NOAA'S OFFICE OF OCEAN & COASTAL RESOURCE MANAGEMENT

CZMA CLIMATE CHANGE AND COASTAL HAZARDS E-NEWS UPDATE #27

The Coastal Programs Division of NOAA's Office of Ocean and Coastal Resource Management distributes the CZMA Climate Change and Coastal Hazards E-News Update to keep state and territory coastal program managers and climate change/coastal hazards staff informed about climate change (as it pertains to coastal hazards) and coastal hazards activities. If you would like to receive the Climate Change and Coastal Hazards E-News Update, please e-mail christa.rabenold@noaa.gov. For previous issues, see the E-News Update archive at http://coastalmanagement.noaa.gov/news/climatenewsletter.html.

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NOAA UPDATES

NOAA Issues 2012 Hurricane Season Outlooks

http://www.cpc.ncep.noaa.gov/products/OUTLOOKS_index.shtml
http://www.prh.noaa.gov/hnl/pages/examples/CPHC_Hurricane_Outlook_PR.pdf
http://hurricane.atmos.colostate.edu/Forecasts/

NOAA's Climate Prediction Center has issued its 2012 outlook for hurricane activity in the Atlantic and Eastern Pacific. For the Atlantic, forecasters are anticipating a near-normal hurricane season. There is a 70 percent chance of 9 to 15 named storms, of which 4 to 8 could become hurricanes, including 1 to 3 major hurricanes (Category 3, 4, or 5). Similarly, the researchers at Colorado State University's Tropical Meteorology Project released their June forecast, estimating that the season will bring 13 named storms, 5 hurricanes, and 2 major hurricanes. For the Eastern Pacific, projected climate conditions suggest a near-normal season. NOAA forecasters estimate a 70 percent chance of 12 to 18 named storms, which includes 5 to 9 hurricanes, of which 2 to 5 could become major hurricanes. NOAA's Central Pacific Hurricane Center has projected a below-normal season for the Central Pacific, where 2 to 4 tropical cyclones are expected.

NOAA Launches New Storm Surge and Coastal Inundation Website

http://www.stormsurge.noaa.gov/

NOAA's new Storm Surge and Coastal Inundation website is designed to help prepare coastal communities and residents for storm surge threats to people and property. It consolidates storm surge information and related services from across NOAA offices. The site features an overview of storm surge and information about storm surge impact, preparedness, forecasts and warnings, models and observations, research and development, NOAA's expertise, event history, and products and resources.

New CSC Publication Introduces Use of Simulated Images to Communicate Coastal Issues

http://www.csc.noaa.gov/digitalcoast/publications/visualizations

"Using Photorealistic Visualizations" (20 pp.) from the NOAA Coastal Services Center (CSC) introduces visualizations, or simulated images, with a focus on the photorealistic visualization. It was written for coastal officials who want to get their constituents interested and involved in community planning initiatives, particularly when it comes to local hazard resilience efforts. It covers visualization techniques, basic principles, appropriate use, and ways to incorporate visualizations into meetings or workshops.

CSC Expands Critical Facilities Flood Exposure Tool

http://www.csc.noaa.gov/digitalcoast/tools/criticalfacilities

The NOAA Coastal Services Center's (CSC) Critical Facilities Flood Exposure Tool, originally developed for Mississippi and Alabama, is now available for coastal areas nationwide. The tool provides an initial assessment of a community's critical facilities and roads in the one-percent annual-chance flood zone established by FEMA. It is designed to help coastal managers quickly learn which facilities may be at risk—providing information that can be used to increase flood risk awareness or to inform a more detailed analysis.

New CO-OPS Product Provides Extreme Water-Level Information

http://tidesandcurrents.noaa.gov/est/

NOAA's Center for Operational Oceanographic Products and Services (CO-OPS) has released a web-based exceedance probability statistics product for determining extreme water levels for most water-level stations on the East, Gulf, Pacific, and Alaskan Coasts with at least 30 years of data. Exceedance probability is the likelihood that water levels will exceed a given elevation based on historic values. When used in conjunction

with real-time station data, exceedance probability statistics can be used to evaluate current conditions and determine when a rare event has occurred. This information may also be instrumental in planning for the possibility of dangerously high or low water events on a local level.

NOS Launches Viewer for NOAA's Historical Shoreline Surveys
http://specialprojects.nos.noaa.gov/tools/shorelinesurvey.html

NOAA's National Ocean Service (NOS) has launched the NOAA Historical Shoreline Survey Viewer to provide access to historical shoreline surveys conducted by NOAA and its predecessor organizations. About 7,800 surveys—the earliest dating back to 1841—are available for viewing in Google Earth. In addition to overlaying a scanned image of the survey in Google Earth, the viewer provides links to download the original scan and metadata, the resulting extracted vector shoreline, and a descriptive report compiled by the survey team.

CSC Updates Primer on Mapping Coastal Inundation
http://www.csc.noaa.gov/digitalcoast/_/pdf/guidebook.pdf

The NOAA Coastal Services Center (CSC) has updated its "Mapping Coastal Inundation Primer" (28 pp.). Changes include adding VDatum to the process and providing more discussion about vertical/tidal datums and building digital elevation models. It also provides more information about the following approaches to mapping the water surface: modeled water surfaces, interpolated water surfaces (using high water marks), and single-value water surfaces (i.e., fill the bathtub).

NOAA Releases Unstructured Grid Catalog for Gulf of Mexico
http://www.ngdc.noaa.gov/mgg/dem/ugc/

NOAA's Coastal Storms Program is leading the initiative to develop a database of unstructured grids, starting with grids developed in the Gulf of Mexico. The "Gulf of Mexico Unstructured Grid Catalog" is a searchable geospatial database of unstructured grids that have been developed by federal agencies to support hydrodynamic modeling. Users can find grids by area, model, type, or organization; download grids and associated files; and contribute grids and associated information for others to use.

Podcast Examines Use of Oceanographic Information for Non-Navigational Purposes
http://oceanservice.noaa.gov/podcast/p0512.html

"Diving Deeper" from NOAA's National Ocean Service (NOS) is a monthly audio podcast featuring in-depth talks with NOS scientists on a variety of ocean topics. The May 24th episode, "COASTAL Tools You Can Use," highlights some of the ways that oceanographic information from NOAA's Center for Operational Oceanographic Products and Services' Coastal Oceanographic Applications and Services of Tides and Lakes program is being used for non-navigational applications such as protecting life and property, emergency response, and coastal development (≈14 minutes).

Webpage Highlights Contributions of NOS Offices in Hurricane Planning and Response
http://oceanservice.noaa.gov/hazards/hurricanes/

NOAA's National Ocean Service (NOS) plays a number of key roles in preparing for and responding to hurricanes. The "Responding to Hurricanes" web page provides brief descriptions of the work NOS offices do before, during, and after a storm. Rapid response activities include conducting water-level monitoring, navigational surveys, aerial photography surveys, and hazardous spill response and providing ocean and coastal data. Long-term response activities include conducting contamination assessments, supporting long-term recovery planning, and providing maps and data analysis.

OTHER FEDERAL UPDATES

FEMA Issues Notice of Intent to Prepare EIS for NFIP
http://www.regulations.gov/#!documentDetail;D=FEMA-2012-0012-0001

FEMA is undertaking an environmental impact statement (EIS) of the National Flood Insurance Program (NFIP) to consider new information relating to the environmental impacts of the NFIP, to update the 1976 EIS on the NFIP, and to consider potential changes to the program's implementation. Comments are due by July 16, 2012.

USGS Report Supports Preparedness for Hurricane-Induced Erosion along Gulf Coast
http://coastal.er.usgs.gov/hurricanes/erosionhazards/gom/

According to the "National Assessment of Hurricane-Induced Coastal Erosion Hazards: Gulf of Mexico" (51 pp.) from the USGS, 70 percent of the Gulf of Mexico shoreline is vulnerable to extreme erosion during even the weakest hurricanes. USGS scientists used state-of-the-art modeling to determine the probabilities of erosion, overwash, and inundation during direct hurricane landfall for sandy beaches along the entire U.S. Gulf Coast shoreline. The research is expected to help emergency managers prepare for hurricanes and better protect lives and property. The report is accompanied by an interactive map that allows users to focus on different parts of the Gulf Coast to view how the probability of erosion will vary depending on hurricane intensity. A similar report detailing erosion hazards along the East Coast is planned for later this year.

USGS Finds Sea Levels Rising Faster on East Coast of United States than Elsewhere
http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate1597.html

According to a new USGS report published in *Nature Climate Change*, "Hotspot of Accelerated Sea-Level Rise on the Atlantic Coast of North America" (5 pp.), rates of sea level rise are increasing three-to-four times faster along portions of the U.S. Atlantic Coast than globally. Since about 1990, sea level rise along the coast between Cape Hatteras, North Carolina, and just north of Boston, Massachusetts, has increased 2–3.7 mm/year; the global increase over the same period was 0.6–1.0 mm/year. The report shows that the sea level rise hotspot is consistent with the slowing of Atlantic Ocean circulation, which may be tied to changes in water temperature, salinity, and density in the subpolar north Atlantic.

USGS Assesses Historical Shoreline Change in Hawaiian Islands
http://pubs.usgs.gov/of/2011/1051/
http://pubs.usgs.gov/of/2011/1009/index.html

"National Assessment of Shoreline Change: Historical Shoreline Change in the Hawaiian Islands" (67 pp.) from the USGS reports on shoreline change on three of the eight main Hawaiian islands (Kauai, Oahu, and Maui) and is one in a series of reports on shoreline change in coastal regions of the United States that currently include California, the Gulf of Mexico region, the Southeast Atlantic Coast, and the Northeast Atlantic Coast. The report summarizes the methods of analysis, documents and interprets the results, explains historical trends and rates of change, and describes the response of various communities to coastal erosion. A GIS compilation of vector shorelines and associated shoreline change data accompanies the report.

NTHMP Resource Compiles Tsunami Education Resources
http://nthmp.tsunami.gov/documents/CompendiumTsunamiEd.pdf

The National Tsunami Hazard Mitigation Program (NTHMP) has produced a compendium (4 pp.) of references to materials that have been developed as part of the National Tsunami Education and Outreach Plan of the NTHMP for use in schools to educate students about tsunamis and related natural hazards.

USGCRP Releases Decadal Strategic Plan
http://globalchange.gov/what-we-do/strategic-planning

The U.S. Global Change Research Program (USGCRP) has released its "National Global Change Research Plan 2012-2021: A Strategic Plan for the U.S. Global Change Research Program" (152 pp.). The plan will serve as the guiding document for the program for the next decade. It is built around four strategic goals: advance science, inform decisions, conduct sustained assessments, and communicate and educate. In addition to these four goals, it emphasizes the importance of national and international partnerships that leverage federal investments and provide for the widest use of program results.

ADDITIONAL UPDATES

Connecticut Law Aims to Balance Coastal Interests
http://www.cga.ct.gov/2012/ACT/PA/2012PA-00101-R00SB-00376-PA.htm

In early June, the governor of Connecticut signed into law "An Act Concerning Coastal Management and Shoreline Flood and Erosion Control Structures." The new law creates a framework to address concerns about rising sea levels, increased coastal flooding, and severe erosion in a manner that protects property owners' rights. It specifies that municipal planning efforts should minimize public spending on armoring to protect new development and allows for structural solutions only as a last resort to protect infrastructure, water-dependent uses, inhabited structures (constructed as of January 1, 1995), and cemetery or burial grounds where there is no feasible, less environmentally damaging alternative and where all reasonable mitigation measures and techniques have been provided to minimize adverse environmental impacts.

New Portal Helps Decision Makers Visualize Coastal Hazards in Georgia
http://gchp.skio.usg.edu/

The Georgia Coastal Hazards Portal is an interactive map designed to help decision makers better understand the potential impacts of hazards on coastal communities in Georgia. It displays information about sea level rise, shoreline change, storm surge, FEMA flood zones, historic hurricane tracks, armored shorelines, land use and cover, and more. The portal was created through a partnership between the Skidaway Institute of Oceanography and the Savannah Area GIS (SAGIS) program with funding provided by the Georgia Coastal Management Program.

2012 Coastal Master Plan Aims to Protect and Restore Coastal Louisiana
http://www.coastalmasterplan.louisiana.gov/2012-master-plan/final-master-plan/

In late May, the Louisiana legislature approved "Louisiana's Comprehensive Master Plan for a Sustainable Coast" (190 pp.). The overall goals of the plan are protection—use a combination of restoration, nonstructural, and targeted structural measures to provide increased flood protection for all communities—and restoration—use an integrated and synergistic approach to ensure a sustainable and resilient coastal landscape. The $50 billion, 50-year plan includes assumptions about increases in sea level rise, subsidence, and other factors and identifies 109 projects that are expected to deliver measurable benefits to Louisiana coastal communities and ecosystems over the coming decades.

Survey Finds California Coastal Professionals Support Climate Change Adaptation
http://www.usc.edu/org/seagrant/research/survey.html

According to the results of a survey by a collaborative of 15 coastal organizations in California and reported in "Rising to the Challenge: Results of the 2011 Coastal California Adaptation Needs Assessment" (76 pp.), a majority of California coastal planners and resource managers acknowledge the need to prepare for climate change impacts along the coast. The survey captured information about attitudes toward climate change,

knowledge about climate change and adaptation, adaptation activity underway in coastal California, barriers to adaptation, and information, training, and decision-support needs. Findings show that roughly 40 percent of coastal professionals are still trying to understand their risk, and another 41 percent are beginning to brainstorm what might be done. However, only 11 percent have begun to implement adaptation options.

Report Emphasizes Importance of Nature in Preparing for Climate Change
http://www.defenders.org/publications/harnessing-nature.pdf

According to "Harnessing Nature: The Ecosystem Approach to Climate Change Preparedness" (20 pp.) from Defenders of Wildlife, preserving and rebuilding natural defenses is one of the most cost-effective, practical, and sustainable ways to protect American communities and natural resources from natural disasters. The report includes a summary of the benefits of restoring and protecting green infrastructure, case studies, and recommendations to help decision makers incorporate ecosystem-based measures into their climate change adaptation plans.

Storm Surge Report Examines Residential Exposure along Gulf and Atlantic Coasts
http://www.corelogic.com/about-us/researchtrends/2012-storm-surge-report.aspx
http://www.corelogic.com/about-us/researchtrends/2012-storm-surge-cbsa-fact-tables.aspx

The "2012 CoreLogic Storm Surge Report: Residential Storm Surge Exposure Estimate for U.S. Coastal Areas" (36 pp.) details exposure of single-family homes to storm-surge damage within several predefined geographic areas in the United States. It provides a property-level analysis of residential property risk along the Atlantic and Gulf Coasts broken down by region and by individual state in addition to a snapshot of risk within previously reported major metro areas. This year's report indicates that just over four million homes along these coasts are at risk of hurricane-driven storm-surge damage, with more than $700 billion in total property exposure. A list of all core-based statistical areas (CBSAs) at risk for storm-surge damage, as well as the top ten zip code areas at risk associated with each CBSA, is also available. Maps detailing storm surge risk are available for all CBSAs upon request.

NRC Reports on Sea Level Rise Projections for West Coast
http://www.nap.edu/catalog.php?record_id=13389

The National Research Council (NRC) has released the results of a sea level rise study sponsored by the states of California, Washington, and Oregon; NOAA; USGS; and the U.S. Army Corps of Engineers. *Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (250 pp.) projects sea level rise along the West Coast for 2030, 2050, and 2100, taking into account the many factors that affect sea level rise on a local scale. The projections show a sharp distinction at Cape Mendocino in northern California. South of that point, sea level rise is expected to be very close to global projections; north of that point, sea level rise is projected to be less than global projections because seismic strain is pushing the land upward. However, a large earthquake in this area could cause the land to drop and sea level to suddenly rise by an additional meter or more.

Report Examines Setbacks and Vegetated Buffers for Coastal Protection Purposes
http://sterlinglab.ca/setbacks-and-vegetated-buffers-in-nova-scotia

"Setbacks and Vegetated Buffers in Nova Scotia: A Review and Analysis of Current Practices and Management Options" (122 pp.) presents the results of a research project, which was supported by the government of Nova Scotia (Department of Fisheries and Aquaculture and Nova Scotia Environment) and Environment Canada, to investigate potential management options for setbacks and vegetated buffers that can protect ecosystem processes, people, and property. The report includes policy and literature reviews and the key steps and challenges in determining appropriate vegetated buffer and/or setback design.

CONFERENCES, TRAININGS, EVENTS

Digital Coast Webinar: The Social Coast – Social Science, Simply Explained and Applied
http://www.csc.noaa.gov/digitalcoast/webinar
July 11, 2012

Digital Coast Webinar: New Elevation Inventory for the Nation
http://www.csc.noaa.gov/digitalcoast/webinar
August 1, 2012

Share Your Thoughts
If you have news that you would like to include in future updates or suggestions about the type of information you would like to see here, please e-mail christa.rabenold@noaa.gov.

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