

## RETHINKING PROGRESS

Contrary to the often overworked and grossly dismissive stereotype, most of us in the environmental community do not endorse (or practice) subsistence living in a cave, surviving on organic buckwheat and bean-sprout sandwiches. Nor are we opposed to responsible use of natural resources in making a profit to support business operations and healthy, prosperous communities.

At the Center for a Sustainable Coast we envision a future where there will be little disagreement between those who value diverse and flourishing ecosystems and people who pursue prosperity and economic opportunity. The difference between this future and our present circumstance is, simply put, enlightened self-interest.

Such enlightenment comes not at the expense of economic advancement, but rather in support of it. For we cannot expect to prosper while we diminish the productivity of our land and water resources in pursuit of profit. This enlightened perspective comes, instead, at the expense of obsolete, ill-advised, and destructive methods of extracting financial value from nature.

The misuse of nature for profit is often at odds with our true interests and those of our neighbors, even to the point of threatening survival due to pollution of air, land, and water. To move toward a day when there is greater harmony between perceived self-interest and valid public interest will require innumerable small steps, and perhaps a few large ones. Working together, by taking these steps,

### IN THIS ISSUE

- 2 What We Do
- 3 Pew Ocean Commissions Report
- 4 Center Programs
- 5 Dear Friends
- 6 Coastal Georgia Faces Unique Environmental Challenges
- 7 Beach Renourishment
- 8 Index

### An Environmental Approach to Economic Self-Interest

*A message from the Executive Director*

we will succeed in redefining "progress" to better serve human needs.

Slowly, sometimes haltingly, over at least the past three decades a growing awareness has emerged. We see it reflected in the Clean Water Act and the Clean Air Act of the early 1970s. Many of the reading public were profoundly, irreversibly enlightened by Rachel Carson's seminal book, *Silent Spring*, published in the early 1960s. More recently, enthusiasts of the evening news learned of the treachery and tragedy in reckless human abuse of nature at Love Canal, Chernobyl, and with the Exxon Valdez. And as we witness the conversion

to wind and solar energy technology being made by shrewd investors and progressive governments worldwide, we are experiencing the leading edge of a transition that, with favorable pace and wise counsel, may yet generate a future of hope upon which humanity's success will ultimately thrive. But this promising future will not arise inevitably, according to some predetermined destiny.

Without a vision and disciplined commitment toward that future, surely we will flounder. As our world becomes more interdependent and further urbanized, we simply cannot continue rampant exploits under the guise of unfettered "free enterprise" and unrestricted "property rights," which increasingly impose unjustified risks on the health and shared future of our fellow humans.

*See Progress next page*

### Center to Prepare Georgia's First Comprehensive Coastal Assessment Grant from Savannah Presbytery Primes Pump for Project

This summer the Center will begin work on a comprehensive analysis of coastal Georgia's growth, development characteristics, and environment. The purpose of the project is to evaluate existing and foreseeable problems brought by the rising demands of this rapidly growing state. Once such problems are more thoroughly understood, the Center will recommend specific steps needed to resolve them, including actions by state and local government. Findings are also likely to include suggestions for needed research, funding, and business practices.

Start-up funding for the project has been provided by a grant from the Savannah Presbytery. "We are very grateful to the Savannah Presbytery for their generous recognition of the value of our project," said Center Board president, Dr. Jim Henry. Although more funding will be needed, this grant will help the Center get started.

The coast has been growing at a tremendous rate, but so has much of the rest of Georgia. Rapid change throughout the drainage areas of our five coastal rivers (the Altamaha, Ogeechee, Savannah, Satilla, and St. Marys) presents numerous problems to the coast, which receives water and contaminants from more than 60% of our state.

"We cannot isolate the environmental conditions and economic prospects of the coast from the

### You Can Help!

The Center has launched a fundraising campaign to help pay for the project by using local contributions to supplement the grant already received. Please consider making a special donation to the Center to be used especially for preparing the **State of the Coast Report**. Your contribution is fully tax deductible and will be applied to a very worthy cause. Contributions over \$500 will be acknowledged in the published report unless the donor would prefer to remain anonymous.

*See Report next page*

**Progress: from pg. 1**

To convert to a more rational agenda, our institutions must adopt accountable guidelines for tracking human use of nature, and for safely fulfilling society's needs within the sustainable capacity of natural systems. Needed reforms will require a new method of accounting that places proportionate value on clean air and water, and healthy, diverse ecosystems.

Such an innovative approach must distinguish between the social benefits of an investment that prevents injury, compared with one that is needed to compensate for avoidable harm already done. These distinctions are paramount when preventable damage (whether to persons or to nature, or both) is irreversible or otherwise impossible to fully compensate once it occurs.

We can no longer afford a balance sheet that equates damage control with crisis prevention when the estimated dollar value happens to be roughly equivalent. And we cannot openly tolerate long-term degradation of public resources and health for short-term profit, regardless of dubiously compromised trade-offs.

We must build a more successful, enduring accord between private gain and public good using both conservation-conscious technology and community design, as well as robust, resourceful reform in institutional

incentives and priorities (financial and tax laws, economic development criteria, etc.). I am not suggesting repression of private enterprise or profit motivation. Policy reforms must include creative ways for harnessing human ingenuity by determining the benefits and commensurate rewards through which profitable ventures may flourish while benefiting the public interest.

We ask that you think seriously about your preferences for the future of coastal Georgia. Though just a small fragment of this world's intertwined global enterprise, our region deserves a fresh approach that will help steer it out of harm's way and toward a balanced strategy serving our common interests.

And though we can never completely defend ourselves against all possible threats of a complex world, we can—and must—take wise measures to reduce the harm that Georgians unthinkingly impose on both our communities and our descendants.

True advancement will come only with a shift in our awareness, and with that shift, steps toward a sustainable future. Already we are making headway in that initiative on behalf of fellow Georgians. Please share responsibility for our future by supporting the Center's work.

**David Kyler**  
**July 24, 2003**

**Report: from pg. 1**

rest of Georgia," said David Kyler, Center executive director. "Nor can we expect to find reliable, effective solutions without examining conditions, trends, and problems throughout our five watersheds," he added.

To advise decision makers, the analysis will include assessment of trends in population, land use, business activity, infrastructure (water & sewer systems, roads, etc.), economic development, and regulatory activities at the state and local levels.

Further, the work will rely on a variety of reports from state and federal agencies, research institutions, and other sources of information that describe current conditions and/or trends in water quality and supply, air quality, fisheries, wildlife habitat, endangered and threatened species, and toxic sites.

The Center will comment on the effectiveness of existing programs and organizations that are intended to serve the public interest related to natural resources, community development, and quality of life.

The project will be completed by June 2005, and intermittent reports will be issued until then. After the initial analysis is completed, the Center intends to update the report every two years.

**What We Do**

Our work involves several major areas of activity. All of these are needed to ensure the most effective analysis and use of information to implement and improve environmental laws and other public policies supporting responsible stewardship.

**Educate** coastal communities, voters, landowners, and elected officials about the conditions and trends of coastal Georgia's environment—natural, cultural, and economic.

**Collaborate** with other groups in advising citizens and interest groups about threats and opportunities relevant to safeguarding coastal resources and our communities that depend on them.

**Advise** decision-makers and stakeholders about existing and potential economic value of nature-based business and jobs.

**Advocate** legislation and scientific research vital to improving the accountability and reliability of decisions significantly affecting the coastal environment.

**Take Legal Action,** as needed, to prevent or control unwise activities that threaten to impair the quality, capacity, or diversity of our region's resources.



## Pew Oceans Commission Report: **AMERICA'S LIVING OCEANS**

In June, the Center for a Sustainable Coast staff received notice about a report issued by the Pew Oceans Commission, *America's Living Oceans*. According to the *Atlantic Coast Watch*, newsletter of the Sustainable Development Institute in Washington, D.C., the Pew Ocean Commission has "issued a strongly worded plea for sweeping changes in how the U.S. manages its ocean and coastal resources. The report candidly describes marine conditions as a "crisis confronting our oceans" resulting from an unacceptable "failure of both perspective and governance."

After reviewing the report and key findings, the Center moved quickly to notify Governor Perdue about the significance of the report to Georgia.

Quoting from the letter sent to Governor Perdue by the Center's executive director, David Kyler,

"Because of the vast area and natural productivity of our tidal marshes and estuaries, Georgia's coast is very important to the nation's marine resources. Our state holds roughly one-third of the remaining tidal marshes on the eastern seaboard. Therefore, the health of the South Atlantic fishery and a host of other ocean resources depend directly on Georgia's responsible management of the many activities affecting them, throughout much of the state. If these public assets are allowed to further decline, the consequences could be ominous and irreversible, imposing untold costs on our coastal communities and businesses."

The Pew Commission calls for prudent, common-sense steps to restore and protect ocean and coastal ecosystems that support a diverse web of life. The report makes sound and achievable policy recommendations for better stewardship, specifically addressing such issues as coordinated ecosystem management, watershed protection, coastal development, fishing, pollution control, and aquaculture.

Kyler's letter to Governor Perdue further comments on the significance of the Pew report to Georgia:

"Georgians face both unique challenges and uncommon opportunities related to the Pew Commission findings. For example, although Georgia's five coastal watersheds are vulnerable to pollution and escalating urban and rural land disturbance occurring in more than 60% of the state, our coastal economy derives over \$1 billion a year from nature-based businesses. With adoption of prudent public policy, our citizens can further prosper from responsible diversification in nature-based ventures. Conversely, unselective, poorly planned economic

development could unnecessarily hinder Georgia's options for more rational and sustainable use of our resources to meet the needs of a growing state.

"But we cannot resolve these problems and realize these benefits without unprecedented wisdom in making development and regulatory decisions that reflect the long-term public interest. For a variety of reasons, too often such perspective has been lacking in critically important decisions affecting Georgia's resources. Although other coastal states have fared worse, Georgia is at a turning point in its development where timely, pre-emptive action can avert serious risk to natural resources if proper steps are taken. Instead of waiting for a crisis to erupt, we strongly advise that you take actions recommended in the Pew report."

As *Atlantic Coast Watch* article points out, although the Commission terminated its work June 30, various members have expressed their determination to stay together as a voice for responsible management and to work to implement the group's recommendations.

Here in Georgia, the Center will continue to work with the Georgia Water Coalition, the Coastal Resources Division of the Department of Natural Resources and

various city and county governments to help ensure that steps are taken consistent with the Pew report findings. Among these actions are adoption of comprehensive state water management legislation and improved control over land use decisions.

**The Pew Report is available at:  
[www.pewoceans.org](http://www.pewoceans.org)**



**Georgia  
is at a turning point  
in its development where  
timely, pre-emptive action  
can avert serious risk to  
natural resources if proper  
steps are taken.**

**LETTER TO GOVERNOR PERDUE FROM  
CENTER EXECUTIVE DIRECTOR**

### The Center's Board of Directors

**Jack Amason**  
Owner & Manager,  
Sea Garden Seafood

**Charlie Belin**  
Environmental Educator and  
Marine Biologist

**Venetia Butler**  
Environmental Educator,  
Oatland Island Education Center

**Holly Christensen**  
Continuing Education Director  
Coastal Georgia Community College

**Jim Henry**  
Coastal Geologist  
Director (retired)  
Applied Coastal Research Lab,  
Georgia Southern University

**Chris Schuberth**  
Professor of Geology/  
Science Education  
Armstrong Atlantic State University

## Air Quality & Atmospheric Deposition

Cumulatively enormous amounts of nitrous oxide and sulfur oxide, the most common compounds producing acid rain, as well as mercury, a known carcinogen and threat to the human central nervous system, are released by coal-burning power plants. Those most likely to be affecting coastal Georgia are in Alabama, South Carolina, Tennessee and upstate Georgia—at least two dozen plants are in question. The Center collaborates with other organizations in raising public awareness about the importance of these issues and actions that can be taken to address them.

## Water Resources

Water quality and flow of water in coastal rivers is essential to the coastal environment. The region's quality of life and economy depends fundamentally on the interrelated systems of rivers, estuaries, freshwater wetlands, tidal marshes, and groundwater. With continuing growth throughout the region's five watersheds, there are numerous threats to coastal fisheries, water supply, and ecosystems. The Center is working with its members, other non-profit groups, and public officials to help improve understanding of issues, analysis of conditions, and regulatory protection of water resources.

# CENTER PROGRAMS

*Our last issue offered a list of recent Center activities entitled WHAT HAS THE CENTER DONE FOR YOU LATELY? So much of what the Center does involves participation in processes that can only be addressed through programmatic efforts over time, we're providing this list of programs from our web site (www.sustainablecoast.org). Each of the program headings is a link on the site that will take you to a more detailed breakout of our initiatives and achievements.*

## Environmental Education & Values

To achieve significant progress toward ways of living that are more compatible with our natural environment, we must raise awareness about the consequences of our actions - as consumers, workers, and residents. If future generations of coastal Georgians are to enjoy the region's rich diversity of fish, wildlife, and natural landscapes, we must align economic and political motives with those of public interest to realize a sustainable coast. This can only be accomplished through education, and through this education, reconsideration of our basic values. In our newsletter, Works in Progress, editorials, commentary, and public presentations, the Center strives to inform and educate our members, elected officials, landowners, and many others whose actions affect this region's future.

## Coastal Management

**Resource conservation & assessment, sustainable fisheries, and responsible development)** The Georgia Coastal Management Program holds great promise for improving the availability and use of vital information needed to make wise decisions about the use and conservation of coastal resources. Bolstered by the support of federal funding and a comprehensive guiding document, with sufficient public involvement this program could become more effective. We are working in collaboration with other groups to help accomplish this goal through the Coastal Advisory Council and related activities.

## Land-Use/ Development/ Smart Growth

Conflicts over land use and development are inevitable as the coastal population continues to grow. Disturbance of natural landscapes, wildlife habitats, and historic communities can permanently alter the visual and environmental quality that makes this region so appealing. Not all development is equally desirable or destructive. Decisions about how, when, and where to develop can greatly influence the degree to which coastal growth complements or contradicts the public's interest. The Center provides guidance in advising decisionmakers about the benefits and costs of alternative development choices.

## PLEASE, JOIN THE CENTER OR RENEW YOUR SUPPORT TODAY.

I would like to join the Center (please choose type).

- Family (\$40)       Sponsor (\$250+)  
 Individual (\$30)       Patron (\$500+)  
 Student (\$10)       Investor (\$1000+)  
 Business (\$100+)  
 In memory of \_\_\_\_\_  
 for \$ \_\_\_\_\_  
 For a specific issue or activity \$ \_\_\_\_\_  
 (please describe) \_\_\_\_\_

**Commemorative and issue specific contributions may be made in any amount.**

- Please enroll me in the Center's Coastal Action Advisory Network  
 Although I do not want to join the Center, I would like to make a contribution of \$ \_\_\_\_\_  
 Although I do not want to join the Center, please put me on your mailing list (use form).

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

E-Mail \_\_\_\_\_

Please Complete, Print & Mail This Form with your **tax-deductible check**, made payable to:

**The Center for a Sustainable Coast**  
221 Mallory Street Suite B  
St. Simons Island, GA 31522

This form also available at our website **www.sustainablecoast.org**

If you prefer to receive our newsletter electronically, please contact us at: **susdev@gate.net**

July 24, 2003

Dear Friends of the Center:

As the Center marks the end of its sixth year of operation, we take this opportunity to renew perspective on where we've been and where we are headed. And on this occasion we are enthusiastic in expressing our sincere gratitude to the many Center members who have supported our work over the years.

When the Center began in 1997, we faced an ominous, unprecedented threat from a private speculator seeking approval to withdraw millions of gallons of water from three of our coastal rivers, to be sold at a profit to the highest bidder. Thanks to local government officials in the three counties affected (Glynn, Bryan, and Chatham), as well as the hard work of the Center and other groups on the coast in raising public awareness about this proposal, EPD never granted the permits required. Yet, EPD did release a "letter of concurrence" to the private-venture applicant that could have led to these ill-advised permits being issued. This was done because the adverse effects of the withdrawals could not be conclusively proven, and they seemed "intuitively negligible" to the director of EPD. We continue facing the prospect of imprudent permits being approved when reliable facts are lacking.

In the intervening years, we have addressed many other related issues: notable are proposals for surface mining, power plants, port expansion, and major land development projects, including those requiring filling and/or bridging of wetlands. The principles we apply in our work on all these issues are simple in concept but daunting in application, especially given the prevailing political climate:

1. Accurate information must be consistently applied to minimize risks to our natural resources, and practical environmental research must be actively supported.
2. The interests of existing, responsible resource users (including nature-based businesses such as commercial and recreational fishing, eco-tourism, and seafood processing) must be protected.
3. When information about the effect of a proposed activity is inconclusive but suggests the potential for impairment, rather than putting the public interest in jeopardy, the permit should not be issued.
4. Natural, cultural, and economic resources are highly inter-dependent forms of wealth that must be carefully invested to sustain their value for both current and future generations.
5. Coastal Georgia cannot thrive economically without safeguarding public health and natural resources throughout the state, since we share our air, water, and living resources with other regions.

We stand now at a crossroads, where Georgia's rampant population growth poses serious challenges to both our institutions and our environment. Water demands that were the initial focus of the Center's actions have become a paramount public issue—not only in Georgia but throughout the nation as well. By collaborating with the Georgia Water Coalition, we are working to protect the public interest by preventing privatization of water resources through advocating state legislation, as well as promoting more accountable and reliable regulatory enforcement. In commenting on development proposals, we will continue to advance public understanding about the significance of land and water use and, when possible, suggest ways to use responsible conservation practices to support the needs of our growing region. And finally, we will begin a major assessment of coastal Georgia's environment (see article page 1 on the Coastal Georgia Assessment), which will serve as the basis for evaluating current conditions and identifying priorities for resolving major problems.

If we are to meet these challenges without first suffering the damage that has been incurred in other areas, our actions must be well timed and effectively coordinated. ***For the Center to continue in its mission on behalf of coastal Georgia, we need your help.*** The issues we tackle are formidable and complex, and they will not be resolved quickly. Moreover, the revenues available must be proportionate to the tasks ahead. Please do your part to empower us to move forward on this important work by renewing your support.

We urge you to take a moment now to send your tax-deductible donation in the envelope provided.

With regards and best wishes,

Jim Henry  
Board President



## Our Mission

The Center for a Sustainable Coast was formed in 1997 by a group of public-spirited environmental professionals and concerned citizens. The purpose of the organization is to improve the responsible use, protection, and conservation of this region's resources—natural, historic, and economic. The Center for a Sustainable Coast works to protect, preserve, and sustain coastal Georgia's vital natural, cultural, and economic resources.

## Coastal Georgia Faces Unique Environmental Challenges

By Mary Landers • 912.652.0337 - 0335 • landers@savannahnow.com

*This article appeared in The Savannah Morning News (June 25, 2003). For further information on these and other critical coastal Georgia issues, please visit [www.sustainablecoast.org](http://www.sustainablecoast.org).*

Coastal Georgia faces many of the same concerns about air, water and land that the U.S. Environmental Protection Agency outlined for the country as a whole in its "Report on the Environment," released Monday.

But the coast also has its own environmental challenges: areas of dying marsh, declining blue crab population, increasing development and over pumping of its drinking water supply.

Chief among them is preserving the 350,000 acres of salt marsh that transition the land and freshwater to the sea. That's a third of all the salt marsh on the country's East Coast, according to Jan Mackinnon, a biologist with the Georgia Department of Natural Resources.

Last year, pockets of unexplained die-back started popping up in all six coastal counties. Drought may have been a factor. Mackinnon is headed out this week to check on reports of die-back near Midway regenerating.

"After last week's rain, we had reports of green showing up along the Jerico (River), but we've not confirmed that yet," McKinnon said.

The 1998-2002 dry spell is also a major suspect in Georgia's ailing blue crab fishery. The blue crab catch decreased from a long-term average of 8 million pounds a year to a little more than 2 million pounds last year. Drought may have disrupted the crabs' reproduction by driving females too far upstream in their search for less salty conditions. Increased salinity also favors the growth of a lethal crab parasite called Hematodinium, according to Doug Haymans, the blue crab liaison for the Georgia DNR.

The National Marine Fisheries Service recently declared Georgia's blue crab fishery a "commercial fisheries failure." That lets the state seek federal money to aid fishermen and fund additional studies of the blue crab.

### POLLUTANTS ALONG GEORGIA'S COAST

*(Note: This was also included in the same article)*

#### MERCURY

- Fallout affects Georgia's coastal waters;
- A neurotoxin, it can cause developmental and neurological problems;
- Much of it is from coal-fired power plants [30 - 35%];
- The EPA advises against eating king mackerel bigger than a meter long anywhere on the Georgia coast. And it advises restricting consumption of smaller mackerel. Similar advisories exist for the Savannah River through Chatham and Effingham counties for channel catfish and largemouth bass.
- EPA lists fish advisories at <http://map1.epa.gov/>.

#### SMOG

- The American Lung Association gave Savannah a smog grade of "C" this year, noting that there were four days from 1999-2001 when the air was unhealthy for sensitive groups including asthmatics.

While drought is cyclical, increased development along the coast seems likely to stay. That has increased pressure on marsh hammocks—the small islands of high ground in the marsh.

Prompted by a controversial plan to build bridges to connect hammocks to Savannah's Emerald Pointe subdivision, a group convened by the DNR made preliminary recommendations on managing the hammocks. Among other things, the group suggested restrictions on bridge building based on the size of the hammock, its proximity to the mainland and how much marsh would be affected.

But marsh hammocks are just part of the growth picture, said Patty McIntosh, a member of the DNR-organized group and director of coastal programs for the Georgia Conservancy. Increasing population pressures the whole coast — marsh and upland included. "We've gotten smarter with ways to grow that are not harmful," McIntosh said. "We just have to commit to taking actions toward that end."

Growth has also forced coastal Georgia to examine threats to the Floridan Aquifer — the underground source of most of its drinking water. The state has a moratorium through 2005 on new withdrawals from the upper Floridan Aquifer in the 24-county coastal area.

The aquifer faces influxes of salt water at Hilton Head and Brunswick. Saltwater intrusion threatens the water supply in Savannah but probably not for 100 years, said Jim Reichard, associate professor of geology at Georgia Southern University.

"As long as we keep pumping large quantities on the coast, it's going to continue to be an issue," Reichard said. The millions of gallons a day pumped for paper mills are the main source of the problem, Reichard added. "When Rayonier in Jesup (temporarily) shut down, ground water levels in Savannah rebounded overnight," Reichard said.

Proposed deepening of the Savannah Harbor also has raised some concerns about the future of the aquifer, with critics fearing the deeper dredging might crack or weaken the rocky barrier that keeps sea water out.

No one knows how likely that is, but groups such as the Southern Environmental Law Center oppose dredging to a depth of 48 feet mainly for other reasons: the serious impacts they predict it'll have on the ecology of the lower Savannah River, especially the tidal freshwater marshes of the Savannah National Wildlife Refuge.

"We've already lost half the freshwater marsh to salinity," said Blan Holman, staff attorney for the SELC. "We're concerned that deepening this would let a lot more salt water in." Deepening may also degrade habitat for fish such as striped bass and short-nosed sturgeon.

But the proposed project has generated unprecedented scientific study of the river—\$13 million-worth so far, said Hope Moorer, spokeswoman for the Georgia Ports Authority, which wants the deepening so it can serve larger container ships. "For two years we studied what fish are out there, where they are and what the conditions are out there in the river," Moorer said. "Some pretty incredible work is going on."

The draft of the environmental impact statement for the second round of studies is expected to be issued in 2005.

Reprinted by permission of *The Savannah Morning News*

# BEACH NOURISHMENT: THE MAGIC BULLET FOR GEORGIA'S SHORE?

Mandy Schmitt  
The Nicholas School of the Environment  
Duke University

On behalf of the Center for a Sustainable Coast, Andrew C. Haines and I (picture at right) presented a poster entitled **BEACH NOURISHMENT: THE MAGIC BULLET FOR GEORGIA'S SHORE?** at the 2003 Georgia Water Resources Conference in Athens, Georgia in late April 2003. The purpose of our poster was to get Georgians thinking that beach nourishment is a management strategy laden with problems for taxpayers, beach goers, and the critters! Georgia needs to weigh the pro's AND con's of beach nourishment before adopting it as the new way to "save the beach."

In the past few decades, shoreline development has exploded, so much so that now two-thirds of the world's population resides within the coastal zone (Komar 1998). As a result of this increased development, concern about coastal erosion has mounted. Worries about the loss of recreational beaches, coastal homes, and other coastal amenities, have led to increased action towards controlling the erosion "problem." Actions are typically implemented that attempt to control erosion rather than addressing the actual problem (i.e. what to do about development along an eroding beach).

Beaches are naturally dynamic systems, often receding or building out on a regular basis due to sea level rise, storms, sediment transport, and other factors. In order to halt this natural movement of beaches, coastal engineers have adopted many different techniques designed to minimize the impacts of shoreline change on coastal structures. In response to local pressures to stabilize the shoreline, Georgia's Department of Natural Resources (DNR) has indicated a preference for beach nourishment as an alternative to engineered structures.

This preference comes in the face of heavy debate among the scientific, environmental, political, and engineering communities about nourishment. Georgians must first understand both the pros and cons of beach nourishment, and then must critically



analyze the both sides before deciding on its implementation. If nourishment is selected as the primary erosion management alternative, then much thought and care must be taken to ensure that beach nourishment projects are both economically efficient and environmentally sound.

## Negative Economic Impacts

- Expensive: Average Project Costs \$5 million/km
- Hefty Upkeep & Maintenance Costs
- Nourishment needs to be repeated every 2-5 yrs
- Harm to Recreation & Tourism
- Destruction of Surf fishery
- Increased taxes
- Increased dredging of shipping channels
- Procurement Cost of desirable sand increases of time

## Negative Ecological Impacts

- Kills invertebrates such as coquina clams (*Donax* spp.) and mole crabs (*Emerita talpoida*) that inhabit the wet beach and serve as the prey base.
- Fish- destroys their food source and leads to fatal gill damage
- Shorebirds- habitat destruction and destruction of food source
- Loggerhead sea turtle- may create a beach that is not suitable for nesting and/or hatchling incubation (Rumbold 2001)

## Important to think about...

- Sea Level is rising.
- Barrier islands are constantly migrating (unless human development makes them stationary.)
- Beaches only "disappear" when human development won't let the island naturally move.
- Beach Nourishment: The introduction of new sand, placed on the beach by hydraulic or mechanical means, which had the immediate effect of increasing the dry beach width. (Valverde 1999).
- The average beach nourishment project is estimated to cost upwards of \$5 million per kilometer (Komar 1998).
- A beach nourishment project won't last more than 3-5 years before it needs to be redone (Duke PSDS 2002).
- Beach nourishment can have serious negative effects

## WE'RE LOOKING FOR A FEW GOOD BOARD MEMBERS!

If you or people you know are interested in coastal development issues, want more effective environmental safeguards, and would like to play an active role in helping our dynamic coastal group move ahead on these issues, please contact us!

Either call (912) 638-3612 or email us at [susdev@gate.net](mailto:susdev@gate.net) for further information.



221 MALLORY STREET

SUITE B

ST. SIMONS ISLAND, GA 31522

(912) 638-3612

[www.sustainablecoast.org](http://www.sustainablecoast.org)

[susdev@gate.net](mailto:susdev@gate.net)

RETURN

SERVICE

REQUESTED



Printed on  
Recycled Paper

Non-Profit Org.  
U.S. Postage  
PAID  
Brunswick, GA  
Permit No. 928

## ATTENTION!

**Your support  
is important!**

**Unless you are a current Center member, this may be your last issue of Works in Progress.** Beginning with our next issue, we will limit distribution of our newsletter to current members, volunteers, selected public officials, and collaborating organizations.

**If you are in doubt about your membership status, please check your mailing label above.** If it indicates that you are a non-member, an expired member, or says nothing about your membership, according to our records, you are not a current Center member.

**Please call the Center if you have any questions about your membership** or you believe our records are incorrect. If you are not a current member, please complete the enclosed membership form and return it with your **tax-deductible membership contribution** using the enclosed envelope.

## COASTAL GEORGIA INDEX : FACTS ESTIMATES PROJECTIONS

*Natural resources are our most irreplaceable form of public wealth. Use them wisely for the lasting benefit of this and future generations.*

- Average amount of Georgia's annual state budget spent on environmental protection and management as percentage of annual natural resource value to Georgia citizens: 0.1% (One thousandth, maximum) *Source: Center for a Sustainable Coast*
- Average amount budgeted for maintaining and replacing equipment as percentage of productive capacity of that equipment in typical business: 5% (One twentieth, minimum) *Source: Center for a Sustainable Coast*
- Rate of land being used for new development as ratio of population growth: 2+ to 1. (We are using land at two times the rate of population growth.) *Source: Pew Oceans Commission*
- Vehicle miles traveled as ratio of population growth over past 20 years: 4:1 (On average, we are each driving four times as much as we were two decades ago.) *Source: Pew Oceans Commission*
- Number of invasive species introduced into U.S. coastal waters from 1970 to 2000: 150 *Source: Pew Oceans Commission*
- Number of U.S. children expected to be born this year with nervous system disorders caused by mercury contamination: 300,000. *Source: Environmental Protection Agency*