

## PEGGY L. MYRE

### SUMMARY OF QUALIFICATIONS

- Founder and president of a small business specializing in database design, data management, and environmental graphical user interface application development
- Over twenty-five years of experience in information technology, including environmental database management and programming; oceanographic data processing and visualization; sediment quality guideline programming and statistics; and geographic information systems (GIS) mapping and scripting
- Extensive specialized experience with sediment chemistry, bioassay, and bioaccumulation data; tissue chemistry and effects data; water quality and storm water monitoring data; dredged material monitoring data; seafloor survey data; sediment physical properties data
- Scientific training and expertise in marine geochemistry, acoustics, coastal processes, environmental monitoring and regulations, and deep sea coring
- Coastal and offshore seagoing experience
- Strengths in strategic planning, public outreach, and bridging the gap between science, software, and intuitive data visualization
- Experience managing small and large projects among groups of clients, contractors, and interested stakeholders, ranging from local non-profits to large interagency projects.

### WORK EXPERIENCE AND EXAMPLE PROJECTS

#### **Exa Data & Mapping Services, Inc. (Port Townsend, Washington)**

*President/Senior Consultant January 2002-present*

- Project Manager/Database Manager, Technical Support for Watershed Databases for the Assessment and Restoration Division (ARD) of the National Oceanographic and Atmospheric Administration (**NOAA**), managing a wide variety of studies in support of the Great Lakes Restoration Initiative (GLRI) and CERCLA sites including contaminant chemistry and bioassay data in support of the Query Manager/DIVER applications (current).
- Project Manager/Database Manager, Deepwater Horizon Technical Database Support Services for **NOAA ARD**, managing flow of large volumes of contaminant data from both the Response and National Resource Damage Assessment (NRDA) efforts for the Deep Water Horizon oil spill (current).
- Lead scientist, data manager, and partner with DAMOSVision, a Joint Venture for the **U.S. Corps of Engineers, New England District** to manage dredged material through the Disposal Area Monitoring System (DAMOS) Program (current). Current example project is development of a database and user interface for sediment testing data including electronic EDDs, automated import and QC, and a "query wizard" user interface.
- Designer and lead data manager for a web-based interface to allow access to sediment contamination and dredged material tracking data for the interagency Dredged Material Management Office (**DMMO**). Included developing tools to enable dredging applicants to provide dredged material characterization data in electronic templates, and code that

automates the import of the data into a master testing database (**U.S. Corps of Engineers, San Francisco District**; first phase 2009-2013; second phase, current).

- Data manager for a Residential Building Stock Assessment (RBSA) database, including design, population and QC of survey-generated energy use data (**Ecotope, Inc.**; 2012-2013).
- Digital analysis (gridding, contouring, mapping) of bathymetry data, and associated data support, for a sediment characterization project for Grays Harbor, WA, for the **U.S. Corps of Engineers, Seattle District** through SEE, LLC (2011-2013).
- Project Manager, Marine Protected Area (MPA) Monitoring Enterprise User Needs Assessment for the California **Ocean Science Trust**, responsible for designing and conducting surveys and interviews to develop a baseline of information and functionality needs for a system that will deliver monitoring data from MPAs in California (2008-2010).
- Geodatabase design and VBA code development to standardize, populate, and report out from the Puget Sound Nearshore Restoration Program (PSNERP) Change Analysis geodatabase as part of the Puget Sound General Investigation for the **U.S. Corps of Engineers, Seattle District** and **Washington Department of Ecology**, through Anchor Environmental (2007-2010).
- Design and population of a standard template to collect and store water quality data including field observations and monthly monitoring data, with automated code for importing, checking, and querying the database, for the **Port of Los Angeles**, through AMEC Environmental (2004-2009).
- Compile and analyze sediment chemistry, bioassay, and tissue bioaccumulation monitoring data from the San Francisco Deep Ocean Disposal Site (SF-DODS) in support of renewing the management and monitoring plan, for the **U.S. Environmental Protection Agency**, through Germano & Associates (2007-2008).
- Design and software lead for an integrated, GIS-based risk model for assessing output data from hydrographic models for **King County** lakes, rivers, and watersheds through Windward Environmental. Project included spatial and temporal aggregation of data, with map and graphic output integrating SQL Server, Matlab, and ArcGIS components (2005-2007).
- Design, population, and maintenance of a regional database in support of development of sediment quality guidelines for California through the Southern California Coastal Water Resources Project (**SCCWRP**), funded by California State Water Resources Control Board (**SWRCB**). Project included statistical calculations, documentation, and an application to perform sediment quality guideline analysis for users with no database experience (2002-07).
- Compiled sediment quality data for the Minnesota Pollution Control Agency for managing the St. Louis River Area of Concern. Project conducted in two phases, including a module for importing benthic infaunal data, and developing a user interface for running queries (2006).
- Re-design PSAMP (Puget Sound Ambient Monitoring Program) fish tissue database and develop data entry forms for shipboard fish processing for **Washington Department of Fish and Wildlife** (2005).
- Design and backend data management of web-based database interface to allow access to sediment contamination data for southern California, called the Joint Agency Aquatic Information Network (JAAIN), funded by the **Port of Los Angeles**, through Jones & Stokes Associates (2005-06).
- Design and population of a storm water (inputs) database including chemistry, flow, and microbiological data for several agencies in southern California, funded by the Contaminated Sediment Task Force (CSTF) and the Port of Los Angeles, through SCCWRP and AMEC Environmental (2004-06).
- Design and management of the GIS-based Massachusetts Ocean Resources Information System (MORIS) for the MA Office of Coastal Zone Management (**MCZM**); Phase III includes fresh and brackish water quality data; system includes a 'smart' data filtering module, and a

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Stats&Graphs tool that provides utilities to create statistics and graphs for watershed analysis on-the-fly (2002-2003).

- Data manager in support of investigation of sediment quality guidelines for beneficial re-use of dredged material for the San Francisco Bay Dredged Material Management Office (DMMO), through the **Port of Oakland**; project includes development of code to conduct ROC (receiver operating characteristics), logistic regression, and floating point analyses (2003-04).

### **EVS Consultants (Seattle, Washington)**

*Information Services Manager 1999-2002*

- Manage the underlying database behind NOAA's Coastal Protection and Restoration Division's Query Manager System.
- Responsible for IS staff of database programmers and network administrators.
- Program manager for the Massachusetts Ocean Resource Information System (MORIS) Project, a GIS-based integrated system with tools for aquaculture siting.

### **Science Applications International Corporation (Newport, Rhode Island)**

*Senior Scientist 1997-1999*

- Responsible for managing marine programs for state, federal, port, and private industry clients.
- Primary programmatic focus on application of information technologies to marine projects including dredging, seafloor mapping, and environmental impact assessments.
- Supervise marine science and data management/GIS staff.

*Staff Scientist 1991-96*

- Specialized expertise in geochemical and geotechnical characteristics of contaminated marine sediment and dredged material.
- Deputy Program Manager of the Disposal Area Monitoring System (DAMOS) Program, including serving as the Database Manager.
- Geochemical analysis and diffusion modeling of dredged material and coastal sediments.
- Marine acoustic data collection and analysis (single and multi-beam bathymetry, sidescan sonar, CHIRP swept-frequency subbottom).
- Designed geographical database management tools for storing, accessing, and analyzing monitoring data to assist environmental regulators.

### **ENSR (Acton, Massachusetts)**

*Staff Scientist 1996-97*

- Responsible for synthesizing two years of water column oceanographic data from Boston Harbor and Massachusetts Bay collected for the Massachusetts Water Resources Authority (MWRA).
- Analyses included long-term temporal trends and descriptive statistics of background conditions of temperature, salinity, nutrients, chlorophyll, and productivity.
- Developed intuitive synthesis graphics for public documents (i.e., annual reports).
- Managed GIS and 3D visualization of monitoring data for annual workshops.

### **Dames & Moore (San Francisco, California)**

*Staff Geologist 1990-91*

- Managed large chemical database (volatile organics and metals) for a groundwater/soil remedial Superfund investigation, including quarterly monitoring, vapor and groundwater extraction remediation, and geophysical log data.
- Responsible for coordination between field personnel and commercial laboratories, receiving electronic deliverable data, and QA/QC.

- Developed quality control and reporting routines designed for the investigation.
- Analyzed inorganic groundwater and soil chemistry data.

### **Ocean Drilling Program (College Station, Texas)**

#### *Seagoing Marine Scientist/Engineer 1988-90*

- Participated in 5 two-month research cruises aboard the R/V JOIDES *Resolution*.
- Responsible for sampling and preserving deep-sea cores and chemistry residues, maintaining a sample database (S1032) on a VAX mainframe, experience in physical properties and underway geophysics laboratories.
- Shore-based duties included chemical analysis of sediment for a core preservation research project, and database software development.

#### *Graduate Research Assistant 1985-88*

- Diatom/radiolarian sample processing and biostratigraphic research, including microphotography and film processing of diatoms.
- Student technician (geotechnical properties) aboard ODP Leg 108.

### **Bureau of Land Management (Cañon City, Colorado)**

#### *Student Conservation Association Summer 1982*

- Assisted in vertebrate (dinosaur) fossil excavation at Garden Park, CO (in association with the Denver Museum of Natural History).
- Field mapping, mineral potential assessment (in association with the BLM).

## **EDUCATION**

### ***Master of Science (1990, Oceanography)***

*Texas A&M University*

Thesis: Dissolved Aluminum in the Gulf of Mexico

Sediment/water chemical reactions; control of Al phases by organic/inorganic constituents; acquisition of box core and hydrographic data aboard the R/V *Gyre*.

### ***Bachelor of Science (1983, Geology)***

*Northern Arizona University*

Major GPA 3.8/4.0; field mapping (AZ, UT, NV)

## **OTHER SKILLS AND EXPERIENCE**

### ***Software***

- Databases: MS Access, MS Foxpro/Visual Foxpro, MS SQL Server, MySQL, Oracle scripts
- Data Processing: Golden Surfer/Grapher, ESRI ArcView, ArcGIS with extensions including Spatial Analyst, Mathworks Matlab, GMT, AutoCAD, MS Office
- Specialized Software: Sidescan and subbottom acoustic data processing, Hypack navigation software, Seasoft CTD data processing tools, HTML/XHTML
- Languages: Visual Basic for Applications, SQL, Fortran, Matlab (GUI)

### ***Seagoing Experience***

- Multiple small-vessel surveys throughout Long Island Sound, Massachusetts Bay, the New York Bight, and Puget Sound (1991-present)
- R/V Sedco/BP 471 (*Resolution*; 1986-90)

- R/V Gyre (student cruises 1985-87)

### **Field Experience**

#### Marine

- Navigation, single beam bathymetry, sediment-profile camera, CTD, towed acoustics (sidescan, subbottom), coring, sediment/tissue sampling (1991-present)
- Deep sea coring, seismic surveying, and sediment physical properties (1986-90)
- Gravity/piston/box coring, pore water squeezing, rosette, nutrient analyses (1985-87)

#### Geological

- Groundwater well construction and sampling, pump and slug tests (1990-91)
- Field mapping, vertebrate fossil excavation (1982)

### **SELECTED PUBLICATIONS**

*Publications with an asterisk (\*) were presented at the associated meeting:*

\*Myre, P., B. Shorr, J. Field, C. Sayler, C. Severn, and J. Oelrich. 2014. What is a Sample: Complexities of Sharing Contaminant Data Across Multiple Data Management Platforms. Oil Spill & Ecosystem Science Conference. Gulf of Mexico Research Initiative (GOMRI), January 26-29, 2014.

Myre, P.L., A.R. Bailey, D.A. Carey, T.C. Hoffman, and A. Agrawal. 2010. MPA Monitoring Information Management System User Needs Assessment. Final Report, April 2010. MPA Monitoring Enterprise, California Ocean Science Trust, Oakland, CA. (<http://monitoringenterprise.org/documents.php>)

MPA Monitoring Information Management System User Needs Assessment - In Brief. 2010. MPA Monitoring Enterprise, California Ocean Science Trust, Oakland, CA (excerpted from full document as above). (<http://monitoringenterprise.org/documents.php>).

Myre, P.L., L.B. Read, and D.A. Carey. 2007. Using statistical techniques to investigate diagenesis of disposed dredged material in Long Island Sound. Submitted to US Army Corps of Engineers, New England Division, Concord, MA.

\*Myre, P.L., J.D. Germano, D.A. Carey, and T.J. Fredette. 2006. A 22 year record of dredged material monitoring: results from the field verification program (FVP) mound in Long Island Sound. Western Dredging Association Proceedings, San Diego, CA, June 2006.

\*Myre, P.L., D.E. Vidal, S.M. Bay. 2004. Southern California contaminated sediment database with supporting analysis features, metadata, and website. SETAC, November 2004, Portland, OR

\*Myre, P.L., J.D. Germano, L.B. Read, and T.C. Michelsen. Investigation of screening values for sediment targeted for wetland restoration in San Francisco Bay. SETAC, Puget Sound Section Annual Meeting, June 2004, Port Townsend, WA.

\*Myre, P.L., B.K. Carlisle, J.D. Baker, K.L. Moshenberg, C. Trent. 2003. Coastal nonpoint source monitoring database: Massachusetts Ocean Resource Information System Phase III. American Water Resources Association (AWRA), November 2003, San Diego, CA.

- \*Myre P. L., D. S. Carle and S. Snow-Cotter. 2001. Aquaculture siting in Massachusetts (MORIS Phase I): a browsable, integrated metadata database, query, and mapping GIS extension. Coastal GeoTools '01, January 8-11, 2001, Charleston, SC.
- \*Myre P. L., P.J. Walter, and M.P. Rollings. 2000. Geotechnical evaluation of sediment data collected in Boston Harbor confined aquatic disposal cells. In: R.E. Randall (Ed.), Proceedings of the Western Dredging Association 20th Technical Conference. Warwick, RI, June 25 – 28, 2000, pp. 303-316.
- \*Myre (Murray), P. and D.S. Babb-Brott. 1999. The use of interactive GIS for public evaluation of dredging impacts on the Coastal Zone. Coastal GeoTools '99, April 5-7, 1999, Charleston, SC.
- Myre, P.L. and E.C. DeAngelo. 1999. Capacity analysis of CAD sites within Salem, Gloucester, and New Bedford harbors. SAIC Report #467. Submitted to Massachusetts Coastal Zone Management Agency, Boston, MA.
- Myre (Murray), P. E.C. DeAngelo, and H.L. Saffert. 1999. Monitoring results from the first three Mystic River CAD cells. SAIC Report #466. Submitted to Great Lakes Dredge and Dock, East Boston, MA.
- \*Myre (Murray), P., T.J. Fredette, P.E. Jackson, S.H. Wolf, and J.H. Ryther, Jr. 1998. Monitoring results from the first Boston Harbor Navigation Improvement Project confined aquatic disposal cell. In: R.E. Randall (Ed.), Proceedings of the Fifteenth World Dredging Congress, Vol. I. Las Vegas, NV, June 28 – July 2, 1998, pp. 415 - 430.
- \*Myre (Murray), P., D.A. Carey, T.J. Fredette, and J.H. Ryther, Jr. 1998. Isolation of contaminated sediments in disposal cells: short- and long-term benefits for Boston Harbor. American Geophysical Union abstract, May 26-29, 1998, Boston, MA.
- Myre (Murray), P. 1998. Postcap monitoring of Boston Harbor Navigation and Improvement Project (BNHIP) phase 1: assessment of inner confluence CAD cell. (SAIC Rpt. #413). US Army Corps of Engineers, New England Division, Waltham, MA.
- Myre (Murray), P., Cibik, S.J., Lemieux, K.B., Zavistoski, R.A., Howes, B.L., Taylor, and T.L. Loeder. 1997. First 1996 semi-annual water column monitoring report, February-July, 1996. Prepared for the Massachusetts Water Resources Authority, Boston, MA.
- Myre (Murray), P., Cibik, S.J., Lemieux, K.B., Zavistoski, R.A., Howes, B.L., Taylor, and T.L. Loeder. 1997. First and Second 1995 semi-annual water column monitoring reports. Prepared for the Massachusetts Water Resources Authority, Boston, MA.
- Myre (Murray), P. and Selvitelli, P. 1996. DAMOS navigation and bathymetry standard operating procedures. DAMOS Contribution #112 (SAIC Rpt. #290). US Army Corps of Engineers, New England Division, Waltham, MA.
- Myre (Murray), P. 1996. Sediment core chemistry data from the MQR mound, August and December 1991. DAMOS Contribution #103 (SAIC Rpt. # SAIC-92&C105). US Army Corps of Engineers, New England Division, Waltham, MA.



- Myre (Murray), P. 1996. Recolonization of the Mill Quinnipiac River Disposal Mound (MQR): results of a REMOTS survey. DAMOS Contribution #104 (SAIC Rpt. #SAIC-92& C107). US Army Corps of Engineers, New England Division, Waltham, MA.
- \*Myre (Murray), P., T.J. Fredette, J.T. Morris, and A.J. Silva. 1995. Monitoring dredged material deposits using swept-frequency subbottom techniques: results of the 1993/94 New Haven Harbor dredging project. New England Environmental Expo, Boston, MA.
- \*Myre (Murray), P., T.J. Fredette, and D.A. Carey. 1995. Ambient values of contaminant burdens for the evaluation of dredged sediments. New England Environmental Expo, Boston, MA.
- Myre (Murray), P. 1994. Chemical analysis of sediment sampling at the Massachusetts Bay Disposal Site, 5-7 June 1989. DAMOS Contribution #91, US Army Corps of Engineers, New England Division, Waltham, MA.
- \*Myre (Murray), P., D.A. Carey, and T.J. Fredette. 1994. Chemical flux of pore water through sediment caps. In: E.C. McNair, Jr. (Ed.), Proceedings of the Second International Conference on Dredging and Dredged Material Placement, Vol. II. Lake Buena Vista, FL, Nov 13-16, 1994. Amer. Soc. Civ. Eng., New York, pp. 1017-1026.
- \*Myre (Murray), P., D.A. Carey, and T.J. Fredette. 1994. Mapping sediment texture at the Massachusetts Bay Disposal Site. New England Estuarine Research Society (NEERS) Spring Meeting Abstracts of Presented Papers and Posters, June 2, 1994, Salem, MA.
- Myre (Murray), P., E. DeAngelo, J. Parker, and T.J. Fredette. 1994. Integrated acoustic seafloor characterization. In: E.C. McNair, Jr. (Ed.), Proceedings of the Second International Conference on Dredging and Dredged Material Placement, Vol. I. Lake Buena Vista, FL, Nov 13-16, 1994. Amer. Soc. Civ. Eng., New York, pp. 295-303.
- \*Myre (Murray), P., M.B. Wiley, D. Pabst, and B. May. 1994. Subbottom profiling of a sand capped disposal mound. In: E.C. McNair, Jr. (Ed.), Proceedings of the Second International Conference on Dredging and Dredged Material Placement, Vol. II. Lake Buena Vista, FL, Nov 13-16, 1994. Amer. Soc. Civ. Eng., New York, pp. 1285-1294.
- \*Myre (Murray), P., J.H. Parker, D.A. Carey, and T. J. Fredette. 1993. Grain size distribution at the Massachusetts Bay Disposal Site inferred from acoustic impedance: assessing anthropogenic and natural sedimentary microenvironments. Geol. Soc. America Abstracts, Vol. 25, p. 128.
- Myre, P.L. 1990. "Dissolved Aluminum in the Gulf of Mexico." Texas A&M University. M.S. Thesis. 64 p.
- \*Myre, P.L. 1988. Dissolved aluminum in the Gulf of Mexico. EOS Transactions, American Geophysical Union, Vol. 69, p. 1127-1128.