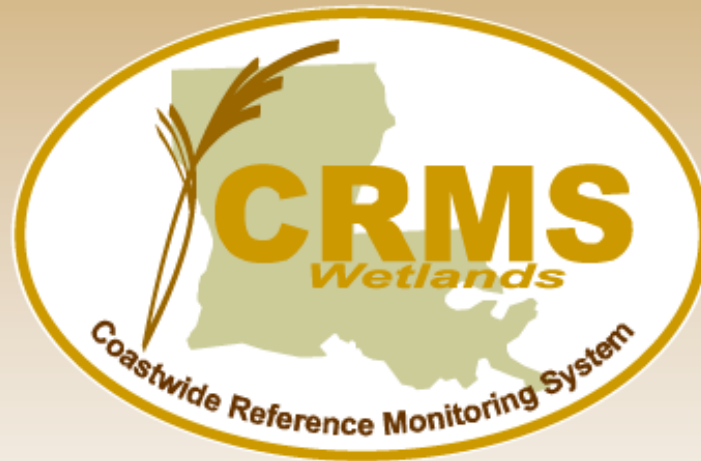


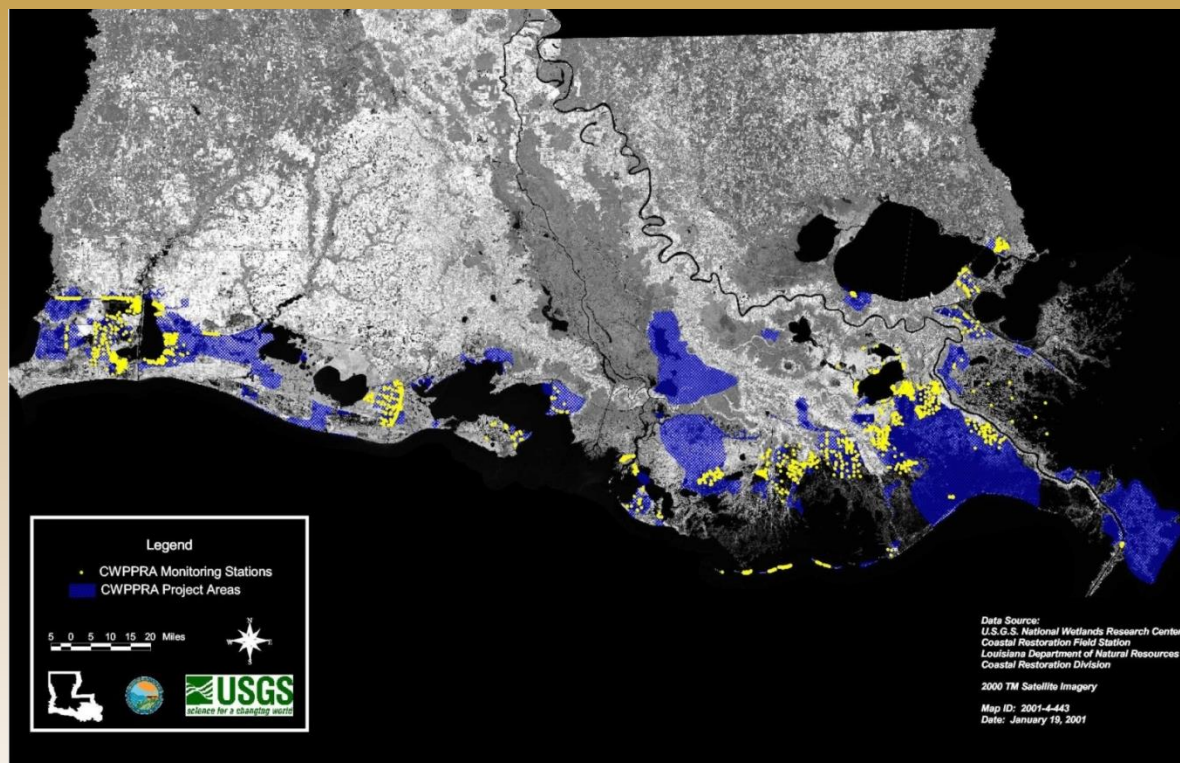
CRMS Website Training



April 2014

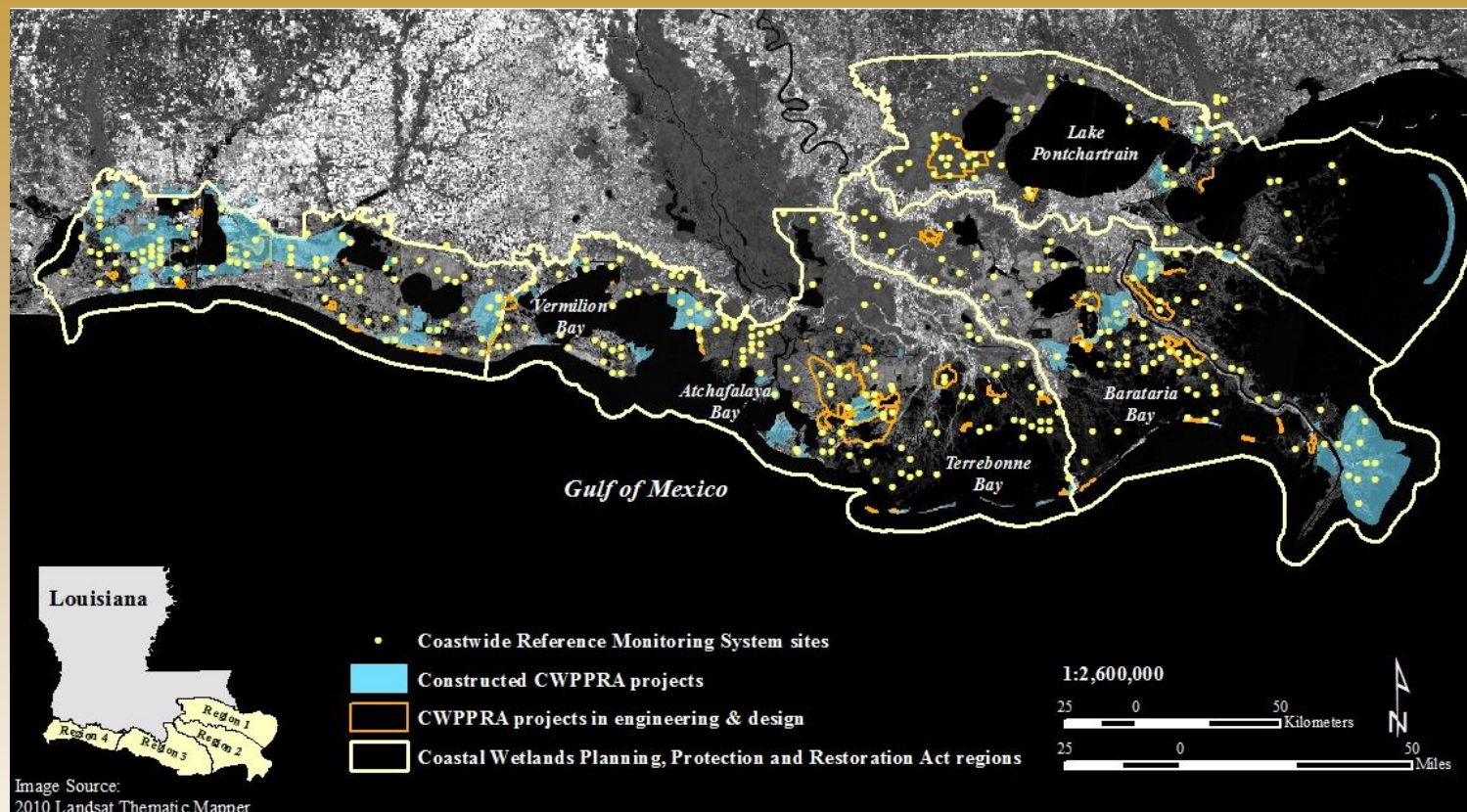
<http://www.lacoast.gov/crms>





- CWPPRA was congressionally funded in 1990 and mandated 20 years of restoration project monitoring
- CWPPRA program uses multiple restoration techniques
 - size and types of projects vary
- Initially the program used paired project and reference sites
 - with time, difficult to find “uninfluenced” reference
- Inconsistent monitoring variables and collection frequencies across projects with short data records

Restoration project types: diversions of freshwater and sediments, marsh creation, shoreline protection, sediment and nutrient trapping, hydrologic restoration, and vegetation planting



- To improve our ability to determine the effectiveness of individual coastal restoration projects.
- Provide information to evaluate coastal wetlands at the project, basin, and coastwide scales.
- To determine the ecological condition of coastal wetlands to ensure that the strategic coastal planning for Louisiana (Coast 2050, LCA, Louisiana Master Plan) is effective in recreating a sustainable coastal ecosystem.



Coastwide Reference Monitoring System - *Wetlands*

CRMS Design and Assessment

- Funded by CWPPRA in 2003

- ~ 390 CRMS sites

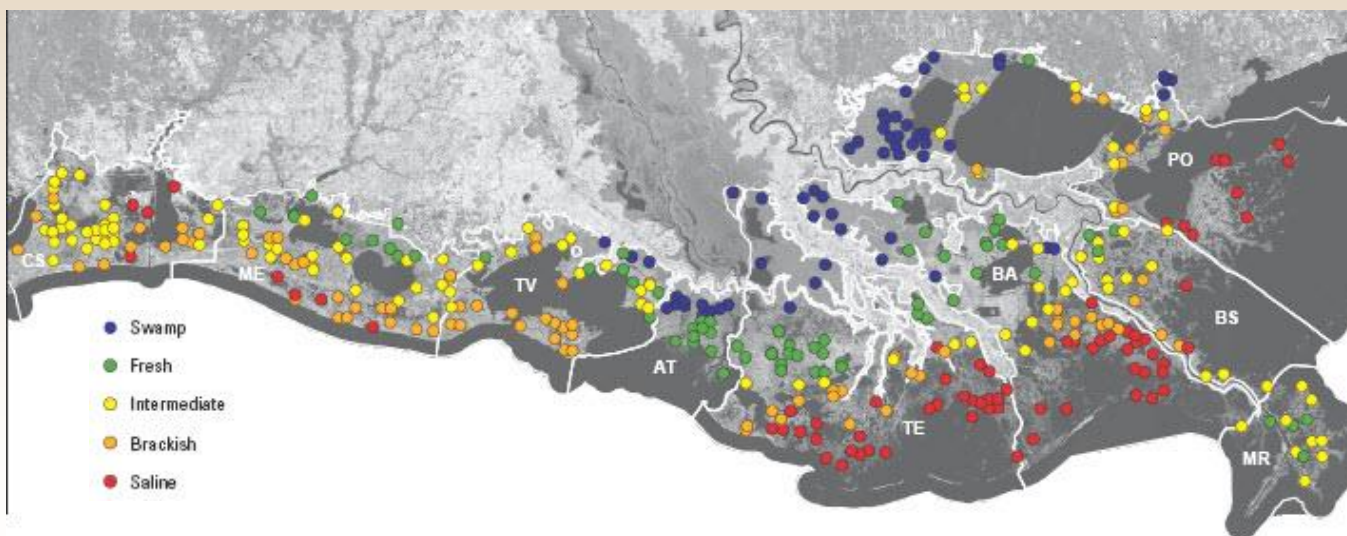
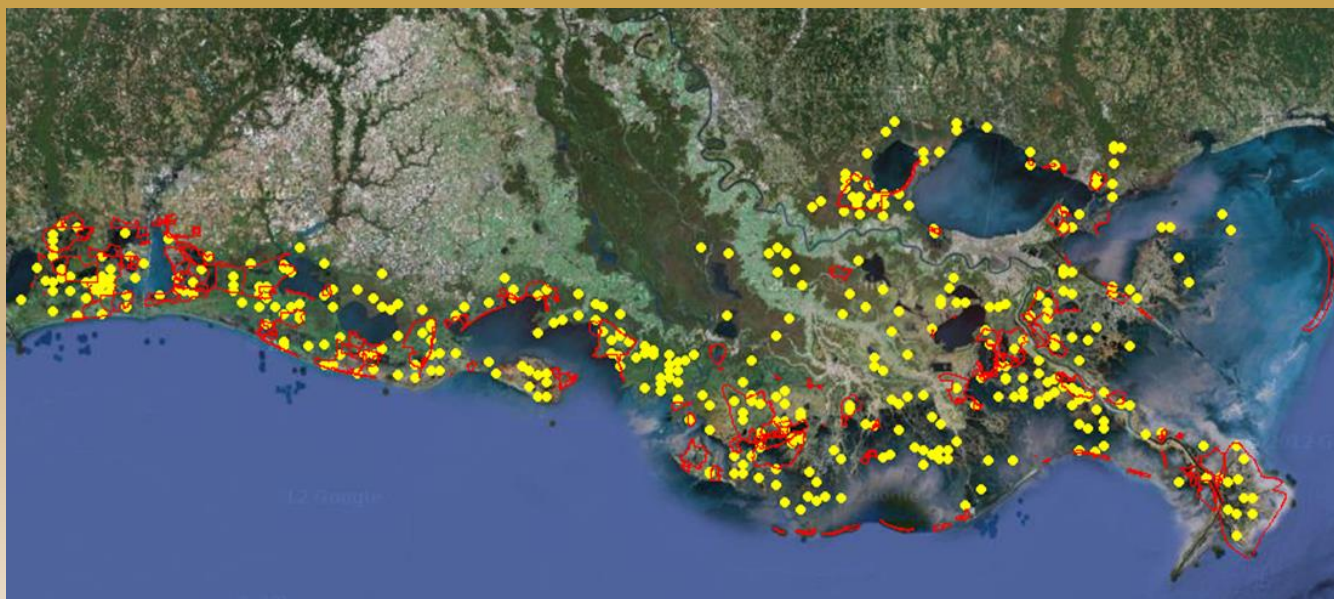
- Long-term dataset (2006-2019)

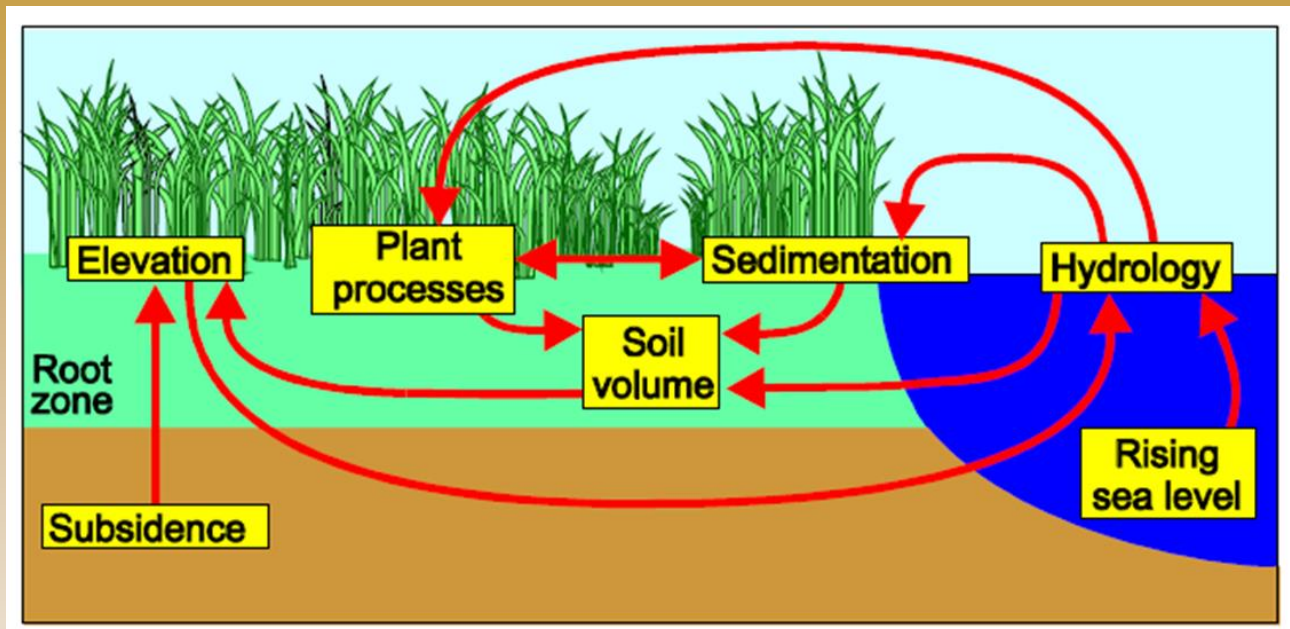
- Sites inside & outside of CWPPRA projects

- Sites in swamp, fresh, intermediate, brackish, and salt marsh

- Allows for multi-scale assessments through CRMS report cards

- Data used for future scenario modeling





Questions to address through CRMS:

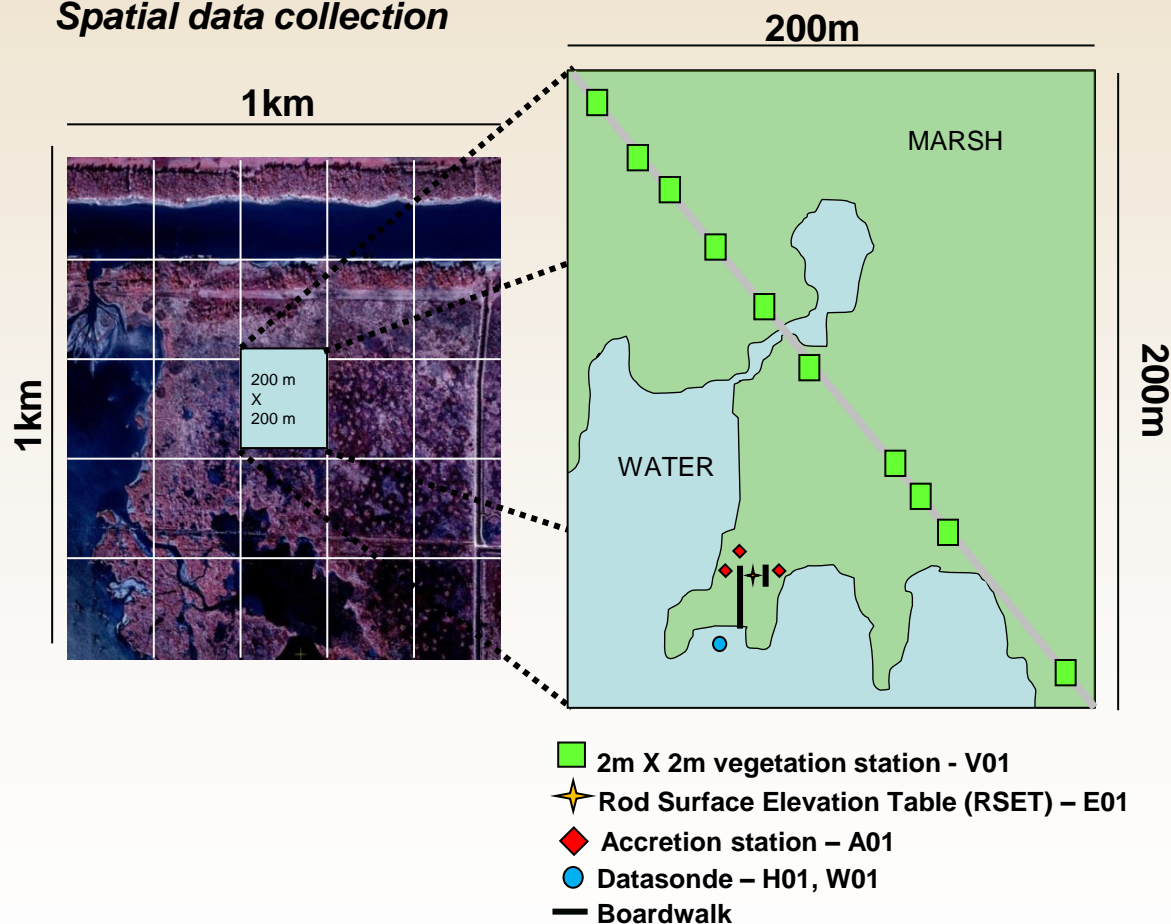
Did the restoration program:

- reduce coastal wetland loss?
- sustain a diversity of vegetation types within basins?

Is the restoration program effective in reducing major stressors on wetlands (i.e., flooding regime, salinity, elevation change)?

Which project types are the most effective in creating, restoring, protecting and enhancing wetlands?

Spatial data collection



Typical Marsh Site



Typical Swamp Site

CRMS Site vs. CRMS Station

Aerial photo

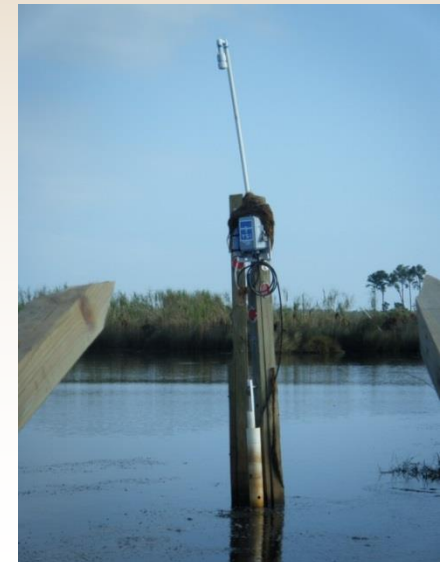
2005

2008

1km² scale:

High resolution aerial photography based land:water analyses to investigate land change through time.

200m² scale: Field data collection using standardized data collection protocols and consistent sampling intervals





Coastwide Reference Monitoring System - *Wetlands*

Site Layout





Coastwide Reference Monitoring System - *Wetlands* Site Data Collection

| Data Type | Parameter | Method | Scale | Frequency |
|--------------------|--|--|---|------------------------------|
| Land change | Land:Water Ratio | Satellite Imagery | Hydrologic Basin | 3 years |
| | Land:Water Ratio | Digital Aerial Photography | CRMS Site (1 km ²) | 3 years |
| Vegetation | Emergent Vegetation | Braun Blanquet: % Cover, Species Richness, Height of Dominant Species | (10) 2m x 2m plots per marsh site or (9) plots per swamp sites | Annually during peak biomass |
| | Forested Vegetation | DBH, Canopy Cover, Understory veg | (3) 20m x 20m Forested plots & (9) 6m X6m Understory plots per site | 3 yrs during peak biomass |
| Soils | Soil Characteristics | Core samples profiled into 4 cm increments to 24 cm. Bulk Density, OM%, Soil Salinity, pH, and Moisture. | 3 cores, 18 archived samples per site | 6 to 10 years |
| | Vertical Accretion | Feldspar Plots/Cryogenic Cores | 3 plots per site | Twice per year |
| | Marsh Elevation Change | Rod Surface Elevation Table (RSET) | 4 directions per site | Twice per year |
| Hydrology | Soil Porewater | 10 and 30 cm syringe sippers | 3 samples per depth per site and at vegetation plots | Variable and annually |
| | Surface Water Salinity, Temp and Water Level | Submersible Data Logger | in available water within 200m of CRMS site or in a well | Hourly |



Coastwide Reference Monitoring System - Wetlands Analytical Teams

a CWPBRA funded project



Coastwide Reference Monitoring System

Home Data Mapping Library Visualization Program




Map



Data



Factsheet



Wetland restoration efforts conducted in Louisiana require monitoring the effectiveness of individual projects as well as monitoring the cumulative effects of all projects in restoring, creating, enhancing, and protecting the coastal landscape. The effectiveness of the traditional paired-reference monitoring approach in Louisiana has been limited because of difficulty in finding comparable test sites. CRMS is a multiple reference approach that uses aspects of hydrogeomorphic functional assessments and probabilistic sampling.

This approach includes a suite of sites that encompass the range of ecological conditions for each stratum, with projects placed on a continuum of conditions found for that stratum. Trajectories in reference sites are then compared with project trajectories through time. The approach could serve as a model for evaluating wetland ecosystems.



- State and federal scientists
- Academics
- Computer programmers
- Web developers
- Oversight review-CWPPRA Monitoring Work Group



Coastwide Reference Monitoring System - Wetlands Analytical Teams

a CWPBRA funded project

Coastwide Reference Monitoring System

Home Data Mapping Library Visualization Program

**Map**

**Data**

**Factsheet**

Wetland restoration efforts conducted in Louisiana require monitoring the effectiveness of individual projects as well as monitoring the cumulative effects of all projects in restoring, creating, enhancing, and protecting the coastal landscape. The effectiveness of the traditional paired-reference monitoring approach in Louisiana has been limited because of difficulty in finding comparable test sites. CRMS is a multiple reference approach that uses aspects of hydrogeomorphic functional assessments and probabilistic sampling.

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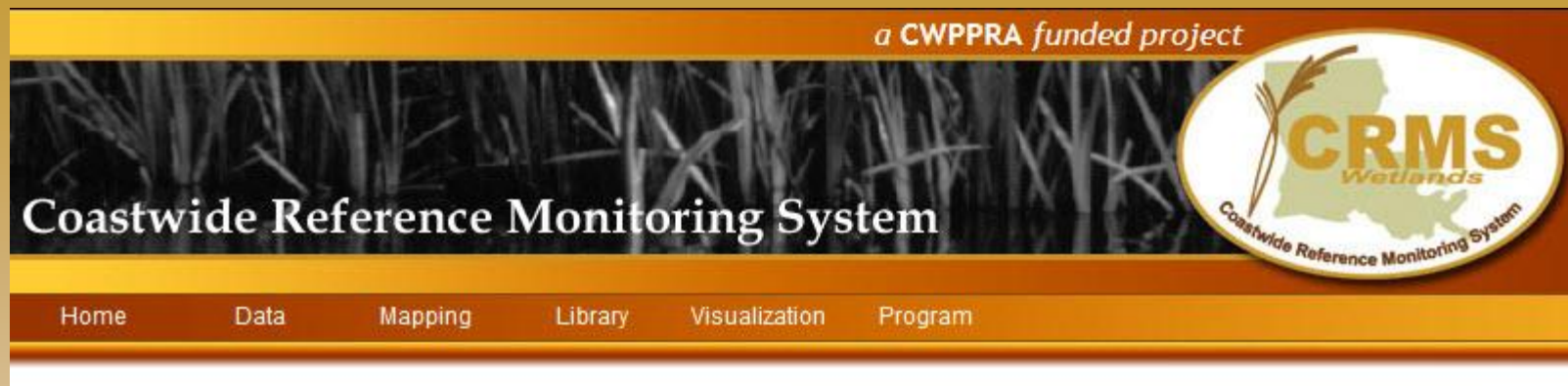


- Provide web mapping viewer
- Summarize and visualize data at multiple scales
- Provide on-the-fly user defined graphics and tools
- Simplify querying and downloading of data
- Develop multi-metric ecological indices
- Develop report card

www.lacoast.gov/crms



Site Overview – Main Menu



Data

- Spatial Data / Tabular SONRIS Data Tool / Tabular CRMS Bulk Download

Mapping

- SONRIS / Basic Map Viewer

Library

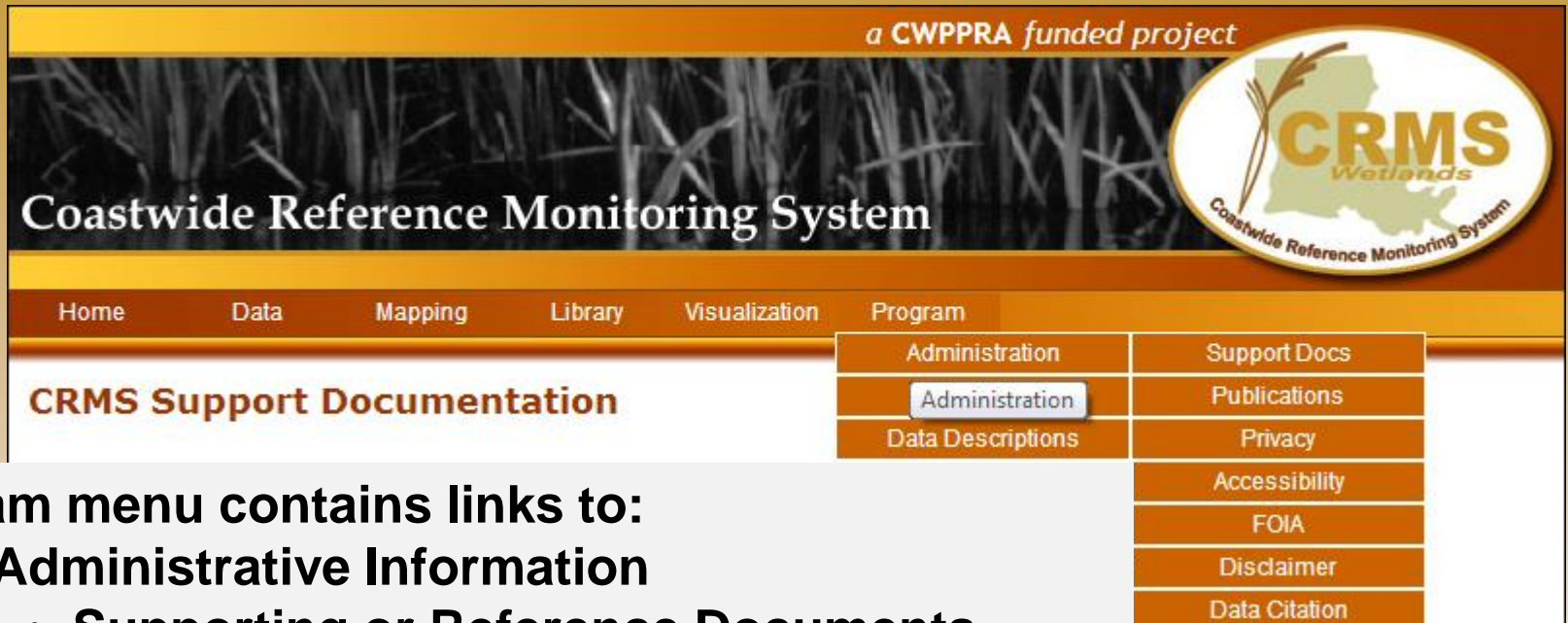
- Maps / Presentations / SONRIS Reports / CRMS Reports

Visualization

- Charting / Bulk Charting / Conceptual Models

Program

- Administrative links / Data Citation / Data Descriptions / Publications



Program menu contains links to:

- **Administrative Information**
 - Supporting or Reference Documents
 - CRMS Related Publications
 - Privacy and Accessibility Statements
 - Freedom of Information Act
 - Data Citation
- **Contacts from both USGS and CPRA**
- **Data Description Information**
 - Includes analytical framework documents
 - Report card analysis explanations



New Page: CRMS Publication Page

[Home](#)[Data](#)[Mapping](#)[Library](#)[Visualization](#)[Program](#)

Administration

Contacts

Data Descriptions

Support Docs

Publication

Privacy

Accessibility

FOIA

Disclaimer

Data Citation

CRMS Publications

Couvillion, B.R. and H. Beck. 2013. [Marsh Collapse Thresholds for Coastal Louisiana Elevation and Vegetation Index Data](#). *Journal of Coastal Research* 63:58-67

Dietrich, J.C., J.J. Westerink, A.B. Kennedy, J.M. Smith, R.E. Jensen, M. Zulema, L.H. Holthuijsen, C. Dawson, R.A. Luettich, Jr., M.D. Powell, V.J. Cardone, A.T. Cox, G.W. Stone, H. Pourtaheri, M.E. Hope, S. Tanaka, L.G. Westerink, H.J. Westerink, and Z. Cobell. 2011. [Hurricane Gustav \(2008\) Waves and Storm Surge: Hindcast, Synoptic Analysis, and Validation in Southern Louisiana](#). *Monthly Weather Review* 139:2488-2522.

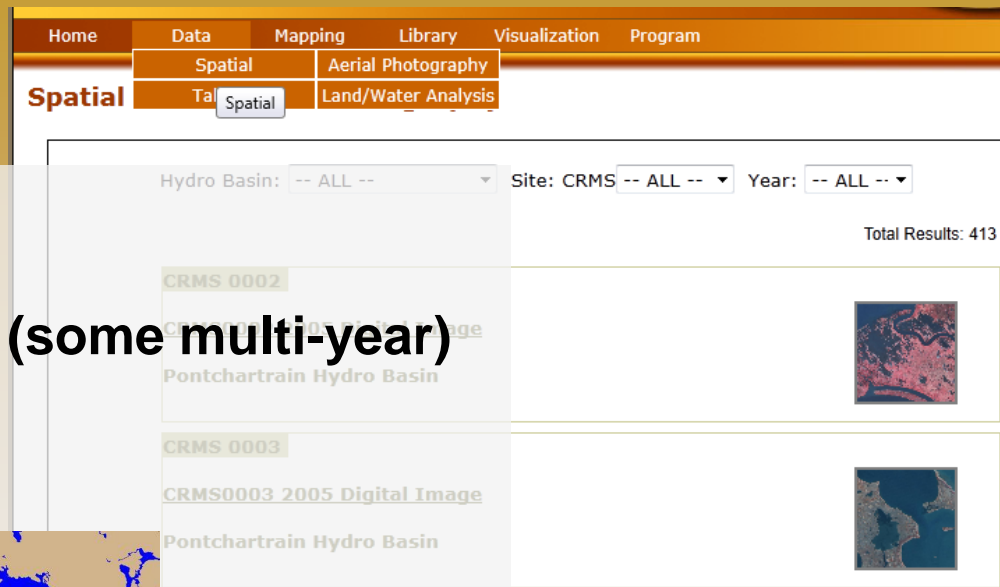
Green, C.C., W.E. Kelso, M.D. Kaller, K.M. Gautreaux, and D.G. Kelly. 2012. [Potential for naturalization of nonindigenous *Tilapia Oreochromis* sp. in coastal Louisiana marshes based on integrating thermal tolerance and field data](#). *Wetlands* 32:717-723.

Honig, Aaron. 2013. [Population Ecology of the Ribbed Mussel in Southeastern Louisiana](#). Louisiana State University Thesis 54p.

Hope, M.E., J.J. Westerink, A.B. Kennedy, P.C. Kerr, J.C. Dietrich, C. Dawson, C.J. Bender, J.M. Smith, R.E. Jensen, M. Zijlema, L.H. Holthuijsen, R.A. Luettich Jr., M.D. Powell, V.J. Cardone, A.T. Cox, H. Pourtaheri, H.J. Roberts, J.H. Atkinson, S. Tanaka, H.J. Westerink, L.G. Westerink. 2013. [Hindcast and validation of Hurricane Ike \(2008\) waves, forerunner, and storm surge](#). *Journal of Geophysical Research: Oceans* 118:4424-4460.

Kang, S.R. and S.L. King. 2013. [Effects of hydrologic connectivity and environmental variables on nekton assemblages in a coastal marsh system](#). *Wetlands* 33:321-334.

Kang, S.R. and S.L. King. 2013. [Effects of hydrologic connectivity on pond environmental characteristics](#)

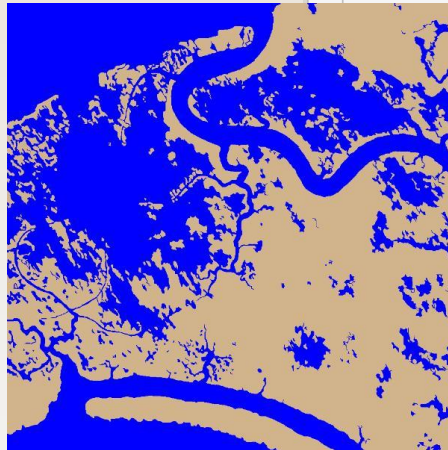
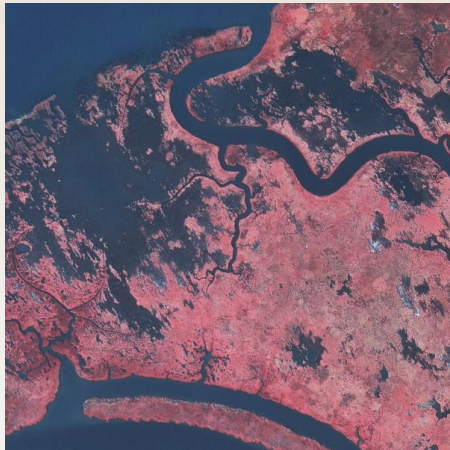


- **Data menu contains links to:**

- **Spatial Data:**

Available for each CRMS site (some multi-year)

- **Aerial Mosaic**
 - **Land/Water Analysis**



- **Tabular Data**

- **Links back to SONRIS data download tools**
 - **CRMS bulk data download tools**



• CRMS bulk data download

All values for selected years, for selected stations
(queue processes first come first serve)

▼ Hydro

Hydro Averages
Hydro Index
Percent Flooded
Water Level Range

▼ Vegetation

Basal Area
Floristic Quality Index
Marsh Class
Veg Percent Cover

▼ Soil

Calculated Elevation Change
Submergence Vulnerability Index

▼ Spatial

Percent Land

Coastwide Reference Monitoring System

Home

Data

Mapping

Library

Visualization

Program

Spatial

Tabular

SONRIS Data Tool

Previous Charting Version

Bulk Data Download

Previous Charting Version

Charting

Bulk Charting

Data Download

Reporting

Data Download

Data available through this website are calculated or derived values based on the original data which are available from the SONRIS database (SONRIS)

▼ Hydro

Hydro Averages
Hydro Index
Percent Flooded
Water Level Range

▶ Vegetation

▶ Soil

▶ Spatial

Water Year is October 1 - September 30

Yearly

Calendar Year

Year:

| Select All | Deselect All |
|------------|--------------|
| 1987 | 1994 |
| 1992 | 1995 |
| 1993 | 1999 |
| 1996 | |
| 1997 | |
| 1998 | |
| 2000 | |
| 2001 | |
| 2002 | |

Submit

Basin: All Basins

Project: All Projects

| Select All | Deselect All |
|------------|--------------|
| BA01-01 | |
| BA01-02 | |
| BA01-03 | |
| BA01-04 | |
| BA01-07 | |
| BA01-08 | |
| BA01-09 | |
| BA01-10 | |
| BA01-14 | |

Show Map Selector

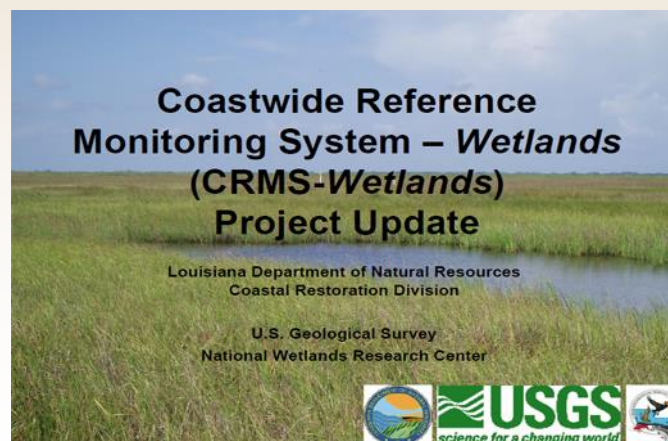
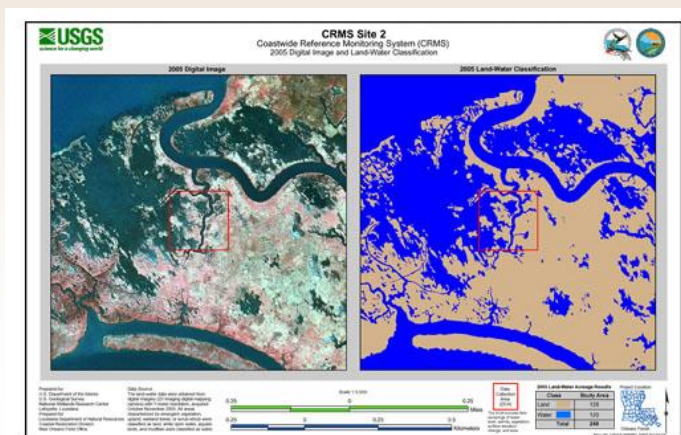
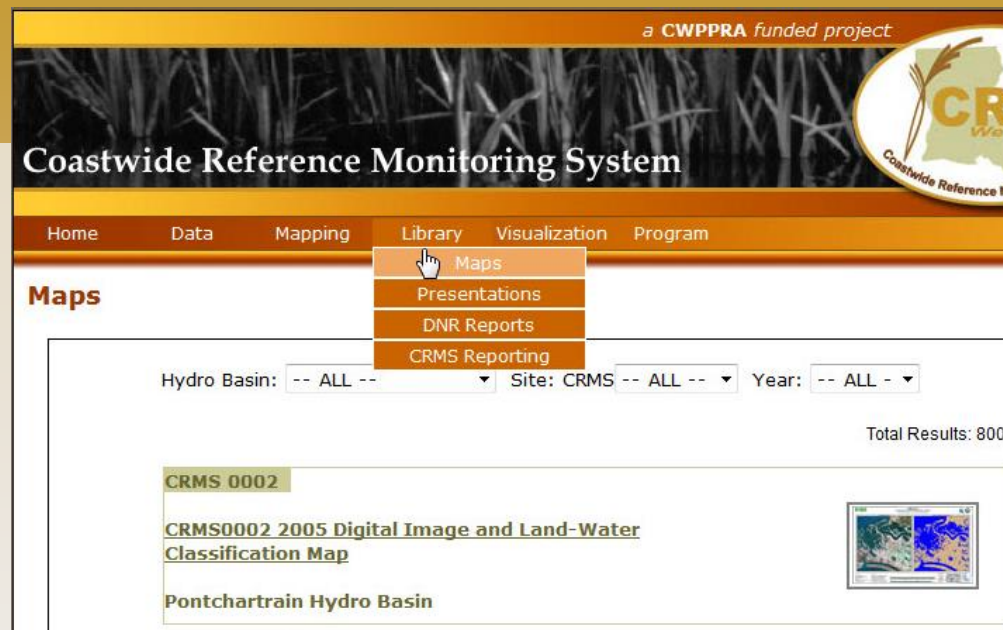
Email Address:

Submit Request



Library menu contains links to:

- Maps: Available for each CRMS site (some multi-year)
- Presentations
- Reports (via SONRIS)
- CRMS Report Card



Mapping menu contains links to:

- SONRIS Viewer
- Basic Map Viewer





Coastwide Reference Monitoring System

Home Data Mapping Library Visualization Program

Charting
Bulk Charting
Conceptual Models



Visualization menu contains links to:

- **Charts...Lots of Charts.**
 - Surface Elevation/Accretion
 - % Organic / Bulk Density
 - Vegetation
 - Forested
 - Porewater
 - Hydrographic (Salinity, Temp, Water Level)
 - Precipitation
 - Report Card

Coastwide Reference Monitoring System

a CWPRA funded project

Home Data Mapping Library Visualization Program

Previous Charting Version

Charting Bulk Charting Data Download Reporting

Hydro

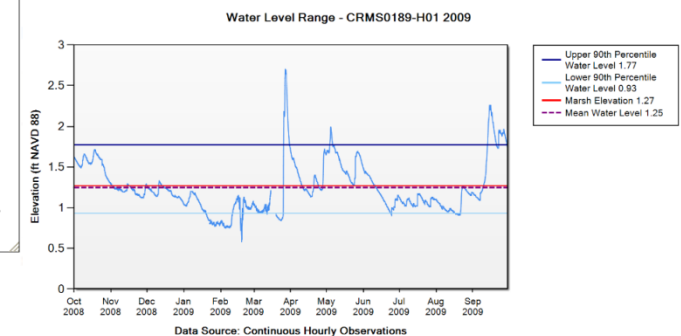
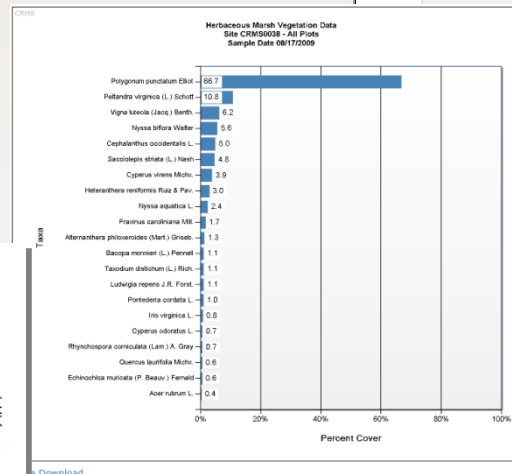
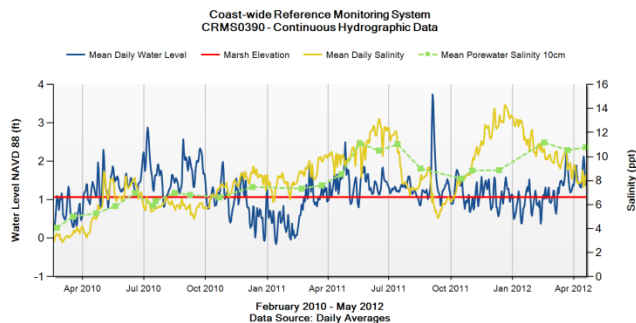
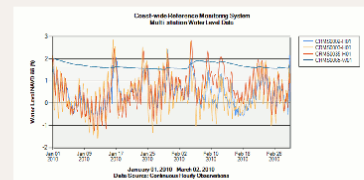
Water Level Range
Hydro Completeness
Salinity
Water Level
Temperature
Continuous
Site Hydro Index
Soil Porewater
Precipitation

Vegetation

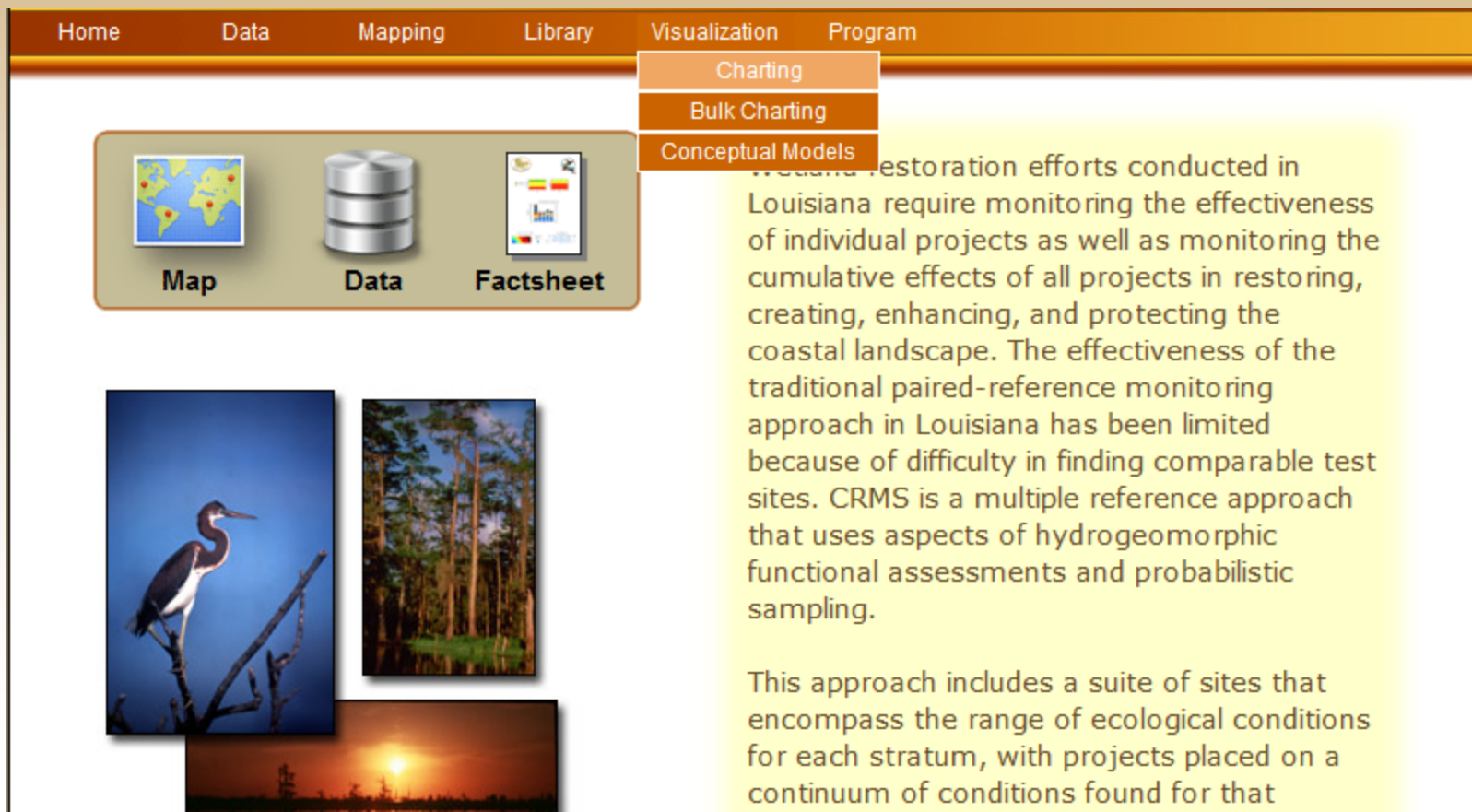
Soil

Spatial

Report Card Charts



Using the charting interface



The screenshot displays the CRMS web interface. At the top is a navigation bar with links: Home, Data, Mapping, Library, Visualization, and Program. A dropdown menu is open under 'Visualization', showing options: Charting, Bulk Charting, and Conceptual Models. Below the navigation bar are three main sections: Map (with a world map icon), Data (with a database cylinder icon), and Factsheet (with a document icon). At the bottom left, there are three images: a bird perched on a branch, a forest scene, and a sunset over water. On the right side, there is a text box with the following content:

Wetland restoration efforts conducted in Louisiana require monitoring the effectiveness of individual projects as well as monitoring the cumulative effects of all projects in restoring, creating, enhancing, and protecting the coastal landscape. The effectiveness of the traditional paired-reference monitoring approach in Louisiana has been limited because of difficulty in finding comparable test sites. CRMS is a multiple reference approach that uses aspects of hydrogeomorphic functional assessments and probabilistic sampling.

This approach includes a suite of sites that encompass the range of ecological conditions for each stratum, with projects placed on a continuum of conditions found for that



Charting Usage

Previous Charting Version

Charting

Bulk Charting

Data Download

Reporting

Hydro

Water Level Range
Hydro Completeness
Salinity
Water Level
Temperature
Continuous
Site Hydro Index
Soil Porewater
Precipitation

Vegetation

Soil

Spatial

Report Card Charts

Clear Charts

Previous Charting Version

Charting

Bulk Charting

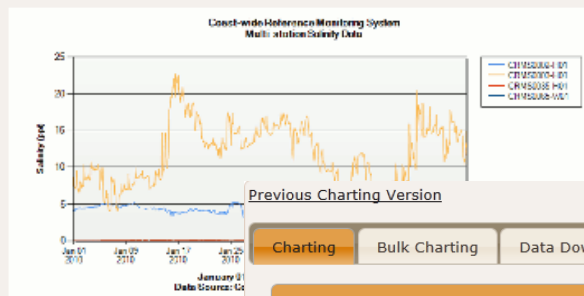
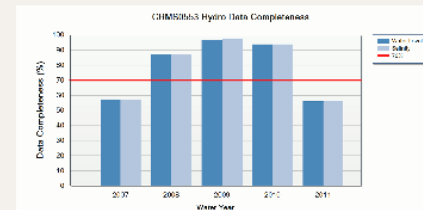
Data Download

Reporting

Hydro

Water Level Range
Hydro Completeness
Salinity
Water Level
Temperature
Continuous
Site Hydro Index
Soil Porewater
Precipitation

Vegetation



Charting

Bulk Charting

Data Download

Reporting

Hydro

Water Level Range
Hydro Completeness
Salinity
Water Level
Temperature
Continuous
Site Hydro Index
Soil Porewater
Precipitation

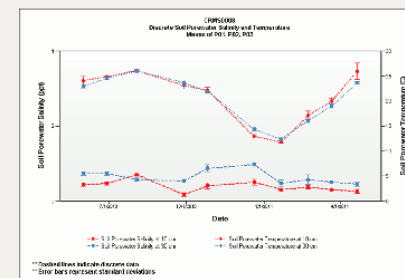
Vegetation

Soil

Spatial

Report Card Charts

Clear Charts





1. Pick a Data Category

1. Hydro

2. Pick a Parameter

1. Salinity

[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

▼ Hydro

Water Level Range
Hydro Completeness
Salinity
Water Level
Temperature
Continuous
Site Hydro Index
Soil Porewater
Precipitation

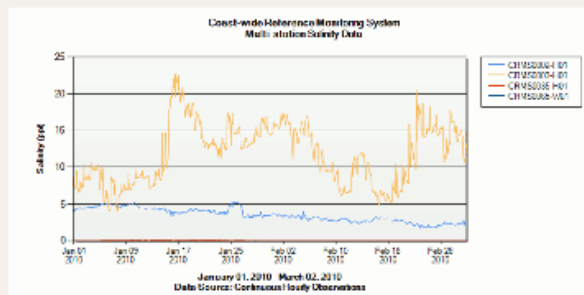
▶ Vegetation

▶ Soil

▶ Spatial

▶ Report Card Charts

Clear Charts





1. Pick a Data Category
 1. Hydro
2. Pick a Parameter
 1. Salinity
3. Pick a Scale
 1. Station
4. Enter Start / End Dates
 1. 1/1/2001
 2. 12/31/2011
 3. Apply Date Filter

[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

▼ Hydro

Water Level Range

Hydro Completeness

Salinity

Water Level

Temperature

Continuous

Site Hydro Index

Soil Porewater

Precipitation

Interactive Hydro

▶ Vegetation

▶ Soil

▶ Spatial

▶ Report Card Charts

Clear Charts

Water Year is October 1 - September 30

Scale:

Station

Date Range:
2/25/1987 - 3/11/2014

Min Date:

01/01/2001

Max Date:

12/31/2011

Apply Data

◀

Dec

▼

2011

▶

| Su | Mo | Tu | We | Th | Fr | Sa |
|----|----|----|----|----|----|----|
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |



1. Pick a Data Category
 1. Hydro
2. Pick a Parameter
 1. Salinity
3. Pick a Scale
 1. Site
4. Enter Start / End Dates
 1. 1/1/2001
 2. 12/31/2011
 3. Apply Date Filter
5. Pick Site

[Previous Charting Version](#)

Charting Bulk Charting Data Download Reporting

▼ Hydro

- Water Level Range
- Hydro Completeness
- Salinity**
- Water Level
- Temperature
- Continuous
- Site Hydro Index
- Soil Porewater
- Precipitation

Interactive Hydro

▶ Vegetation

▶ Soil

▶ Spatial

▶ Report Card Charts

Clear Charts

Water Year is October 1 - September 30

Scale: Station ▼

Date Range:
2/25/1987 - 3/11/2014

Min Date: 01/01/2001

Max Date: 12/31/2011

Apply Date Filter ⓘ

☐ Mean annual salinity
☐ Mean growing season salinity

CRMS0153-H01
CRMS0154-H01
CRMS0156-H01
CRMS0157-H01
CRMS0159-H01
CRMS0161-H01
CRMS0162-H01
CRMS0163-H01
CRMS0164-H01
CRMS0171-H01

☐ Include major weather\storm events
[Show Map Selector](#)

Submit Request



1. Pick a Data Category
 1. Hydro
2. Pick a Parameter
 1. Salinity
3. Pick a Scale
 1. Site
4. Enter Start / End Dates
 1. 1/1/2001
 2. 12/31/2011
 3. Apply Date Filter
5. Pick Site

[Previous Charting Version](#)

Charting

Bulk Charting

Data Download

Reporting

Hydro

Water Level Range

Hydro Completeness

Salinity

Water Level

Temperature

Continuous

Site Hydro Index

Soil Porewater

Precipitation

Interactive Hydro

Vegetation

Soil

Spatial

Report Card Charts

Clear Charts

Water Year is October 1 - September 30

Scale: Station

Date Range:
2/25/1987 - 3/11/2014

Min Date: 01/01/2001

Max Date: 12/31/2011

Apply Date Filter

☐ Mean annual salinity

☐ Mean growing season salinity

CRMS0154-H01

CRMS0156-H01

CRMS0157-H01

CRMS0159-H01

CRMS0161-H01

CRMS0162-H01

CRMS0163-H01

CRMS0164-H01

CRMS0171-H01

CRMS0172-H01

☐ Include major weather\storm events

[Show Map Selector](#)

Submit Request

Salinity



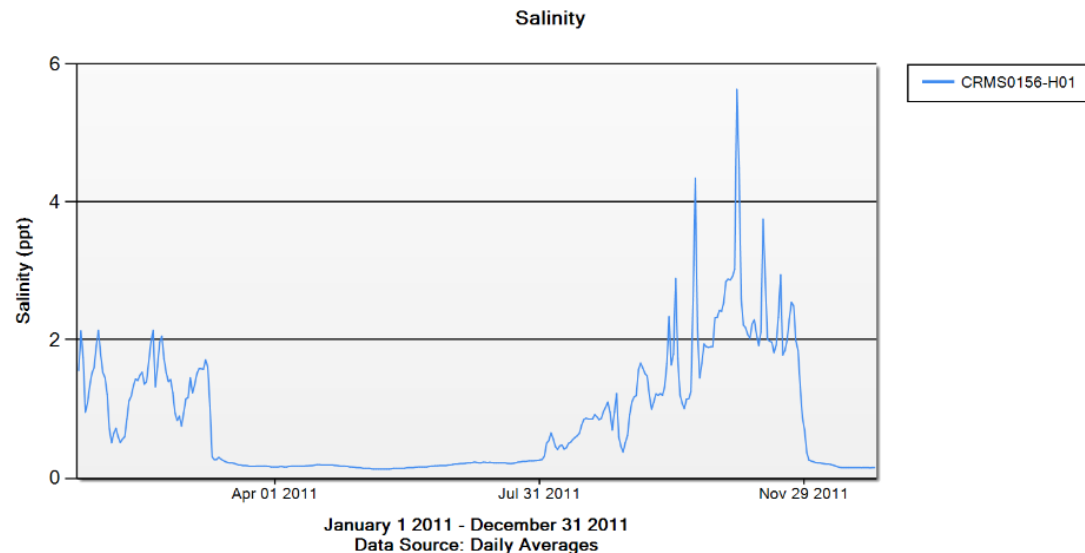
Jan 2007 Jan 2008 Jul 2008 Jan 2010 Nov 2011

June 28 2007 - December 28 2011 Data Source: Monthly Average



1. Pick a Data Category
 1. Hydro
2. Pick a Parameter
 1. Salinity
3. Pick a Scale
 1. Site
4. Enter Start / End Dates
 1. 1/1/2001
 2. 12/31/2011
 3. Apply Date Filter
5. Pick Site
6. View Chart
7. Save Chart Image
8. Download Data (optional)

CRMS

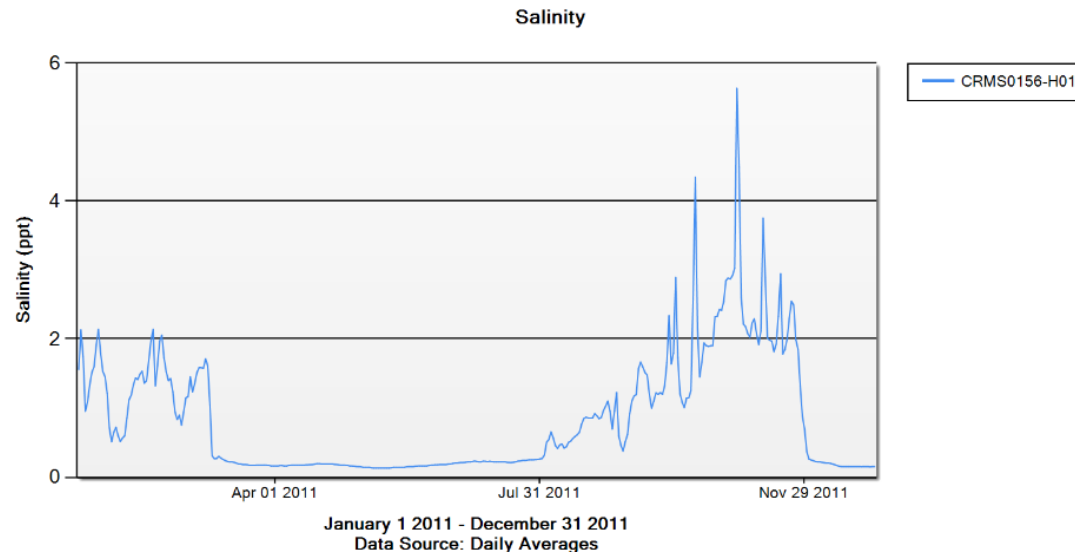


[Data Download](#)

- View Image
- Copy Image
- Copy Image Location
- Save Image As...**
- Send Image...
- Set As Desktop Background...
- View Image Info
- Copy
- Search Google for "Home Data Mappi..."
- View Selection Source
- Convert Selection to Adobe PDF
- Append Selection to Existing PDF
- Inspect Element with Firebug
- Adblock Plus: Block image...

1. Pick a Data Category
 1. Hydro
2. Pick a Parameter
 1. Salinity
3. Pick a Scale
 1. Site
4. Enter Start / End Dates
 1. 1/1/2001
 2. 12/31/2011
 3. Apply Date Filter
5. Pick Site
6. View Chart
7. Save Chart Image
8. Download Data (optional)

CRMS



[Data Download](#)

MultiStationChart_Salinity_201271013184495.csv-0.csv - Microsoft Excel

| | A | B | C | D | E | F |
|----|--------------|----------------|-----------|-------------|-------------------|---|
| | Station_ID | MonDate | Salinity | Water_Level | Water_Temperature | |
| 1 | CRMS0156-H01 | 1/1/2011 0:00 | 1.560417 | 1.8325 | 9.65125 | |
| 2 | CRMS0156-H01 | 1/2/2011 0:00 | 2.130833 | 1.62625 | 12.42083 | |
| 3 | CRMS0156-H01 | 1/3/2011 0:00 | 1.746667 | 1.434167 | 8.210417 | |
| 4 | CRMS0156-H01 | 1/4/2011 0:00 | 0.95375 | 1.350417 | 7.404583 | |
| 5 | CRMS0156-H01 | 1/5/2011 0:00 | 1.085833 | 1.344167 | 7.54125 | |
| 6 | CRMS0156-H01 | 1/6/2011 0:00 | 1.333333 | 1.408333 | 7.622083 | |
| 7 | CRMS0156-H01 | 1/7/2011 0:00 | 1.514583 | 1.237083 | 7.506667 | |
| 8 | CRMS0156-H01 | 1/8/2011 0:00 | 1.60125 | 1.127917 | 7.66375 | |
| 9 | CRMS0156-H01 | 1/9/2011 0:00 | 1.908333 | 1.9775 | 8.087916 | |
| 10 | CRMS0156-H01 | 1/10/2011 0:00 | 2.137083 | 1.900417 | 11.25458 | |
| 11 | CRMS0156-H01 | 1/11/2011 0:00 | 1.789583 | 1.528333 | 8.947917 | |
| 12 | CRMS0156-H01 | 1/12/2011 0:00 | 1.529583 | 1.18125 | 6.955 | |
| 13 | CRMS0156-H01 | 1/13/2011 0:00 | 1.455417 | 1.05125 | 6.779583 | |
| 14 | CRMS0156-H01 | 1/14/2011 0:00 | 1.21125 | 0.9725 | 6.984583 | |
| 15 | CRMS0156-H01 | 1/15/2011 0:00 | 0.7083333 | 1.16 | 6.829583 | |



Multi-Station Charting

1. Pick a Data Category
 1. Hydro
2. Pick a Parameter
 1. Water Level
3. Pick a Scale
 1. Multi Station
4. Enter Start / End Dates
 1. 1/1/2001
 2. 12/31/2011
 3. Apply Date Filter
5. Pick Stations

Previous Charting Version

Charting Bulk Charting Data Download Reporting

▼ Hydro

- Water Level Range
- Hydro Completeness
- Salinity
- Water Level**
- Temperature
- Continuous
- Site Hydro Index
- Soil Porewater
- Precipitation

Interactive Hydro

▶ Vegetation

▶ Soil

▶ Spatial

▶ Report Card Charts

Clear Charts

Water Year is October 1 - September 30

Scale: Multi Station ▼

Date Range:
2/25/1987 - 3/11/2014

Min Date: 01/01/2001

Max Date: 12/31/2005

Apply Date Filter ⓘ

Basin: Calcasieu/Sabir ▼ Project: All Projects ▼

Selection limited to 10 items

| | |
|----------|---------|
| CS20 | |
| CS20-10R | CS20-03 |
| CS20-14R | CS20-07 |
| CS20-15R | CS20-09 |
| | CS20-17 |

☐ Include major weather/storm events

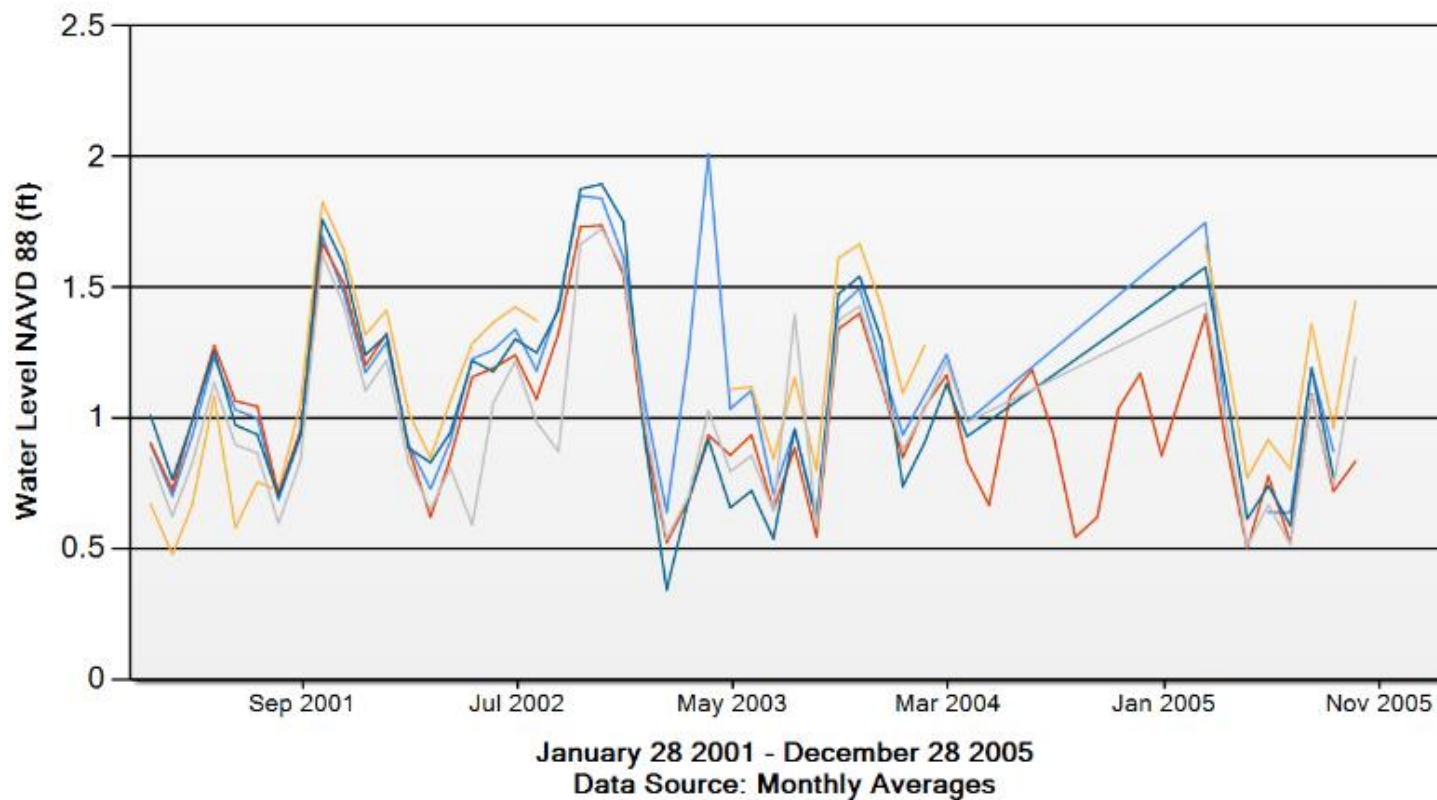
[Show Map Selector](#)

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Multi-Station Charting

CRMS

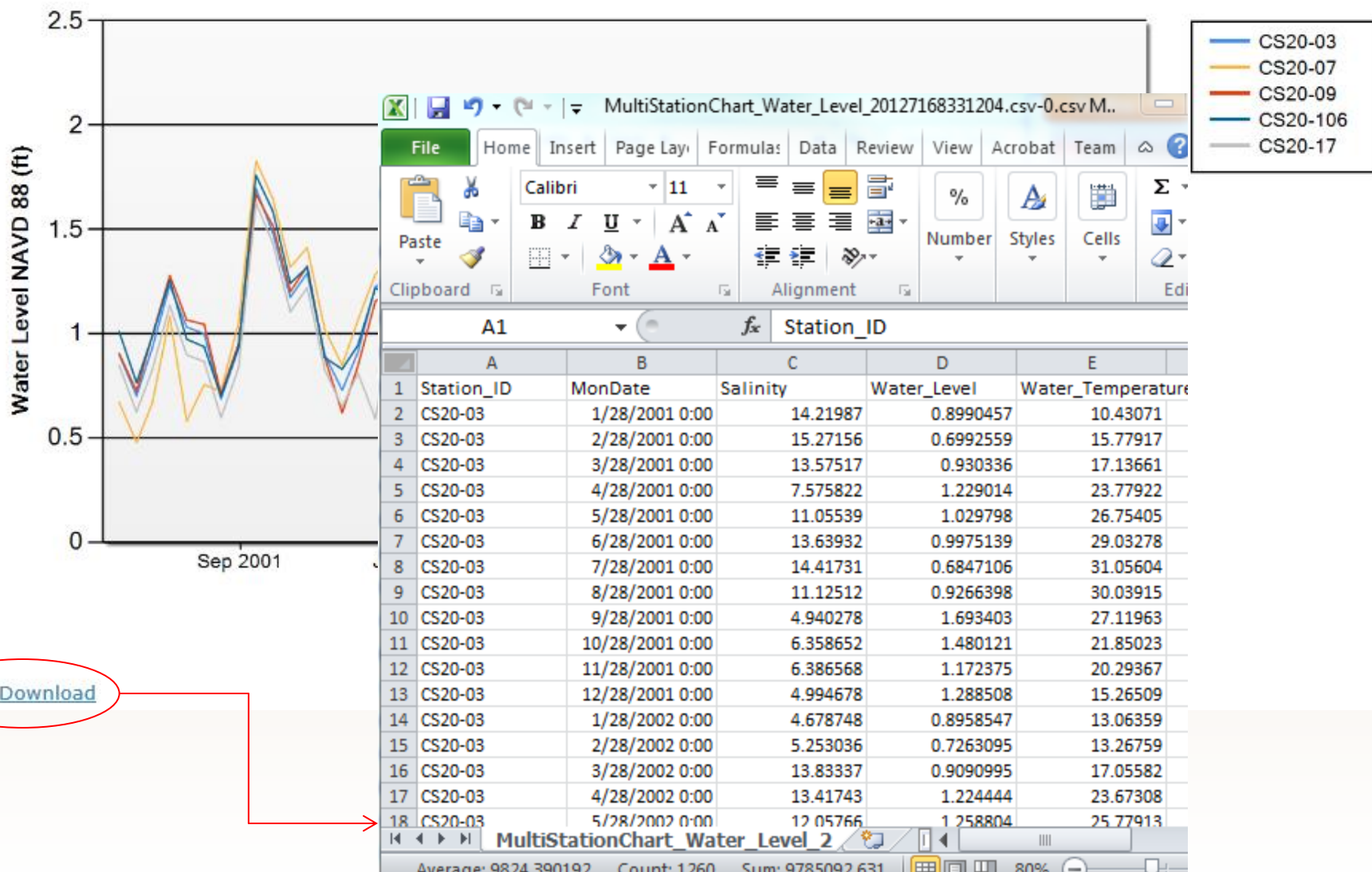
Water Level



- View Image
- Copy Image
- Copy Image Location
- Save Image As...
- Send Image...
- Set As Desktop Background...
- View Image Info
- Copy
- Search Google for "Home Data Ma
- View Selection Source
- Convert Selection to Adobe PDF
- Append Selection to Existing PDF
- Inspect Element with Firebug
- AdBlock Plus: Block image...

[Data Download](#)

Water Level





Interactive Hydro Chart

Great for hydro data exploration without having to download data.

[Previous Charting Version](#)

Charting Bulk Charting Data Download Reporting

▼ Hydro

- Water Level Range
- Hydro Completeness
- Salinity
- Water Level**
- Temperature
- Continuous
- Site Hydro Index
- Soil Porewater
- Precipitation
- Interactive Hydro**

▶ Vegetation

▶ Soil

▶ Spatial

▶ Report Card Charts

Clear Charts

Water Year is October 1 - September 30

Scale: Multi Station ▼

Date Range:
2/25/1987 - 3/11/2014

Min Date: 01/01/2001

Max Date: 12/31/2005

Apply Date Filter ⓘ

Basin: Calcasieu/Sabir ▼ Project: All Projects ▼

Selection limited to 10 items

| CS20 | |
|----------|---------|
| CS20-106 | CS20-03 |
| CS20-14R | CS20-07 |
| CS20-15R | CS20-09 |
| | CS20-17 |

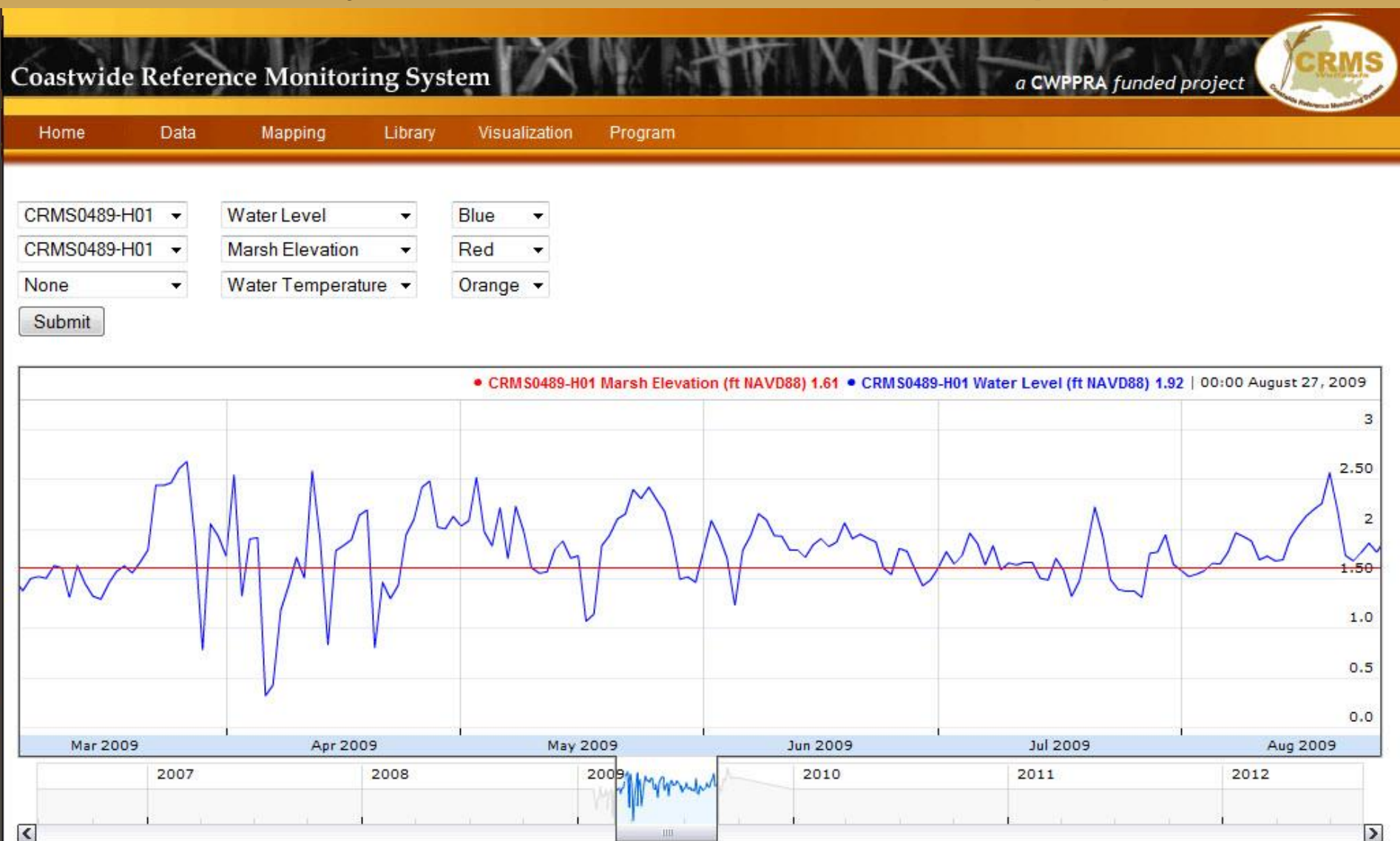
☐ Include major weather\storm events

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Interactive Hydro Chart – same site with the multiple parameters



Interactive Hydro Chart – multiple sites with the same parameter

Coastwide Reference Monitoring System

a CWPRA funded project



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CRMS0232-H01 ▼

Water Level ▼

Red ▼

CRMS4529-H01 ▼

Water Level ▼

Blue ▼

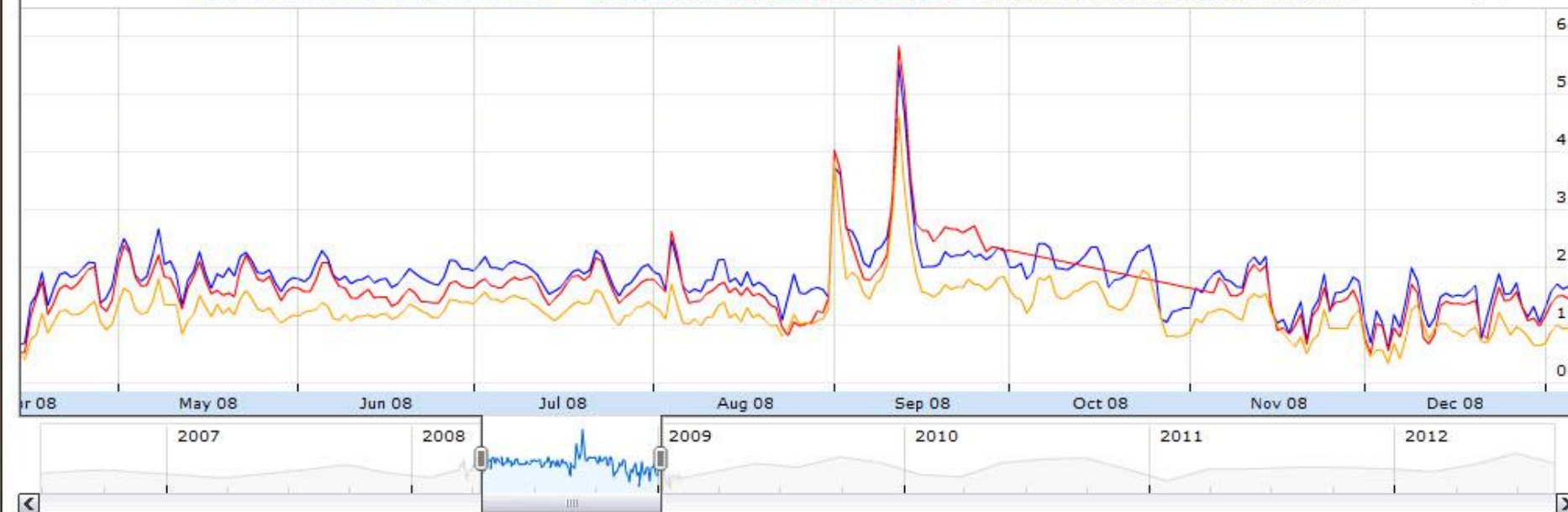
CRMS0172-H01 ▼

Water Level ▼

Orange ▼

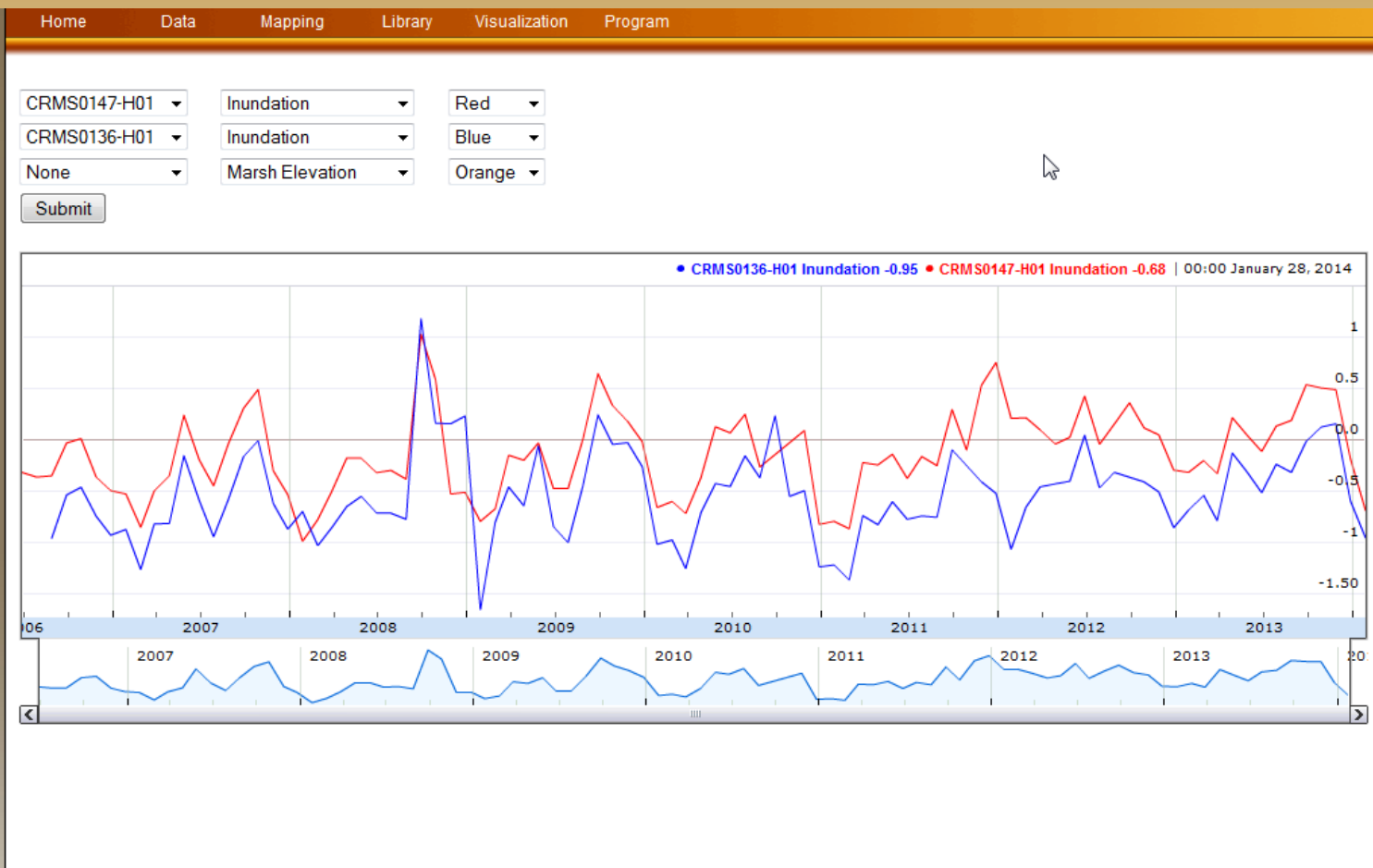
Submit

• CRMS0172-H01 Water Level (ft NAVD88) 0.92 • CRMS0232-H01 Water Level (ft NAVD88) 1.26 • CRMS4529-H01 Water Level (ft NAVD88) 1.51 | 00:00 January 07, 2009

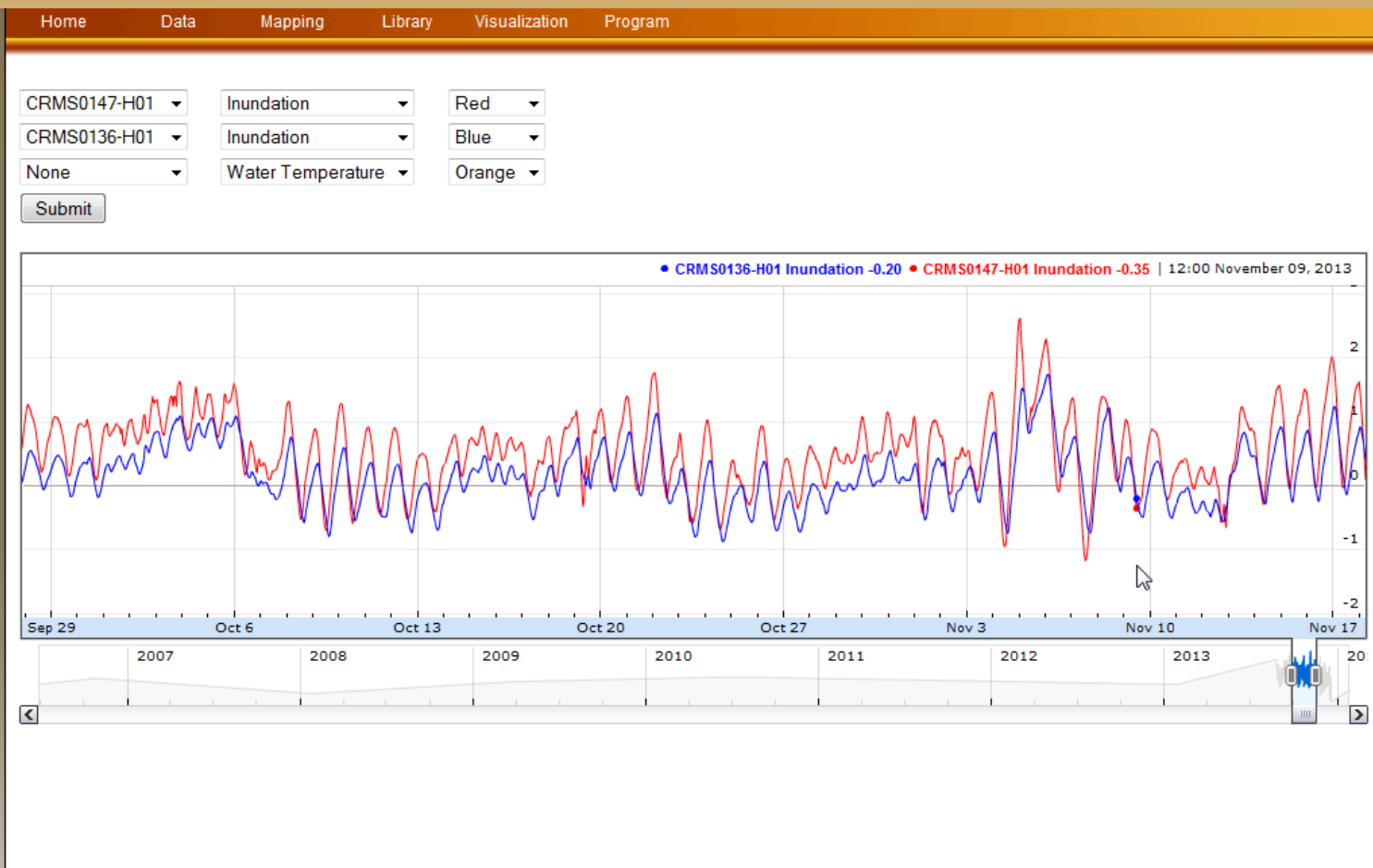




Interactive Hydro Chart – full period of record shows monthly averages






Interactive Hydro Chart – smaller time range increases frequency of visualized data (i.e., hourly vs. monthly)






Bulk charting

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Visualization
Program

Charting
Bulk Charting
Conceptual Models

Map
Data
Factsheet

Wetland restoration efforts conducted in Louisiana require monitoring the effectiveness of individual projects as well as monitoring the cumulative effects of all projects in restoring, creating, enhancing, and protecting the coastal landscape. The effectiveness of the traditional paired-reference monitoring approach in Louisiana has been limited because of difficulty in finding comparable test sites. CRMS is a multiple reference approach that uses aspects of hydrogeomorphic functional assessments and probabilistic sampling.

This approach includes a suite of sites that encompass the range of ecological conditions for each stratum, with projects placed on a continuum of conditions found for that stratum. Trajectories in reference sites are



[Previous Charting Version](#)

Bulk Charting

- ▼ Hydro

Water Level Range

Hydro Completeness

Salinity

Water Level

Temperature

Continuous

Site Hydro Index

Soil Porewater

Precipitation
- ▶ Vegetation
- ▶ Soil
- ▶ Spatial
- ▶ Report Card Charts

Water Year is October 1 - September 30

Scale:

Station ▼

Date Range:
2/25/1987 - 3/11/2014

Min Date:

01/01/2001

Max Date:

12/31/2005

Apply Date Filter

Basin:

All Basins ▼

Project:

CS-20 ▼

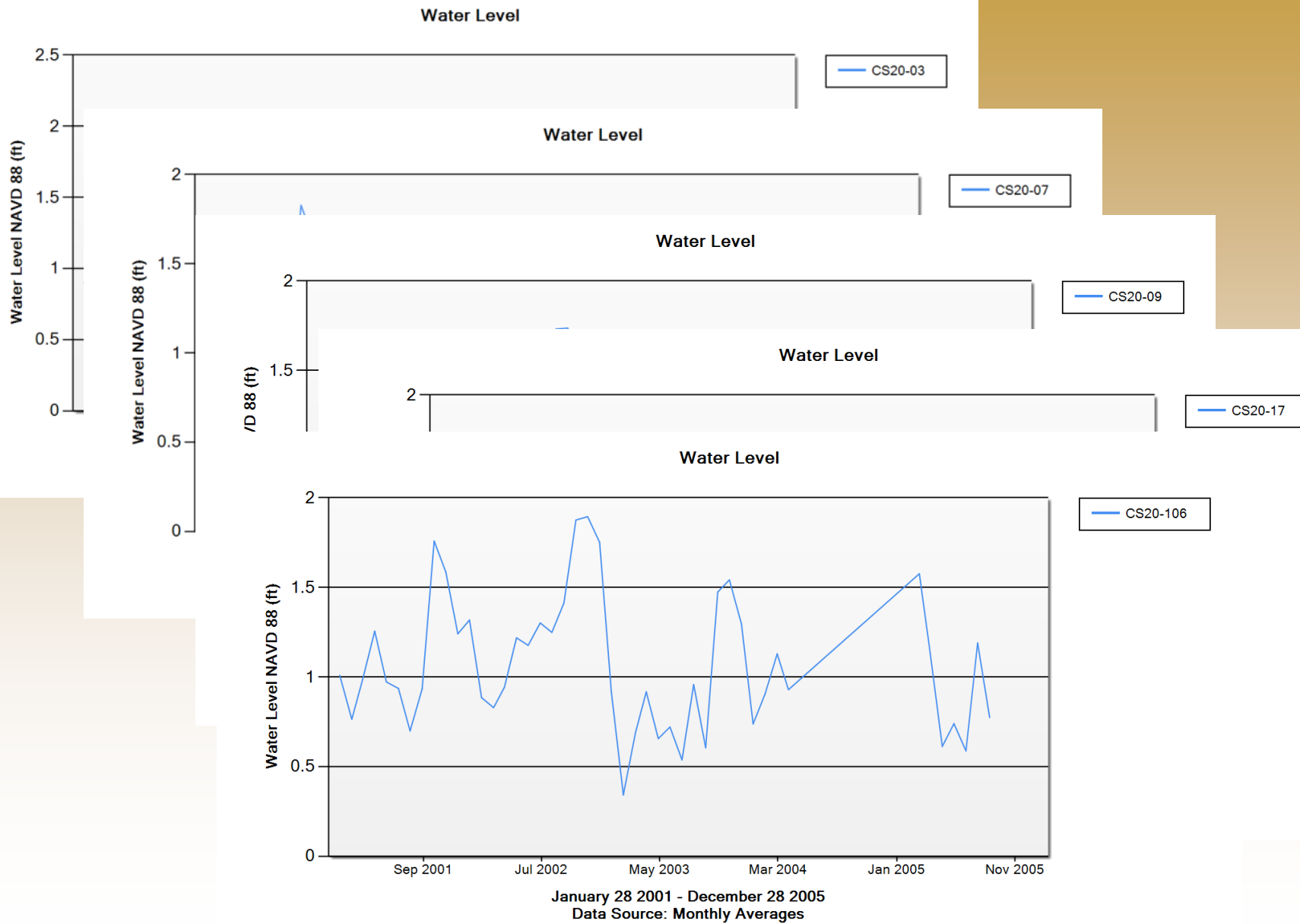
| | Select All | Deselect All |
|----------|------------|--------------|
| CS20-14R | | CS20-03 |
| CS20-15R | | CS20-07 |
| | | CS20-09 |
| | | CS20-106 |
| | | CS20-17 |

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Multiple charts with same set up.





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Charting

Bulk Charting

Data Download

Reporting

Bulk Charting

▶ Hydro

▼ **Vegetation**

Forested
Herbaceous
Site Floristic Quality Index
Project/Reference FQI
Marsh Class

▶ Soil

▶ Spatial

▶ Report Card Charts

Basin: All Basins

Project: All Projects

| Select All | Deselect All |
|------------|--------------|
| CRMS0002 | CRMS0647 |
| CRMS0003 | CRMS0655 |
| CRMS0006 | CRMS0672 |
| CRMS0008 | |
| CRMS0030 | |
| CRMS0033 | |
| CRMS0034 | |
| CRMS0035 | |
| CRMS0036 | |

Choose Colors

Cancel

| | |
|-------------------------------------|--------------------------|
| <input checked="" type="checkbox"/> | Spartina patens |
| <input type="checkbox"/> | Typha latifolia |
| <input type="checkbox"/> | Phragmites australis |
| <input type="checkbox"/> | Distichlis spicata |
| <input type="checkbox"/> | Schoenoplectus robustus |
| <input type="checkbox"/> | Paspalum vaginatum |
| <input type="checkbox"/> | Amaranthus bigelovii |
| <input type="checkbox"/> | Paspalum distichum |
| <input type="checkbox"/> | Symphyotrichum subulatum |
| <input type="checkbox"/> | Other |

piazzas@usgs.gov

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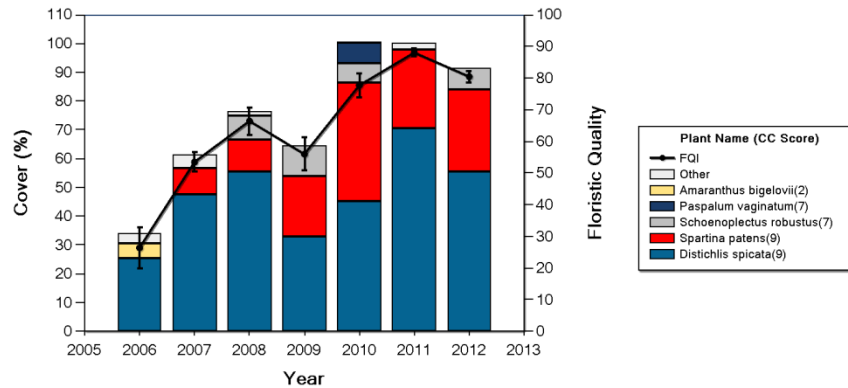
Charting

Bulk Charting

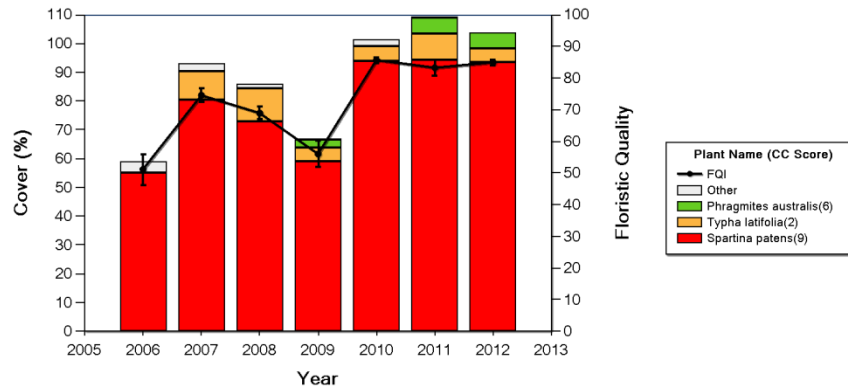
Data Download

Reporting

Floristic Quality Index for Saline Marsh, Site CRMS0655



Floristic Quality Index for Intermediate Marsh, Site CRMS0647



Basin: All Basins

Project: All Projects

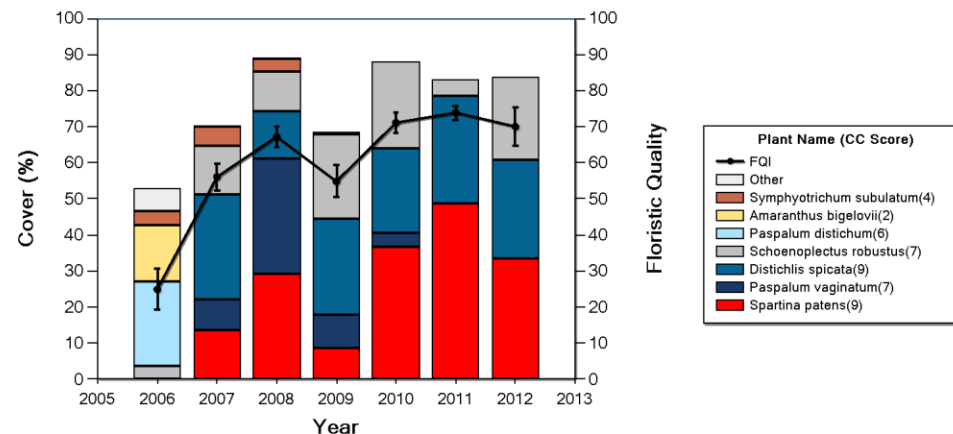
| Select All | Deselect All |
|------------|--------------|
| CRMS0002 | CRMS0647 |
| CRMS0003 | CRMS0655 |
| CRMS0006 | CRMS0672 |
| CRMS0008 | |
| CRMS0030 | |
| CRMS0033 | |
| CRMS0034 | |
| CRMS0035 | |

Choose Colors

Cancel

| | |
|-------------------------------------|-----------------|
| <input checked="" type="checkbox"/> | Spartina patens |
| <input checked="" type="checkbox"/> | Typha latifolia |

Floristic Quality Index for Brackish Marsh, Site CRMS0672





CRMS Data Download

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Data Download

Data available through this website are calculated or derived values based on the original data which are available from the SONRIS database ([SONRIS](#))

▶ Hydro

▶ Vegetation

▶ Soil

▶ Spatial



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Data Download

Data available through this website are calculated or derived values based on the original data which are available from the SONRIS database ([SONRIS](#))

▼ Hydro

Hydro Averages

Hydro Index

Percent Flooded

Water Level Range

▶ Vegetation

▶ Soil

▶ Spatial

Water Year is October 1 - September 30

Year:

| | Select All | Deselect All |
|------|----------------------------|------------------------------|
| 2007 | | |
| 2008 | | |
| 2009 | | |
| 2010 | | |
| 2011 | | |
| 2012 | | |
| 2013 | | |
| | | |

Submit



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Data Download

Data available through this website are calculated or derived values based on the original data which are available from the SONRIS database ([SONRIS](#))

▼ Hydro

Hydro Averages

Hydro Index

Percent Flooded

Water Level Range

▶ Vegetation

▶ Soil

▶ Spatial

Water Year is October 1 - September 30

Year:

| | Select All | Deselect All |
|--|------------|--------------|
| | | 2007 |
| | | 2008 |
| | | 2009 |
| | | 2010 |
| | | 2011 |
| | | 2012 |
| | | 2013 |
| | | |

Submit

Basin: All Basins ▼

Project: All Projects ▼

| | Select All | Deselect All |
|----------|------------|--------------|
| CRMS0002 | | CRMS0030 |
| CRMS0003 | | CRMS0033 |
| CRMS0006 | | CRMS0034 |
| CRMS0047 | | CRMS0035 |
| CRMS0056 | | CRMS0038 |
| CRMS0058 | | CRMS0039 |
| CRMS0061 | | CRMS0046 |
| CRMS0063 | | |
| CRMS0065 | | |

[Show Map Selector](#) Email Address:

Submit Request



Spatial selection has been added to Charting

ChartingBulk ChartingData DownloadReporting

▼ Hydro

Water Level Range
Hydro Completeness
Salinity
Water Level
Temperature
Continuous
Site Hydro Index
Soil Porewater
Precipitation

Interactive Hydro

▶ Vegetation

▶ Soil

▶ Spatial

▶ Report Card Charts

Clear Charts

Water Year is October 1 - September 30

Scale: Multi Station ▼

Date Range:
2/25/1987 - 3/11/2014

Min Date: 2/25/1987

Max Date: 3/11/2014

Apply Date Filter ⓘ

Basin: All Basins ▼ Project: All Projects ▼

Selection limited to 10 items

| | |
|---------|--|
| AT04-01 | |
| AT04-02 | |
| AT04-03 | |
| AT04-04 | |
| AT04-06 | |
| BA01-01 | |
| BA01-02 | |
| BA01-03 | |
| BA01-04 | |

☐ Include major weather/storm events

Show Map Selector

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Spatial selection has been added to Charting

Select Mode - Drag the Mouse inside the map to select stations.



■ CRMS Stations ■ CWPPRA Stations

Clear Selected

Submit

BA01-02

BA01-03

Show Map Selector

Submit Request

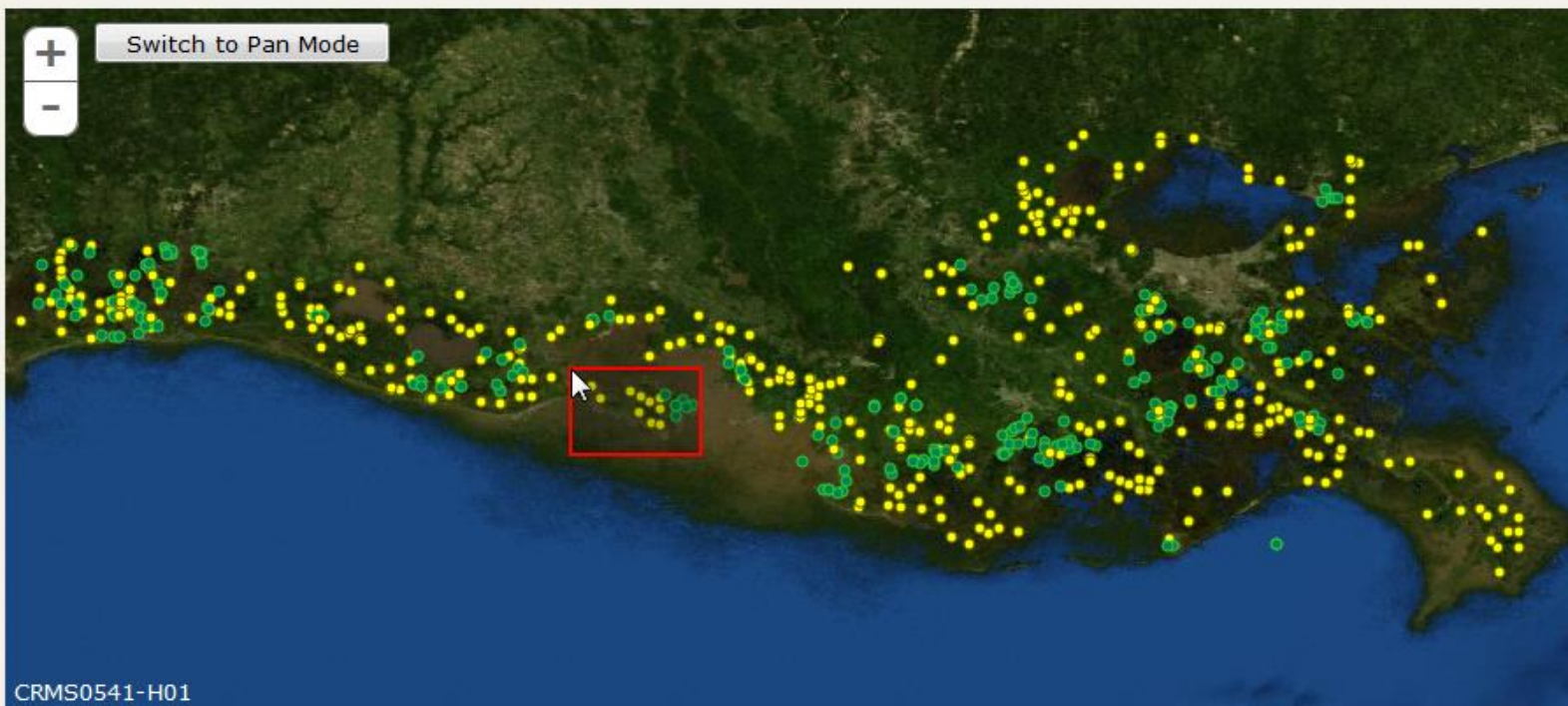




Spatial selection has been added to Charting

[Previous Charting Version](#)

Select Mode - Drag the Mouse inside the map to select stations.



● CRMS Stations

● CWPPRA Stations

Clear Selected

Submit

BA01-02

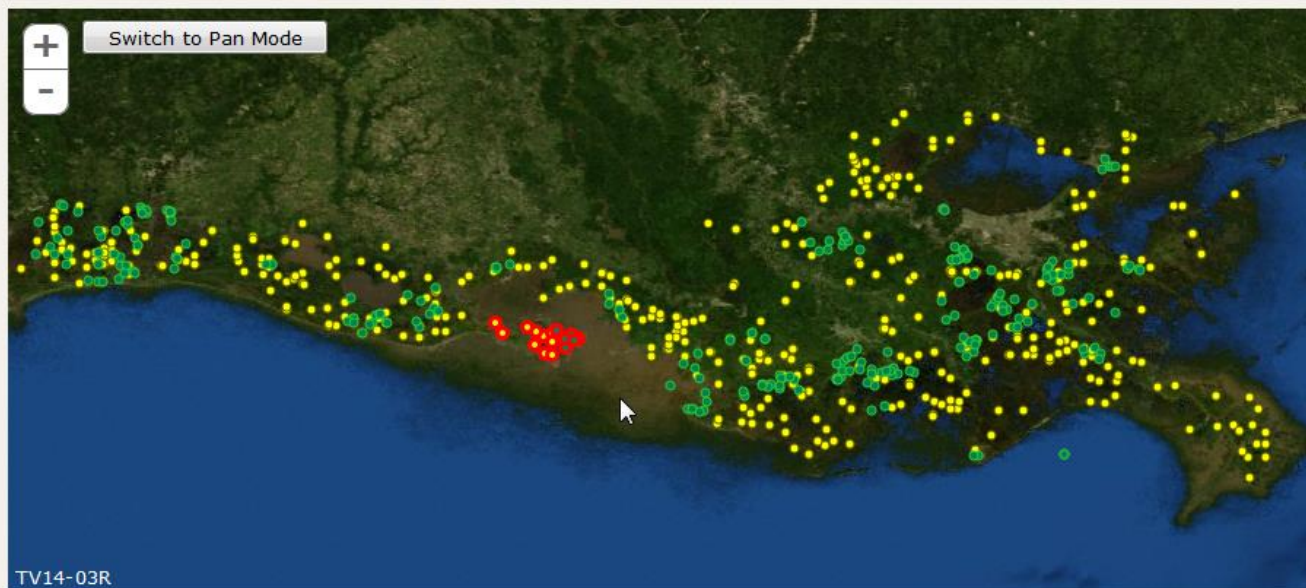
BA01-03

☐ Include major weather\storm events



Spatial selection has been added to Charting

Select Mode - Drag the Mouse inside the map to select stations.



■ CRMS Stations ■ CWPPRA Stations

Clear Selected

Submit

BA01-02

CRMS0524-W01

BA01-03

CRMS0529-H01

Show Map Selector

Submit Request





Spatial selection has been added to Charting

Water Level Range
Hydro Completeness
Salinity
Water Level
Temperature
Continuous
Site Hydro Index
Soil Porewater
Precipitation

Interactive Hydro

▶ Vegetation

▶ Soil

▶ Spatial

▶ Report Card Charts

Clear Charts

Scale: **Multi Station**

Date Range:

2/25/1987 - 1/31/2014

Min Date: 2/25/1987

Max Date: 1/31/2014

Apply Date Filter



Basin: All Basins

Project: All Projects

Selection limited to 10 items

| AT04-01 | CRMS0498-H01 |
|---------|--------------|
| AT04-02 | CRMS0499-H01 |
| AT04-03 | CRMS0504-H01 |
| AT04-04 | CRMS0520-H01 |
| AT04-06 | CRMS0522-W01 |
| BA01-01 | CRMS0523-H01 |
| BA01-02 | CRMS0524-W01 |
| BA01-03 | CRMS0529-H01 |
| BA01-04 | CRMS0530-W01 |

Show Map Selector

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Spatial selection has been added to Charting

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Charting

Bulk Charting

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Reporting

Hydro

Water Level Range
Hydro Completeness
Salinity
Water Level
Temperature
Continuous
Site Hydro Index
Soil Porewater
Precipitation

Interactive Hydro

Vegetation

Soil

Spatial

Report Card Charts

Clear Charts

Water Year is October 1 - September 30

Scale: Multi Station

Date Range:

2/25/1987 - 1/31/2014

Min Date: 2/25/1987

Max Date: 1/31/2014

Apply Date Filter



Basin: Mississippi River

Project: All Projects

Selection

- All Basins
- Atchafalaya
- Barataria
- Breton Sound
- Calcasieu/Sabine
- Mermentau
- Mississippi River Delta**
- Pontchartrain
- Terrebonne
- Teche/Vermilion
- CRMS0159-H01
- CRMS0161-H01
- CRMS0162-H01
- CRMS0163-H01
- CRMS0164-H01

☐ Include major weather/storm events



Spatial selection has been added to Charting


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Select Mode - Drag the Mouse inside the map to select stations. ✕

+

-

Switch to Pan Mode



● CRMS Stations ● CWPPRA Stations

CRMS0162-H01

CRMS0163-H01

CRMS0164-H01

Clear Selected


Submit


☐ Include major weather\storm events


CRMS Report Card




HomeDataMappingLibraryVisualizationProgram

MapsPresentationsDNR ReportsCRMS Reporting


Map


Data


Factsheet



Wetland restoration efforts conducted in Louisiana require monitoring the effectiveness of individual projects as well as monitoring the cumulative effects of all projects in restoring, creating, enhancing, and protecting the coastal landscape. The effectiveness of the traditional paired-reference monitoring approach in Louisiana has been limited because of difficulty in finding comparable test sites. CRMS is a multiple reference approach that uses aspects of hydrogeomorphic functional assessments and probabilistic sampling.

This approach includes a suite of sites that encompass the range of ecological conditions for each stratum, with projects placed on a continuum of conditions found for that stratum. Trajectories in reference sites are then compared with project trajectories.



Previous Charting Version

Charting

Bulk Charting

Data Download

Reporting

Generate Report Card

Year: 2011 ▼

▼ Generate Report Card

Site Level Report

Project Level Report

Basin Level Report

Coastwide Level Report

► OM&M

CRMS0002

CRMS0003

CRMS0006

CRMS0008

CRMS0030

CRMS0033

CRMS0034

CRMS0035

CRMS0038

CRMS0039

CRMS0046

CRMS0047

Submit Request

Report Card CRMS0003 2011



Coastwide Reference Monitoring System (CRMS)

Site Level Report Card

Site: CRMS0003

Year: 2011



7/16/2012

plot of the scores for all the sites within the same marsh type each year.

in a given

CRMS

Figure
CRMS
CRMS

Coastal Site Assessment Floristic Quality Index (FQI)

Co




Literature Cited

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- Visser, J.M., Steyer, G.D., Shaffer, G.P., Höppner, S.S., Reyes E., Keddy, P., Mendelsohn, I.A., and Swarzenski, C., 2003b, Habitat Switching Module, in Louisiana Coastal Area (LCA), La - Ecosystem Restoration: Comprehensive Coastwide Exosystem.




Using the mapping interface

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SONRIS Viewer
Basic Viewer

Map
Data
Factsheet

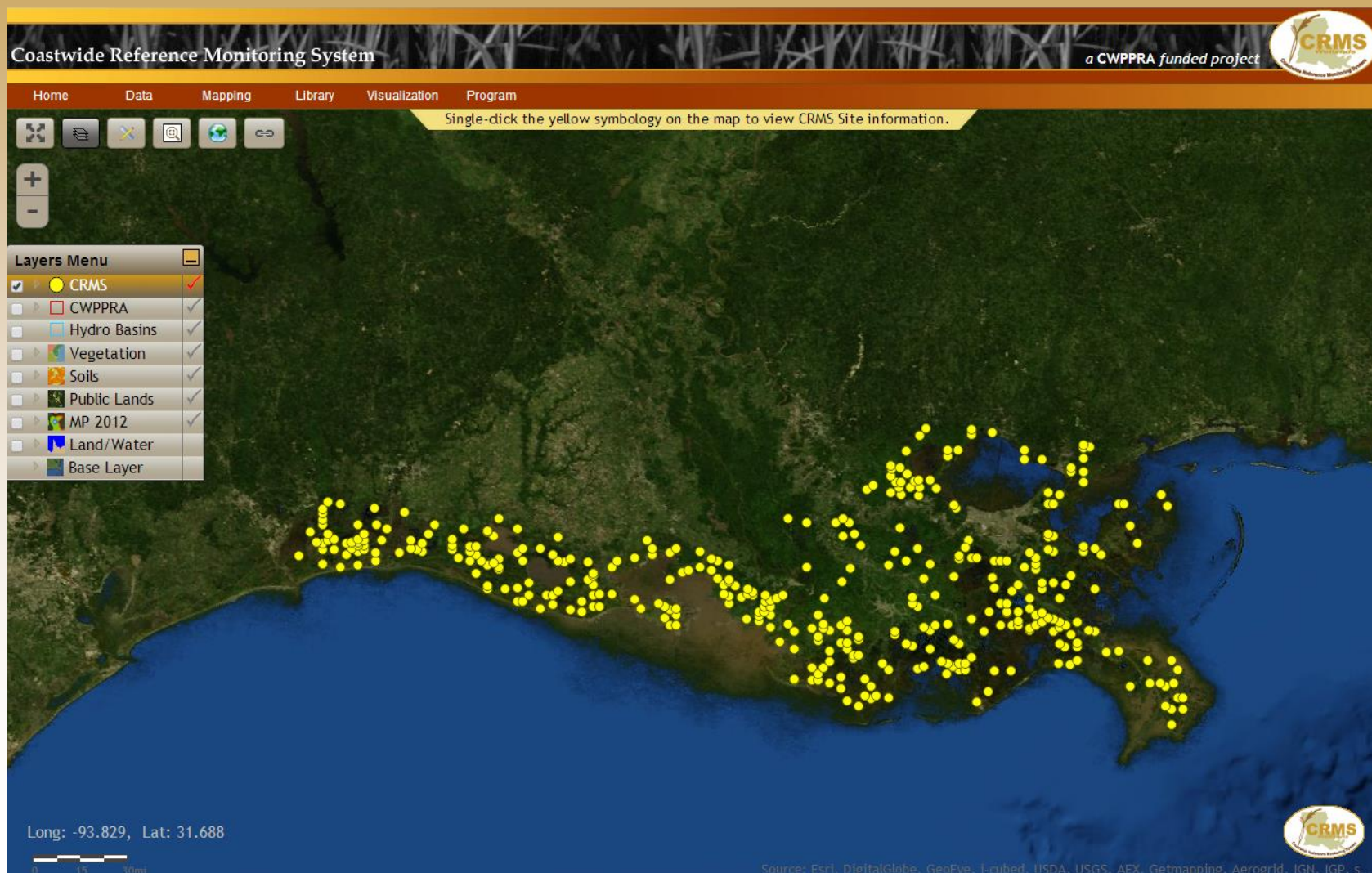
Wetland restoration efforts conducted in Louisiana require monitoring the effectiveness of individual projects as well as monitoring the cumulative effects of all projects in restoring, creating, enhancing, and protecting the coastal landscape. The effectiveness of the traditional paired-reference monitoring approach in Louisiana has been limited because of difficulty in finding comparable test sites. CRMS is a multiple reference approach that uses aspects of hydrogeomorphic functional assessments and probabilistic sampling.

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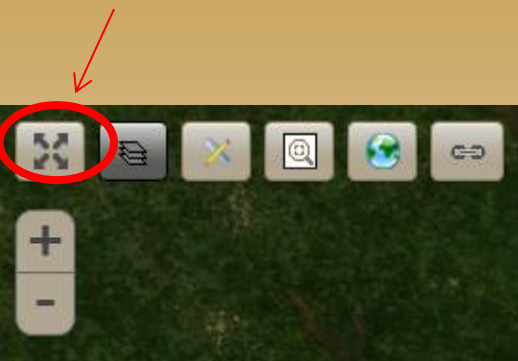


Map Navigation

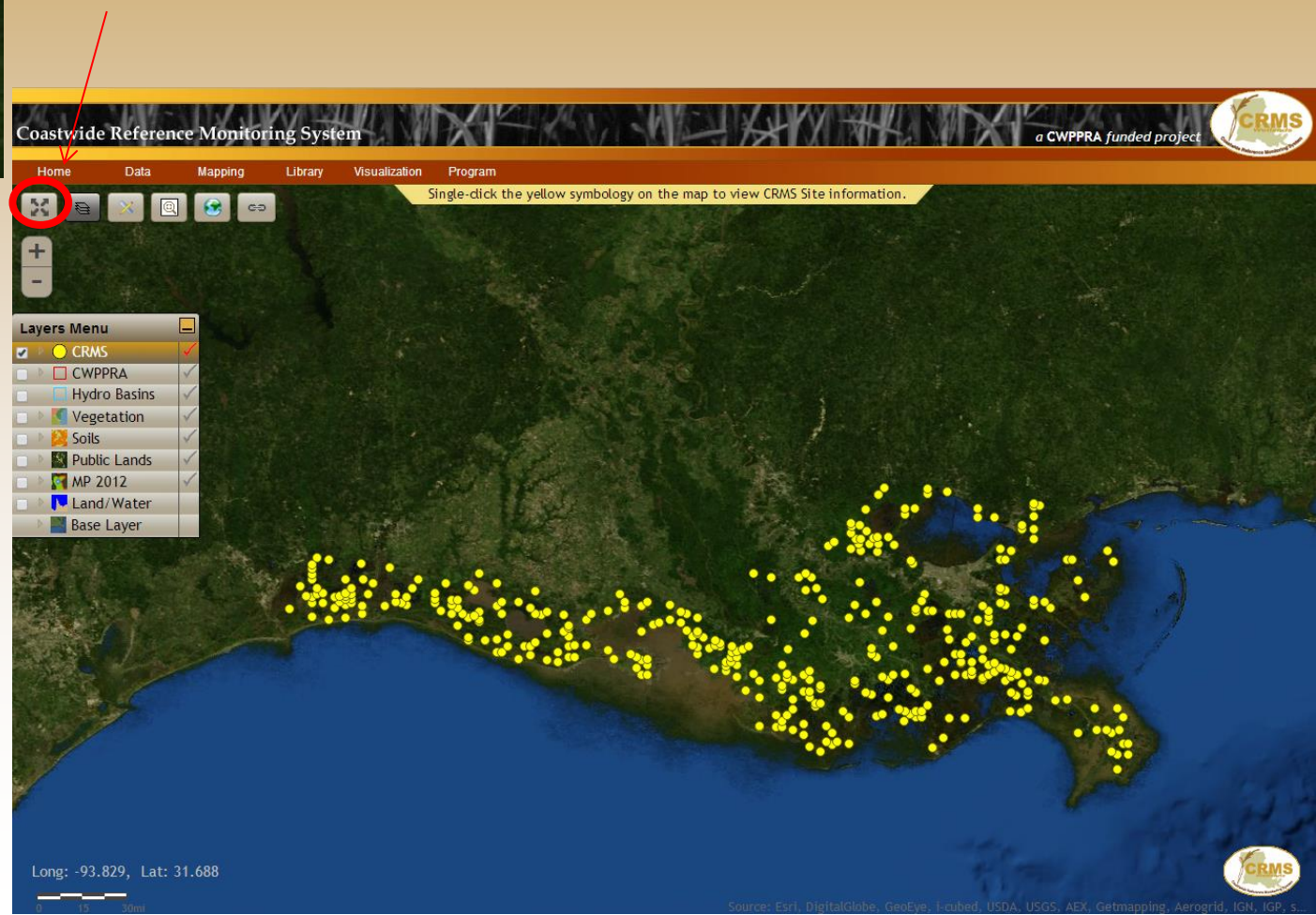
CRMS Viewer now implements ESRI's ArcGIS JavaScript API which allows mouse wheel scrolling to zoom in and out of the map.



Full Screen Button hides the top menu.

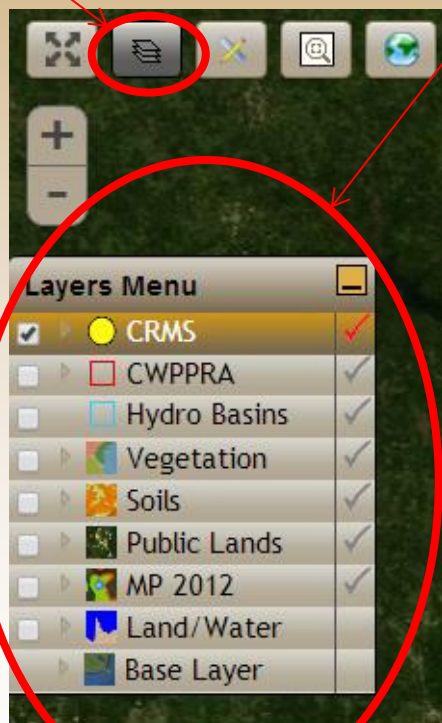


Full Screen Button changes when the top menu is hidden.

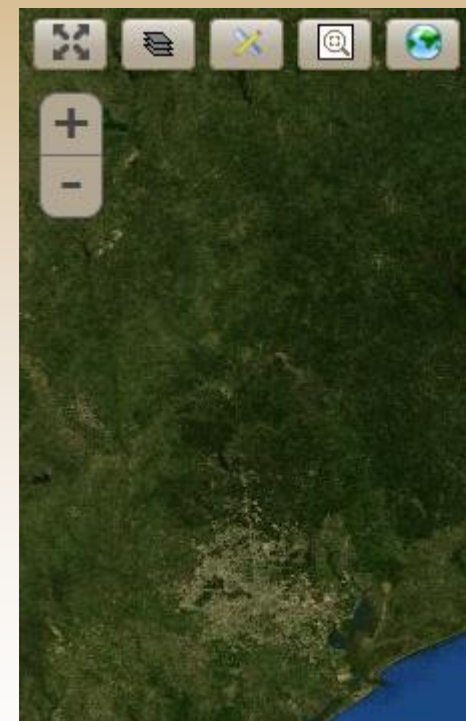


Layers Button shows and hides the Layers Menu

Layers Menu
Shown:



Layers Menu
Hidden:



Tools Button brings up the Tools Menu.

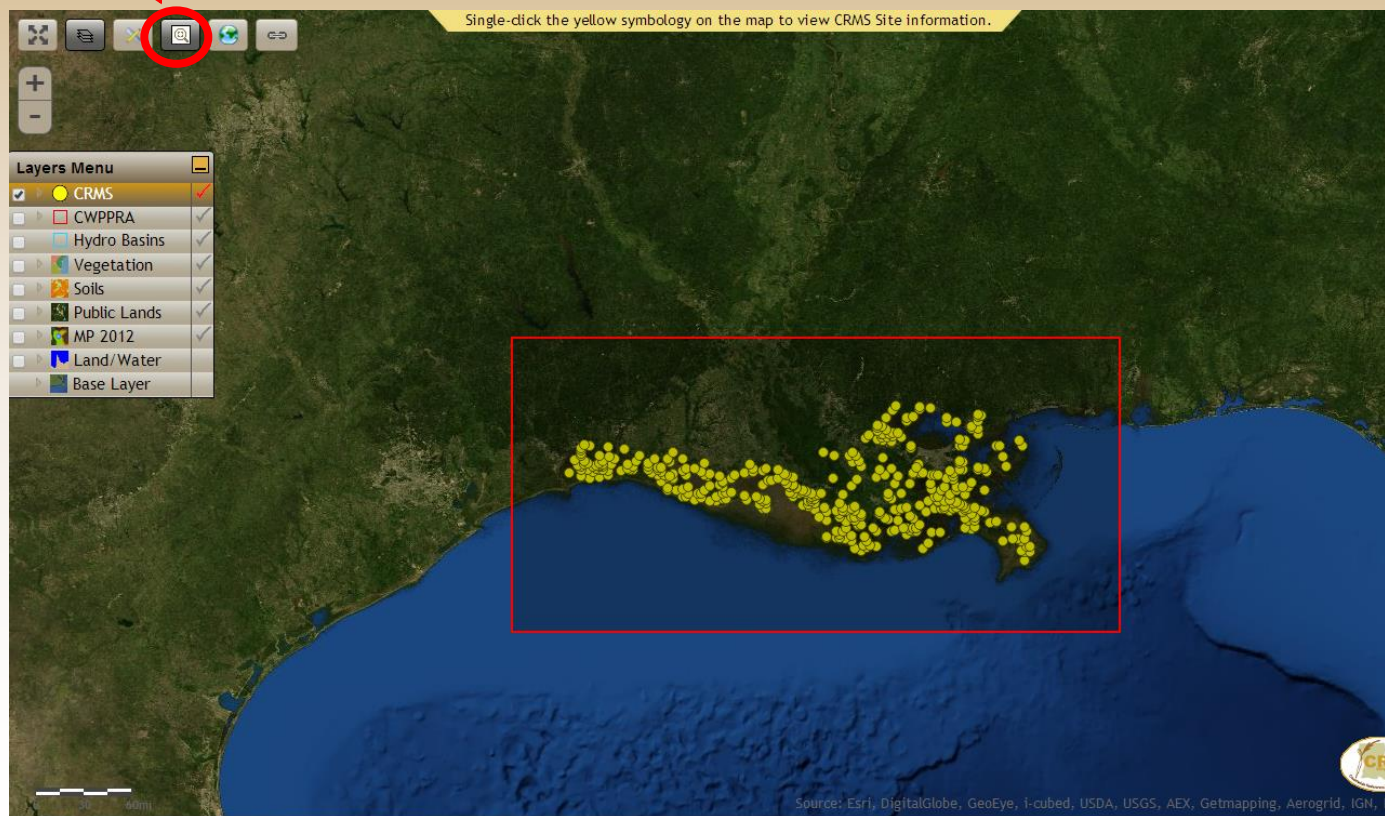


Tools Button darkens when the menu is shown.



Zoom Button zooms to the rectangle drawn on the map.

The icon darkens when the mouse is in the “zoom” state.



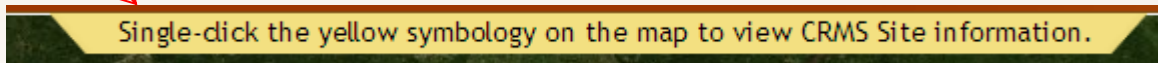
Zoom To Full Extent Button resets the map back to the original area and zoom level.



+/- Buttons zoom in and out.



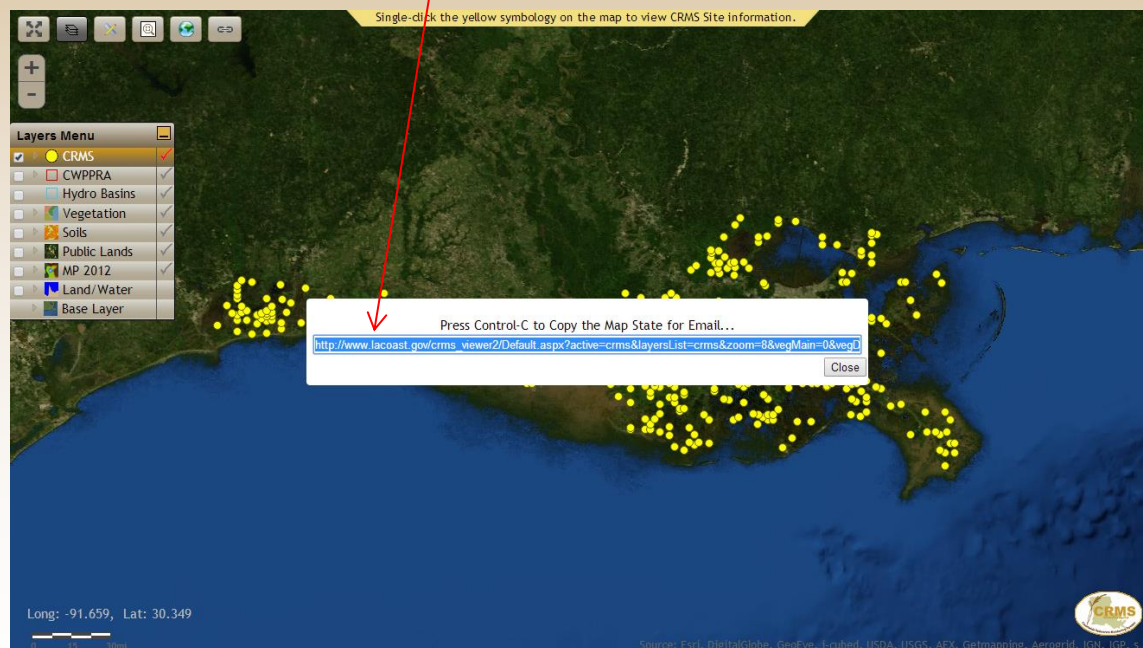
Manila dropdown shows how to interact with the current active layer.



Used to create a save state on the map.



Link created to save the current state of the map.



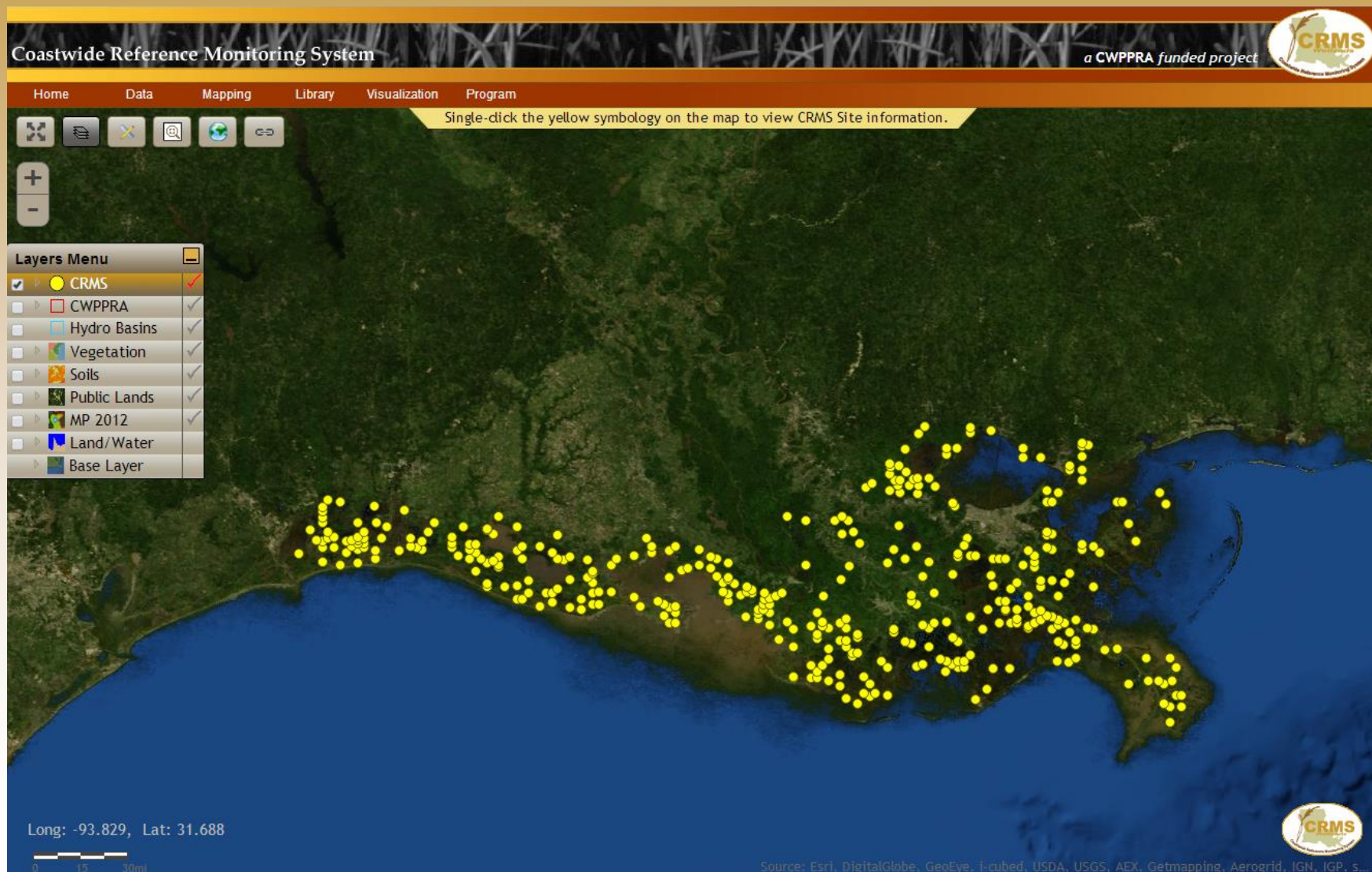
Expand layer to display more layer options.

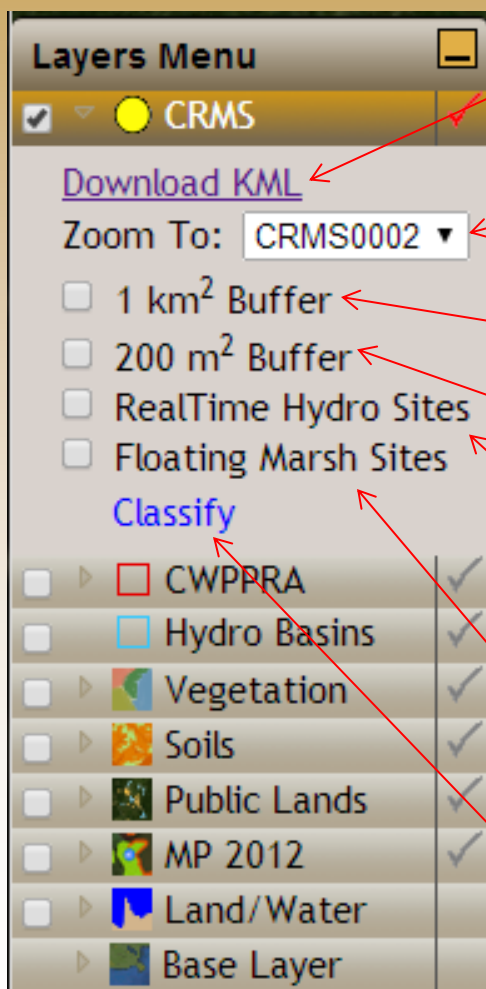


Make this the current active layer.



CRMS Active Layer





Download a KML file to used in Google Earth.

Zooms to the site and shows the site information bubble.

Checkbox adds/removes the 1 km² Buffer layer to the map.

Checkbox adds/removes the 200 m² Buffer layer to the map.

Checkbox adds/removes the Real Time Hydro Sites layer to the map.

Checkbox adds/removes the Floating Marsh Sites layer to the map.

Classify invokes the tools menu with the classification option selected.



CRMS Active Layer

Click a point for Information Bubble

Coastwide Reference Monitoring System

a CWPRA funded project

Home Data Mapping Library Visualization Program

Single-click the yellow symbology on the map to view CRMS Site information.

Layers Menu

- ☒ CRMS
- ☐ CWPRA
- ☐ Hydro Basins
- ☐ Vegetation
- ☐ Soils
- ☐ Public Lands
- ☐ MP 2012
- ☐ Land/Water
- ☐ Base Layer

Info Water Vegetation Soil Spatial Report Card Tools

Site ID: CRMS5035
Lat, Long: 29.6212, -91.0397
Marsh Elevation: 1.57ft NAVD1988 GEOID99

Data Availability: 2014

Pre/Post Construction Pictures:

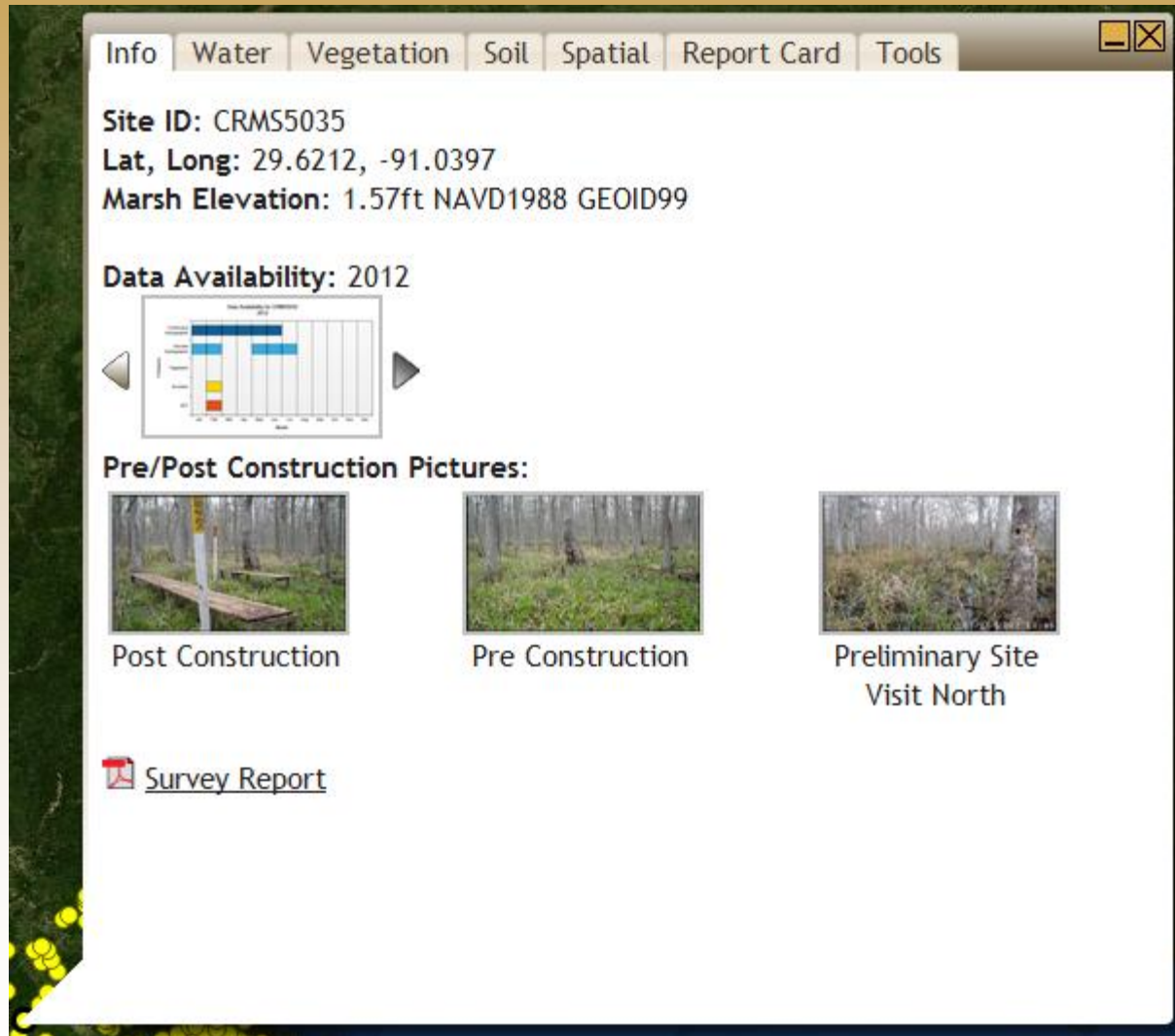
Post Construction Pre Construction Preliminary Site Visit North

Survey Report

Long: -92.539, Lat: 31.868

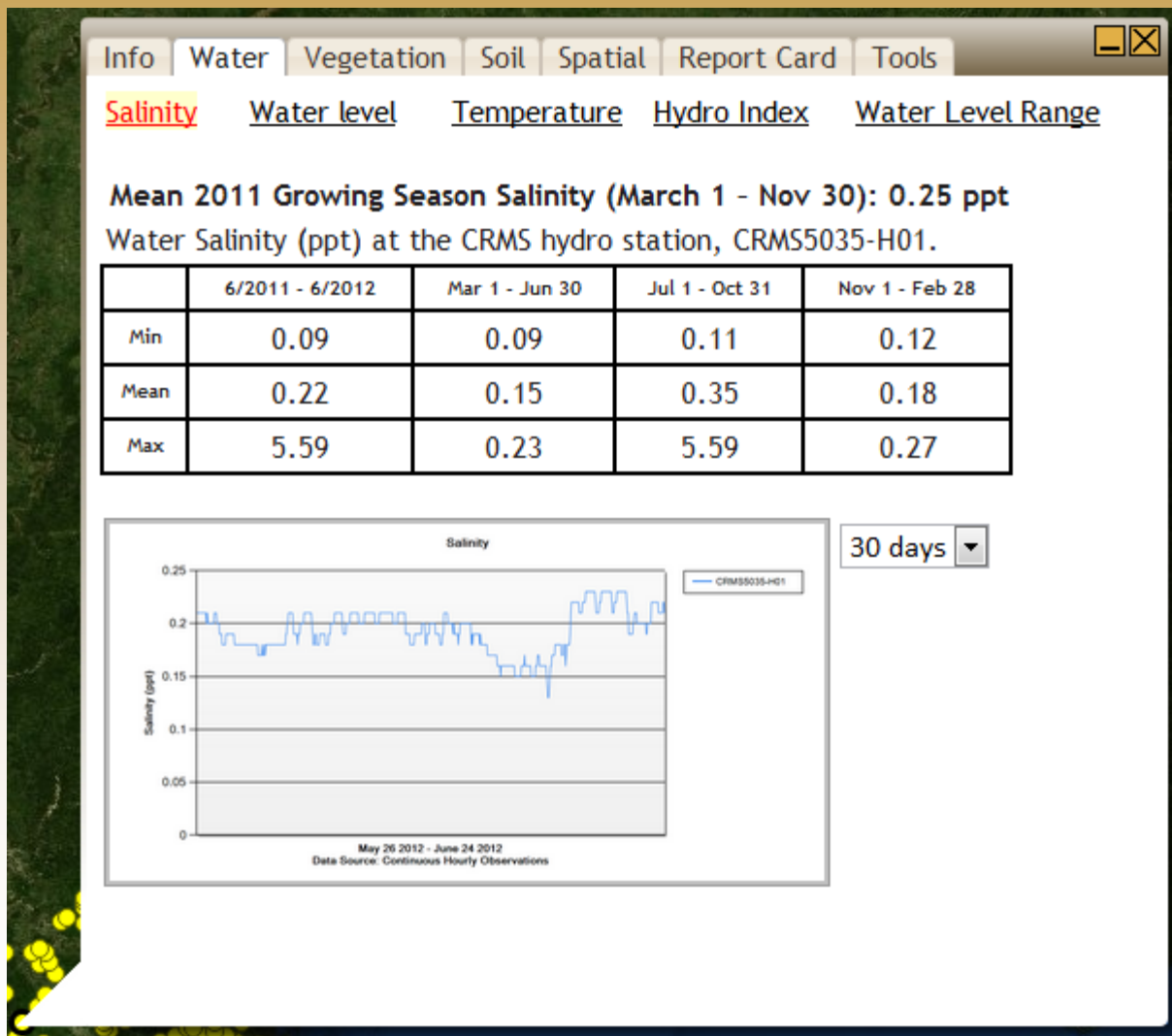
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User

Information Bubble

The screenshot shows a web-based information bubble for a specific CRMS site. At the top, there is a navigation bar with tabs for "Info", "Water", "Vegetation", "Soil", "Spatial", "Report Card", and "Tools". The "Info" tab is currently selected. Below the navigation bar, the site's details are listed: "Site ID: CRMS5035", "Lat, Long: 29.6212, -91.0397", and "Marsh Elevation: 1.57ft NAVD1988 GEOID99". A section titled "Data Availability: 2012" contains a horizontal bar chart showing data availability for various parameters (Water, Vegetation, Soil, Spatial) across different years (2008, 2009, 2010, 2011, 2012). Below the chart, the "Pre/Post Construction Pictures:" section displays three photographs: "Post Construction" (a wooden boardwalk in a wetland), "Pre Construction" (a natural wetland area), and "Preliminary Site Visit North" (a wetland area with trees). At the bottom, there is a link labeled "Survey Report" with a document icon.

The information bubble appears when a CRMS site is clicked. The Site Info tab is automatically chosen when the bubble pops up on the screen.

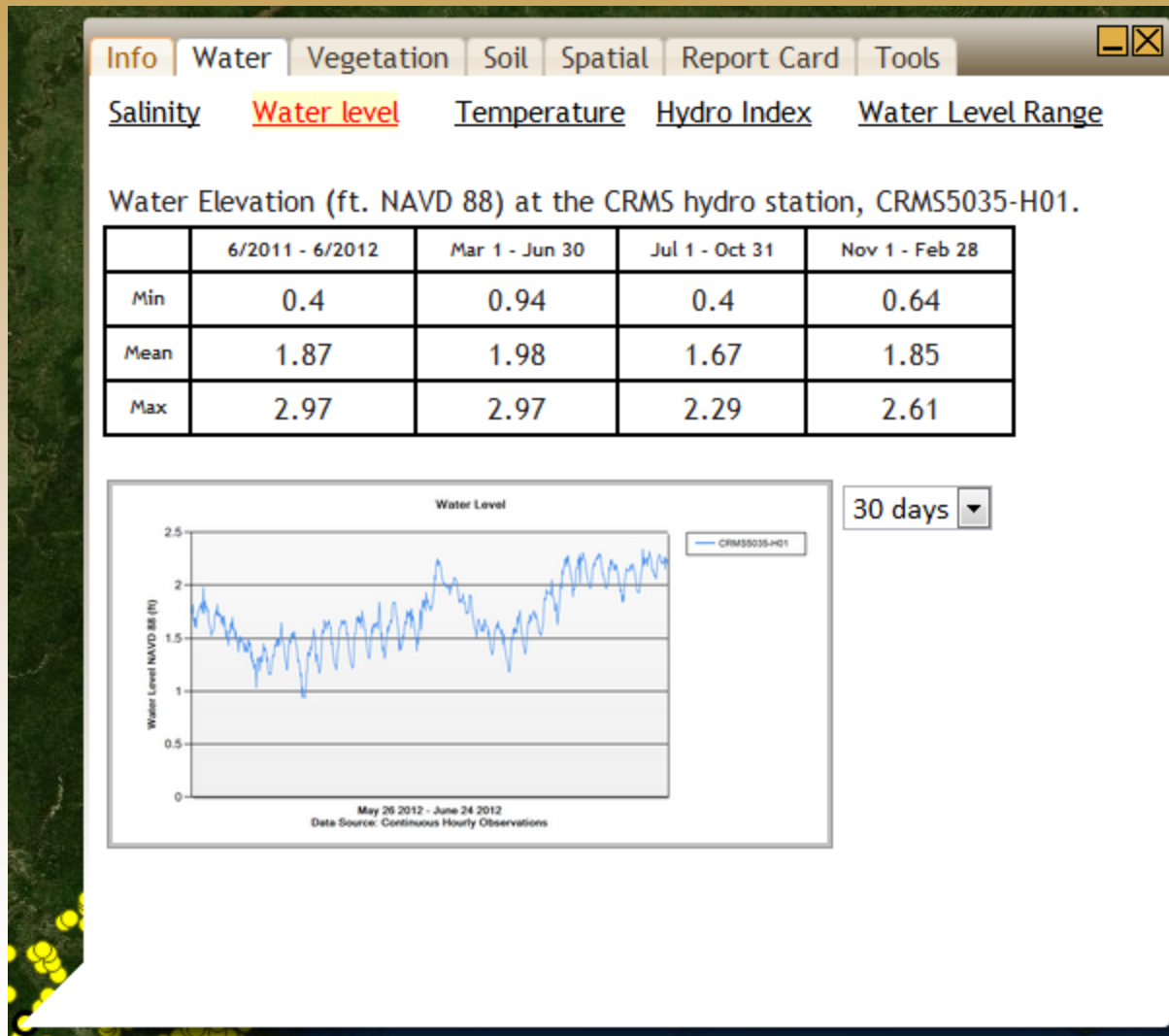
Information Bubble



The Water tab contains all hydrologic information for the selected site.

Salinity – Brief overview of salinity data for the site. Also charts most recent salinity data for the site.

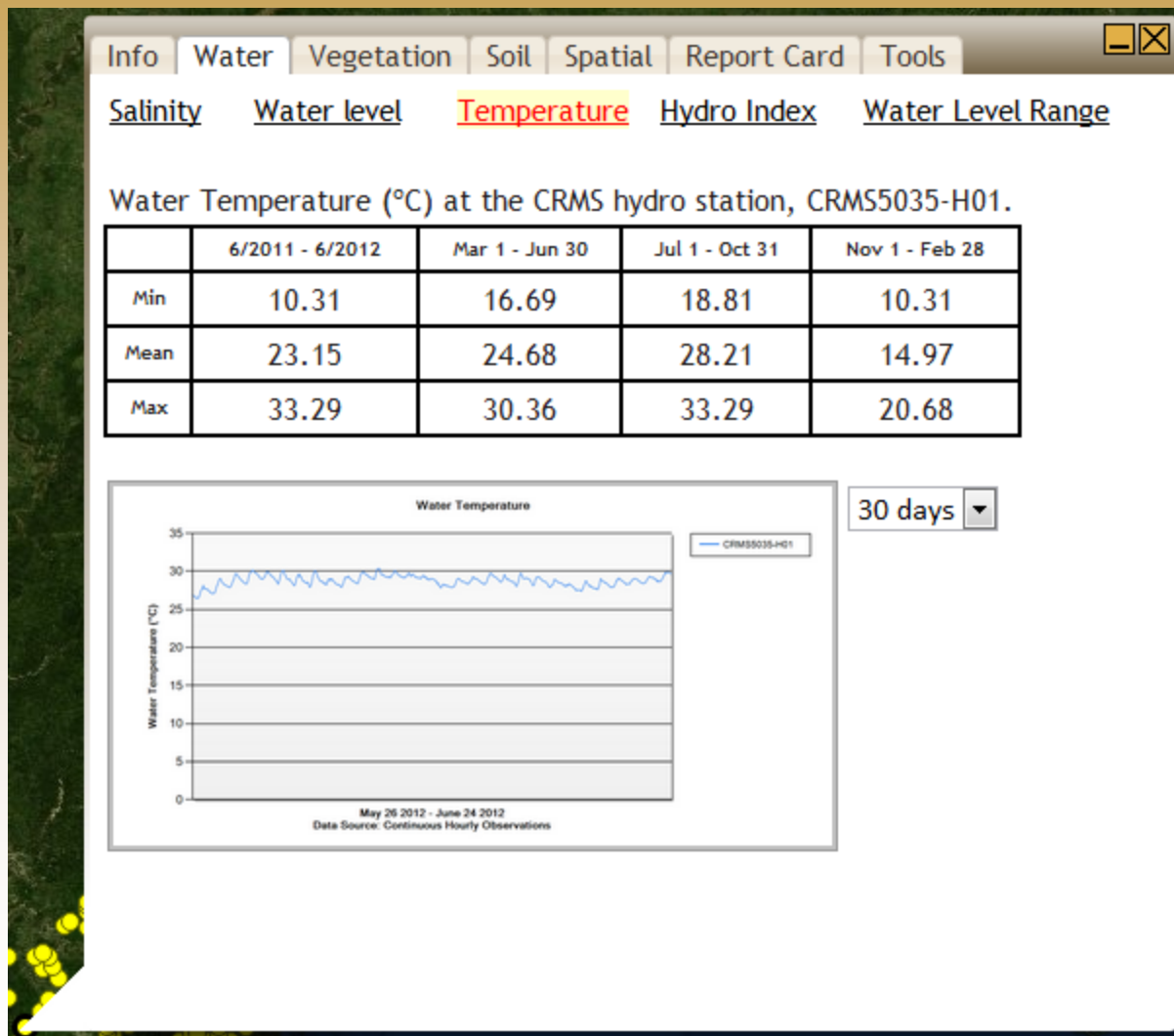
Information Bubble



The Water tab contains all hydrologic information for the selected site.

Water Level – Brief overview of water level data for the site. Also charts most recent water level data for the site.

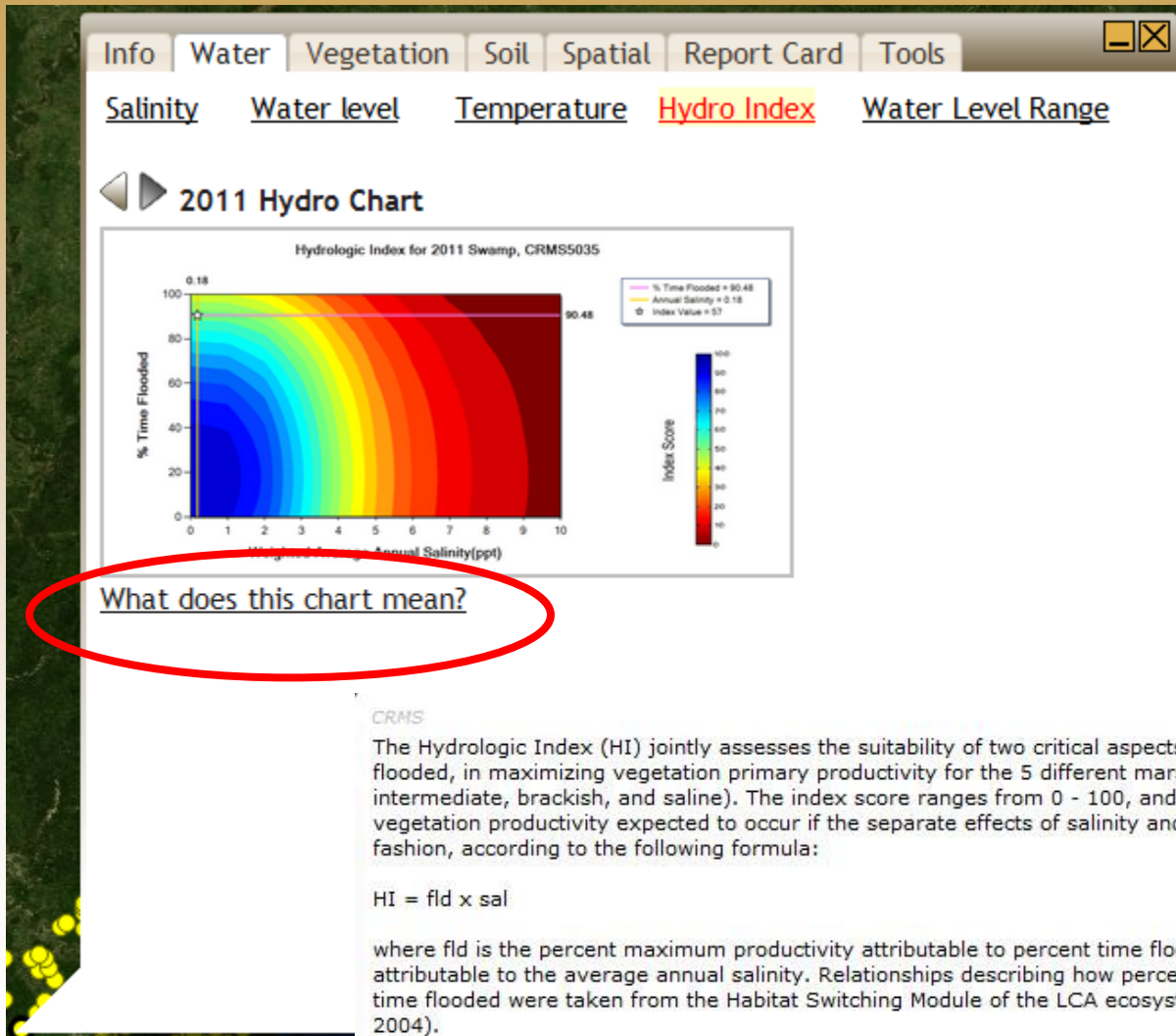
Information Bubble



The Water tab contains all hydrologic information for the selected site.

Water Temperature – Brief overview of water temperature data for the site. Also charts most recent temperature data for the site.

Information Bubble

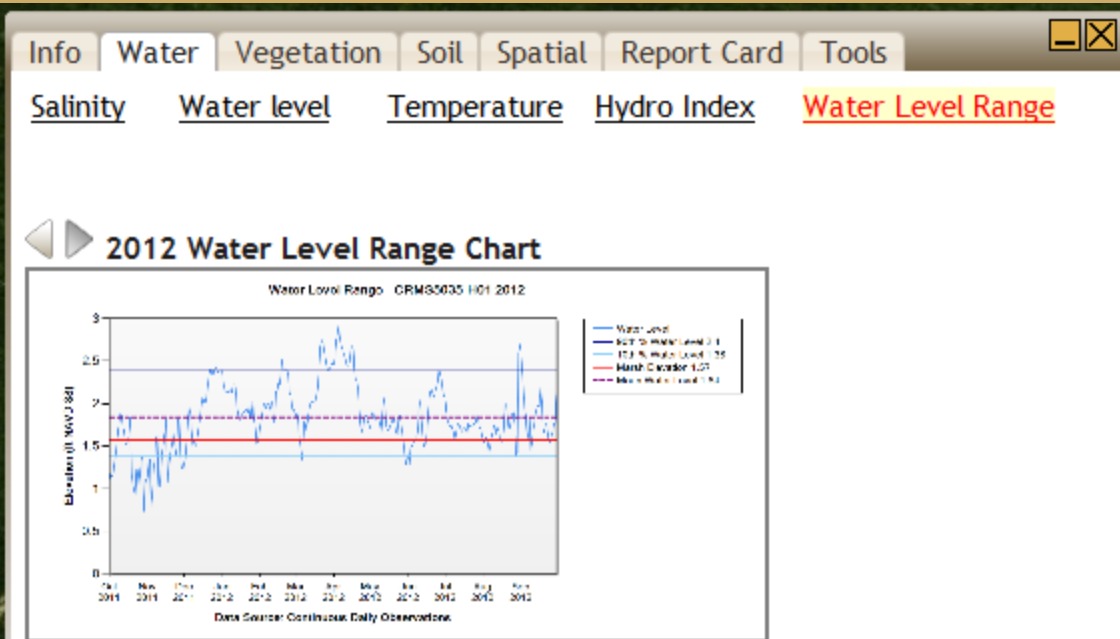


The Water tab contains all hydrologic information for the selected site.

Hydro Index – All Hydro Index charts available for the site.

Information Bubble

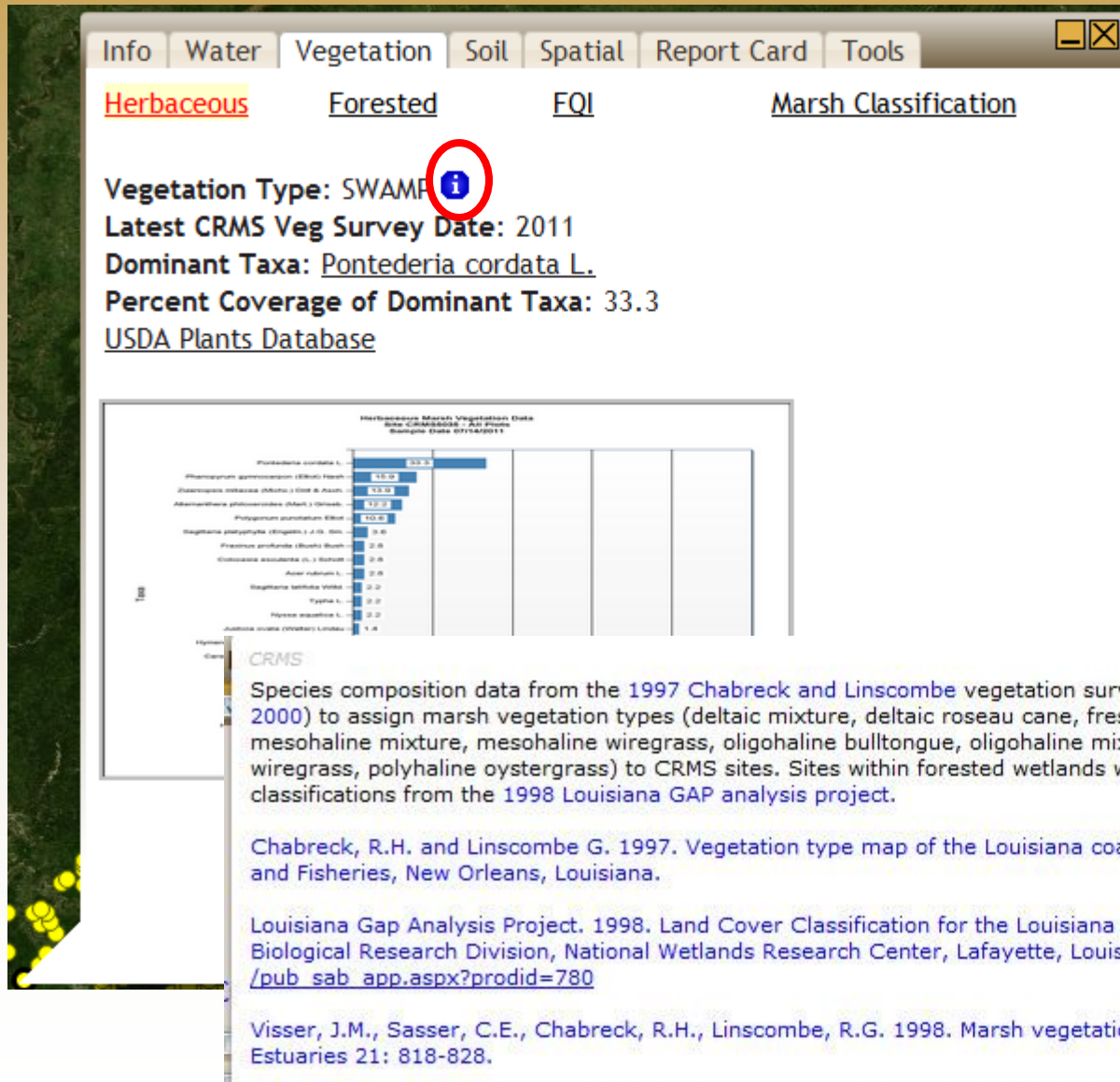
The Water tab contains all hydrologic information for the selected site.



Water Level Range – All water level range charts available for the current site.

What does this chart mean?

Information Bubble



The screenshot shows the CRMS Active Layer interface with the 'Vegetation' tab selected. The 'Herbaceous' sub-tab is active, displaying site information for a 'SWAMP' site. A red circle highlights an information icon (i) next to the 'Vegetation Type: SWAMP' label. Below this, the 'Latest CRMS Veg Survey Date: 2011', 'Dominant Taxa: *Pontederia cordata* L.', 'Percent Coverage of Dominant Taxa: 33.3', and 'USDA Plants Database' are listed. A horizontal bar chart titled 'Herbaceous Marsh Vegetation Data' shows the percent coverage of various plant species. The species *Pontederia cordata* L. has the highest coverage at 33.3%.

| Species | Percent Coverage |
|--|------------------|
| <i>Pontederia cordata</i> L. | 33.3 |
| <i>Phragmites communis</i> (Willd.) Nash | 15.0 |
| <i>Spartina patens</i> (Michx.) C. & A. Nash | 15.0 |
| <i>Alternanthera philoxeroides</i> (Roxb.) Griseb. | 12.5 |
| <i>Polygala punctatum</i> Willd. | 10.0 |
| <i>Sagittaria arifolia</i> (Willd.) J. R. Smith | 5.0 |
| <i>Fraxinus profunda</i> (Michx.) Benth. | 5.0 |
| <i>Cladonia aculeata</i> (L.) Rostk. | 5.0 |
| <i>Aster rubrum</i> L. | 5.0 |
| <i>Sagittaria latifolia</i> Willd. | 5.0 |
| <i>Lythra</i> L. | 5.0 |
| <i>Hieracium</i> L. | 5.0 |
| <i>Aster</i> L. | 5.0 |

CRMS

Species composition data from the 1997 Chabreck and Linscombe vegetation survey were used by Visser et al. (1998, 1999, 2000) to assign marsh vegetation types (deltaic mixture, deltaic roseau cane, fresh bulltongue, fresh maidencane, fresh spikerush, mesohaline mixture, mesohaline wiregrass, oligohaline bulltongue, oligohaline mixture, oligohaline spikerush, oligohaline wiregrass, polyhaline oystergrass) to CRMS sites. Sites within forested wetlands were assigned as swamp based on swamp classifications from the 1998 Louisiana GAP analysis project.

Chabreck, R.H. and Linscombe G. 1997. Vegetation type map of the Louisiana coastal marshes. Louisiana Department of Wildlife and Fisheries, New Orleans, Louisiana.

Louisiana Gap Analysis Project. 1998. Land Cover Classification for the Louisiana GAP Analysis Project. U.S. Geological Survey, Biological Research Division, National Wetlands Research Center, Lafayette, Louisiana. http://sabdata.cr.usgs.gov/sabnet_pub/pub_sab_app.aspx?prodid=780

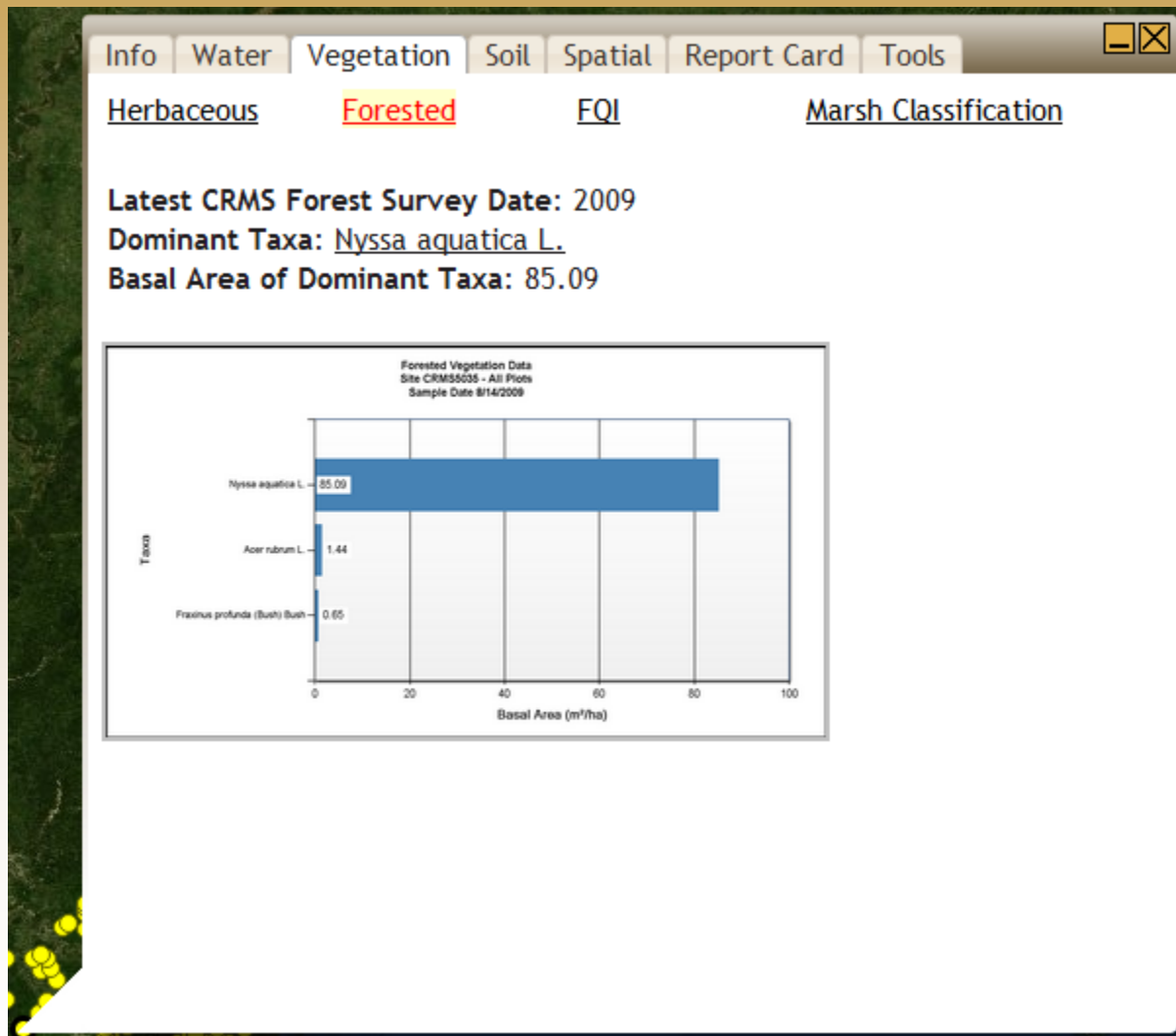
Visser, J.M., Sasser, C.E., Chabreck, R.H., Linscombe, R.G. 1998. Marsh vegetation types of the Mississippi River deltaic plain. *Estuaries* 21: 818-828.

The Vegetation tab contains all vegetation information for the selected site.

Herbaceous – Species driven percent cover chart.

MOVE CLOSE

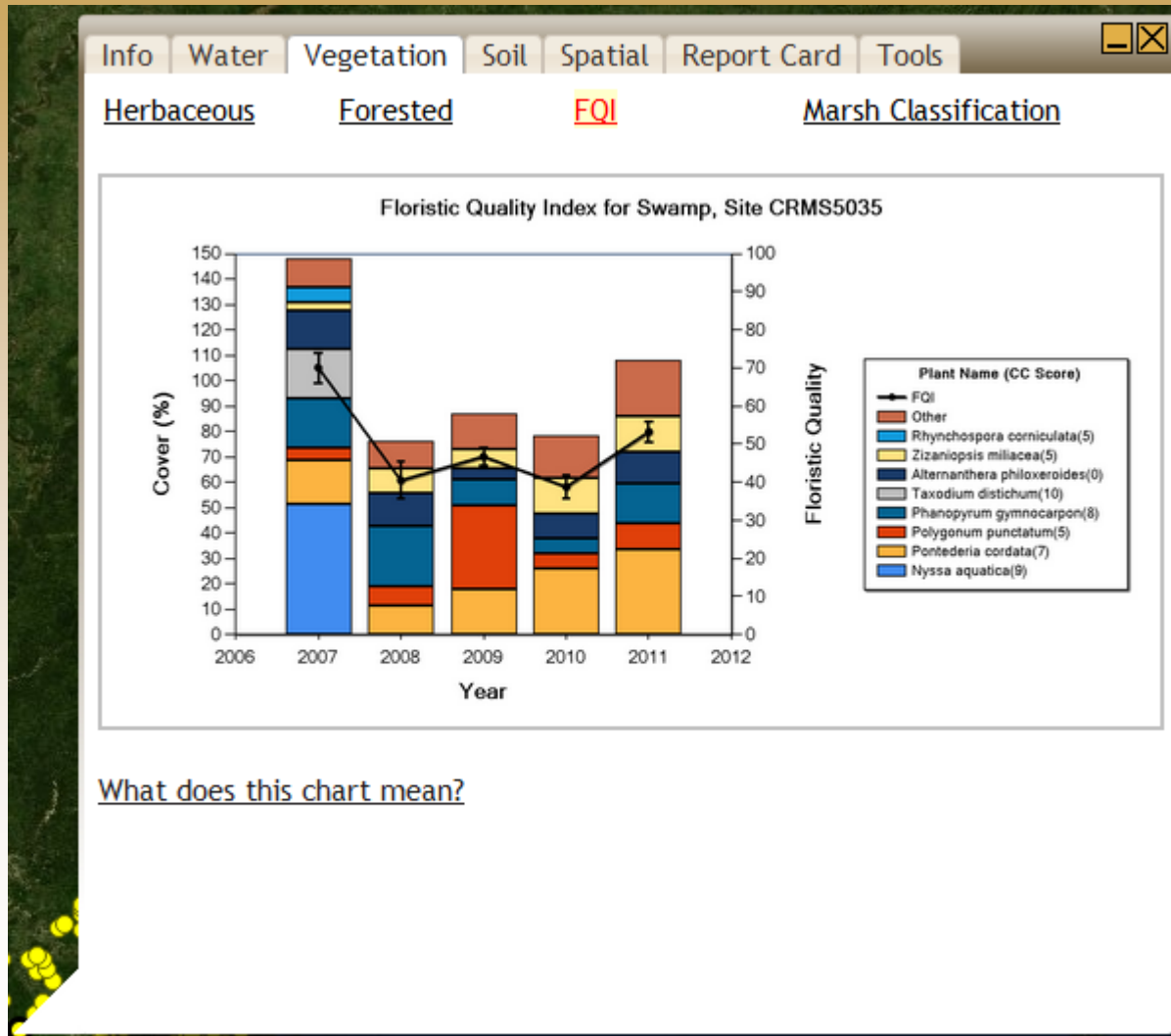
Information Bubble



The Vegetation tab contains all vegetation information for the selected site.

Forested – Species driven basal area chart.

Information Bubble

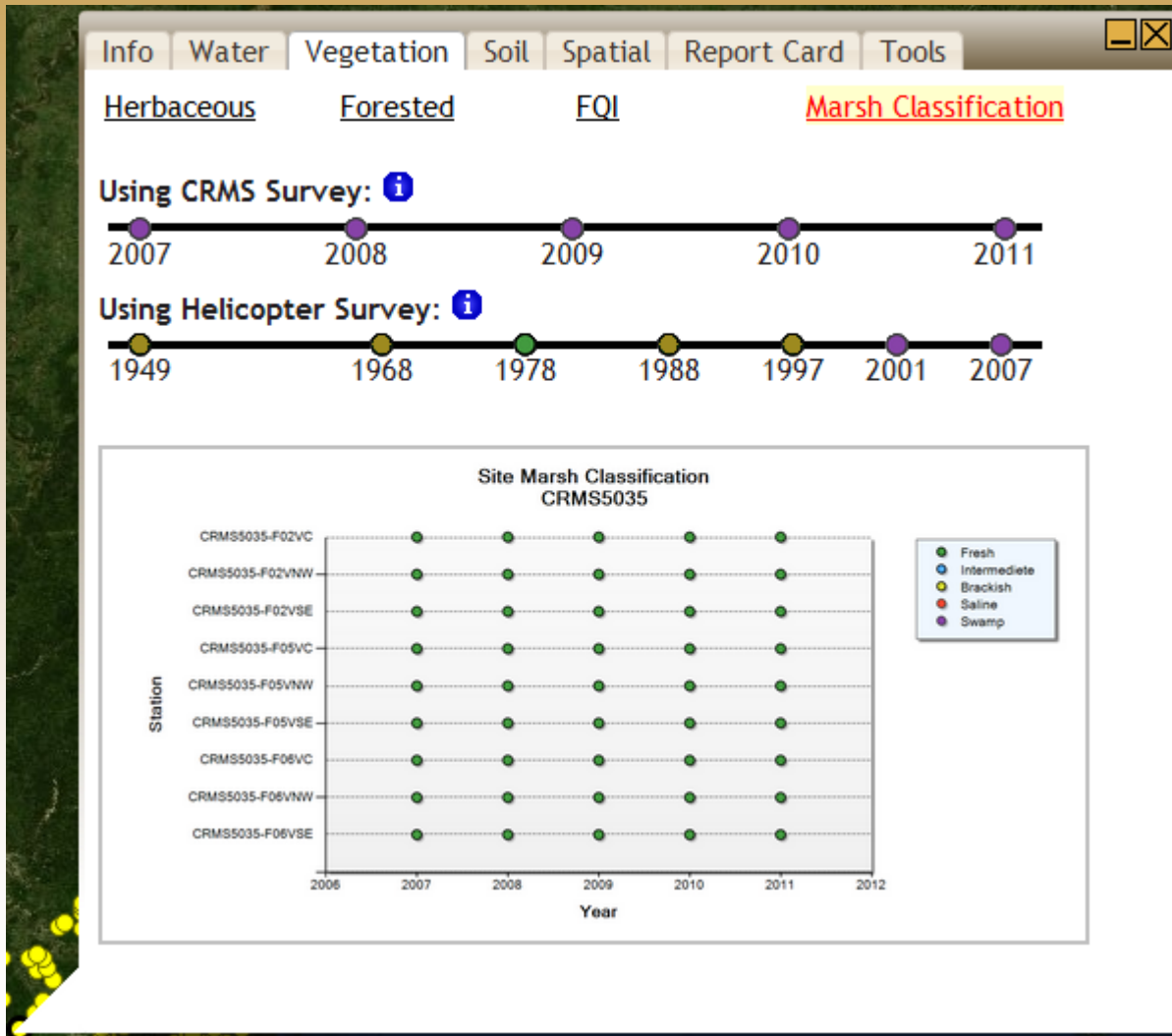


The Vegetation tab contains all vegetation information for the selected site.

Floristic Quality Index

What does this chart mean?

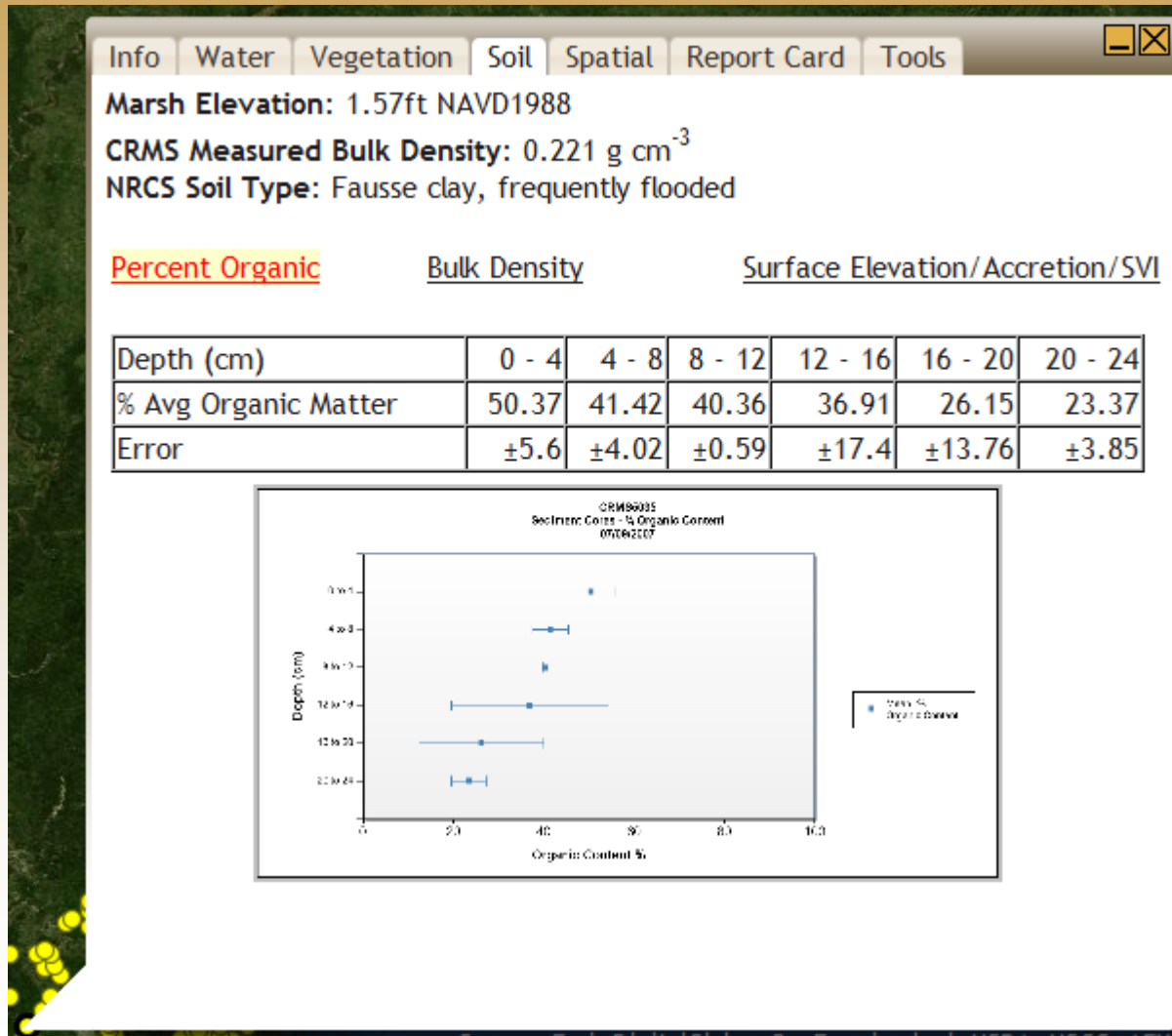
Information Bubble



The Vegetation tab contains all vegetation information for the selected site.

Marsh Classification – The chart displays marsh class by station over time, the top bar is marsh class at the site level, and the bottom line is marsh class at the site level using the helicopter survey data.

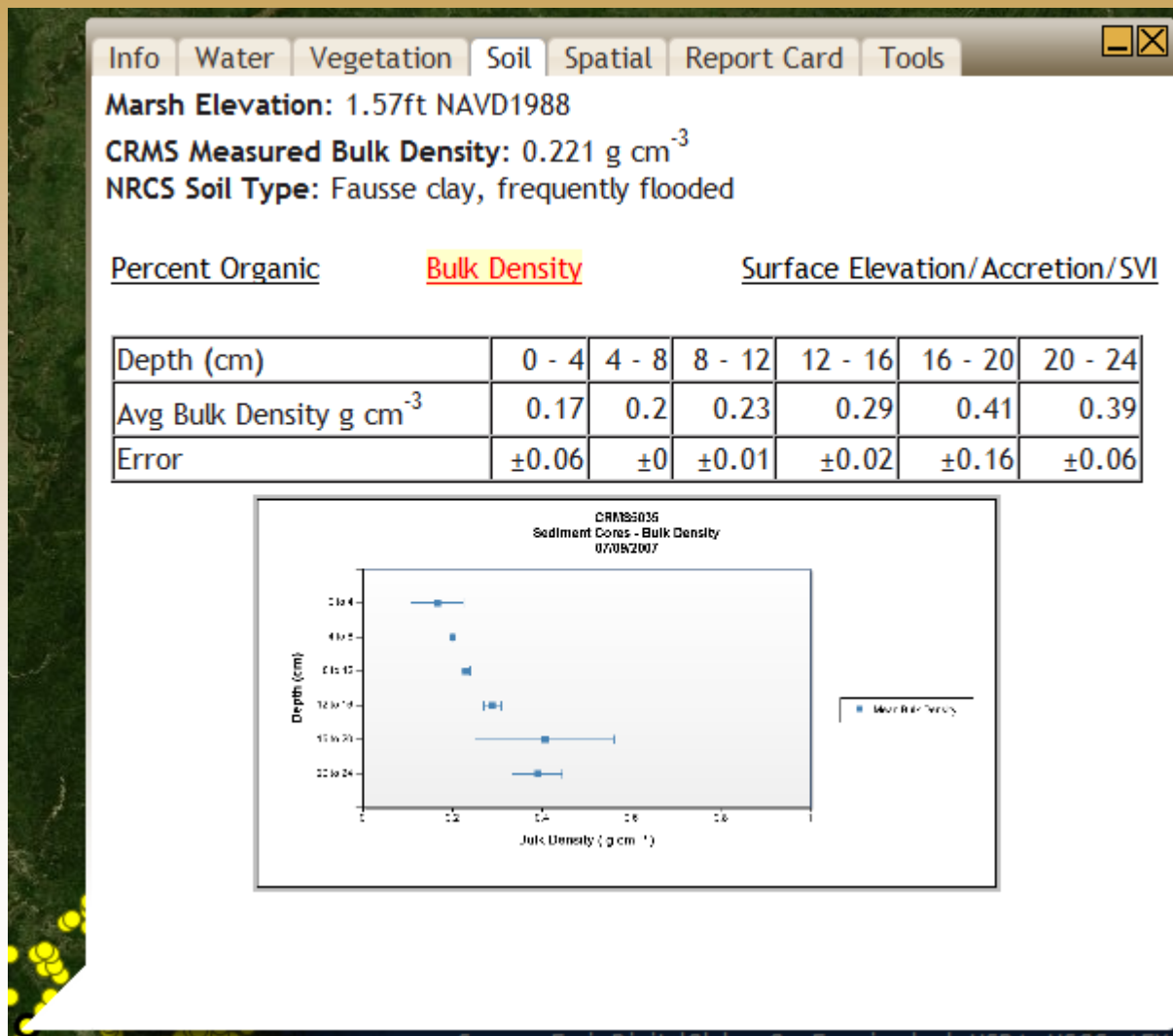
Information Bubble



The Soil tab contains all soil information for the selected site.

Percent Organic – Soil profiles taken at site establishment.

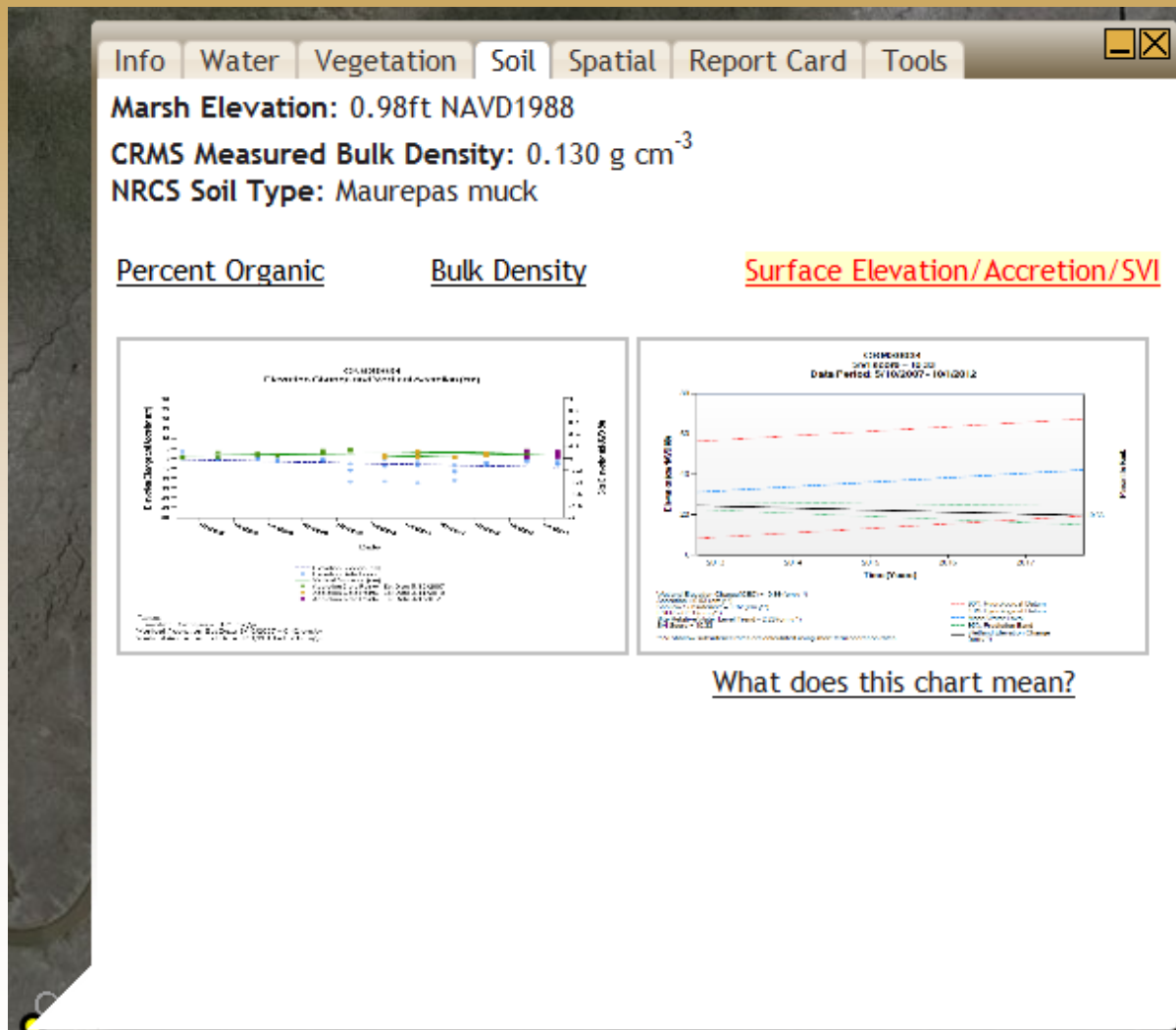
Information Bubble



The Soil tab contains all soil information for the selected site.

Bulk Density - Soil profiles taken at site establishment.

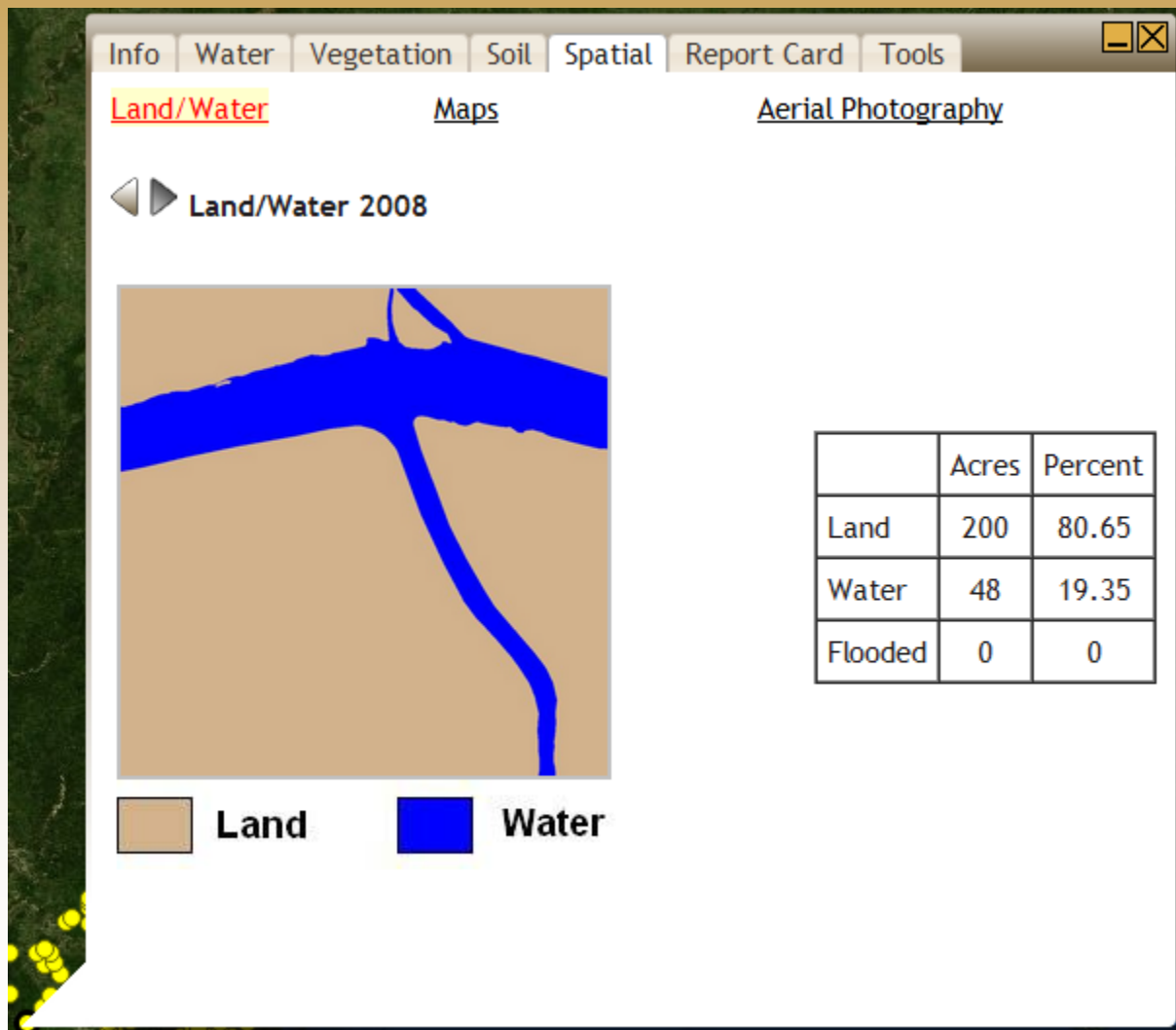
Information Bubble



The Soil tab contains all soil information for the selected site.

Surface Elevation/Accretion – currently displays site level elevation change and accretion and gives rates for shallow subsidence.

Information Bubble



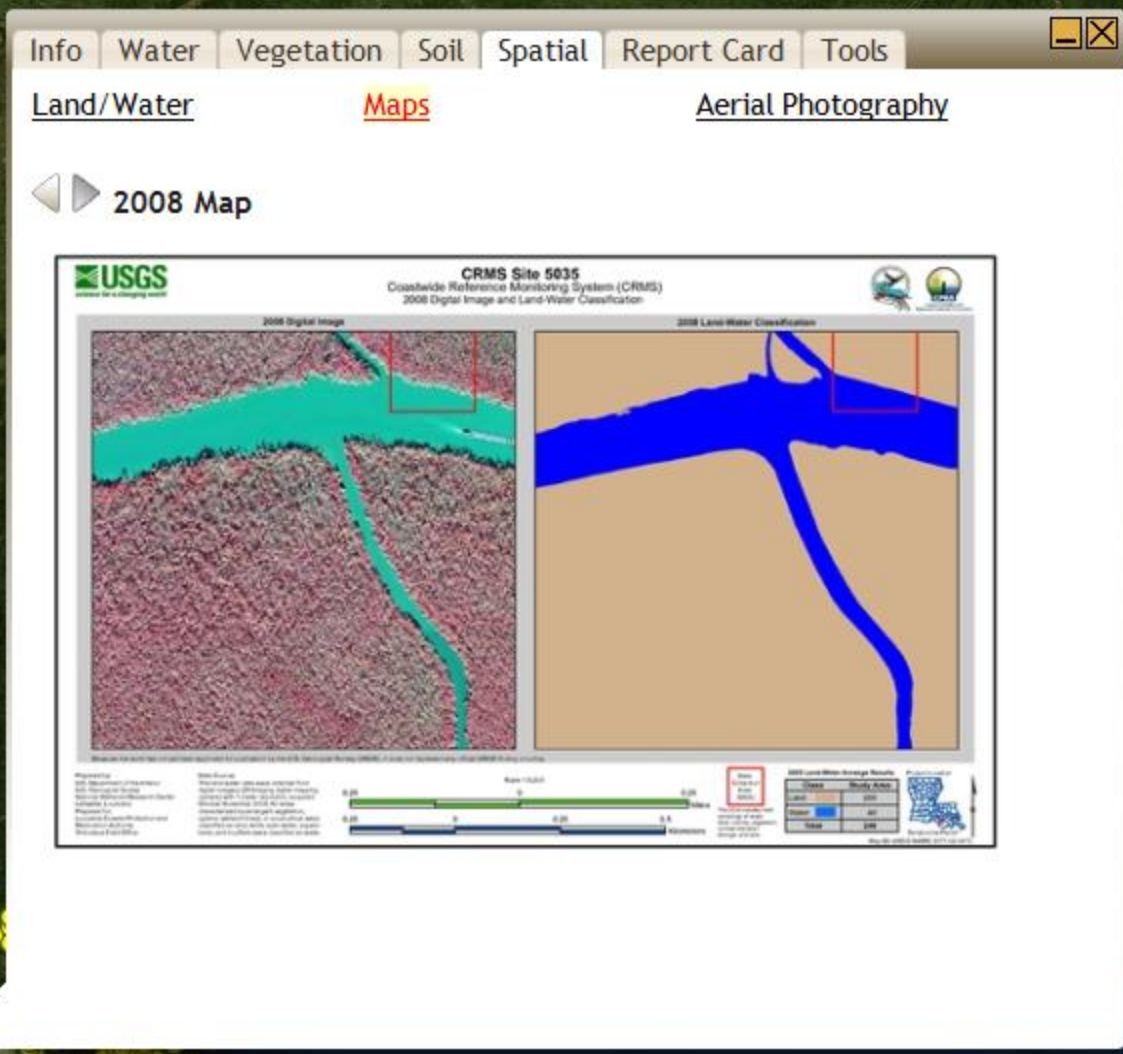
The Spatial tab contains all spatial information for the selected site.

Land/Water with acre breakdowns

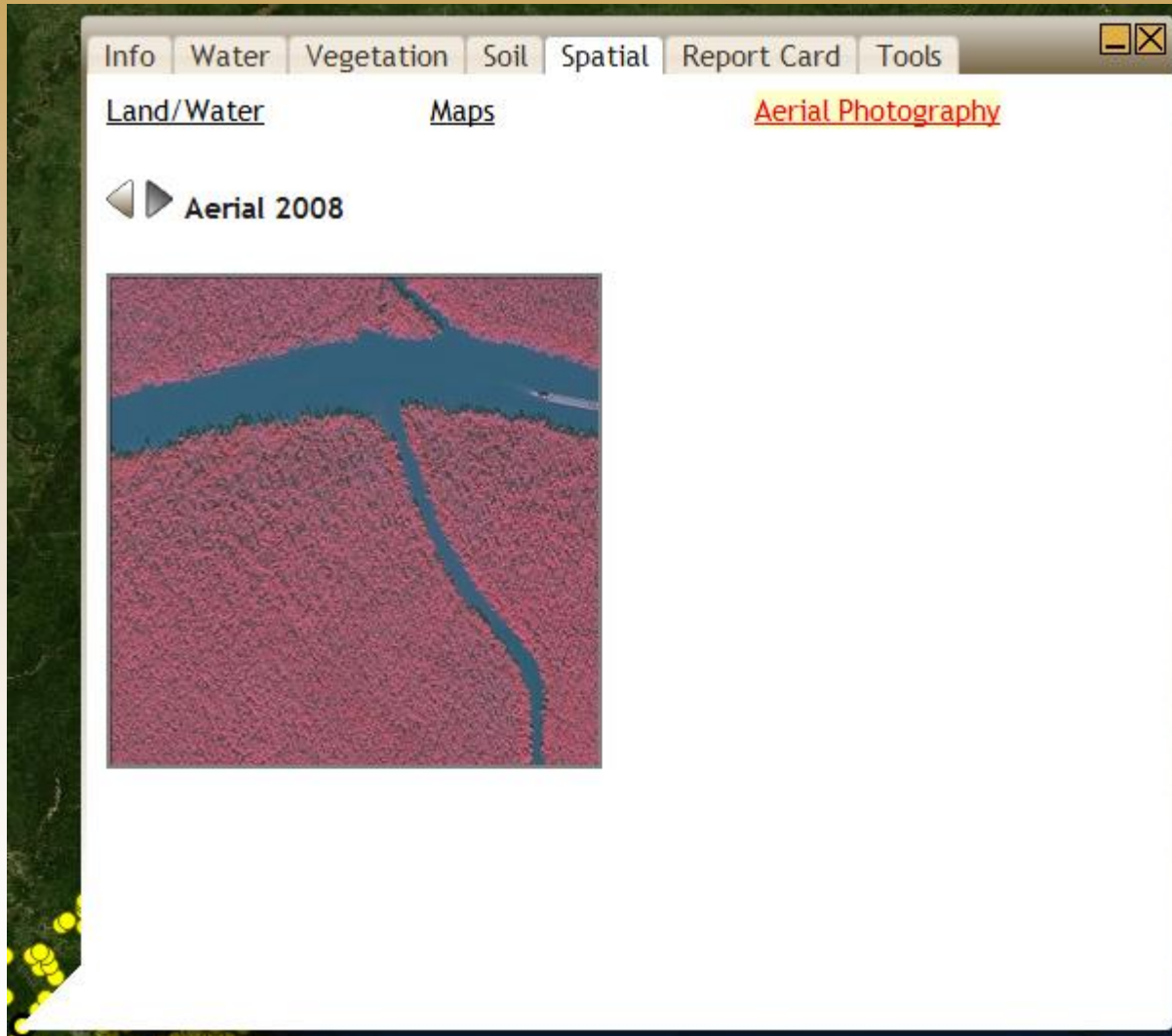
Information Bubble

The Spatial tab contains all spatial information for the selected site.

Site Specific maps at the 1km² scale.



Information Bubble



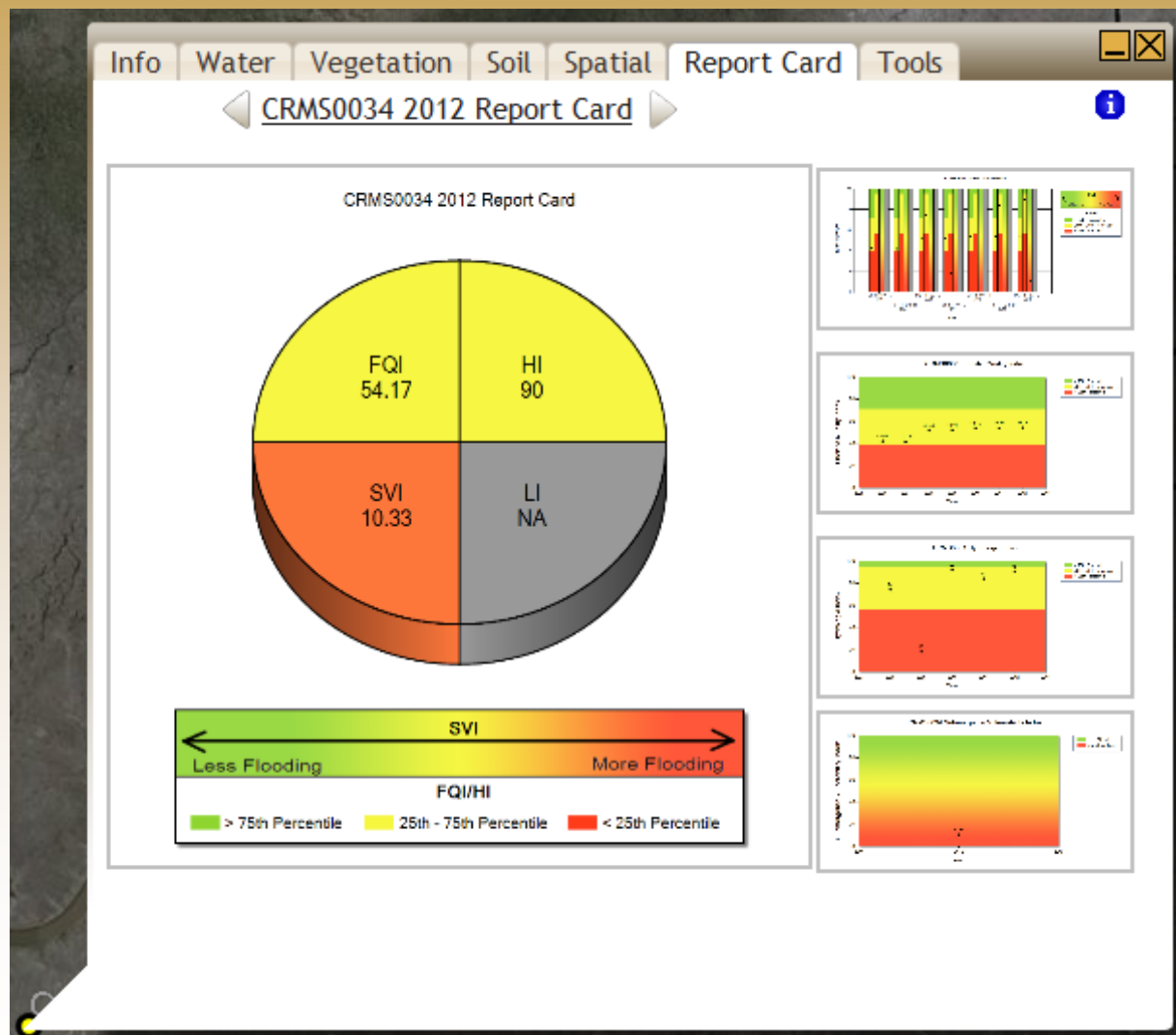
The Spatial tab contains all spatial information for the selected site.

Aerial Photography

Information Bubble

The Report Card tab contains all report card information for the selected site.

Report Card





CRMS Active Layer

Information Bubble



The Tools tab lets you do an Acreage Assessment on the selected site.

Acreage Assessment – Use the acreage assessment tool to determine acreage breakdowns of the available coastwide vegetation surveys or land/water data.



CWPPRA Active Layer

Coastwide Reference Monitoring System

a CWPPRA funded project



Home Data Mapping Library Visualization Program

Single-click in a red polygon on the map to view CWPPRA Project information.



Layers Menu

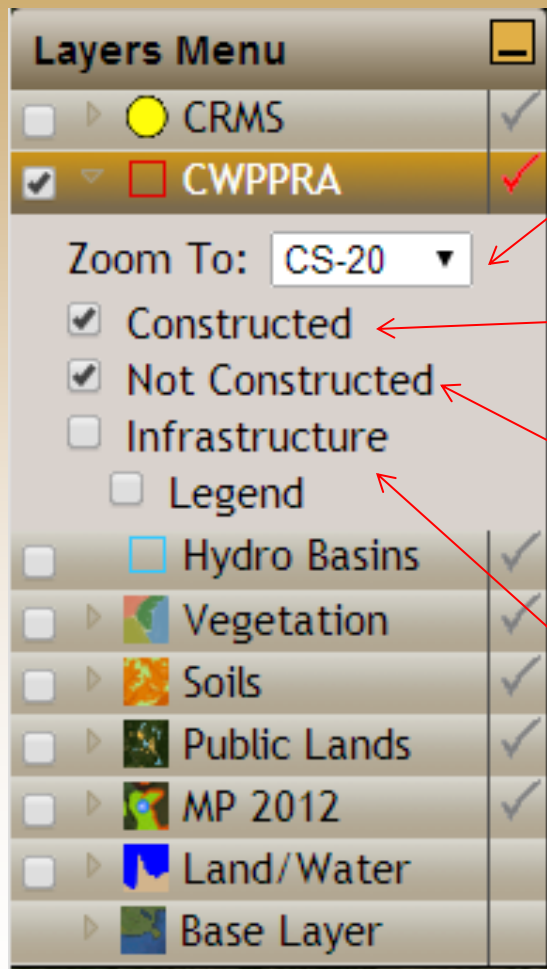
- ☐ CRMS
- ☒ CWPPRA
- Zoom To: CS-20
- ☒ Constructed
- ☒ Not Constructed
- ☐ Infrastructure
- ☐ Legend
- ☐ Hydro Basins
- ☐ Vegetation
- ☐ Soils
- ☐ Public Lands
- ☐ MP 2012
- ☐ Land/Water
- ☐ Base Layer

Long: -87.634, Lat: 31.783



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the ...





Zoom to function zooms to the project and shows the information bubble for it.

Checkbox adds/removes the Constructed projects layer to the map.

Checkbox adds/removes the Not Constructed projects layer to the map.

Checkbox adds/removes the Project Infrastructure layer to the map and shows the legend.



Information Bubble

Info | Water | Vegetation | Report Card | Tools

State ID: CS-20
Name: East Mud Lake Marsh Management
Sponsors: NRCS and OCPR
Type: Marsh Management
Links:
• [CS-20 General Fact Sheet\(2.45 MB\)](#)
• [CS-20 Monitoring Plan\(1.17 MB\)](#)
• [CS-20 Comprehensive Monitoring Report\(2.77 MB\)](#)
• [CS-20 Wetland Value Assessment\(1.03 MB\)](#)

Objectives:

- Prevent wetland degradation in the project area by reducing vegetative stress, thereby improving the abundance of emergent and submergent vegetation. This will be achieved through hydrologic structural management to reduce water levels and salinities.
- Stabilize shoreline of Mud Lake through vegetative plantings.

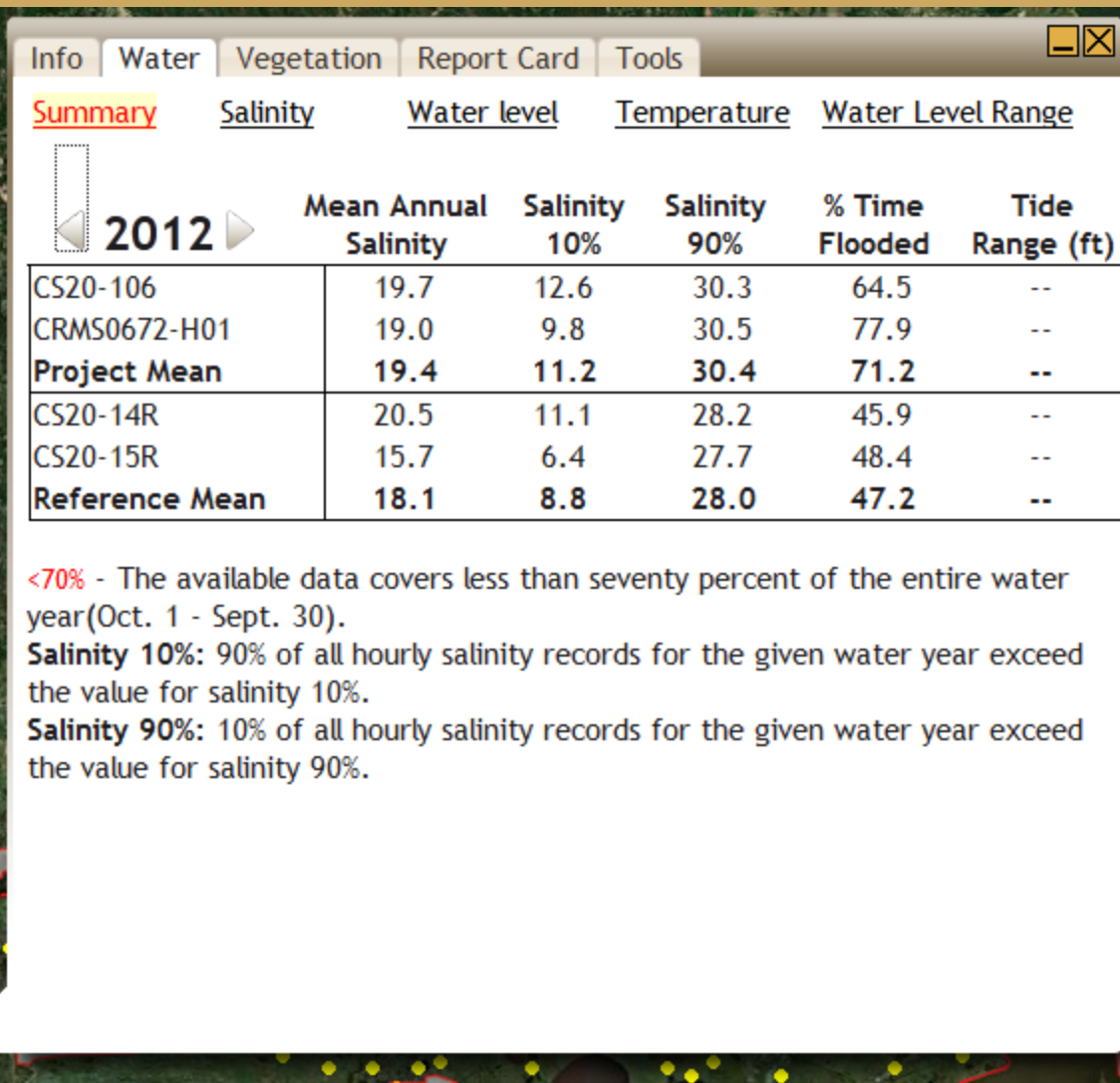
Goals:

- Decrease rate of marsh loss
- Increase vegetative cover along shoreline of East Mud Lake
- Increase coverage of emergent vegetation in shallow, open-water areas
- Increase abundance of vegetation in presently vegetated portions of project area

The information bubble appears when a CWPPRA project is clicked. The Project Info tab is automatically chosen when the bubble pops up on the screen.



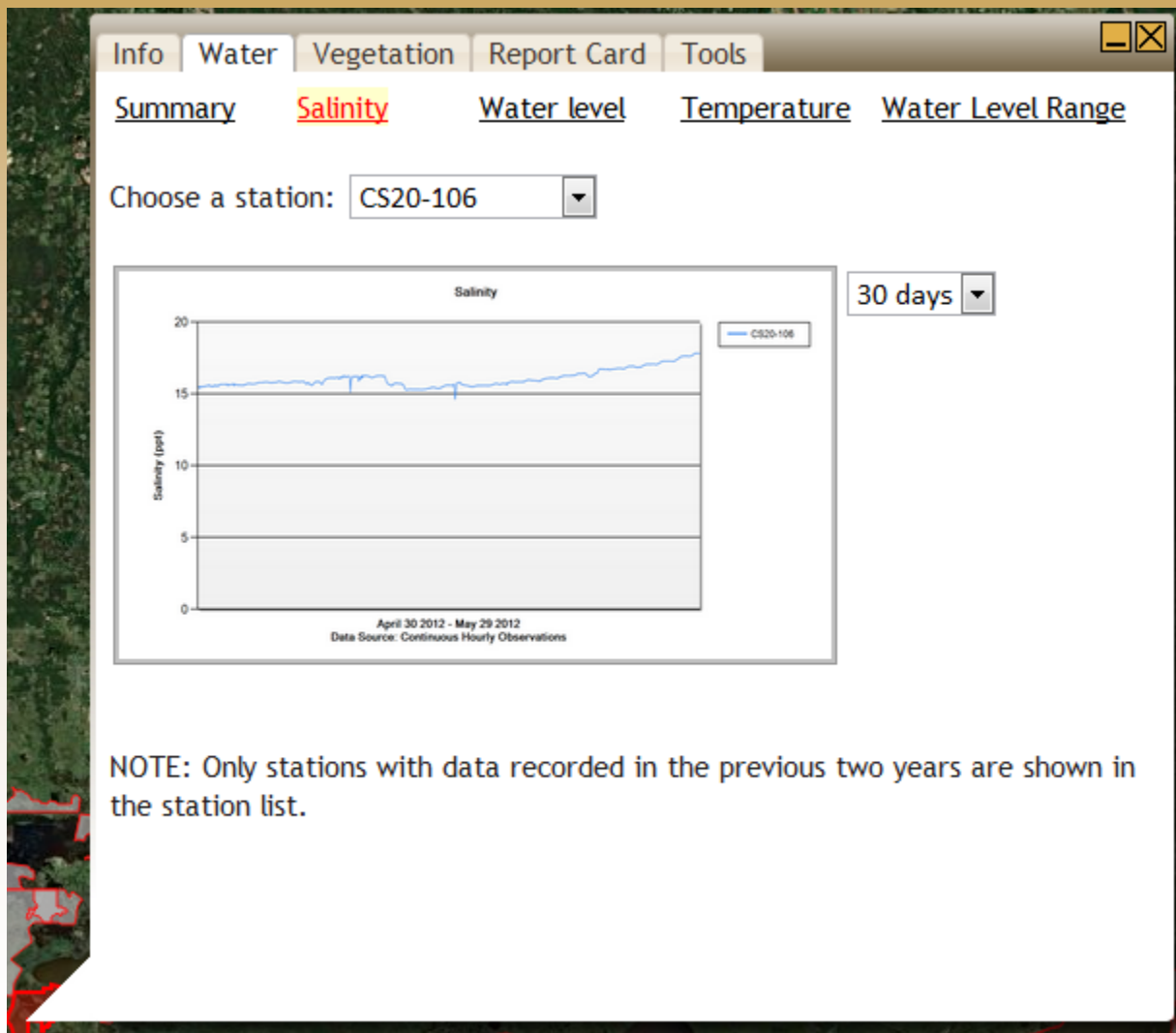
Information Bubble



The Water tab contains all hydrologic information for the selected project.

Summary – Gives a brief overview of the hydro data available for the project.

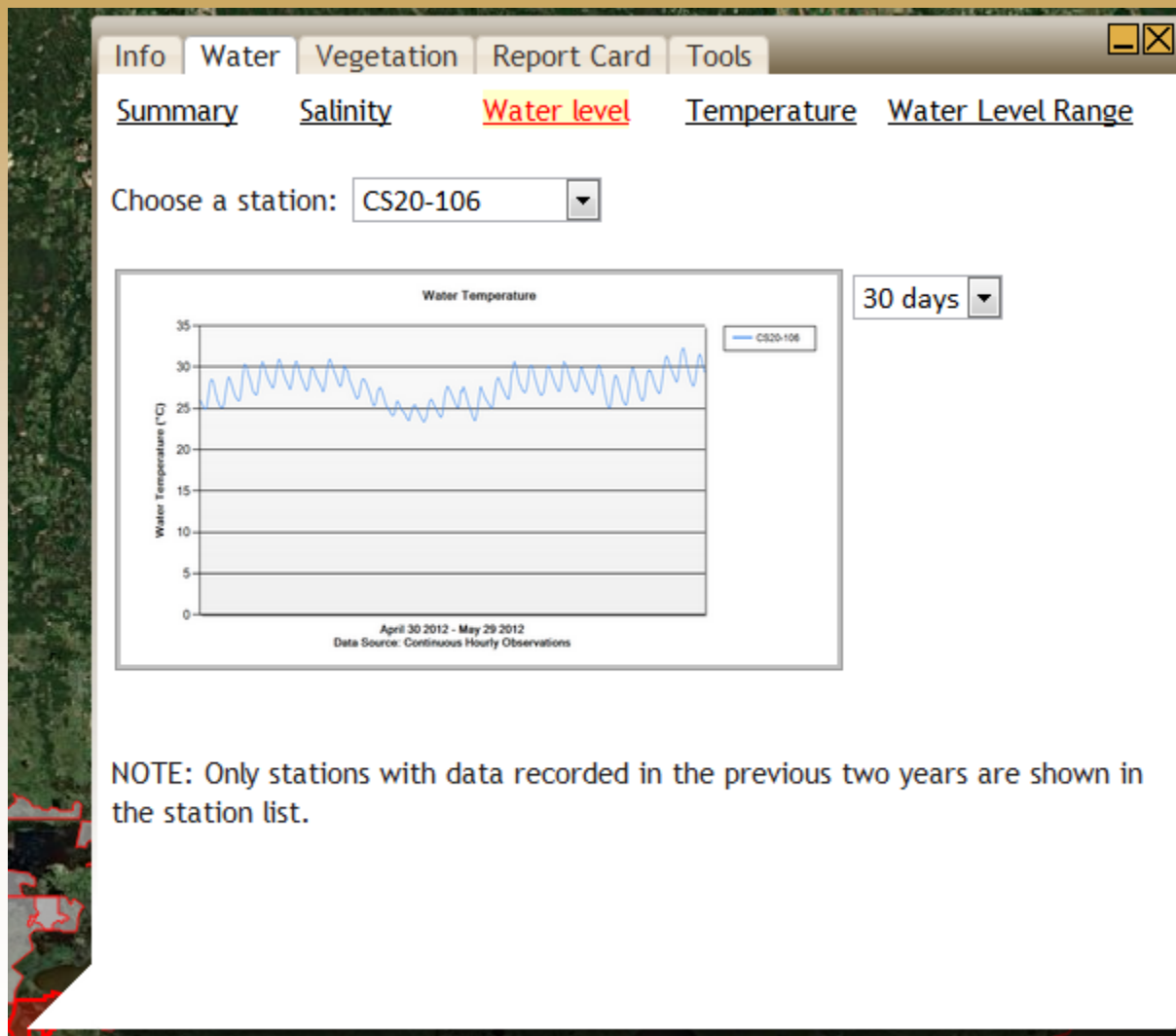
Information Bubble



The Water tab contains all hydrologic information for the selected project.

Salinity – Charts most recent data for hydro stations located within the project.

Information Bubble

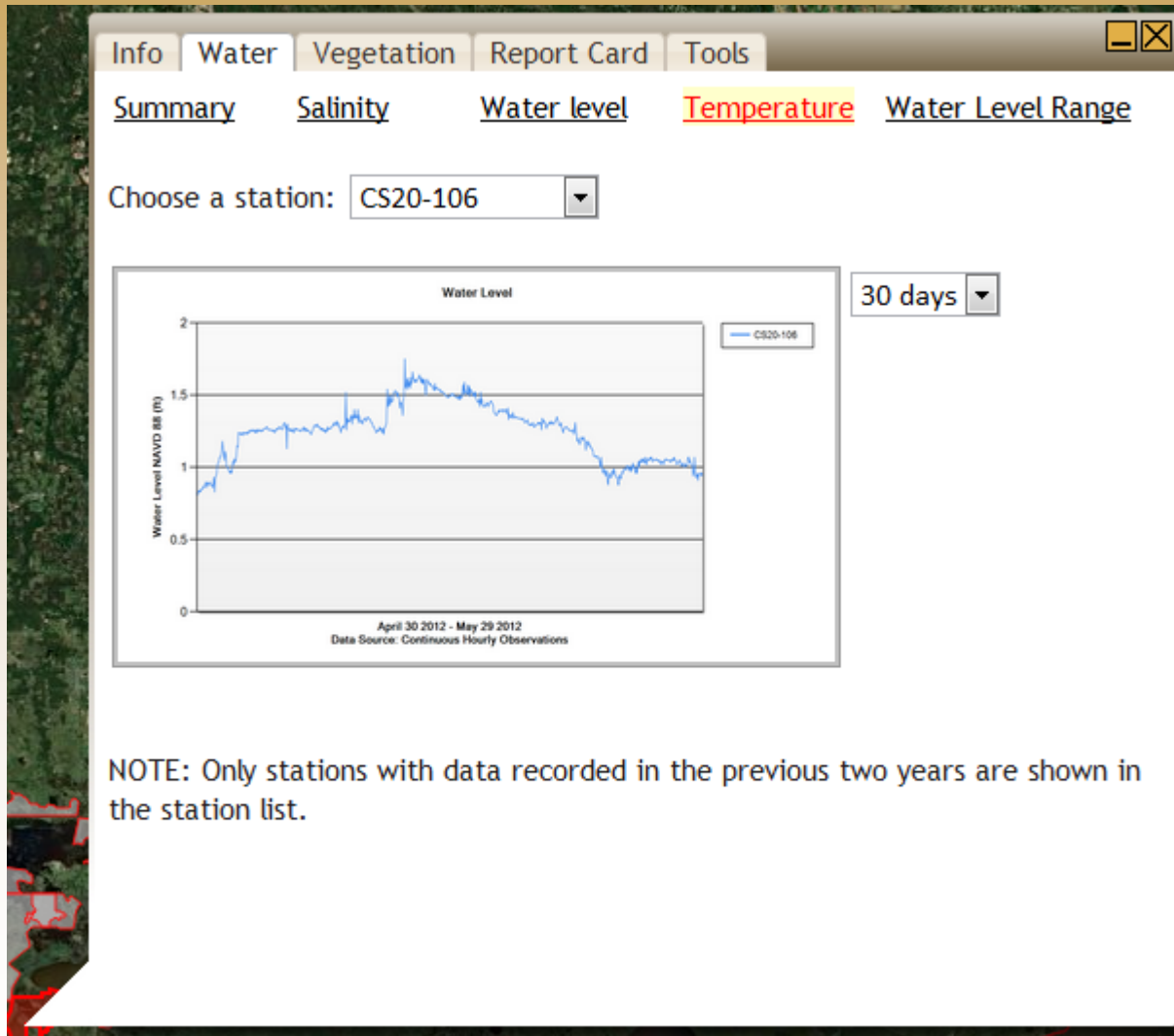


The Water tab contains all hydrologic information for the selected project.

Water Level – Charts most recent data for hydro stations located within the project.

NOTE: Only stations with data recorded in the previous two years are shown in the station list.

Information Bubble

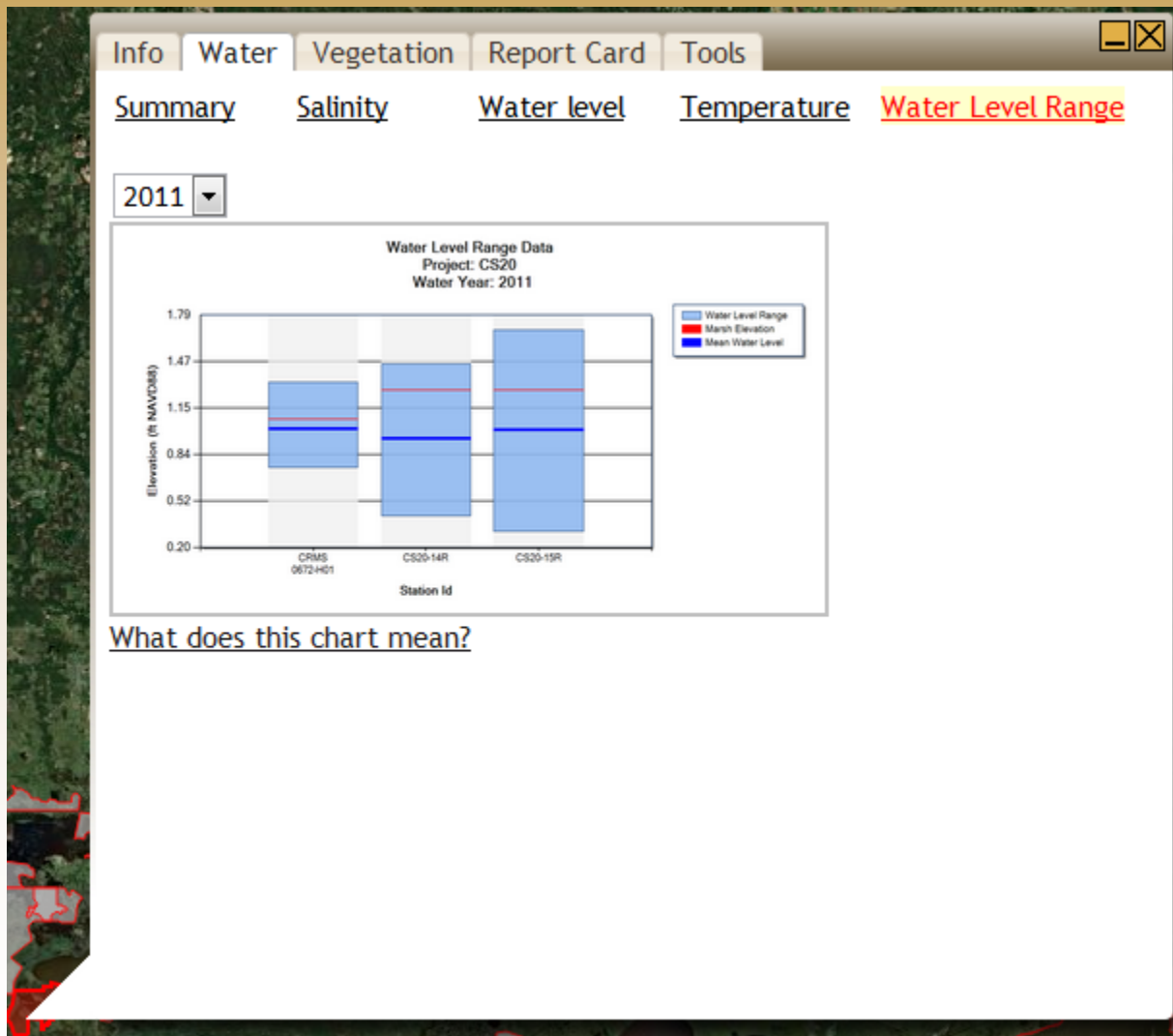


The Water tab contains all hydrologic information for the selected project.

Water Temperature –
Charts most recent data
for hydro stations located
within the project.

NOTE: Only stations with data recorded in the previous two years are shown in the station list.

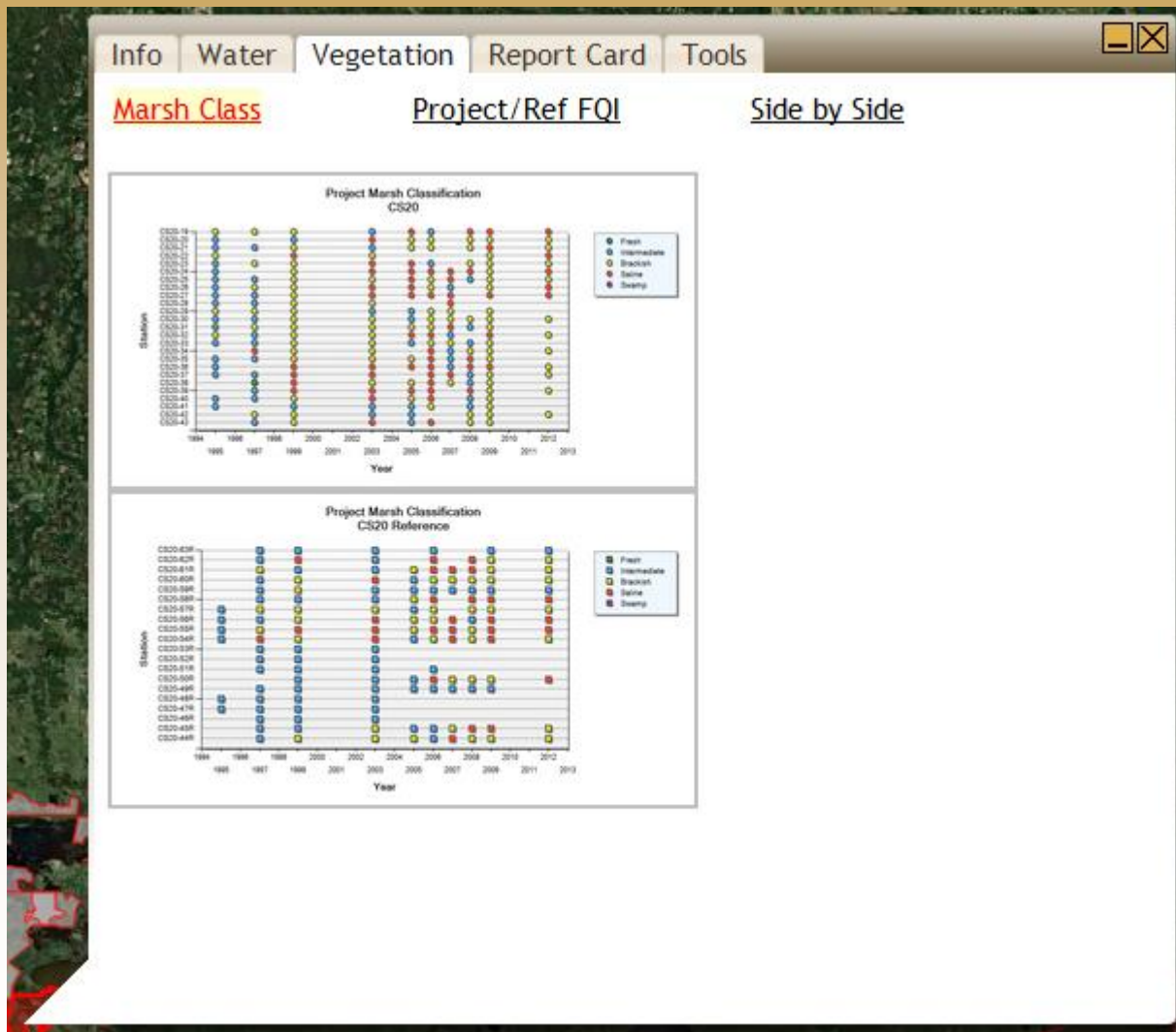
Information Bubble



The Water tab contains all hydrologic information for the selected project.

Water Level Range – Charts water level range data for hydro stations located within the project.

Information Bubble



The Vegetation tab contains all vegetation information for the selected project.

Marsh Class – Charts project and project reference Marsh Classification over multiple years.

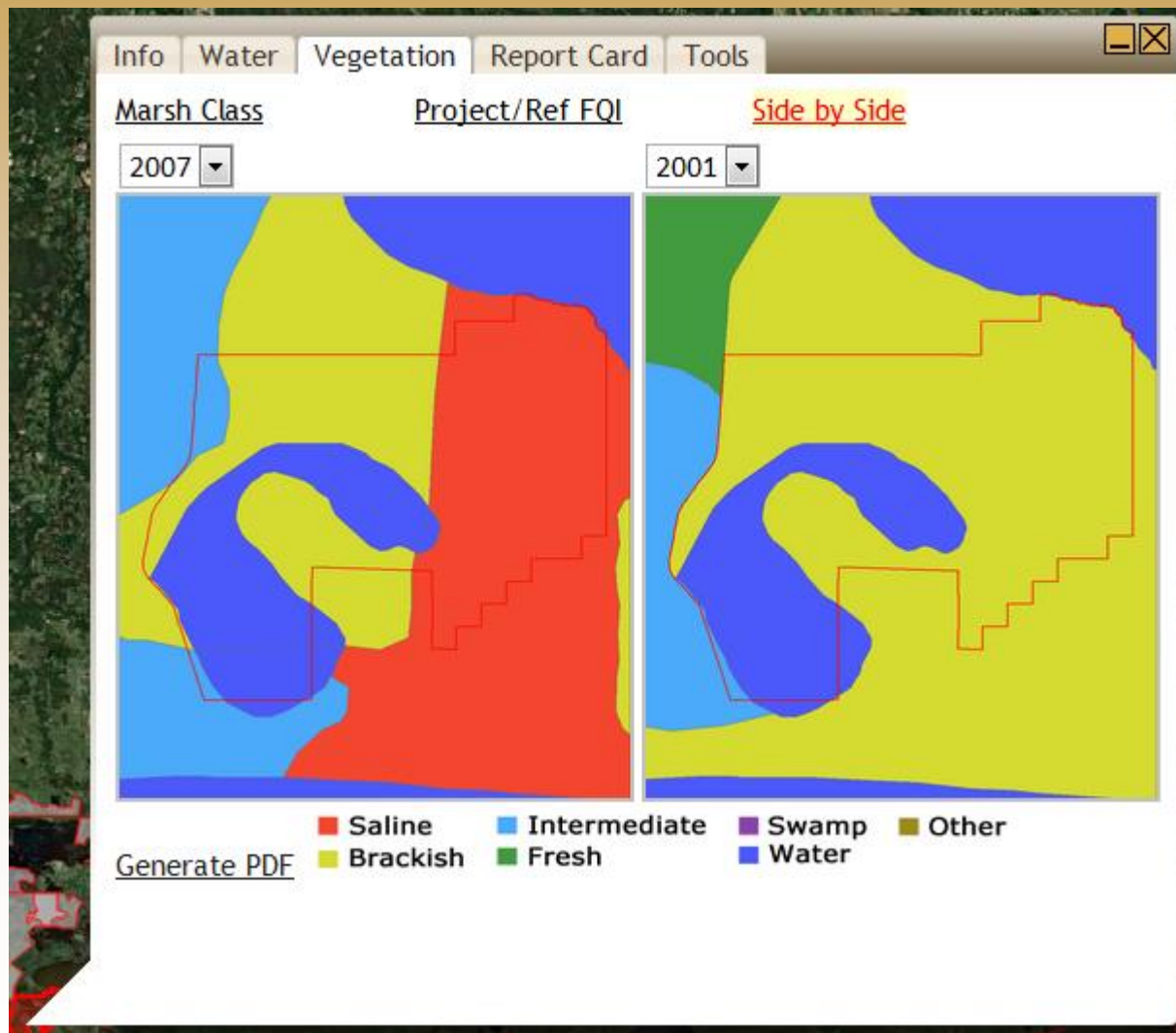
Information Bubble



The Vegetation tab contains all vegetation information for the selected project.

Project/Ref FQI – Project Scale Floristic Quality Index Chart.

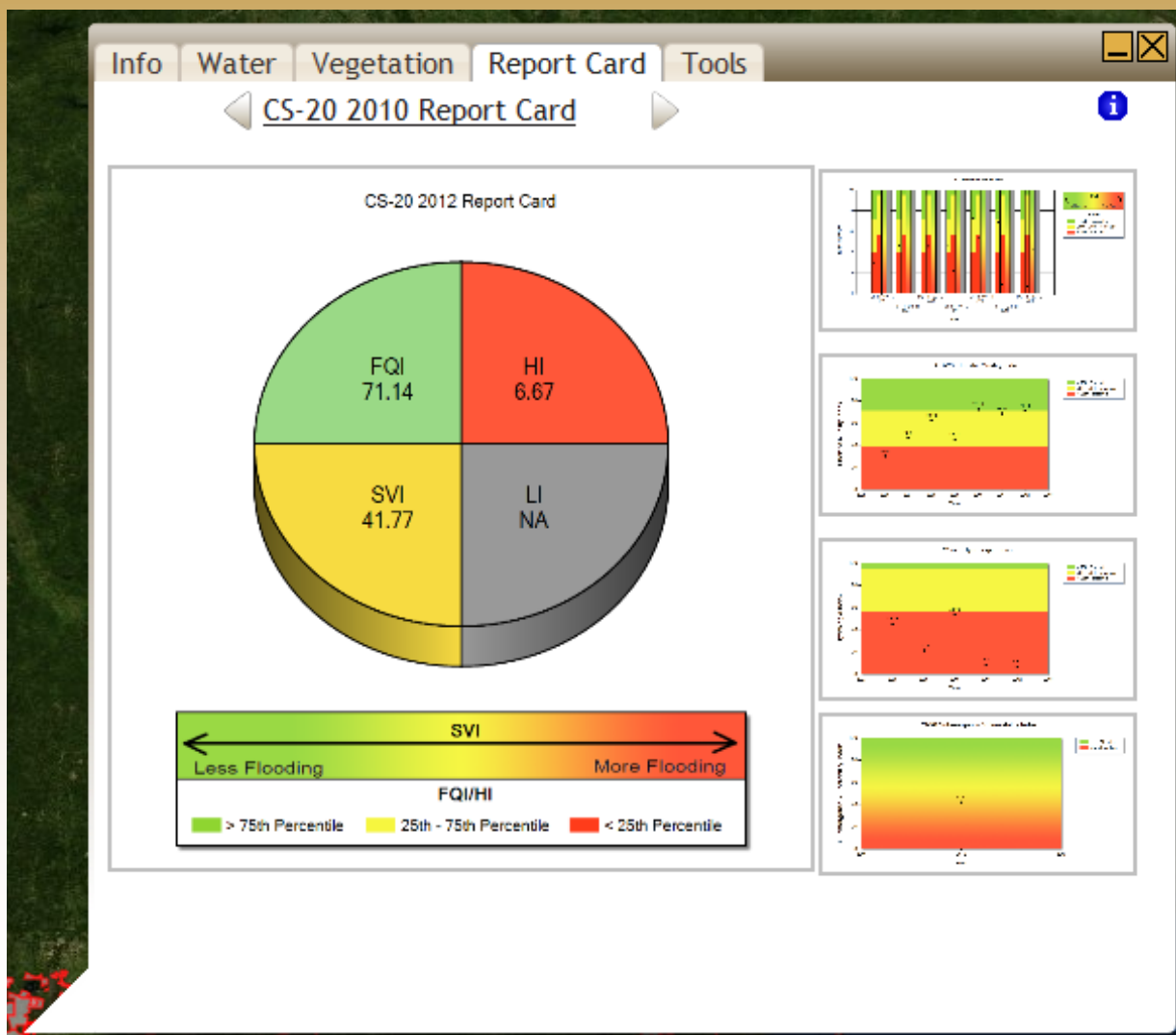
Information Bubble



The Vegetation tab contains all vegetation information for the selected project.

Side by Side – Side by side comparison of Marsh Class using the raster image created from helicopter surveys.

Information Bubble



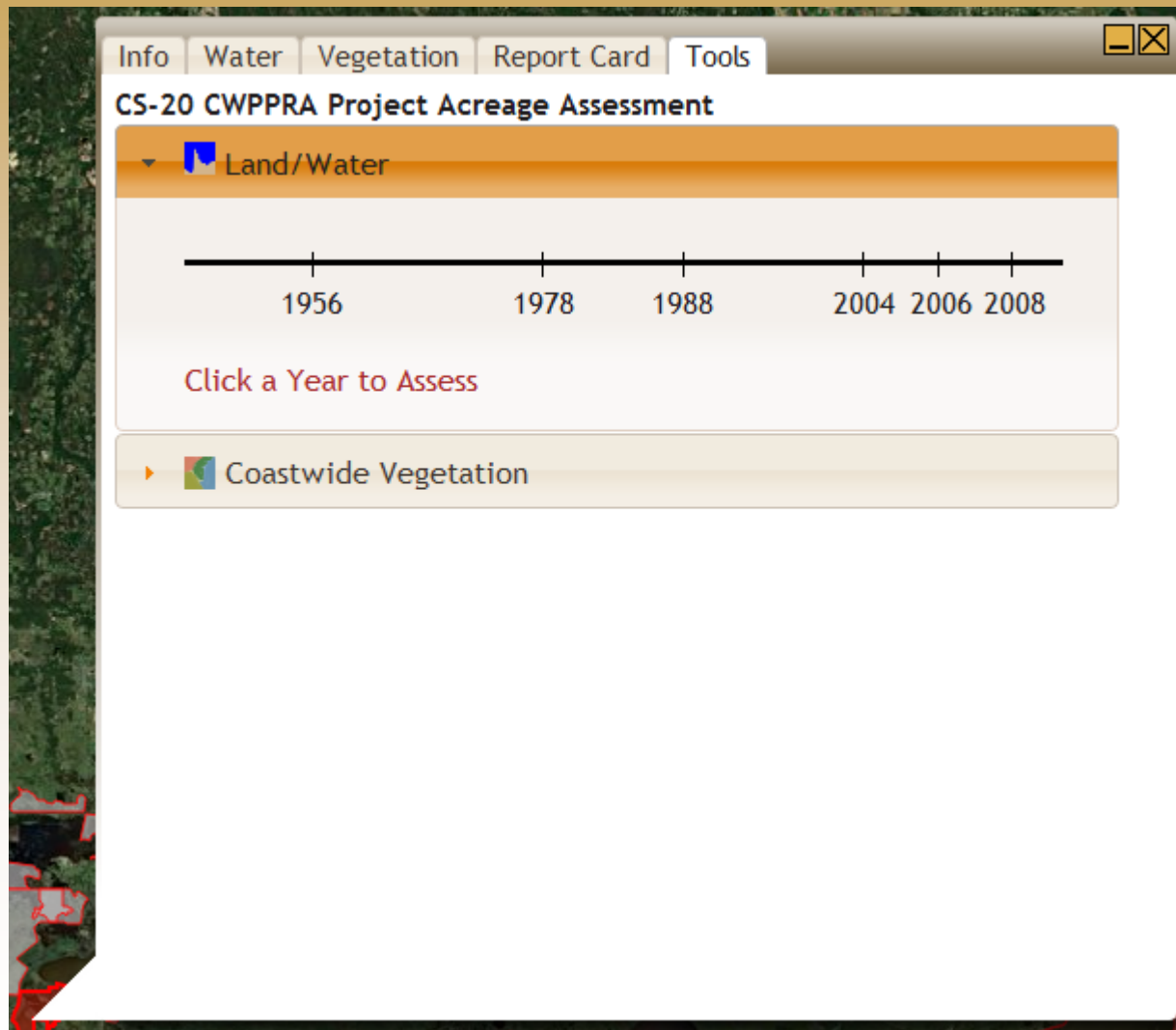
The Report Card tab contains all report card information for the selected project.

Report Card-Summary of project scale information compiled into a report card.



CWPPRA Active Layer

Information Bubble

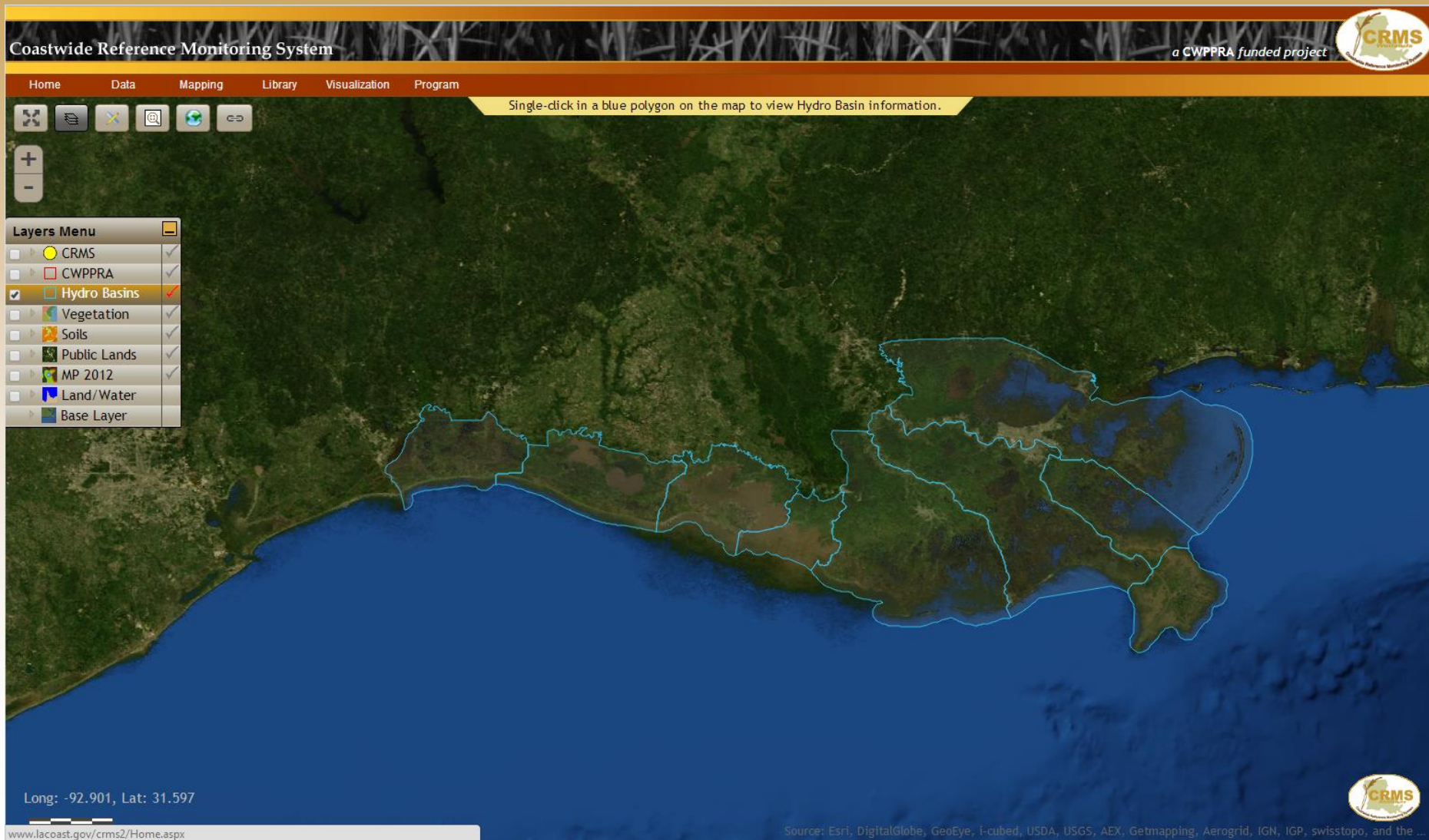


The Tools tab lets you do an Acreage Assessment on the selected project.

Acreage Assessment – Use the acreage assessment tool to determine acreage breakdowns of the available coastwide vegetation surveys or Land/Water data.



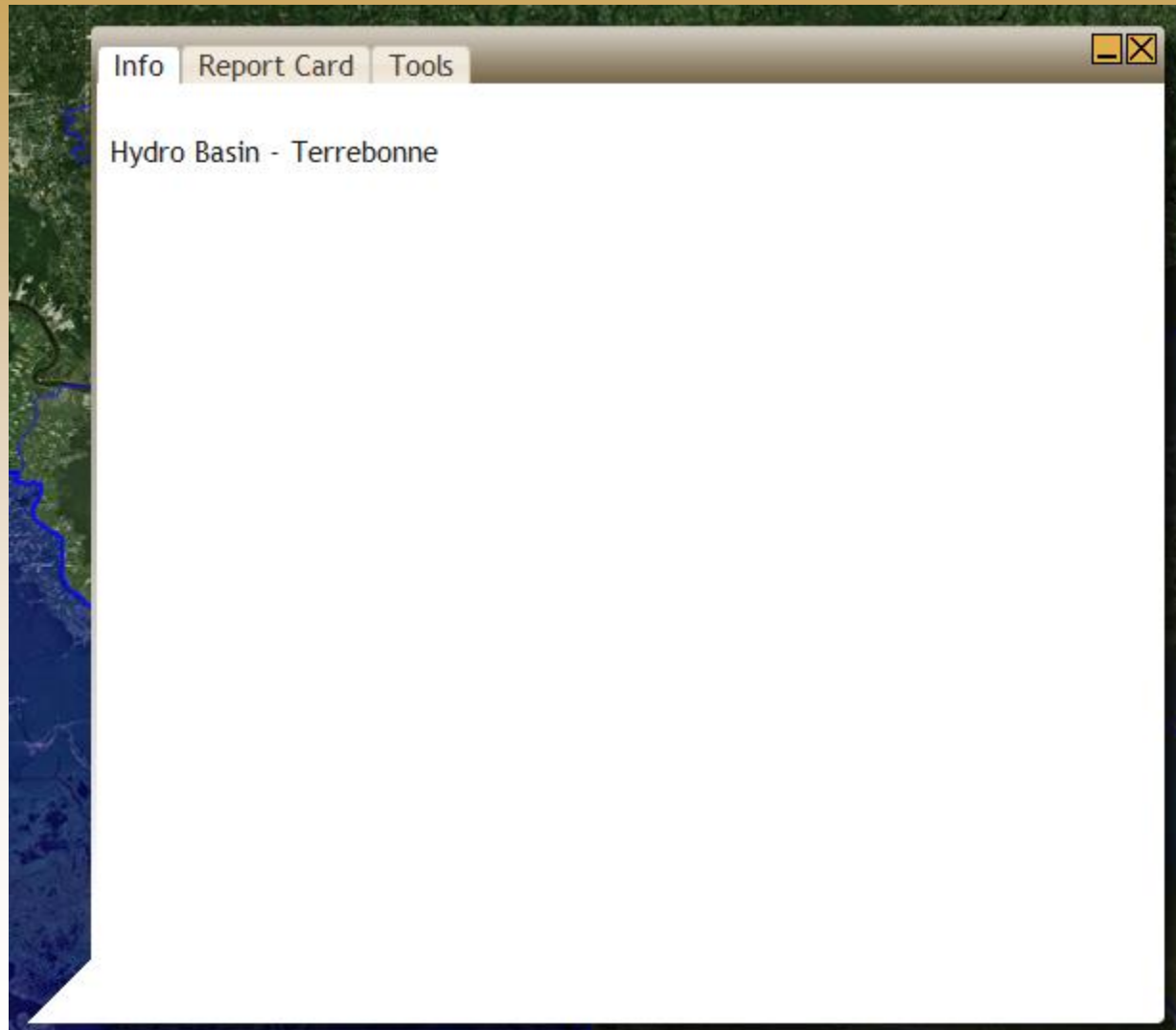
Hydro Basins Active Layer





Hydro Basins Active Layer

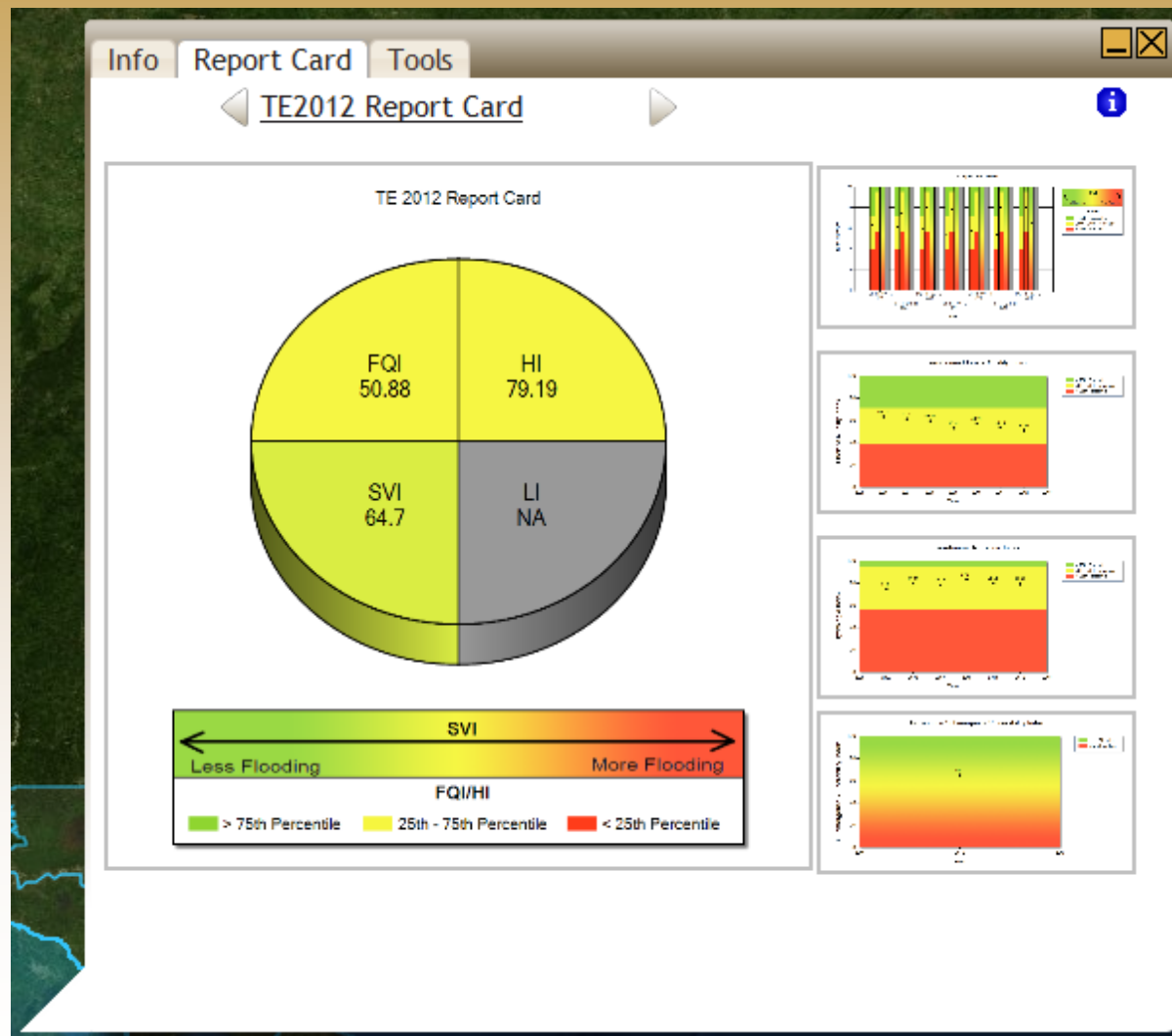
Information Bubble



The information bubble appears when a Hydro Basin is clicked. The Basin Info tab is automatically chosen when the bubble pops up on the screen.

More basin level descriptive information will be posted soon....

Information Bubble



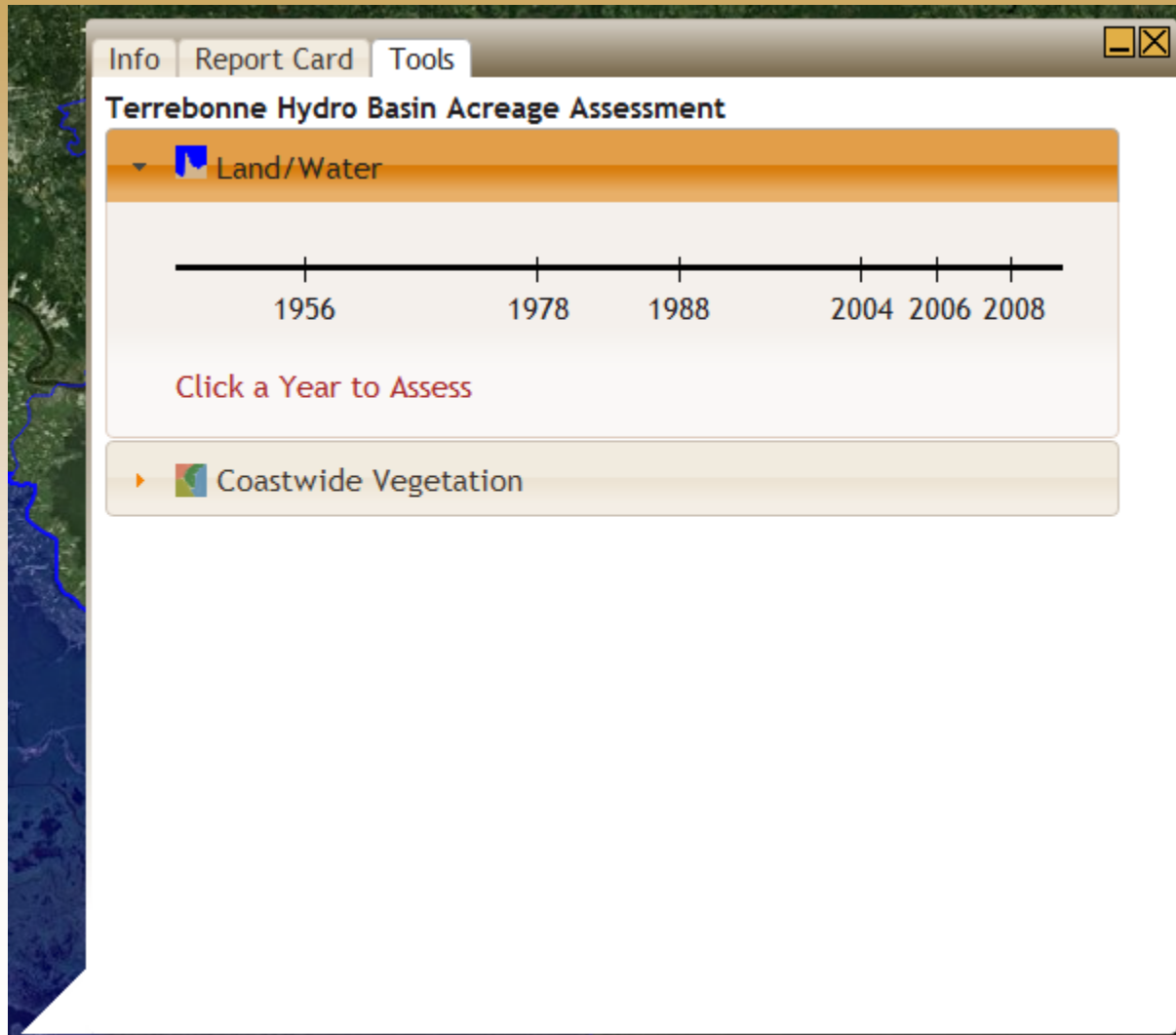
The Report Card tab contains all report card information for the selected basin.

Report Card – Summary of basin scale information compiled into a report card.



Hydro Basins Active Layer

Information Bubble

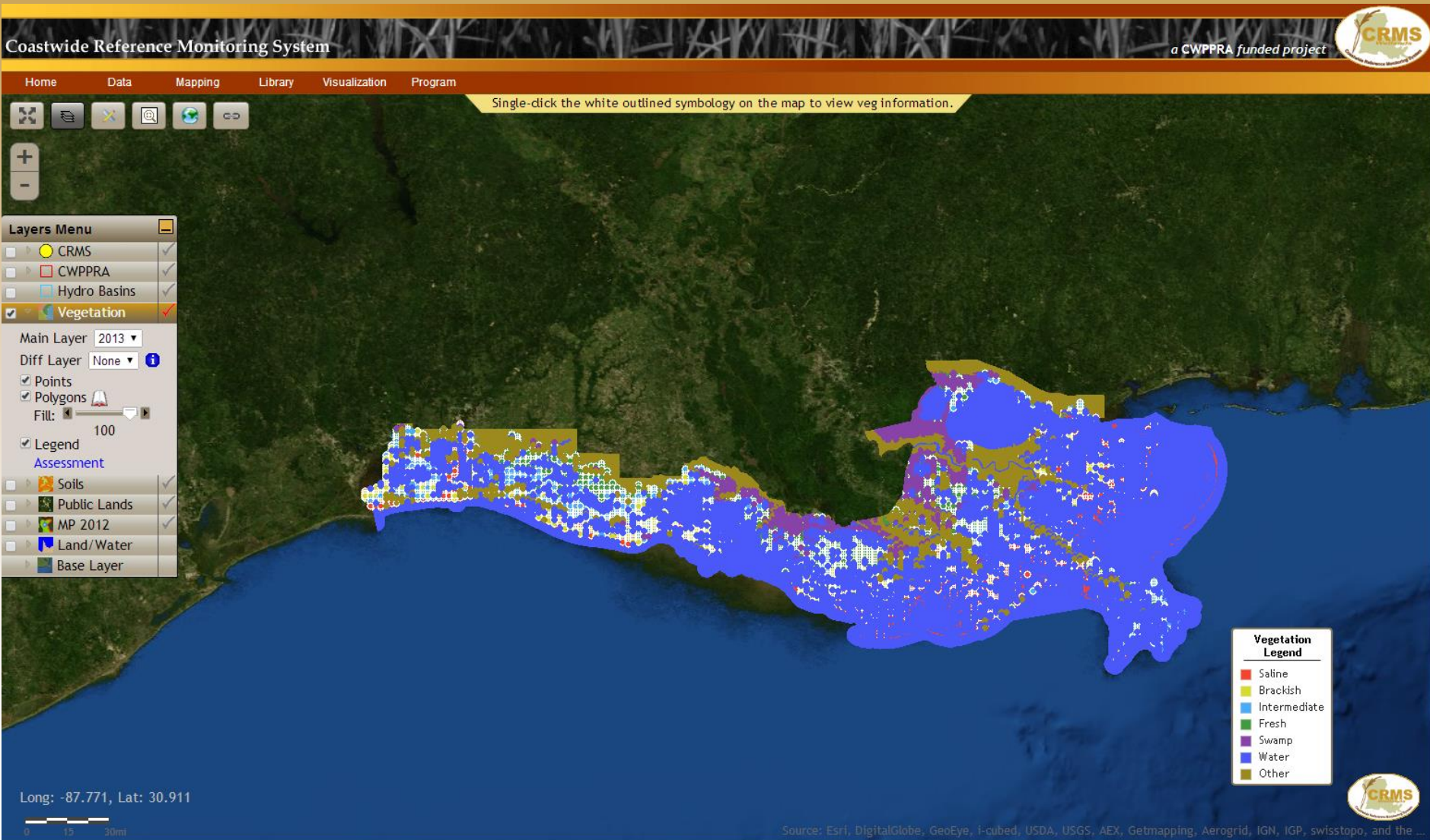


The Tools tab lets you do an Acreage Assessment on the selected basin.

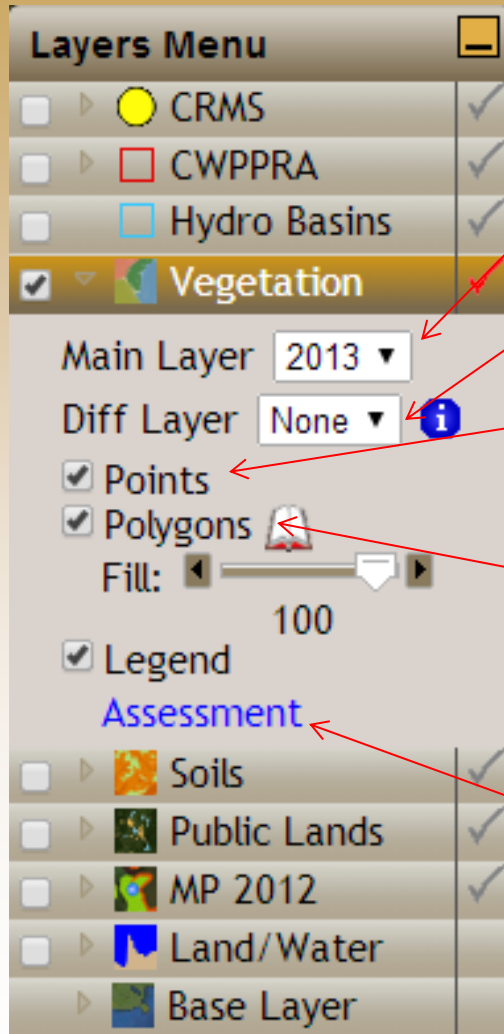
Acreage Assessment – Use the acreage assessment tool to determine acreage breakdowns of the available coastwide vegetation surveys or Land/Water data.



Vegetation Active Layer



Vegetation Active Layer



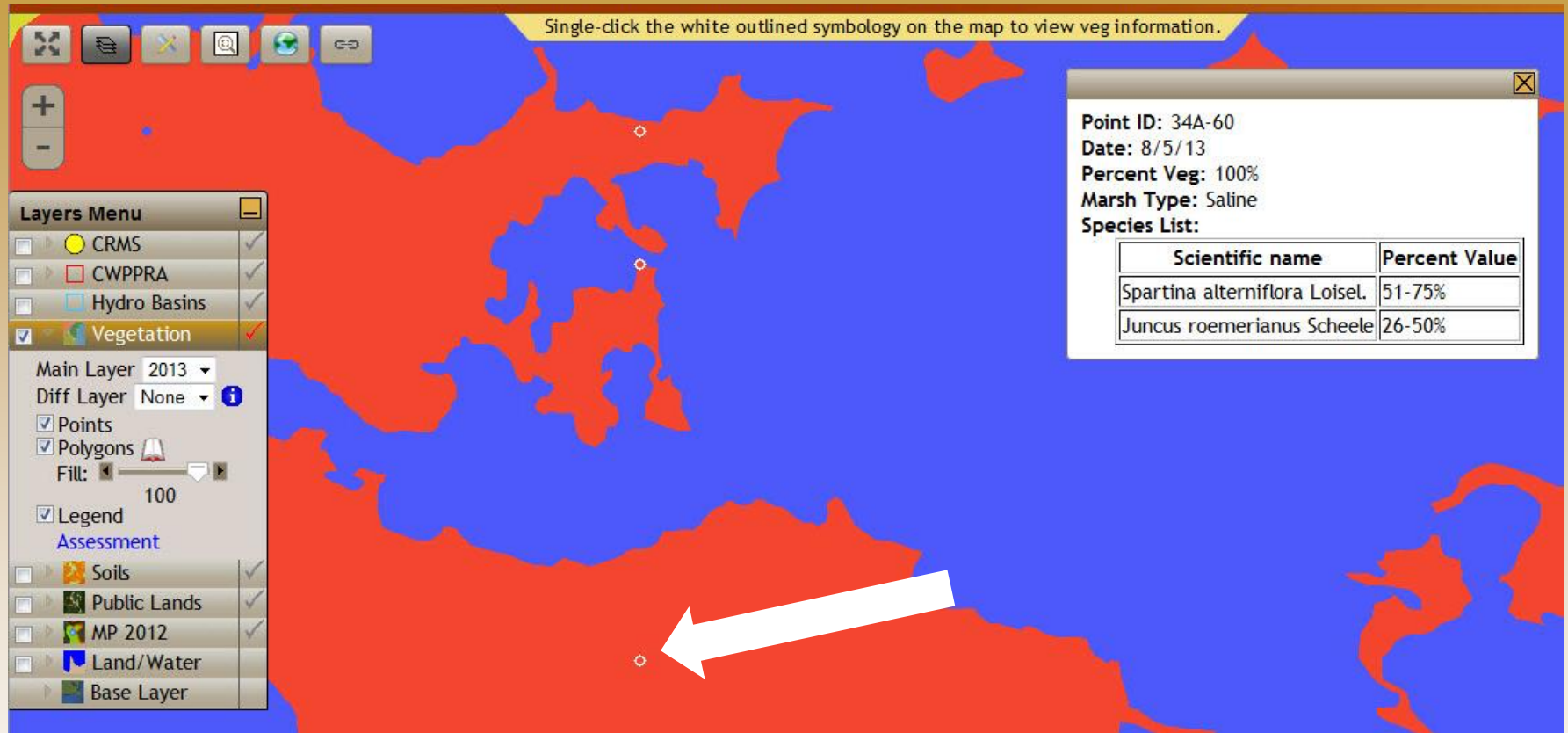
Main Year selects the primary polygon layer on the map.

Diff Year selects the secondary polygon layer on the map.

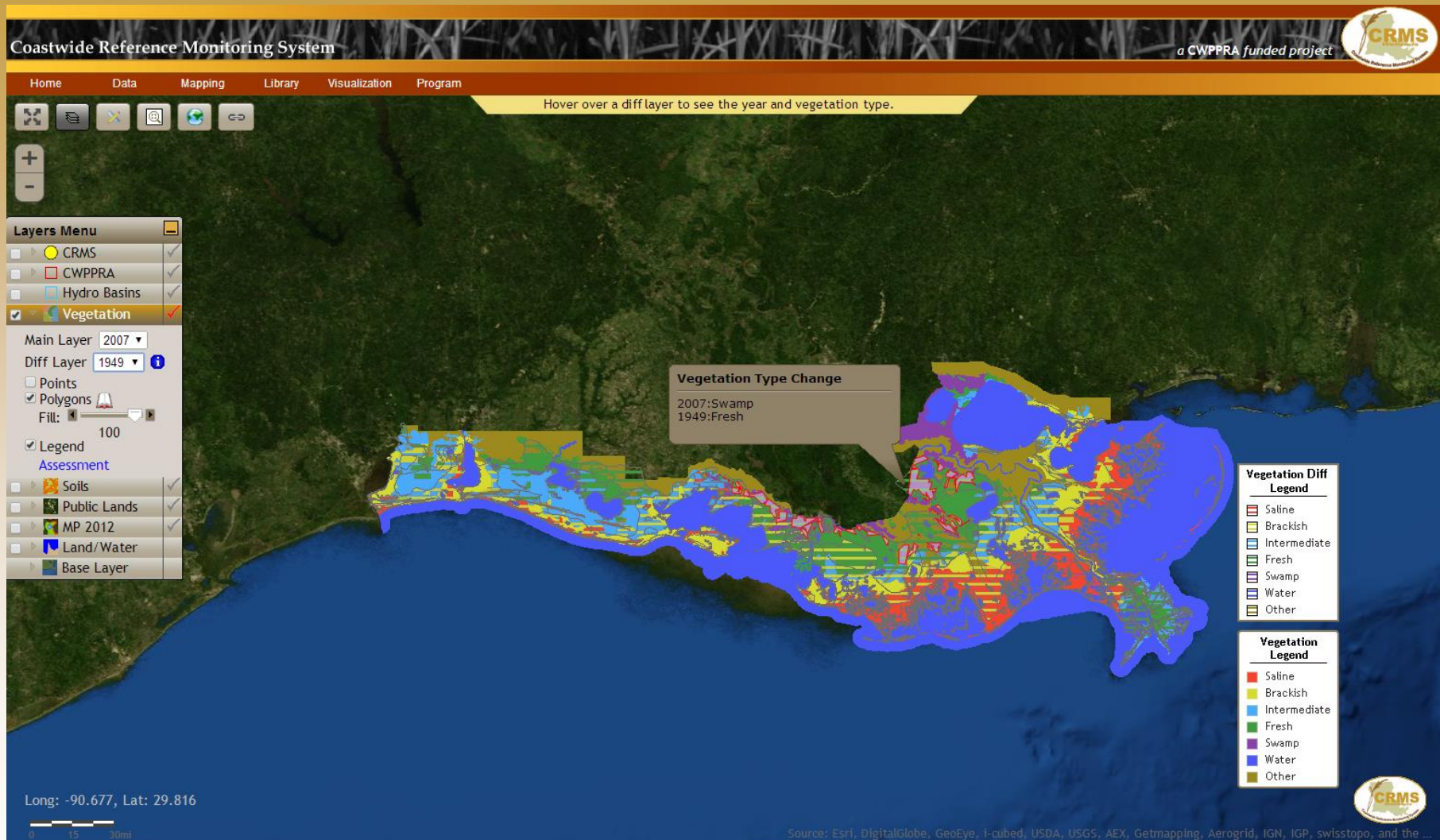
Points checkbox adds/removes the Vegetation data points.

Checkbox adds/removes the Vegetation Polygons layer. The slider changes the transparency of the layer.

Assessment link invokes the acreage assessment tool menu for the currently selected year.



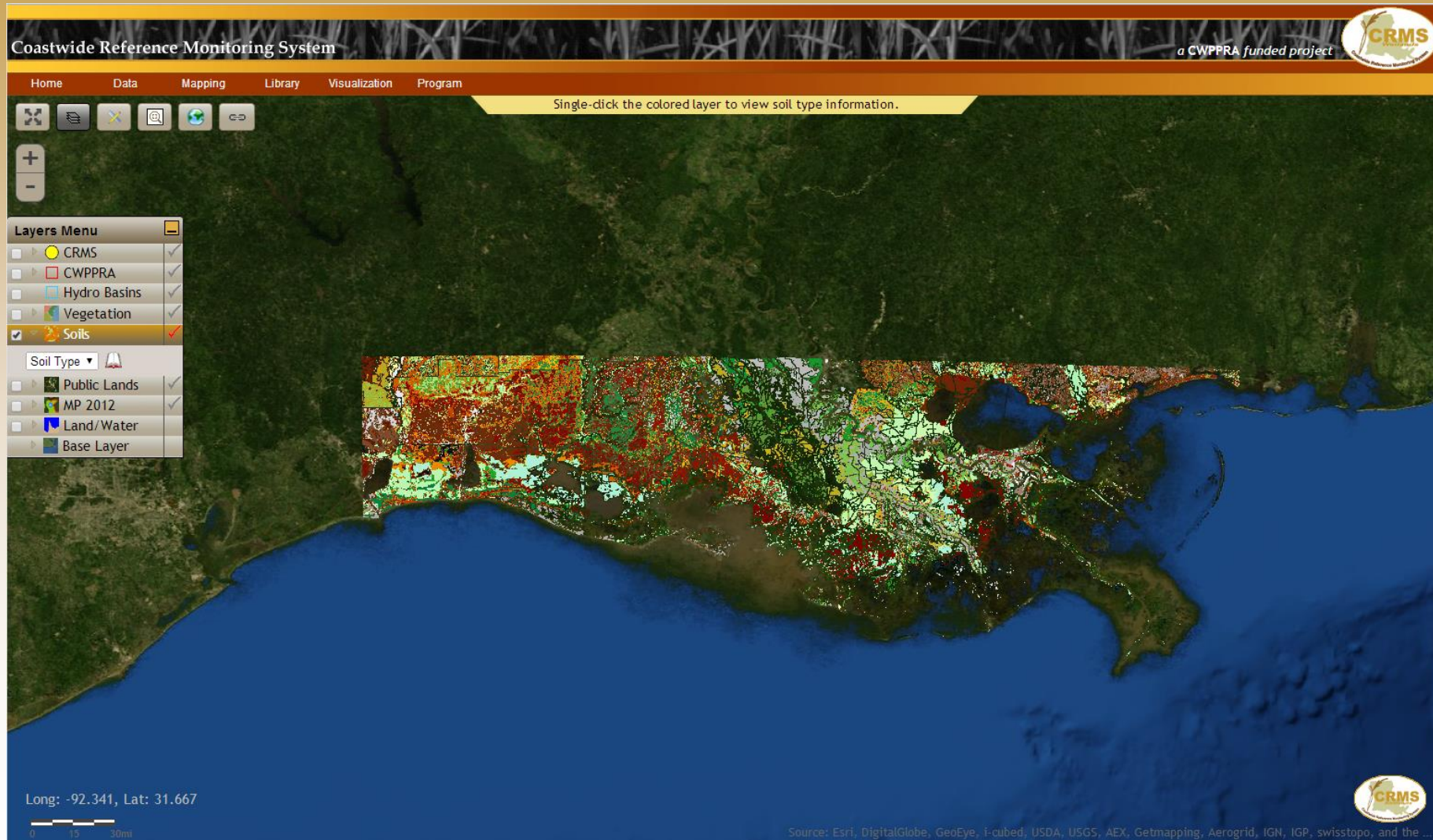
If Points is checked, the site specific vegetation data is shown when clicked.

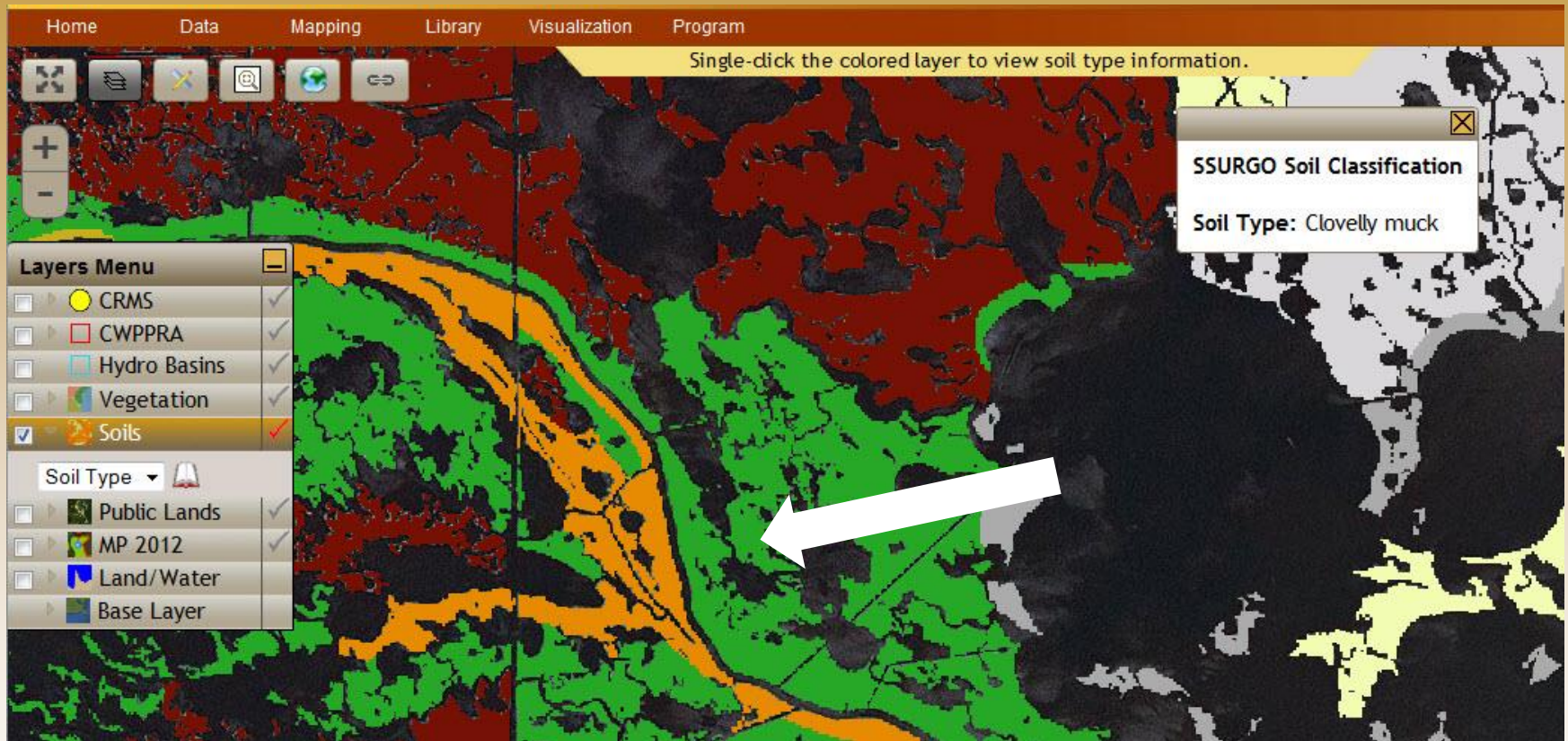


The Vegetation Type Change is shown when two different years are chosen for the Main Layer and Diff Layer.



Soils Active Layer

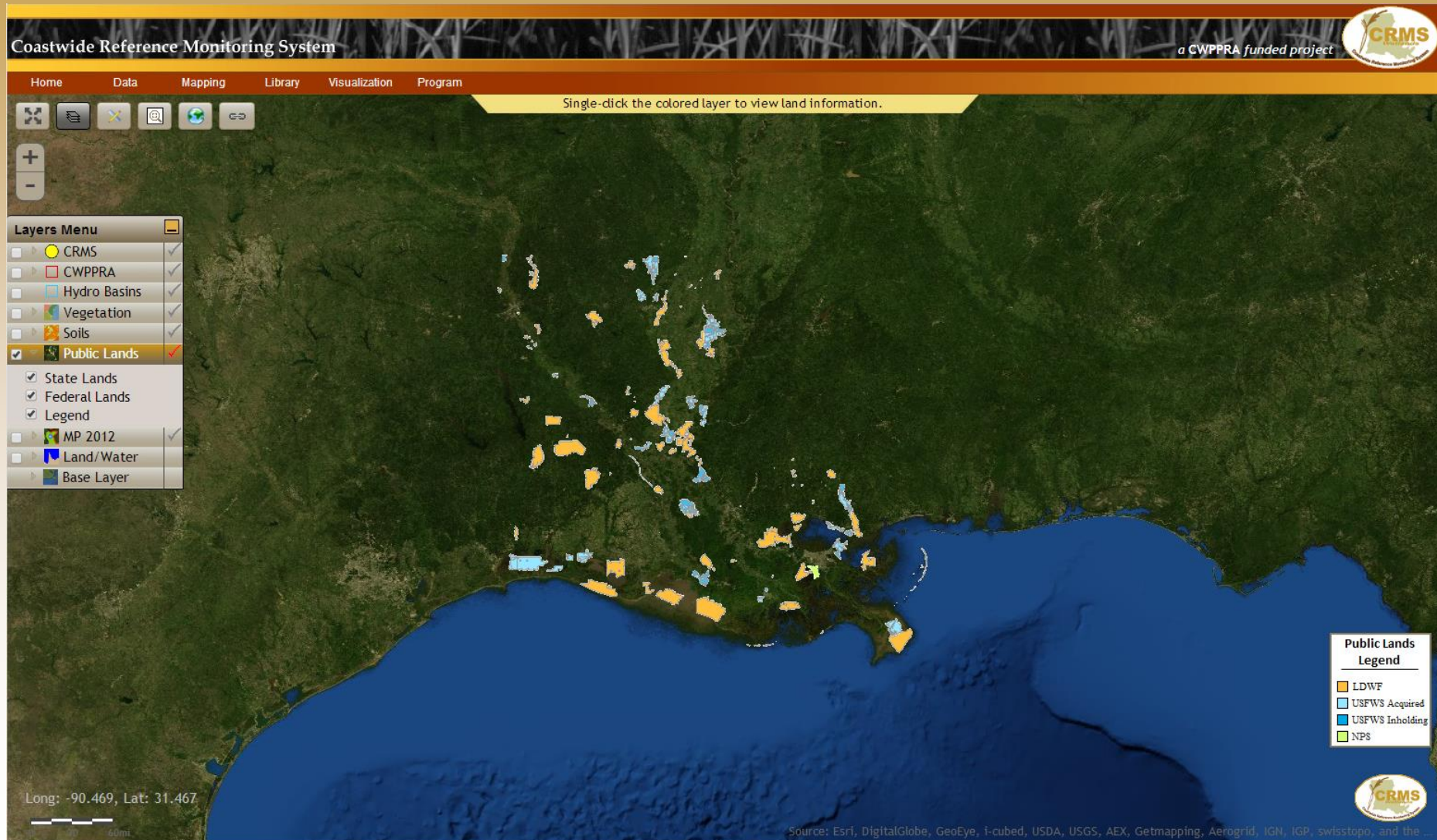




The Soil Type information window pops up when a soil area is clicked.



Public Lands Active Layer



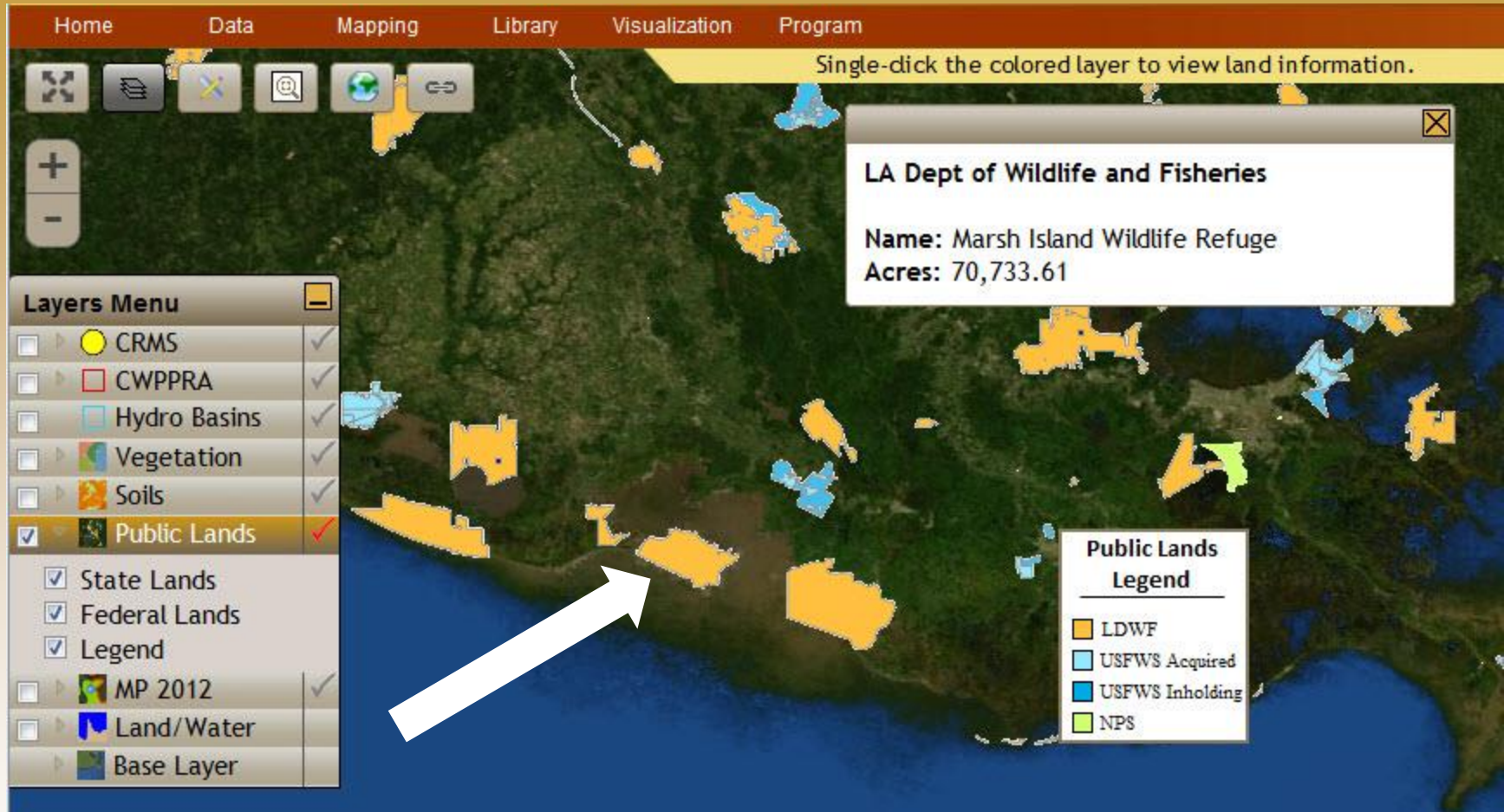


Public Lands Active Layer



State Lands checkbox adds/removes LA Department of Wildlife and Fisheries layer.

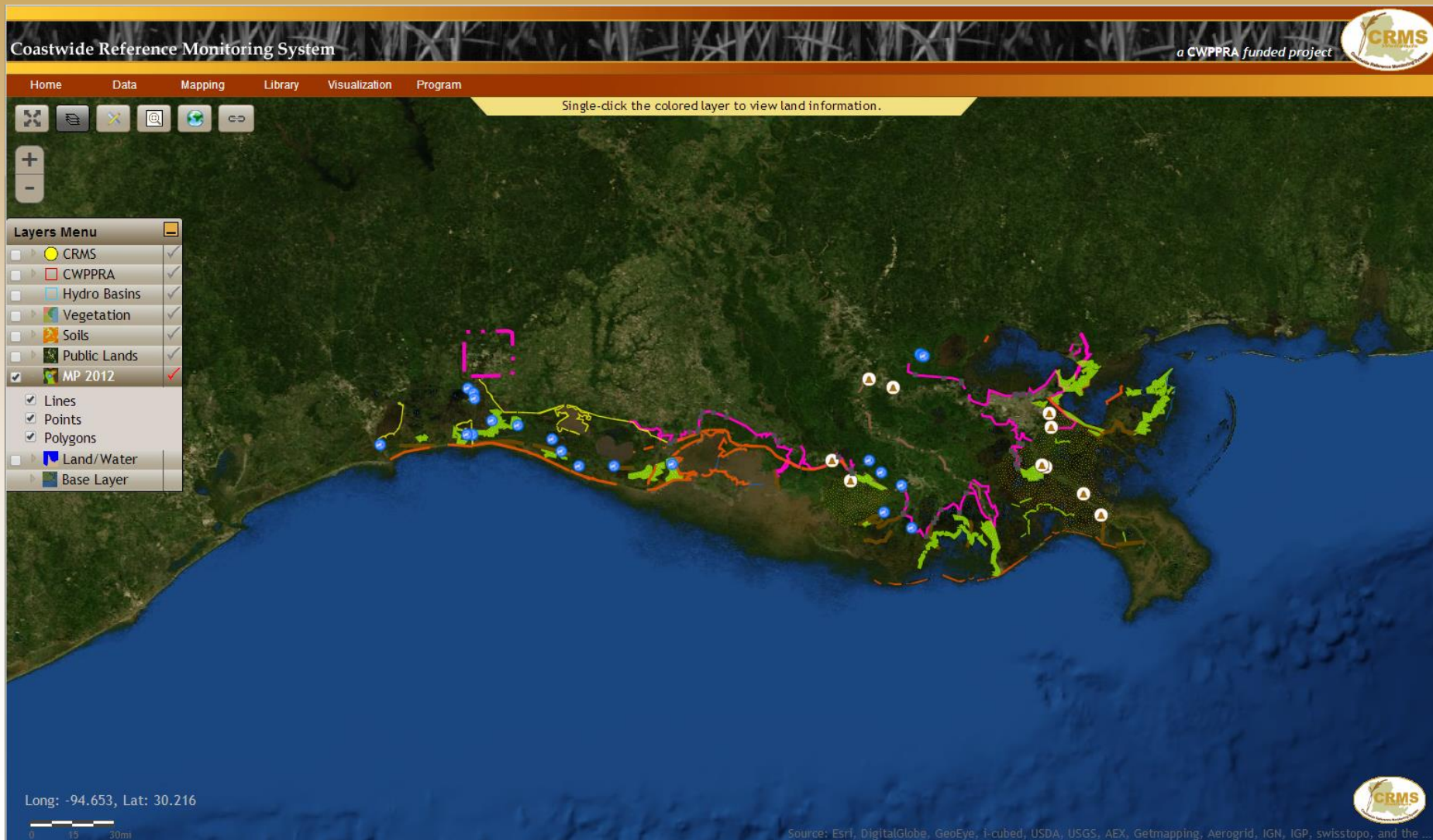
Federal Lands checkbox adds/removes National Park Service and US Fish and Wildlife Service.

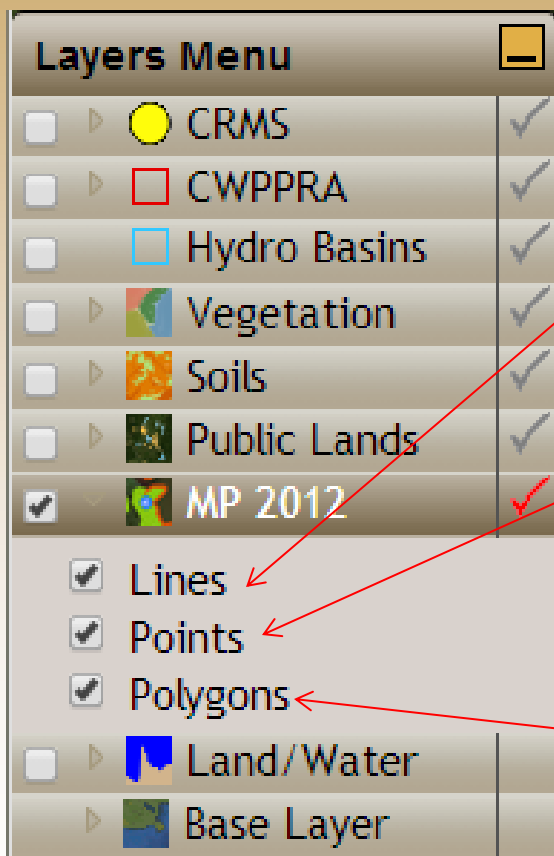


The Public Lands information window pops up when a Public Lands polygon is clicked.



Master Plan 2012





Checkbox to put the lines of the Master Plan 2012 on the map

Checkbox to put the points of the Master Plan 2012 on the map

Checkbox to put the polygons of the Master Plan 2012 on the map



The Master Plan information window pops up when a Master Plan polygon is clicked.



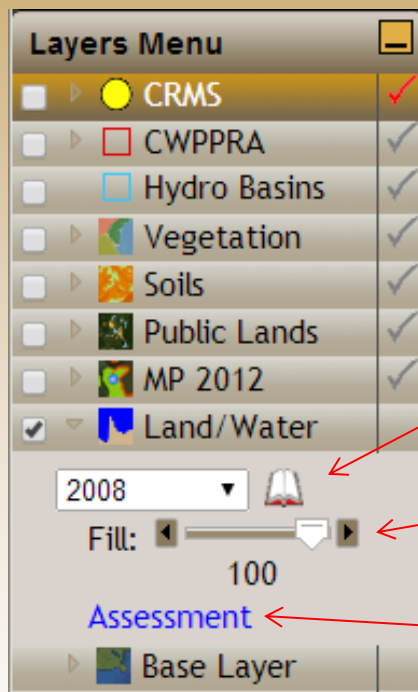
Other Layers

Land/Water





Land/Water

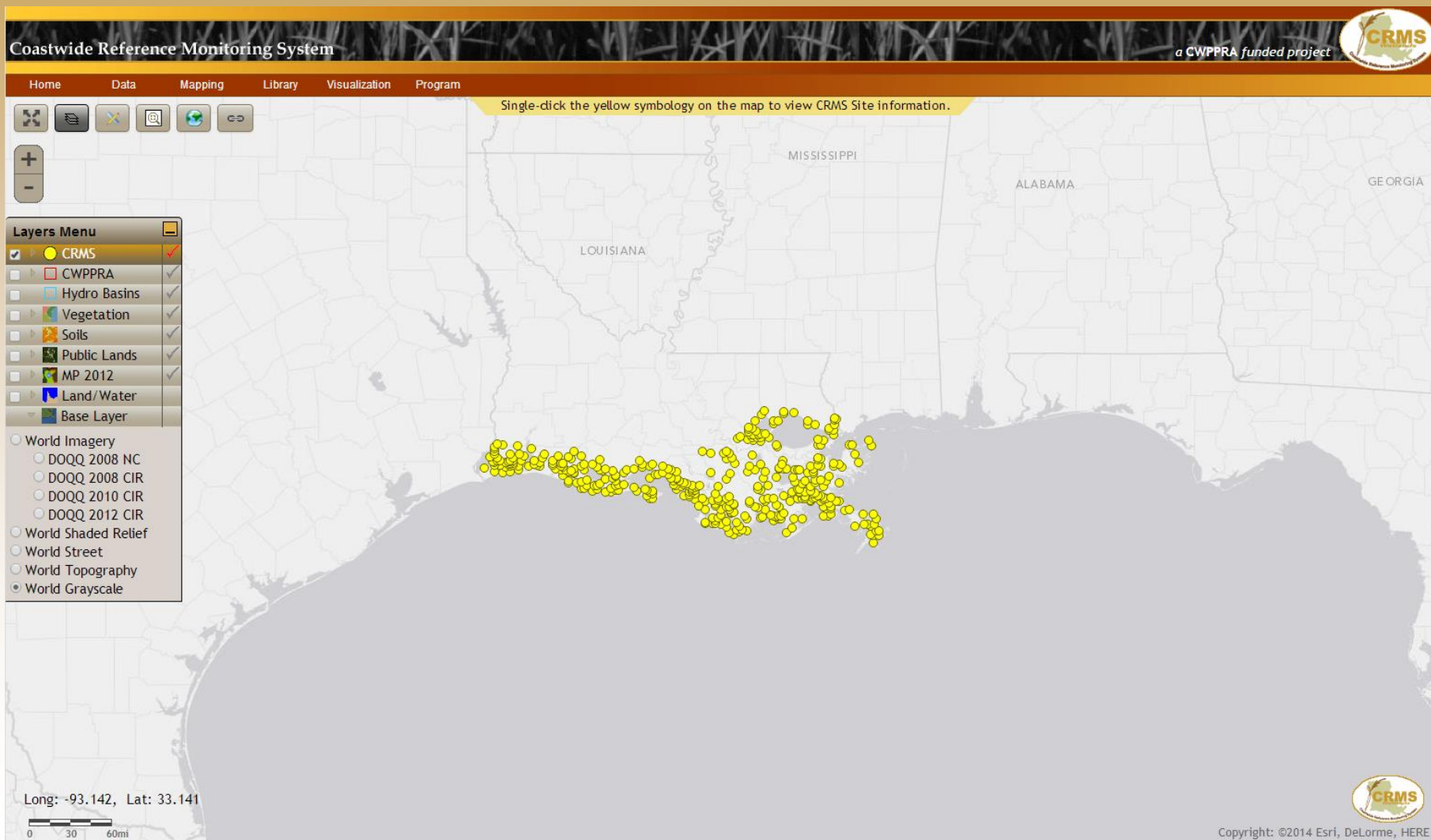


Changes the Land/Water layer's year.

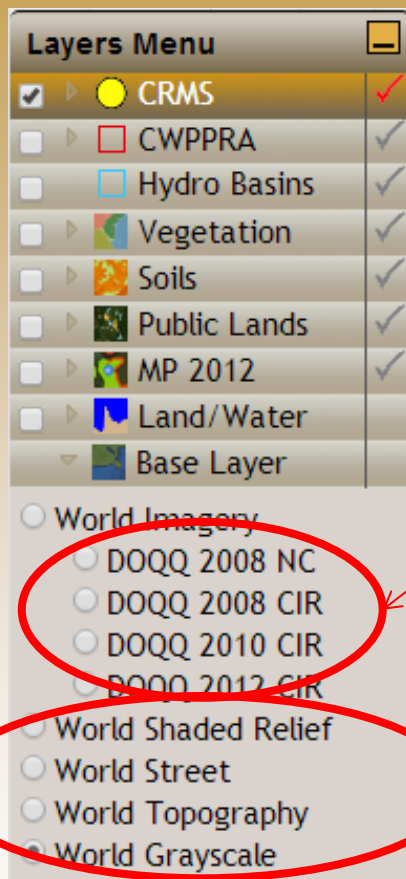
Slider changes the transparency of the layer.

Assessment link invokes the acreage assessment tool menu for the currently selected year.

Base Layers



Base Layers



DOQQ radio buttons add the selected DOQQ layer to the map.

Other radio buttons change the base/background layer of the map.

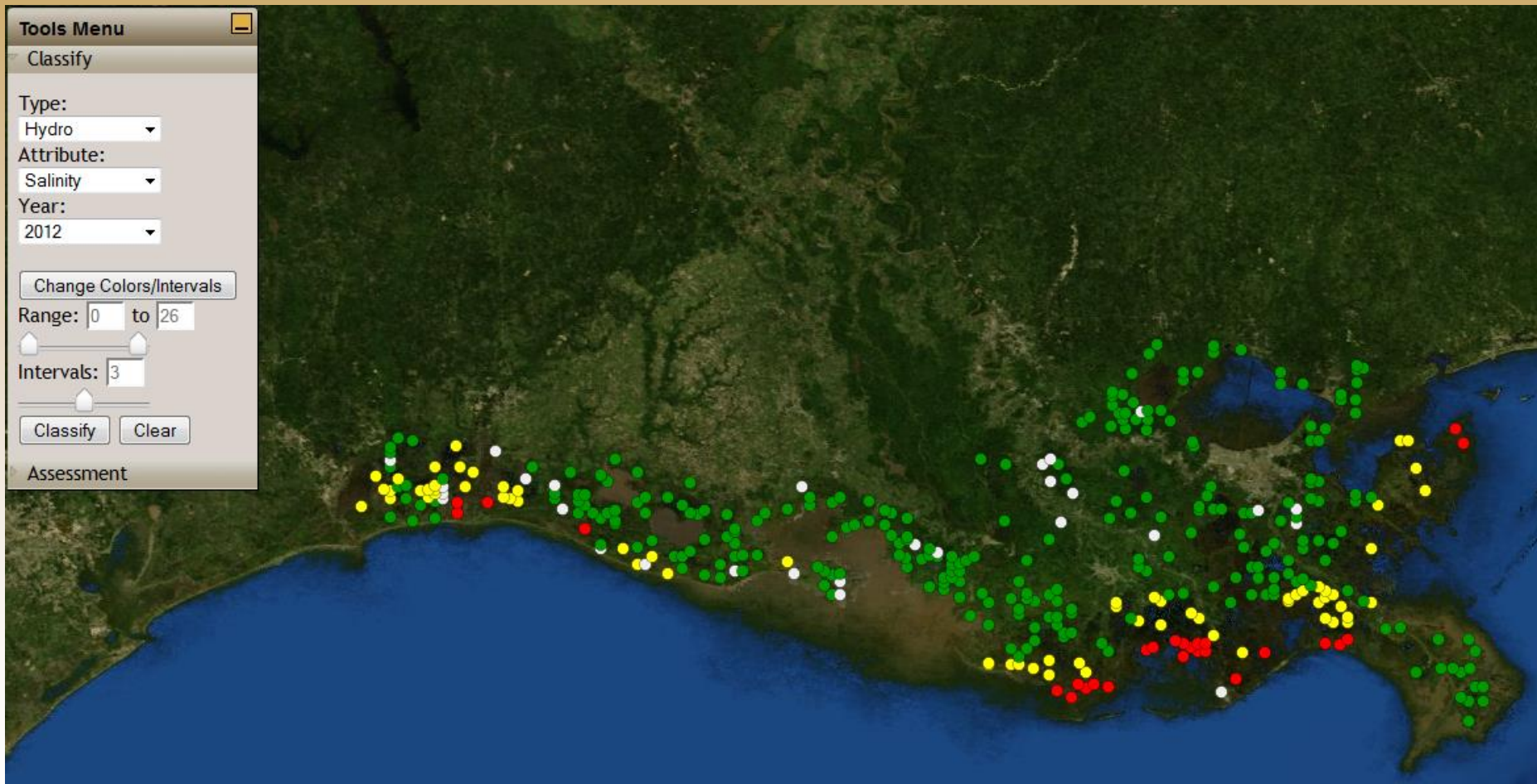
Classify Tool



A Type, Attribute, and Year must be chosen to Classify the CRMS sites. All of the Attributes except for the Marsh Classification have a color chooser option.

- Vegetation
 - FQI
 - Marsh Classification
- Hydro
 - Hydro Index
 - Salinity
 - Water Level
- Soil
 - Calculated Elevation Change (CEC)
 - Submergence Vulnerability Index (SVI)

Classify Tool



Classify Tool

Tools Menu

Classify

Type: Hydro

Attribute: Salinity

Year: 2012

Change Colors/Intervals

Range: 0 to 26

Intervals: 3

Classify Clear

Assessment

Tools Menu

Classify

Type: Hydro

Attribute: Salinity

Year: 2012

Change Colors/Intervals

Range: 13 to 26

Intervals: 5

Classify Clear

Assessment

Tools Menu





Classify

Type: Hydro

Attribute: Salinity

Year: 2012


Change Ranges

| | | |
|-------|-------|---|
| 13 | 15.6 |  |
| 15.6 | 18.2 |  |
| 18.2 | 20.8 |  |
| 20.8 | 23.40 |  |
| 23.40 | 26 | |

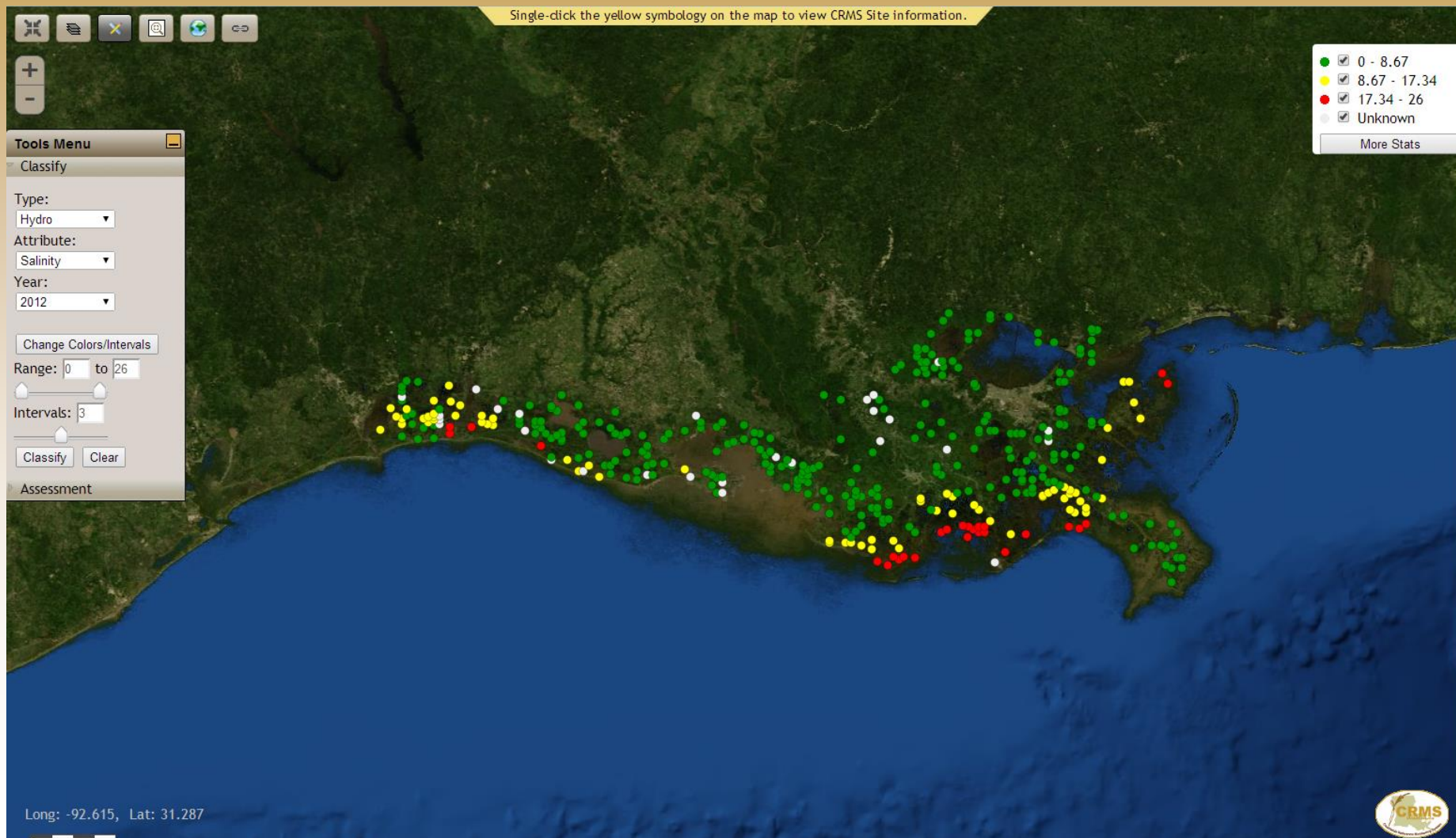
Unknown

Classify

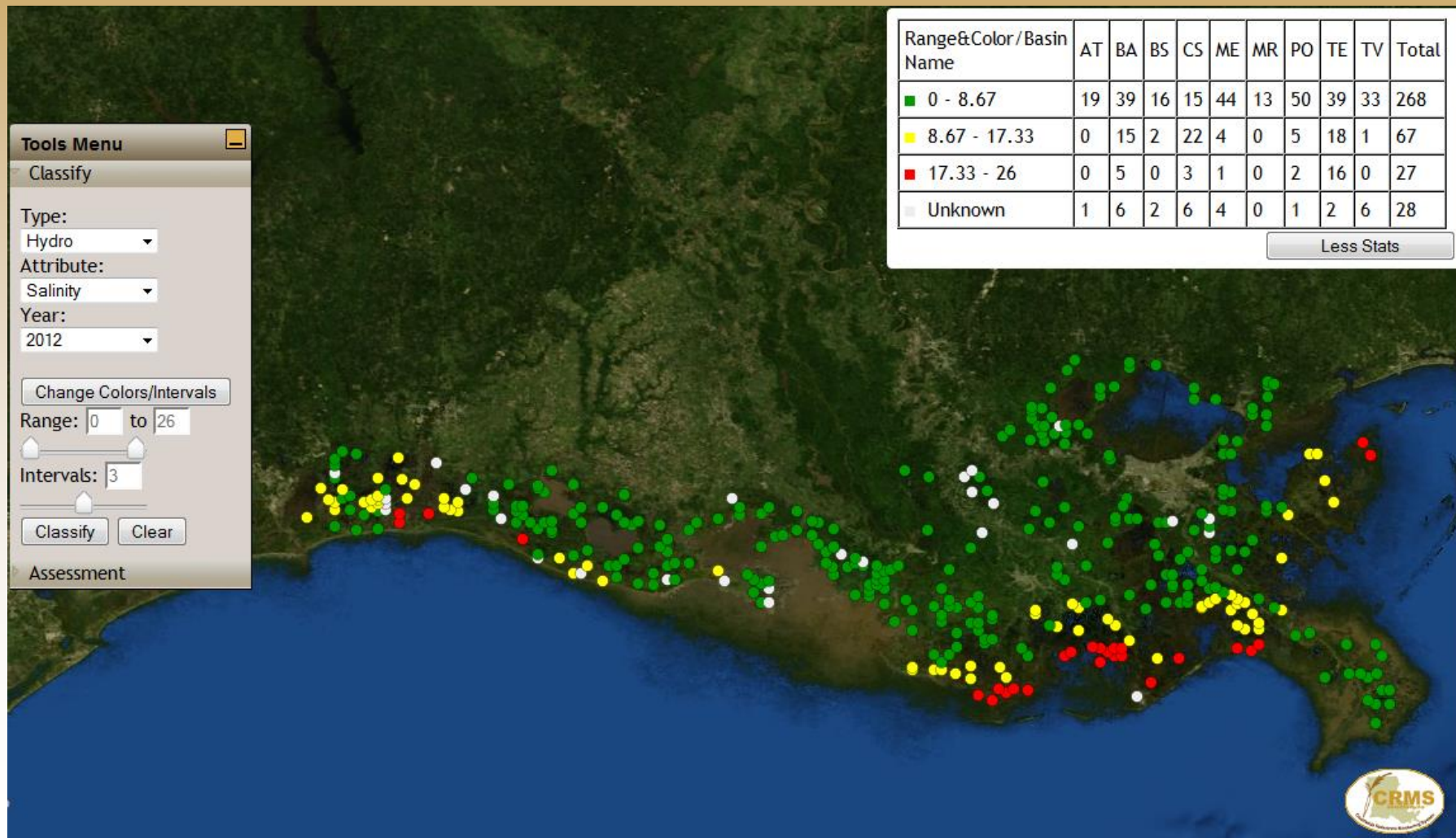
Assessment



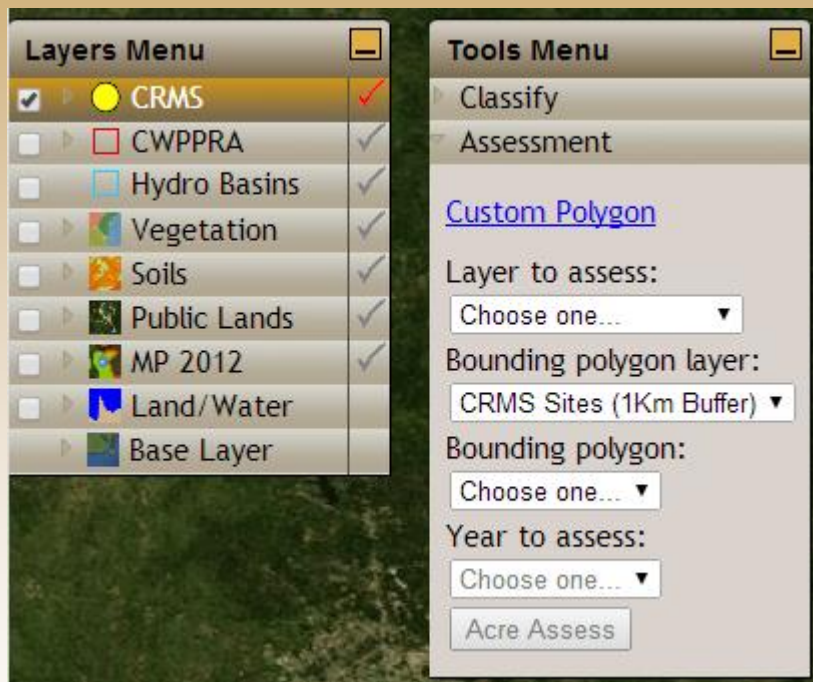
Classify Tool



Classify Tool



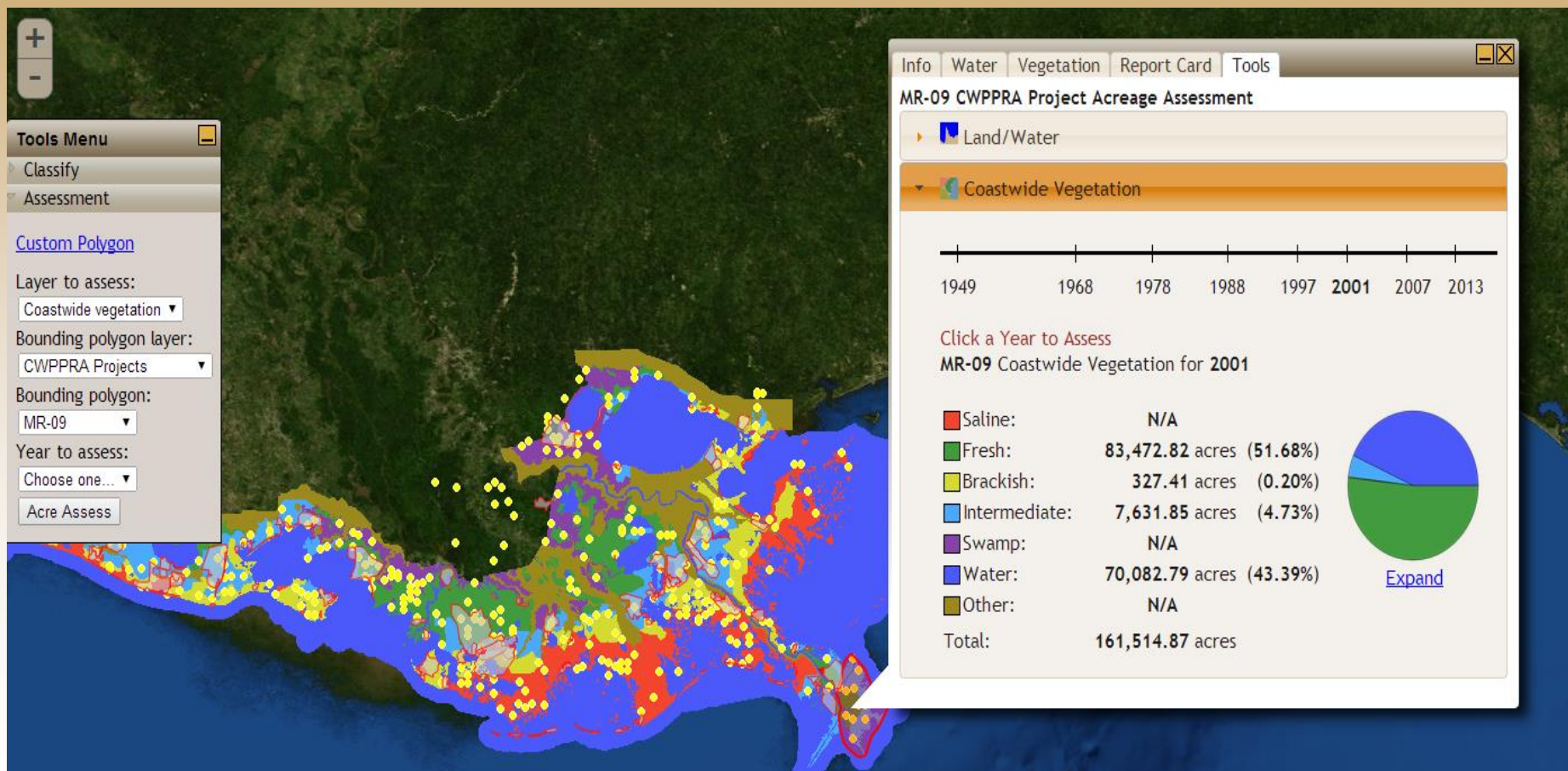
Acreage Assessment Tool



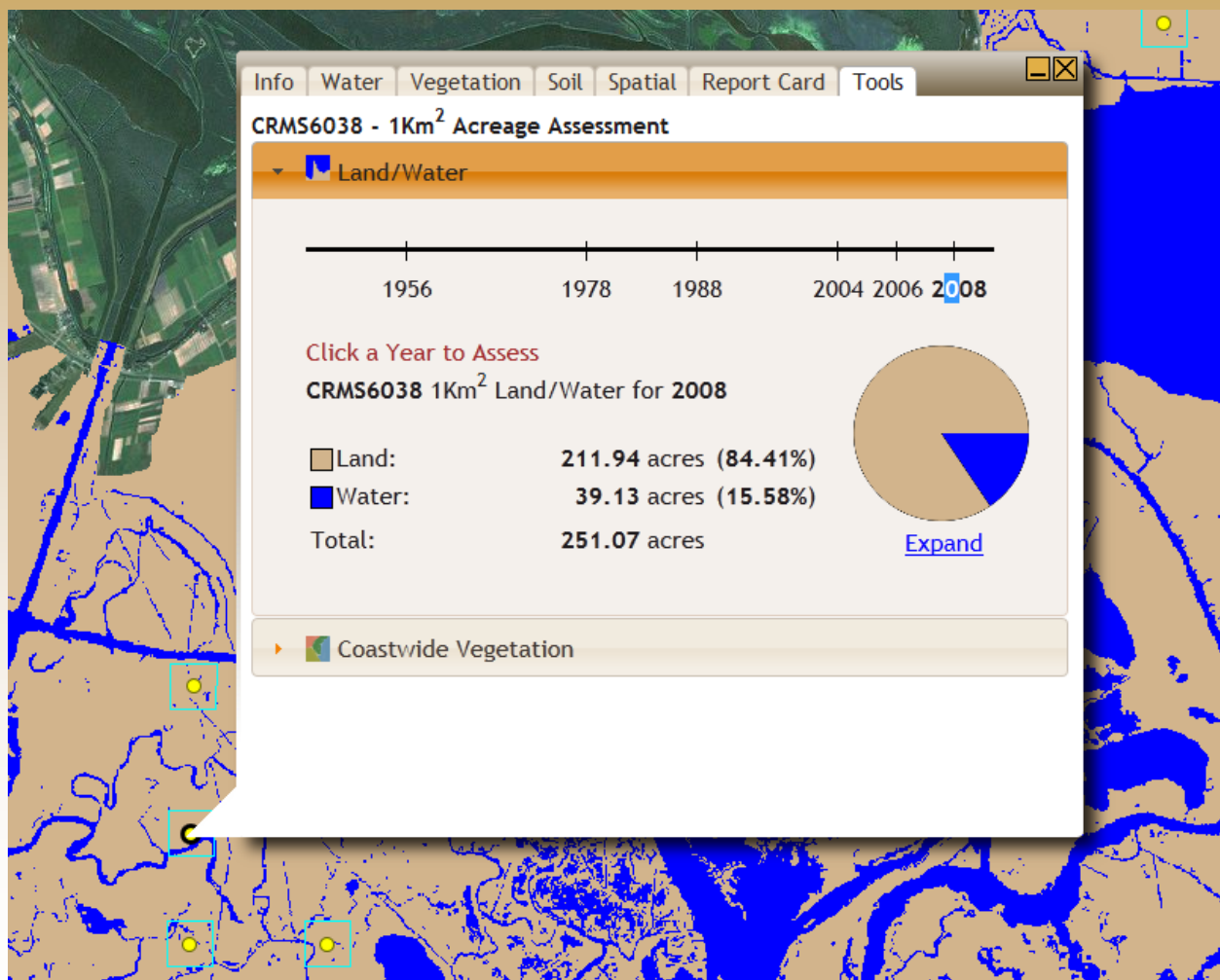
A custom polygon can be drawn on the map to assess the area of the polygon drawn.

A Type, Attribute, and Year must be chosen to classify the CRMS sites. All of the attributes except for the Marsh Classification have a color chooser option.

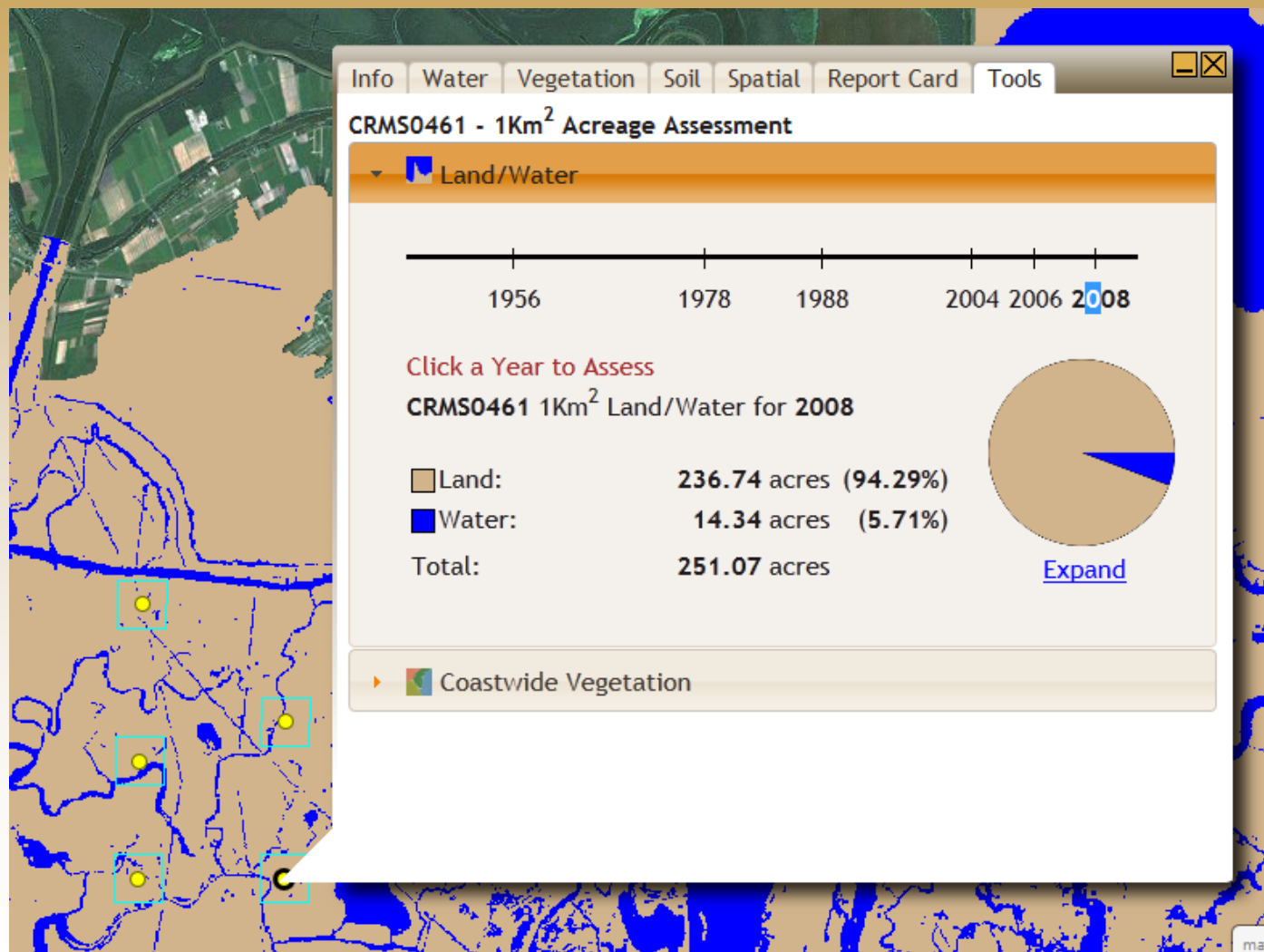
Acreage Assessment Tool



Tools Tab Persistence



Tools Tab Persistence





Custom Acreage Assessment

Single-click the yellow symbology on the map to view CRMS Site information.

Layers Menu

- ☒ CRMS
- ☐ CWPPRA
- ☐ Hydro Basins
- ☐ Vegetation
- ☐ Soils
- ☐ Public Lands
- ☐ MP 2012
- ☐ Land/Water
- ☐ Base Layer

Tools Menu

- Classify
- Assessment
- Custom Polygon
- Layer to assess:
Choose one...
- Bounding polygon layer:
CRMS Sites (1Km Buffer)
- Bounding polygon:
Choose one...
- Year to assess:
Choose one...
- Acre Assess

Long: -92.554, Lat: 30.623

javascript:__doPostBack('AssessCPolygon','')

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, s...



Request Password:
E-mail: comeauxm@usgs.gov

Single-click the yellow symbology on the map to view CRMS Site information.

Layers Menu

- ☒ CRMS
- ☒ CWPPRA
- ☒ Hydro Basins
- ☒ Vegetation
- ☒ Soils
- ☒ Public Lands
- ☒ MP 2012
- ☒ Land/Water
- ☒ Base Layer

Tools Menu

- Classify
- Assessment
- Custom Polygon
- Layer to assess:
Choose one...
- Bounding polygon layer:
CRMS Sites (1Km Buffer)
- Bounding polygon:
Choose one...
- Year to assess:
Choose one...
- Acre Assess

Log In

User Name: comeauxm

Password:

Log In

Long: -93.642, Lat: 30.807

javascript:__doPostBack('AssessCPolygon','')

Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, s...



Custom Acreage Assessment

Single-click the yellow symbology on the map to view CRMS Site information.

Layers Menu

| | | | |
|-------------------------------------|--|--------------|-------------------------------------|
| <input checked="" type="checkbox"/> | | CRMS | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | | CWPPRA | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | | Hydro Basins | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | | Vegetation | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | | Soils | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | | Public Lands | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | | MP 2012 | <input checked="" type="checkbox"/> |
| <input checked="" type="checkbox"/> | | Land/Water | <input checked="" type="checkbox"/> |
| <input type="checkbox"/> | | Base Layer | <input checked="" type="checkbox"/> |

Tools Menu

Classify
Assessment

Layer to assess:
Land/Water

Year to assess:
2008

Begin

Long: -93.137, Lat: 29.926

javascript:__doPostBack('AssessCPolygon','')

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, s...



Custom Acreage Assessment

40 nodes/dicks. Single-click to start drawing polygon. Map is limited to 40 nodes/dicks.

CRMS Wetlands
Coastal Reference Monitoring System

Layers Menu

- ☒ CRMS
- ☐ CWPPRA
- ☐ Hydro Basins
- ☐ Vegetation
- ☐ Soils
- ☐ Public Lands
- ☐ MP 2012
- ☒ Land/Water
- ☐ Base Layer

Tools Menu

Classify

Assessment

Layer to assess:
Land/Water

Year to assess:
2008

Acre Assess Clear

Double-click to complete

Long: -90.945, Lat: 29.606

javascript:__doPostBack('AssessCPolygon','')

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, s...



Custom Acreage Assessment

40 nodes/dicks. Single-click to start drawing polygon. Map is limited to 40 nodes/dicks.

+

-

Layers Menu

☒ CRMS

☐ CWPPRA

☐ Hydro Basins

☐ Vegetation

☐ Soils

☐ Public Lands

☐ MP 2012

☒ Land/Water

☐ Base Layer

Tools Menu

Classify

Assessment

Layer to assess:
Land/Water

Year to assess:
2008

Acre Assess

Clear

Long: -92.939, Lat: 29.921

javascript:__doPostBack('AssessCPolygon','')

CRMS

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, s...



Custom Acreage Assessment

Single-click to start drawing polygon. Map is limited to 40 nodes/dicks.

Loading... May take 3-5 minutes...

Layers Menu

- ☒ CRMS
- ☐ CWPPRA
- ☐ Hydro Basins
- ☐ Vegetation
- ☐ Soils
- ☐ Public Lands
- ☐ MP 2012
- ☒ Land/Water
- ☐ Base Layer

Tools Menu

Classify

Assessment

Layer to assess:
Land/Water

Year to assess:
2008

Acre Assess Clear

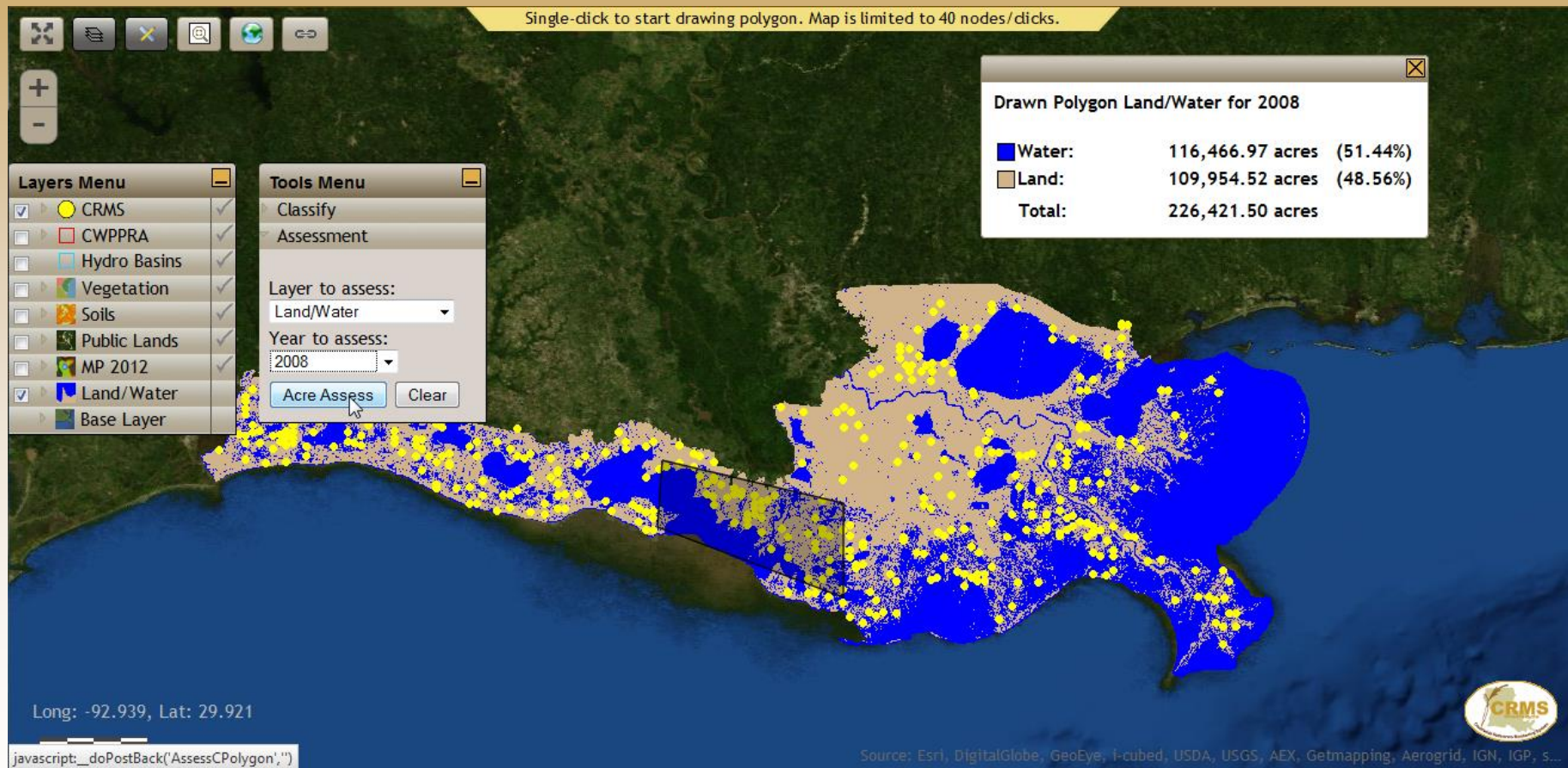
Long: -92.939, Lat: 29.921

javascript:__doPostBack('AssessCPolygon','')

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, s...



Custom Acreage Assessment





Questions?

<http://www.lacoast.gov/crms>

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