



TCS Bulletin  
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## The Coastal Society at 25

By Pam Smith

When it comes to The Coastal Society, the whole is greater than the sum of its parts, according to TCS President Walter Clark. Clark, who serves as North Carolina Sea Grant’s coastal law and policy specialist, is at the helm of the international organization which began addressing emerging marine and coastal issues twenty-five years ago.

The strength of TCS, he believes, rests with its 300-plus members — a diverse group of professionals representing academia, government, the nonprofit arena and the private sector. In other words, the dedicated women and men who are “in the trenches” dealing with coastal change on a daily basis.

“TCS is small enough to be effective, but large enough to have a voice that can be

heard above the confusion of issues,” Clark maintains.

Perhaps, TCS is more relevant and more important today than ever before, he says. “In the past 25 years, the pressure on the coastal and marine environment did nothing but increase. A huge percentage of the world’s population is clustered in coastal zones. With that goes increased resource pressures and increased user conflicts. And, with that also goes a necessity for collaboration among citizens, agencies, local governments and nations.”

Clark explains that TCS has a reputation for being proactive by bringing

**TCS at 25,**  
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## On the Half-Shell: Native or Foreign?

### **The Introduction of Oysters into Chesapeake Bay**

Paul C. Ticco, Ph.D.

The steady and often rapid decline in numbers of living coastal marine resources has been well documented worldwide. Overharvesting, habitat loss, destructive land-use practices, point and non-point sources of pollution, incidental or deliberate by-catch, and overdevelopment of coastal areas have all led to the implementation of a variety of management strategies that have both ecological and socio-economic ramifications.

One management tool employed, if

rarely, is the direct introduction of a new species to substitute for a species that has been decimated by human or natural perturbations. The goal is to use a species that not only fills a similar ecological niche as the original but that may also become valuable for human use. However, the introduction of species historically has not, of course, always exhibited these positive results.

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# Message From the President

## *Looking Back, Looking Ahead*

It's hard to believe that it has been almost two years since our last TCS Biennial meeting in Portland, Oregon. And as I write this note in the midst of preparations for our upcoming meeting in Galveston, Texas, I find myself reminiscing about the past and thinking about the future.

I became acquainted with TCS in 1988 when Bill Queen (TCS President 1988-90) phoned and told me about this exciting organization. Bill described TCS as a small organization, intimate enough to feel like a gathering of friends but sufficiently substantive to allow for professional development. I found that description intriguing and attended my first TCS conference in 1990. Interestingly, the conference was titled *Our Coastal Experience: Assessing the Past, Confronting the Future*. It was a fantastic experience and I met a lot of folks who have become close friends and wonderful colleagues. Since then I haven't missed a conference.

This year TCS is celebrating twenty-five years of service to the coastal community. I have had the wonderful experience of serving as the organization's sixteenth president – an experience that has been true to Bill Queen's observation fourteen years ago. But that experience has been possible only because of the dedication and hard work of past presidents, board members, chapter and committees chairs and the collective membership of TCS.

Planning for TCS-18, *Converging Currents: Science, Culture and Policy at the Coast*, would not have been impossible without many hours of volunteer time by dozens of TCS members. Of course, the reward will be a gathering of folks from around the nation and the world who will come to Galveston to share in knowledge and friendship. This year's conference in Texas promises to be exciting, interesting and in line with many of the events and issues facing our coasts. Please take the time and say thanks to the volunteers that have made this year's conference possible and to the multitude of folks that have made twenty-five years of TCS something to celebrate.

I hope to see you in Galveston!

*Walter Clark*

## ***THE COASTAL SOCIETY***

### ***Presidents***

M. H. Schwartz	1975 - 1976
Evelyn L. Pruitt	1977 - 1978
Edward T. La Roe	1978 - 1979
Lewis M. Alexander	1979 - 1980
Norbert Psuty	1980 - 1981
Marc Hershman	1981 - 1982
J. Kevin Sullivan	1982 - 1984
Maurice P. Lynch	1984 - 1986
Virginia K. Tippie	1986 - 1988
William H. Queen	1988 - 1990
Lauriston R. King	1990 - 1992
Margaret A. Davidson	1992 - 1994
David Smith	1994 - 1996
Michael Orbach	1996 - 1998
Megan Bailiff	1998 - 2000
Walter Clark	2000 - 2002

# From the Editor's Desk...

Welcome to the first of the quarterly TCS BULLETINS for 2002. As I mentioned in the last issue of the BULLETIN, TCS has moved ahead to increase the rate of publication from twice yearly to four times a year. We have also begun to examine the prospects for electronic publication of the BULLETIN to provide quicker service to TCS members. Members have received an e-mail pointing to a downloadable version of the BULLETIN.

The plan is to continue parallel publication (*i.e.* hard copy and electronic publication) to ensure that TCS members with limited internet access do not miss even one issue of the BULLETIN. As we move ahead we will consider how to best take advantage of technological developments to provide faster and more efficient publication of news and information to TCS members.

To increase the value of the BULLETIN, we depend on you to let us know what we're doing right and where we might strive to make improvements. More frequent publication and the use of electronic distribution should augment the dialogue among and between TCS members. Evidence of our enhanced conversation with members is represented in the pages of this edition. Board members have shared with us what they're up to in their respective corners of the world (see **News from the Board**, p. 18). TCS Chapter leaders have passed along news of what they've been doing and what their plans for the future are (see **Chapter News**, pp. 14-15). Those notes highlight the energy and optimism of the increasing ranks of student members as they move through their academic experiences and prepare to become the next generation of coastal managers, scientists, policymakers, and teachers.

And while we look ahead, it is important to remember the contributions so many folks have made to the organization over the course of the last twenty-five years. Pam Smith's article (**The Coastal Society at 25**, p.1) serves as a tribute to the men and women who have served the organization over the last quarter century. Walter Clark's note (**Message from the President**, p.2), illustrates the fact that each TCS leader is building upon the contributions of those who have worked so hard in the past.

While we work to better attune the BULLETIN to the needs of TCS members, we are quite aware that the dialogue that animates the organization's mission is not confined to the pages of a publication. You are the participants in the conversation. Our hope is that the BULLETIN can serve as a tool to foster that dialogue. And keep in mind that the BULLETIN is only one tool. Conferences such as TCS18 serve as unique opportunities to come together and share experiences, to test new ideas, to consider new perspectives. At the same time, the organization's website, [www.thecoastalsociety.org](http://www.thecoastalsociety.org), plays an increasingly valuable role in providing members with information. As you talk to one another, let us know what you're up to. We're here to learn.

*John Duff*

## Wanted

### Articles Notices Bright Ideas

As The Coastal Society reflects upon 25 years of service to coastal communities, we would like to hear from those of you who have been involved with the organization over the years.

In the coming months and issues, TCS BULLETIN will publish articles about the work of the organization and its membership (because in truth, the organization is its membership).

If you have an article that illustrates the role that TCS members have played in coastal governance, please send it along. We are also interested in articles about contemporary coastal matters. Information about upcoming conferences as well as education and training opportunity notices are always welcome. Finally, TCS BULLETIN would like to highlight innovative approaches to coastal and ocean resource stewardship. If you are involved in, or know about, a truly "bright idea" that promises to improve coastal resource management efforts, let us know.

Remember, sound governance of our ocean and coastal resources wasn't just the concept behind the formation of The Coastal Society, it is a principle of historic importance.

*He has plundered our Seas,  
he has ravaged our coasts ...  
he has destroyed the lives of our people.*

Declaration of Independence, 1776.

Submissions can be made to: [jduff@usm.maine.edu](mailto:jduff@usm.maine.edu) or [Coastalsoc@aol.com](mailto:Coastalsoc@aol.com).

The TCS BULLETIN is published by The Coastal Society to provide information about coastal issues and events. The Coastal Society is an organization of private sector, academic, and government professionals and students dedicated to actively addressing emerging coastal issues by fostering dialogue, forging partnerships, and promoting communication and education.

Contributions to the BULLETIN are encouraged. Inquiries about the BULLETIN or the Society should be addressed to:

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new information to the table and providing a forum for discussion and debate. One such forum is the biennial TCS conference — designed as a venue to exchange information, cross-pollinate ideas and develop strategies. The information, ideas and strategies are exponentially multiplied as members test them in their real-world settings, Clark says.

That momentum has kept TCS viable through the years, he adds. It also supports a premise espoused by Clark: “As long as there is time and energy, we can influence results — often for the common good.”

While TCS has been served by members from around the globe, North Carolina seems to serve as a model for producing TCS leaders and members.

### ***The North Carolina Connection***

Walter Clark shares the TCS leadership legacy with others who have strong ties to the area. The roster of TCS past presidents includes:

- William A. Queen, director of the Institute for Coastal and Marine Resources at East Carolina University, TCS president 1988-1989;
- Lauriston R. King, director of the doctoral program in coastal resource management at East Carolina University, TCS president 1989-1990; and
- Michael K. Orbach, director of the Duke University Marine Laboratory in Beaufort, TCS president 1996-1998.

Queen joined TCS during its early years. He was impressed with the interdisciplinary character of the fledgling organization.

“Problems are best solved by people from different disciplines learning to work together to share information and reach conclusions,” Queen says. “Almost any topic, from offshore drilling to estuarine water quality, must take a diversity of interests into consideration — the natural environment, coastal processes, socio-economic and political dimensions.”

His own research bears an interdisciplinary hallmark, including a string of estuarine science/public policy studies he coordinated for North Carolina Sea Grant in eastern North Carolina. From 1979 to 1993 Queen administered Sea Grant’s Marine Advisory Service activities.

King, who served as deputy director of Texas

A&M Sea Grant from 1978 to 1987, says TCS was one of the first professional organizations to truly understand that message.

“People became interested in TCS when they recognized that you can’t address an issue unless you bring all areas to bear on the topic,” he adds.

King recalls the late 1960s, when the U.S. was in a race for science against the Russians. There was an attitude in many government agencies that doing “hard” science was the end all and be all. He waged an uphill battle advocating the integration of social science.

Orbach, too, remembers the TCS launch as an extension of other events at the national level.

“In 1976 the National Oceanic and Atmospheric Administration was charged with implementing the National Marine Fisheries Act. They recognized a social scientist was needed to help take the human element into account,” Orbach explains. He became the first social science advisor for both NOAA and the National Sea Grant Program.

He repeats King’s views that the decision-making process needs both science and social science in the decision-making equation. Social scientists study how people govern themselves, he says. “You can’t just study the fish in the water, you have to study the human in the community,” he asserts.

Orbach says it boils down to this: “When you make political decisions regarding natural resources, you are not changing the behavior of nature. You are attempting to change the behavior of people. Decisions are based on human values — how people want the environment to be. So, necessarily, resource management is people management.”

As TCS president, Orbach left an important mark — how to train professional coastal environment managers to take science and put it into the public policy arena.

Orbach also left a mark on state policy with a major Sea Grant study in 1996, “Effort Management in North Carolina Fisheries: A Total Systems Approach.” It was an important piece of the report of the Fisheries Moratorium Steering Committee to the North Carolina General Assembly later that year.

He predicts an integrated coastal management model will be key to implementing coastal and ocean policies for the next century.

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## *An evolving story*

Clark says that the TCS future rests on a strong foundation laid down in an era of social change and environmental awareness. The 1960s launched the Stratton Commission to look at the nation's use of oceans. The Coastal Zone Management Act, the National Marine Fisheries Act, the Marine Mammal Protection Act and the Clean Water Act, NOAA and the National Sea Grant network emerged from the commission's 100 recommendations.

TCS was forged by a handful of people from across the country who were working in newly established federal and state programs, recalls Marc Hershman, director of the School of Marine Affairs at the University of Washington. Hershman served as TCS president 1980-1981 and is a member of the U.S. Commission on Ocean Policy.

"There also were recent grads from the emerging marine affairs programs, faculty and members of public interests and environmental organizations," Hershman says.

"Early on, we had to decide if we were oriented to research and information generation, activism, public education — or some other approach. Typical of young organizations, we didn't make a hard decision, but assumed that we would have broad appeal. There have always been grand dreams that TCS would be a 'think tank,' a policy forum, a job fair, etc."

He credits Margaret Davidson, director of the NOAA-Coastal Services Center and former South Carolina Sea Grant director, with establishing a forum for land use and property rights issues.

"Orbach took the time to push us toward thinking about ourselves as an emerging profession with particular standards and specialties. And Tom Bigford spent much time upgrading the TCS *Bulletin*," says Hershman.

Bigford, who directs the NOAA/NMFS Habitat Protection Division, served as *Bulletin* editor for 17 years.

Though he has been on the TCS board in various capacities, Bigford is most proud to have been a prime mover behind the student awards for papers at the biennial conference. Student members of TCS chapters at ECU, Duke and the University of

Washington make poster and paper presentations at special conference sessions.

"The student award is named for me, and gives me a chance every two years to convince folks that I am still alive," Bigford jokes.

Bigford believes the next generation of coastal managers will benefit from the collective experience of a diverse TCS membership. "Members represent a cross-section of coastal fields from students to professionals, from conservation to development, biology to engineering, teaching to librarian. They are from U.S. coasts and overseas," he says.

There's much to be said for the TCS networking. Even after nearly three decades in his field, he says, "Habitat is a common integrator between scientists, fishery managers, the private sectors and the public. Networking is important in this field. I have used my volunteer work with The Coastal Society and my professional career with NOAA to weave several networks."

Bigford says the role of TCS is to educate and communicate, to share information and to encourage deeper thought about how the nation uses its coastal resources.

Coastal management challenges include grappling with ecosystem-based approaches to fishery management, burgeoning port and harbor development, and environmentally sound aquaculture, he says.

Somewhat tongue-in-cheek, Bigford adds, "And, balancing uses in Marine Protected Areas to meet the public's expectations to do all things faster, cheaper and more effectively with the latest technology."

Robert F. Goodwin, coastal services specialist with Washington Sea Grant, is president of the TCS Cascadia Regional Chapter — the first regional chapter.

"TCS is thriving and growing both here and nationally. We have a new student chapter at the University of Washington, modeled after the one at Duke. That speaks to the interest of the next generation of coastal managers in sustaining a vital international professional organization.

Goodwin adds, "TCS is the only membership organization that serves the interests of the coastal

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managers, academics, practitioners and involved citizens – and builds bridges among them, celebrates their successes, and honors their leaders. TCS is a true coastal fellowship that has sustained the spirit of the Coastal Zone Management Act through some dauntingly adverse political periods over the past quarter century.”

### ***A holistic approach to the future***

The 2002 TCS conference, “Converging Currents: Science, Culture and Policy at the Coast,” (May 19-22) is being played out against the backdrop of prospective change. As members gather in Galveston, the U.S. Commission on Ocean Policy continues a series of national meetings that could set the agenda for the 21<sup>st</sup> century ocean policy. At the same time, the Pew Oceans Commission, created by the Pew Charitable Trust, is completing a series of national studies on a litany of coastal and marine topics.

TCS members expect to hear from the U.S. Commission on Ocean Policy. And, likewise, TCS President Clark is hopeful that members of the commission might learn some things from the TCS approach to regional problem-solving.

“We’ll be examining the scientific and management challenges of the Gulf of Mexico,” Clark notes. “The Gulf is a semi-closed body of water that touches many countries and jurisdictions. We’ll have a chance to hear about what they are doing that could become a model in other regions, especially related to governance issues.”

Sessions are to focus on regional approaches to ecosystem based management, including physical, ecological, cultural, political and economic perspectives.

The conference as a whole is a time and place to synthesize a host of issues, Clark says. “It brings together a lot of good minds into one forum for sharing good work from specialized sciences.”

Discussion topics include strategies for addressing a host of issues at the land-water interface, as well as post-Sept.11 security issues for ports and harbors. As expected, North Carolina will be well-represented at the table.

ECU’s King leads a panel attempting to shed light on “Understanding Change, Designing Coastal Policy.” The panel considers the changes and their

impacts on social and natural resources.

“Population change is short-hand for increased pressures on the coast and its resources. ... But demography is not destiny,” King says.

Jack Thigpen, North Carolina Sea Grant extension director and coastal communities specialist, is part of the panel. He targets coastal land-use planners, government agencies and those charged with decision making.

Not surprising, King and Thigpen are collaborating on a Sea Grant-funded project looking at policy issues local communities tackle, especially those involving coastal resource issues. While the focus is on North Carolina coastal communities, they hope the project will aid other states in managing growth challenges.

In another TCS presentation, King outlines a framework for understanding the political context within which fisheries managers must work. He recommends training strategies for prospective coastal resource managers. In other words, TCS members don’t stop at stating obvious problems, but rather offer solutions.

Clark is optimistic about the future of coastal and ocean stewardship. He says his optimism is not unfounded. “It’s not all doom and gloom out there,” Clark says. “It may seem like the problems are insurmountable, but look at history. Since the 1970s, the state of the environment and the quality of coastal waters have improved.”

He’s hedging his bet on holistic, integrated management. “It holds the key to wise stewardship of our coastal and marine environments. We’ve got to understand the relationship between human action and environmental response and to learn how to effectively guide our activities to be wise keepers of the garden. We are, in effect, the trustees of the environment.”

“Like TCS, collective environmental stewardship is greater than the sum of its parts,” says Clark.

(Reprinted from *Coastwatch*. Thanks to Pam Smith for letting us run this article in TCS BULLETIN.) ■

A current example of this situation is the possible, perhaps inevitable, introduction of the non-native *Crassostrea ariakensis* oyster into Chesapeake Bay as a substitute for the native American or Eastern oyster *Crassostrea virginica*. Preliminary research has shown that this foreign oyster is disease resistant, grows faster to market size than the native oyster, admirably performs its water filtering function, and is amenable to human consumption. However, there is still great scientific uncertainty as to the effect of this introduction on the Bay ecosystem, including impacts on other organisms. Scientists, coastal managers, industry representatives, policy-makers, and individual shellfishers throughout the region have been weighing in on this issue to the point that it has become extremely controversial at the state, regional and national level.

### **Background**

When Captain John Smith sailed into Chesapeake Bay in the 17<sup>th</sup> century he was overwhelmed by the sheer abundance of oysters that greeted him. Today, due to severe overharvesting (beginning in the years immediately following the Civil War) and the effects of pathogenic diseases, a mere fraction of the original historic population of *C. virginica* exists. This situation has had serious ecological and socio-economic repercussions. Apart from sustaining a shellfishing industry (and its associated economic side-effects), oysters and their associated reefs serve several critical ecological functions. They provide important habitat for other forms of aquatic life, and filter algae and particulates from the water column thus improving water quality for all organisms that reside in the Bay (including those consumed by humans). It is estimated that at peak population levels Chesapeake oysters could filter out the entire Chesapeake Bay in four days. Today, the lack of oysters has increased this water quality self-regulation time to well over one year.

In an effort to rectify this situation, scientists began experimenting with alternative oyster species that play a similar ecological role, and which may aid the restoration of the oyster shellfishing industry. With native *C. virginica* populations already at extremely low levels, scientists introduced *Crassostrea gigas* (the Pacific or Japanese Oyster - the most widely

cultured oyster in the world) into eastern U.S. coastal waters in the 1940s and 1950s. Despite its positive similarities in many respects to *C. virginica* (growth rate, taste) it, unfortunately, left behind a deadly oyster-contagious disease MSX (*Haplosporidium nelsoni*). This disease spread from Delaware Bay to the Chesapeake Bay and decimated much of the remaining native Virginia oyster population, although oysters in Maryland and Delaware were not as severely depleted. By the 1980s another pathogenic disease, Dermo (caused by the parasite *Perkinsus marinus* – a single-celled protozoan), was also discovered to be killing oysters at a high rate. The extreme susceptibility of *C. virginica* to MSX and Dermo destroyed most of the remaining oysters in Virginia, devastated the industry, and contributed significantly to the decline of the Bay's water quality.

In response, the Virginia General Assembly in 1995 directed the Virginia Institute of Marine Science (VIMS) to research the possible introduction of the non-native *Crassostrea ariakensis* oyster into Chesapeake Bay. In several laboratory and field trials *C. ariakensis* has been shown to grow rapidly and survive under a wide range of coastal and oceanographic conditions, e.g., it is able to tolerate extreme differences in temperature, salinity, dissolved oxygen and the amount of suspended sediments in the water column; and, perhaps most important, is much less susceptible to the diseases that have plagued the native Chesapeake Bay oyster. It has even “passed the human taste test.”

Many aquaculturists and commercial fishermen want to move forward with the wide-scale introduction of *C. ariakensis* into the Bay. They point to the following benefits:

- good economic potential for Virginia and the region as a whole, including increased employment and state tax revenue;
- restoration of ecological functions of oyster reefs; and
- improved water quality from oyster filtering functions.

However, many scientists and coastal policy-makers within the states that surround Chesapeake Bay fear

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the potential adverse impacts that accompany an introduction of any non-native species into the ecosystem, and the uncertainties that surround the *C. ariakensis* oyster. The number of unknowns and concerns include:

- whether or not it builds reefs;
- feeding patterns;
- its ability to co-exist with native oysters and other species in the Bay;
- the possibility that it may very well introduce other pathogens into what is left of the native oyster community;
- survival success in the wild;
- possible spread from Chesapeake Bay to other areas;
- it may be illegally introduced by private citizens before conclusive scientific study deems it safe to be placed into the Bay even under controlled circumstances; and
- hurricanes or other storms might displace them into the wild from both aquaculture sites and hatchery facilities.

### ***Positions/Actions***

Given the enormous economic and ecological impact of the Chesapeake Bay watershed on the eastern United States, the historical and cultural significance of the Bay oyster fishery, and the scientific uncertainty surrounding the introduction of *C. ariakensis* into the Bay the issue has attracted much attention, and has become a classic precautionary principle case study. To wit, how much and what type of research needs to be completed before policy-makers decide whether the benefits of *C. ariakensis* introduction outweigh the costs to the degree necessary to move forward with a program of establishing a non-native oyster population.

One umbrella effort to help reach a conclusion is being performed by the National Academy of Sciences. The NAS, a non-profit institution created to advise Congress on scientific matters, has been reviewing the ecological, social and economic issues surrounding the potential introduction of *C. ariakensis* into Chesapeake Bay. The study, funded through several state and federal agencies, and the Virginia and Maryland Sea Grant programs, is slated for

completion in May of 2003. The report will focus specifically on the impact that *C. ariakensis* would have on the recovery of native oysters, and its effect on Bay water quality, habitat, other marine life, and the aquaculture industry.

Regionally, the “Chesapeake 2000” agreement (an encompassing set of management strategies designed to achieve resource and ecological goals in the Bay) includes a goal that:

“By 2010, achieve, at a minimum, a tenfold increase in native oysters in the Chesapeake Bay, based upon a 1994 baseline. By 2002, develop and implement a strategy to achieve this increase by using sanctuaries sufficient in size and distribution, aquaculture, continued disease research and disease-resistant management strategies, and other management approaches to restore the native oyster productivity to Chesapeake Bay.”

The cost of achieving this goal is estimated at approximately \$100 million. In response, the Chesapeake Bay Program Federal Agencies Committee (CBPFAC), signatories to the agreement, stated that:

“there are a number of significant, poorly understood risks and potential adverse consequences associated with introducing *C. ariakensis* into the Chesapeake Bay – worsening disease problems, interspecific competition with the native oyster and other organisms, and detraction of funds and effort from the Chesapeake 2000 commitment to a ‘tenfold increase in native oysters.’ ”

Therefore, the CBPFAC “opposes the introduction of *C. ariakensis* into the Chesapeake Bay unless environmental and economic evaluations are conducted and reviewed to ensure that the risks of introduction are acceptably low.”

Another major regional player, the Chesapeake Bay Foundation (CBF), has taken a similar precautionary track, taking the position that:



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“until there is substantial scientifically validated information about the ecological risks and benefits associated with the use of sterile *Crassostrea ariakensis* oysters for aquaculture, a public policy decision to sanction large-scale aquaculture or outright introduction cannot be made responsibly.”

The CBF is also calling for more laboratory and Bay-wide research, strict safety controls on all in-water experimentation, a review of Maryland and Virginia oyster aquaculture policies, an evaluation of the public actions necessary to stimulate the oyster aquaculture industry, and a bi-state initiative to educate the public about the dangers of illegal private introductions of *C. ariakensis*.

Similar attitudes exist at the state management level. The Maryland and Virginia Sea Grant programs jointly held a 2001 symposium “Aquaculture of Triploid *Crassostrea Ariakensis* in Chesapeake Bay” and concluded that “the intentional introduction of reproductively capable *C. ariakensis* would be imprudent as the ecological consequences are too uncertain to support such an introduction.” The University of Maryland Center for Environmental Science presented a parallel apprehension that called for “strict biosecurity and vigilant monitoring to minimize the risks of introduction, and no intentional introduction of *C. ariakensis* until the potential impacts of this on species and ecosystems are completely studied.”

These conclusions hail from a number of research efforts currently underway that underscore the difficulty in reaching consensus. As one example, the Virginia Marine Resources Commission has experimented by growing sterile *C. ariakensis* in controlled environments throughout different parts of the Bay with assistance from researchers at the Virginia Institute of Marine Science (VIMS). These “triploid” oysters (as opposed to the fertile “diploid” oysters) were genetically altered to be reproductively sterile to decrease the probability of a reproductive large-scale introduction of *C. ariakensis*. Many researchers believe that these hatchery-reared *C. ariakensis* hold the key for rejuvenating the Bay oyster industry.

However, several scientists who attended the symposium stated that if the management decision were

made to proceed with large-scale aquaculture of triploid *C. ariakensis* it would inevitably lead to some introduction of reproductive oysters into the Bay with unknown consequences for population growth and Bay ecology. There is even a risk of triploid reversion to diploidy. Thus, confining these triploids is a primary concern. Several biosecurity measures designed to prevent accidental release of the oysters into the Bay, including laboratory quarantine procedures, physical barriers, and chemical treatment of wastewater to kill any organisms that may escape have already been employed. So, despite the promise of hatchery-reared *C. ariakensis* many serious concerns remain.

There are even fundamental differences that exist between states. The lower salinity levels and other conditions in the Maryland side of Chesapeake Bay create reduced disease pressures, and have kept alive the hope of restoring the native *C. virginica* species. Researchers there are attempting to selectively breed these native oysters to better tolerate MSX and Dermo. In fact, during the above-mentioned symposium, Maryland state agency representatives opposed the introduction of a non-native oyster species in any form. The interspecific competition that could potentially result between triploid *C. ariakensis* oysters in Virginia waters and selectively bred diploid *C. virginica* in Maryland waters may be another serious concern.

Finally, although the Chesapeake Bay shellfishing industry also agrees that more scientific study is required before a decision to introduce a non-native oyster is made, most aquaculturists and fishermen wish to proceed quickly with the wide-scale introduction of the sterile triploid *C. ariakensis* to protect and enhance their commercial aquaculture operations. Generally, for the long-term, they also encourage the development of a disease-free diploid stock. However, according to the joint Maryland/Virginia Sea Grant symposium report, Maryland producers are “specifically interested in diploid introduction and might oppose the introduction of a triploid without a concurrent plan for a diploid oyster” for competitive reasons. They believe that a triploid-only introduction in Virginia would “threaten their competitive stance in the marketplace and allow Virginia to get-ahead of Maryland.”

**Half-Shell,**

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# Surfrider Prepares State of the Beach Report

by Chad Nelsen

Beaches are among the most dynamic landscapes on the planet. They change with every tide, swell, and season. As surfers, we are keenly tuned in to subtle changes that occur at the beach. We watch the sands wash back and forth along the beach, and notice the wind ripple on the water and the direction from which the swell is arriving. In addition, surfers use weather maps, wave buoys, tide tables, and other tools to get an understanding of what the conditions are like now and what they might be like in the future. Over time surfers develop almost a sixth sense for the conditions of their local beaches.

**What state is your beach in?** The State of the Beach report applies that critical “surfer’s eye” to the conditions of our nation’s beaches. For three years we have been collecting information in the areas of beach access, surf zone water quality, beach erosion, beach nourishment, shoreline structures, and surfing areas to get an understanding of the condition of our nation’s beaches.

Unfortunately, we found that it is not an easy task because there are significant gaps and limitations in beach health indicator information. We did find that:

- What we do know about the condition of our nation’s beaches is alarming.
- **Unless we do something about it, we could lose our beaches.**
- There are actions we can take to bring about positive change and protect healthy beaches for the future.

This year, during our third such investigation of the state of our beaches, we have found that little has changed regarding our understanding of the current and future condition of our beaches.

To evaluate the state of the beach we reviewed existing literature, sent out surveys, surfed the Web, and phoned coastal zone management agencies. We then evaluated the twenty coastal states and territories where the Surfrider Foundation has chapters for information on and status of our seven beach health indicators. Here is what we found:

## **FINDING: Indicator information is sparse.**

Little information exists in the areas of beach erosion, beach nourishment, and shoreline structures.

- **Twelve states have information on beach erosion that is either limited in scope or out-of-date. Eight states conduct regular comprehensive monitoring and assessment of shoreline change**
- Only four states, Michigan, North Carolina, South Carolina, and Texas, maintain an accurate and up-to-date statewide inventory of beach nourishment projects. Two states have no inventory of beach nourishment projects.
- Just two states, New Jersey and South Carolina, maintain an accurate and up-to-date statewide inventory of the locations and types of shoreline structures. Five states have no inventory of shoreline structures.

The two areas with the most information are beach access and surf zone water quality.

- All states have at least some inventory of public beach access sites. Thirteen states maintain online beach access site inventories that are accurate and up-to-date, and include descriptions of amenities such as parking, restrooms, and access for the handicapped. Very few states report on gains or losses in beach access.
- All states but one, Oregon, have some kind of ocean water quality standards and a monitoring program. Six states have uniform statewide ocean water quality standards and a regular monitoring program. Of these, only Delaware’s standards do not meet current EPA standards.

We believe the differences in the quantity and quality of information on beach erosion, beach nourishment, and shore protection exist because changes in these areas tend to be subtle and occur over a long period of time. In contrast, changes in beach access and water quality are immediately noticeable by the public and have more immediate economic impacts.

All of the states have a presence on the World Wide Web. In particular, Florida, North Carolina, New Jersey, Oregon, South Carolina, Texas, and Washington are taking advantage of advances in information technology to provide easy access to detailed information.

## **FINDING: Indicator information is ambiguous.**

One study indicates that 60% of the shoreline in California is *publicly owned*; another that approximately 42% of the shoreline is *publicly owned and accessible*. One study indicates that in North Carolina there is one *public access site* for about every 16 miles of *shoreline*; another that there is a *public beach access point* for every 1.2 miles of *coastline*.

In Washington, one study indicates that 25% of the *shoreline* is publicly owned; another report states that 39% of Washington’s *tidelands* and 70% of the *shorelands* remains in public ownership. One study indicates that Washington has one *public access site* for every 3.5 miles of *shoreline*; another that there is one *public beach access site* every 5.3 miles.

Examples of ambiguous information exist for all of the beach health indicators. It is not necessarily that one study is accurate and another study is wrong. Different studies measure slightly different things, or use the same language to describe different things. This can make the results inconsistent.

## **FINDING: The condition of our beaches is murky at best.**

Insufficient and conflicting information make it difficult to draw meaningful conclusions about the health of our nation’s beaches. The only way to know the extent to which our coastal and ocean resources are at risk is to have adequate and accurate information. It’s also the only way to make sound decisions and develop appropriate policies.

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This is the same message the State of the Beach has been reporting for three years. Other national studies confirm our findings:

In an evaluation of state coastal management program effectiveness in protecting natural beaches, dunes, bluffs, and rocky shores, Bernd-Cohen and Gordon (1999) concluded “there is insufficient nationally compatible outcome data to determine on-the-ground effectiveness.”

The 1999 “State of the Nations Ecosystems” report states that, of the of the three ecosystems they covered, “coasts and oceans suffer most from a lack of comprehensive and consistent information on key ecosystem goods, services, and properties.” Without such information, ecosystem status cannot be accurately established.

Beach health information is so lacking that the health of our nation’s beaches is impossible to determine.

**FINDING: The information we found on beach health is disturbing.**

- Approximately 70% of our nation’s coastline is privately owned. More than 90% of the Maine and Virginia shorelines is privately owned.
- Between 1999 and 2000, the number of beach closures across the nation doubled. In California, beaches were closed or had warnings almost 6000 times during 2000, nearly twice as many as in 1999. Extended closures/advisories (those lasting 6 to 12 weeks) more than quadrupled from the previous year. *Although some of this increase can be owed to increased monitoring, it indicates a growing problem with chronically polluted beaches.*
- More than 75% of Florida’s shoreline, 47% of New York’s shoreline, and 26% of New Jersey’s and Virginia’s shoreline is identified as critically eroding. Approximately 31% of Maryland’s coastline is currently experiencing some degree of erosion. Nearly 80% of Wisconsin’s Great Lakes shorelines suffers from bluff erosion and recession problems.
- Federal beach nourishment funding in Fiscal Year 2002 reached an all-time high of \$135 million. Florida tops the list, receiving more than \$31 million in federal funding. In many cases, this funding is being spent on a problem that is avoidable.
- More than 10% of California’s, Florida’s, Maine’s, and South Carolina’s shoreline is covered with beach-destroying

shoreline armoring. In California, about 74% of Northern Monterey Bay shoreline is armored, about 65% of Ventura County’s shoreline is armored, and almost 100% of the coast from Dana Point through San Clemente is armored.

These are but a few of the alarming facts we have been able to find. You’ll find more in the individual state sections and at the end of the report, in the section “What state is your beach in?” The sources of these and other indicator statements in the 2002 Surfrider State of the Beach Report can be found on our website: [www.surfrider.org/stateofthebeach.org](http://www.surfrider.org/stateofthebeach.org)

**FINDING: Beach health issues tend to be regional in nature.** Natural systems don’t recognize state or local boundaries. Although most coastal zones share common problems, many of the issues have characteristics that are unique to their specific region. Erosion of barrier islands is a concern in Florida and the Carolinas. Water quality is an issue for Michigan, Wisconsin, and all the states that hug the Great Lakes shores. The same can be said for the states surrounding Chesapeake Bay and Long Island Sound. Beach access, water quality, and beach erosion are very different issues in southern California than they are in northern California, Oregon, and Washington. Exploring issues and treating problems in isolation can lead to incorrect or incomplete solutions, as well as missed opportunities. Besides being more effective, an ecosystem-wide approach is also a more efficient use of time and money.

**FINDING: Very little information is designed to inform the public about the health of our beaches.**

A wealth of technical and scientific data exists for specific beach sites around the nation as “gray literature” in academic journals or studies that line the bookshelves of coastal zone management offices. This information may help professionals make policy decisions. However, it is often not made available to the public or it is not written in a way that is easily understood by the average citizen. This lack of public education is alarming. It leaves the public without an adequate understanding about how government policies and decisions affect beach health and severely limits their ability to ensure that public interests are considered equitably in the decision-making process.

*Chad Nelsen serves as the Environmental Director at Surfrider Foundation. Stay tuned to TCS BULLETIN and The Coastal Society’s web page, [www.thecoastalsociety.org](http://www.thecoastalsociety.org), for updates on additional news and information about the state of the nation’s beaches.*

*(Author’s note: The 2002 State of the Beach report will be released on May 21, 2002. The full report will be available on the web at: [www.surfrider.org/stateofthebeach](http://www.surfrider.org/stateofthebeach). Please contact Chad Nelsen if you are interested in a print copy of the report: Surfrider Foundation, P.O. Box 6010, San Clemente, CA 92674 (949)492-8170 [cnelson@surfrider.org](mailto:cnelson@surfrider.org))*

## CONFERENCES

### **Summer Meeting of the American Society of Limnology and Oceanography**

June 10-14, 2002

Victoria, British Columbia, Canada

Session topics on environmental issues at the meeting will include: aquaculture, the response of zooplankton and other aquatic communities to climate change, the ecological impacts of pelagic longline fisheries, factors influencing the population fluctuations in wild Pacific salmon, marine protected areas (essentially natural parks for oceanic fish), ecological responses of aquatic life in lakes and ponds to runoff of pollutants from land, and more.

*Contact:* Helen Schneider Lemay

ASLO Business Office, 5400 Bosque Blvd., Suite 680

Waco, TX 76710 USA

*Phone:* 800-929-ASLO

*Fax:* 254-776-3767

*E-mail:* [business@aslo.org](mailto:business@aslo.org)

*URL:* <http://aslo.org/victoria2002/>

### **Coastal Zone Canada**

*Managing Shared Waters:*

*Towards Sustainable Transboundary Coastal Ecosystems*

June 23 – 28, 2002 Hamilton, Ontario CANADA

On June 23-28, 2002, professionals and community stakeholders from around the world, will gather together in the North American Great Lakes region, to exchange ideas and refine their strategies for the sustainable development of freshwater and marine coastal areas. With the world's coastal zone communities now representing more than half of the world's population, it is

becoming increasingly important to pool our knowledge and experience to better manage these vulnerable and valuable natural resources.

<http://www.pollutionprobe.org/managing.shared.waters/index.htm>

### **National Fisheries Law Symposium**

Friday June 28, 2002

Roger Williams University Law School

Topics to be covered include the law and economics of fisheries regulations, fisheries regulations in Rhode Island, clarifying marine aquaculture legal rights, search and seizure of fishing vessels, and more. Registration \$100; registration including CLE credit \$115; student registration \$15. The symposium is sponsored by the Roger Williams University Ralph R. Papitto School of Law and the Rhode Island Sea Grant College Program. For more information, contact [lawevents@rwu.edu](mailto:lawevents@rwu.edu).

### **2002 National Marine Educators Conference**

July 22-26, 2002, at Connecticut College in New London, CT.

Concurrent Sessions will address marine geology and archeology, estuarine environments, deep sea life, educational resources, classroom curriculum and activities and much more. For more information on the NMEA 2002 Conference or to be added to the mailing list to receive registration materials when they are available contact: Thaxter Tewksbury, Conference Co-Chair 860-445-9007 work Project Oceanology [ttewks@aol.com](mailto:ttewks@aol.com) or Cathi Lepore, Conference Co-Chair 860-445-9007 work Project Oceanology [ocean3@uconnvm.uconn.edu](mailto:ocean3@uconnvm.uconn.edu) <http://www.oceanology.org/SENEME/NMEA2002/nmea2002.html>

### **American Fisheries Society Annual Meeting Turning the Tide**

132nd AFS Annual Meeting

Baltimore, MD Aug. 18-22, 2002

<http://www.fisheries.org/annual2002/>

### **The American Shore and Beach Preservation Association 2002 Annual Conference**

September 15-18, 2002

Portland, Oregon

<http://www.asbpa.org/2002conf.html>

### *Corrections*

In the hard copy version of TCS BULLETIN Volume 23, Issue 2, footnotes to Marc Poirier's article, *Palazzolo v. Rhode Island* (page 1), were omitted. A fully footnoted version of the article can be found in the electronic version of the BULLETIN, viewable at: [http://www.mli.usm.maine.edu/TCS\\_2001reprint.pdf](http://www.mli.usm.maine.edu/TCS_2001reprint.pdf). A front-page article in that issue, *TCA Turns 25* (as well as the reference to the article in the Table of Contents), should have read *TCS Turns 25*.

*TCS BULLETIN publishes articles which may represent varying perspectives on coastal issues. The views expressed in TCS BULLETIN are those of the authors and may not represent the policy of TCS or the BULLETIN. TCS BULLETIN welcomes comments as well as information about errors that warrant correction. Contact: [jduff@usm.maine.edu](mailto:jduff@usm.maine.edu) and indicate "comment/correction: Vol. \_\_, Issue \_\_" in the subject line.*

## Postdoctoral Fellowships and Postgraduate Studentships

**National University of Ireland Galway (NUIG)**  
*Law of the Sea and Ocean Management Research*

The School of Law at the National University of Ireland Galway (NUIG) in collaboration with the Martin Ryan Marine Science Institute is committed to the development of marine legal research as a priority research area within the University. NUIG as a lead-institute has been awarded public funding for a number of postdoctoral fellowships and postgraduate studentships under the Higher Education Authority Programme for Research in Third Level Institutions in Ireland. This project which will run for three years, is scheduled to start in Autumn 2002, requires a number of specialist researchers with appropriate legal and/or scientific qualifications/experience in maritime delimitation and/or in ocean management.

**Research Leader:** Dr. Ronán Long

*Project Number: MSR 4.1*

Positions available:

- MSR 4.101 Postgraduate position in NUIG (2 available)
- MSR 4.102 Postdoctoral position in NUIG (1 available)
- MSR 4.103 Postdoctoral position in Trinity College Dublin (1 available half-time)

Postgraduate student stipend: 16,506 Euro

Postdoctoral fellowship salary: 26,419 Euro

Senior research post salary: 25,472 Euro (half-time salary)

Expressions of interest in the form of a CV and covering letter quoting the appropriate reference should be sent to the **Marine Development Office, Martin Ryan Institute, NUI, Galway, Ireland** or by e-mail to [declan.clarke@nuigalway.ie](mailto:declan.clarke@nuigalway.ie).

Enquiries by telephone: +353 91 524411 x3583.

**Closing Date:** 31<sup>st</sup> May 2002

## Institute for Fisheries Management and Coastal Community Development Post-Doctoral Research Associate

The Institute for Fisheries Management and Coastal Community Development (IFM) in Hirtshals, Denmark seeks candidates for a three-year position as a *Post-Doctoral Research Associate*. This position stems from several newly funded projects on the social and economic aspects of fisheries management. They address fisheries in Africa, Asia and Europe, taking a broadly institutional approach, and share a focus on the implications of stakeholder participation for developing an accurate knowledge of the fisheries resource. The projects draw in more or less equal measure on common property research, the anthropology of local ecological knowledge and the sociology of knowledge/science. Our immediate need is for data management and analysis for both quantitative surveys (SPSS) and qualitative interviews. Current needs also involve desk and some field research. Beyond these

existing projects, the successful candidate will be strongly encouraged to use this opportunity to work with the senior researchers to develop her or his own research agenda within the broad field of fisheries management and fisheries-related coastal community development. **Qualifications:** A Ph.D. in Anthropology, Institutional Economics, Geography, Political Science or Sociology; demonstrated research interest in environmental social science or natural resource management; and a grasp of qualitative interviewing and analysis, sample survey methodology, data management and basic statistics. Citizenship is open but fluency in English is required. Specific knowledge of fisheries, Southeast Asia and a Scandinavian language would all be a plus. A competitive salary will depend on qualifications. IFM ([www.ifm.dk](http://www.ifm.dk)) is a small but respected non-profit research foundation located at the North Sea Centre in a beautiful resort area in rural Denmark. The position can begin as early as October, 2002 and must be filled by January, 2003. **Application deadline is 1 August, 2002.** Send a letter describing research interests, a full CV and a writing sample (a single authored journal article, book or dissertation chapter, or other formal research report) to Poul Degnbol, Director, The Institute for Fisheries Management and Coastal Community Development, North Sea Centre, Willemoesvej 2, P.O.Box 104, DK-9850 Hirtshals, Denmark. References will be required only after initial selection round. Further information can about the position can be obtained by contacting senior researcher Doug Wilson at +45 98 94 28 55 or [dw@ifm.dk](mailto:dw@ifm.dk).

## Recreational Angler Interviewers

Intercept interviewers, also known as in-person interviewers, will visit assigned sites to conduct intercept interviews when anglers are most likely to be available. Typically, the work is performed outdoors wherever saltwater fishing takes place, e.g., on or about jetties, docks, break-waters, boats, etc. Interviews must be conducted appropriately, professionally and in accordance with procedures. Results of collected data must be reported to regional representatives in a timely fashion. Education equivalent to completing high school; related educational background and/or field experience, or at the least, saltwater fishing experience/avidity; knowledge of regional fish species and locales; good communication skills; ability to conduct self with tact and diplomacy; ability to follow directions; ability to speak, read and write English fluently; ability to work assigned work schedule; and ability to work alone with little or no supervision. Employment opportunities are available in the following states seasonally: South Carolina, Virginia, Maryland, Delaware, New Jersey, New York, Rhode Island and Massachusetts (including Nantucket and Martha's Vineyard); and, Puerto Rico. Call Bob at 1-800-639-1310 for additional job information. Email contact: [Bob.Gaffney@macroint.com](mailto:Bob.Gaffney@macroint.com). Visit the website at: <http://www.macroint.com/content/employe/usMore.asp>.

## **Cascadia Chapter**

*Submitted by R. Goodwin*

### *TCS Cascadia Chapter Website*

The Cascadia Chapter website provides a portal to state and provincial coastal programs, academic institutions and non-governmental organizations; and, articulates regional issues and themes through a series of essays (presently being edited). Please visit us at: <http://www.thecoastalsociety.org/cascadia/index.html>.

### *2001 Submerged Lands Management Conference, Seattle September 23-27.*

With the help of (former) Cascadia Chapter Secretary Leigh Espy, your Board of Directors worked with the Washington State Department of Natural Resources to co-sponsor this national conference held in the Pacific Northwest. The Chapter's unique contribution to this event was its sponsorship of a special poster session, "*Using GIS and Remote Sensing for Submerged Lands Management.*" Sixteen posters from the US and Canada were presented in conjunction with the Monday evening opening reception at the Seattle World Trade Center on Seattle's downtown harborfront.

## **Duke Student Chapter**

*Submitted by Jennifer N. Latusek*

The Duke University chapter of TCS recently appointed four new officers to their board. Congratulations are extended to: Lindsay Fullenkamp, Elizabeth Griffin, Greta Hawkins, and Adrienne Harris. Belated congratulations go to Jeremy Potter and Angela Corridore for selections as Knauss Fellows in 2002. Jenni Macal was selected as a Presidential Management Intern in March, 2002.

The class of 2002 in the Nicholas School of Environment and Earth Sciences graduated on May 10, 2002. Many of our new grads have already exhibited their dedication to conservation of marine resources. Graduates secured jobs working in government, non-governmental and academic settings. Posts include NOAA's Damage Assessment and Restoration Project and the Duke University Marine Lab to NC National Estuarine Research Reserve and

Florida's Fish and Wildlife Commission. Congrats to those who have landed jobs already and best wishes to those interviewing in the coming months.

Many members of Duke's chapter are anticipating the exciting events of TCS 18. Special thanks to Jenni Macal and Melanie Severin for their hard work as TCS 18 committee chairs for the Young Leaders in Coastal Management Workshop. Other chapter members dedicated time and energy to ensure a successful workshop. Duke chapter members hope to talk with students that wish to form new chapters elsewhere. Some of our members will be presenting their research at the meeting this year.

## **East Carolina University Student Chapter**

*Submitted by Kelly Gleason*

The ECU Chapter has been working with the Coastal Resources Management PhD Program in its initiation of a two-year Executive-in-Residence program aimed at linking academic perspectives with the experience of professional coastal and resource managers. Senior executives drawn from federal, state, and regional agencies, as well as non-governmental advocacy groups, and private industry will be invited to the East Carolina University campus for several days. During their visit they will make informal and formal presentations, visit with students and faculty, and deliver at least one major presentation open to the campus community and public. This program gives students an opportunity to learn about the day-to-day realities that confront professional coastal resources managers. The program is designed to convey an understanding of the role of science and technology, the values and socioeconomic context in which decisions must be made, and the nature of the political process.

Spring Semester of 2002 brought with it the first two Executive-in-Residence visitors to the ECU campus. In April, Dr. Robert J. Hofman, Scientific Program Director of the Marine Mammal Commission (Retired) spoke to students and faculty. Supported by an expert scientific advisory committee to provide guidance to this first legislative mandate for an ecosystem approach to wildlife conservation, his involvement in the Marine Mammal Protection Act of 1972 established the Marine Mammal Commission. Dr. Hofman outlined the MMPA and addressed the

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manner in which the act and related conservation issues have changed since 1972.

Peter M. Douglas, Executive Director of the California Coastal Commission, arrived in late April to provide a professional workshop to students. In his lecture, "Trouble on the Edge: Coastal Zone Management in the New Millennium," Mr. Douglas provided students with valuable insight into the realities of professional coastal management. As a consultant to the state legislature, he was a principal author of the 1976 Coastal Act that made permanent California's coastal management program. He also outlined the early regulations implementing the federal Coastal Zone Management Act. Hofman and Douglas provided outstanding opportunities to have students learn from high ranking professionals in the field of coastal management. The Chapter is looking forward to future visitors.

#### **University of Washington Student Chapter**

*Submitted by Rebecca A. Ellis, President and  
Monika T. Thiele, Vice President*

TCS-UW has convened its first Executive Board Meeting. With reflection on the success of March's MISS PACMAN conference, April's excellent recruitment and Earth Week's opportunities, the chapter is moving steadily forward. TCS-UW has been created with an interdisciplinary Executive Board representative of colleges UW-campus-wide, linking members with ties to programs, faculty, and alumni. This group provides a fundamental role in enhancing the diversity of interests, activities, and opportunities and captures valuable information and connections through multiple disciplinary resources. Our board currently represents the following schools: School of Marine Affairs, School of Law, Evans School of Public Affairs, and the Program on the Environment, College of Oceanography, College of Civil Engineering, and College of Landscape Architecture.

We are pleased to share the proceedings of the Maritime International Student Symposium on Pacific Management hosted by UW's Marine Affairs Student Association. Please visit the following website:  
<http://students.washington.edu/uwmasa/MISSPACMAN.htm>.

TCS-UW extends appreciation to keynote speaker and TCS member Leigh Espy for concluding the conference with her engaging presentation on the power of communication. Thank you Leigh!!

TCS-UW actively participated in Earth Week 2002 at the University of Washington by hosting student information booths at activity fairs. Not only was this a great way to promote awareness of the world's oceans and coasts, but a successful member recruitment activity and publicizing event for The Coastal Society. Welcome new members!

As we approach the end of this school year and begin planning for 2002-03, we are excited to continue promoting our network of TCS membership campus-wide as well as the Cascadia Chapter. Additionally, we plan to set the stage for linking our student chapter to national members to take advantage of the wealth of knowledge and resources in TCS national membership. Our goal is to not only continue to link student interests here in Seattle, but to widely share those in meaningful ways with other TCS students and professionals, nation-wide. *For more info please visit:* <http://students.washington.edu/tcsuw/>. ■

**Now What?**

It is clear that there exist many interested players in this debate, and much uncertainty in how to proceed. Policy-makers are faced with the dilemma of incomplete knowledge of the biology and life history of *C. ariakensis*, the lack of consensus among scientists as to the impacts of a non-native species on the ecology of the Chesapeake Bay, and the pressures of commercial and economic interests to revive the once-vigorous and lucrative Bay shellfishing industry. There may also be questions as to how oysters will be managed on a regional basis (beyond state jurisdictional boundaries) as an introduced oyster could spread along the East and Gulf Coasts.

As for the risks involved, some risks cannot be foreseen, and thus perfect information will probably never be achieved. Although all parties agree that more study is needed, how long should we proceed using the precautionary principle? How long do we wait for sufficient “better and more complete” science, while accepting the associated risks of not going ahead with the oyster introductions, e.g., the continuing loss of economic benefit and worsening of water quality?

Given the extremely small (and ever-decreasing) population of native oysters (especially in areas with both MSX and Dermo present), the positive research data that point to the great ecological and economic potential of using *C. ariakensis* to both improve water quality and revitalize the commercial oyster industry, and the belief that illegal introductions into the Bay may have already occurred, it seems likely that some form of non-native oyster introduction will occur in the future unless “conclusive” evidence reveals catastrophic impacts. The only remaining question may be the form of management and control that oversee the operation. Stay tuned!

*Paul Ticco is a TCS Board member and serves as Assistant Director to the Virginia Graduate Marine Science Consortium. (Acknowledgment: Many of the details for this paper were culled from “Aquaculture of Triploid Crassostrea Ariakensis in Chesapeake Bay: A Symposium Report” which can be obtained from either the Maryland or Virginia Sea Grant offices; and various issues of the Chesapeake Bay Journal which can be accessed at: [www.bayjournal.com](http://www.bayjournal.com) My thanks go to William Rickards, Director, Virginia Graduate Marine Science Consortium for his input and review of this paper. The views expressed are those of the author and do not necessarily reflect those of the Virginia Graduate Marine Science Consortium.)*

For more information, please visit the Maryland and Virginia Sea Grant web sites:

Maryland: [www.mdsg.umd.edu](http://www.mdsg.umd.edu)

Virginia: [www.virginia.edu/virginia-sea-grant](http://www.virginia.edu/virginia-sea-grant)

VIMS: [www.vims.edu](http://www.vims.edu)

‘O Oysters’, said the Carpenter,  
‘You’ve had a pleasant run!  
Shall we be trotting home again?’  
But answer came there none –  
And this was scarcely odd, because  
They’d eaten every one.

Lewis Carroll (1872)  
*Through the Looking Glass*



# TCS Annual Report 2000

## 17<sup>th</sup> International Biennial Conference

TCS 17 - "Coasts at the Millennium" was held in Portland, OR in July 2000. The conference opened with a challenge, from Dee Hock, to fully understand the current structure of our organizations and then move past them to be open to the concepts of chaordic organizations which harmoniously blend chaos and order to solve problems. Another plenary session started with a panel presentation on urban sprawl in the Cascadia Coastal Region and concluded with lively probing by a National Public Radio affiliate station's popular talk show host. On the third morning, conference attendees grappled with how to create greater public awareness and policy action regarding climate change. Afternoon concurrent sessions were grouped by theme tracks to help attendees choose between sessions and carry forward the theme of that morning's plenary. The goal of the conference was to present new philosophies and approaches to better manage our coasts in the new millennium. TCS 18 will continue this popular format as it carries on the theme of integrated management.

## Next Conference

TCS 18 will be held May 19 - 22, 2002 on Galveston Island, TX, in the Moody Gardens hotel. The date was changed from a summer date to take advantage of off-season rate savings, while still being held during the academic summer vacation. The conference will explore interrelationships among the physical, ecological, cultural and political influences and feature local and international trans-boundary issues.

## Major Gift

TCS received a generous gift - a charitable contribution of \$23,000. Megan Bailiff, TCS Past President, and her husband, Quinn, donated \$11,500 to the Society, which was matched 100% by Quinn's employer, Microsoft. Megan hoped to encourage other members to remember TCS when making charitable contributions.

## New Committee

The Development Committee was established to examine ways to expand our financial resources, so that TCS may continue its mission. The committee will be working closely with the conference planning committee to obtain sponsorships from private industry as well as federal and local agencies. It will be responsible for researching funding opportunities, developing models, evaluating proposals and matching them with TCS's strategic plan. Members familiar with fund raising or with experience writing grants are encouraged to volunteer for this committee.

## Membership Communications

TCS dove into electronic communications this year with the establishment of a permanent web site and a linked site for the biennial conference. Potential attendees were encouraged to submit electronic inquiries for registration and membership information. For the first time, a TCS membership application was available for immediate downloading. In the fall, TCS began regular Friday emails to members with important announcements and job opening notices. Members could even respond by email with their elections vote. The Society welcomes your ideas for enhanced communications to and among members.

## Affiliated Chapters

### *Cascadia Region Chapter*

TCS's first regional chapter, encompassing the region including the coasts and inland marine waters of British Columbia, Washington, Oregon and Northern California, made its debut at TCS 17 in July in Portland, Oregon. The chapter held a membership meeting to elect its officers and solicit the members' ideas for services and activities. The chapter also mounted a Cascadia Poster Session at the conference. Since the conference, the chapter has installed a web site and has held bi-monthly board meetings.

### *Duke University Student Chapter*

Under the direction of Katie Moore and Faculty Advisor, Mike Orbach, Duke University launched the first TCS student chapter in spring 2000. The Duke University Student Chapter was endorsed by TCS and held its first meeting; then began the process of recruiting members, adopting bylaws, developing an organizational structure and electing officers for the 2000-2001 academic year. The Chapter also participated on the TCS Education Committee to better foster student participation within TCS. The Duke Chapter hosted two meetings with TCS President Walter Clark to discuss legal issues and student opportunities for fellowships. Duke, along with the TCS, sponsored travel to the 2000 TCS Conference in Portland, Oregon for Katie Moore and the 2000-2001 officers: Kristy Long, Rachael Franks, and Amy Carter. Over 30 new members have joined both the Duke Chapter and TCS.

## Relationships with Other Organizations

TCS members offered their professional expertise to several organizations in 2000. The Education Committee assisted in the development of NOAA('s) Coastal Services Centers's "CZ 101" curriculum. This curriculum is targeted to young professionals and contains information on coastal management skills. "Project Learning Tree" tapped the TCS Education Committee members as reviewers for a high school environmental curriculum called "Exploring Environmental Issues in the Places We Live." TCS and NOAA('s) CSC are collaborating on an effort to promote student internship and fellowship opportunities. A listing of available internships and fellowships is located on the NOAA CSC's web site with a link to TCS. If you know of an opportunity where TCS members can contribute their expertise to other organizations, or have internships or fellowships information, please contact the TCS office.

## Financial Position

TCS finished its two-year budget with a bank balance of \$56,932.00, the highest in TCS history. This position was due to the contribution by Megan Bailiff and to a successful conference.

Date	Members	Financial Status
Jan 1, 1998	203	\$12,695
Jan 1, 1999	237	\$39,353
Jan 1, 2000	258	\$39,381
Jan 1, 2001	342	\$56,932

# News from the Board

TCS board members dedicate considerable time and energy to the organization on a voluntary basis. Most of them deal with coastal issues in their everyday lives and careers. Here's a sample of what they've been up to recently.

**Megan Bailiff** is living in La Jolla, CA and is enjoying the warm ocean breeze. She was recently named to the Board of Trustees of Hubbs SeaWorld Research Institute. After a great year away from the ins and outs of the marine conservation world, she is excited to be getting more directly involved again.

**Robert Boyles**, Director of Policy & Operations at the S. C. Marine Resources Division, is working on new approaches to managing the early season shrimp resources in the outer limits of state waters. The process involves collaborative decision making and stakeholder involvement as well as the application of new technologies in resource management

**Walter Clark** teaches courses on ocean and coastal policy and oversees three fellowship programs: the Knauss Marine Policy Fellowship, NOAA's Coastal Management Fellowship and the North Carolina Coastal Management Fellowship. He recently published "*Protecting North Carolina's Estuarine Shoreline Through Policy and Planning.*"

**Ariel Cuschnir** continues his work on coastal issues worldwide, conducting environmental studies and scientific research, and actively working to preserve coastal habitats.

**John Duff** has been working on law and public policy research related to aquaculture property rights and seaweed harvesting.

**Mike Eng** works at a new independent federal agency called the U.S. Institute for Environmental Conflict Resolution. Mike handles the Institute's coastal-related projects and cases, as well as those involving protected areas or endangered species issues

**Jim Giattina**, Director of EPA's Gulf of Mexico Program Office (GMPO), is currently focusing on two key issues: Gulf Hypoxia (aka the "Dead Zone") and Mercury in Gulf Fisheries

**Kelly Gleason**, is a first-year student in the East Carolina University Ph.D. Program in Coastal Resources Management. According to **Kerry Pate**, outgoing TCS-ECU Chapter President, "Kelly has an incredibly diverse background that spans doing graduate underwater archaeology in St. Andrews, Scotland, spending a year in Kenya helping the indigenous population, and teaching school children in Santa Barbara, to name but a few. She is a terrific addition to the CRM program."

**Michael Henderson**, Executive Director for NOAA's Office of Marine and Aviation Operations, has been concentrating on the role of NOAA's ships and aircraft in the Homeland Security effort.

NOAA's fleet is working with Navy and Coast Guard and NOAA's remote sensing aircraft have provided airborne photogrammetric assistance to the cleanup efforts of the World Trade Center and the Pentagon.

**Larry Hildebrand** has been largely preoccupied with the planning for Coastal Zone Canada 2002 conference (see Conference info page 12). Larry will be departing directly from TCS18 for Canberra, Australia to participate in an ACORN (Australian-Canadian Ocean Research Network) workshop with colleagues from law schools in both countries. He continues to work on his Ph.D. at the University of Wales related to *The Role of Government in Community-based Coastal Management*.

**Chad Nelsen**, Environmental Director at Surfrider Foundation, leads the campaign to "Save Tres Palmas" in Rincón, Puerto Rico from massive hotel development. Surfrider locals in Puerto Rico are seeking permanent protection through the creation on a Reserva Natural Marítima and the first Special Planning Area (Area de Planificación Especial) to be designated in Puerto Rico since 1978.

For more information visit: [www.surfrider.org/rincon](http://www.surfrider.org/rincon).

**Paul Ticco** is completing his first year as the Assistant Director of the Virginia Marine Science Consortium, and Research Professor at his *alma Mater*, the University of Virginia. He is enjoying working with scientists, policy-makers, and especially students. Paul is continuing his research and writing on marine protected area management and is completing a NOAA-sponsored group project on an assessment of the NERRS Coastal Decision-Maker Workshops.

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