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## **EDUCATION**

**Ph.D., Geology**, The Pennsylvania State University; University Park, PA.

Emphasis: Hydrogeology, Ground-Water Flow and Transport Modeling.

Dissertation: Aquifer-Estuary Interaction and the Vulnerability of Ground-Water-Supplies to Sea-Level-Rise Driven Saltwater Intrusion. Advisor: Dr. Richard R. Parizek, Department of Geosciences, College of Earth and Mineral Sciences.

**M.S., Hydrology**, University of Nevada, Reno; Reno, NV.

Emphasis: Hydrogeology, Water-Resource Management. Thesis: Assessment of Management Strategies for Drought Mitigation through a Conjunctive Use Irrigation System in Smith Valley, Lyon Co., Nevada. Advisor: Dr. Gilbert F. Cochran, Center for Water Resources Research, Desert Research Institute.

**B.S., Geology**, University of Rhode Island; Kingston, RI.

**Diploma**, Will C. Crawford High School; San Diego, CA.

## **EXPERIENCE**

**SUPERVISORY HYDROLOGIST AND HYDROLOGIST** -- May 1983 to present:  
U.S. Geological Survey (USGS), New Jersey Water Science Center (*formerly known as New Jersey District Office*), 810 Bear Tavern Rd., Suite 206, West Trenton, New Jersey, 08628, USA (609) 771-3900.

**April 1996 to present**: Supervisory Hydrologist, GS-1315-14, Assistant Center Director for Hydrologic Systems Investigations and Research, responsible for the technical oversight and administration of hydrologic projects (about 30 projects) in the New Jersey Water Science Center and supervision of Program Chiefs (3 program chiefs with 30 to 45 subordinate employees). Supervisors: Richard H. Kropp and Eric J. Evenson.

**Activities**: planning the Water Science Center research program, performing technical oversight of projects, preparing project proposals, reviewing project progress, performing personnel evaluations, reviewing reports, developing federal, state, and local cooperators, negotiating with project cooperators and agency officials, distributing office resources to meet commitments, and performing administrative tasks related to the operation of the Center, including personnel, budget, and purchasing.

**Dec. 1993 to April 1996**: Supervisory Hydrologist, GS-1315-13, Program Chief of the Hydrologic Simulation Program, responsible for the technical oversight and administration of ground-water modeling and related hydrogeologic projects (usually

5 to 7 projects) in the New Jersey District and supervision of project personnel (usually 10 to 15 employees). Supervisor: Herbert T. Buxton.

**Activities:** performing technical oversight of projects, preparing project proposals, reviewing project progress, performing personnel evaluations, reviewing reports, developing federal, state, and local cooperators (clients), informing the public, about project progress, providing hydrogeologic consultative services for USGS, U.S. EPA, U.S. Army Corps of Engineers, and N.J. Dept. of Environmental Protection, and participating in the operation of the District Office.

**Jan. 1991 to Nov. 1993:** Hydrologist, GS-1315-13, Project Chief of Northeastern U.S. Nonpoint-Source Ground-Water Contamination Project, a multi-year investigation associated with the USGS Toxic Substances Hydrology Program. Objective to incorporate regional ground-water flow and transport analysis with regional ground-water-quality databases to facilitate investigation of management or mitigation of nonpoint-source ground-water contamination. Supervisor: Herbert T. Buxton.

**Activities:** using ground-water flow model, using particle-tracking analysis techniques, performing a regional analysis of land-use and ground-water quality data using Geographical Information System (GIS) techniques.

**Feb. 1990 to Jan. 1991:** Hydrologist, GS-1315-13, Project Chief of project to use Camden area ground-water flow model, particle tracking, and transport modeling techniques to assess the risk of saltwater intrusion into Coastal Plain aquifers due to potential sea-level rise. Study supported by the USGS Climate-Change Hydrology Program. Supervisor: Herbert T. Buxton.

**Activities:** developing and using ground-water flow model, using particle-tracking analysis techniques and one-dimensional solute-transport analysis; modeling operations supported by using GIS techniques.

**June 1986 to Jan. 1990:** Supervisory Hydrologist, GS-1315-13, Program Chief of the Hydrologic Simulation Program, responsible for the technical oversight and administration of ground-water modeling and related projects (usually 5 to 7 projects) in the New Jersey District and supervision of project personnel (usually 10 to 20 employees). Also maintained responsibility as Project Chief of Camden ground-water study. Supervisors: Dr. P. Patrick Leahy and Herbert T. Buxton.

**Activities:** preparing project proposals, reviewing project progress, performing personnel evaluations, reviewing reports, developing federal, state, and local cooperators (clients), informing the public, about project progress, and participating in the operation of the District Office.

**During the period July 1988 to Jan. 1989,** Acting Assistant District Chief, responsible for the administration of all District research projects (28 projects) and project personnel (55 employees). Duties included negotiating with project cooperators and agency officials, distributing office resources to meet commitments, planning for short- and long-term goals, and performing associated administrative tasks. Supervisor: Donald A. Vaupel.

**May 1983 to May 1986:** Hydrologist, GS-1315-12, Project Chief of Camden and Vicinity Ground-Water Study, a multi-year cooperative effort with the New Jersey Department of Environmental Protection (NJDEP). Objective to perform a high-resolution analysis of the ground-water flow system and evaluate the effects of water-supply management strategies (NJDEP Water-Supply Critical Area Policy). Improvement of the conceptualization of interaction between aquifer system and Delaware River was a major focus. Sophisticated data collection methods and numerical flow-modeling techniques used, including GIS to manage flow-model data and output. Supervisor: Dr. P. Patrick Leahy.

**Activities:** directing subordinate project personnel and drilling crews (contract, State, and USGS) to collect and analyze field data; designing and organizing project computer database system; analyzing drill cuttings and borehole geophysical logs; designing and performing aquifer tests; analyzing regional ground-water flow system; designing, calibrating, and using ground-water flow and transport models; preparing and reviewing project reports.

**HYDROLOGIST** (on sabbatical) -- August 1982 to May 1983: USGS, Water Resources Division.

Selected for USGS Graduate School Program. Attended The Pennsylvania State University for one academic year to take course work for a Ph.D. in Geology with emphasis in hydrogeology and ground-water modeling. Subsequent dissertation research was concurrent with USGS research projects. Supervisor: William B. Scott.

**HYDROLOGIST** -- January 1979 to August 1982: USGS, Water Resources Division, East-Central Florida Subdistrict Office (Orlando area), 224 W. Central Parkway, Altamonte Springs, FL, 32714, (407) 648-6191.

Hydrologist, GS-1315-11, Involved in research projects as Project Chief and Project Member. Projects included: study of the ground-water resources of Flagler County, Florida; assessment of impact of urban water recharge into the Floridan aquifer through solution cavities in the vicinity of Gainesville, Florida; compilation of ground-water-flow model input data for the Floridan aquifer Regional Aquifer System Assessment project; hydrogeologic data summary of a 2,000 foot-deep core hole at Polk City, Green Swamp Area, Central Florida; compilation of the water resources of the Withlacoochie River Region of Central Florida; and potentiometric-surface mapping of carbonate aquifers in the Gainesville area and Sumter County. Supervisor: Robert A. Miller.

**Activities:** collecting ground-water level, water quality, and stream discharge data; directing drilling crews (contract, State, and USGS); analyzing drill cuttings and borehole geophysical logs; performing aquifer tests; compiling data for ground-water models; analyzing regional ground-water flow systems; and preparing project reports.

**GRADUATE RESEARCH FELLOW** -- January 1977 to November 1978: Center for Water Resources Research, Desert Research Institute, University of Nevada System, P.O. Box 60220, Reno, NV 89506.

Participated in various research projects: a systems analysis of conjunctive ground-water and surface-water use for irrigation in Smith Valley, Lyon Co. Nevada;

calibration and use of a flash-flood simulation model to examine the sensitivity of a flash flood to various basin parameters; and water-quality sampling of the Truckee River for Nevada State Health Department enforcement of water quality standards. Supervisor: Dr. Gilbert F. Cochran.

**Activities**: collecting water-quality samples, analyzing water-use data, analyzing regional ground-water flow systems, developing and using a ground-water budget model, and preparing project reports.

**CONSULTANT** -- March 1978 to September 1978: Nevada State Engineers Office, Division of Water Resources, 201 South Fall St., Carson City, Nevada, 89710. Compiled ground-water use inventories and ground-water rights abstracts for an analysis of potential withdrawal limitations in various Nevada ground-water basins. Supervisor: Jack Cardinalli.

## **RELATED PROFESSIONAL ACTIVITIES**

- **Registered Professional Geologist** in the Commonwealth of Pennsylvania; License number PG-002000-G.
- **Chairman**, Ground Water Subcommittee of Hydrometric Determinations Technical Committee (ISO TC113/SC8) of the International Organization for Standardization (ISO), Member of Technical Advisory Committee (TAC) representing the USA on ISO/TC113, April 1994 to present.
- **Part-Time Lecturer**, Department of Civil and Environmental Engineering, Rutgers University, Piscataway, NJ: Spring 1998 and Spring 1999 taught Graduate Level Groundwater Engineering class (180:574)

## **PROFESSIONAL INTERESTS**

Quantitative analysis of ground-water flow; interaction of ground-water and surface-water systems; wetland hydrology; water-supply management; transport of ground-water solutes; use of computers in the geosciences for modeling and database management; use of Geographical Information Systems (GIS) for hydrogeologic investigations.

## **PUBLICATIONS**

- Navoy, A.S., Voronin, L.M., and Modica, E., 2004, Vulnerability of wells in the Potomac-Raritan-Magothy aquifer system to saltwater intrusion from the Delaware River in Camden, Gloucester, and Salem Counties, New Jersey: U.S. Geological Survey Scientific Investigations Report 2004-5096, 35 p.
- Schopp, R.D., Stedfast, D.A., and Navoy, A.S., 2003, Real-time surface-water monitoring in New Jersey, 2003: U.S. Geological Survey Fact Sheet, FS-048-03, unpaginated.
- Jones, W.D., Navoy, A.S., Pope, D.A., 2002, Real-time ground-water-level monitoring in New Jersey, 2001: U.S. Geological Survey Fact Sheet FS-011-02, unpaginated.
- Navoy, A.S., 1996, Use of flowpath simulation to determine contributing areas and traveltimes of nonpoint-source ground-water contamination, Gloucester County, New Jersey, in: D. W. Morganwalp and D. A. Aronson, eds. U.S. Geological

- Survey Toxic Substances Hydrology Program--Proceedings of the technical meeting, Colorado Springs, Colorado, September 20-24, 1993 U.S. Geological Survey Water-Resources Investigations Report 94-4015, p. 1011-1019.
- Navoy, A.S. and Carleton, G.B., 1995, Ground-water flow and future conditions in the Potomac-Raritan-Magothy aquifer system, Camden area, New Jersey: New Jersey Department of Environmental Protection, New Jersey Geological Survey Report GSR 38, 183 p.
- Leake, S.A., Leahy, P.P., and Navoy, A.S., 1994, Documentation of a Computer program to Simulate Transient Leakage from Confining Units using the Modular Finite Difference Ground-Water Flow Model; U.S. Geological Survey Open-File Report 94-59, 70p.
- Navoy, A.S., 1994, Simulated effects of projected withdrawals from the Wenonah-Mount Laurel aquifer on ground-water levels in the Camden, New Jersey, area and vicinity: U.S. Geological Survey Water-Resources Investigations Report 92-4152, 22 p.
- Navoy, A.S., 1991, Aquifer-Estuary Interaction and Vulnerability of Ground-Water Supplies to Sea-Level-Rise Driven Saltwater Intrusion: Doctoral Dissertation, The Pennsylvania State University, Department of Geosciences, December 1991, 225 p.
- Navoy, A.S., Vowinkel, E.F., Buxton, H.T., and Stackelberg, P.E., 1991, Plans for research of nonpoint-source ground-water contamination in the Coastal Plain of the northeastern United States, in Mallard, G.E., and Aronson, D.A., eds, U.S. Geological Survey Toxic Substances Hydrology Program--Proceedings of the technical meeting in Monterey, California, March 11-15, 1991: U.S. Geological Survey Water-Resources Investigations Report 91-4034, p. 349-351.
- Leahy, P.P., Paulachok, G.N., Navoy, A.S., and Pucci, A.A., Jr., 1987, Plan of study for the New Jersey bond issue ground-water-supply investigations: New Jersey Geological Survey Open-File Report 87-1, 53 p.
- Navoy, A.S., and Bradner, L.A., 1987, Ground-Water Resources of Flagler County, Florida: U.S. Geological Survey Water-Resources Investigations Report 87-4021, 45 p.
- Navoy, A.S., 1986, Hydrogeologic data from a 2,000-foot deep core hole at Polk City, Green Swamp area, central Florida: U.S. Geological Survey Water-Resources Investigations Report 84-4257, 89 p.
- Miller, R.A., Anderson, Warren, Navoy, A.S., Smoot, J.L, and Belles, R.G. 1981, Water-Resources Information for the Withlacoochee River Region, West Central Florida: U.S. Geological Survey Water-Resources Investigations Report 81-11, 130 p.

- Navoy, A.S., 1981, Potentiometric surface of the Floridan aquifer in central Sumter County, Florida, May 1981: U.S. Geological Survey Open-File Report 81-1198.
- Navoy, A.S., 1981, Potentiometric surface map of the Floridan aquifer in Alachua County, Florida, September 1980: U.S. Geological Survey Open-File Report 81-224.
- Navoy, A.S., 1981, Potentiometric surface map of the Floridan aquifer in central Sumter County, Florida, September 1980: U.S. Geological Survey Open- File Report 81-338.
- Navoy, A.S., 1980, Potentiometric surface map of the Floridan aquifer in Alachua County, Florida, May 1980: U.S. Geological Survey Open-File Report 80-1199.
- Navoy, A.S., 1980, Potentiometric surface map of the Floridan aquifer in central Sumter County, Florida, May 1980: U.S. Geological Survey Open-File Report 80-1181.
- Navoy, A.S., 1980, Potentiometric surface map of the Floridan aquifer in Alachua County, Florida, September 1979: U.S. Geological Survey Open-File Report 80-1121.
- Navoy, A.S., 1980, Potentiometric surface map of the Floridan aquifer in central Sumter County, Florida, September 1979: U.S. Geological Survey Open- File Report 80-401.
- Navoy, A.S., and Batts, L.L., 1980, Potentiometric surface map of the Floridan aquifer in Alachua County, Florida, May 1979: U.S. Geological Survey Open-File Report 80-1122.
- Navoy, A.S., and Anderson, Warren, 1979, Potentiometric surface map of the Floridan aquifer in central Sumter County, Florida, May 1979: U.S. Geological Survey Open-File Report 79-1592.
- Navoy, A.S., Cochran, G.F., and Schulke, D.F., 1980, Drought Mitigation Strategy: Conjunctive Use in Smith Valley, Nevada: Desert Research Institute Publication No. 41069, University of Nevada System, Reno, NV, 66 p.
- Navoy, A.S., 1978, Assessment of Management Strategies for Drought Mitigation through a Conjunctive Use Irrigation System in Smith Valley, Lyon Co., Nevada, Master Thesis, University of Nevada, Reno, December 1978, 149 p.