

**OUR SHARED JOURNEY:
COASTAL ZONE MANAGEMENT PAST, PRESENT AND FUTURE**

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Aloha! Okay, I know we're not in the islands but we need to do better than that...let's try it again – Aloha! Much better! Mahalo nui loa (thank you very much) for acknowledging my “ha” – my breath of life. You see, that's the basic reason why we respond when someone says “aloha” – we are taking time to recognize one another and acknowledge the life force that is both unique to each of us and, at the same time, binds us together. By exchanging aloha we have, in essence, embraced one another in spirit and set the stage for sharing our ideas, our energy, and our shared mana – our spiritual power.

In many ways, that's what CZ conferences have always been:

- An opportunity to recognize that each of us – scientists, engineers, business men and women, state and local resource managers, federal government officials, representatives of non-governmental organizations and individual citizens – have unique and important insights and perspectives to offer and roles to play;
- An opportunity to recognize that we share the same passionate commitment to a common task;
- An opportunity for shared learning and joint problem-solving; and, of course,
- An opportunity for the pure pleasure that seeing old friends will always provide!

It is a distinct honor and a real joy for me to be standing up here today. In some ways, this was one of the most difficult talks I've ever had to prepare – being in front of family makes one particularly anxious to please – or at least not to disappoint! On the other hand, I had a wonderful time preparing this talk because it gave me an opportunity to recall good times, remember dear friends, reflect on our shared challenges and enjoy our shared accomplishments. I apologize, in advance, for the fact that the following historical snapshot will have a U.S. flavor; it is the part of our shared journey with which I was – until recently – most familiar. Now just sit back, relax and join me as I share some personal vignettes on the journey we have shared over the past thirty-one years.

Where did we start and where have we been?

As I put this talk together, I thought it was perhaps good to start with a snapshot of some of the landmarks we've passed on our coastal zone management travels...so here goes (with appropriate thanks to NOAA/NOS/OCRM and others for the facts and figures and apologies to those who feel I've missed a significant event—or two—or three...):

- 1972 – The Coastal Zone Management Act of 1972 set us on our way and several years of support for state planning efforts provided the wind that initially fueled our travels together;
- 1974/1976 – Washington becomes the first state with an approved state coastal management program. Forgive me but my logbook from the trip is a bit confused here – one entry says that the Washington program was not actually approved by the federal government until 1976;
- 1976 – Amendments to the CZMA create the Coastal Energy Impact Program;
- 1977 – Oregon's CZM program is approved;
- 1978 – Maryland and ten other state CZM programs receive federal approval;
- 1978 – The first CZ conference is convened in San Francisco...

A little side-trip

I hope you'll indulge me in a little side-trip down memory lane here; I think that a look at CZ78 is important because it represented such an important stop on our shared journey. So, take a moment to bring up the memory of the Jack Tar Hotel – now the Cathedral Hill, I think – and recall how the CZ conferences began. The CZ78 Program noted that the conference would

“...*bring together* professional planners, engineers, environmentalists, government administrators and interested individuals *in an atmosphere that will stimulate productive discussion and interaction* on the leading coastal zone management issues of the day.”

As Orville T. Magoon – an early navigator on our journey -- reminded me recently, the focus was on “*solutions*” – in fact, as many of you will recall, “*Spotlight on Solutions*” became the underlying theme of CZ conferences for many years to come. The idea, as Orville described it, was to “bring together all those concerned with coastal decisions” and provide an opportunity for them to share and understand the different perspectives that they brought to the table. I think it's safe to say that we still expect CZ conferences to be an opportunity to share experiences, work out differences, meet the challenges of today and identify opportunities for the future.

Another of our early navigators, Robert W. Knecht, delivered the Opening Keynote for CZ78 and described Coastal Zone Management as a “***bold experiment***.” That was, in fact, the case – we were still in the early stages of our journey and, frankly, there weren’t yet many signposts to guide the way. We were, in fact, helping to create those signposts as we went along. ***Flexibility and adaptability*** have always been important forces on our coastal journey – we have learned from both our successes and our failures. This “adaptive management” approach has helped guide us on our journey and is an important factor in the sustainability of coastal resources, communities and economies. I’ll come back to that thought in a few moments.

A look at the Program for CZ78, and many of the early CZ conferences that followed, also provide glimpses into some other important characteristics of both our regular reunions and the Coastal Zone Management program that we gather again here in Baltimore to celebrate:

- The involvement of *leaders* in government (at all levels), non-governmental organizations, coastal communities, business, law, science, engineering and education;
- *Shared support and responsibility* on the part of the *public and private sectors* for both the conference and the coastal management experiment;
- Presentations and panel discussions that helped facilitate the emergence of a closer *partnership between coastal science and public policy*;
- A recognition of the *international dimensions* of the coastal management challenge and the value of sharing lessons learned from around the world;
- Opportunities to *explore both the breadth and the depth* of the waters we were navigating through philosophical discussions of legal, political and management issues intermingled with detailed presentations on specific technical issues and the latest developments in science and engineering; and
- An opportunity to *take our current bearings* – by focusing on some of the day’s critical issues – *and plot a course for the future* by looking over the horizon at the next challenges we might face.

We are indebted to Orville Magoon, Bob Knecht, Jon Moore, Hugh Converse, Tom Tobin, Charlie Chestnut, Billy Edge, Dallas Miner, Delores Clark and all the other visionaries who, in 1978, recognized the value of a CZ conference and had the energy to make it a reality. I hope you’ll take a moment to join me in taking a moment to remember their contributions and give them our thanks!

Back to the Journey

Okay, let's go back to those historical snapshots...

- 1979 – Coastal programs in 19 states covering 69% of the nation's shoreline had received federal approval;
- 1980 – Pursuant to section 315 of the CZMA, nine estuarine reserves were in place in eight states; today, there are 25 estuarine areas in the national estuarine research reserve system protecting more than a million acres in 22 states;
- 1986 – With the approval of the CZM program in the Commonwealth of Virginia, 90% of the U.S. coastline was covered by approved CZM programs in 29 states and territories;
- 1990 – The 1990 amendments to the CZMA create two important new programs:
 - The *Coastal Zone Enhancement Program* to facilitate State efforts to address eight areas of “national significance”: wetlands protection; coastal hazards; cumulative & secondary impacts of development; public access to the coast; special area management programs; ocean governance; marine debris; and government and energy facilities siting; and
 - *Section 6217, “Protecting Coastal Waters”* which requires that states with approved CZM programs develop coastal non-point pollution control programs. In addition to addressing a critical, locally-relevant issue – non-point source pollution – it also required an enhanced level of coordination at the federal level, most notably between NOAA and EPA, and at the state level between land and water agencies.

Another brief excursion

Again, I hope you'll allow me to take another brief excursion here and talk for a moment about *watershed management* as one of our more exciting current challenges and opportunities. It is also, I believe, a good example of some of the insights we've gained on our coastal journey. As one of my Micronesian colleagues said a few years back, “Water is Gold” and §6217 provides a clear recognition that coastal zone management offers an opportunity to help secure this valuable resource.

A few weeks ago, during a Workshop on Climate and Coral Reefs at the Turtle Bay Resort on the North Shore of Oahu, Billy Causey noted that, as manager of the Florida Keys Coral Reef System, he saw his sphere of responsibility as beginning in the

Orlando watershed and extending to the outer edges of the reefs in the Florida Keys system. A Pacific Island coral reef manager expressed a similar need to look at integrated programs from “ridge to reef.” The traditional Hawaiian resource management concept of *ahupua’a* – from the top of the mountains to the edge of the reef – acknowledges this need for an integrated approach that recognizes the interactions between land, water, plants, animals and people. It requires a *collaborative approach to management* that combines the special knowledge and unique insights of experts from all walks of life. Effectively implementing §6217 – and, in fact, coastal management as a grand challenge – provides an opportunity for us to focus on the critical *interactions* among individual elements in the coupled coastal system of society and resources and facilitate the emergence—or, in some cases, the re-emergence—of a coastal community dedicated to the management and sustainability of that coupled coastal system.

Resuming our travels

I promise that was the last side-trip and, in fact, I’m going to run rapidly through the 1990s:

- 1992 – States & territories produce assessments of their management programs in the context of the eight “enhancement program” areas and develop five-year strategies which were updated in 1997 and, presumably, are being updated again even as we speak;
- 1993 – The World Bank publishes the Noordwijk Guidelines for Integrated Coastal Zone Management for distribution at the November 1993 World Coast Conference (International Conference on Coastal Zone Management).
- 1997 – The Department of Commerce Inspector General (DOC/IG) releases a report noting “only anecdotal evidence of the accomplishments of the CZM program” and called on NOAA to develop a “strategy to measure the effectiveness of the CZM program.”
- 1999 – Responding to the DOC/IG report, NOAA commissions Marc Hershman and colleagues to undertake a comprehensive study of “the effectiveness of coastal zone management in the united states.” One key finding called for the development of a common set of “indicators” that would link state management activities to national CZMA objectives;
- 2001 – NOAA initiates development of a national performance measurement system for coastal zone management by commissioning a study through the H. John Heinz III Center for Science, Economics and the Environment (Heinz Center);
- May 2003 – Heinz Center publishes “The Coastal Zone Management Act: Developing A Framework For Identifying Performance Indicators.” The report

recommends an “outcomes-based” performance evaluation framework directed at *six focus areas* based on section 303 of the CZMA:

- Coastal ecosystems;
- Coastal water quality;
- Coastal hazards;
- Public access;
- Waterfront development; and
- Coastal-dependent uses (such as fishing & shipping).

So, where are we today?

Let’s take a few quick look at our current bearings...

According to the NOAA/OCRM website, *34 out of the 35 eligible states and territories have federally-approved coastal zone management programs covering 99.9% of the nation’s shoreline...not too shabby, folks!* This level of spatial coverage is particularly important in light of UNEP’S Geo-2000 Millenium Report which notes that “by 2025, 75% of the U.S. population is expected to live within 50 miles of the coast.” According to NOAA’S 1998 “state of the coasts” report, indicates that “53% of Americans live in coastal regions that take up only 17% of the nation’s land.”

Here are a few more thought-provoking factoids that may help us take our bearings¹:

- Since 1974, approximately \$1.6 billion in federal funds have been appropriated for coastal management and this amount has been matched by state funds.
- Maritime commerce accounts for 95% of imports to and exports from the U.S.
- Commercial fisheries is a \$3.6 billion a year industry in the U.S.
- Tax revenues associated with shipping contribute about \$20 billion annually in federal, state and local taxes.
- The outer continental shelf accounts for 30 percent of domestic oil and 27 percent of domestic natural gas production.

¹ Most of these are drawn from the May 2003 Heinz Center Report although their original sources are numerous and varies.

- More than 90% of marshes have been destroyed along our coastlines with Louisiana alone seeing a net conversion of 4,000 square kilometers of wetlands to open water.
- Between 1972 and 1984 the amount of recreational lands along the coasts increased by 27% but still doesn't appear to keep up with demand.
- Approximately 50% of all new residential, industrial, office, retail and recreational buildings are constructed in coastal areas.

All in all, while we've come a fair distance in our journey, we still, clearly, have a long way to go.

Navigational tools for the future

So, what kind of navigational tools do we have for the next phase of our shared journey? My own review of the past thirty-one years – supplemented by a very unscientific survey of some of our colleagues and friends – suggests that we can identify some important guideposts for the future. I've tried to capture some of these beacons in the context of a set of *key words* that I believe have helped facilitate our past successes and should help guide the continued evolution of coastal zone management in the future.

The first is **balance** – the CZMA itself acknowledges the importance of balancing 'preservation, protection, development and restoration/enhancement' of coastal resources. The development of individual state programs and CZ conferences throughout the years have highlighted the importance of balancing the often-competing interests of the communities, businesses and resources that call the coastal zone home.

Helping to establish and sustain this kind of balance requires **accommodation and compromise**. The 2003 Heinz Center Report on performance indicators acknowledges that even the goals of the CZMA – and individual state programs – can conflict. We should renew our commitment to *practical problem-solving* and maintain that 'Spotlight on Solutions' that Orville Magoon, Bob Knecht and the rest of our early navigators identified as an underlying theme for the CZ conferences. We must continue to share our own insights and experiences and the perspectives of the many individuals and interests who are making this journey with us.

Achieving this kind of accommodation, of course, requires the evolution of a sustainable **partnership** with our fellow travelers. Moving an outrigger canoe forward requires the collaborative efforts of all the paddlers – each aware of her own responsibility and appreciative of the roles of others. The CZMA itself acknowledges that coastal management is a partnership between State and Federal governments. Over the past thirty-one years, I think we have come to recognize that there are a number of other partnerships that are vital to our future progress, including partnerships among:

- Society↔Environment↔Economy
- Government↔Private Sector↔Civil Society
- Local↔State↔National↔Global
- Science & Engineering↔Public Policy
- Western Science↔Traditional & Local Knowledge
- People↔Resources↔Place

We must come to more fully understand the nature of these partnerships and build on the strengths that they bring us – our combined effort produces a whole that is considerably greater than the sum of its parts.

Ensuring the full and effective *participation* of all interested parties is fundamental to the development and maintenance of these partnerships. Thankfully, the CZMA, the national program and the individual coastal management programs we see today embrace this precept. While I applaud the Heinz Center Report’s focus on “measurable outcomes”, I would respectfully suggest that we do, in fact, also need to find ways to monitor and assess the *processes* we put in place to support the necessary education, outreach and interactive dialogue among citizens, stakeholders and resource managers. These are, as the Heinz Center Report suggests, “tools” but they are also critical indicators of how successful we are in supporting the management of coastal resources and the development of coastal communities in the long term.

A related navigational tool is *integration*. As I’ve just described, integrating the individual perspectives of the various stakeholders in our evolving coastal partnership has long been recognized as an essential element in a successful coastal management program.

In discussing the development of a performance evaluation framework, the Heinz Center report notes that “the inter-relatedness among focus areas is as important as the individual activities that fall within a single focus area.” This is perhaps nowhere more clear than in the case of developing non-point pollution programs under §6217. This requires coastal managers to help facilitate effective watershed management which, in turn, requires the integrated consideration of social, economic, cultural and environmental factors related to land, water and resource use patterns and policies as well as the interactions and interdependencies among a variety of ecosystems and resources that range from head waters to coastal waters. Achieving this level of integration – at the local and state levels, with the federal government, among federal agencies and, in some cases, with the international community offers coastal managers one of their greatest challenges but, I believe, one of their greatest opportunities to demonstrate the value of

coastal management programs. As Orville Magoon said to me just a few weeks ago – “make big plans if you want to succeed!”

Sustaining our vital coastal partnerships over the long-term also requires ***flexibility*** and the ability to adapt to the dynamic nature of coastal ecosystems and the communities and businesses that depend on them. I suspect that the individual experiences of everyone in this room will confirm the assertion that one of the keys to the success of the CZMA is the ability of individual states and territories to develop programs that address their own needs and special circumstances – one size does not fit all. Place and context matter and a sustainable coastal management program must celebrate the diversity and find innovative ways to make the uniqueness of people, resources and place combine in creative, mutually-reinforcing ways.

Another aspect of the need for flexibility is reflected in one of the fundamental tenets of sustainable development – *adaptive management*. The coastal zone – like the Earth System of which it is a part – is a dynamic place characterized more by change than by stability. In his groundbreaking book, “*Compass and Gyroscope*”, Kai Lee encourages us to develop resource management systems that acknowledge the dynamic nature of living resources (like fisheries), the ecosystems that support them and the human communities that rely on them. No individual management decision should ever be ‘final’ but, rather, those decisions should be constantly re-evaluated and adjusted in light of new understanding and changing conditions. We must be prepared to learn from our failures as well as our successes and we must ensure that our coastal management programs include the monitoring and assessment activities necessary to measure progress, identify problems and recommend adjustments. Many of the papers and posters for this week will offer insights on coastal adaptive management experience around the world and I look forward to taking some new insights home.

Related to flexibility is another important navigational tool, the ability to be ***proactive***, to address today’s concerns while planning for the future. Some of my colleagues from Micronesia used the word “meninkairor” – taking the long view – as a fundamental tenet of successfully dealing with the challenges of climate variability and change for coastal resources. I share his sense that part of our job must include looking over the horizon, anticipating the changing conditions that may lie ahead and creating policies and management programs that are flexible enough to adjust to those changes. CZ conferences over the years have consistently included opportunities to look toward the horizon. CZ03 is no exception and I look forward to the sessions entitled “*Where Are We Going?*” and “*How Do We Get There?*”

One specific aspect of being proactive, involves *building the resilience* of coastal communities, ecosystems and economies. Building resilience in the face of natural hazards has been an important component of coastal management programs over the years. Admitting to my own personal bias, I believe that building resilience in the face of climate variability and change -- climate risk management -- is going to be a particularly important part of the coastal management challenge in the future. I can think of no better time than today to recommit ourselves to the objective of enhancing our resilience in the face of a variety of hazards. In so doing, we will increase the public’s awareness of the

role that coastal resources – and the management programs that sustain them – play in keeping coastal communities and economies strong and stable.

Finally, I'd like to touch on some of the personal tools that I think will help guide us – individually and collectively – on the next phase of our shared journey. When I was in college at the University of Delaware and in graduate school at the Virginia Institute of Marine Science (VIMS), I was inexorably drawn toward the emerging challenges facing coastal communities and, in particular, the opportunities to build more effective links between science and public policy. Part of what drew me to these issues was the **energy, commitment, enthusiasm and passion** of a number of leaders in the coastal and ocean communities. I won't bore you with a litany of these individuals – for they are well known to most of you – but I'd like to use one of the most important in my life – William J. Hargis, Jr. – to illustrate a point. For those of you who may not yet have had the pleasure of knowing him, Bill Hargis is a former Director of VIMS (for some of us, he is **the** Director), a former Chair of the Coastal States Organization, former Chairman of the National Advisory Committee on Oceans & Atmosphere (NACOA) and a central figure in Chesapeake Bay science and public policy. Bill's passionate commitment to the coastal resources of the Chesapeake Bay was unwavering, even in the face of great challenges. His integrity was unassailable and his energy remains, to this day, a marvel to me. He knew how to work hard and he also knew how to have a good time. He taught me to never think that a challenge was too big and to always relish the smallest of accomplishments because, taken together, they could produce great things. As I look out across the room today, I see the same passion, the same commitment, the same enthusiasm and the same energy in each and every one of you. Don't lose them for, as they have been in the past, these are the *real* sources of energy that have fueled our travels to the present and which will propel us into the future.

I'd like to conclude by leaving you with another Hawaiian term – OHANA. By way of an introduction, let me remind you that the last time we convened here in Baltimore disco was still alive (heaven forbid) and one of the popular songs of the decade was "We Are Family." That's what ohana means – family. Always remember that we are, indeed, a coastal ohana. We have our wise elders, our successful aunts and strong-willed uncles, our smart-alecky cousins and upstart keiki (kids). We have our traditions and some wonderful, shared memories of those good times. And, of course, we have our family reunions – the CZ conferences – and they continue to provide exciting opportunities to catch up, work hard and have fun!

Most of all, as with all families, we can always rely on one another and together we can and will accomplish great things.

'i ke aku, 'i ke mai, kokua aku kokua mai; pela i ho la ka nohona 'ohana.

Value and respect your family; help others, and be helped in return;
such is a family relationship.

Before I leave, I need to extend my thanks to some special people who helped make this afternoon possible. First, I'd like to thank all the organizers and sponsors of

CZ03 for inviting me and, more specifically, thanks to Margaret Davidson, Paul Scholz, Jan Kucklick and Sam Thomas of the Coastal Services Center for their role in putting me at this podium. Thanks to Cheryl Graham, project manager for the Heinz Center Performance Evaluation Framework study for getting me an early copy of the Report. A special mahalo nui loa to Orville Magoon, John Skoda, Rich Delaney, Chantal Lefebvre, Bill Thomas, Kelvin Char and, especially, my dear friend Delores Clark for helping me put this presentation together. I'd also like to thank my real brother, Sean Shea, for taking time to come up from Virginia and lend some special support from my own personal ohana.

Last, but by no means least, mahalo nui loa to all of you for indulging this particular aunty today. Here's to a great week and to the exciting new adventures as our coastal ohana continues its journey! Pono.