

Active commercial and recreational fisheries, working waterfronts, seafood processing plants, public access to coastal waters, aquaculture and varied tourism industries are mainstays of North Carolina's coastal culture and economy. All depend directly on the availability and quality of water resources.

#### Protecting water quality also can be profitable:

- You may save money by preventing pollution and erosion up front compared to costly clean-ups and restorations.
- You may draw residents, visitors and businesses by creating attractive communities with “green” development designs.
- You may increase revenue from fisheries and water activities in your area and downstream.
- You may avoid fees imposed by the state for water quality violations.
- You may reduce infrastructure maintenance costs by incorporating low-impact development strategies.

#### Communities in Action

##### Watershed Planning: Lockwood Folly River Watershed

In response to deteriorating water quality in the Lockwood Folly River and continued growth in the watershed, Brunswick County officials collaborated with federal and state agencies to establish the Lockwood Folly Watershed Roundtable. The group considered the financial feasibility of various strategies and provided the county with a range of watershed-based options for maintaining and restoring water quality in the river.

Options include changing land development policies, developing education programs, preserving strategic sites and developing financial incentive programs.

[www.brunswickcountync.gov/Departments/Administration/LockwoodFollyRiverRoundtableReports/tabid/558/Default.aspx](http://www.brunswickcountync.gov/Departments/Administration/LockwoodFollyRiverRoundtableReports/tabid/558/Default.aspx)

##### Low-Impact Development (LID): New Hanover & Brunswick Counties

With assistance from the N.C. Coastal Federation these communities formed technical review committees to prepare model resolutions and a draft LID manual. By removing the usual regulatory hurdles, the resolutions and manual may encourage developers to choose LID techniques instead of conventional stormwater approaches.

In Brunswick and New Hanover counties, landscape archi-



*The Lockwood Folly Watershed Roundtable developed strategies to restore water quality in the Lockwood Folly River. (Photo: Pam Smith)*

tect Heather Burkert worked with housing developers to design neighborhoods that capture, treat and use runoff in the landscape through LID techniques:

- Swales: landscape features that act as open drainage systems to manage rainfall runoff.
- Rain gardens and native plants: filter polluted runoff before it enters bodies of water.
- Habitat corridors: areas where native wildlife can roam.
- Cisterns: receptacles for collecting runoff from rooftops.

Brunswick County's model resolution and LID guidance manual are available at:

[www.brunswickcountync.gov/Departments/Engineering/StormWater/tabid/173/Default.aspx](http://www.brunswickcountync.gov/Departments/Engineering/StormWater/tabid/173/Default.aspx).

An estimated \$1.5 million was saved and four lots were added to the Ridge Field housing development in New Hanover County after stormwater management was redesigned with LID strategies.



Jobs, culture, recreation and tourism can all be linked to water quality in coastal communities. (Photo: Nate Bachelor)

### Critical Land Protection: Chesapeake Bay, Maryland

Preserving some natural buffers between developments and sensitive water bodies allows pollutants to be filtered, limiting their direct entry into waterways. Studies have shown that protecting water quality also may enhance the desirability of nearby property.

In 1986, the Maryland Critical Areas Commission limited residential development on land abutting the Chesapeake Bay. In 1992 and 2001 studies, researchers found that as far away as three miles from critical areas where development was limited, homes increased in price.

- Homes with water frontage increased 46 to 62 percent (Parsons 1992).
- Homes without water frontage but still in critical areas increased 14 to 17 percent (Polis 2001).
- Homes three miles from critical areas increased 4 to 11 percent (Polis 2001).

### Water Quality Resources - Getting Started

#### N.C. Department of Environment & Natural Resources

##### Division of Water Quality (DWQ)

- For data, citizen resources, financial assistance, permits, laws and technical assistance:  
[www.stormwater.org](http://www.stormwater.org)
- For materials on coastal stormwater regulations:  
<http://h2o.enr.state.nc.us/su/coastal.htm>

#### North Carolina State University

##### Watershed Education for Communities and Officials (WECO)

- *Local watershed planning: Getting citizens involved*  
[www.ces.ncsu.edu/depts/agecon/WECO/publication.html](http://www.ces.ncsu.edu/depts/agecon/WECO/publication.html)
- *Nonpoint source pollution prevention and control through land use planning and management*  
[www.ces.ncsu.edu/depts/agecon/WECO/publication.html](http://www.ces.ncsu.edu/depts/agecon/WECO/publication.html)

#### North Carolina Sea Grant

- *Soundfront Series*  
[www.ncseagrant.org/home/resource-library](http://www.ncseagrant.org/home/resource-library)

For more water quality resources, read North Carolina Sea Grant's **Water Quality Fact Sheet 4: Actions & Resources**.

#### Information for this document was drawn from:

- H. Burkert & Co. (2008). *Ridge Field Re-design* [Presentation]. New Hanover County, NC: Heather Burkert.
- North Carolina Coastal Federation. (2008). *Low impact development for the North Carolina Coast* [Brochure]. Newport, NC.
- Parsons, G.E. (1992). "The effect of coastal land use restrictions on housing prices: A repeat sale analysis." *Journal of Environmental Economics and Management*. 22: 25-37.
- Polis Project on Ecological Governance, Faculty of Law & School of Environmental Studies. (2001). University of Victoria, Canada and Smart Growth British Columbia. *Economic benefits of green space protection*. (May).
- Pendleton, L. (2008). *The economic and market value of coasts and estuaries: What's at stake?* (executive summary). Retrieved Feb. 20, 2009, from <http://www.estuaries.org/?id=208>
- Smith, P., & Putnam, G. (2009). Stepping up the pace for coastal water quality. *Coastwatch*, (Winter), 12-17. Raleigh, NC: North Carolina Sea Grant.



Your link to  
**research and resources**  
for a healthier coast

#### North Carolina Sea Grant

NC State University  
1575 Varsity Drive, Flex Building Module 1  
Campus Box 8605, Raleigh, NC 27695  
Phone: 919/515-2454

UNC-SG-09-04A

Spring 2009

This document was developed with funding from the N.C. Fisheries Resource Grant Program and the N.C. Blue Crab and Shellfish Research Program. Printing was funded by the NOAA Coastal Nonpoint Source Pollution Control Program under Grant NA06NOS4190149.