

## IVAN VALIELA

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### Education:

Ph.D., Cornell University (1968), Ecology; B.S., Rutgers University (1964), Agricultural Research Member

American Soc. of Limnology and Oceanography, Coastal and Estuarine Research Federation, North Eastern Estuarine Research Soc.

### Academic activities:

Distinguished Scientist (2014-present), Senior Res. Scientist, The Ecosystems Center, Marine Biological Laboratory (2008-2014).

Emeritus Professor, 2008-present; Professor, 1982-2007, Assoc. Professor (1971-1980), Assit Professor (1969-1975), Boston University Marine Program.

Co-Director, Marine Ecology Course, Marine Biological Laboratory (1975-1983).

Act. Director, Boston Univ. Marine Progr. (1983-1987),

Coord., Woods Hole Mar. Sci. Consortium (1985-1991), and Director, REU site Coastal Bays of New England (1995-2007).

Taught courses at Fac. de Biología, Univ. de Barcelona (1985), Inst. de Biología Marina y Pesquera "Alte.

Storni", San Antonio Oeste, Argentina (1986); Facultad de Ciencias del Mar, Univ. de Las Palmas, Gran Canaria, Spain (1989-1991); Inst. de Ciencias del Mar y Limnología, Univ. Nac. Autónoma de México (1998), Inst. Oceanografía Univ. de São Paulo, Brazil (1998); Facultad de Biología, Universidad de

Oviedo, 2006, Università Ca' Foscari, Venice (2007), Marine Affairs Institute, Trinidad (2009).

Visiting Scholar, Dept. of Oceanography, Univ. of Washington (1981), Univ. of Barcelona (1982).

Postdoctoral NIH Trainee, Department of Zoology, Michigan State University (1969).

### Institutional and editorial activity:

Member, Consiglio Científico, Stazione Zoologica "Anton Dohrn", Naples (1985); Board Member, Fundación Antorcha, Argentina; Jury for Fundación Bunge y Born National Prize, Argentina; Bd. of Dir., Assoc. for Preservation of Cape Cod (1989-1991); Bd of Adv., Amer. Littoral Soc. (1982-1996), Ext.

Rev. Board, University of Groningen, the Netherlands; Member, Member of Governing Board of CERF (2007-2010); Jury for BBVA Prize for Biodiversity and Conservation (2008), Member, NOAA Science Advisory Board Ecosystem Sciences and Management Working Group (2009-2010)-President, Comité Ejecutivo del Laboratorio Internacional de Cambio Global (2009-2011).

Member, Research Advisory Committee, Waquoit Bay National Research Reserve, NOAA (2005-present). Member, Cape Cod Commission Tech. Review Committee (2006-present).

Editorial Board, Rev. Hist. Nat. Litoral (Argentina) (1982-2000), Limnética (1987-2000), Board of Editors, Limnology and Oceanography (1989-1992), Scientia Marina (1982-2006). Editor, Estuarine, Coastal and Shelf Science (2006-2016).

### Other Activities:

Consultant, advisor, and lecturer in coastal ecology to educational institutions, government agencies, towns,

William A. Niering Outstanding Educator Award, Estuarine Research Federation, for excellence in coastal and estuarine education, 2005.

Wiese Distinguished Lecturer, Dauphin Island Sea Laboratory, 2007.

Howard, Eugene, and William Odum Award, Coastal and Estuarine Research Federation, for lifetime achievement, 2013.

#### Publications

- 1967 Hansens, E.J., and I. Valiela. Activity of the face fly in New Jersey. *J. Econ. Ent.* 20:20-
- 1969 Valiela, I. An experimental study of the mortality factors of larval *Musca autumnalis* Geer. *Ecol. Monogr.* 39:199-225.
- Valiela, I. The arthropod fauna of bovine dung in Central New York and sources on its natural history. *J. New York Entom. Soc.* 77:212-220.
- 1971 Valiela, I. Food specificity and community maturity: Preliminary ornithological evidence for a general framework. *General Systems* 16:37-47
- 1973 Valiela, I., J.M. Teal, and W. Sass. Nutrient retention in marsh plots experimentally fertilized with sewage sludge. *Estuar. Coast. Mar. Sci.* 17:691-701.
- Vince, S., and I. Valiela. The effects of ammonium and phosphate enrichments on chlorophyll a, pigment ratio and species composition of phytoplankton in New York Sound. *Mar. Biol.* 19:673-683.
- 1974 Estrada, M., I. Valiela, and J.M. Teal. Concentration and distribution of chlorophyll in fertilized plots in a Massachusetts salt marsh. *J. Exp. Mar. Biol. Ecol.* 56:47-56
- Banus, M., I. Valiela, and J.M. Teal. Exports of lead from salt marshes. *Mar. Pollut. Bull.* 5:6-9
- Teal, J.M., and I. Valiela. The Living Filter. *Oceanus* 17:7-19- Reprinted in *Marine Technol. Soc. J.* 7:19-21.
- Krebs, C.T., I. Valiela, G. Harvey, and J.M. Teal. Reduction of field populations of fiddler crabs by uptake of chlorinated hydrocarbons. *Mar. Pollut. Bull.* 5:140-142.
- Prinslow, T., I. Valiela, and J.M. Teal. The effect of detritus and ration size on the growth of *Fundulus heteroclitus*, a salt marsh killifish. *J. Exper. Mar. Biol. Ecol.* 16:1-10
- Van Raalte, C., I. Valiela, E.J. Carpenter, and J.M. Teal. Nitrogen fixation: presence in salt marshes and inhibition by additions of combined nitrogen. *Estuar. Coast. Mar. Sci.* 20:501-511
- Van Raalte, C., W.D. Stewart, I. Valiela, and E.J. Carpenter. A <sup>14</sup>C technique for measuring algal productivity in salt marsh muds. *Botanica Marina* 17:186-191
- Valiela, I., D. Babiec, W. Atherton, S. Seitzinger, and C. Krebs. Some consequences of sexual dimorphism: feeding in male and female fiddler crabs, *Uca pugnax* (Smith). *Biol. Bull.* 147:652-660.
- Valiela, I., and J.M. Teal. Nutrient limitation in salt marsh vegetation. Pp563-71. R.J. Reimold and W.H. Queen (Eds.), *Ecology of Halophytes*, Academic Press.
- 1975 Valiela, I., M. Banus, and J.M. Teal. Metal retention by salt marsh sediments and the response of marsh bivalves to enrichment with metal-containing fertilizers. *Environ. Pollut.* 7:145-157.
- Valiela, I., J.M. Teal, and W.J. Sass. Production and dynamics of salt marsh vegetation and effect of sewage contamination. Biomass, production and species composition. *J. Appl. Ecol.* 19:982-993

Banus, M., I. Valiela, and J.M. Teal. Lead, zinc and cadmium budgets in experimentally enriched ecosystems. *Estuar. Coast. Mar. Sci.* 12:1430.

MacLeod, P., and I. Valiela. The effect of density and mutual interference by a predator: a laboratory study of predation by the nudibranch *Coryphella rufibranchialis* on the hydroid *Tubularia larynx*. *Hydrobiologia* 47:339-346.

1976 Meany, R., I. Valiela, and J.M. Teal. Growth, abundance and distribution of larval tabanids in experimentally fertilized plots on a Massachusetts salt marsh. *J. Appl. Ecol.* 13:223-

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- Teal, J.M., I. Valiela, and D. Berlo. Nitrogen fixation by rhizosphere and living bacteria and salt marsh sediments. *Limnol. Oceanogr.* 24:126-136.
- Valiela, I., and J.M. Teal. Nutrient dynamics: summary and recommendations. Pp. 262-259. R.E. Good, D.F. Whigham and R.K. Simpson (eds.), *Freshwater Wetlands*. Acad. Press.
- Kaplan, W., I. Valiela, and J.M. Teal. Denitrification in a salt marsh ecosystem. *Limnol. Oceanogr.* 24:726-734.
- 1979 Valiela, I., L. Koumjian, T. Swain, J.M. Teal, and J. Hobbie. Cinnamic acid inhibition of detritus feeding. *Nature* 280:557.
- Valiela, I., and J.M. Teal. The nitrogen budget of a salt marsh ecosystem. *Nature* 280:652-656.
- 1980 Giblin, A.E., A. Bourg, I. Valiela and J.M. Teal. Uptake and cycling of heavy metals in sewage sludge in a New England salt marsh. *Amer. J. Bot.* 67:1058-1069.
- 1981 Breteler, R.J., I. Valiela, and J.M. Teal. Bioavailability of mercury in several northern U.S. *Spartina* ecosystems. *Estuar. Coast. Shelf Sci.* 12:655-665.
- Breteler, R.J., J.M. Teal, and I. Valiela. Retention and fate of experimentally added mercury in a Massachusetts salt marsh treated with sewage sludge. *Mar. Environm. Res.* 25:211-225.
- Breteler, R.J., A.E. Giblin, J.M. Teal, and I. Valiela. Trace enrichments in decomposing litter of *Spartina alterniflora*. *Aquat. Bot.* 11:111-120.
- Buchsbaum, R., I. Valiela, and J.M. Teal. Grazing by Canada geese and related aspects of the chemistry of salt marsh grass. *Colonial Waterbirds* 4:126-136.
- Howes, B.L., R.W. Howarth, J.M. Teal, and I. Valiela. Oxidation reduction potentials in a salt marsh: Spatial patterns and interactions with primary production. *Limnol. Oceanogr.* 26:350-360.
- Vince, S.W., I. Valiela, and J.M. Teal. An experimental study of the structure of herbivorous insect communities in a salt marsh. *Ecology* 62:1667-1678.
- 1982 Jordan, T.E., and I. Valiela. A nitrogen budget of the ribbed mussel *Geukensia demissa*



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- Valiela, I. Review of "An Introduction to Coastal Ecology" by P. J. S. Boaden and R. Seed. *Quart. Rev. Biol.* 61:424-425.
- 1987 Caraco, N., A. Tamse, O. Boutros, and I. Valiela. Nutrient limitation of phytoplankton growth in brackish coastal ponds. *Canad. J. Fish. Aquat. Sci.* 44:763-773.
- Buchsbaum, R., and I. Valiela. Variability in the chemistry of estuarine plants and its effect on feeding by Canada geese. *Oecologia* 73:153-156.
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- 1988 Rietsma, C., I. Valiela and R. Buchsbaum. Effects of detrital chemistry on growth and food choice in the salt marsh snail, *Melampus bidentatus*. *Ecology* 69:261-266.
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- 1989 Valiela, I. Review of "Ecology Potentials and Limitations", by T. Fenchel. *Estuaries* 11:1410-1411.
- Valiela, I. Review of "The Ecology and Management of Wetlands", Vols. I, II, by D. Hook and others (eds.). *Marine Technol. Soc. J.* 23:362-363.
- 1990 Valiela, I. Suitably large scales for study of marine ecosystems. Review of "Biomass Yields and Geography of Large Marine Ecosystems, by K. Sherman and L. M. Alexander (eds.). *Ecology* 71:2031.
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- Valiela, I., J. Costa, K. Foreman, J.M. Teal, B. Howes, and D. Aubrey. Transport of groundwater borne nutrients from water. *Ambio* 1:203-210.



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- Drake, C., P.J. Behr, and I. Valiela. Effect of algal cover on size selective predation of *Gammarus mucronatus* by the striped killifish, *Fundulus majalis* *Biol. Bull.* 189: 243-244.
- Lyons, J., J. Ahern, J. McClelland, and I. Valiela. Macrophyte abundances in Waquoit Bay estuaries subject to different nutrient loads and the potential role of fringing salt marsh in groundwater nitrogen interception. *Biol. Bull.* 189:252-256.
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- Tomasky, G., and I. Valiela. Nutrient limitation of phytoplankton growth in Waquoit Bay, Massachusetts. *Biol. Bull.* 189:257-258.
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- Foreman, K., I. Valiela, and R. Sardá. Controls of benthic marine food webs. *Sci. Mar.* 62:119-128
- 1996 Alber, M., and I. Valiela. Utilization of microbial organic aggregates by bay scallops, *Argopecten irradians* (Lamarck). *J. Exp. Mar. Biol. Ecol.* 195:79.
- Foreman, K., I. Valiela, and R. Sardá. Controls of benthic marine food webs. *Sci. Mar.* 62:119-128
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- Valiela, I., P. Peckol, C. D'Avanzo, K. Lajtha, J.N. Kremer, W.R. Geyer, K. Foreman, D. Hersh, B. Seely, T. Isaji, and R. Crawford. Hurricane Bob on Cape Cod. *Amer. Scientist* 84:514-521
- Dickens, A., L. Soucy, and I. Valiela. Particulate and dissolved nitrogen: A study of transformations in groundwater and estuarine samples of the Waquoit Bay estuarine system. *Biol. Bull.* 191:331-332
- Feinstein, N., S. Yelenik, J. McClelland, and I. Valiela. Growth rates of ribbed mussels in six estuaries subject to different nutrient loads. *Biol. Bull.* 191:327-328
- Fritz, C., E. LaBrecque, J. Tober, P.J. Behr, and I. Valiela. Shrimp in Waquoit Bay: Effects of nitrogen loading on size and abundance. *Biol. Bull.* 191:326-327
- Galán Jiménez, E., J. Hauxwell, E. Heckscher, C. Reitsma, and I. Valiela. Selection of nitrogen-enriched macroalgae (*Cladophora vagabunda* and *Gracilaria tikvahiae*) by the herbivorous amphipod *Microdeutopus gryllotalpa*. *Biol. Bull.* 191:323-324.
- Heckscher, E., J. Hauxwell, E. Galán Jiménez, C. Reitsma, and I. Valiela. Selectivity by the herbivorous amphipod *Microdeutopus gryllotalpa* among five species of macroalgae. *Biol. Bull.* 191:324-326.
- LaBrecque, E., C. Fritz, J. Tober, P.J. Behr, and I. Valiela. Abundance and specific growth rates in relation to population densities of *Fundulus heteroclitus* in Waquoit Bay estuaries subject to different nitrogen loads. *Biol. Bull.* 191:319-320.
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- Sardá, R. I. Valiela, and K. Foreman. Decadal shift in salt marsh macroinfaunal community in response to sustained long-term experimental nutrient enrichment. *J. Exp. Mar. Biol. Ecol.* 205:63-81.
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Valiela, I., and S. E. Fox. Managing coastal wetlands. *Science* 312:190-

Valiela, I., and S. Fox. Mechanisms of ecological control over time: Evidence from coastal ecosystems. Valladares, F., Camacho, A., Elosegui, A., Estrada, M., Gracia, C., S. C. & Gili, J.M. (eds). *Unity in Diversity*. Ed. Rubes, Fundación BBVA, Madrid.

Bowen, J. L., and I. Valiela. Using  $^{15}\text{N}$  to assess coupling between watersheds and estuaries in temperate and tropical regions. *J. Coast. Res.* 24:884-

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Culbertson, J., I. Valiela, M. Pickart, E. Peck, and C. Reddy. Long-term consequences of residual petroleum on salt marsh grass in Wild Harbor, MA. *J. Appl. Ecol.* 45:1282-

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Carmichael, R. H., T. Hattenrath, I. Valiela, and R. H. Michener. Nitrogen stable isotopes in the shell of *Mercenaria mercenaria* trace wastewater inputs from watersheds to estuarine ecosystems. *Aquat. Biol.* 4:99-111.

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Valiela, I. *Doing Science: Design, Analysis, and Communication of Scientific Research*. Second Edition. Oxford University Press. 333 pages.

Baeta, A., R. Pinto, I. Valiela, P. Richard, N. Niquil, and J. C. Marques.  $^{15}\text{N}$  and  $^{13}\text{C}$  in the Mondego estuary food web: Seasonal variation in producers and consumers. *Marine Environmental Research* 67:109-116.

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Fox, S. E., M. Teichberg, Y. S. Olsen, and I. Valiela. Restructuring of benthic communities in eutrophic estuaries: lower abundance of prey leads to trophic shifts from omnivory to grazing. *Mar. Ecol. Progr. Ser.* 380:457.

Valiela, I., E. Kinney, J. Culbertson, E. Peacock, and S. Smith. Global losses of mangroves and salt marshes: Magnitudes, causes and consequences. Pp. 38, 07- Duarte, C. (ed.). *Global Loss of Coastal Habitats: Rates, Causes, and Consequences*. Fundación BBVA. Bilbao.

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2013

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