Ecological Research Associates, Davis, CA; Motor ColumbusConsulting Engineers, Baden, Switzerland.

Vaux, P. 1978. Fisheries. In: C.R. Goldman. Lokoja hydroelectric project environmental impact report. Ecological Research Associates, Davis, CA; Motor ColumbusConsulting Engineers, Baden, Switzerland.

### ***Scientific Presentations*** (2006 – present)

“Needles in a haystack: accessing data and information products”. Gulf of Maine Ocean Data Partnership, Portland ME. (2009)

“Relationship between changes in urban land cover and trends in water clarity in four time periods for Maine’s Great Ponds”. Maine Water Conference, Portland ME. M. Tylka, P. Vaux and K. Bell. (2009)

“Benchmarks for assessing the condition of natural resources in National Park areas”. Boston Harbor Islands Science Symposium, Boston MA. S. Nelson, P. Vaux, M.J. James-Pirri and C.V. Schmitt. (2008)

“Climate change and Maine’s freshwater biodiversity”. Forum on climate change and aquatic ecosystems. Ellsworth ME. (2008)

“Growing up in the wrong neighborhood? Mercury in vernal pools. Northeast Regional Air Quality Committee Meeting, Winter Harbor ME. S. Nelson, C. Loftin, A. Calhoun, A. Elskus, K. Simon and P. Vaux (2008)

“A map-based bulletin board for non-traditional lakes information”. Maine Water Conference, Augusta ME. I. Willig and P. Vaux. (2008)

“Assessment of natural resource condition in Acadia National Park, Maine. National Park Service water resources professionals conference, Fort Collins, CO. (2008)

“Biodiversity of Maine’s mountain lakes”. Mountains Conference, Strong ME. C. Schmitt and P. Vaux. (2007)

“A sixty-year comparison of fish assemblage structure in Maine lakes”. Maine Water Conference, Augusta ME. P. Vaux and K. Webster. (2007)

“Maine’s freshwater biodiversity: spatial and temporal patterns”. New England Association of Environmental Biologists annual meeting, ME. P. Vaux and A. Olivero. (2006)

“Biodiversity in Maine’s lakes and streams”. Maine Water Conference – poster. (2006)

### ***Classes Taught*** (2002 to date)

International water resources management and conservation (academic-year course at College of the Atlantic).

Watershed ecology and GIS (summer course at College of the Atlantic, for teachers).

Fisheries ecology, University of Maine.

### ***Outreach / Community Service (since 2000)***

Board member & treasurer, Maine Lake Volunteer Monitoring Program.

Board member: Mount Desert Island Water Quality Coalition

Director, PEARL website: [www.pearl.maine.edu](http://www.pearl.maine.edu)

Member, National Advisory Team, "Water on the Web" ([waterontheweb.org](http://waterontheweb.org)). University of Minnesota-Duluth (NSF-funded).

Technical advisor, Union River Watershed Coalition.

Invited lectures and other presentations; University of Maine and other regional venues.

### ***Languages***

Spanish (fluent)

French (good working knowledge)

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