



NEWS RELEASE

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How are Waterfront Property Owners Responding to the Changing Massachusetts Coastline? Topic of Sea Grant's "Oceans Alive" Lecture

Join coastal geologist Jim O'Connell for a narrated slide show tour of the Massachusetts coastline on Tuesday, April 18th as Woods Hole Sea Grant kicks off its annual "Oceans Alive" lecture series at 7:00 p.m. in Redfield Auditorium on Water Street, Woods Hole. O'Connell, coastal processes specialist for Sea Grant and Cape Cod Cooperative Extension, will address what he considers a serious dilemma: how to protect waterfront property without impacting other coastal resources.

"We are at a critical point in this shoreline management dilemma," says O'Connell. "There is not a single community in Massachusetts that has not lost at least some linear length of dry beach at high tide due to erosion control measures. And," he continues, "this situation is only going to accelerate in the future because of sea level rise and the human response to sea level rise and storms."

O'Connell will show photographs from many Massachusetts communities, starting in Hull and working his way south, including Cape Cod, the islands of Martha's Vineyard and Nantucket, and some towns along the Buzzards Bay coastline. Included among his many photographs are a handful of beaches as they looked 100 years ago—taken from old postcards he's found—with images of those same beaches today. In example after example, the pictures speak volumes about our management of the shoreline.

"People have a right to protect their waterfront property," explains O'Connell. "And those who can afford to, do, under current regulations. The problem," he says, "is that we are eliminating the sand sources that allow for the continued existence of beaches, dunes, and barrier beaches. We're in bad shape in terms of losing our sandy beaches because we've walled up so many sand sources."

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But the problem does not end there, says O'Connell. "Most communities realize this dilemma and are [starting to] regulate compensation for sand loss by requiring that sand be put back into the system." While O'Connell believes that such mitigation measures are commendable and appropriate, there are two problems: sand sources for mitigation are expensive and difficult to find. Expense aside, finding sand, be it from offshore sources or inland sources, leads to even more problems. "We're talking millions of cubic yards of sand" that will be needed for current and near-future nourishment projects, says O'Connell.

One potential source of sand, the ocean bottom, is largely off-limits, due to essential fish habitat regulations, which restrict the excavation or mining of sand from documented or potential fish habitat areas. Land-based sand sources, such as gravel and sand pits, may be able to supply enough sand for some projects, but not nearly enough to fulfill all of Massachusetts' needs, says O'Connell. Plus, he says, the "cost and impacts associated with truck-hauled sand are, in many cases, prohibitive."

These problems are largely without solutions, says O'Connell. To address some of these needs, a newly-formed state coastal hazards commission has been charged with reviewing existing coastal hazards practices and policies, identifying data and information gaps, and drafting recommendations for administrative, regulatory, and statutory changes, if necessary. Members of the commission, chaired by the state Coastal Zone Management director, include six state legislators from coastal communities, six representatives from state agencies, and two local officials. O'Connell has been asked to chair a working group of the commission that will address erosion and storm damage reduction and mitigation approaches.

On the optimistic side, O'Connell believes that communities in Massachusetts can assist each other and look to other coastal states for solutions and funding options. One management approach, says O'Connell, is community-level beach nourishment projects. In some cases, local dredging projects provide enough sand for such projects.

"It is the responsibility of the entity that is preventing source sediment from naturally feeding the littoral system—be it individual, state, or federal—to search out and provide sand," he says. "However, the human-induced loss of beach sand over many decades is so large, and the physical and economic consequences so far-reaching, that the state and federal governments need to take the lead."

Another thing that's needed, he says, is environmental studies on the potential impacts of mining sand from the ocean bottom, particularly in the northeast. "Flexibility and compromise will be needed if we want to see beaches in the future."

During his "Oceans Alive" presentation, O'Connell will show site-specific projects, discuss their complexities, and describe what some communities are doing—and aren't doing—to compensate for the loss of beaches.

O'Connell earned a B.S. in geology from Boston State College and a master's in physical geography from the University of Texas, where he analyzed shoreline change data and tidal inlet stability. He has worked as a coastal geologist in Massachusetts since 1985, first with Massachusetts Coastal Zone Management, then the Cape Cod Commission, and since 1999, for the Woods Hole Sea Grant Program and Cape Cod Cooperative Extension. O'Connell serves on several panels and committees at the local, regional, state, and federal level dealing with coastal processes and shoreline management issues. He has written and appeared in numerous publications on the subject and frequently provides advice to local communities on coastal processes and management options.

Join the Sea Grant program next Tuesday evening, April 25th, when WHOI photographer and oceanographer Chris Linder shares images and stories from an Arctic expedition. The "Oceans Alive" series concludes on Tuesday, May 2nd, with an afternoon presentation by local high school science fair winners beginning at 4:00 p.m. All presentations are free and open to the public. Families are encouraged to attend; light refreshments will be provided. Parking for evening lectures is available in the parking lot opposite the auditorium. For the May 2nd lecture, on-street metered parking is available on a limited basis.

For more information, contact the Woods Hole Sea Grant Program, (508) 289-2398, or seagrant@whoi.edu. Professional development points are available for educators who attend the presentations.

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