

COASTAL CONNECTIONS



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A BIMONTHLY PUBLICATION FOCUSED ON TOOLS FOR COASTAL RESOURCE MANAGERS

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C O A S T A L M A N A G E M E N T P R O F I L E



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Most fulfilling aspect of your job:

For the past ten years, the reserve has been engaged in a successful land acquisition program in partnership with The Nature Conservancy and others. Thanks to the support of Senator Judd Gregg, the funding has been available to protect over 4,000 critical acres around Great Bay.

Most challenging aspect of your job:

The State of New Hampshire has very limited state funds. While the tax burden is low on our citizens, it is often hard to come up with additional funds for worthwhile projects, such as managing all the land we have acquired.

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THIS ISSUE'S FOCUS

GETTING THE MOST OUT OF YOUR LAND COVER MAPPING DOLLARS

Land cover maps capture how land is being used. With a land cover map, officials can document how much of the region is covered by forests, golf courses, wetlands, infrastructure, development, farms, and so on. The maps are created using remotely sensed data, which include both satellite and aircraft-based imagery.

No other technology provides a better big-picture view of a region. Instead of viewing changes to the landscape parcel by parcel, officials can get the entire view at once—finding the information they need to assess and understand how their community or watershed is changing.

Many coastal programs do not have access to the maps they need or the software tools and expertise to use the information fully. Some programs have issues with the scale of the maps and the cost of the imagery. The goal of the National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center is to help coastal programs work through these issues so that state and local officials have the right tools for the job.

Land Cover Project in Maine

The State of Maine needed a way to map Maine's land cover. Officials wanted to use the data to estimate watershed imperviousness to rank areas needing assistance, determine water quality criteria to calculate health risks, and predict wildlife habitat for setting harvest levels and long-term management.

"All of these things are currently going on, but we were using 14-year-old data—so the need for updated data is clear," says Michael Smith, senior database analyst for the Maine Department of Environmental Protection (DEP).

"The project was to map Maine's land cover and imperviousness at the 5-meter level [instead of 30 meters with lower resolution] to determine how to plan for future growth in the region. We also wanted refined spatial accuracy and to make a few tweaks to the classification system," adds Smith. The standardized classification system is used by NOAA, the U.S. Geological Survey (USGS), and others.

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One work-related accomplishment you're proud of:

We have just completed work on the Hugh Gregg Coastal Conservation Center, which will help meet the growing demand for workshops and programs.

One personal accomplishment you're proud of:

I almost drowned as a child, so I am most proud of becoming a certified lifeguard earlier in my career.

Things you do in your spare time:

My favorite activities include photography and kayaking.

Family: I have an older son who is a chef in Hampton Beach, New Hampshire, and a daughter who is a senior at Saint Anselm College in Manchester. Both are great kids!!

Favorite movie: My favorite movie is *The Last of the Mohicans*.

In your CD player right now: I wish that I could say Mozart, but actually it is the greatest hits of Guns 'n Roses. This band rocks!

"I spent the first part of my career working with New Hampshire communities to develop master plans to help guide growth and development with an emphasis on protecting farmland. The reserve position suddenly thrust me into the middle of coastal zone management issues, and I have enjoyed combining this experience with my background in land protection.

"The next step, in my mind, is to look at the whole Great Bay watershed (almost a third of it is located in Maine) as a critical eco-region. New England is rethinking what it means to be sustainable, and I hope to help push this agenda forward.

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The State of Maine realized how expensive land cover data can be and sought a partnership with NOAA, USGS, and Space Imaging (now Sanborn).

"We didn't initially prepare for a collaborative project, but we knew we needed better land cover data and were trying to line that up. It was Andrew Brenner, general manager of Sanborn's Ann Arbor office, who suggested the collaborative approach. Then USGS and NOAA changed the schedule of which mapping zones got done when—moving Maine up by two years," says Smith.

"Rather than creating a whole new system, we were able to expand on a national standard and just tweak it a bit to meet our needs. Thus, we saved about \$300,000 [50 percent of the project budget] and got a product which dovetails nicely with the federal data," adds Smith.

Through the collaboration, DEP was able to obtain all the information it needed at a fraction of the price. Now that they have it, what will they use it for?

"The real nice thing about this is that we get to deliver the state and federal products, providing the end user with a wide array of choices for land cover, imperviousness, canopy, change, and satellite imagery that we otherwise could not have delivered for only \$320,000," concludes Smith.

Center Land Cover Mapping Services

The NOAA Coastal Services Center works closely with state and local coastal programs throughout the coastal zone, helping these programs address specific coastal issues using remote sensing. The Center also offers the following services.

Data and Maps

The Center has worked with various remote sensing providers to create a database of land cover data for most of the nation's coastal zone, and this effort is nearly complete. The goal is to update these areas every five years. The processed data are available free of charge from the Center's Web site. Visit www.csc.noaa.gov/landcover/.

Training

The Center offers a two-day Remote Sensing for Spatial Analysts course that teaches remote sensing basics. After completing the hands-on course, participants should be able to understand how remote sensing can be used in coastal resource management, be aware of the benefits and limitations, and use the data in a geographic information system (GIS) environment. The course also provides information about the value of partnerships and collaboration.

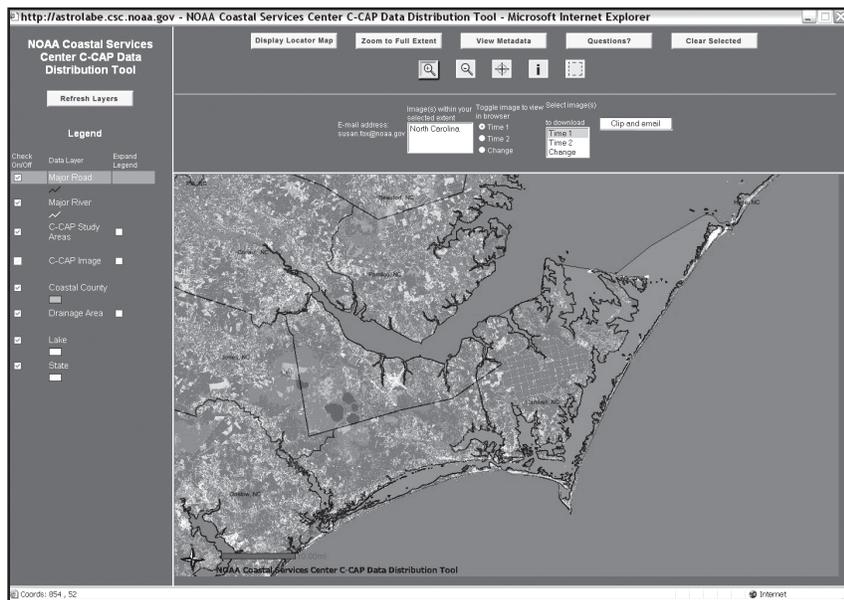
The course can be brought to your region. See www.csc.noaa.gov/training/ for details.

Tool Development

The Center creates software tools to help coastal programs use remote sensing to address coastal management issues. These tools are free of charge and available from the Internet at www.csc.noaa.gov/crs/data.html.

The tools include

- **Impervious Surface Analysis Tool (ISAT)** – Used to calculate the percentage of impervious surface area of geographic areas.
- **Nonpoint Source Pollution and Erosion Comparison Tool (N-SPECT)** – Helps officials predict water quality impacts from nonpoint source pollution and erosion.
- **Integrated Coastal Management (ICM) Tool** – Helps officials design and implement habitat restoration projects.



The NOAA Coastal Services Center C-CAP Data Distribution Tool (shown above) allows customers to download images of geographic areas, adding layers such as rivers, major roads, and county boundaries. They can transmit the layered image to their e-mail address.

Common Data Standards and Protocols

The Center's land cover work is housed under the Coastal Change Analysis Program (C-CAP), which has been in existence within NOAA since 1995. C-CAP standards and protocol are used in every product, ensuring data quality and compatibility even when they are from different years or providers. Other organizations use these standards as well. The land cover data are integrated into the National Land Cover Database development effort.

Data Provider Liaison

The Center acts as a conduit of information, helping remote sensing providers understand the concerns and needs of the coastal resource management community and informing coastal programs of available data that might help them do their jobs better.

For more information about the remote sensing and land cover programs at the NOAA Coastal Services Center, visit www.csc.noaa.gov/crs/.

Examples of How Coastal Officials Use Land Cover Maps

- Assess urban growth and other land use changes
- Develop trend analyses
- Develop policies to protect areas of importance
- Provide data for permitting and modeling programs
- Correlate changes in land cover with changes in environmental health
- Assist in regional planning
- Predict floods and storm surges
- Respond to oil and hazardous spills
- Provide information for real estate and insurance decision making

NOW AVAILABLE

Data for the Northern Gulf Coast Region and the Northeast

See all the data at www.csc.noaa.gov/landcover/

COASTAL GEOTOOLS '07

**MARCH 5 TO 8, 2007
MYRTLE BEACH,
SOUTH CAROLINA**

Coastal GeoTools is the conference series that focuses on the technical information needs of the nation's coastal programs. The goal of the conference is to help the constituents of the NOAA Coastal Services Center address coastal resource management issues through the effective use of geospatial data and tools. Remote sensing is always an important part of the agenda. This year's conference will once again take place in Myrtle Beach, South Carolina—the sun fun capital of the East Coast! For updates on GeoTools '07, add your name to the conference's electronic mailing list: www.csc.noaa.gov/geotools/mailling_list.htm.

Coastal Connections is a publication of the National Oceanic and Atmospheric Administration Coastal Services Center, produced for the coastal resource management community. Each issue of this free bimonthly newsletter focuses on a tool, information resource, or methodology of interest to the nation's coastal resource managers.

Please send us your questions and suggestions for future editions. To subscribe or contribute to the newsletter, contact our editors at

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NEWS AND NOTES

NOAA Designates 14th National Marine Sanctuary

The National Oceanic and Atmospheric Administration (NOAA) recently celebrated the single-largest act of ocean conservation in history. The five-year process of designating the Northwestern Hawaiian Islands as NOAA's 14th national marine sanctuary has been completed, and the designation created the largest marine conservation area in the world. The designation means that, for the first time, NOAA will play a leading role in managing a national monument.

Mission-Aransas National Estuarine Research Reserve Designated

Recently, NOAA designated its 27th reserve—the Mission-Aransas National Estuarine Research Reserve in Texas. The Mission-Aransas Reserve is the third largest in the system and comprises 185,708 acres of contiguous wetland, terrestrial, and marine environments.

California and the World Ocean 2006 Conference

The California and the World Ocean 2006 conference will be held September 17 to 20 in Long Beach, California. The conference will focus on a renewed call for ocean and coastal protection. For more information, visit <http://resources.ca.gov/ocean/cwo06/> or contact cwo2006@completeconference.com.

Vermont Sea Grant Recognized

Lake Champlain Sea Grant and its partners received a 2006 Outstanding Planning Award from the American Planning Association for its *Shoreline Stabilization Handbook for Lake Champlain and Other Inland Lakes*. For more information, visit www.uvm.edu/~seagrant/.

Transitions

Ron Hodson has retired as director of North Carolina Sea Grant, and Mike Voiland has taken his place... Bruce Carlisle has been named deputy director of the Massachusetts Coastal Zone Management Program... Dave Mackey has left the Ohio Department of Natural Resources' Office of Coastal Management, and John Watkins has been named acting program manager... Dave Easter has left the Alaska Coastal Management Program and will be working at the NOAA Coastal Services Center as an ocean observation specialist... Jennifer Brewer is the new manager for the Kachemak Bay National Estuarine Research Reserve in Alaska.

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