



Sheltering Communities from Coastal Storms

NOAA Coastal Storms Program





Coastal Storm Impacts

- **50% population and 56% economy in coastal areas**
- **Coastal Inundation is the single largest repeat loss category for insurance pools**
- **Katrina will cost in excess of \$200B**





Mission

Harness and leverage NOAA and community resources to reduce the adverse effects of coastal storms.





Background

- **Created in 2001 by a cross NOAA team**
- **NOAA wide effort**
- **Local leadership working with NOAA resources**
- **Addresses specific local needs**
- **Pilot projects**



Coastal Storms Program

4 Pilot Regions

1) St. Johns River, FL (Jacksonville)

Why?

- Hurricanes
- Flooding/winds



2) Pacific Northwest (Columbia River)

Why?

- Pacific Storms
- Fish Habitat Impacts



3) Southern California (Bight Region)

Why?

- Pacific Storms
- Flooding and Runoff



4) Gulf of Mexico (TBD)

Why?

- Hurricanes
- Coastal Inundation





Primary Goals

- **Prevent loss of life and property**
- **Lessen economic impacts on communities and business**
- **Sustain the natural environment**





Pilot Organization



- **Identify region**
- **Local outreach lead**
- **Kick-off meeting to identify needs**
- **Assign need to NOAA team for development**
- **Create local partnerships**
- **Develop/deploy/conduct project**
- **Wrap-up meeting/training**



Florida Pilot



- **First CSP Pilot**
- **St. Johns River Watershed**
- **Began 2001, ended 2005**
- **Wrap-up meeting held January, 2005**



Florida Pilot Project Products

- **Improved Prediction of Coastal Winds, Waves, and Flooding**
- **Improved Oceanographic and Meteorological Observations**
- **Outreach and Extension**
- **Data Access and Standards**
- ***Risk and Vulnerability Assessment Tool***
- ***Ecological Assessment of Storm Impacts***
- ***Shallow Water Bathymetry***
- ***St. Johns River Circulation Model***
- ***Inland Flood Evacuation Planning and Response Tool***



Florida Pilot Projects Risk and Vulnerability Assessment Tool

Enhancing hazard response, recovery, and mitigation planning through:

- **Interactive mapping applications**
- **Access to risk and vulnerability data**
- **Real-time hazard forecast data**
- **Used during Hurricanes to notify people living in high risk areas**





Florida Pilot Projects

Ecological Assessment

- Identified ~170 pesticides
- Identified 3 significant hazards
- Conducted toxicological tests on marine life of the 3 toxins
- Identifies geographic locations of greatest risk and provides recommendations for mitigation



Shallow Water Bathymetry St. Johns River

Ensuring Navigational Safety

- Acquired over 600 million soundings of St. Johns River
- Significantly improved upon 1970s survey of St. Johns River (45 navigation obstructions identified)
- Supplied data for updating navigation charts and modeling





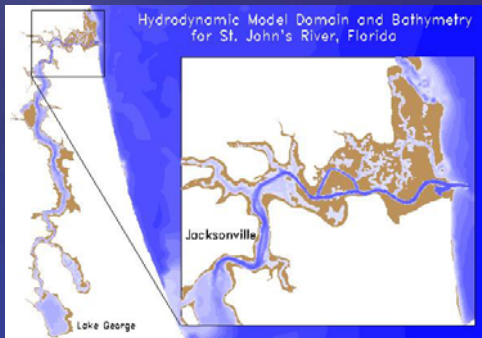
Florida Pilot Projects

St. Johns River

Circulation Model

Promoting public and navigation safety by

- **Providing real-time, river physical (water levels and currents) conditions and 36-hour forecasts**
- **Supporting navigation safety and hazardous spill tracking**
- **Generating time-series graphics of water levels, with maps of currents, temperature, salinity, and winds**





Florida Pilot Projects Inland Flood

Planning and Response Tool

Assisting flood response through:

- **Real-time flood conditions and forecasts**
- **Graphical displays**
- **Automated real-time data acquisition**





Pacific Northwest Pilot



- **Began in 2003**
- **Kick-off meeting to determine products**
- **Location: coastal border between Washington and Oregon**
- **Pat Corcoran Sea Grant Lead**

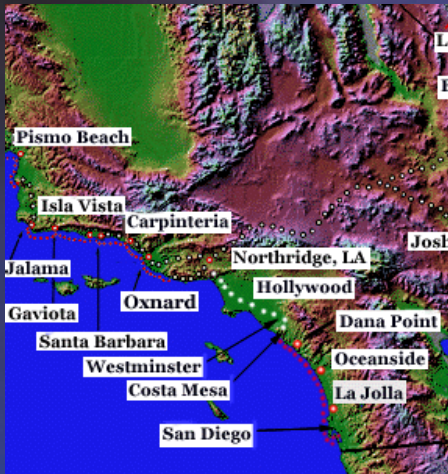


Pacific Northwest Pilot Project Products

- **Columbia River Circulation Model**
- **Improved Oceanographic and Meteorological Observations**
- **Ecological Assessment of Storm Impacts**
- **Improved Prediction of Coastal Waves**
- **On-Line Coastal Inundation Tool**
- **Outreach and Extension**



Southern California



- **Kickoff meeting in February, 2005**
- **Location: Southern California Bight**
- **Products for development under consideration**
- **Dolores Wesson is the local lead**



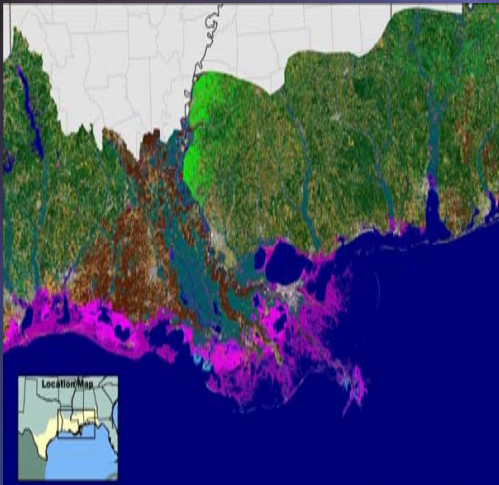
Southern California Pilot Project Products



- **Improved Oceanographic and Meteorological Observations**
- **Precipitation Atlas**
- **VDatum and Topo/Bathy**
- **Ecological Assessment**
- **Decision Support Tools Portal**
- **Outreach and Extension**



Gulf of Mexico



- **Next Region, specific location to be determined**
- **Initial planning in 2007**
- **Focus on Coastal Inundation**
- **Strong partnerships**



Expected Benefits

- **More accurate forecasts of high-impact coastal weather**
- **Decision-support tools to assist coastal managers**
- **Improved hazard mitigation plans**
- **Ultimately, lives saved and fewer economic and property losses**



No Adverse Impacts

- **Coastal No Adverse Impacts Handbook**
- **Contract between Coastal Services Center and ASFPM**
- **Handbook for planning without harming surroundings**
- **Workshop at ASFPM meeting in February?**



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The NOAA Coastal Storms Program

www.csc.noaa.gov/csp

