

**PATRICK W. FAIRBAIRN, Ph.D.**  
**Wetland Scientist, Ornithologist, Botanist**

Dr. Fairbairn's professional experience includes the classification and evaluation of terrestrial and wetland ecosystems (tropical and temperate) with particular reference to the vascular plants and vertebrates; rare, threatened and endangered species surveys; wetland evaluation and boundary delineation; aerial photointerpretation and mapping; wildlife habitat evaluation and management; environmental impact assessment; conservation policy formulation and planning; administration of conservation law; international conservation; environmental education; and project management.

**EDUCATION**

- Ph.D. 1974, Wildlife Biology/Natural Resources Planning, University of Massachusetts  
M.A. 1965, English Language & Literature, University of Toronto  
A.B. 1963, General Studies, Harvard University

**PROFESSIONAL EMPLOYMENT HISTORY**

- 1986-Present Normandeau Associates, Inc.  
1985-1986 Sudbury Valley Trustees, Sudbury, Massachusetts  
1975-1984 Natural Resources Conservation Department, Government of Jamaica  
1972-1974 Water Resources Research Center, University of Massachusetts  
1971-1973 Cortell and Associates  
1969-1971 Center for International Agricultural Studies, Univ. of Massachusetts  
1966-1968 U.S. Peace Corps, Uganda

**SELECTED PROJECT EXPERIENCE**

MA Turnpike Authority (2004-Present) - Mitigation wetland project monitoring, Miller's River, Cambridge and Boston. Senior Wetland Scientist.

MA Highway Dept. (2002-Present) – Wetland restoration at maintenance depots in Lee, Westfield, Athol, Barre and Haverhill.

Massachusetts Wetland Restoration Program (2001-Present) - North Pool, Parker River NWR, Plum Island, Newburyport (MA). Voluntary, not-for-profit corporate consultancy to investigate feasibility of restoring tidal flow to 160-acre waterfowl management area. Project Manager.

Massachusetts Wetland Restoration Program, S. Cape Beach, Mashpee (MA) (2001-Present) - Data collection and analysis, and management recommendations on the prospective restoration of free tidal flow to a 15-acre salt marsh. Coordination of wetland work with that of surveyors (ASEC, Inc.) and hydrologists (Woods Hole Group). Project Manager.

ALCOA (2003-2005) - Photointerpretation and ground-truthing of wetlands around 4 reservoirs on Yadkin River, NC. Breeding-bird and herp inventory. Protected-species surveys of selected shoreline habitats. Ecologist.

US Forest Service (2004) – Waterville Valley, White Mountains National Forest. Breeding-bird surveys and listed plant search in proposed mitigation wetland areas.

MA DEP (2002-2003) - Quarry Hills, Quincy and Milton. Acting for the DEP to monitor impacts of wetland mitigation actions. Senior Wetland Scientist.

**PATRICK W. FAIRBAIRN, Ph.D.**  
**Wetland Scientist, Ornithologist, Botanist**

**SELECTED PROJECT EXPERIENCE**  
**(Continued)**

TVA (2002-2003) - Reservoir Operating Study EIS. Research and discussion of impacts of proposed action alternatives on land use throughout the 7-state TVA area. Planner Ecologist.

S. Shore Tri-Town Development Corporation (2001-2003) - former Naval Air Station, S. Weymouth (MA). Vernal-pool and listed-species surveys and monitoring, habitat evaluation; breeding bird surveys including upland sandpiper, grasshopper sparrow, northern harrier; as part of EIR baseline studies. Project Manager and Lead Ecologist.

NJ Dept. of Transportation (2002) – Bay Head Rail Yard. Listed-species (plant and animal) search, including census of Black-crowned Night Heron roost.

US Army, Natick Soldier Systems Center, MA (1998-2002) - Contaminant exposure pathway evaluations of terrestrial vertebrates, including seasonal bird inventories; ecological risk assessment. Project Ecologist.

Department of Environmental Management (2001) - Scusset Beach, Sandwich-Bourne (MA). Environmental baseline inventory and management recommendations for species including Piping Plover for 500-acre tract as part of comprehensive management planning for publicly-owned properties designated for recreation. Project Ecologist.

PB Power (2000-2001) - Tapoco relicensing project. Photointerpretation and field inspection of 4 reservoir shorelines in Tennessee to evaluate impacts of proposed water-level change on wetlands and protected biota. Team Ecologist.

MA Highway Dept. (2000) - Bridge reconstruction projects (e.g. Barre, Williamstown, Lancaster, Gill-Montague, Athol, S. Hadley, Lynn-Saugus, requiring wetland resource area definition and delineation, field surveys for protected species, and evaluation of impacts on them. Wetland Scientist/Ecologist.

Tennessee Gas Pipeline Co. (1998-2000) - Wetland resource area delineation and protected-species surveys associated with pipeline improvement and maintenance activities throughout MA. Project Manager.

US Forest Service (1996-2000) – Field surveys of protected plant and animal species, including Bicknell’s Thrush and Northern Goshawk searches in addition to general breeding bird inventories, as part of Biological Assessments and related EIS/EA work for ski industry: Sugarbush, VT; Waterville Valley, NH; Mt. Snow, VT; and Cannon Mountain, NH. Project Ecologist.

Winthrop, MA (1998) - Fishermen’s Bend. Wetland resource area inventory and qualitative mapping of fresh to brackish marsh. Project Ecologist.

NH Dept. of Transportation (1998) – Bald Eagle winter roost survey, Merrimack River, NH. Team Biologist.

The Cranberry Institute (1997) – Wildlife habitat evaluation, including breeding-bird inventory, of two cranberry farms, Bandon, OR. Project Ecologist.

OK Dept. of Transportation (1996-1997) – Wetland and protected-species surveys of highway bypass alternatives, Tulsa and Oklahoma City. Project Ecologist.

**PATRICK W. FAIRBAIRN, Ph.D.**  
**Wetland Scientist, Ornithologist, Botanist**

**SELECTED PROJECT EXPERIENCE**  
**(Continued)**

Destin Pipeline Co., MS (1996) – Wetland and protected-species surveys of proposed gas pipeline route, south-central MS. Project Ecologist.

CIBA-Geigy Corp. NJ (1994) - Ornithological Evaluation of CIBA-Tom's River in support of the Environmentally Sensitive Area mapping for a Discharge Prevention, Containment and Countermeasure Plan. Project Ornithologist and Ecologist.

NJ Dept. of Transportation (1993-1994) –

- Tall Cedars, Little Egg Harbor. Site habitat evaluation and State-listed species searches, including Barred Owl.
- Roadway corridor habitat evaluation and State-listed species searches for Ocean County, including Barred Owl.

Massachusetts Water Resources Authority, Weston, MA (1998-1999) - Vernal-pool survey. Project Ecologist.

US Army Corps of Engineers (1997) - Birch Hill Dam, MA, a 5,000-acre study area; Rare or Protected Species and Exemplary Natural Communities Survey including breeding-bird inventory. Project Ecologist.

MA Highway Dept. (1996-1997) - Central Artery Project, Wetland Mitigation Planning and Design for Millers River, Boston and Cambridge, MA. Senior Wetland Scientist.

MA Highway Dept. (1994-1995) - Wildlife Habitat Evaluation and Species Survey including breeding-bird inventory to guide planning for mitigation of wetland impacts. Project Biologist.

NY Canal Recreationway Commission (1993-1994) - New York Canal Recreationway Plan. Project Ecologist.

USAID-Jamaica (1991-1993) – Development of a computerized method for rapid wetland evaluation. Project Co-investigator.

Maine DOT, Sears Island, ME (1992) - Surveys of coastal and inland birds and State-listed plant species. Project Biologist.

National Aeronautics and Space Administration, Advanced Solid-Fuel Rocket Motor Project, Stennis Space Center, MS (1990-1992) - Wetland Mitigation. Project Biologist.

U.S. Army Corps of Engineers (1988-1990) - Evaluation of wetland boundaries marked by permit applicants. Project Coordinator.

U.S. Army Corps of Engineers (1989-1990) - Evaluation of wetland mitigation actions taken by permit holders. Project Coordinator.

Normandeau Engineers Inc. (1988) - Ecological Impact Assessment of Massachusetts DPW Highway Snow and Ice Control Program. Ecological Coordinator.

Town of Framingham, MA. (1987-1988) - Riverine Habitat Evaluation including breeding-bird inventory. Consultant Biologist.

Sudbury Valley Trustees, Sudbury, MA. (1985-1986) - Open Space Inventory and Planning. Consultant Planner.

**PATRICK W. FAIRBAIRN, Ph.D.**  
**Wetland Scientist, Ornithologist, Botanist**

**SELECTED PROJECT EXPERIENCE**  
**(Continued)**

The following work was undertaken during service as an ecologist on contract to the Government of Jamaica, (1975-1984):

Wetlands Wildlife Management for Recreation and Public Education; (1980-1984)  
Petrojam Wetland Peat Resources Utilization Feasibility Study; (1981-1984)  
Blue Mountain Multipurpose Water Project; (1980-1983)  
Javemex Ecological Pre-Audit Study; (1976-1979)

Interstate Highway Development, vicinity of Boston (MA); (1971-1973) - Ecological Consultant.

**SPECIAL TRAINING & COMMITMENTS**

Personnel Protection and Safety Training for Hazardous Waste Site Activities (OSHA Course), 1995.  
Three-month course for secondary school teachers at Teachers' College, Columbia University.  
Three-week course in basic management, taught by U.S. Internal Revenue Service consultants, Jamaica.  
International conservation meetings in Jamaica, USA, St. Lucia, Nicaragua, Brazil and Costa Rica. Subjects: conservation law, environmental education, parrots, sea turtles, environmental impact assessment.  
Ongoing participation in professional-society workshops and seminars on wetlands, wildlife etc.  
Member, Conservation Commission, Watertown, MA

Instructor, Introductory wetland boundary delineation, for the certificate program offered by New England Wild Flower Society, 2002-5.

Volunteer, Plant Conservation Program of the New England Wild Flower Society, 2005.

Certified Wetland Scientist, New Hampshire.

**SELECTED PRESENTATIONS**  
**AND PUBLICATIONS**

Fairbairn, P.W. 1975. Environmental impact evaluation of flood-control dams by vegetation analysis of the terrestrial ecosystem. Report of the Water Resources Research Center, University of Massachusetts, Amherst (Ph.D. dissertation).

Fairbairn, P.W. and R.L. Sutton. 1979. Birds as indicators of human disturbance in dry limestone forest, Jamaica; in Environmental Management in Jamaica, proceedings of a symposium on environmental studies, Dept. of Chemistry, University of the West Indies, Mona, Jamaica.

Reeson, P.H. and P.W. Fairbairn. 1979. Environmental impact assessment of a hydroelectric project in Jamaica. Ibid.

Cruz, Alexander and P.W. Fairbairn. 1980. Conservation of Jamaican avifauna; in Proceedings 45th N. American Wildlife Conference, American Wildlife Institute, Washington, D.C.

Fairbairn, P.W. 1986. Conservation of Jamaican forests, with particular reference to wildlife; in Forests of Jamaica, proceedings of the Jamaica Association of Scientists and Technologists Caribbean regional seminar, Kingston, Jamaica, 1983, ed. D.A. Thompson et al., Institute of Jamaica Publications.

**PATRICK W. FAIRBAIRN, Ph.D.**  
**Wetland Scientist, Ornithologist, Botanist**

**SELECTED PRESENTATIONS  
AND PUBLICATIONS (Continued)**

Fairbairn, Patrick W. and Ann Haynes. 1986. Jamaica. in A Directory of Neotropical Wetlands compiled by D.A. Scott and M. Carbonell, IUCN Cambridge and IWRB Slimbridge.

Normandeau Associates. 1987, 1988, 1990, 1992. Fermi 2 Power Plant remote sensing and vegetation ground truth program. Report series prepared for Detroit Edison Co., Michigan.

Fairbairn, Patrick W. 1989. The Sudbury River: Natural Resources Report, in The Sudbury River, A Community Resource: Opportunities and Strategies. Bay Circuit Study/Town of Framingham, MA. April 1989.

Michener, M.C. and P.W. Fairbairn. 1989. Wetlands and road runoff. Proc. First Annual New England Environmental Exposition, Longwood Environmental Management, Belmont, MA.

Fairbairn, Patrick, W., Kent E. Snyder and Ray B. Bryant. 1995. Terrestrial bryophytes of a hydrosequence in the western Adirondacks, New York. Poster presentation at the Society of Wetland Scientists 16th Annual Meeting, Boston, Massachusetts.

Fairbairn, Patrick, W. and Robert R. Bryan. 1995. Biodiversity impact assessment for a proposed cargo terminal in mid-coast Maine. Workshop presentation to Task Force on Transportation and Natural Resources, Transportation Research Board, Austin, TX.

Fairbairn, Patrick, W. 1997. Biodiversity and ecosystem function. Environmental Alert 2:4(1-5). American Association of State Highway and Transportation Officials Standing Committee on the Environment, Washington, DC.

Fairbairn, P. W., Allen, S. D., Weishar, L. I. 2002. Preserving salinity gradients during restoration of a coastal wetland on Cape Cod. Presentation at annual meeting of the New England Chapter of the Society of Wetland Scientists.

Dr. Fairbairn has also written and co-authored many other reports and articles, both technical and popular, and other presentations prepared on a wide variety of conservation subjects.