

Keith M. Carr

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Current Activities

Vice President for Systems

BioDiversity Institute

P.O. Box 1322, Northville, NY

1995 - 2004

Co-founder, chief technical officer and system developer for the BioDiversity Institute, a non-profit organization dedicated to developing innovative information management technologies in the service of biodiversity conservation. BDI's current focus is on developing interactive web-based field guides for species identification. Website: www.bdi.org. Application platform: ColdFusion

Independent IT consultant and system developer

Projects:

Client: Chemonics International Inc., Washington DC, 2003 - 2004

Senior technical advisor for development of a web-based catalog for the natural resources library collections of the U.S. Agency for International Development (USAID). Application platform: ColdFusion

Client: Autoridad Nacional del Ambiente (ANAM), Panama, 2002

Technical consultant for design of biodiversity monitoring system that coordinates GIS and natural resources data repositories across the organization.

Client: Association for Biodiversity Information (ABI), Arlington VA, 1998 - 1999

Product #1: *ABI website (www.abi.org – original version now defunct)*. Designed and implemented a site for giving the programs of the Natural Heritage Network a collective presence on the Web. Product#2: *Web-based database system for delivering Natural Heritage data products*: a pilot application that displayed aggregated species distribution data from five U.S. Natural Heritage Programs. Application platform: ColdFusion

Client: Association for Biodiversity Information (ABI), Arlington VA, 1998 - 1999

Provided management consulting services for transfer of Natural Heritage Network support functions from The Nature Conservancy to ABI.

Client: Association for Biodiversity Information (ABI), Arlington VA, 1997 - 1998

Served as ABI's representative to the NAFTA Commission for Environmental Cooperation (CEC) in Montreal to help further CEC's goal of promoting coordinated implementation of biodiversity and natural resources information systems in the U.S., Canada, and Mexico.

Client: FIFRA Endangered Species Task Force (a consortium within the chemical industry), 1996 - 1997
Product: *State Program Tracking System*: a custom application for cataloging the various state programs for protecting endangered species from the effects of pesticides. Application platform: MS Access.

Client: The Nature Conservancy, Arlington VA, 1996 -1997
Product: *Plots Database System*: a custom application for cataloging the structure and contents of ecological plots and thereby support inventory and monitoring efforts. The application is being deployed in units in the U.S. National Park System and among the Natural Heritage Programs. Application platform: MS Access.

Client: American Bird Conservancy, Washington DC, 1996
Product: *Grants Database System*: a custom application for tracking research grants and proposals. Application platform: Lotus Approach.

Client: The Nature Conservancy, Arlington VA, 1995
Product: *Report on the world's major systems for managing biodiversity information*. This was a major research project, involving survey and analysis of the world's leading initiatives, plus in-depth investigation of a number of these systems as case studies. Research required on-site visits to a number of prominent systems initiatives around the globe.

Previous Experience

Director of Conservation Systems
The Nature Conservancy
4245 North Fairfax Drive, Suite 100
Arlington, VA 22203-1606
1987-1995

Department head responsible for research and development, system engineering, and technical support for scientific computer applications and system products.

The application of primary concern was the Conservancy's renowned Biological and Conservation Data (BCD) System, as used by the Natural Heritage Data Center Network (which includes the U.S. State Natural Heritage Programs, cooperating agencies at federal and state governmental levels, and the Conservation Data Centers in Latin America, Canada, and the Pacific Rim). The BCD System was a sophisticated database management application based upon the Advanced Revelation DBMS/application development environment. At the time it was among the foremost software packages available for managing biodiversity and land conservation information, and was installed in nearly 300 locations in the Western Hemisphere. In recognition of its technical excellence and beneficial impact on society, the BCD System and the Natural Heritage Network were awarded the prestigious *Computerworld Smithsonian Award* in 1994. I was responsible for all aspects of BCD System engineering: system design, production of software upgrade releases (in English and Spanish versions), delivery and installation, documentation and technical publications, training, and ongoing technical support to users. Associated technologies supported by my staff included geographic information systems (GIS), image processing, and digital cartographic systems. In addition, my staff administered a large wide-area network supporting central production database operations and office automation applications.

Achievements in this position:

- Key member of the Conservancy's senior management team for science activities and strong contributor to establishment of strategic directions for science in the organization. Routinely served as a spokesperson for the Conservancy on science and technology issues; conducted frequent seminars, orientation sessions, and demonstrations for Conservancy staff and the public; coordinated development of the technology component for the charter strategic plan of the Association for Biodiversity Information (ABI).
- Built the Conservation Systems Department "from the ground up" to eventual staffing complement of 16 biologists, geographers, and systems professionals.
- Created the BCD System software product, acting personally as lead software engineer. Directed development and rollout of annual system upgrade releases and delivery to installed base of 300+ locations.
- Created a central Data Visualization and Infrastructure Center (as a unit within my department) to develop a web presence for the Natural Heritage Network.
- Created a central Spatial Data Integration Center (as a unit within my department) to research and support GIS, digital cartography, and computer graphics technologies. Through this unit, spearheaded the effort to set up subsidiary GIS centers in the Conservancy's four U.S. regional offices, in several state government agencies, and in Panama.
- Developed extensive material about the BCD System and Natural Heritage Network for the permanent *Information Age* exhibit in the National Museum of American History, Smithsonian Institution.
- Media appearances: National Public Radio, *ABC Nightly News*, TV documentaries for Japanese national television and U.S. Information Agency, *Wired* magazine, *CIO* magazine, other publications.

National Database Administrator

U.S. National Park Service, Washington, DC.

1985-1987

Chief policy manager for issues concerning database management, application integration, and data standards throughout the National Park Service. Supervisor of technical support team responsible for managing DBMS software and database implementation in a dual HP3000 minicomputer/IBM MVS mainframe environment. Chief technical manager for development of the Service's agency-wide natural resources database (the NPS *Common Database System*).

GIS Team Leader

U.S. National Park Service, Washington, DC.

1984-1985

Supervisor and project manager for group supporting GIS, computer mapping, and remote sensing applications. Provided technical assistance to general IT staff and the user community; participated in nationwide assessment of GIS requirements for all levels and locations within the National Park System.

Systems Manager

U.S. National Park Service, Washington, DC.

1982-1984

Responsible for selection, configuration, and maintenance of systems software and hardware for a Hewlett-Packard HP3000 data center serving the National Park Service and the White House.

Computer Programmer/Analyst

U.S. National Park Service, Washington, DC. 1981-1982

Navy Fleet Material Support Office, Mechanicsburg, Pennsylvania. 1979-1981

GIS Project Coordinator

Environmental Management Dept., Lane County, Oregon. 1978-1979

Education

University of Oregon

M.A., Geography, 1978

Thesis: "Environmental Perceptions, Attitudes, and Values in Oregon's Willamette Valley: 1800 to 1978"

State University of New York at Albany

B.A. 1974

Professional Honors and Awards

Computerworld Smithsonian Award for BCD System/Natural Heritage Network,
category: Environment, Energy & Agriculture, 1994 (team award)

National Park Service Special Achievement Award, January 1986

National Park Service Special Achievement Award, Sept. 1984

National Park Service Special Achievement Award, May 1982

References

Available upon request