

## **Everglades Publications by David Rudnick**

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### **Education:**

- Ph.D. (Oceanography) 1984 - University of Rhode Island, Kingston, RI
- B.S. (Zoology) 1975 - Duke University, Durham, NC

### **Expertise:**

- Estuarine Ecology
- Nutrient Cycling
- Benthic Ecology

### **Projects:**

- Florida Bay Feasibility Study
- Florida Bay MFLs

### **Publications:**

Rudnick, D., C. Madden, R. Bennett, A. McDonald, S. Kelly, K. Cunniff, R. Alleman, R. Chamberlain, P. Doering, M. Gostel, D. Haunert, M. Hedgepeth, M. Hunt, B. Orlando, C. Qiu, and P. Walker. Management and Restoration of Coastal Ecosystems. Chapter 12, 2008 South Florida Environmental Report. SFWMD. 110 p.

Rudnick, D., C. Madden, S. Kelly, R. Bennett, and K. Cunniff. 2007. Report on Algal Blooms in Eastern Florida Bay and Southern Biscayne Bay. 2007 South Florida Environmental Report, Appendix 12-3. SFMWD. 28p.

Childers, D.L., J.N. Boyer, S.E. Davis, C.J. Madden, D.T. Rudnick, and F.H. Sklar. 2006. Nutrient concentration patterns in the oligotrophic “upside-down” estuaries of the Florida Everglades. Limnology and Oceanography 51:602-616.

Rudnick, D., J. VanArman, M. Hunt, D. Swift, C. Madden, R. Bennett, and A. McDonald. 2006. Technical documentation to support development of Minimum Flows and Levels for Florida Bay. SFWMD Technical Report. 202 p.

Rudnick, D.T., P.B. Ortner, J.A. Browder, and S.M. Davis. 2005. A conceptual model of Florida Bay. Wetlands 25:870-883.

Davis S.E., J. Cable, C. Childers, C. Coronado, J. Day, C. Hittle, C. Madden, E. Reyes, D.

Rudnick, and F. Sklar. 2004. Importance of episodic storm events in controlling ecosystem structure and function in a Gulf Coast estuary. *Journal of Coastal Research* 20:1198-1208.

Davis, S.E., D.L. Childers, J.W. Day, Jr., D.T. Rudnick, and F.H. Sklar. 2003. Factors affecting the concentration and flux of materials in two southern Everglades mangrove wetlands. *Marine Ecology Progress Series* 253:85-96.

Sutula, M.A., B.P. Perez, E. Reyes, D.L. Childers, S. Davis, J.W. Day, Jr., D. Rudnick, and F. Sklar, 2003. Factors affecting spatial and temporal variability in material exchange between the Southeastern Everglades wetlands and Florida Bay (USA). *Estuarine and Coastal Shelf Science* 57:757-781.

Davis, S.E., D. L. Childers, J. W. Day Jr., D.T. Rudnick, and F.H. Sklar. 2001. Nutrient dynamics in vegetated and non-vegetated areas of a southern Everglades mangrove creek. *Estuarine and Coastal Shelf Science*, 52:753-768.

Davis, S.E., D.L. Childers, J.W. Day Jr., D.T. Rudnick, and F.H. Sklar. 2001. Wetland-Water Column Exchange of Carbon, Nitrogen, and Phosphorus in a Southern Everglades Dwarf Mangrove. *Estuaries* 24:610-622.

Koch, M.S., R.E. Benz, and D.T. Rudnick. 2001. Solid phase phosphorus pools in highly organic carbonate sediments of northeastern Florida Bay. *Estuarine and Coastal Shelf Science* 52: 279-291

Sklar, F.H., C. McVoy, R. Van Zee, D. E. Gawlik, K. Tarboton, D. Rudnick, S. Miao, and T. Armentano. 2001. The effects of altered hydrology on the Everglades. Porter and Porter (eds). *The Everglades, Florida Bay and Coral reefs of the Florida Keys: An Ecosystem Sourcebook*. CRC Press, 39-82, Boca Raton, FL.

Sutula, M., J.W. Day Jr., J. Cable, and D. Rudnick. 2001. Hydrological and nutrient budgets of freshwater and estuarine wetlands of Taylor Slough in the Southern Everglades, Florida. *Biogeochemistry* 56:287-310.

Louda, J.W., J.W. Loitz, D.T. Rudnick, and E.W. Baker. 2000. Early diagenetic alteration of chlorophyll-a and bacteriochlorophyll-a in a contemporaneous marl ecosystem; Florida Bay. *Organic Geochemistry* 31:1561-1580.

Robbins, J.A., C. Holmes, R. Halley, M. Bothner, E. Shinn, J. Graney, G. Keeler, M. tenBrink, K.A. Orlandini, and D. Rudnick. 2000. Time averaged fluxes of lead and fallout radionuclides to sediments in Florida Bay. *Journal of Geophysical Research - Oceans*, 105:28805-28822.

Rudnick, D., C. Madden, and F. Sklar. 1999. Sufficiency Review of Information Needed to Establish Minimum Flows and Levels for Florida Bay. 45 p. (SFWMD report).

Rudnick, D.T., Z. Chen, D.L. Childers, J.N. Boyer, and T.D. Fontaine III. 1999. Phosphorus and nitrogen inputs to Florida Bay: the importance of the Everglades watershed. *Estuaries* 22:398-

Swart, P.K., G. Healy, L. Greer, M. Lutz, A. Saied, D. Anderegg, R.E. Dodge, and D.T. Rudnick. 1999. The use of proxy chemical records in coral skeletons to ascertain past environmental conditions in Florida Bay. *Estuaries* 22:384-397.

Rudnick, D.T. 1998. Florida Bay status and restoration. Pages 312-313 in R.W. Herschy and R.W. Fairbridge (eds.), *Encyclopedia of Hydrology and Water Resources*, Kluwer Acad. Publ., Dordrecht.

Armentano, T., Rudnick, D., N. Thompson, P. Ortner, M. Robblee, and R. Halley. 1997. Strategic Plan for the Interagency Florida Bay Science Program. 42 p.

Armentano, T., M. Robblee, P. Ortner, N Thompson, D. Rudnick, and J. Hunt. 1994. Florida Bay Science Plan. 43 p.

Rudnick, D.T., S.N. Levine, and W.C. Ghiorse. 1992. Flow through microcosms for testing the nutrient limitations of microorganisms in terrestrial subsurface sediments. Pages 47-58 in: J.A. Stanford and J.J. Simons (eds.), *Proc. First Int'l Conf. on Groundwater Ecology*, AWRA.

Kelly, J.R., D.T. Rudnick, R.D. Morton, L.A. Buttel, S.N. Levine, and K.A. Carr. 1990. Tributyltin and invertebrates of a seagrass ecosystem: exposure and response of different species. *Marine Environmental Research* 29:245-276.

Kelly, J.R., S.N. Levine, L.A. Buttel, K.A. Carr, D.T. Rudnick, and R.D. Morton. 1990. Tributyltin effects within a Thalassia ecosystem. *Estuaries* 13:301-310.

Levine, S.N., D.T. Rudnick, J.R. Kelly, R.D. Morton, L.A. Buttel, and K.A. Carr. 1990. Pollution dynamics as influenced by seagrass beds: experiments with tributyltin in Thalassia microcosms. *Marine Environmental Research* 30:297-322.

Rudnick, D.T. 1989. Time lags between the deposition and meiobenthic assimilation of phytodetritus. *Marine Ecology Progress Series* 50:231-240.

Frithsen, J.B., D.T. Rudnick, and P.H. Doering. 1986. The determination of fresh organic carbon weight from formaldehyde preserved macrofaunal samples. *Hydrobiologia* 133:203-208.

Oviatt, C.A., D.T. Rudnick, A.A. Keller, P.A. Sampou, and G.T. Almquist. 1986. A comparison of system (O<sub>2</sub> and CO<sub>2</sub>) and C-14 measurements of metabolism in estuarine mesocosms. *Marine Ecology Progress Series* 28:57-67.

Rudnick, D.T. and C.A. Oviatt. 1986. Seasonal lags between organic carbon deposition and mineralization in marine sediments. *Journal of Marine Research* 44:815-837.

Frithsen, J.B., R. Elmgren, and D.T. Rudnick. 1985. Responses of benthic meiofauna to long-

term, low-level additions of No. 2 fuel oil. *Marine Ecology Progress Series* 23:1-14.

Rudnick, D.T., R. Elmgren, and J.B. Frithsen. 1985. Meiofaunal prominence and benthic seasonality in a coastal marine ecosystem. *Oecologia (Berlin)* 67:157-168.

Gearing, J.N., P.J. Gearing, D.T. Rudnick, A.G. Requejo, and M.J. Hutchins. 1984. Isotopic variability of organic carbon in a phytoplankton-based, temperate estuary. *Geochimica Cosmochimica Acta* 48:1089-1098.

Nixon, S.W., M.E.Q. Pilson, C.A. Oviatt, P. Donaghay, B. Sullivan, S. Seitzinger, D. Rudnick, and J. Frithsen. 1984. Eutrophication of a coastal marine ecosystem - an experimental study using the MERL microcosms. Pages 105-135 in M.J.R. Fasham (ed.), *Flows of Energy and Materials in Marine Ecosystems*, Plenum Press, London.

Oviatt, C.A., M.E.Q. Pilson, S.W. Nixon, J.B. Frithsen, D.T. Rudnick, J.R. Kelly, J.F. Grassle, and J.P. Grassle. 1984. Recovery of a polluted estuarine system: a mesocosm experiment. *Marine Ecology Progress Series* 16:203-217.

Rudnick, D.T. 1984. Seasonality of community structure and carbon flow in Narragansett Bay sediments. Ph.D. dissertation, Univ. of Rhode Island, Kingston, RI. 320 p.

Frithsen, J.B., D.T. Rudnick, and R. Elmgren. 1983. A new, flow-through corer for the quantitative sampling of surface sediments. *Hydrobiologia* 99:75-79.