Accessing Martin County Coastal Geodatabase Data with ArcGIS Online

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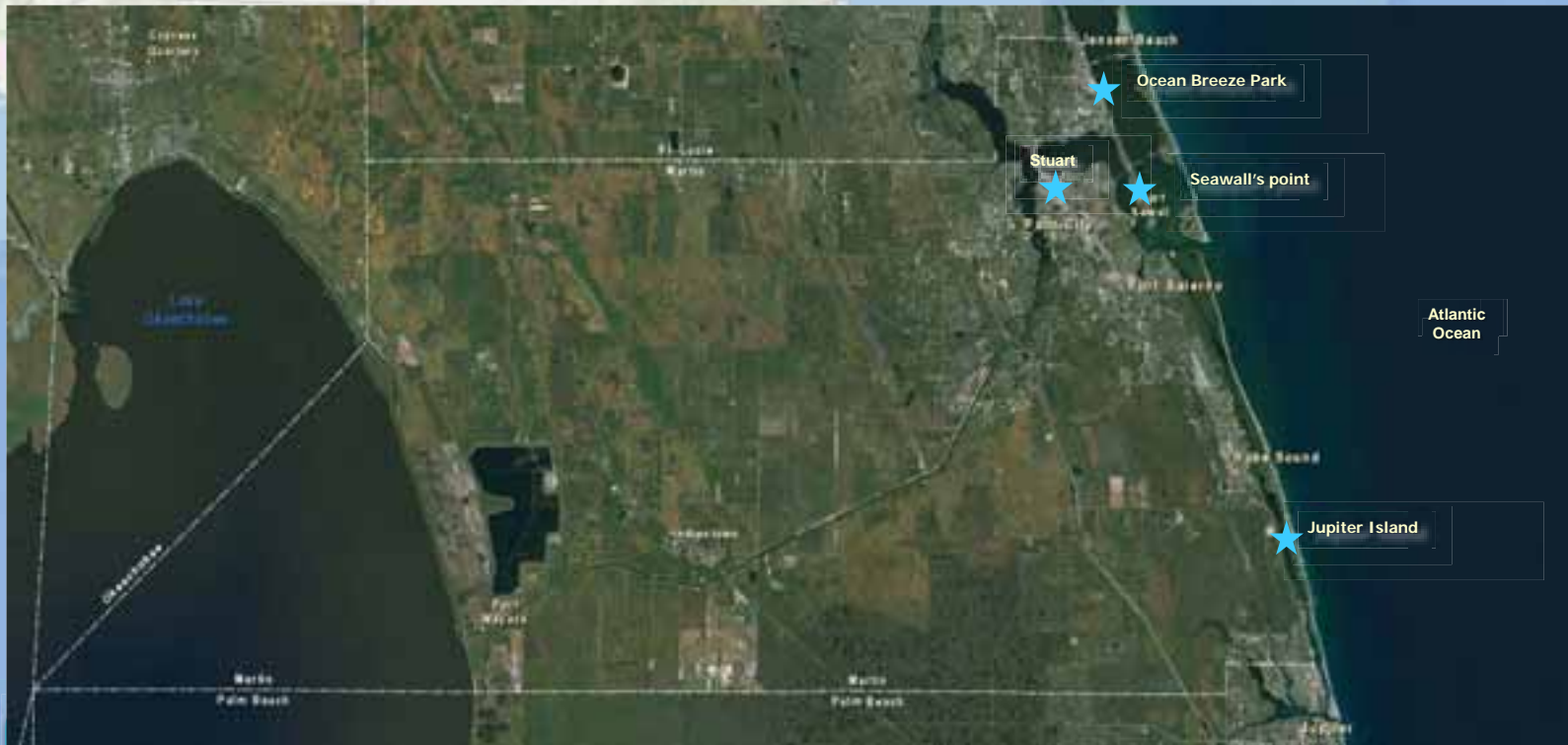Martin County Engineering Department
Stuart, Florida

Outline

- Martin County FACTS

- Overview of the Martin County Coastal Programs

- History of the Martin County Coastal Geodatabase Project

- Project Goals and Current Status

- ArcGIS Online ?

- ArcGIS Online Demonstration Projects

- Future Goals and Challenges

Martin County FACTS

Land Area: 556 square miles	Commission District: 5
2010 Population: 146,318	Atlantic Coastline Length: 22 miles
Municipalities : 4	Active Coastal Programs: 6

Artificial Reefs

Two permitted reef sites in federal waters
One Permitted reef site in federal and state waters
Three permitted reef sites in state waters

Coastal Monitoring and Park Management

Annual coastal monitoring of the entire 22 miles of coastline

Maintenance of several local waterfront parks and often co-sponsor of activities in the Federal and State Parks

Beach Restoration and Management

Two long-term beach renourishment projects

Smaller projects when needed

Beach placements from inlet and waterway dredging projects

Inlet Maintenance

Sand bypass from a sediment trap located on the north end of the inlet to the south beaches

Jetty maintenance projects

Waterways Management

Intracoastal waterway
Okeechobee Waterway
Smaller dredging projects such as Manatee pocket
City of Stuart Mooring fields

Habitat Management and Restoration

Oyster Reefs and
Wetlands Restoration Projects

2003

Martin County Coastal Geodatabase

Project Goals

- Data consolidation and easy access to the data

- Track and manage permit and grant requirements and compliance

- Support the planning and management of the County's coastal programs

- Community outreach to the public

- Information sharing with the Federal and State agencies, as well as to the scientific and engineering communities

# Martin County Coastal Geodatabase Project History

- Needs assessment meetings
- Data inventory by program area
- Design and implementation of geodatabase structure and schema
- Availability of funding and resources determined which data was uploaded to the geodatabase
- Coastal data consolidation

Data Consolidation

- Historical data

  - Artificial Reefs program

  - Beach Restoration

  - Coastal monitoring program

  - Waterways management program

- Several smaller dredge projects within the County waterways

- Data stored in the coastal geodatabase spans almost 15 years

Coastal Geodatabase Access

SDE
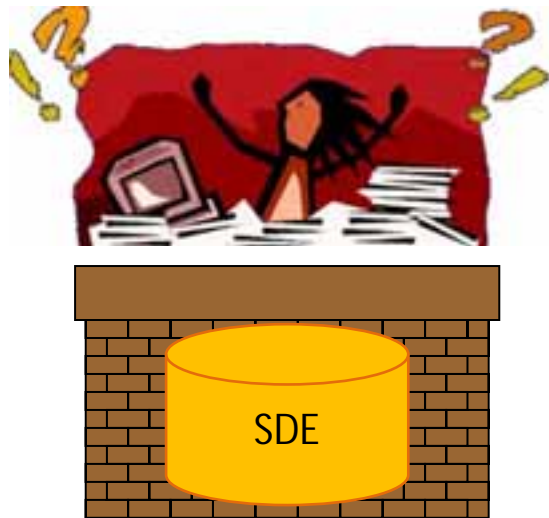
GIS Desktop
Web Services
No Access

ArcGIS Online

ArcGIS Online Advantages

- Easy and simple to use without requiring in-depth GIS skills

- Accessible from most internet able devices

- Reduced needs for basemap data storage within the organization (*information available through web services*)

- Easy to share information (internal, external clients, public)

- Easy to create dynamic maps that "tell a story"

- Coastal geodatabase (SDE) based web services can be updated regularly to include the most recent information

ArcGIS Online Challenges

- Still limited on the tasks it can perform

- Editing, and multi-user data editing

- Data formats accepted

- Limited capabilities to display more than 1000 features (*not a huge limitation for most of the coastal projects*)

- Simplifying for web display is not acceptable for the most part in the types of project the County provides data

Project Status
Q2 2012

Current Work

- Inlet maintenance program (data consolidation and upload)

- Preparation of small demonstration ArcGIS Online projects to evaluate its potential towards achieving the County project goals

- Demonstration sessions with County staff for feedback on usability

Demonstration Projects

Public Outreach Example
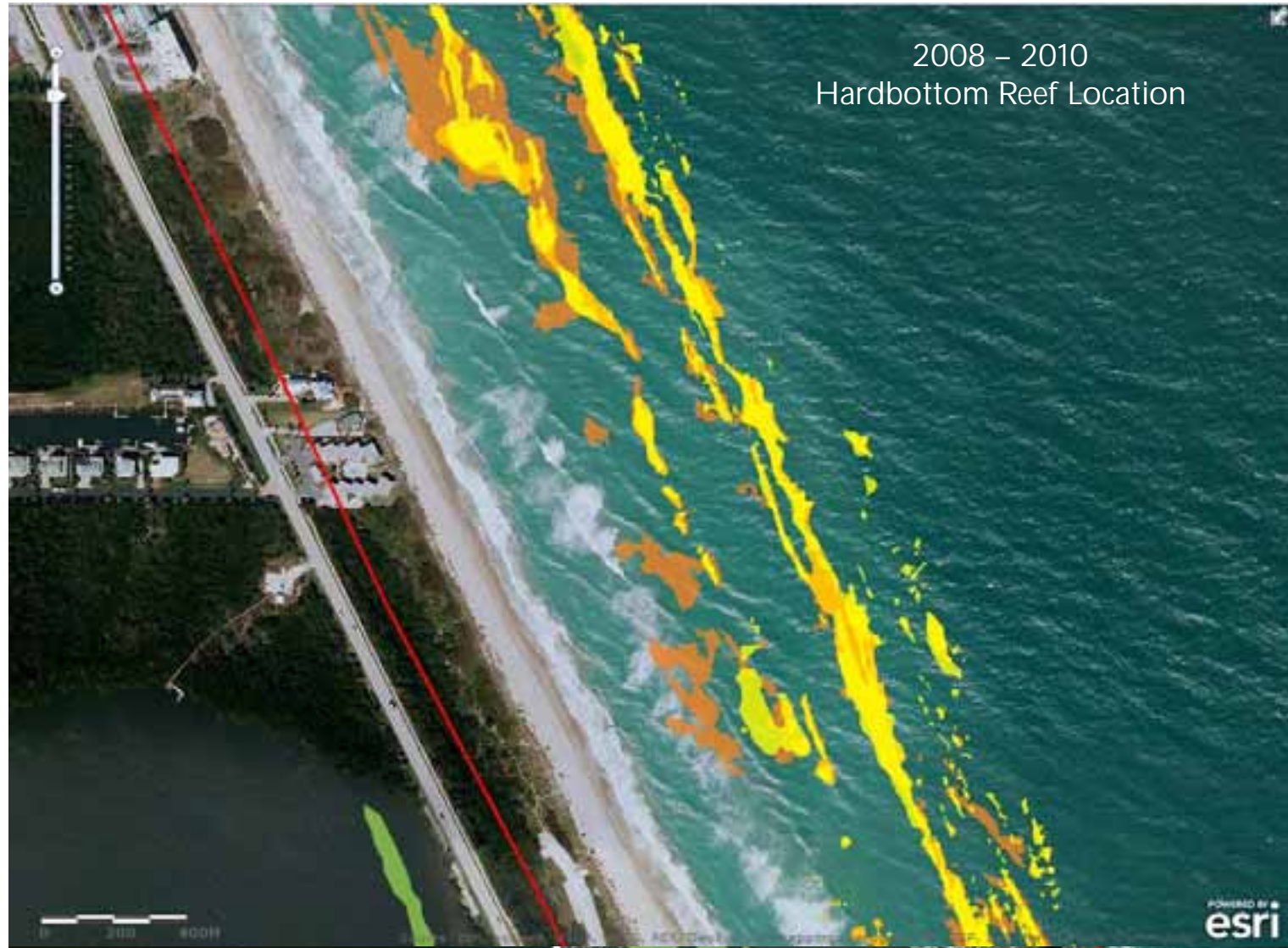
Use of Historical Project Data

Public Information

Channel markers

Depth in August 2011

Location of the areas that shoaled since 2010

Historical Data

2008 – 2010
Hardbottom Reef Location

2012 – 2013 Goals

- County plans to upload all its historical data into the coastal geodatabase by the end 2012
  - Quarterly, twice a year, or yearly depending on the monitoring frequency associated with each project

- Meet with County Information Systems department to discuss the possibility of implementing and testing the ArcGIS online demonstration projects

- Discuss implementation of ArcGIS online within the County Engineering Division

Future Challenges

- Funding
  - The cloud, sharing of data through web services has reduced storage needs and accordingly reducing the cost of maintaining the data in house
  - Technology is evolving to make data more easily accessible to everyone without the need to buy expensive desktop software

- Data QA/QC and good metadata
  - QA/QC and metadata are two components of the County coastal geodatabase

- Balance the internal needs vs. public and stakeholders information needs

- Create simple applications that will address the FAQs

Thank You

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NORTHSTAR GEOMATICS