CALIFORNIA SEA GRANT COLLEGE PROGRAM

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Invasive Marine Species Subject of International Conference

Nature magazine (Feb. 6, 2003) calls biological invasion "the world's largest environmental problem." The Third International Conference on Marine Bioinvasions will convene the world's leading experts in marine invasive species to present their research on this epic problem on **March 17-19, 2003** in San Diego. Experts from around the globe will discuss the current science and status of marine pests.

The conference topics include: Ecological and Genetic Consequences of Bioinvasions, Transport Vectors, Biological Control, Patterns of Invasions in Time and Space, Environmental Management and Assessment, Economic Impacts, Innovative Education and Outreach Programs, and Marine Policy and Law.

The keynote address will be given on **Mon., Mar. 17, at 8:45 a.m.** by Dr. Susan Williams, the Director of the Bodega Marine Laboratory and Professor of Environmental Science & Policy at UC Davis, who will speak on *Caulerpa taxifolia*, the invasive alga that has devastated the northern Mediterranean. In California, Caulerpa was first sighted in Agua Hedionda Lagoon in northern San Diego County in June 2000 and poses a potential threat to the U.S. West Coast. Sea Grant funded Williams to study the potential range and growth rates of *Caulerpa* on the West Coast. For further information, see California Sea Grant Web site at http://www-csgc.ucsd.edu/STORIES/Caulerpa.html.

The importance of vectors unrelated to shipping will be addressed on **Tues., Mar. 18, at 1:45 p.m.** by Shannon Weigle, Program Manager, Massachusetts Bays Program. Weigle will speak on her MIT Sea Grant-funded research on transport vectors that they have often been overlooked in regulations, but may be a source of a truly bad actor – Caulerpa is a good example, as are the pathogens that affect shellfish and fish. Weigle's colleagues, David Smith, Smith College, Judith Pederson, MIT Sea Grant, and James Carlton, Williams College-Mystic Seaport Maritime Program, examined the risks associated

with non-shipping pathways, such as releases into marine waters of live bait and packing materials, aquarium contents, and live seafood, that may introduce non-native marine species in New England. This collaborative study quantifies the number of sources, volume, frequency of potential releases, and number of species involved in each activity and proposes ways to mitigate new introductions.

On **Wed., Mar. 19, at 12:15 p.m.**, Dr. Hugh MacIsaac of the Great Lakes Institute for Environmental Research, University of Windsor, will discuss the economic impacts invasive species have had on Canada's resource-based economy. While his talk will focus on marine and Great Lakes invaders, thus far Canada's greatest damage and costs have come from forestry and agricultural invasives, such as a beetle (the emerald ash borer). It was first identified in summer 2002 and has already been attributed with approximately $6 billion in damage to ash forests in the Detroit area. MacIsaac believes a national program is needed to adequately identify and manage the risks associated with undesirable nonindigenous species.

Biological control of invasive species will be the focus of a presentation by Dr. Armand Kuris, UC Santa Barbara, on **Wed., Mar. 19, at 4:30 p.m.** Kuris will discuss his Sea Grant-funded research to find a parasite to biologically control the voracious European green crab, which has invaded the West Coast and is known to eat local shellfish "like popcorn."

Kuris believes another invasive pest, the Chinese mitten crab, which has clogged fish collectors at water intake stations in the San Francisco Bay-Delta, is also potentially amenable to biocontrol. Kuris will be going to China in May with a National Science Foundation group and will be raising this issue with Chinese ecologists. The NIH/NSF Ecology of Infectious Diseases Program recently awarded Kuris a $2.2 million, five-year grant to study the role of parasites in ecosystems with particular attention to the role of introduced species.

Kuris led the team of scientists that orchestrated the first successful eradication of an invasive marine pest in the world. The pest, a tiny South African worm that infected abalone shells and stunted the animals' growth, nearly wiped out California's farmed abalone crops in the early 1990s. Before the problem was identified, the worm was inadvertently introduced into the wild abalone population near Cayucos, Calif., through water discharges from an abalone farm. In work funded by California Sea Grant, Kuris' team identified the source of the abalones' affliction and developed a strategy to rid the infested coastal waters of the worm by removing thousands of turban snails, an alternative host for the worm.

In analyzing their own and other scientists' work with invasive species, Kuris and colleagues Dr. Mark Torchin, UC Santa Barbara, and Dr. Kevin Lafferty of the U.S. Geological Survey (who are also speaking at the conference) have developed a new "enemy release" theory about dealing with marine invasive species. Their ideas are set forth in the journal Nature, Feb. 6, 2003, in two companion articles on invasive animals and invasive plants. (Torchin, M. E. *et al.* Introduced species and their missing parasites *Nature* 421, 628-630 (2003) *Letters to Nature*.) Torchin will be presenting this new theory at the meeting in San Diego on **Wed., Mar. 19, at 4:45 p.m.**

Registration for the Marine Bioinvasions conference is still open. Call or email Helen Schneider Lemay at (254) 776-3550 or helens@sgmeet.com or visit the conference Web site at http://www.sgmeet.com/mb.

The conference is being hosted by California Sea Grant and MIT Sea Grant College Programs, and co-sponsored by the U.S. Fish & Wildlife Service and the National Sea Grant College Program. It will be held at UCSD's Scripps Institution of Oceanography in La Jolla, the headquarters for California Sea Grant.

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