

BJÖRN KJERFVE

Director of Marine Science Program; Professor of Marine and Geological Sciences, University of South Carolina, Columbia, SC 29208, USA. Phone: 1-803-777-2572; Fax: 1-803-777-4600; Email: bjorn@msci.sc.edu.

EDUCATION

Ph.D., 1973, Louisiana State University, Baton Rouge, LA, in marine sciences (physical oceanography).

M.S., 1970, University of Washington, Seattle, WA, in oceanography.

B.A., 1968, Georgia Southern College, Statesboro, GA, in mathematics (with credits from Stockholms Universitet).

EMPLOYMENT

University of South Carolina: Director of Marine Science Program (2000-present), RPI Associate (2002 – present), Professor (1986-present), Associate Professor (1978-1986), Assistant Professor (1973-1978).

RESEARCH INTERESTS AND EXPERTISE

Oceanography of bays, coastal lagoons, estuaries, and coastal waters; ecology of mangrove, salt marsh, and coral reef systems; numerical modeling of flow and transport in coastal systems; hydrology of tropical river systems; satellite remote sensing and GIS applications to coastal systems; database development and coastal management.

RESEARCH EXPERIENCES

USA: Research on estuarine and coastal oceanographic processes, ecological cycles and processes in coastal and riverine ecosystems, hydrodynamics modeling, coastal applications of satellite remote sensing and GIS; principal co-investigator on the North Inlet LTER (long-term ecological research) project in South Carolina, 1979-1992.

Brazil: Visiting professor, Departamento de Geoquímica, Universidade Federal Fluminense, Niterói, RJ, 1988-1999, coastal lagoon, coastal bay, and mangrove research; Visiting professor, Instituto Oceanográfico and Centro Tecnológico de Hidráulica, University de São Paulo, 1984-1985, teaching estuarine courses 1984-1985;

Caribbean: Research in Belize on physical-biological coupling along the barrier reef and in the reef lagoon, regional applied oceanography 1997-present sponsored by The Nature Conservancy; reef currents 1975-1979 sponsored by the Smithsonian; and in Jamaica research on coastal physical processes in fringing reefs environments, hindcasting of hurricanes, and hurricane impacts, 1981-1995, including NSF and UNESCO support.

Malaysia: Asian Development Bank consultant on shoreline protection and database development, Coastal Engineering Division, Kuala Lumpur 1994-1996; visiting scientist, School of Biological Sciences, Universiti Sains Malaysia, Penang, 1986, land reclamation and flow modeling; IDRC adviser, School of Biological Sciences, Universiti Sains Malaysia, Penang, 1984; mangrove outwelling research 1984-1992;

Thailand: UNESCO-UNDP consultant and mangrove research, Ranong, 1986-1990; evaluation of post-graduate marine science education, Chulalongkorn University, Bangkok, 1983.

México: Research on coastal lagoons hydrology and hydrodynamics, mangrove systems, reef oceanography, and modeling, 1980-1998; numerous field expeditions to Caribbean and Gulf of Mexico environments.

Chile: Tide and oil spill research, Straits of Magellan, 1976;

Sweden: Estuarine field research, Askö Laboratory, Institute of Marine Ecology, Stockholms Universitet, summers of 1981, 1982, and 1983 to investigate the dynamics and transport processes in a Swedish estuary.

Australia: Estuarine research circulation project in Broken Bay, NSW, The University of Sydney, 1979-1980;

Papua New Guinea: Purari River hydro-electric dam project research, Government of Papua New Guinea, 1980;

PROFESSIONAL EXPERIENCES

- Member of Steering Committee, CARICOMP (Caribbean Coastal Marine Productivity) regional network project, 1985-.
- SCOR Working Group 106, Dynamics of muddy coasts, 1995-.
- Board of Directors (Conselho Deliberativo) of Instituto Acqua, Rio de Janeiro, Brazil, 1993-1996.
- Consultant to the Science Advisory Board, Environmental Protection Agency, Washington, DC, USA, 1993-.
- Member of Council of the International Society for Mangrove Ecosystems (ISME), Okinawa, Japan, 1993-.
- Member of Commission on Ecology, The World Conservation Union (IUCN), Gland, Switzerland, 1992-1995.
- Member of the UNEP-UNESCO mangrove task team to assess impact of climate change, 1992-.
- Consultant to Marine Sciences/UNESCO, Paris, France, 1990-1991.
- Editorial Board member of *Estuarine, Coastal and Shelf Science*, 1988-; *Estuaries* 1989-1992, 1977-1980; *Trabalhos Oceanográficos* (Brazil) 1987-; *Boletim de Estudos de Ciências do Mar* (Brazil); *Research Bulletin*, Phuket Marine Biological Center (Thailand) 1984-; *Anales del Instituto de Ciencias del Mar y Limnología* and *Publicaciones Especiales* (México) 1982-; *Coral Reefs*, 1980-1990.
- Research Evaluation: have served on several panels: NSF 1985-; World Bank 1992-; EPA 1993-.
- Member of the Scientific Council of the EPOMEX program, Universidad Autónoma de Campeche, México, 1991-.
- Vice-President, Estuarine Research Federation, 1983-1985.
- Member UNEP-IOC-WMO group of experts on long-term global monitoring related to climate changes 1991.
- UNESCO-COMAR working group on mean sea-level rise and its influence on the coastal zone, 1989;
- SCOR Working Group 65, Coastal-offshore ecosystems relationships, 1982-1986.

BOOKS (total 13)

- Kjerfve, B. (ed.). 1988. *Hydrodynamics of estuaries*. vol. 1, 163 pp. & vol. 2, 125 pp. CRC Press. Boca Raton.
- Kjerfve, B. 1990. *Manual for investigation of hydrological processes in mangrove ecosystems*. New Delhi. 79 pp.
- Kjerfve, B. (ed.). 1994. *Coastal lagoon processes*. Elsevier. Amsterdam. 577 pp.
- Kjerfve, B., L. D. Lacerda & E. S. Diop (eds.). 1997. *Mangrove Ecosystem Studies in Latin America and Africa*. UNESCO. Paris. 349 pp.
- Kjerfve, B. (ed.). 1999. *CARICOMP - Caribbean Coral Reefs, Seagrasses and Mangroves Sites*. UNESCO, Paris. 345 pp.
- Seeliger, U., and B. Kjerfve (eds.). 2001. *Coastal Marine Ecosystems of Latin America*. Ecological Studies, Vol. 144. Springer-Verlag. Heidelberg. 352 pp. (Winner of Premio Jabuti 2003 in Natural Sciences, Technology and Information Science).
- Miranda, L. B., B. B. M. Castro Filho and B. Kjerfve. 2002. *Princípios de oceanografia física de estuários (Principles of physical oceanography of estuaries)*. Edusp - Editora da Universidade de São Paulo, São Paulo. 414 pp.

RESEARCH PUBLICATIONS: Total 214 papers, technical, reports, and books, including:

- Kjerfve, B., K.E. Magill, J. W. Porter, & J. D. Woodley. 1986. Hindcasting of hurricane characteristics and observed storm damage on a fringing reef, Jamaica, West Indies. *Journal of Marine Research* 44:119-148.
- Kjerfve, B., & K.E. Magill. 1989. Geographic and hydrographic characteristics of shallow coastal lagoons. *Marine Geology* 88:187-199.
- Kjerfve, B., and B. A. Knoppers. 1991. Tidal choking in a coastal lagoon. pp. 169-179. In: *Tidal hydrodynamics*. B. Parker (ed.). John Wiley & Sons. 608 pp.
- Kjerfve, B., L. B. Miranda, & E. Wolanski. 1991. Modelling water circulation in an estuary and intertidal

- salt marsh system. *Netherlands Journal of Sea Research* 28(3):141-147.
- Kjerfve, B., H. E. Seim, A. F. Blumberg, & L. D. Wright. 1992. Modeling of the residual circulation in Broken Bay and the lower Hawkesbury River, NSW. *Australian Journal of Marine and Freshwater Research* 43:1339-57.
- Kjerfve, B., & H. O. Ferreira. 1993. Tidal bores: first ever measurements. *Ciencia e Cultura* 45(2):135-138.
- Kjerfve, B. & L. D. Lacerda. 1993. Mangroves of Brazil. pp. 245-272. In: *Conservation and sustainable utilization of mangrove forests in Latin America and Africa regions*. L. D. Lacerda (ed.). Okinawa, Japan. 272 pp.
- Kjerfve, B., C. A. F. Schettini, B. Knoppers, G. Lessa & H. O. Ferreira. 1996. Hydrology and salt balance in a large hypersaline coastal lagoon: Lagoa de Araruama, Brazil. *Estuarine, Coastal and Shelf Sciences* 42(6):701-725.
- Kjerfve, B., C. H. A. Ribeiro, G. T. M. Dias, A. M. Filippo & V. S. Quaresma. 1997. Oceanographic characteristics of an impacted coastal bay: Baía de Guanabara, Rio de Janeiro, Brazil. *Continental Shelf Research* 17(13):1609-1643.
- Moore, W. S., B. Kjerfve & J. Todd. 1998. Identification of rain-freshened plumes in the coastal ocean using Ra isotopes and Si. *Journal of Geophysical Research* 103(C4):7709-7717.
- Heyman, W. D. and B. Kjerfve. 1999. Hydrological and oceanographic considerations for integrated coastal zone management in southern Belize. *Environmental Management* 24(2):229-245.
- Restrepo, J. D. and B. Kjerfve. 2000. Magdalena River: Interannual variability (1975-1995) and revised water discharge and sediment load estimates. *Journal of Hydrology* 235:137-149.
- Restrepo, J. D., B. Kjerfve, I. D. Correa and J. González. 2002. Morphodynamics of a high discharge tropical delta, San Juan River, Pacific coast of Colombia. *Marine Geology* 192:355-381.
- Morris, J. T., P. V. Sundareshwar, C. T. Nietch, B. Kjerfve and D. R. Cahoon. 2002. Response of coastal wetlands to rising sea level. *Ecology* 83(10): 2869–2877.

TEACHING, STUDENT SUPERVISION, AND PROFESSIONAL COLLABORATION

Kjerfve teaches courses in physical and estuarine oceanography, oceans and man, and coastal processes at the University of South Carolina (USC) and also at Universidade Federal Fluminense (UFF). Kjerfve presently supervises the Ph.D. dissertations of Deeptha Thattai and Neudy Jean-Baptiste at USC, and Heitor Tozzi and Geórgenes Cavalcante at UFF, and the M.S. theses of Heather Holm and Brandy Glett at USC. During the past five years, Kjerfve supervised and graduated Alessandro Filippo (Ph.D. 2003), J. D. Restrepo (Ph.D. 2001), S. M. Patchineelam (Ph.D. 1999), F. R. Mochel (Ph.D. 1999), C. Z. F. Braga (Ph.D. 1998), J. B. Atkins (Ph.D. 1998), L. David (Ph.D. 1998); served on numerous post-graduate student committees; and worked with 3 post-docs. Overall, Kjerfve has graduated 11 Ph.D. and 22 M.S. students, and employed 71 undergraduate research assistants.

PERSONAL

Born in Skövde, Sweden; Swedish passport; permanent resident of the U.S. since 1972; permanent resident of Brazil since 1994; languages: Swedish, English, and Portuguese with the ability to read German and Spanish.