

JAMES T. CARLTON

Professor of Marine Sciences Emeritus
Williams College, Williamstown, Massachusetts
and

Director Emeritus, Ocean and Coastal Studies Program of
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EDUCATION

University of California, Berkeley	Paleontology	B.A.	1971
University of California, Davis	Ecology	Ph.D.	1979

RESEARCH

Marine Biodiversity and Conservation:

Ecology, biogeography, history and management of marine bioinvasions
Modern-day global extinctions of marine organisms
Environmental history of estuaries and coastal zones

POSITIONS and APPOINTMENTS

2015	Professor of Marine Sciences Emeritus	Williams College
1993-2015	Professor of Marine Sciences	Williams College
1989-2015	Director	Ocean & Coastal Studies Program of Williams College & Mystic Seaport (Williams-Mystic)
1989-1992	Associate Professor of Marine Sciences	Williams College
1989	Acting Director	Univ. of Oregon Institute of Marine Biology
1986-1989	Assistant Professor of Biology	Univ. of Oregon Institute of Marine Biology
1982-1985	Marine Scientist	Williams-Mystic Maritime Studies Program
1978-1982	Postdoctoral Researcher	Woods Hole Oceanographic Institution
	<i>National Science Foundation National Needs Postdoctoral Fellowship (1980–81)</i>	
1976 (summer)	Research Associate, UC Berkeley	Naval Arctic Research Laboratory, Point Barrow
1974-1979	Ecology Graduate Group	University of California, Davis
1971-1973	Research Assistant	California Academy of Sciences, San Francisco

ADDITIONAL AFFILIATIONS

Research Associate	Smithsonian Institution
Research Associate	California Academy of Sciences, San Francisco
Associate in Science	Bishop Museum (Honolulu, Hawaii)

HONORS and AWARDS

- *Fellow*, American Association for the Advancement of Science (AAAS) (1994)
- “*Ocean Hero*,” Smithsonian Institution, Washington, D.C. (1995)
- *Pew Fellow* in the Environment and Conservation, The Pew Foundation (1996)
- *Distinguished Research Fellow*, Bodega Marine Laboratory, University of California at Davis (1996)
- *Duke University Conservation Scholar* (1998)

- U.S. Federal Government *Interagency Recognition Award for Significant and Sustained Contributions to the Prevention and Control of Nonindigenous Species in America's Aquatic Ecosystems* (first U.S. scientist to receive this award, 1999)
- *James T. Carlton Marine Science Center* of the Williams College – Mystic Seaport Maritime Studies Program. Dedicated September 29, 2007
- Dean of Faculty *Nelson Bushnell Prize for Writing and Teaching*, Williams College (2007)
- *Paul Illg Distinguished Lecturer*, Friday Harbor Laboratories, University of Washington, 2008
- *Fellow*, California Academy of Sciences, San Francisco, California, 200
- *The Fellows Medal*, California Academy of Sciences, San Francisco, California (2013) awarded to one scientist annually in the United States
- *Certificate of Recognition*, National Oceanic & Atmospheric Administration for providing "...invaluable expertise to the Government of the United States ..." on marine invasive species, presented at SERC (Edgewater MD), April 10, 2014
- *James T. Carlton Annual Fund* of the Williams College -- Mystic Seaport Maritime Studies Program. Named Fall 2015
- *Judith A. Pederson and James T. Carlton Early Career Scientist Travel Award* of the International Conference on Marine Bioinvasions (ICMB). Named January 2016
- (The first) *Lifetime Honorary Membership* in the International Association for Open Knowledge on Invasive Alien Species (Invasivesnet). Awarded and presented at NEOBIOTA, Dublin, Ireland, September 4, 2018.

CONGRESSIONAL TESTIMONY

- Testified 10 times before U.S. Senate and House committees and subcommittees, 1990-2011
- Agency and congressional briefings, Washington, D.C., 1990–2011

SELECTED PROFESSIONAL ACTIVITIES (since 1993 only)

- Member, *Comite Tecnico, Cientifico y Asesor de Especies Exoticas Invasoras*, Ministry of the Environment, Santiago Chile (2021 -)
Only United States member
- International Council, *Invasivesnet* <https://www.invasivesnet.org/>
- Visiting Scholar (CONICYT), Universidad Católica del Norte, Coquimbo "Ecología de invasión en ambientes marinos," September-November 2019 (Coquimbo, Archipiélago Juan Fernández: Isla Róbinson Crusoe, and Rapa Nui)
- Lead Principal Investigator, Japanese Tsunami Marine Debris (JTMD): Invasive Species Biodiversity, Attrition, Genetic Characterization, Population Biology and Reproductive Status, and Debris Interception and Characterization. National Science Foundation, Oregon Sea Grant, North Pacific Marine Science Organization (PICES) and Japan Ministry of Environment (2012-2017)
- Faculty Instructor, Biennial Summer Workshop on Marine Biological Invasions, at the University of Oregon Institute of Marine Biology (1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011, 2013, 2019, 2022)

- Founding Editor and Editorial Board, *Biological Invasions* (Springer) (1999 to date)
- Advisor, International Conference on Marine Bioinvasions (ICMB) (2011 – to date)
- Project Science Team, Assessing the Debris-Related Impacts from the Tsunami (ADRIFT), North Pacific Marine Science Organization (2014 – 2018)
- Co-Chair and Co-Organizer, *Taller Internacional sobre Bio-Invasiones Marinas en Ecosistemas Insulares Tropicales* (International Workshop on Marine Bioinvasions of Tropical Island Ecosystems), Charles Darwin Research Station, Puerto Ayora, Galapagos Islands (February 24-27, 2015), including field work on Santa Cruz Island in marine biofouling communities
- Co-Chair, Committee on Assessing Numeric Limits for Living Organisms in Ballast Water, National Research Council, National Academy of Sciences (2010-2011)
- Chair, *Working Group on Introductions and Transfers of Marine Organisms*, International Council for the Exploration of the Sea (ICES) (1991- 2000)
- Inaugural Member (First Term Member) *Invasive Species Advisory Council* [ISAC], Washington, D.C. (2000-2002)
- Principal Investigator, United States of America National Biological Invasions Shipping Studies (NABISS), 1991-2000, involving the oversight and production of the three major National Ballast Water Studies called for by the U.S. Congress: The Shipping Study, the Ballast Exchange Study, and the Biological Study (San Francisco Bay)
- Faculty Instructor, Biennial Summer Workshop on Marine Biological Invasions, at the University of Oregon Institute of Marine Biology (1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011, 2013)
- Member, U. S. Delegation to the Marine Environmental Protection Committee (MEPC) of the United Nations International Maritime Organization (IMO), London (1995 – 1999)
- Committee on Ships' Ballast Operations, Marine Board, National Academy of Sciences, National Research Council, Washington, D.C. (1994-1996)
- Co-Chair, Committee on Biological Diversity in Marine Systems, National Academy of Sciences, National Research Council, Ocean Studies Board and Board on Biology, Washington, D.C. (1993 – 1995)
- Peer reviewer for scores of professional journals

GRADUATE STUDENTS

Master's Committees

Sonia Javier	University of Oregon	1988
Patrick Baker	University of Oregon	1988
Jody Berman	University of Oregon	1989
Eduardo Gomez-Cornejo	University of Oregon	1989
James Jordan	University of Oregon	1989
John Megahan	University of Oregon	1990
Zdravka Tzankova	University of Rhode Island	2000
Wei Yei Wong	Brown University	2002
Shannon Weigle	Northeastern University	2003
Nicole Dobroski	University of Rhode Island	2005
Sarah Teck	University of New Hampshire	2006
Jennifer Bagnasco	Nova Southeastern University	2009
Alison Glassie	University of Rhode Island	2011

Ph.D. Committees

Chad Hewitt	University of Oregon	1993
Ioannis E. Batjakas	Boston University	1998
Andrew Lohrer	University of Connecticut	2000
Marjorie Wonham	University of Washington	2001
Brian Wysor	University of Southwestern Louisiana	2002
Wei Yei Wong	Brown University	2006
April Blakeslee	University of New Hampshire	2007
Deniz Haydar	University of Groningen	2010
James Reinhardt	University of Connecticut	2011
Heidi Weiskel	University of California, Davis	2013
Emily Klein	University of New Hampshire	2014
Megan Flenniken	SUNY Stony Brook	2017
Aly Putnam	University of Massachusetts, Amherst	<i>in progress</i>
Kaitlin Van Volkom	University of New Hampshire	<i>in progress</i>

Postdoctoral Researchers

Gregory Ruiz	University of Oregon	1988-1989
Richard Everett	University of Oregon	1988-1990
Jonathan Geller	University of Oregon	1989-1991
Andrea Locke	University of Toronto	1990-1991
L. David Smith	Smithsonian Environmental Res. Center	1990-1992
Ladd Johnson	Great Lakes Environmental Res Lab	1991-1993
Evangelina Schwindt	Universidad Nacional Mar del Plata	2002

Undergraduate, Graduate, and Postdoctoral Student Researchers

(1986-1989 at OIMB; 1989-2022 at Williams-Mystic)

Over 100 undergraduate, graduate and postdoctoral students from colleges and universities hosted in my laboratories for academic year research, summer research programs, and senior theses.

PUBLICATIONS

Books

1975. Ralph I. Smith and James T. Carlton. Editors/Authors. *Light's Manual: Intertidal Invertebrates of the Central California Coast*. Third Edition. University of California Press, Berkeley, 716 pages.
1995. Cheryl A. Butman and James T. Carlton, Co-Chairs. National Research Council, Ocean Studies Board and Board on Biology, Committee on Biological Diversity in Marine Systems. *Understanding marine biodiversity: A research agenda for the nation*. National Academy Press, Washington, D.C., 180 pp.
2003. Gregory M. Ruiz and James T. Carlton. Editors/Authors. *Invasive species: vectors and management strategies*. Island Press, Washington, Covelo CA, London, 518 pp.
2007. James T. Carlton, Editor/Author. *The Light & Smith Manual: Intertidal Invertebrates of the California and Oregon Coasts*. Fourth Edition,. University of California Press, Berkeley and Los Angeles, 1001 pp.
2009. James T. Carlton and Lucius Eldredge. *Marine bioinvasions of Hawai'i: The introduced and cryptogenic marine and estuarine animals and plants of the Hawaiian Archipelago*. Bishop Museum Bulletins in Cultural and Environmental Studies 4, Bishop Museum Press, Honolulu, 202 pp.
2011. Bella S. Galil, Paul F. Clark, James T. Carlton. Editors/Authors. *In the wrong place: alien marine crustaceans – distribution, biology and impacts*. Invading Nature - Springer Series in Invasion Ecology 6, Springer, Dordrecht, 716 pp.
2011. James T. Carlton, G. M. Ruiz, J. E. Byers, A. Cangelosi, F. C. Dobbs, E. D. Grosholz, B. Leung, H. J. MacIsaac, and M. J. Wonham. *Assessing the relationship between propagule pressure and invasion risk in ballast water*. Committee on Assessing Numeric Limits for Living Organisms in Ballast Water, National Research Council. The National Academies Press, Washington, D.C. 144 pp.
2015. Neal L. Evenhuis and James T. Carlton. Editors. Lucius G. Eldredge III Memorial Volume: Tribute to a Polymath. Bishop Museum Bulletin Zoology 9, 177 pp.

Journal and Other Publications

1967. Edward L. Bousfield and James Carlton. New records of Talitridae (Crustacea: Amphipoda) from the central California coast. *Bulletin of the Southern California Academy of Sciences* 66: 277-284.
1969. James T. Carlton. *Littorina littorea* in California (San Francisco and Trinidad Bays). *The Veliger* 11: 283-284.
1969. James T. Carlton and Victor A. Zullo. Early records of the barnacle *Balanus improvisus* Darwin from the Pacific coast of North America. *Occasional Papers of the California Academy of Sciences* no. 75, 6 pp.

1970. Barry Roth and James T. Carlton. A forgotten periodical of west American conchology. *Nautilus* 84: 31-32.
1972. Victor A. Zullo, Dea B. Beach, and James T. Carlton. New barnacle records (Cirripedia, Thoracica). *Proceedings of the California Academy of Sciences* (4), 39: 65-74.
1973. James T. Carlton. Gastropod shell modification by hermit crabs, and paleoecological implications. *The Echo* 5, Abstracts and Proceedings of the Fifth Annual Meeting of the Western Society of Malacologists 1972: 23.
1973. James T. Carlton. *Corbicula* in San Francisco, California. *The Nautilus* 87(3): 87.
1974. James T. Carlton, Armand M. Kuris and Michael S. Brody. Geographic displacement as a non-range extension of *Tegula gallina* (Forbes) (Gastropoda: Trochidae). *The Veliger* 16(4): 426-427.
1974. James T. Carlton. The biology and ecology of northern California intertidal gastropods: the state of our knowledge. *Annual Report of the Western Society of Malacologists* 7: 51-58.
1975. James T. Carlton. Introduced intertidal invertebrates, pp. 17-25, in: Ralph I. Smith and James T. Carlton, editors. *Light's Manual: Intertidal Invertebrates of the Central California Coast*. Third Edition. University of California Press, Berkeley
1975. James T. Carlton and Armand M. Kuris. Decapod Crustacea, pp. 385-412, in: *Light's Manual*.
1975. James T. Carlton and Barry Roth. Phylum Mollusca: Shelled Gastropods, pp. 467-514, in: *Light's Manual*.
1975. Eugene V. Coan and James T. Carlton. Phylum Mollusca: Bivalvia, pp. 543-578, in: *Light's Manual*.
1975. James T. Carlton. Aschelminthes and smaller worm groups, pp. 121-127; Hirudinea, p. 146; Cephalocarida, Branchiopoda, and Ostracoda, pp. 246-248; Nebaliacea and Mysidacea, pp. 271-273; Brachiopoda, pp. 616-617 in: *Light's Manual*.
1976. James T. Carlton. Marine plant limpets of the northeastern Pacific: patterns of host utilization and comparative plant:limpet distributions. *Annual Report of the Western Society of Malacologists* 9: 22-25.
1976. James T. Carlton. Comments on cosmopolitanism. *Bulletin of the American Malacological Union* 1975: 6.
1976. James T. Carlton. Extinct and endangered populations of the endemic mudsnail *Cerithidea californica* in northern California. *Bulletin of the American Malacological Union* 1975: 65.
1977. Armand M. Kuris and James T. Carlton. Description of a new species, *Crangon handi*, and a new genus, *Lissocrangon*, of crangonid shrimps (Crustacea: Caridea) from the California coast, with notes on adaptation in body shape and coloration. *Biological Bulletin* 153: 540-559.
1979. James T. Carlton. *Chlamydoconcha orcutti* Dall: review and distribution of a little-known bivalve. *The Veliger* 21: 375-378.

1979. James T. Carlton. History, biogeography, and ecology of the introduced marine and estuarine invertebrates of the Pacific coast of North America. Ph.D. dissertation, Ecology, University of California, Davis, xv + 904 pp.
1979. James T. Carlton. Introduced invertebrates of San Francisco Bay, pp. 427-444, in T. J. Conomos, editor, *San Francisco Bay: The Urbanized Estuary*. American Association for the Advancement of Science, Pacific Division, San Francisco.
1981. James T. Carlton and Ernest W. Iverson. Biogeography and natural history of *Sphaeroma walkeri* Stebbing (Crustacea: Isopoda) and its introduction to San Diego Bay, California. *Journal of Natural History* 15: 31-48.
1981. James T. Carlton. Bibliography of Pacific coast Acmaeidae, pp. 106-119, in: D. R. Lindberg, *Acmaeidae, Gastropoda, MOLLUSCA, Invertebrates of the San Francisco Bay Estuary System*. The Boxwood Press, Pacific Grove, California, 122 pp
1982. James T. Carlton. The historical biogeography of *Littorina littorea* on the Atlantic coast of North America, and implications for the interpretation of the structure of New England intertidal communities. *Malacological Review* 15: 146.
1983. Gayle A. Brenchley and James T. Carlton. Competitive displacement of native mud snails by introduced periwinkles in the New England intertidal zone. *Biological Bulletin* 165: 543-558.
1984. Rudolf S. Scheltema and James T. Carlton. Methods of dispersal among fouling organisms and possible consequences for range extension and geographical variation, pp. 127-133, in: J. D. Costlow and R. C. Tipper, eds., *Marine biodeterioration: an interdisciplinary study*. Naval Institute Press, Annapolis, Maryland, 384 pp.
1985. James T. Carlton and Judith A. Scanlon. Progression and dispersal of an introduced alga: *Codium fragile* ssp. *tomentosoides* (Chlorophyta) on the Atlantic coast of North America. *Botanica Marina* 28: 155-165.
1985. James T. Carlton. Transoceanic and interoceanic dispersal of coastal marine organisms: the biology of ballast water. *Oceanography and Marine Biology, An Annual Review* 23: 313-371.
1987. James T. Carlton. Patterns of transoceanic marine biological invasions in the Pacific Ocean. *Bulletin of Marine Science* 41: 452-465.
1988. James T. Carlton. Introduced species and the Galapagos Marine Resources Reserve, pp. 92-104, in: Arthur G. Gaines, Jr., and Hernan Moreano Andrade, editors. *Scientific Research and the Galapagos Marine Resources Reserve. Synopsis of a Workshop April 20-24, 1987*, Guayaquil, Ecuador. Woods Hole Oceanographic Institution Technical Report WHOI-91-41, 199 pp.
1988. James T. Carlton, D. G. Fautin, M. G. Kellogg, B. E. Weitbrecht, and A. M. Kuris. Professor Ralph I. Smith: A tribute to his manuals of marine invertebrates and to his academic progeny. *The Veliger* 31: 135-138.
1989. James T. Carlton. Man's role in changing the face of the ocean: biological invasions and implications for conservation of near-shore environments. *Conservation Biology* 3: 265-273.

1989. Brian W. Meehan, James T. Carlton and Roman Wenne. Genetic affinities of the bivalve *Macoma balthica* from the Pacific coast of North America: evidence for recent introduction and historical distribution. *Marine Biology* 102: 235-241.
1990. James T. Carlton, Janet K. Thompson, Laurence E. Schemel, and Frederic H. Nichols. Remarkable invasion of San Francisco Bay (California, USA) by the Asian clam *Potamocorbula amurensis*. I. Introduction and dispersal. *Marine Ecology Progress Series* 66: 81-94.
1990. Joseph Schormann, James T. Carlton, and Margaret R. Dochoda. The ship as a vector in biotic invasions. The Institute of Marine Engineers International Conference (IMAS 90), Marine Technology and the Environment, London, 23 - 25 May 1990. Transactions of the Institute of Marine Engineers (C), Volume 102, Conference C, Paper 19, pages 147 - 152.
1991. James T. Carlton, Geerat J. Vermeij, David R. Lindberg, Debby A. Carlton, and Elizabeth C. Dudley. The first historical extinction of a marine invertebrate in an ocean basin: the demise of the eelgrass limpet *Lottia alveus*. *Biological Bulletin* 180: 72-80.
1991. Andrea Locke, Donald M. Reid, W. Gary Sprules, James T. Carlton, and Henry C. van Leeuwen. Effectiveness of mid-ocean exchange in controlling freshwater and coastal zooplankton in ballast water. Canadian Technical Report Fisheries and Aquatic Sciences no. 1822, 93 pp.
1991. John W. Chapman and James T. Carlton. A test of criteria for introduced species: the global invasion by the isopod *Synidotea laevidorsalis* (Miers, 1881). *Journal of Crustacean Biology* 11: 386 - 400.
1991. Jody Berman and James T. Carlton. Marine invasion processes: interactions between native and introduced marsh snails. *Journal of Experimental Marine Biology and Ecology*, 150: 267 - 281.
1992. James T. Carlton. Dispersal of living organisms into aquatic ecosystems as mediated by aquaculture and fisheries activities, pp. 13-45, in: Aaron Rosenfield and Roger Mann, editors, *Dispersal of Living Organisms into Aquatic Ecosystems*. Maryland Sea Grant Publication, College Park, Maryland, 471 pp.
1992. James T. Carlton. Introduced marine and estuarine mollusks of North America: an end-of-the-20th-century perspective. *Journal of Shellfish Research* 11: 489 - 505.
1992. James T. Carlton. Extinction (biology). In: *McGraw-Hill Yearbook of Science and Technology 1993*. McGraw-Hill, Inc., New York, New York, pp. 127 - 129.
1992. James T. Carlton. Blue immigrants: the marine biology of maritime history. *The Log* (Mystic Seaport Museum, Mystic CT), 44: 31-36.
1992. Andrea Locke, Donald M. Reid, W. Gary Sprules, Henry C. van Leeuwen, and James T. Carlton. Final Report: Great Lakes Ballast Water Control Guidelines: Compliance and Effectiveness Study, 1991. Environmental Protection Agency Contract #R995164-01-0/05-R-00, 53 pp.
1992. James T. Carlton. Marine species introductions by ships' ballast water: an overview, pp. 23 - 25, in: M. Richard DeVoe, ed., *Introductions and Transfers of Marine Species*. Achieving a Balance between Economic Development and Resource Protection. South Carolina Sea Grant Consortium, Charleston, South Carolina.

1992. James T. Carlton. An international perspective on species introductions: the ICES protocol, pp. 31-34, in: M. Richard DeVoe, ed., *Introductions and Transfers of Marine Species*. Achieving a Balance between Economic Development and Resource Protection. South Carolina Sea Grant Consortium, Charleston, South Carolina.
1992. James T. Carlton. Overview of the issues concerning marine species introductions and transfers, pp. 65 - 67, in: M. Richard DeVoe, ed., *Introductions and Transfers of Marine Species*. Achieving a Balance between Economic Development and Resource Protection. South Carolina Sea Grant Consortium, Charleston, South Carolina.
1993. James T. Carlton. Dispersal mechanisms of the zebra mussel (*Dreissena polymorpha*), Chapter 40, pp. 677 - 697, in: Thomas F. Nalepa and Donald W. Schloesser, editors, *Zebra Mussels: Biology, Impacts, and Control*. CRC Press, Inc., Boca Raton, Florida.
1993. Edward L. Mills, Joseph H. Leach, James T. Carlton, and Carol Secor. Exotic species in the Great Lakes: a history of biotic crises and anthropogenic introductions. *Journal of Great Lakes Research* 19: 1-54.
1993. David F. Reid, Joseph Bidwell, James T. Carlton, Ladd Johnson, Ellen Marsden, S. Jerrine Nichols. Zebra Mussel Specific Containment Protocols (ASSP - 12/29/93). NOAA Great Lakes Environmental Research Laboratory, Ann Arbor, MI. GLERL Contribution No. 890.
1993. Edward L. Mills, Joseph H. Leach, Carol L. Secor, and James T. Carlton. What's Next? The Prediction and Management of Exotic Species in the Great Lakes (Report of the 1991 Workshop). Great Lakes Fishery Commission, Ann Arbor, Michigan, 22 pp.
1993. Cheryl Ann Butman and James T. Carlton. Biological diversity in marine systems (BioMar). A proposed national research initiative. Report of an NSF Workshop 28-29 March 1993, Denver, Colorado. Division of Ocean Sciences, National Science Foundation, Washington, D.C., 20 pp.
1993. Jonathan B. Geller, James T. Carlton, and Dennis A. Powers. Interspecific and intrapopulation variation in mitochondrial ribosomal DNA sequences of *Mytilus* spp. (Bivalvia: Mollusca). *Molecular Marine Biology and Biotechnology* 2(1): 44 - 50.
1993. James T. Carlton and Jonathan B. Geller. Ecological roulette: The global transport of nonindigenous marine organisms. *Science* 261: 78-82.
1993. James T. Carlton. Neextinctions of marine invertebrates. *American Zoologist* 33(6): 499-509.
1993. Andrea Locke, Donald M. Reid, Henry C. van Leeuwen, W. Gary Sprules and James T. Carlton. Ballast water exchange as a means of controlling dispersal of freshwater organisms by ships. *Canadian Journal of Fisheries and Aquatic Sciences* 50: 2086-2093.
1994. D. V. Subba Rao, W. G. Sprules, A. Locke, and James T. Carlton. Exotic phytoplankton from ships' ballast waters: risk of potential spread to mariculture sites on Canada's east coast. *Canadian Data Report of Fisheries and Aquatic Sciences* 937, 51 pp.
1994. Jonathan B. Geller, James T. Carlton, and Dennis A. Powers. PCR-based detection of mtDNA haplotypes of native and invading mussels on the northeastern Pacific coast: latitudinal pattern of invasion. *Marine Biology* 119: 243-249.

1994. James T. Carlton. Biological invasions and biodiversity in the sea: the ecological and human impacts of nonindigenous marine and estuarine organisms. Keynote Address, pp. 5 - 11, in: Nonindigenous Estuarine and Marine Organisms (NEMO), Proceedings of the Conference and Workshop, Seattle, Washington, April 1993, U. S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Scientist, 125 pp. (September 1994). Government Document No. C55.2:N73, Government Printing Office No. 0208-C-04.
1994. Edward L. Mills, Joseph H. Leach, James T. Carlton, and Carol L. Secor. Exotic species and the integrity of the Great Lakes: lessons from the past. *BioScience* 44(10): 666-676 [November 1994]
1994. John W. Chapman and James T. Carlton. Predicted discoveries of the introduced isopod *Synidotea laevidorsalis* (Miers, 1881). *Journal of Crustacean Biology* 14: 700-714.
1995. James T. Carlton and Janet Hodder. Biogeography and dispersal of coastal marine organisms: experimental studies on a replica of a 16th-century sailing vessel. *Marine Biology* 121: 721-730.
1995. James T. Carlton, Donald M. Reid, and Henry van Leeuwen. Shipping Study. The role of shipping in the introduction of non-indigenous aquatic organisms to the coastal waters of the United States (other than the Great Lakes) and an analysis of control options. The National Sea Grant College Program/Connecticut Sea Grant Project R/ES-6. Department of Transportation, United States Coast Guard, Washington, D.C. and Groton, Connecticut. Report Number CG-D-11-95, xxviii + 213 pages and Appendices A-I (122 pages).
1995. Cheryl Ann Butman, James T. Carlton, and Stephen R. Palumbi. Whaling effects on deep-sea biodiversity. *Conservation Biology* 9: 462-464.
1995. James T. Carlton and Katherine Richardson. International Council for the Exploration of the Sea Code of Practice on the Introductions and Transfers of Marine Organisms, 1994. Preamble and a Brief Outline of the ICES Code of Practice, 1994. International Council for the Exploration of the Sea, Copenhagen, Denmark, iii + 5 pp.
1995. Andrew N. Cohen, James T. Carlton, and Monique C. Fountain. Introduction, dispersal and potential impacts of the green crab *Carcinus maenas* in San Francisco Bay, California. *Marine Biology* 122: 225-237.
1995. Sally E. Walker and James T. Carlton. Taphonomic losses become taphonomic gains: an experimental approach using the rocky shore gastropod, *Tegula funebris*. *Palaeogeography, Palaeoclimatology, Palaeoecology* 114: 197-217.
1995. Cheryl Ann Butman and James T. Carlton. Marine biological diversity: some important issues, opportunities and critical research needs. American Geophysical Union. U. S. National Report to International Union of Geodesy and Geophysics 1991-1994. *Reviews of Geophysics, Supplement* (July): 1201-1209.
1995. Richard A. Everett, Gregory M. Ruiz, and James T. Carlton. Effect of oyster mariculture on submerged aquatic vegetation: an experimental test in a Pacific Northwest estuary. *Marine Ecology Progress Series* 125:
1995. James T. Carlton and Cheryl Ann Butman. Understanding marine biodiversity. A Research Agenda for the Nation. *Oceanus* (Woods Hole Oceanographic Institution), 38(2): 4-8.

1995. Andrew N. Cohen and James T. Carlton. Biological Study. Nonindigenous Aquatic Species in a United States Estuary: A Case Study of the Biological Invasions of the San Francisco Bay and Delta. A Report for the United States Fish and Wildlife Service, Washington, D.C., and The National Sea Grant College Program, Connecticut Sea Grant, NTIS Report Number PB96-166525, 246 pp. + Appendices (December, 1995). NOAA Grant Number NA36RG0467
1996. James T. Carlton. Marine bioinvasions: the alteration of marine ecosystems by nonindigenous species. *Oceanography* 9(1): 36-43.
1996. Cheryl Ann Butman, James T. Carlton, and Stephen R. Palumbi. Whales don't fall like snow: Reply to Jelmert. *Conservation Biology* 10(2): 655-656.
1996. James T. Carlton and R. Mann. Transfers and world-wide introductions, Chapter 20, pp. 691-706, in: V. S. Kennedy, R. I. E. Newell, and A. F. Eble, editors, *The Eastern Oyster: Crassostrea virginica*. Maryland Sea Grant, College Park, Maryland.
1996. James T. Carlton. Biological invasions and cryptogenic species. *Ecology* 77: 1653-1655.
1996. L. E. Johnson and James T. Carlton. Post-establishment spread in large-scale invasions: the dispersal mechanisms of the zebra mussel *Dreissena polymorpha*. *Ecology* 77: 1686-1690.
1996. L. David Smith, Marjorie J. Wonham, Linda D. McCann, Donald M. Reid, Gregory M. Ruiz, and James T. Carlton. Shipping Study II. Biological Invasions by Nonindigenous Species in United States Waters: Quantifying the Role of Ballast Water and Sediments, Parts I and II. The National Sea Grant College Program/Connecticut Sea Grant Project R/ES-6. Prepared for U.S. Coast Guard Research and Development Center, Groton CT and United States Coast Guard Marine Safety and Environmental Protection, Washington, D.C. Report No. CG-D-02-97,xxv + 97 pp. + Appendices A-M.
1996. James T. Carlton. Pattern, process, and prediction in marine invasion ecology. *Biological Conservation* 78: 97-106.
1996. Edward L. Mills, David L. Strayer, Mark D. Scheuerell, and James T. Carlton. Exotic species in the Hudson River basin: a history of invasions and introductions. *Estuaries* 19: 814-823.
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