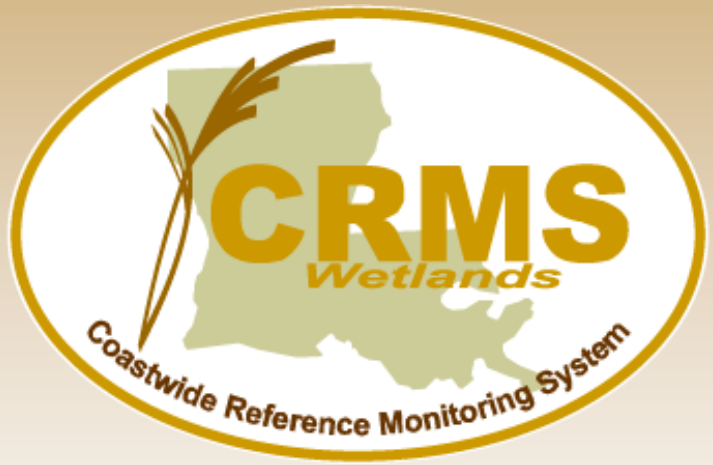
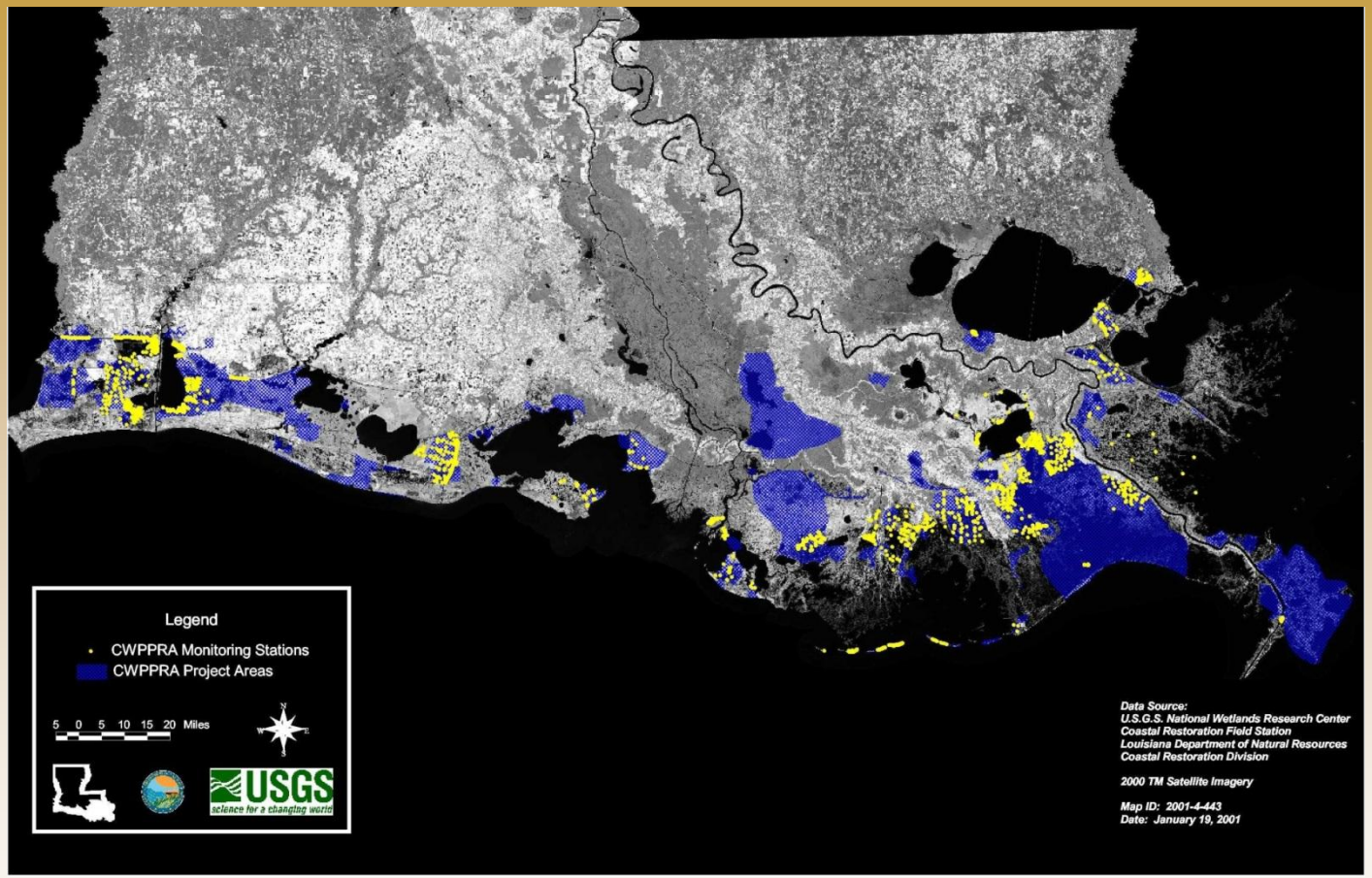
CRMS Website Training



March 2013

http://www.lacoast.gov/crms

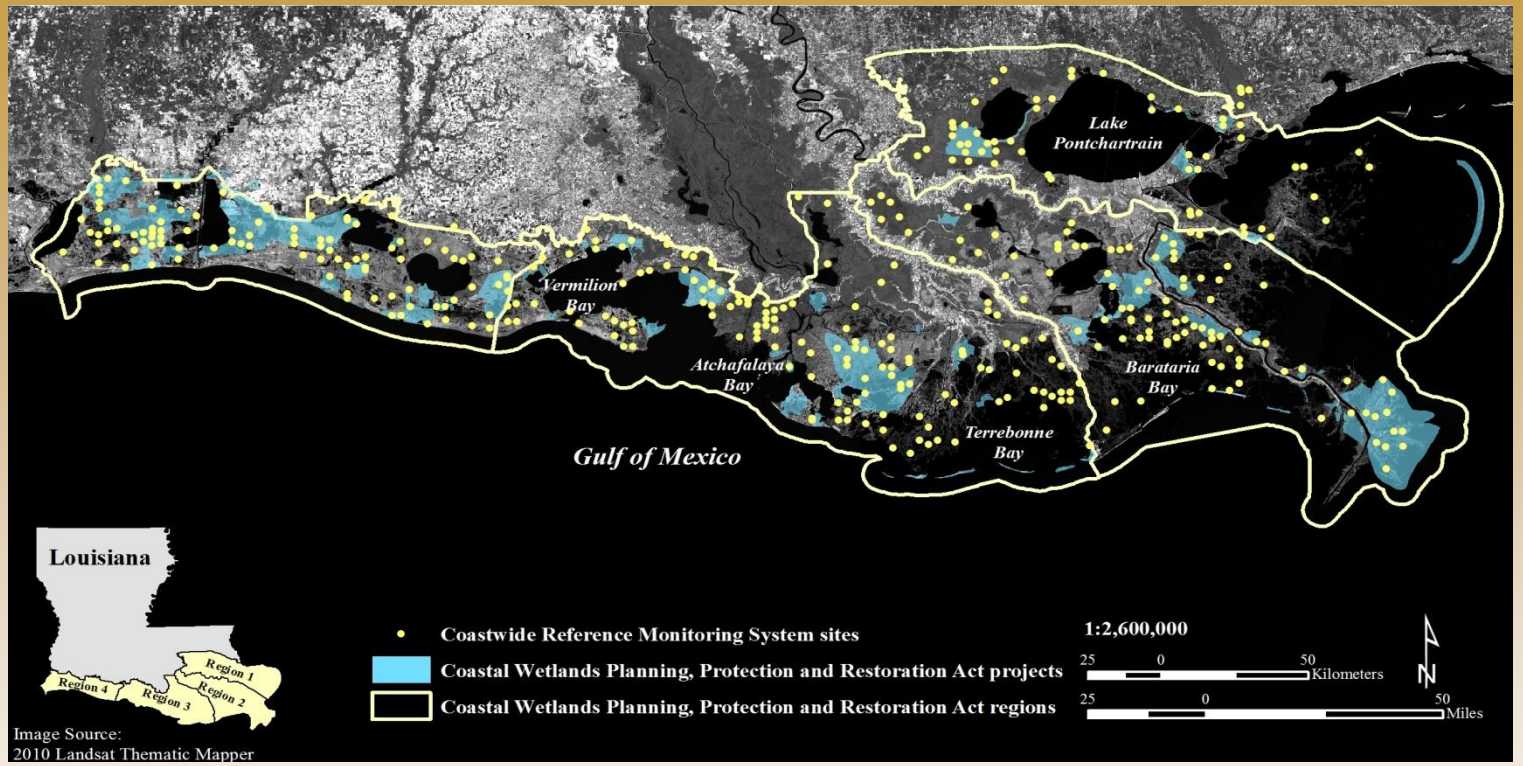
CWPPRA Restoration Projects



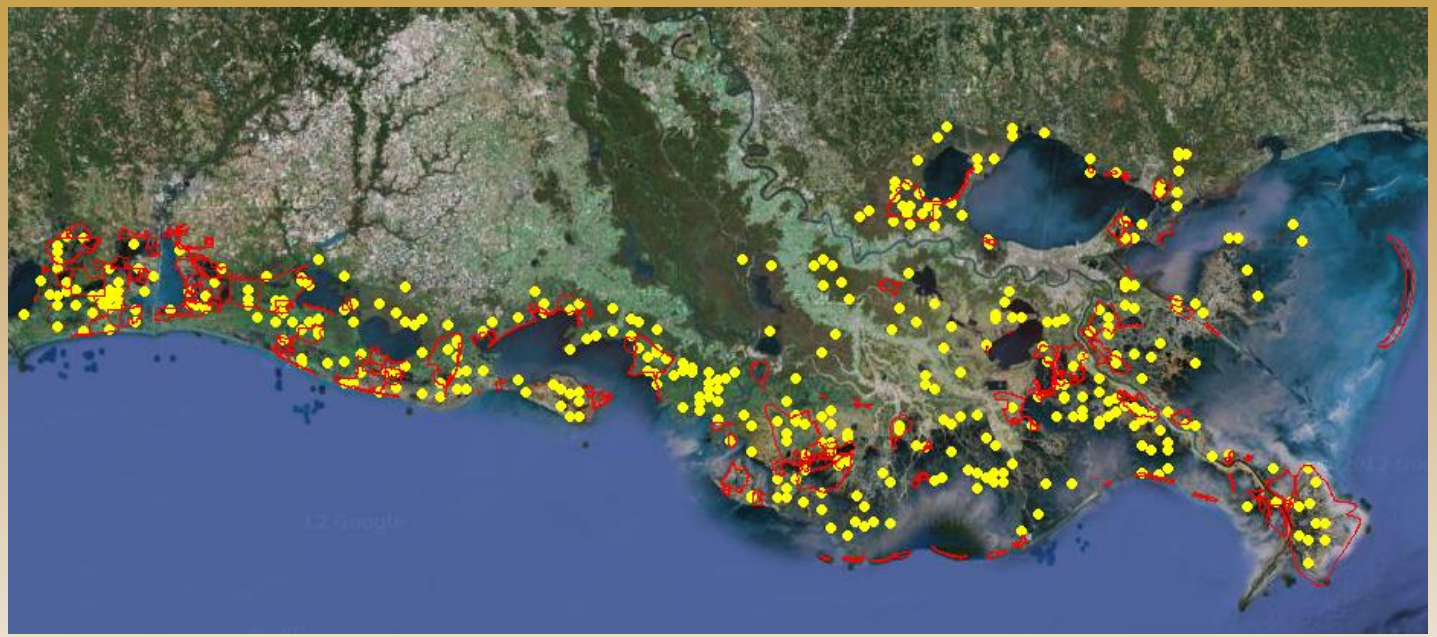
- Congressionally funded in 1990
- Multiple restoration techniques
- Inconsistent monitoring variables and frequencies
- Short data records

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

Purpose



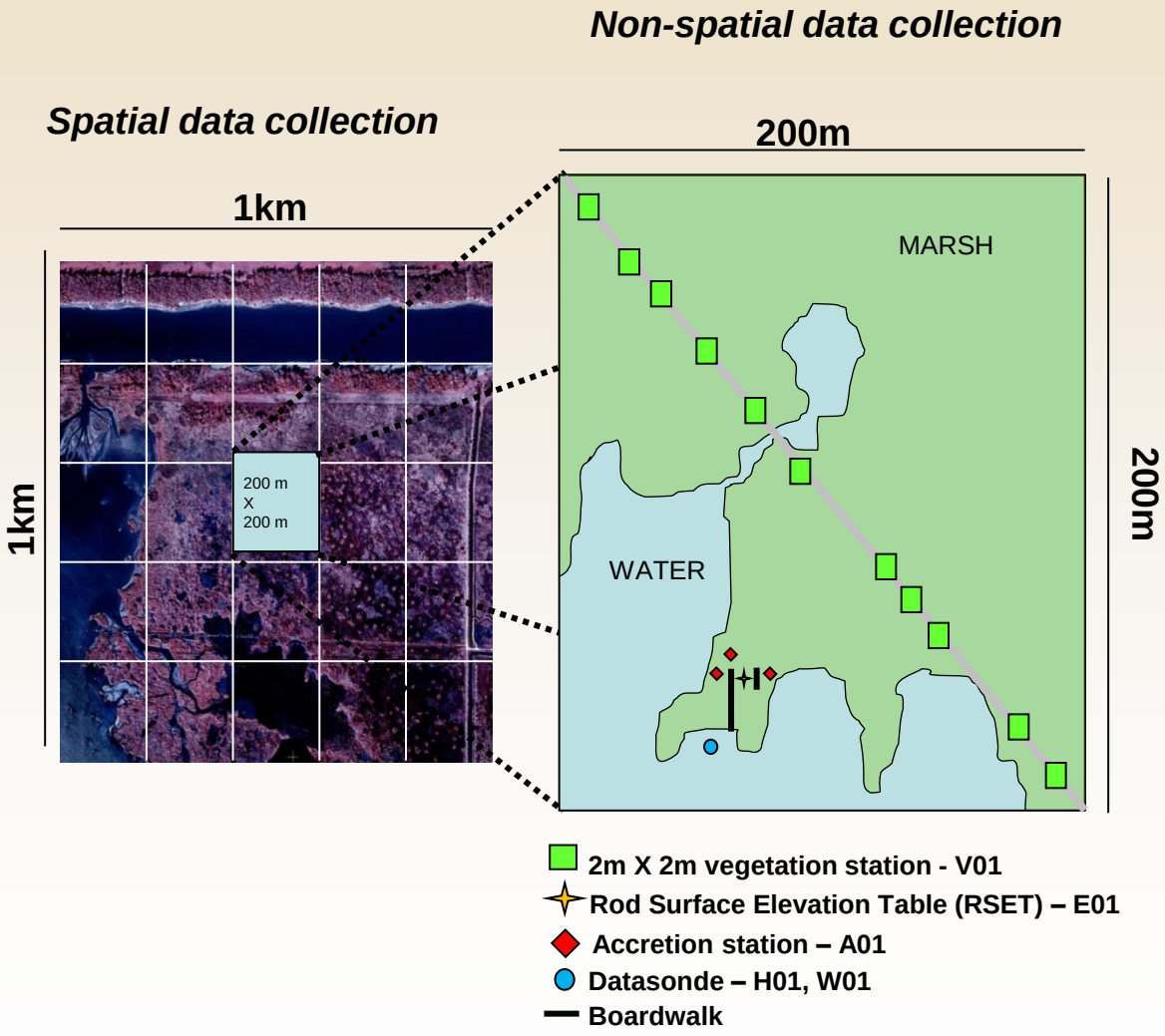
- **To improve our ability to determine the effectiveness of individual coastal restoration projects.**
- **Provide information to evaluate coastal wetlands at the project, basin, and coastwide scales.**
- **To determine the ecological condition of coastal wetlands to ensure that the strategic coastal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



- **Funded by CWPPRA in 2003**
- **390 CRMS sites**
- **Sites inside & outside of CWPPRA projects**
- **Sites in swamp, fresh, intermediate, brackish, and salt marsh**
- **Allows for multi-scale assessments**

Questions to address through CRMS:

(1) Did the restoration program reduce coastal wetland loss?
(2) Did the restoration program sustain a diversity of vegetation types within basins?
(3) Is the restoration program effective in reducing major stressors on wetlands (i.e., flooding regime, salinity, elevation change)?
(4) Which project types are the most effective in creating, restoring, protecting and enhancing wetlands?



CRMS Site vs. CRMS Station

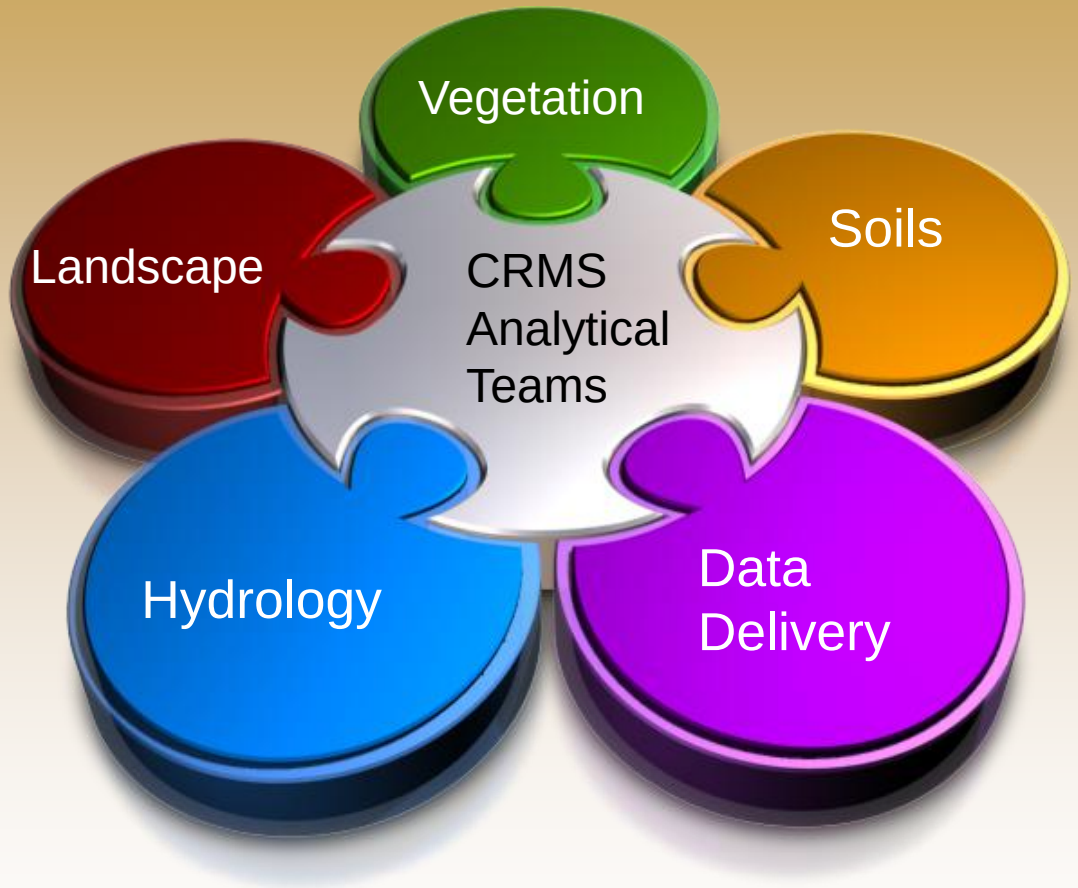
Typical Marsh Site

Typical Swamp Site

Site Design

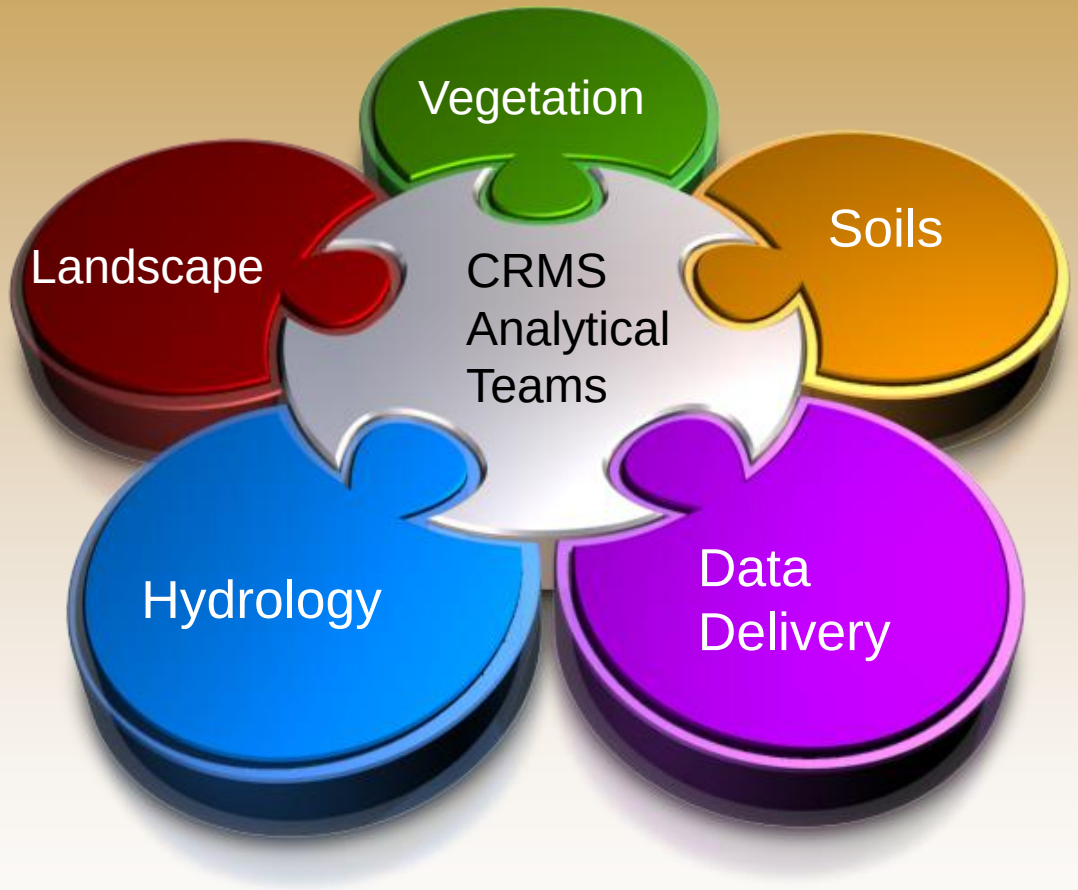
Site Data Collection

Parameter	Method	Scale	Frequency
Land to Water Ratio	Satellite Imagery	Hydrologic Basin	3 years
Land to Water Ratio	Digital Aerial Photography	CRMS Site (1 Km^2)	3 years
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
Vertical Accretion	Feldspar Plots/Cryogenic Cores	3 plots per site	Bi-annually
Marsh Elevation Change	Rod Surface Elevation Table (RSET)	4 directions per site	Bi-annually
Porewater Salinity	10 and 30 cm syringe sippers	3 samples per depth per site and at vegetation plots	Monthly Annually
Surface Water Salinity, Temp and Water Level	Submersible Data Logger	in available water within 200 m of CRMS Site or in a well	Hourly
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



- State and federal scientists
- Academics
- Computer programmers
- Web developers
- Oversight review

Analytical Teams and Web Delivery



- 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

Coastwide Reference Monitoring System - *Wetlands*

CRMS Website

http://www.lacoast.gov/crms

Site Overview – Main Menu

- **Program**
  - **Administrative links, Data Citation, and Data Descriptions**

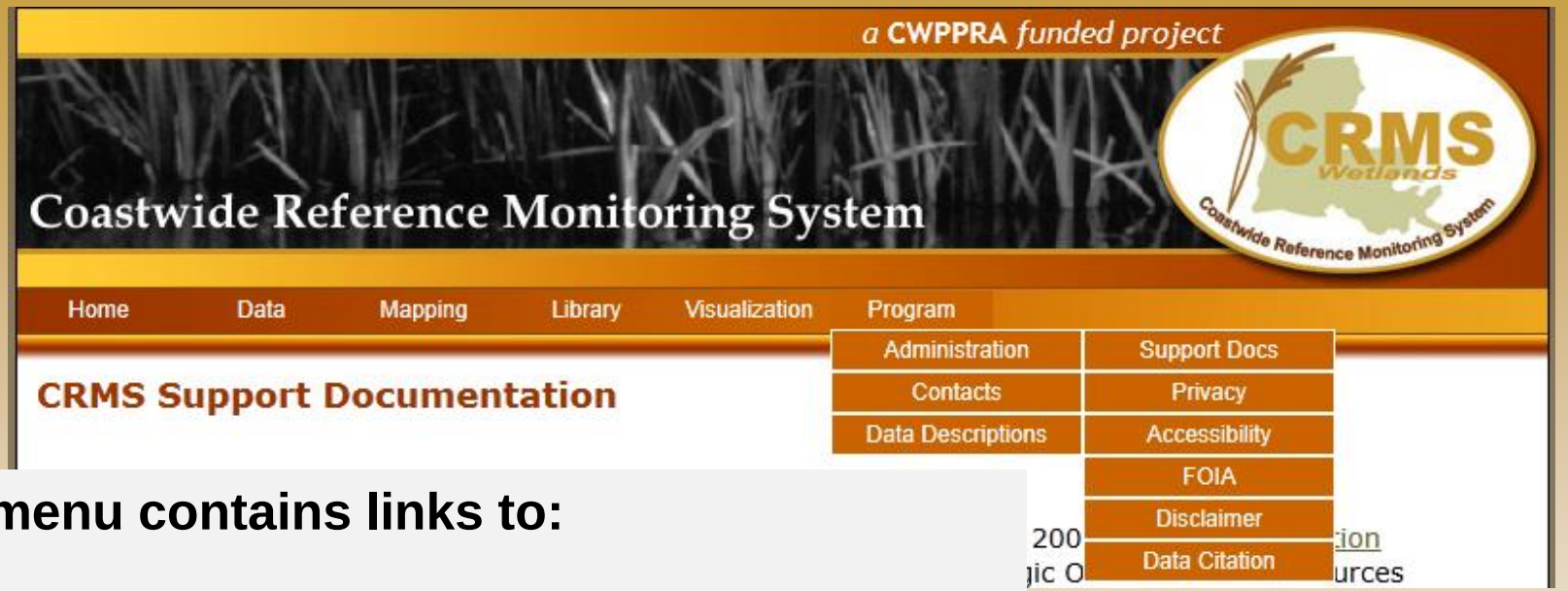
- **Data**
  - **Spatial Data / Tabular SONRIS Data Tool / Tabular CRMS Bulk Download**

- **Library**
  - **Maps / Presentations / SONRIS Reports / CRMS Reports**

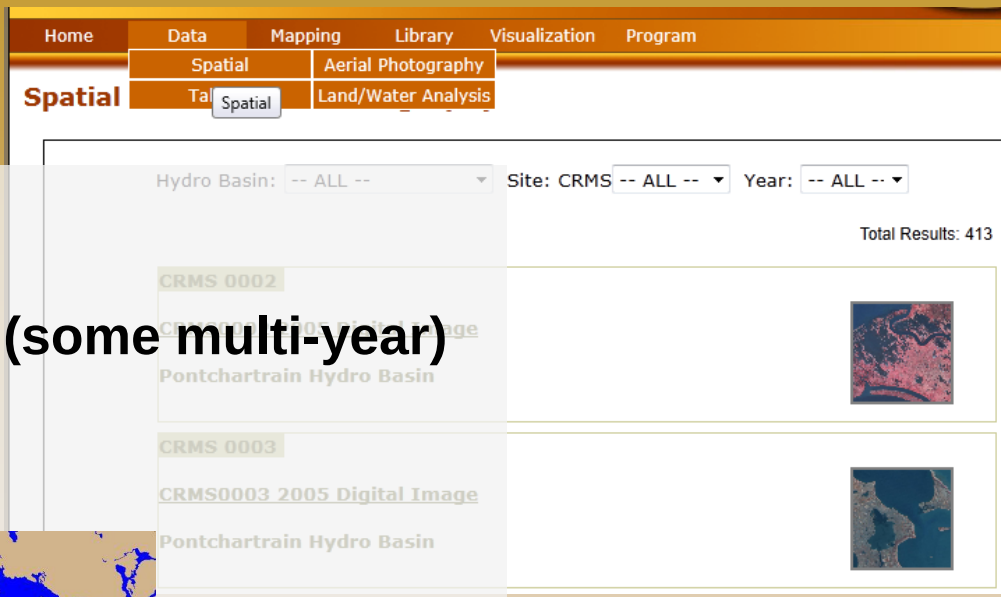
- **Visualizations**
  - **Charting / Bulk Charting**

- **Mapping**
  - **SONRIS / Basic Map Viewer**

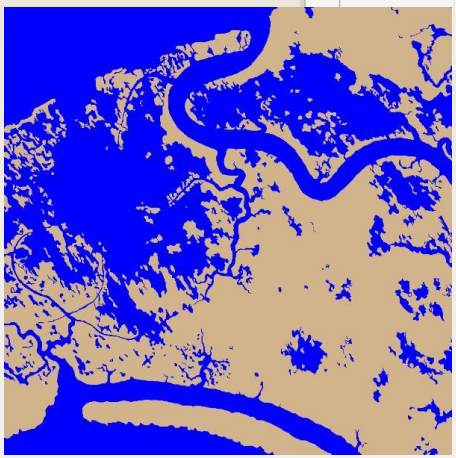
Program



- **Program menu contains links to:**
  - **Administrative Information**
    - **Supporting or Reference Documents**
    - **Privacy and Accessibility Statements**
    - **Freedom of Information Act**
    - **Data Citation**
  - **Contacts from both USGS and OCPR**
  - **Data Description Information**
    - **Includes analytical framework documents**
    - **Report card analysis explanations**



- **Data menu contains links to:**
  - **Spatial Data:**
    Available for each CRMS site (some multi-year)
    - **Aerial Mosaic**
    - **Land/Water Analysis**



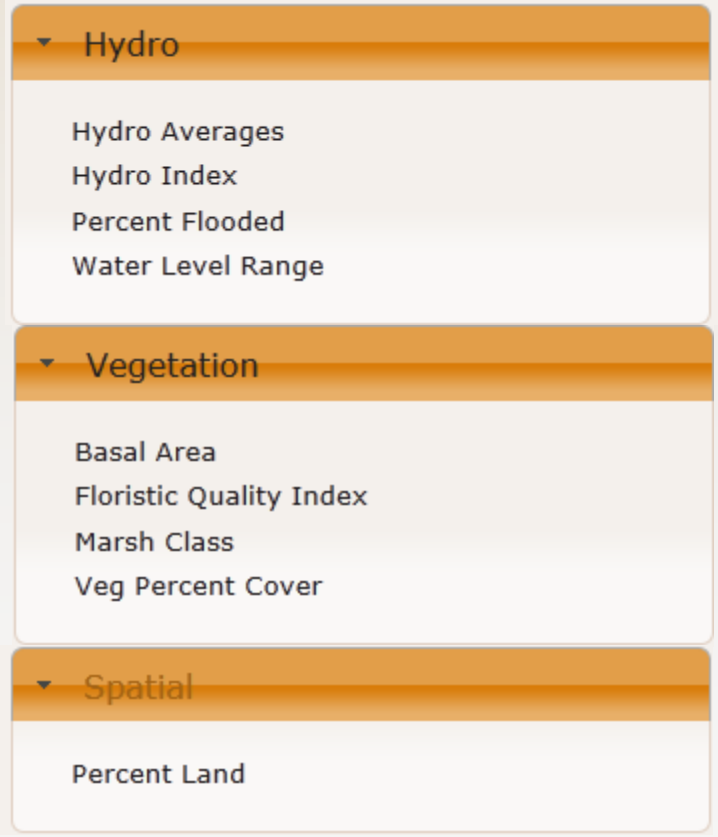
  - **Tabular Data**
    - **Links back to SONRIS data download tools**
    - **CRMS bulk data download tools**

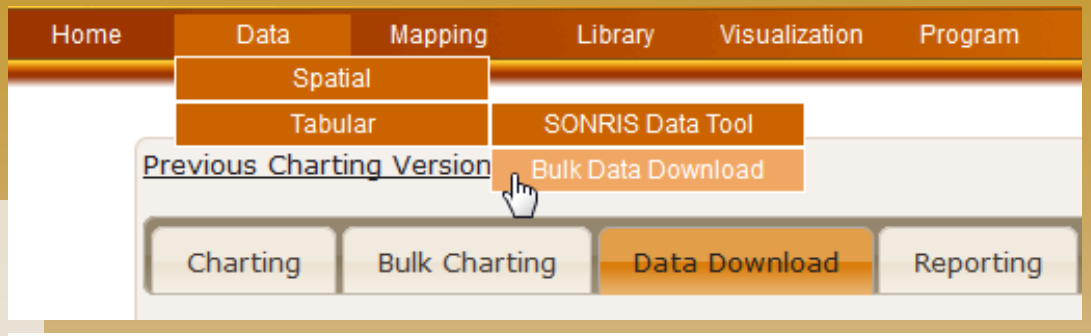
Data

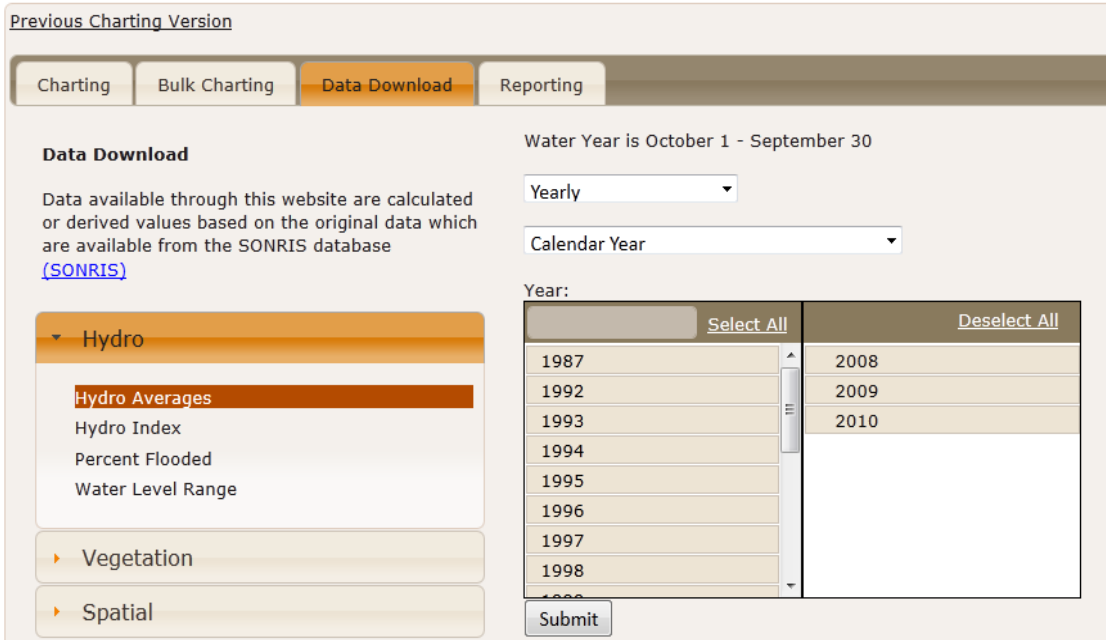
- **CRMS bulk data download tools**

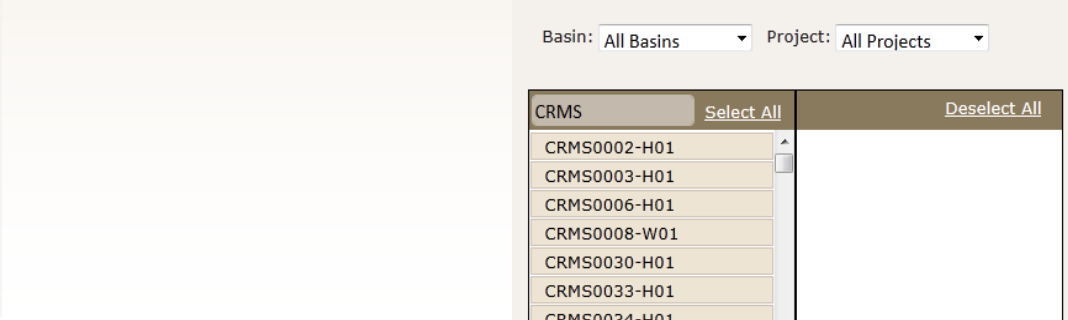
All values for selected years, for selected stations

(queue processes first come first serve)



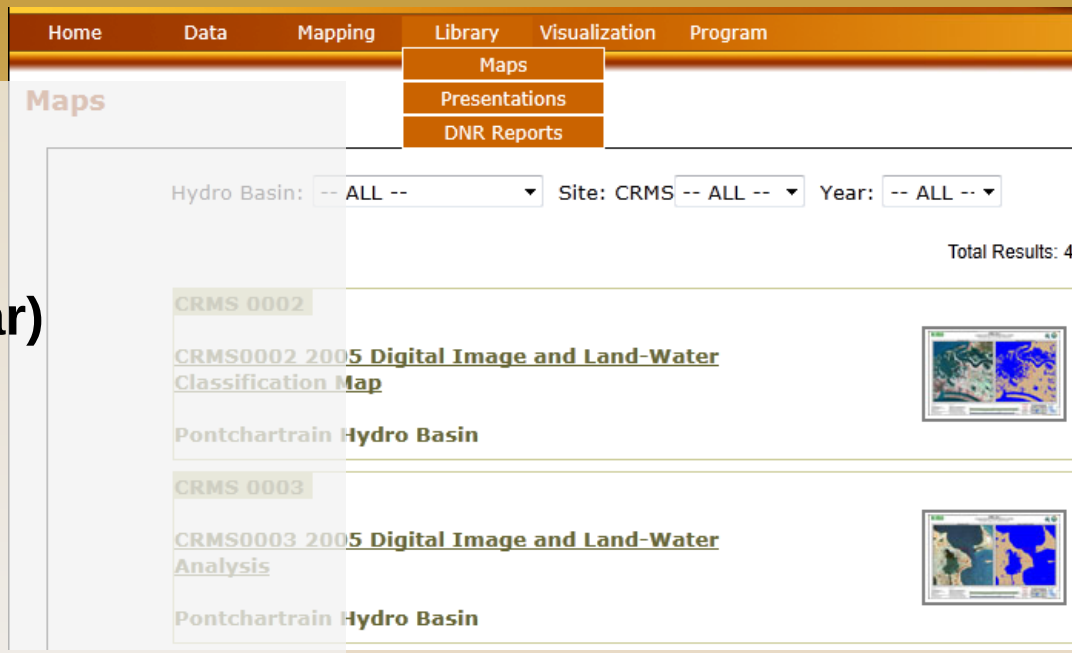


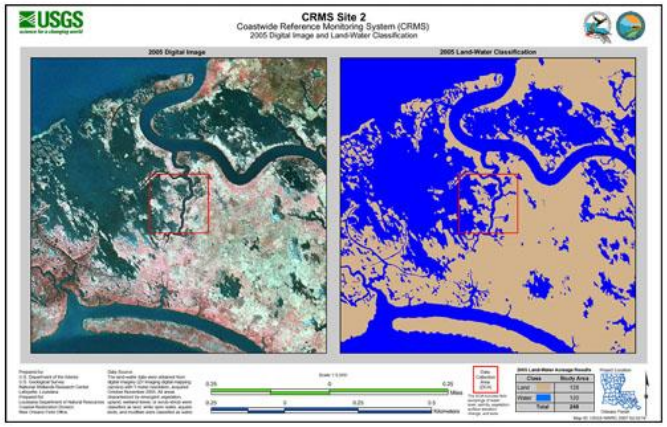




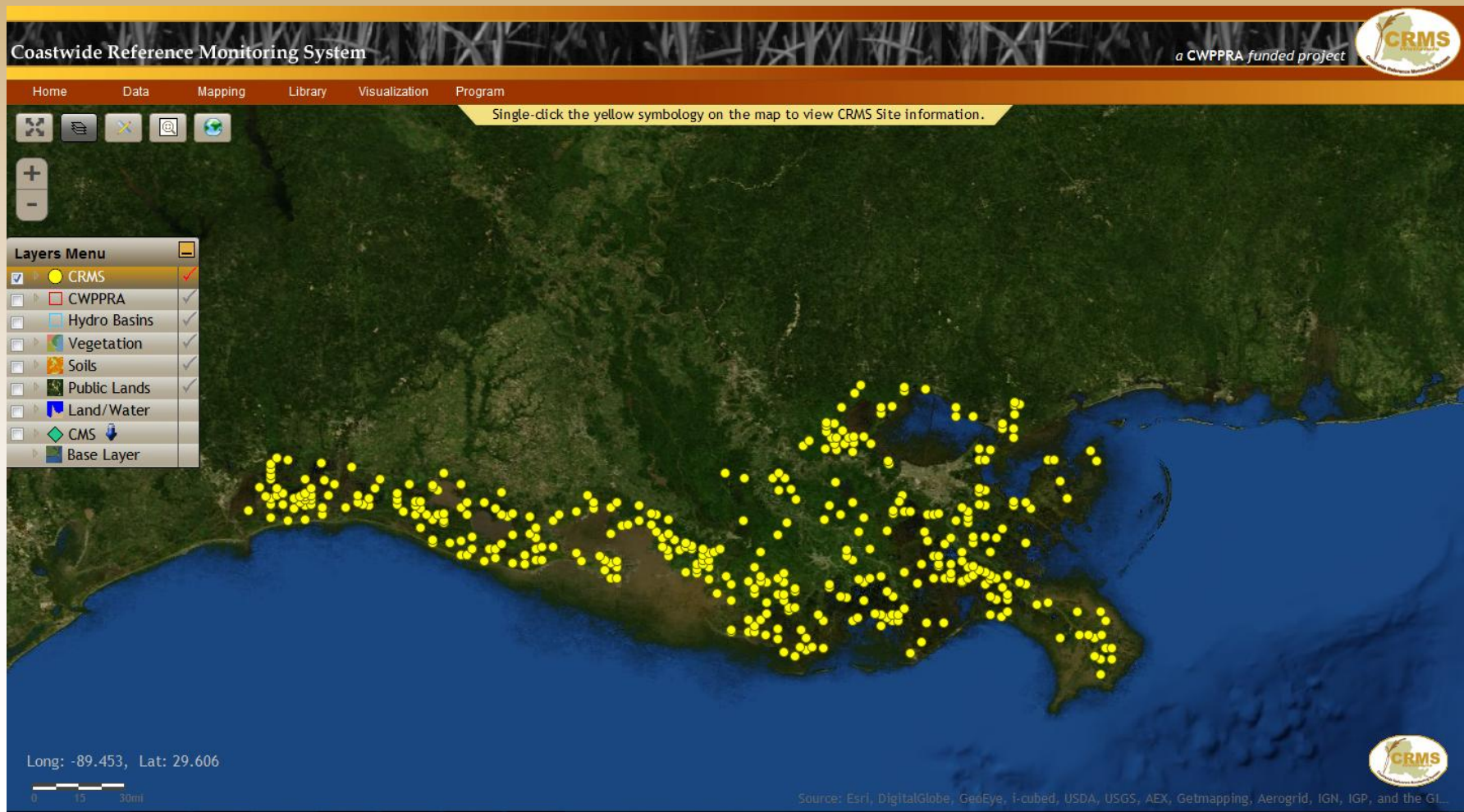
Library

- **Library menu contains links to:**
  - **Maps: Available for each CRMS site (some multi-year)**
  - **Presentations**
  - **Reports (via SONRIS)**
  - **CRMS Report Card**





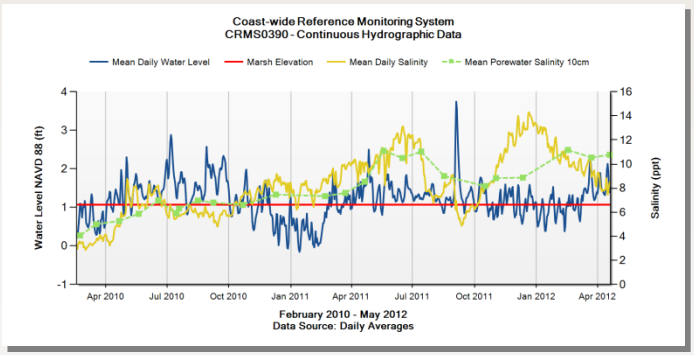
- **Mapping menu contains links to:**
  - **Basic Map Viewer**
  - **SONRIS Viewer**

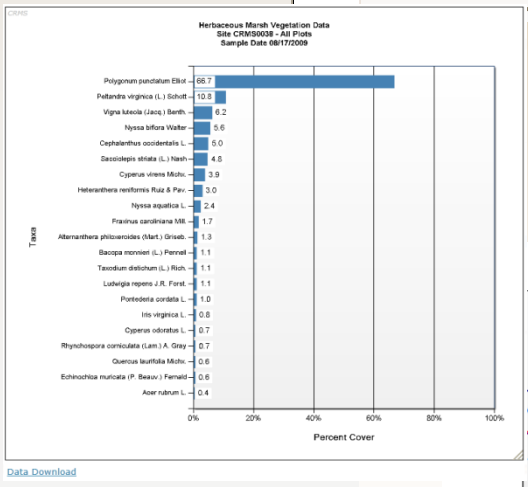


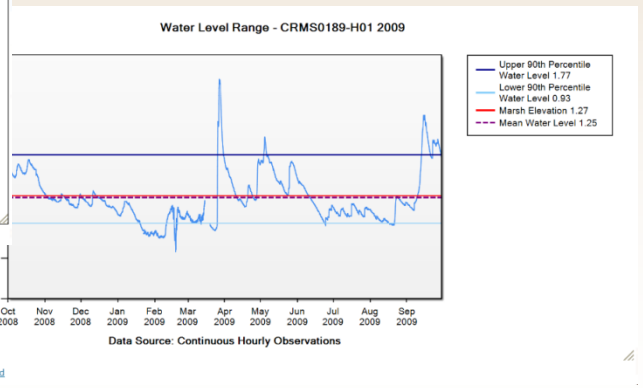
Visualizations

- **Visualization menu contains links to:**

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

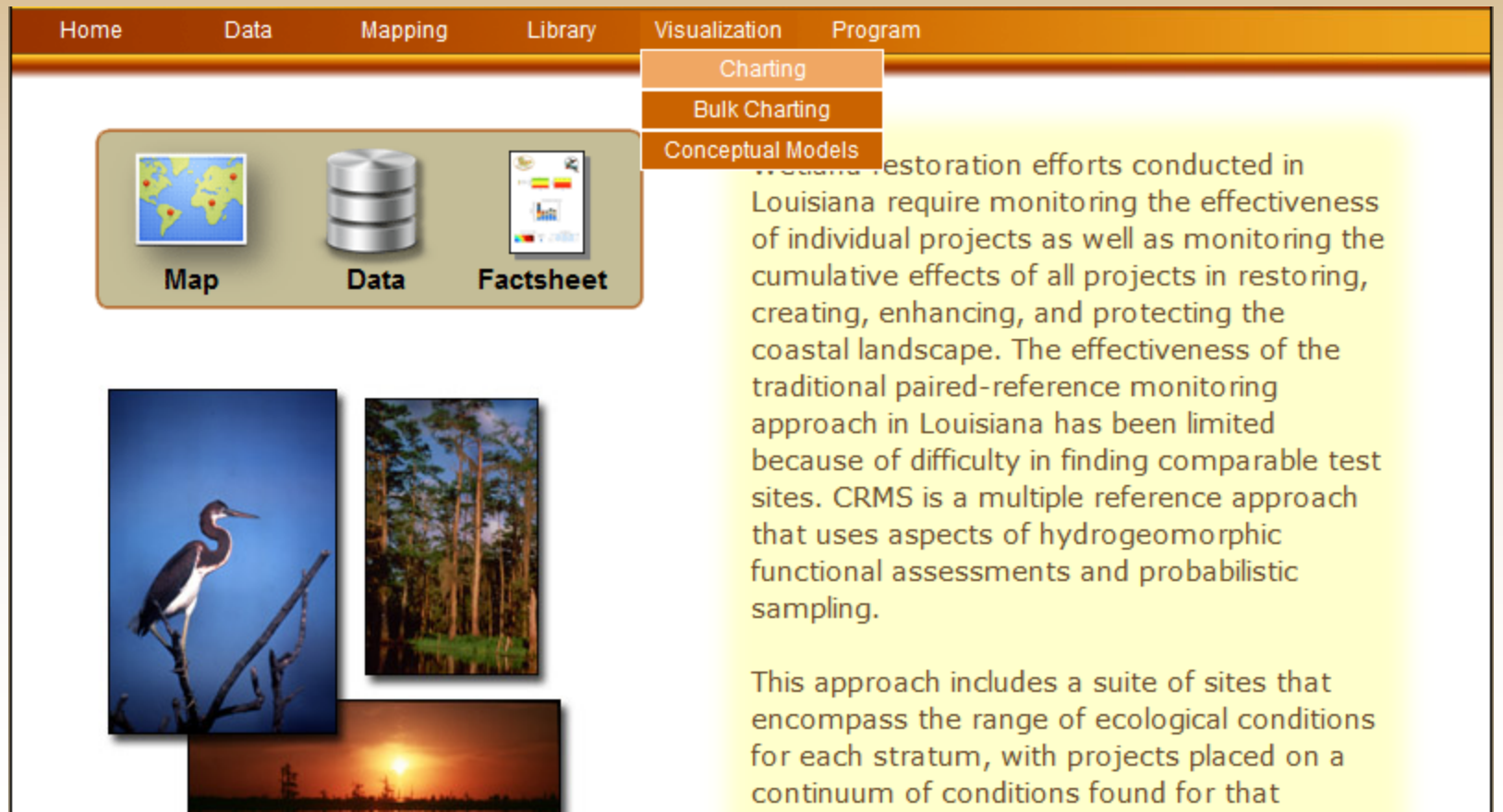






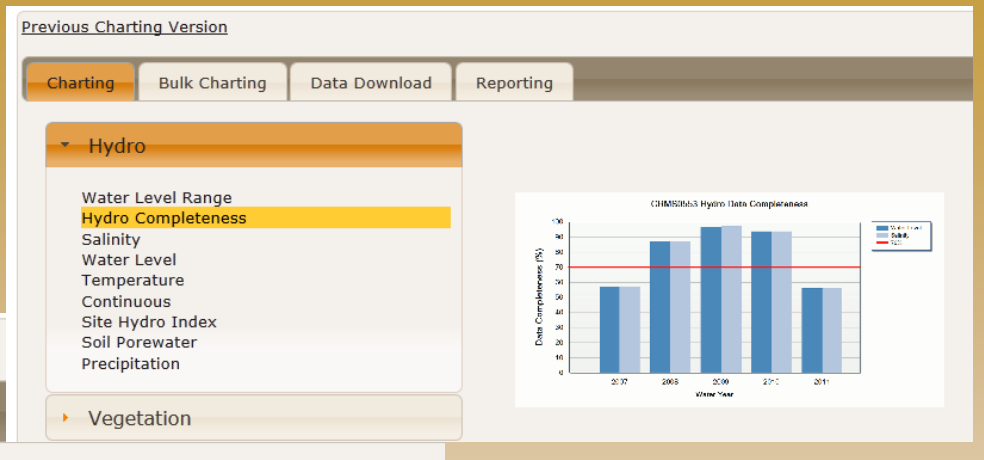
- **Major change to interface to facilitate multi-station and multi-scale charting**

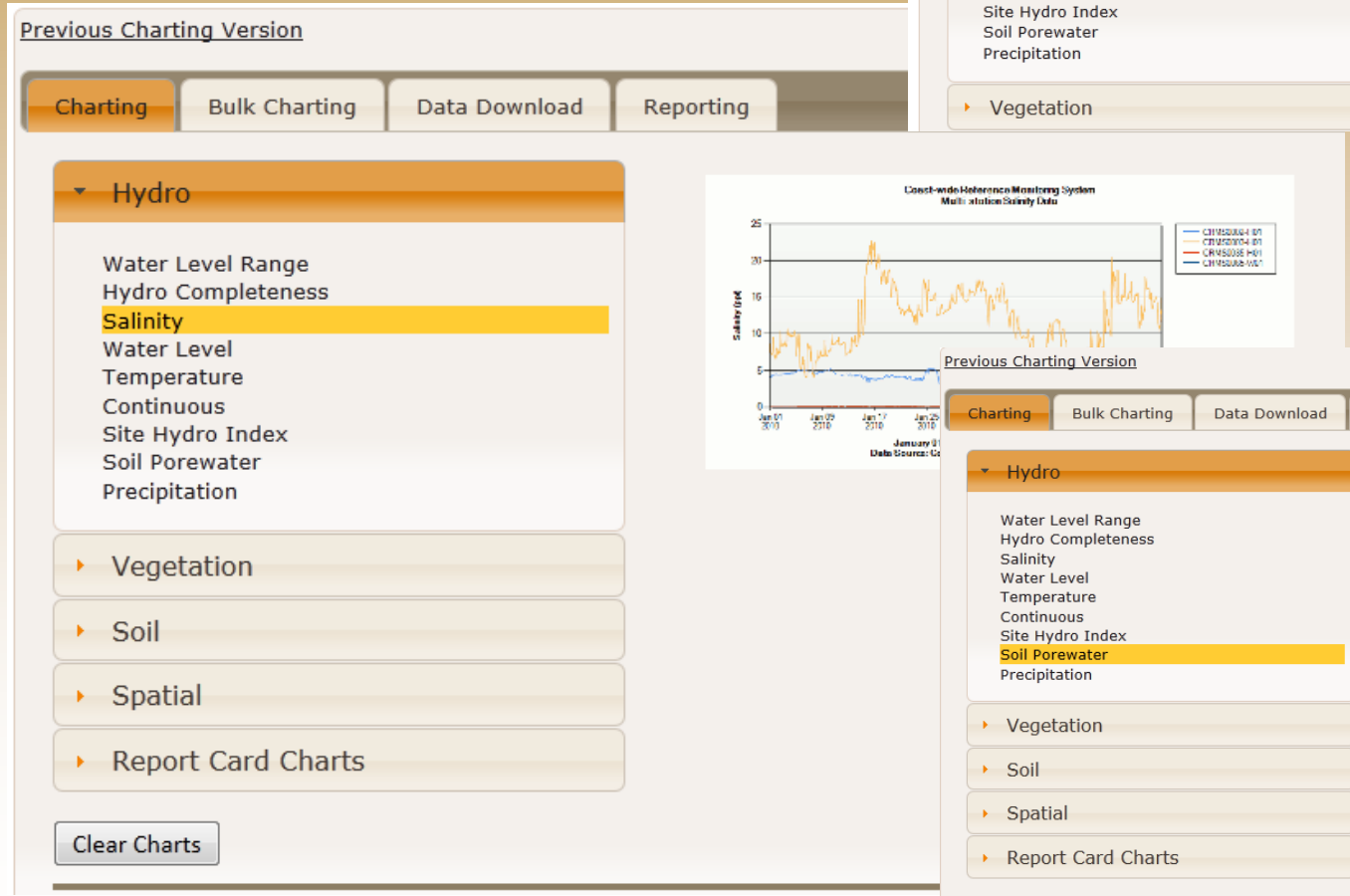
Using the charting interface

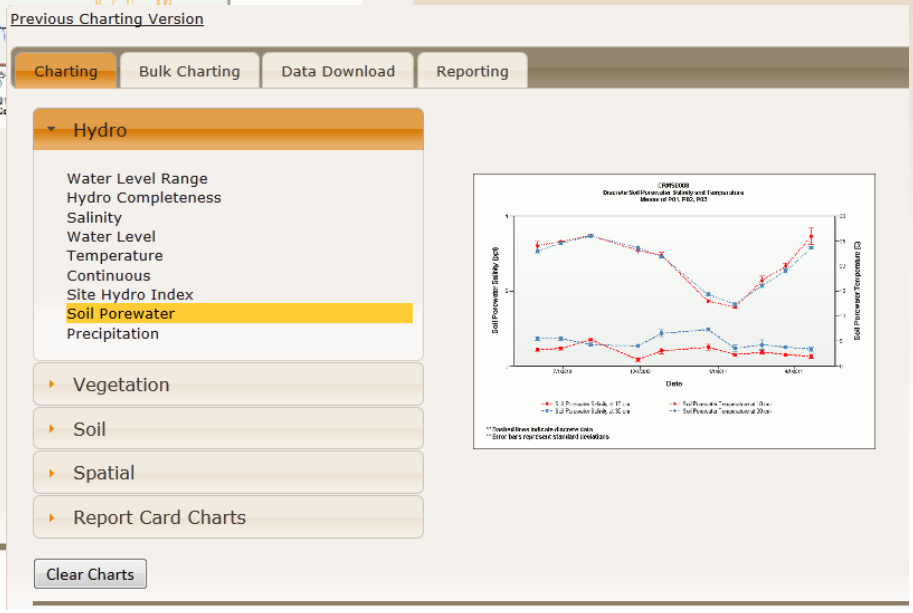


Charting Usage

- **Thumbnails of charts with category hover**

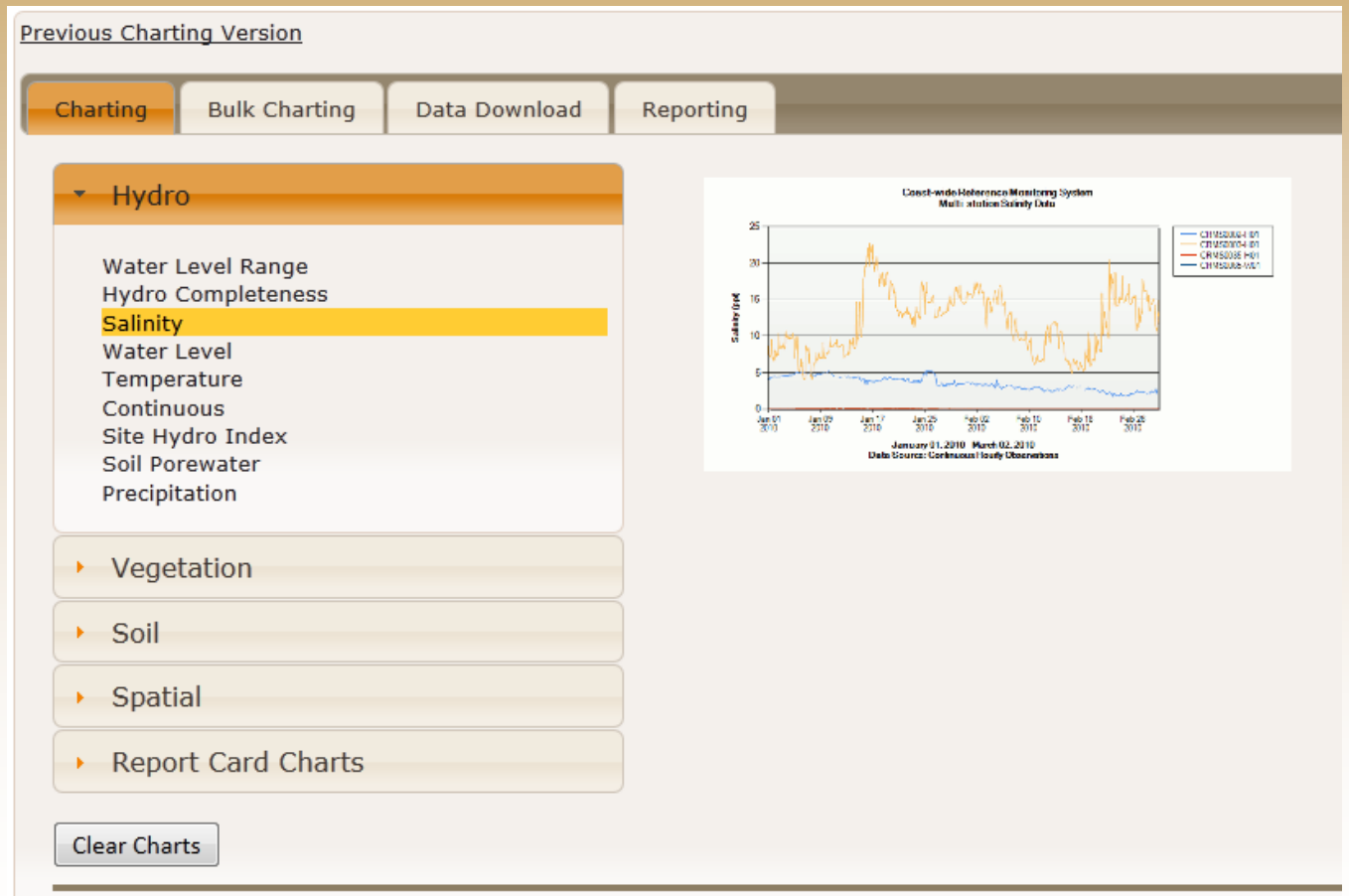






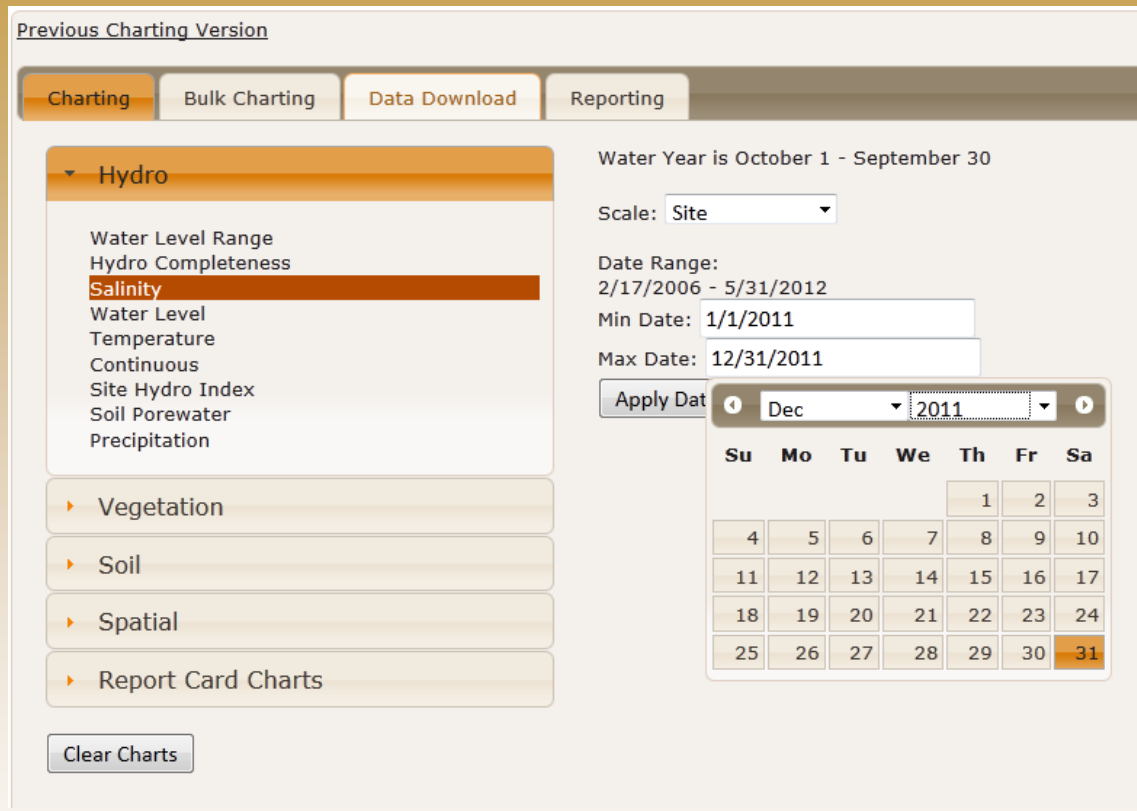
Charting Usage

1. Pick a Data Category
    1. Hydro
2. Pick a Parameter
    1. Salinity



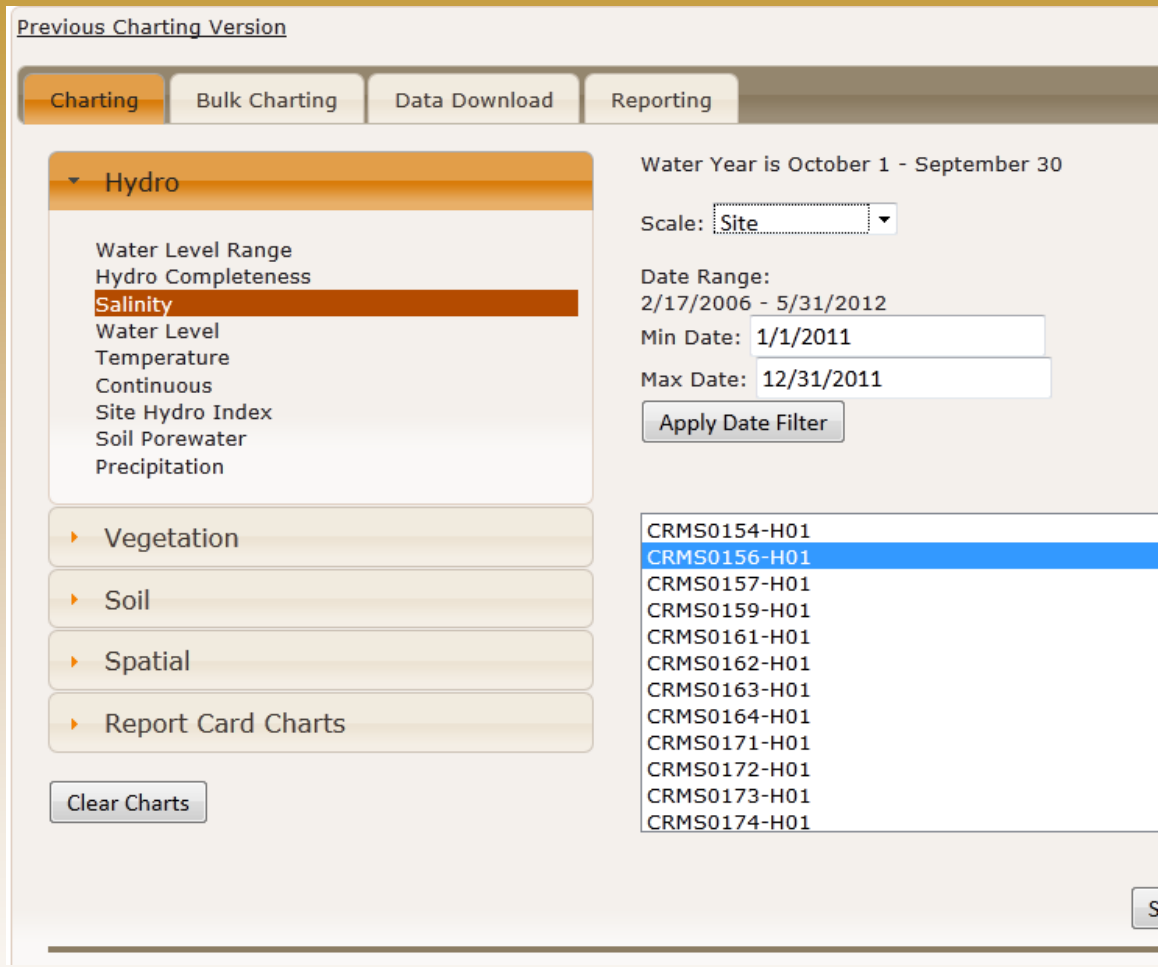
Charting Usage

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



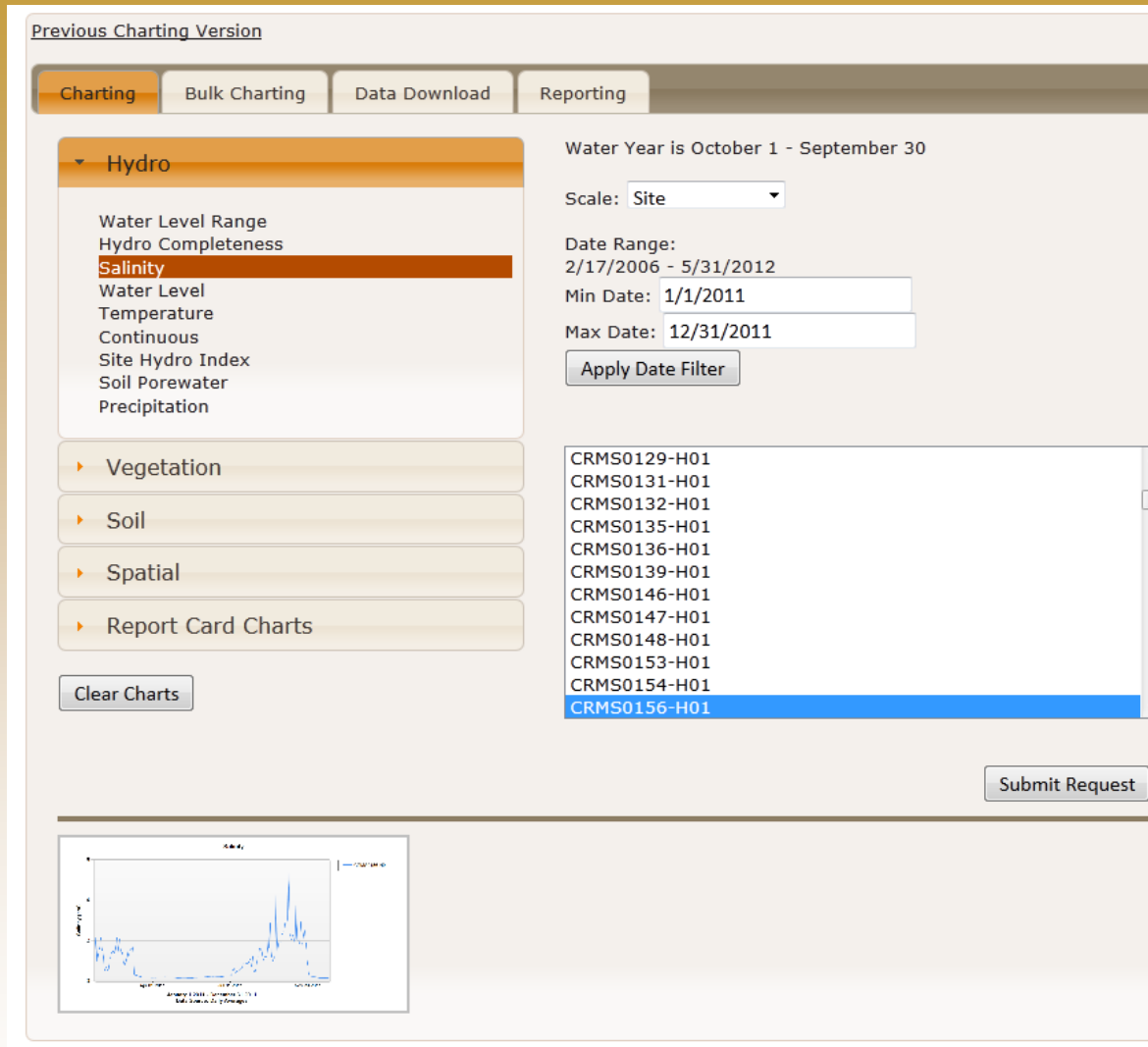
Charting Usage

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**



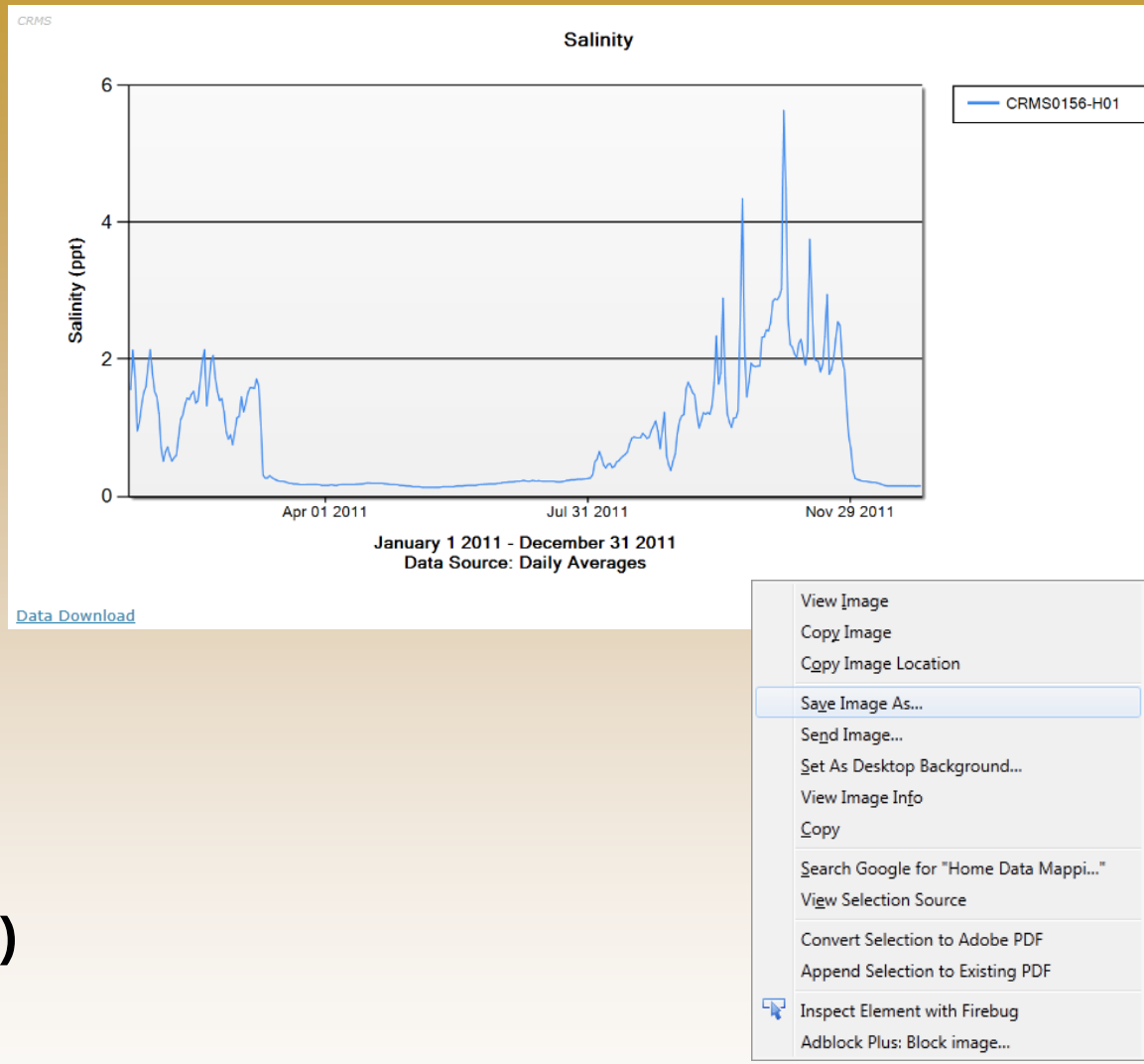
Charting Usage

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**



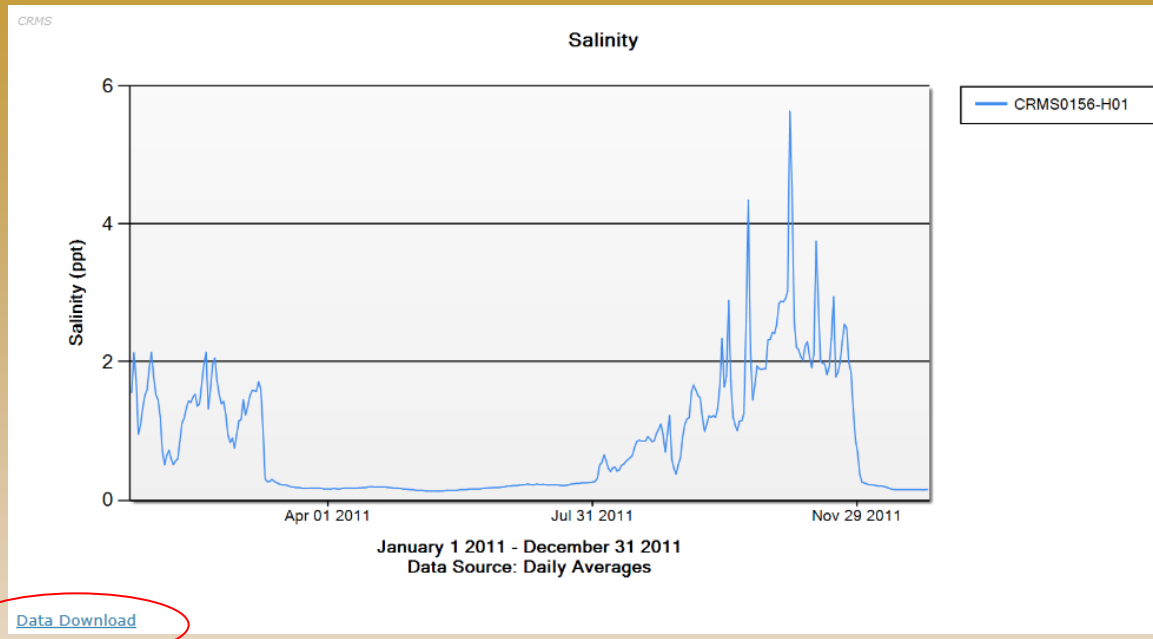
Charting Usage

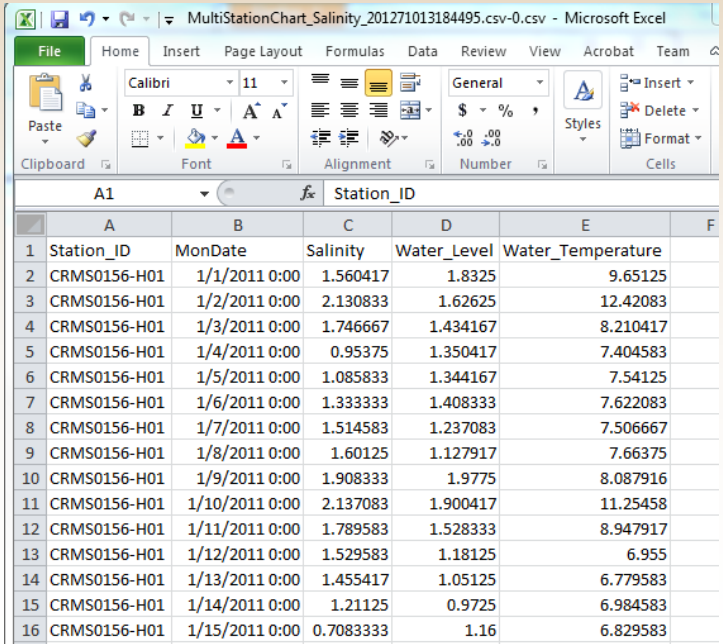
1. Pick a Data Category
    1. Hydro
2. Pick a Parameter
    1. Salinity
3. Pick a Scale
    1. Site
4. Enter Start / End Dates
    1. 1/1/2001
    2. 12/31/2011
    3. Apply Date Filter
5. Pick Site
6. **View Chart**
7. **Save Chart Image**
8. **Download Data (optional)**



Charting Usage

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)**

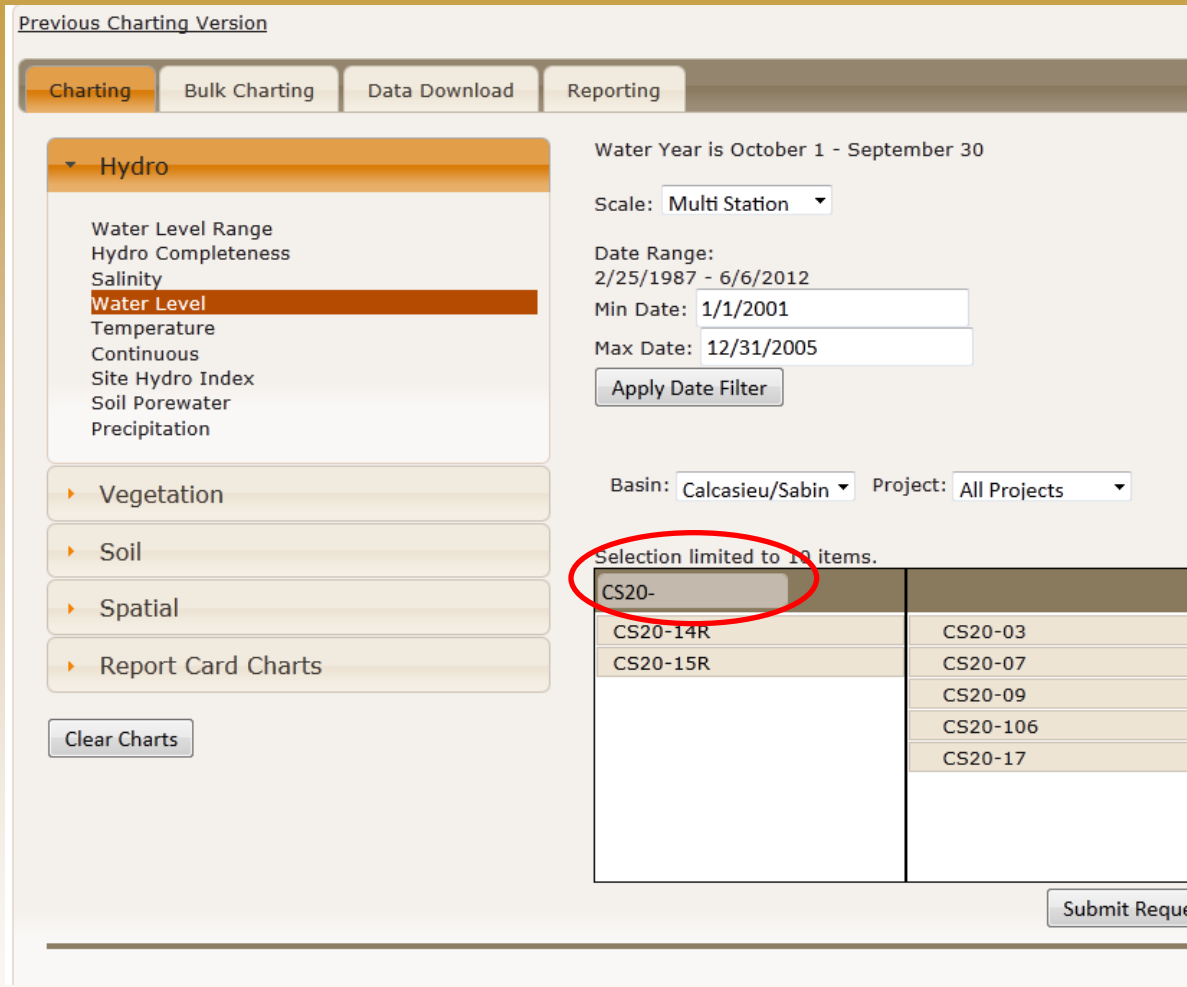




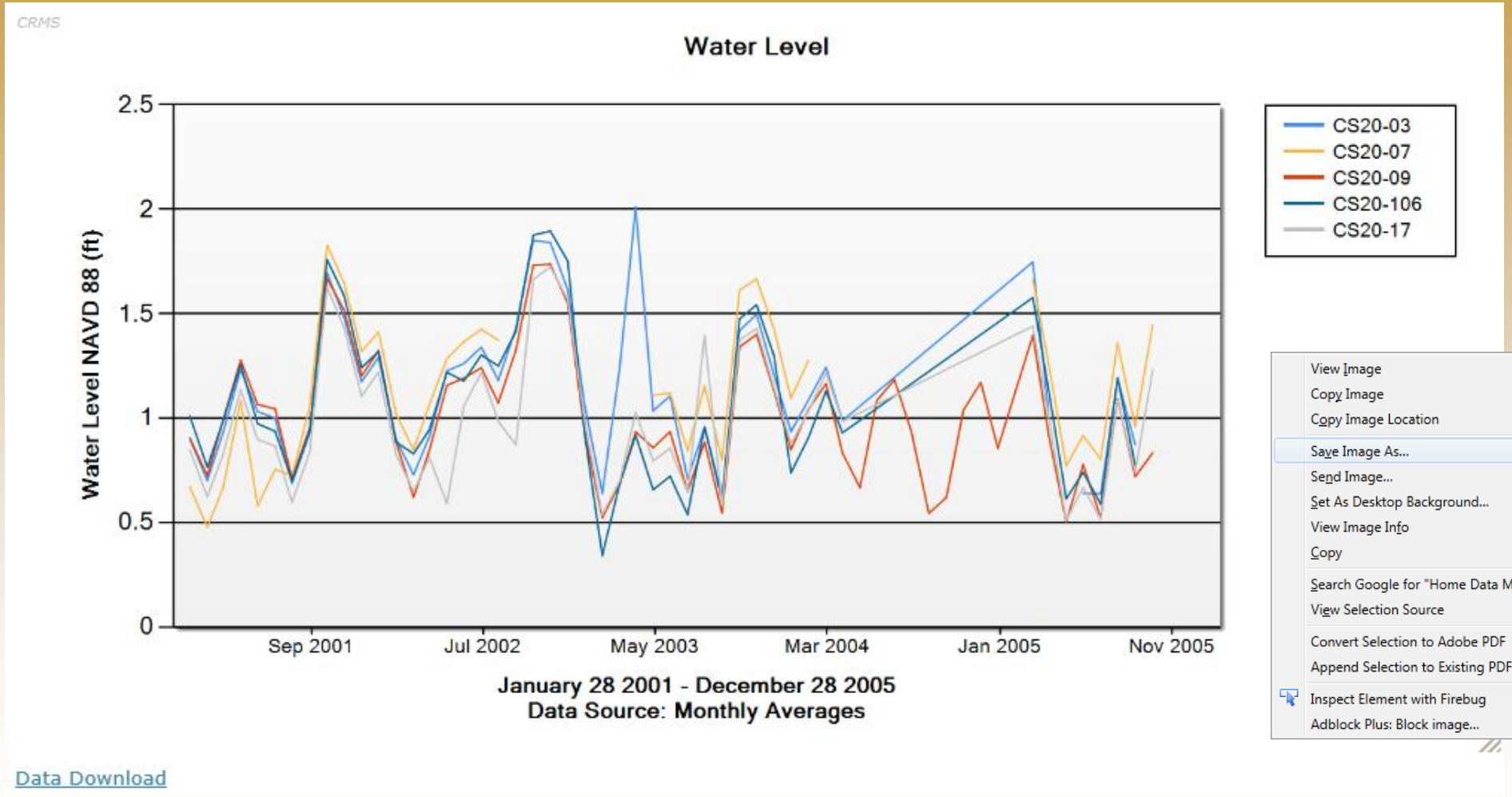
	A	B	C	D	E	F
1	Station_ID	MonDate	Salinity	Water_Level	Water_Temperature	
2	CRMS0156-H01	1/1/2011 0:00	1.560417	1.8325	9.65125	
3	CRMS0156-H01	1/2/2011 0:00	2.130833	1.62625	12.42083	
4	CRMS0156-H01	1/3/2011 0:00	1.746667	1.434167	8.210417	
5	CRMS0156-H01	1/4/2011 0:00	0.95375	1.350417	7.404583	
6	CRMS0156-H01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

Multi-Station Charting

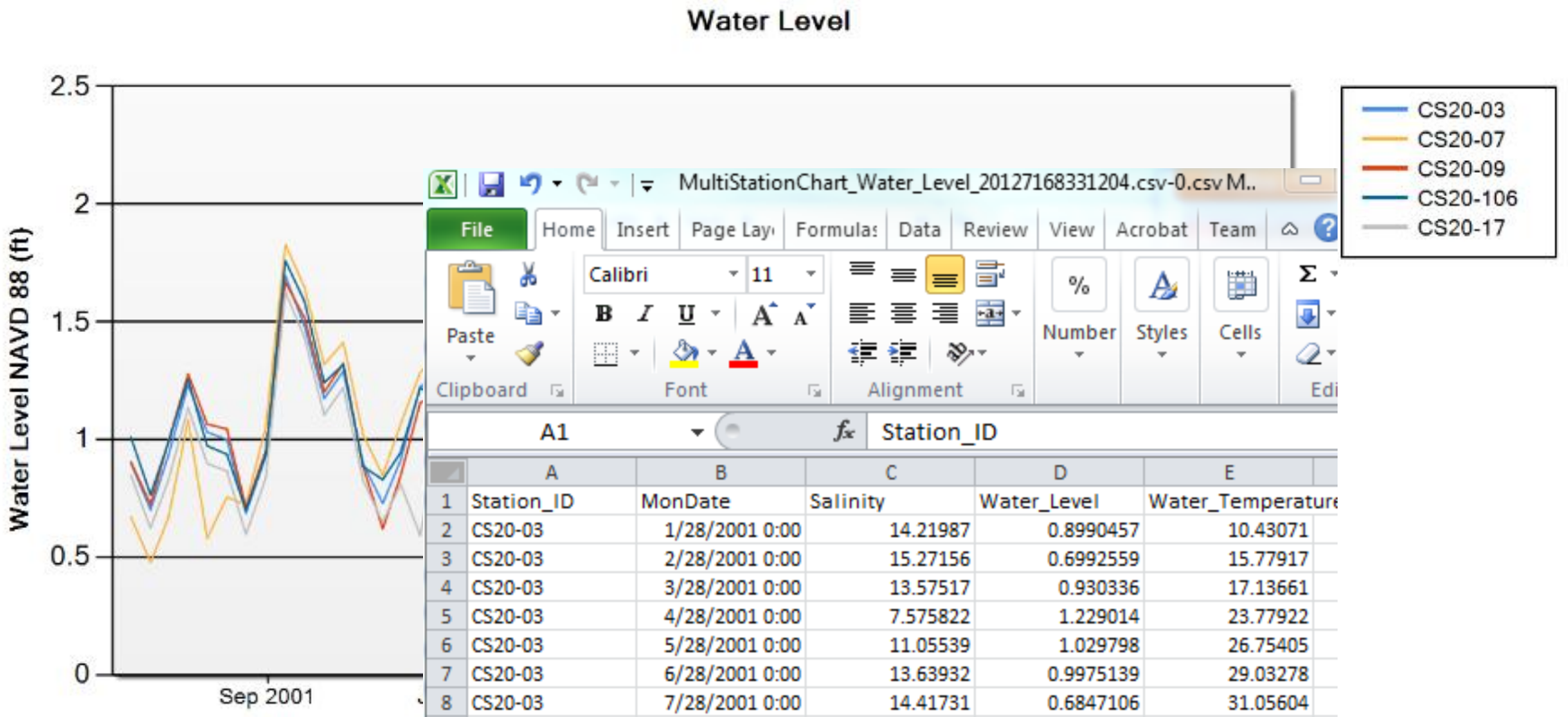
1. Pick a Data Category
    1. Hydro
2. Pick a Parameter
    1. Water Level
3. Pick a Scale
    1. Multi Station
4. Enter Start / End Dates
    1. 1/1/2001
    2. 12/31/2011
    3. Apply Date Filter
5. Pick Stations



Multi-Station Charting



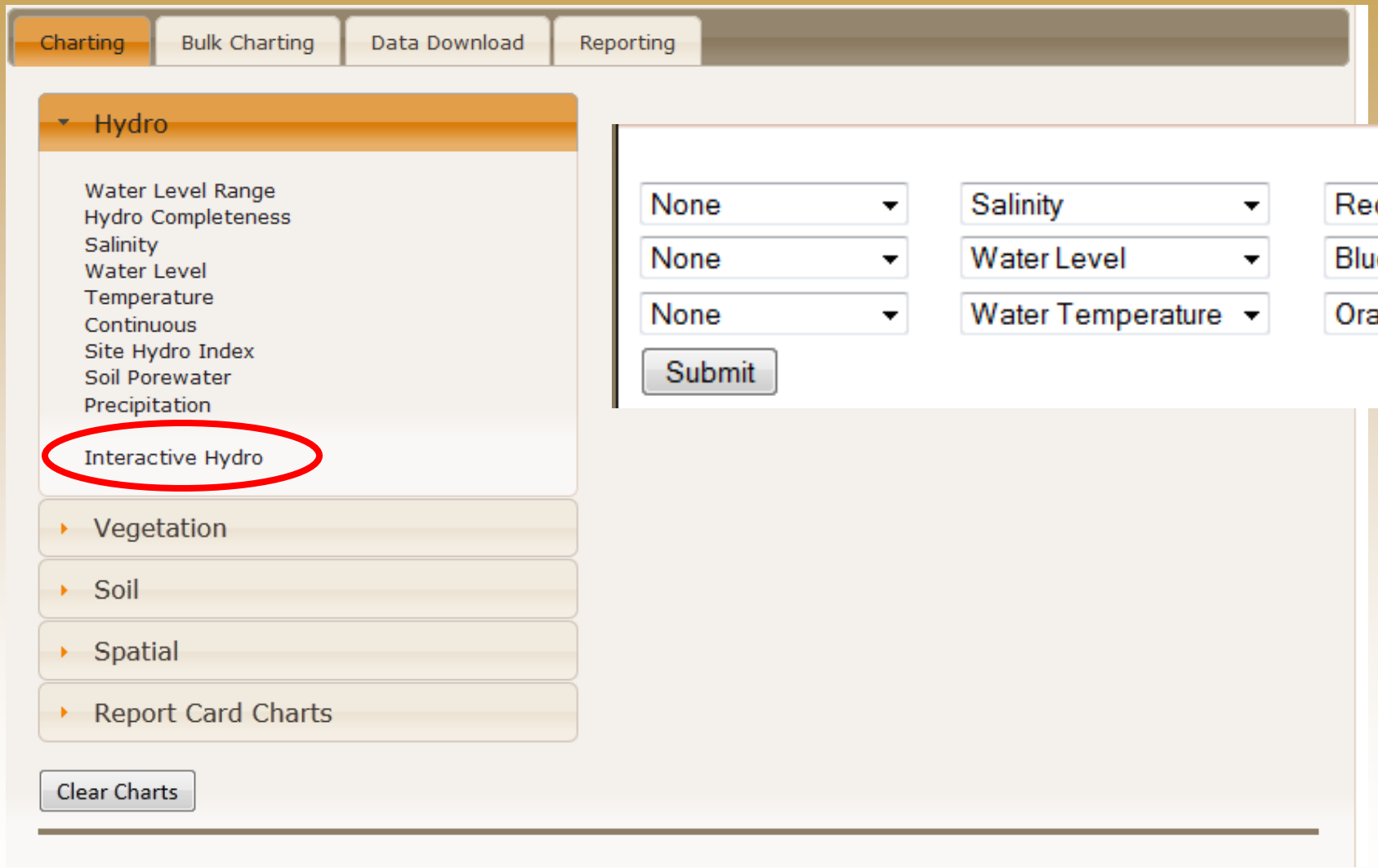
Charting Usage



	A	B	C	D	E
1	Station_ID	MonDate	Salinity	Water_Level	Water_Temperature
2	CS20-03	1/28/2001 0:00	14.21987	0.8990457	10.43071
3	CS20-03	2/28/2001 0:00	15.27156	0.6992559	15.77917
4	CS20-03	3/28/2001 0:00	13.57517	0.930336	17.13661
5	CS20-03	4/28/2001 0:00	7.575822	1.229014	23.77922
6	CS20-03	5/28/2001 0:00	11.05539	1.029798	26.75405
7	CS20-03	6/28/2001 0:00	13.63932	0.9975139	29.03278
8	CS20-03	7/28/2001 0:00	14.41731	0.6847106	31.05604
9	CS20-03	8/28/2001 0:00	11.12512	0.9266398	30.03915
10	CS20-03	9/28/2001 0:00	4.940278	1.693403	27.11963
11	CS20-03	10/28/2001 0:00	6.358652	1.480121	21.85023
12	CS20-03	11/28/2001 0:00	6.386568	1.172375	20.29367
13	CS20-03	12/28/2001 0:00	4.994678	1.288508	15.26509
14	CS20-03	1/28/2002 0:00	4.678748	0.8958547	13.06359
15	CS20-03	2/28/2002 0:00	5.253036	0.7263095	13.26759
16	CS20-03	3/28/2002 0:00	13.83337	0.9090995	17.05582
17	CS20-03	4/28/2002 0:00	13.41743	1.224444	23.67308
18	CS20-03	5/28/2002 0:00	12.05766	1.258804	25.77913

Data Download

Interactive Hydro Chart



Interactive Hydro Chart

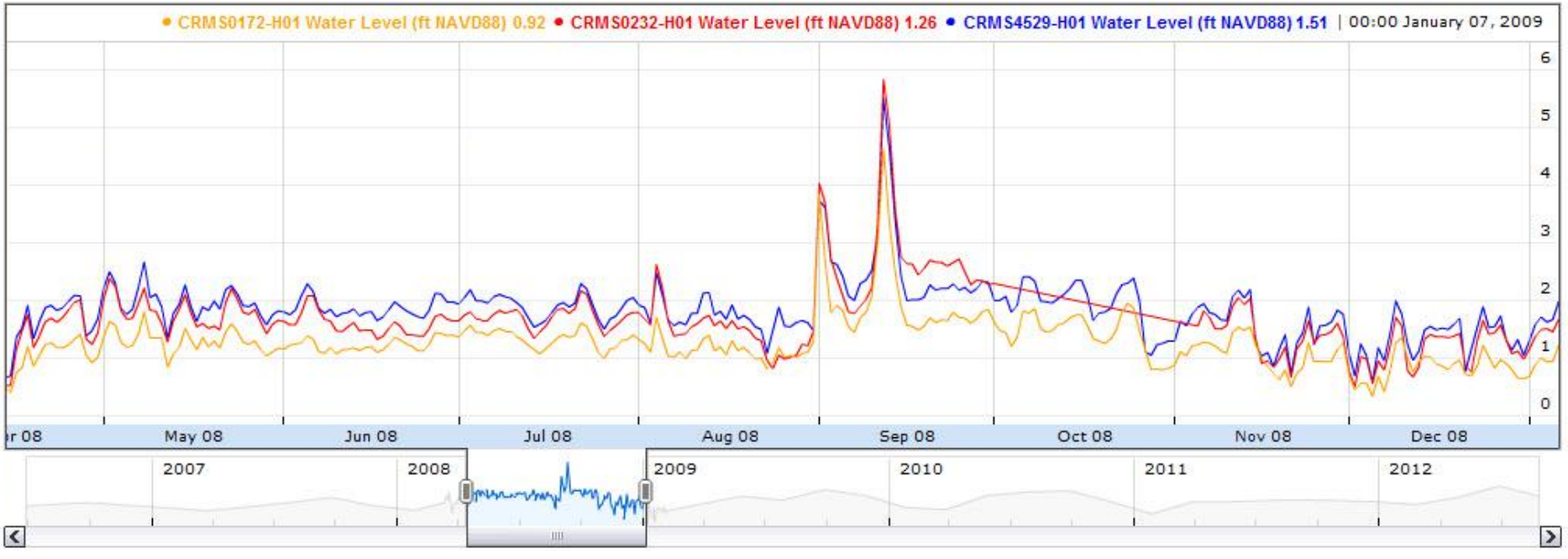
Coastwide Reference Monitoring System

a CWPPRA funded project

Home | Data | Mapping | Library | Visualization | Program

CRMS0232-H01	Water Level	Red
CRMS4529-H01	Water Level	Blue
CRMS0172-H01	Water Level	Orange

Submit



Interactive Hydro Chart

Coastwide Reference Monitoring System

a CWPPRA funded project

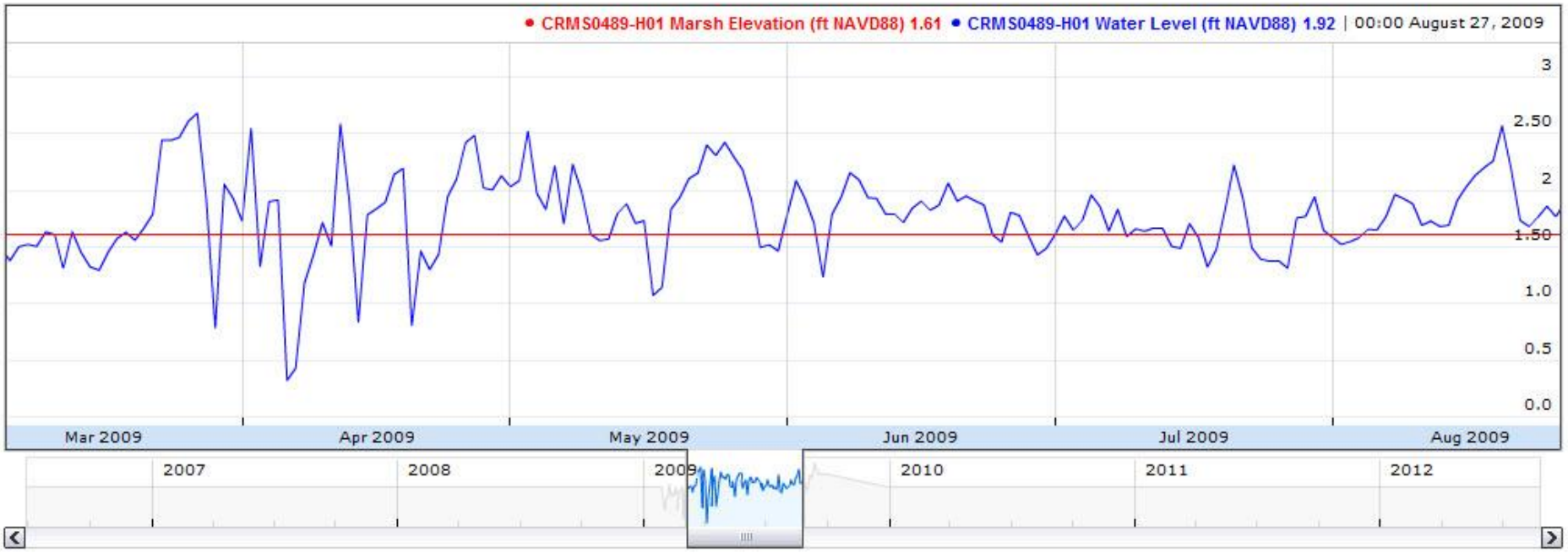
Home | Data | Mapping | Library | Visualization | Program

CRMS0489-H01 | Water Level | Blue

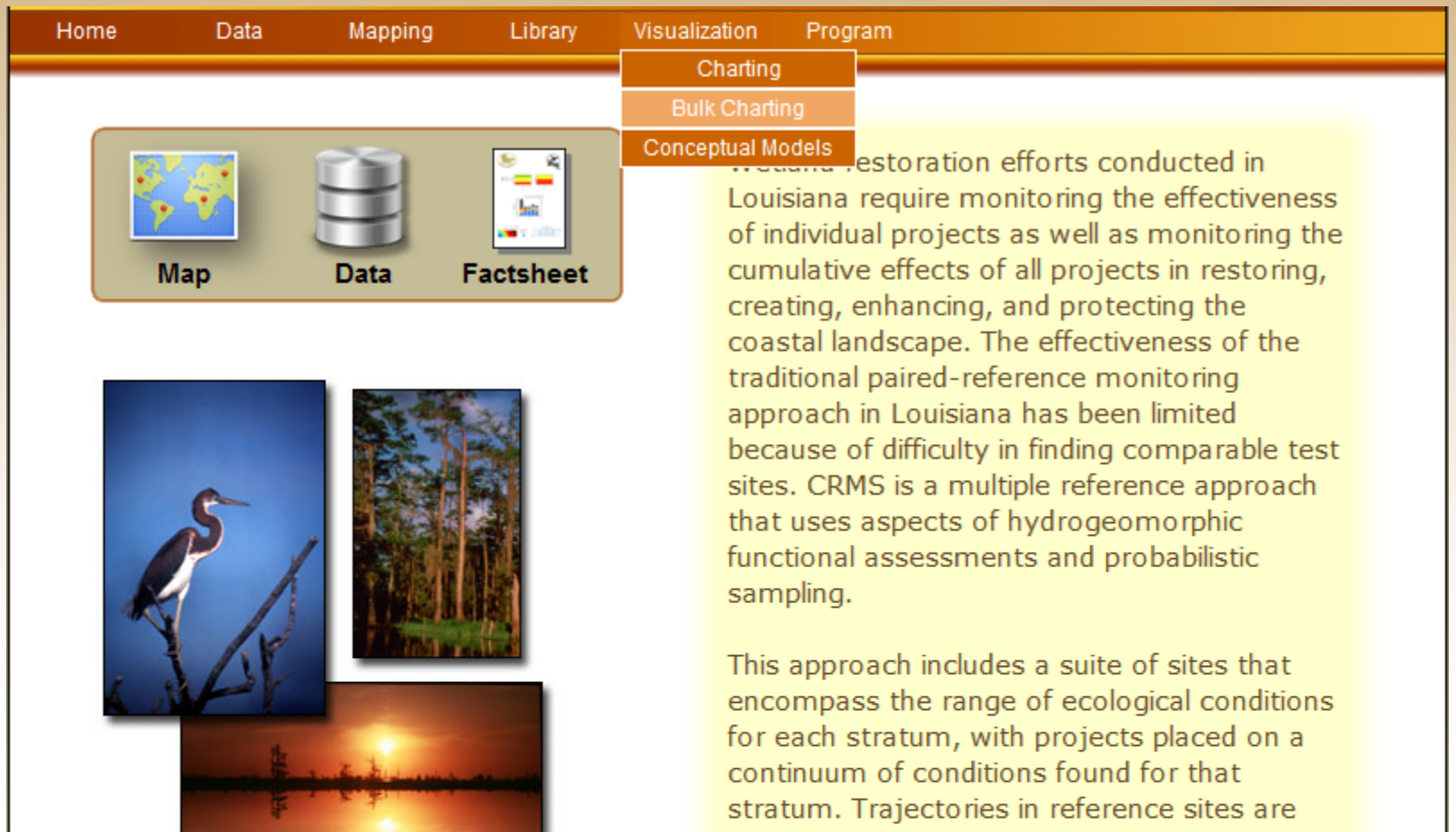
CRMS0489-H01 | Marsh Elevation | Red

None | Water Temperature | Orange

Submit



Bulk charting- *User defined chart selections applied to multiple charts creating a batch of charts with consistent formatting.*



Bulk Charting

Previous Charting Version

Charting | Bulk Charting | Data Download | Reporting

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

Date Range:
2/25/1987 - 6/6/2012

Min Date: 1/1/2001

Max Date: 12/31/2005

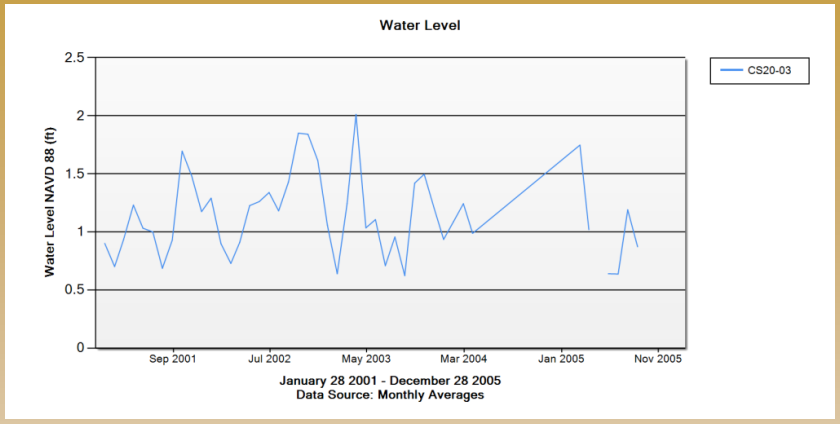
Apply Date Filter

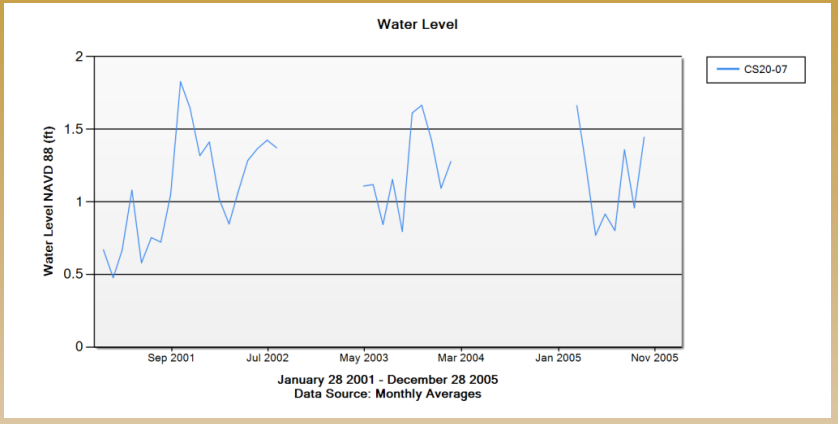
Basin: All Basins Project: CS-20

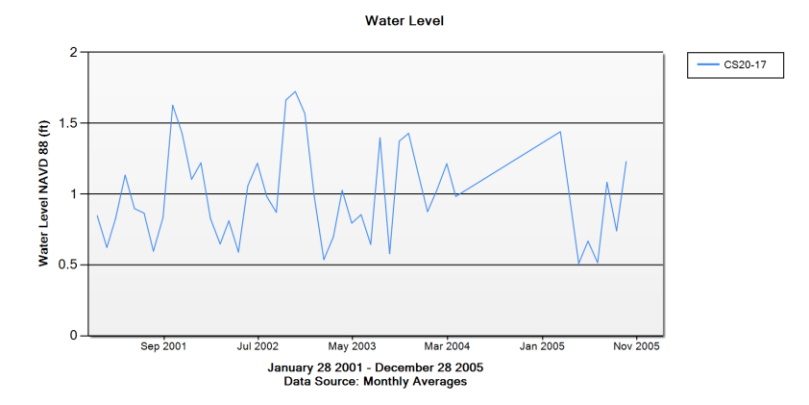
Select All	Deselect All
CS20-14R	CS20-03
CS20-15R	CS20-07
	CS20-09
	CS20-106
	CS20-17

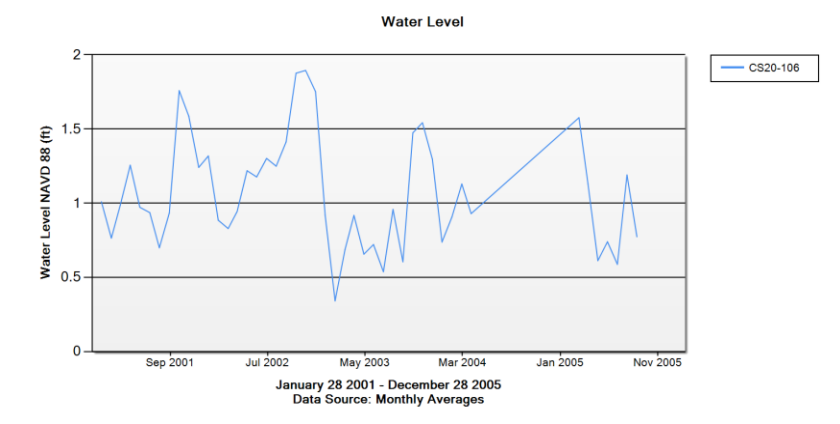
Submit Request

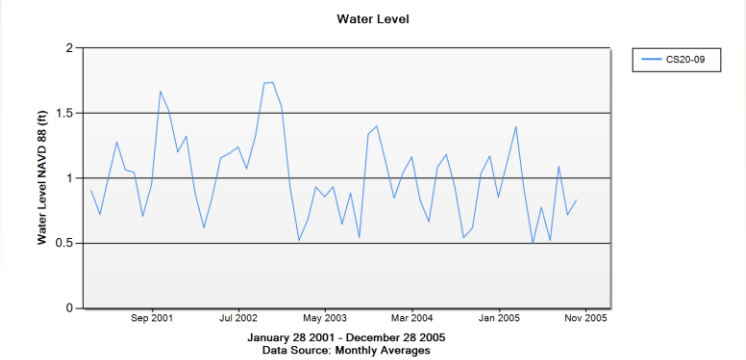
Bulk Charting



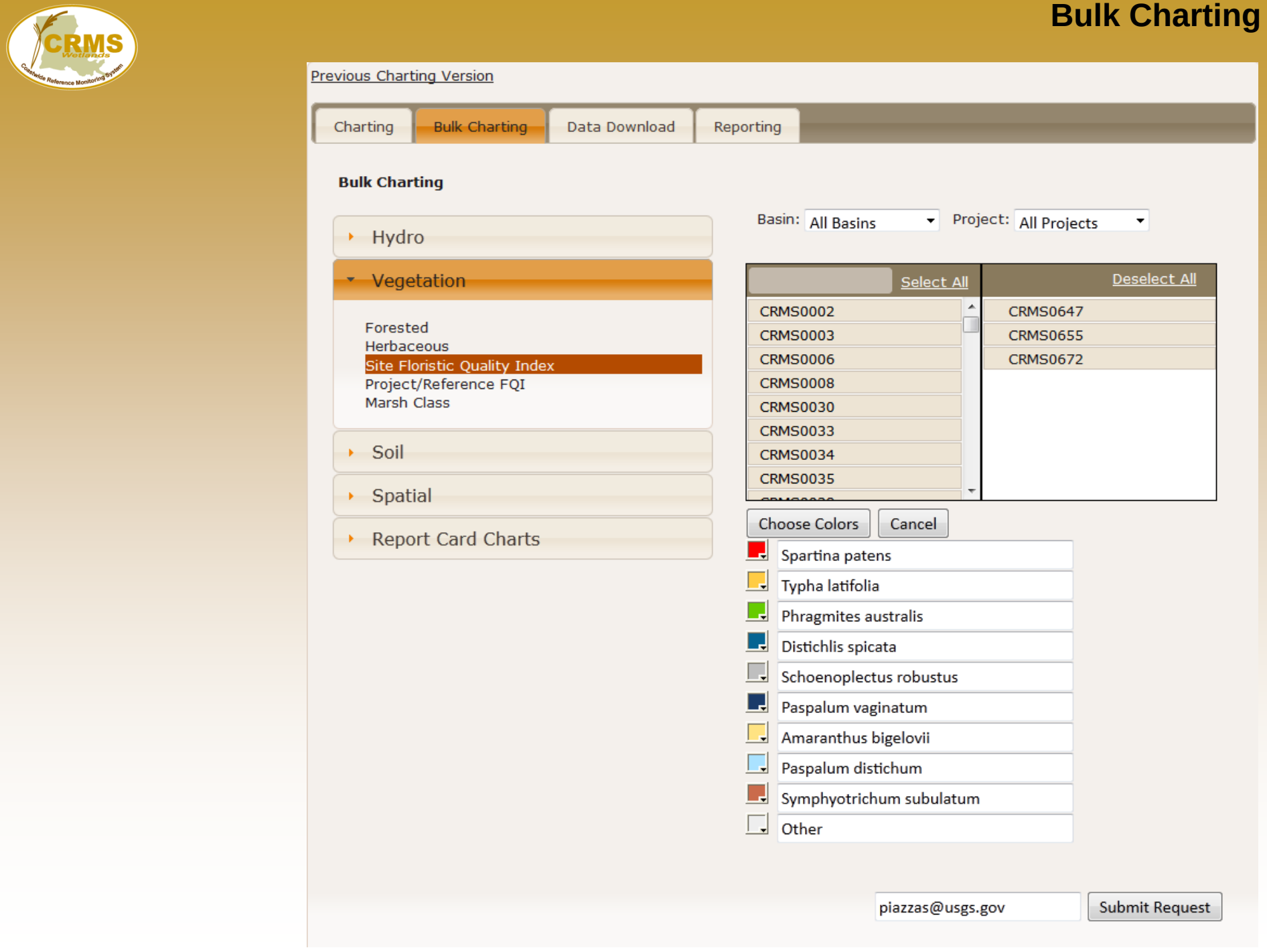




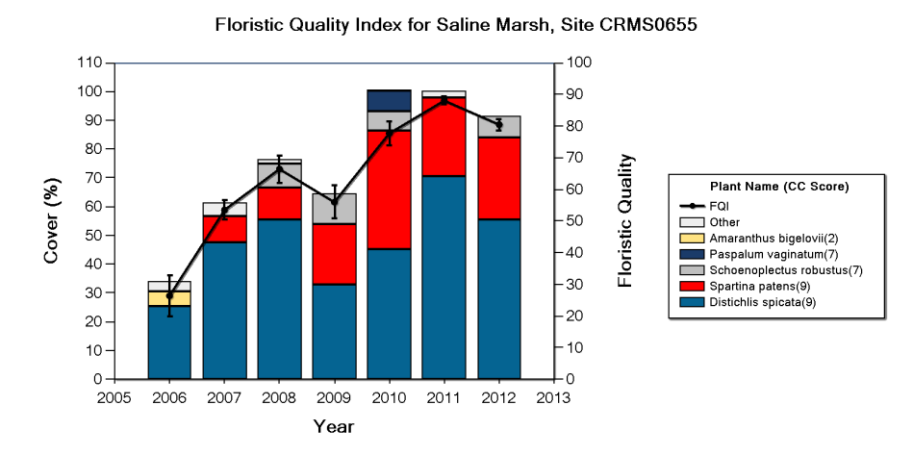


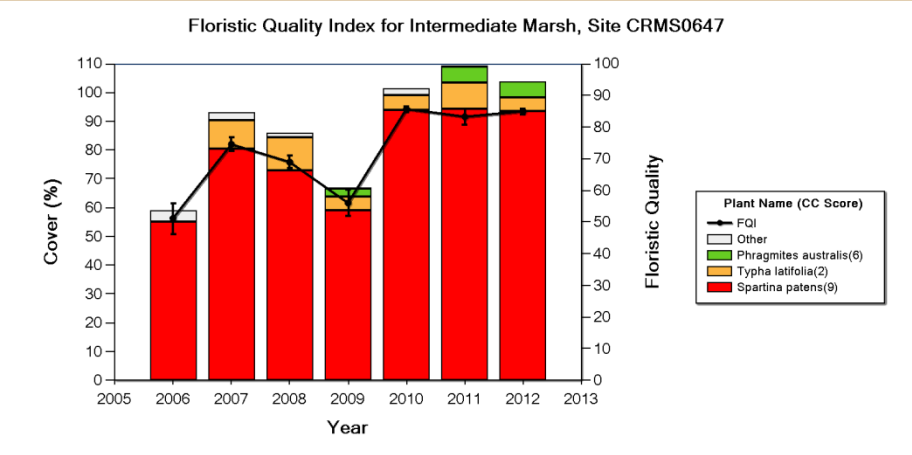


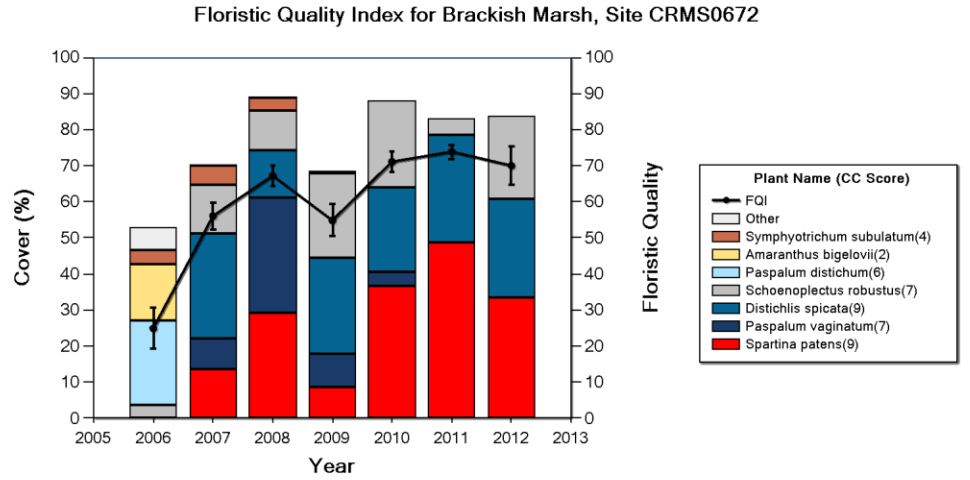
Bulk Charting



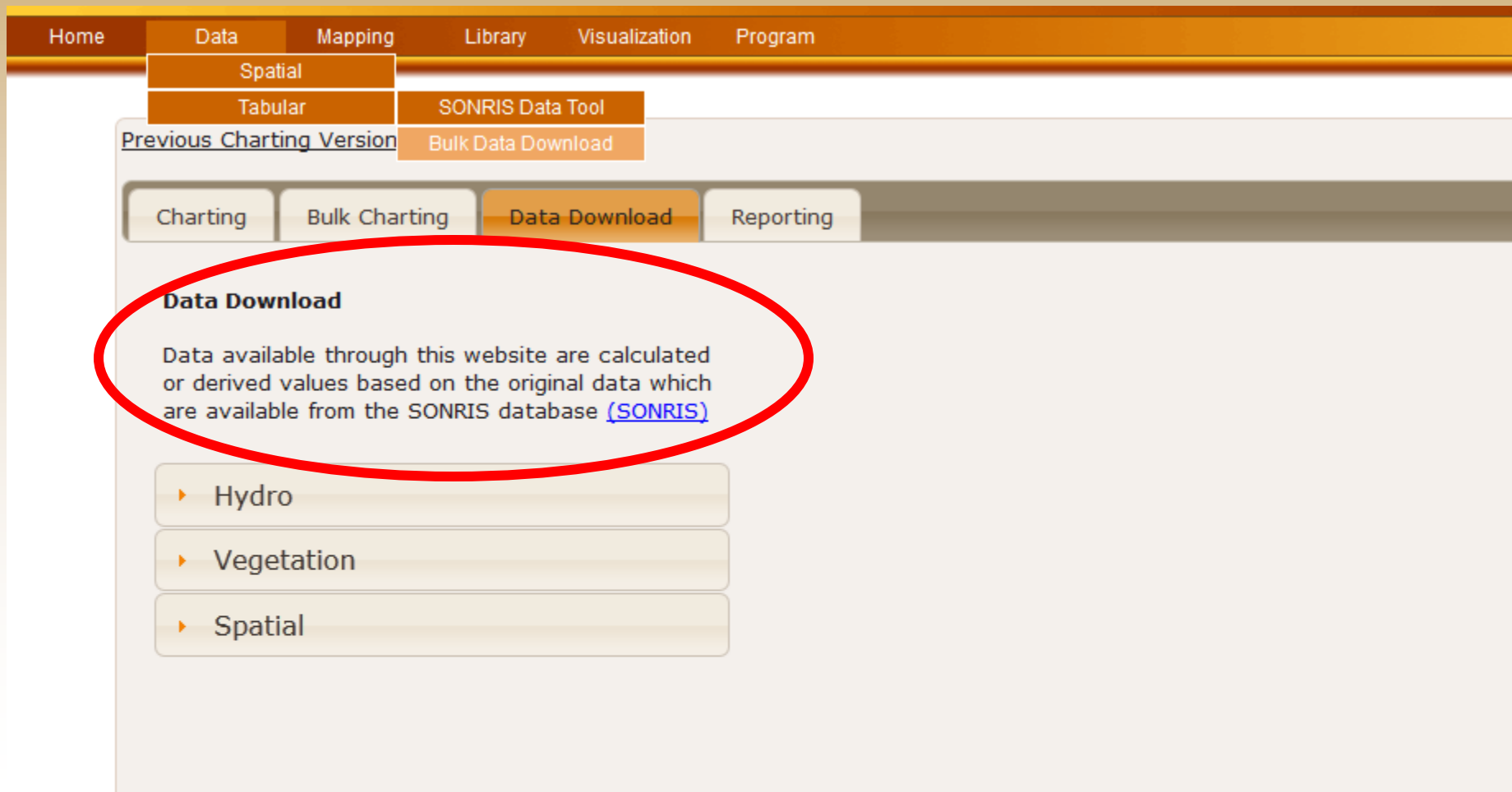
Bulk Charting







CRMS Data Download *– Retrieve user defined datasets for multiple dates or for multiple sites/stations.*



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
- Spatial

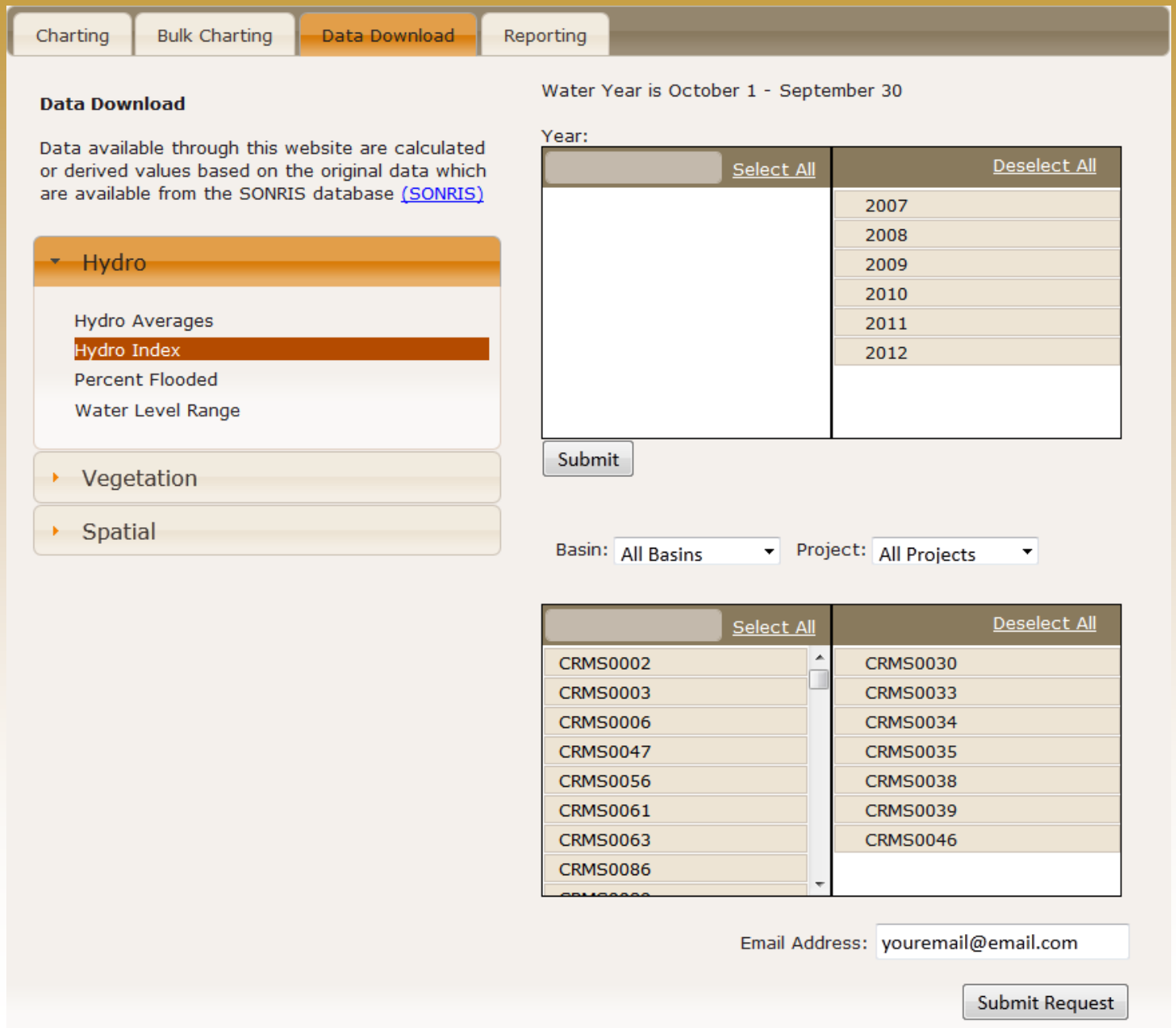
Water Year is October 1 - September 30

Year:

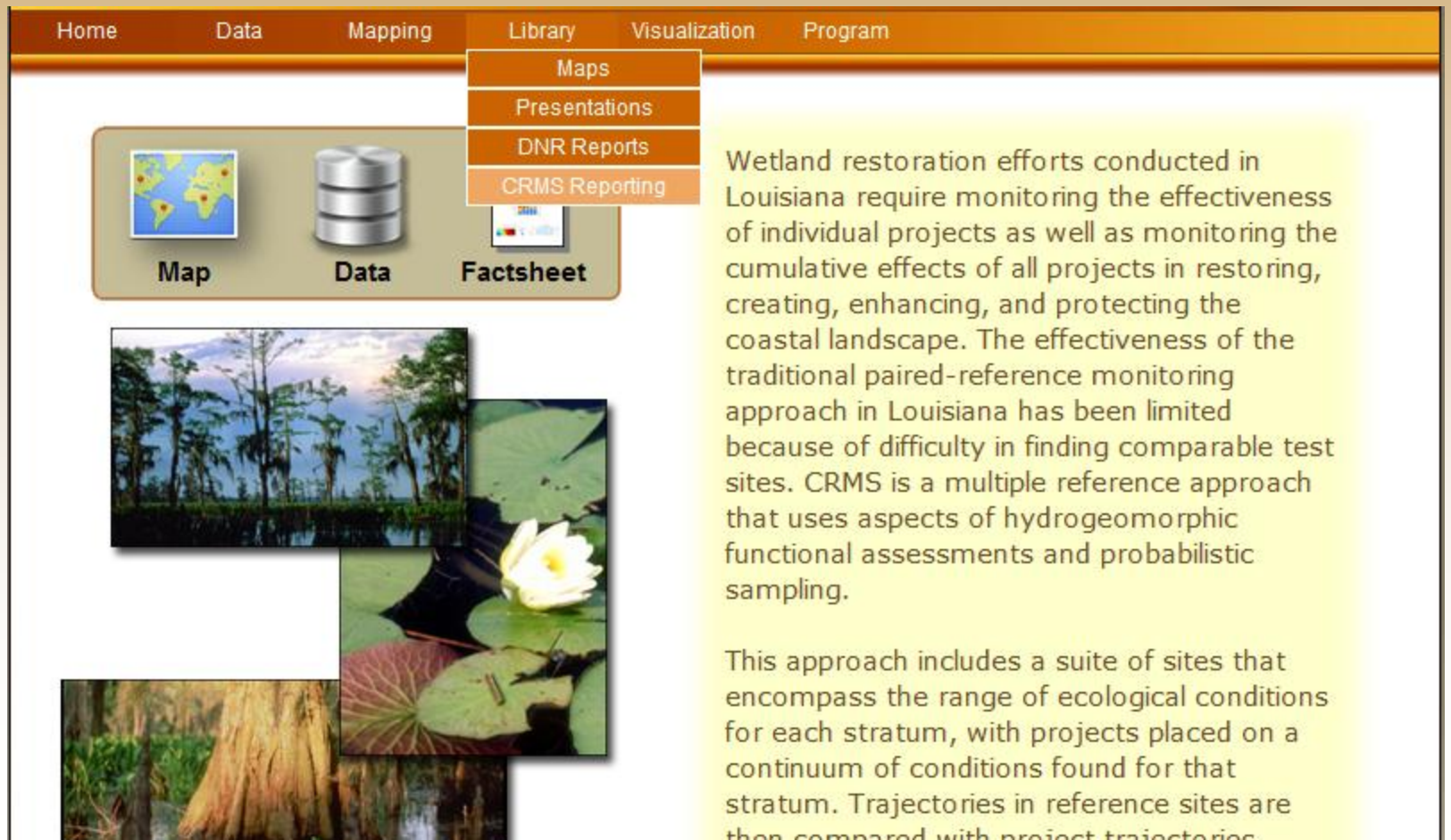
Select All	Deselect All
2007	
2008	
2009	
2010	
2011	
2012	

Submit

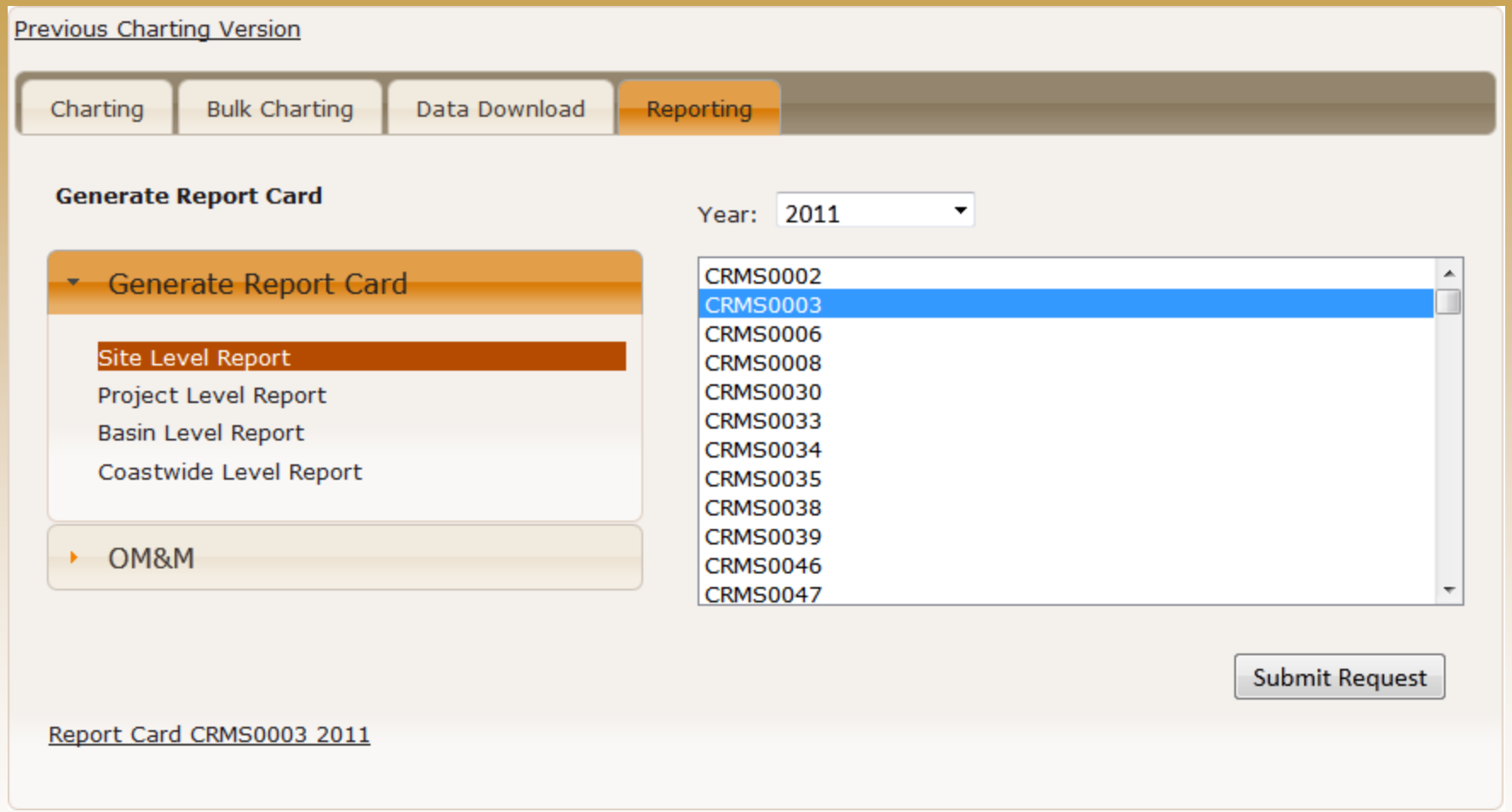
Data Download



CRMS Report Card



Reporting


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

Reporting

Coastwide Reference Monitoring System (CRMS)

Site Level Report Card

Site: CRMS0003

Year: 2011

About the program

In 1990, the U.S. Congress enacted the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) in response to the growing awareness of Louisiana's land loss crisis. The CWPPRA was the first federal, statutorily mandated program with a stable source of federal funds dedicated exclusively to the short- and long-term restoration of the coastal wetlands of Louisiana. To date, the CWPPRA program has constructed more than 75 restoration projects. These projects use a variety of methods to restore, protect, and create coastal wetland habitat including: diversions of freshwater and sediments to improve marsh vegetation; dredged material placement for marsh creation; shoreline protection; sediment and nutrient trapping; hydrologic restoration through outfall, marsh, and delta management; barrier island restoration; and vegetation planting projects.

Need for a Monitoring System

Louisiana's coastal protection and restoration efforts, implemented through numerous CWPPRA projects, require monitoring and evaluation of project effectiveness and cumulative effects of all projects to achieve a sustainable coastal environment. In 2003, the CWPPRA Task Force approved the implementation of a Coastwide Reference Monitoring System (CRMS) as a means to monitor and evaluate the effectiveness of CWPPRA projects at three levels: project, region, and coastwide (Steyer et al., 2003). The CRMS network is currently funded through CWPPRA and the state of Louisiana and provides data for a variety of user groups including resource managers, academics, landowners, and researchers.

CRMS Approach and Design

The CRMS approach includes a suite of sites (391) that encompass a range of ecological conditions across the coast. The CRMS site locations were selected randomly throughout the coastal zone. Sites represent the entire range of ecological variability within a degraded coastal landscape. Sites are located within (project sites) and outside (reference sites) of coastal restoration projects. Trajectories of changing conditions in reference sites are compared with trajectories of change within project sites through time. The CRMS design not only allows for monitoring and evaluating the effectiveness of each project but will also support ongoing evaluation of the cumulative effects of all CWPPRA projects throughout the coastal ecosystems of Louisiana. More information about the CRMS project is provided within a USGS factsheet (http://pubs.usgs.gov/fs/2010/3018/).

About the Interactive Report Card

Through the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) a comprehensive, standardized monitoring and assessment program has been developed to evaluate coastal restoration projects throughout the Louisiana coastal zone. The Coastwide Reference Monitoring System (CRMS) collects monitoring data for numerous ecological variables. Using CRMS data, indices have been developed to assess wetland hydrology, vegetation, and soils. This interactive report card provides summary information and displays index scores for individual CRMS sites, restoration projects, hydrologic basins, and the entire Louisiana coast.

Index Development

What is an Index?

An index combines and synthesizes scientific data to help inform or assess a topic of interest. Each index helps explain the condition of a particular aspect of the coastal wetland ecosystem. By comparing indices at various time and spatial scales we can understand the overall condition of coastal wetlands in Louisiana.

How were the indices developed?

CRMS Analytical Teams, made up of agency and academic personnel, developed indices based on the suite of parameters available from the 2006 to 2009 CRMS dataset. Three indices have been developed: a floristic quality (FQI), hydrologic (HI), and submergence vulnerability (SVI), and a landscape index is currently being refined. Wetland vegetation, hydrology, and soils are undeniably interconnected and form the basis for ecological processes that ultimately influence future land change and the sustainability of coastal habitats. Although these indices have been developed using 4 years of baseline CRMS data, the indices will be refined to better define ecological relationships as the data set becomes more robust overtime.

Because no regulatory thresholds exist for the ecological parameters of interest, it was not possible to assess index scores based on previously defined values that would indicate an acceptable or unacceptable score. Therefore, for the FQI and the HI, assessments were made relative to a baseline distribution of the index scores derived from 2006 to 2009 data at CRMS sites across the Louisiana coast. Because ideal thresholds were not available for the FQI and HI, scores were classified as 'good' (green) if they exceeded the 75th percentile of index scores calculated for all CRMS sites during the baseline period, 'poor' (red) if they did not exceed the 25th percentile, or 'fair' (yellow) if they were intermediate to the 25th and 75th percentiles (Figure 1).

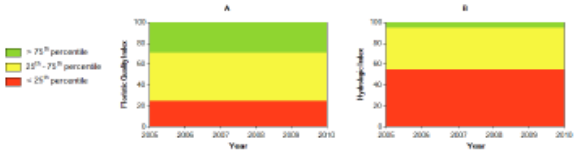
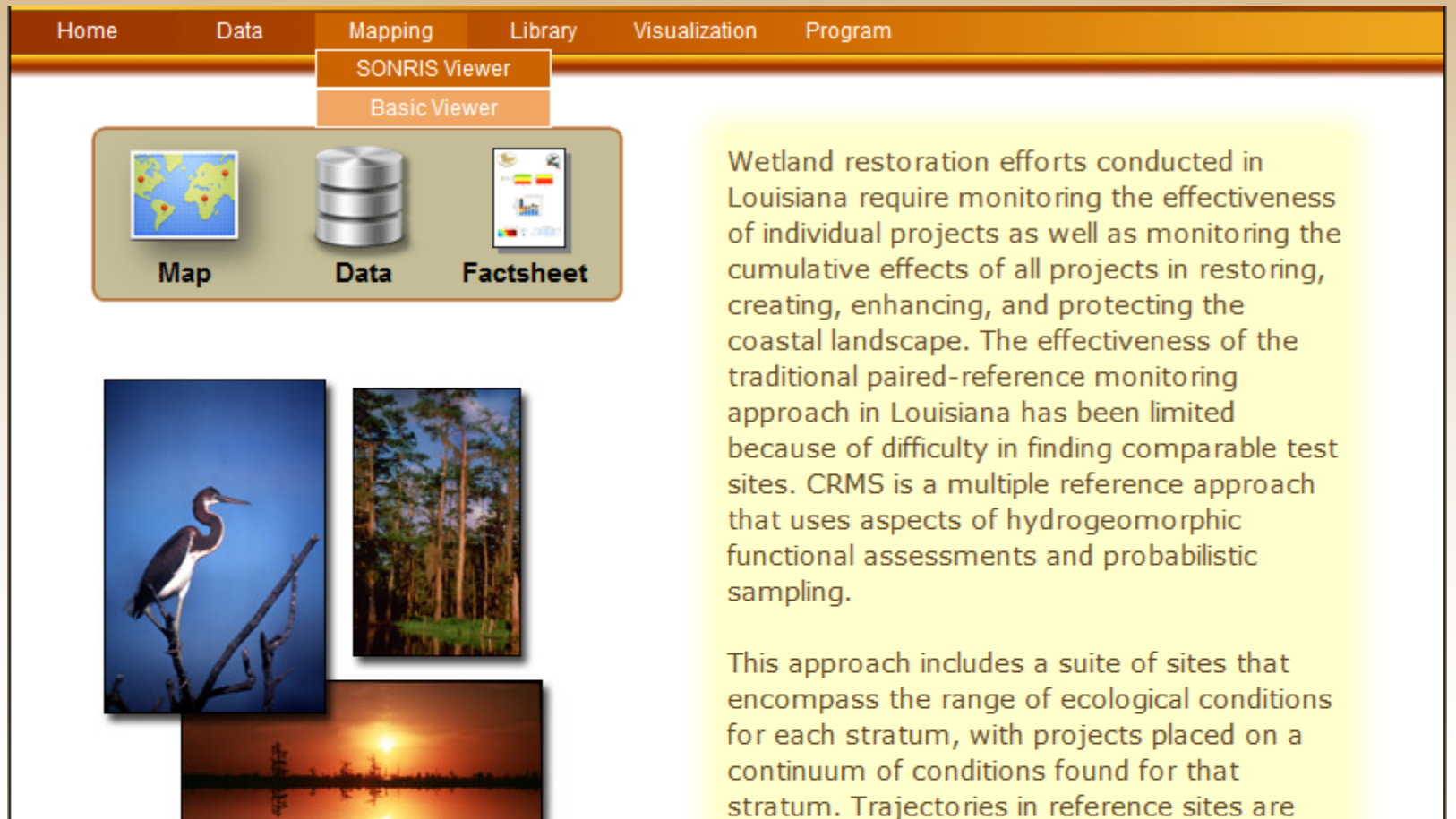


Figure 1. Example of how classifications change based on the assessment index and index score distribution. A) Floristic Quality Index distribution and B) Hydrologic Index distribution based on coastwide data from 2006 to 2009.

Using the mapping interface

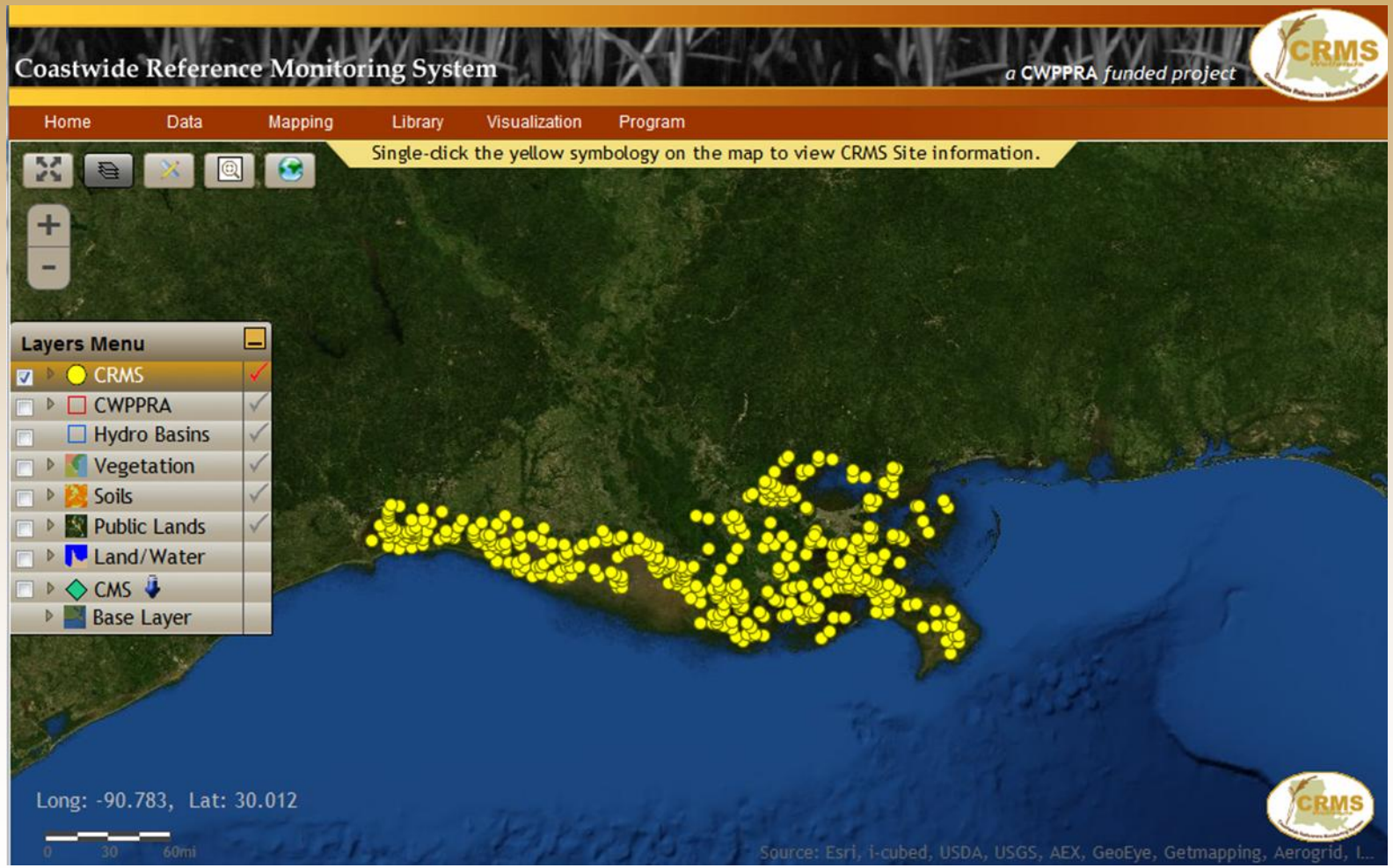


Wetland restoration efforts conducted in Louisiana require monitoring the effectiveness of individual projects as well as monitoring the cumulative effects of all projects in restoring, creating, enhancing, and protecting the coastal landscape. The effectiveness of the traditional paired-reference monitoring 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

Map Navigation

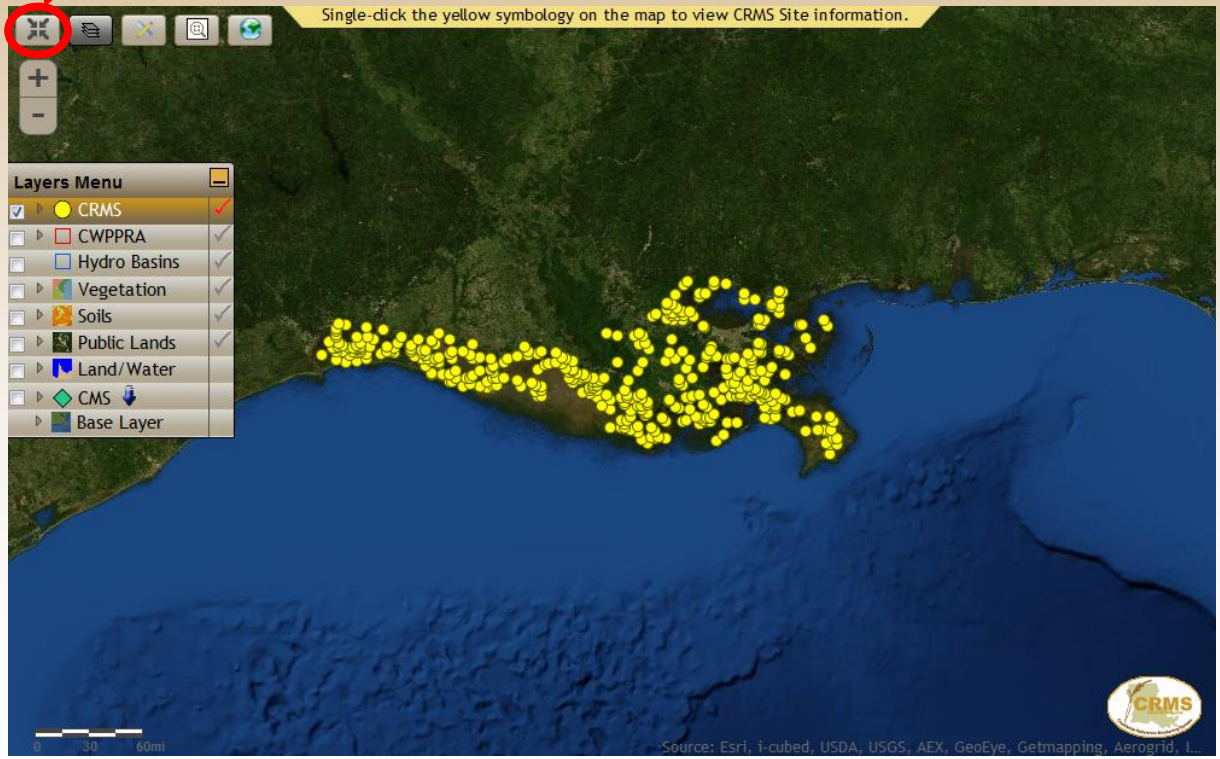
CRMS Viewer now implements ESRI's ArcGIS JavaScript API which allows mouse wheel scrolling to zoom in and out of the map.



Interface

Full Screen Button hides the top menu.

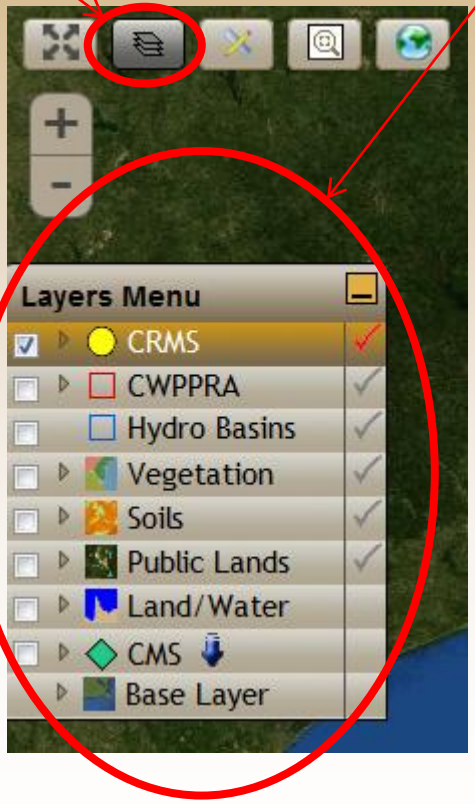
Full Screen Button changes when the top menu is hidden.



Interface

Layers Button shows and hides the Layers Menu

Layers Menu Shown:



Layers Menu Hidden:

Interface

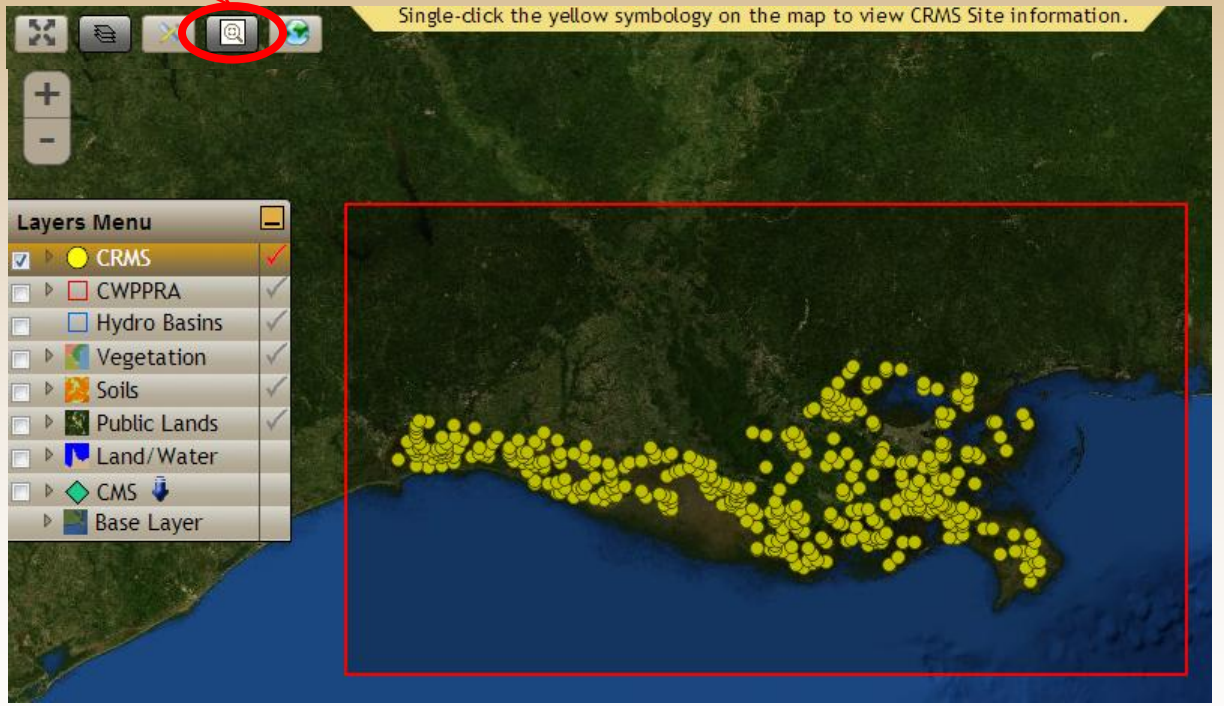
Tools Button darkens when the menu is shown.

Tools Button brings up the Tools Menu.

Interface

Zoom Button zooms to the rectangle drawn on the map.

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

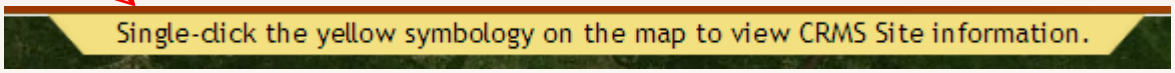


Interface

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

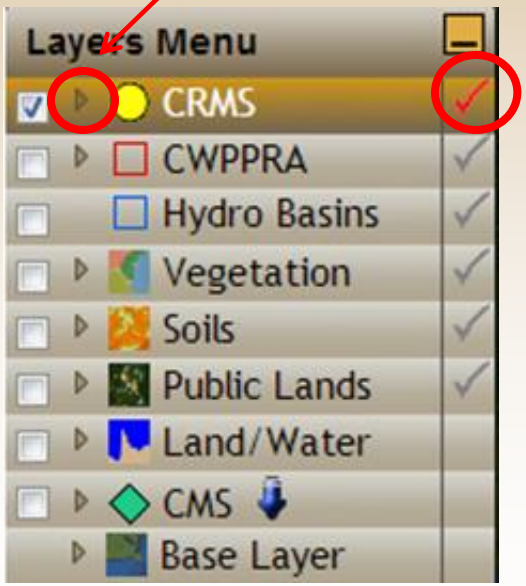
+/- Buttons zoom in and out.

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



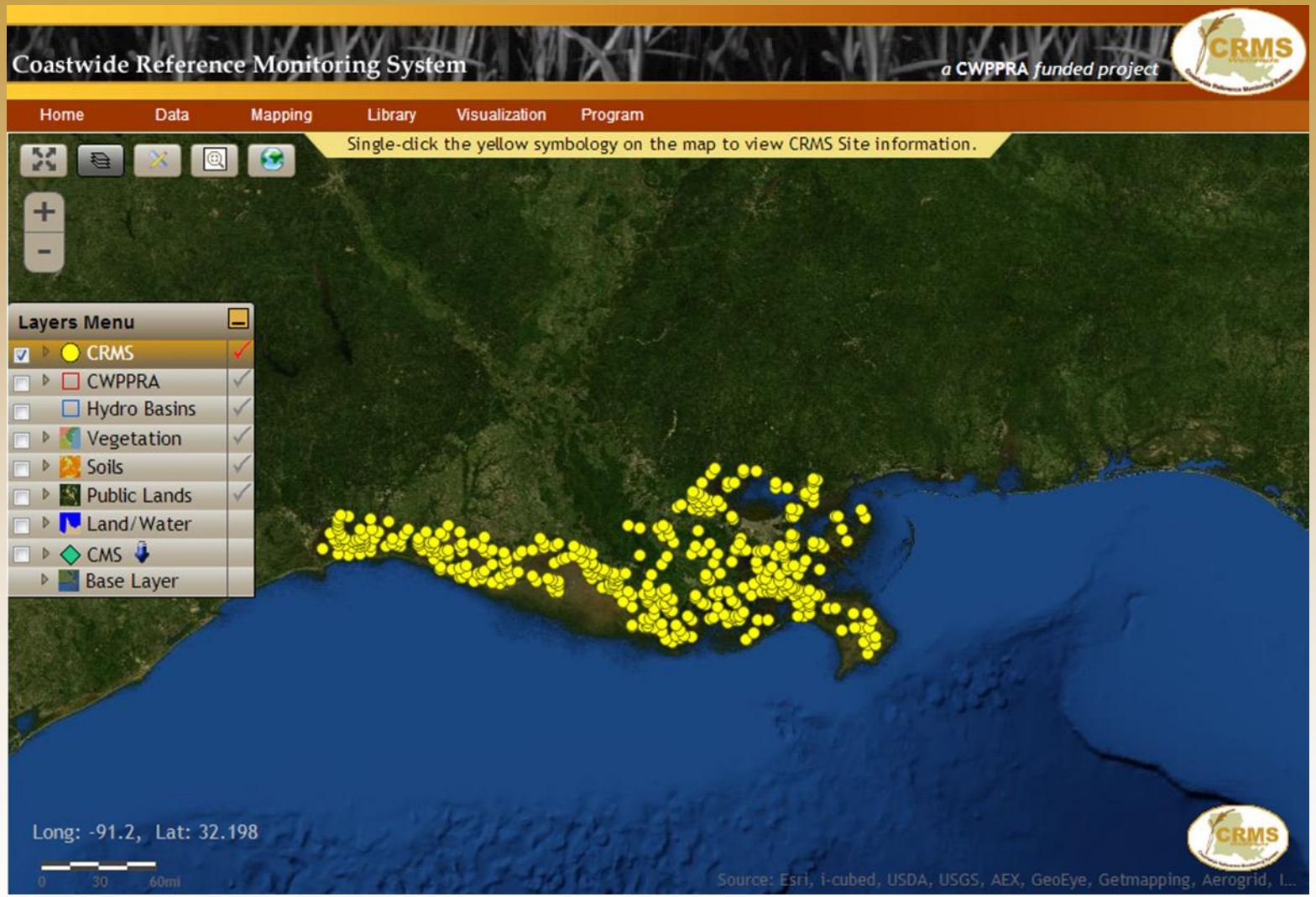
Interface

Expand layer to display more layer options.

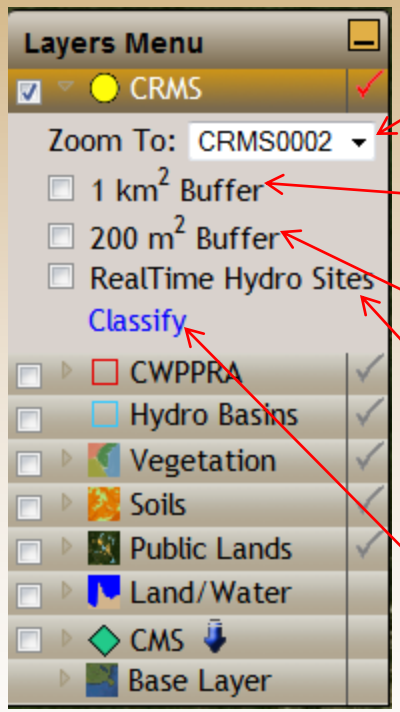


Make this the current active layer.

CRMS Active Layer



CRMS Active Layer



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

1 Km Buffer checkbox adds/removes the 1 Km Buffer layer to the map.

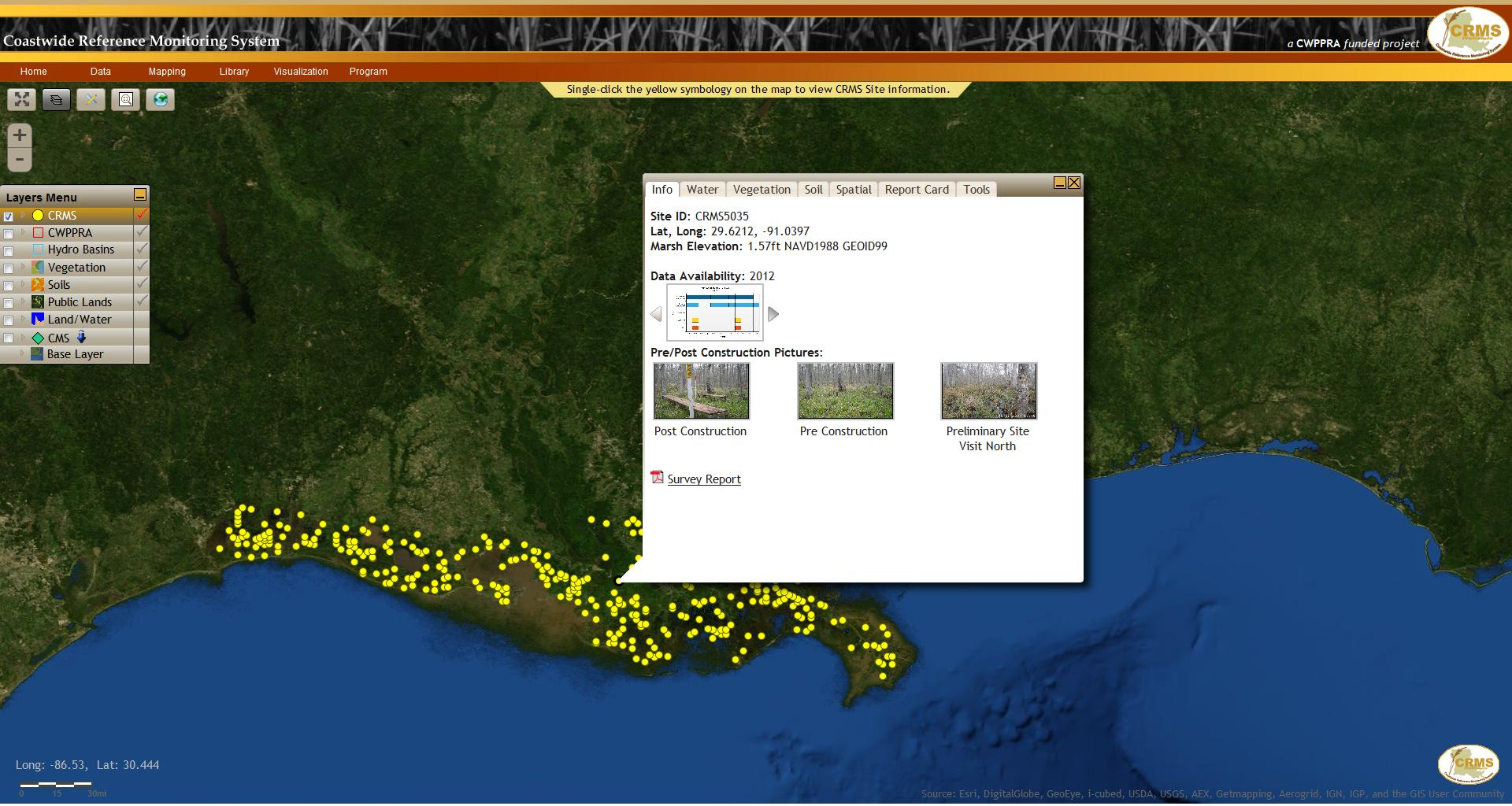
200 M Buffer checkbox adds/removes the 200 M Buffer layer to the map.

RealTime Hydro Sites checkbox adds/removes the RealTime Hydro Sites layer to the map.

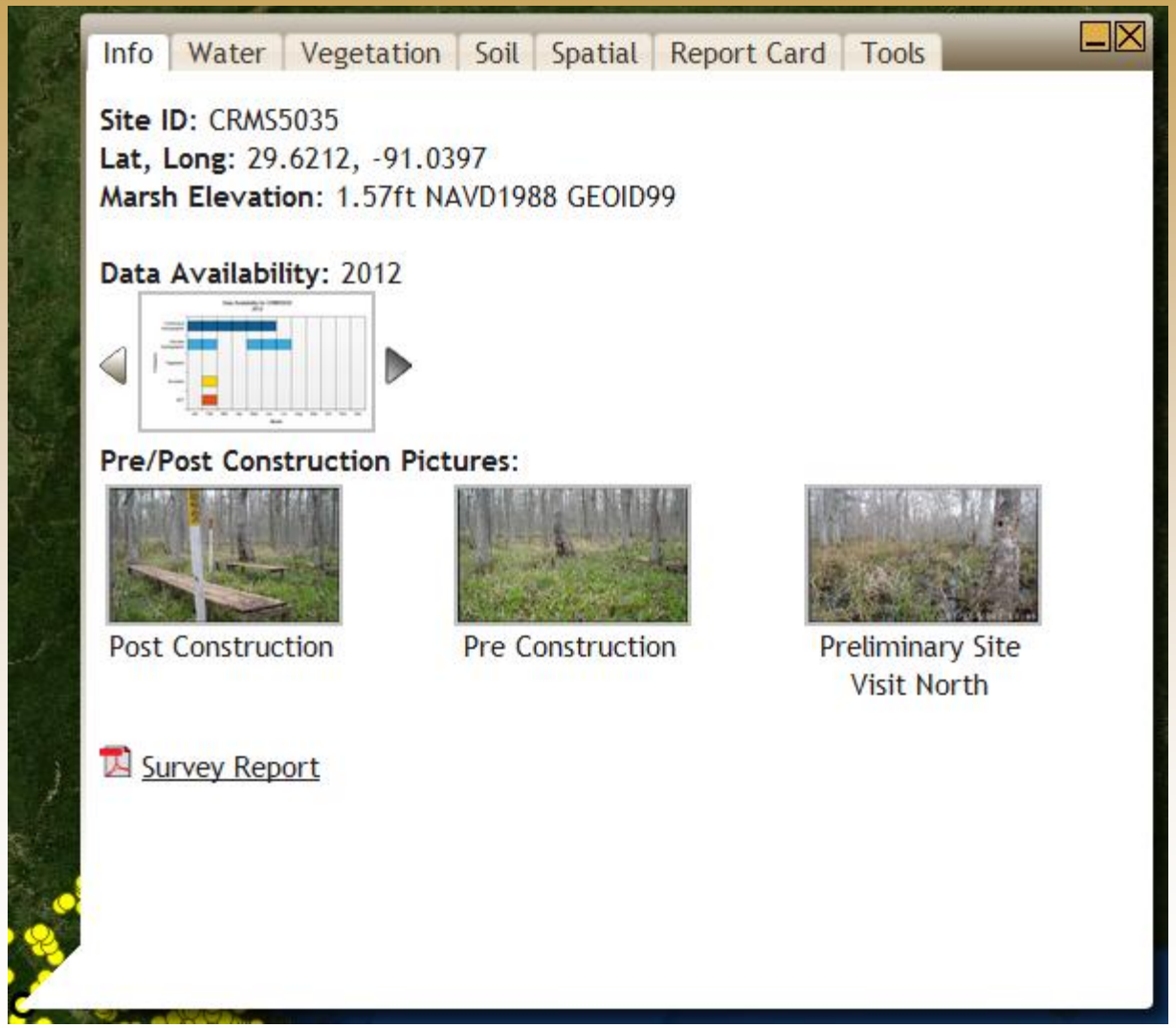
Classify invokes the tools menu with the classification option selected.

CRMS Active Layer

Click a point for Site Information Bubble

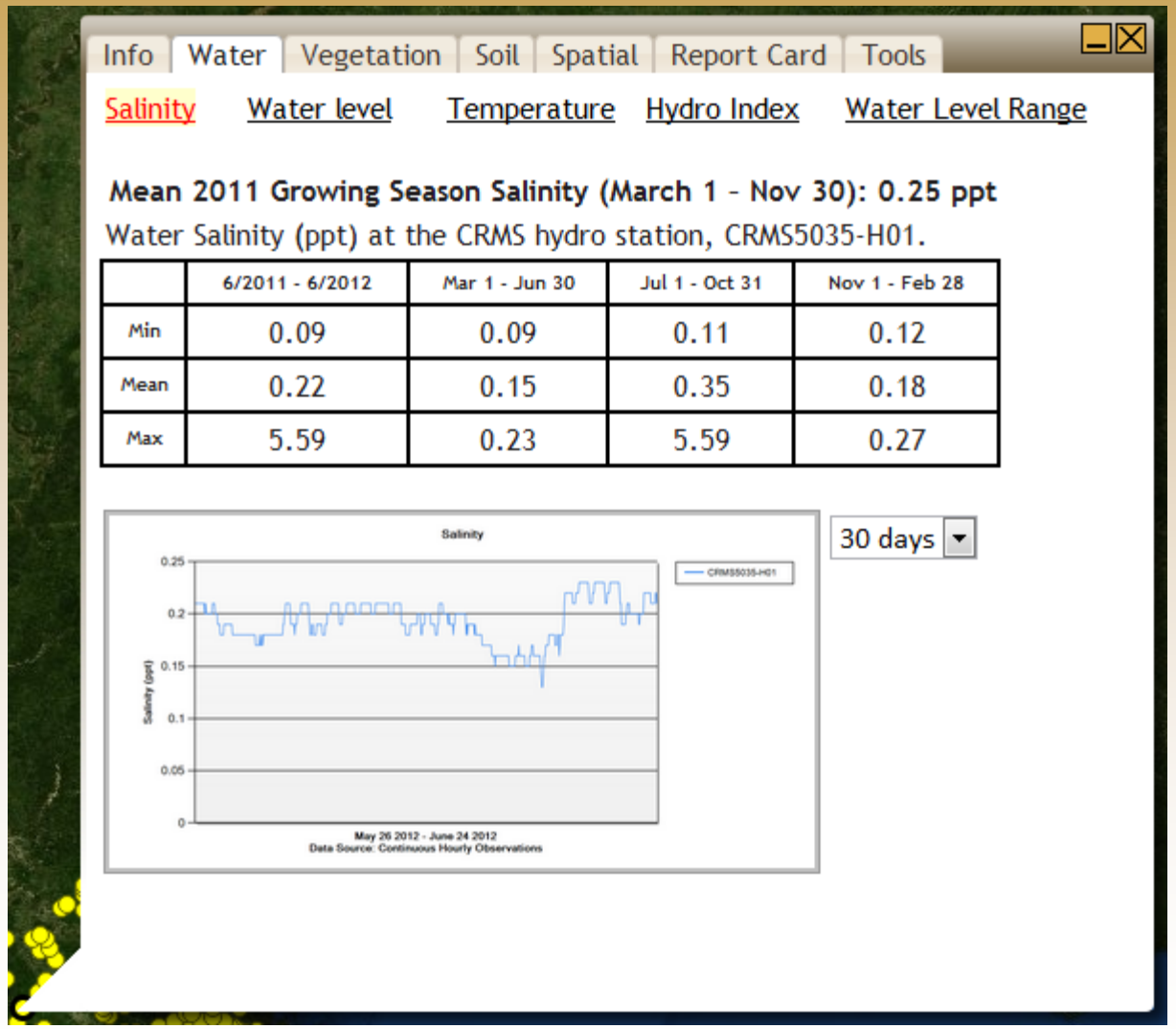


Site Information Bubble



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.

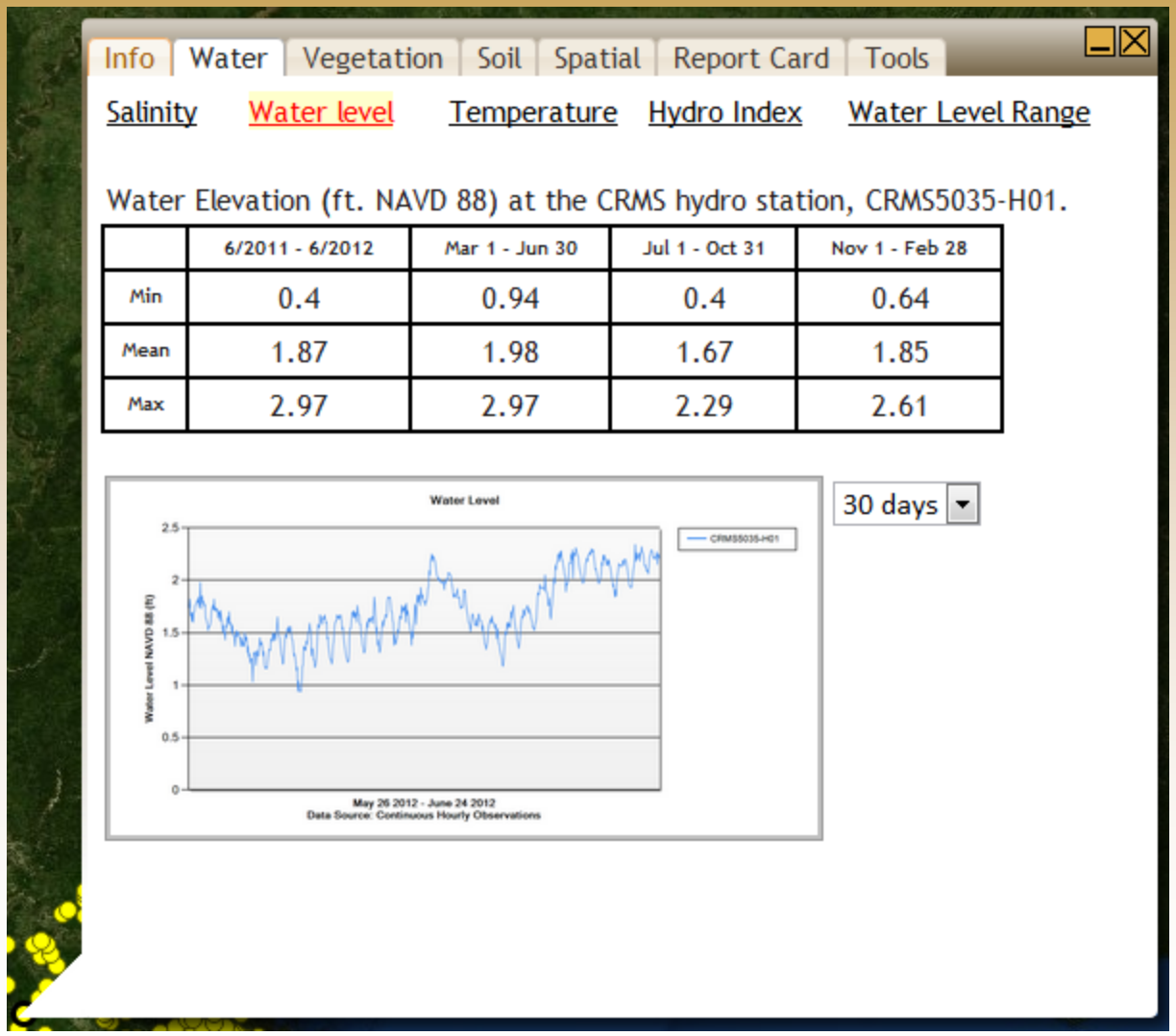
Site Information Bubble



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.

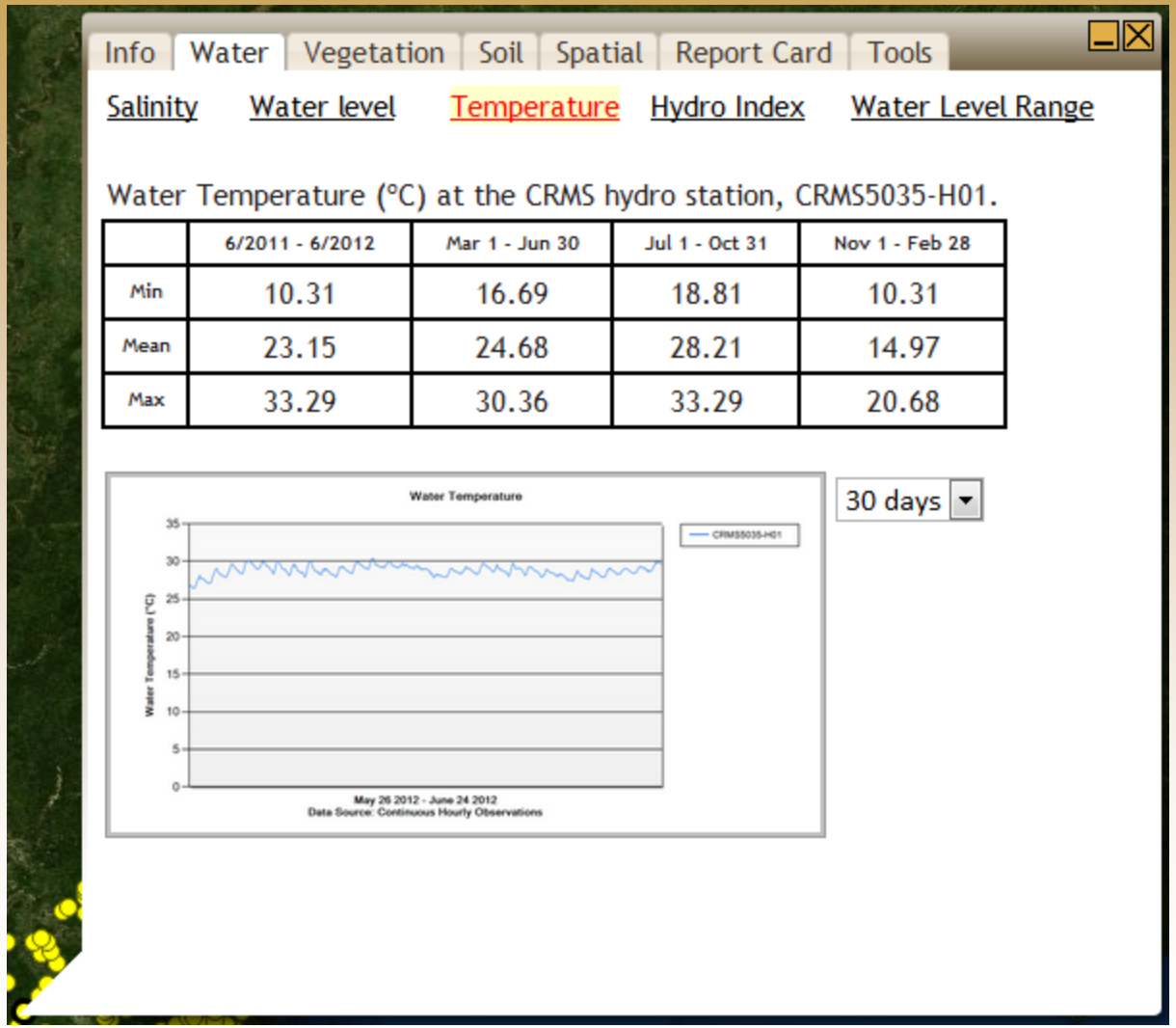
Site Information Bubble



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.

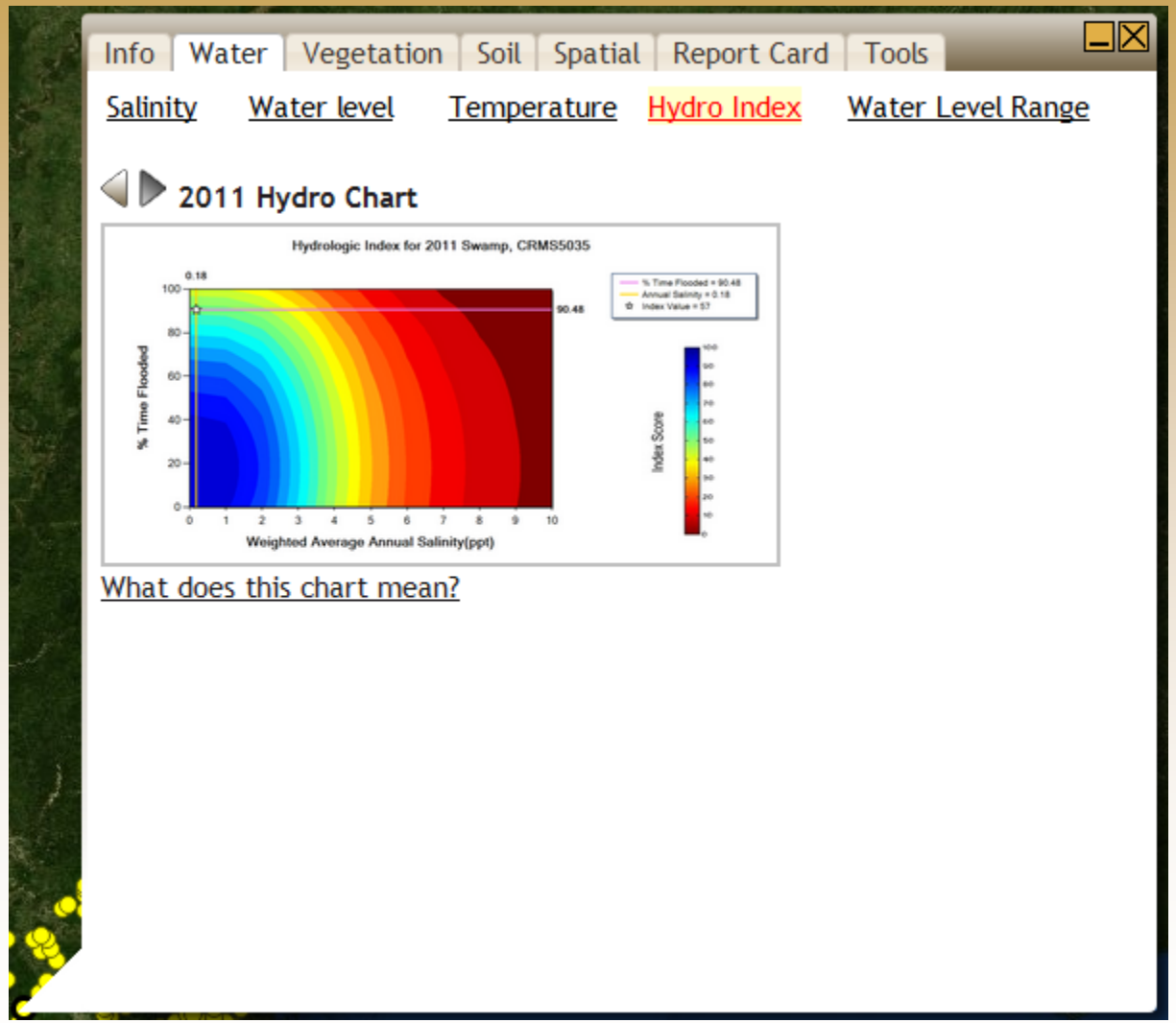
Site Information Bubble



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.

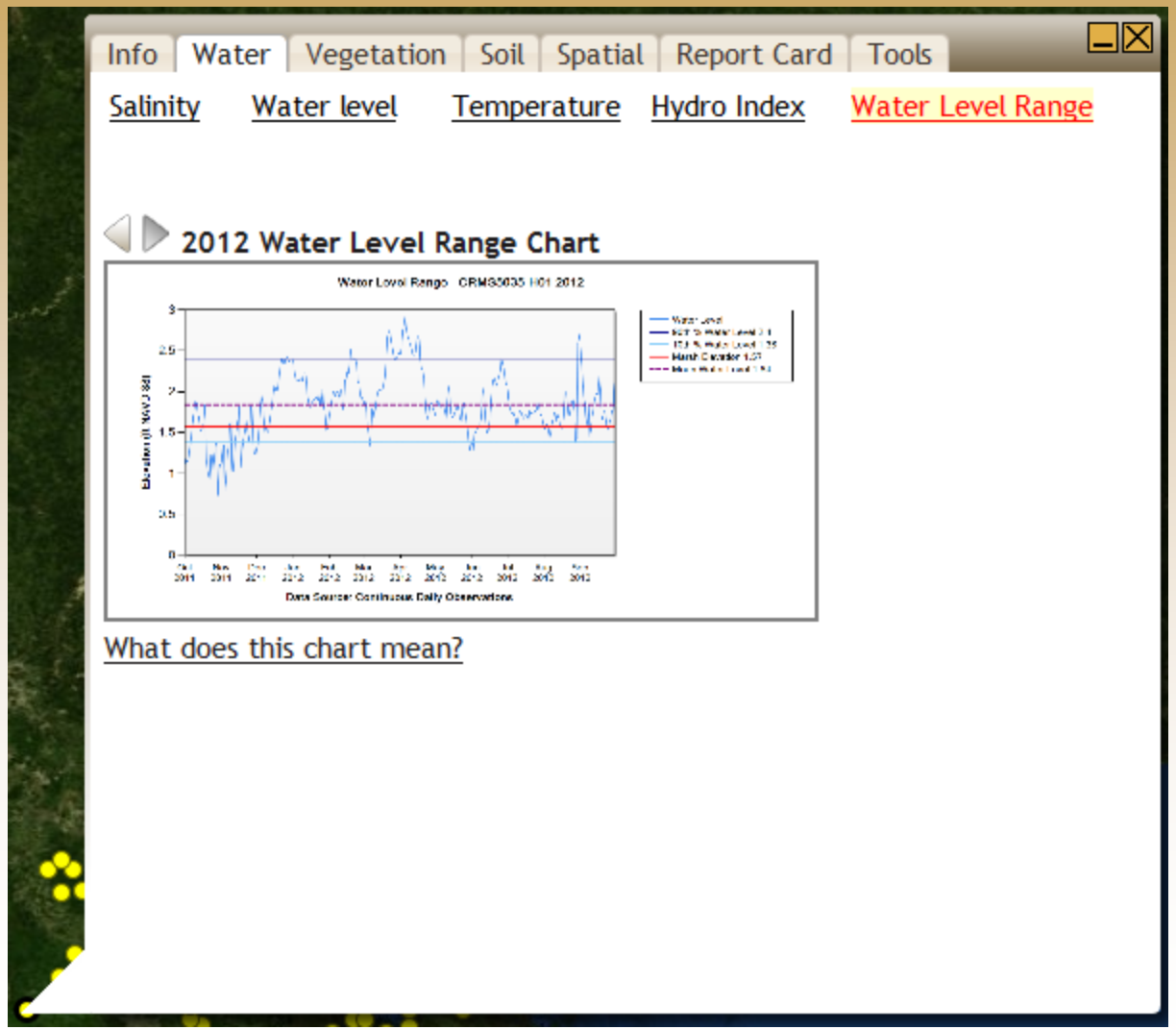
Site Information Bubble



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

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

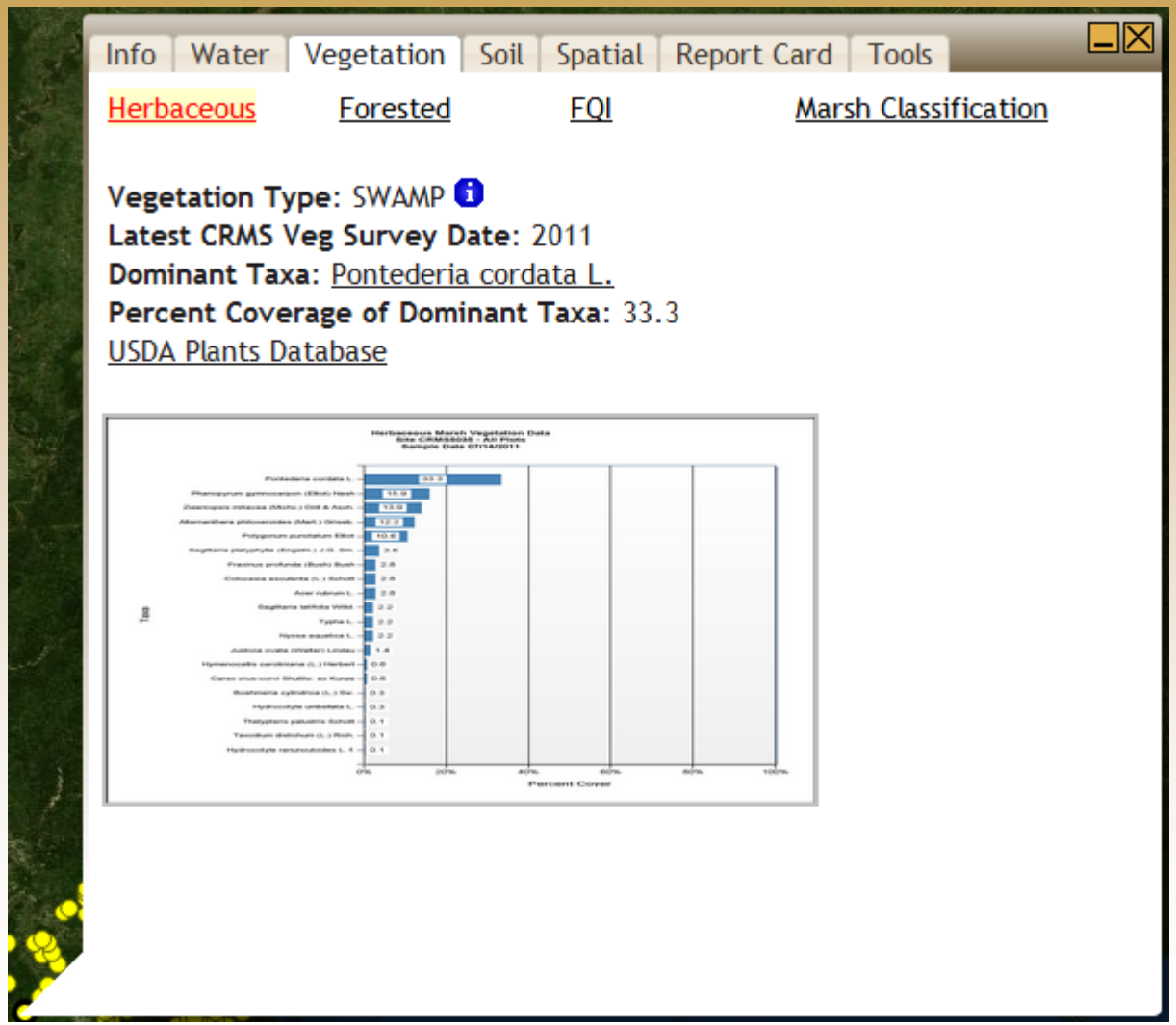
Site Information Bubble



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

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

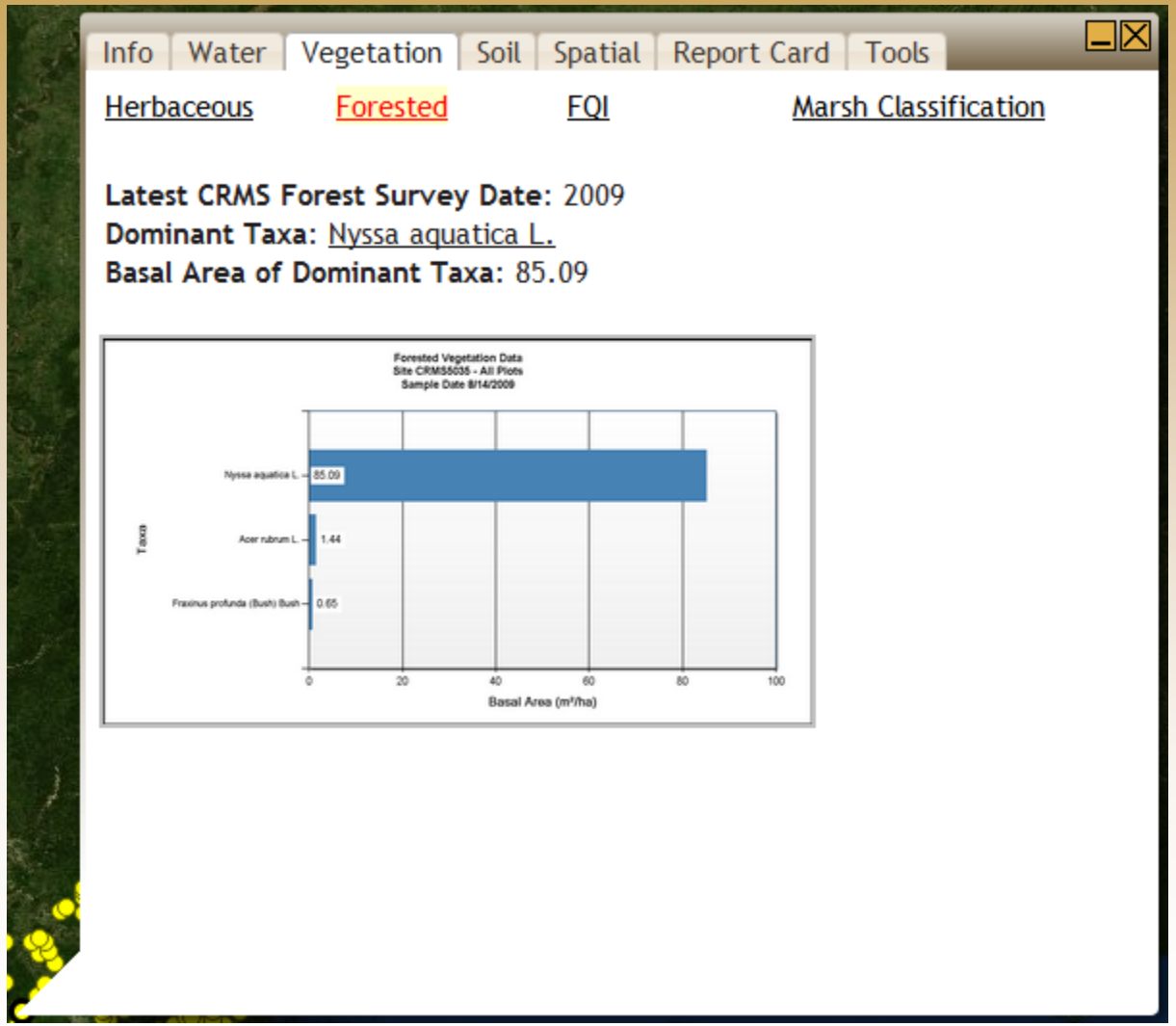
Site Information Bubble



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

Herbaceous – Species driven percent cover chart.

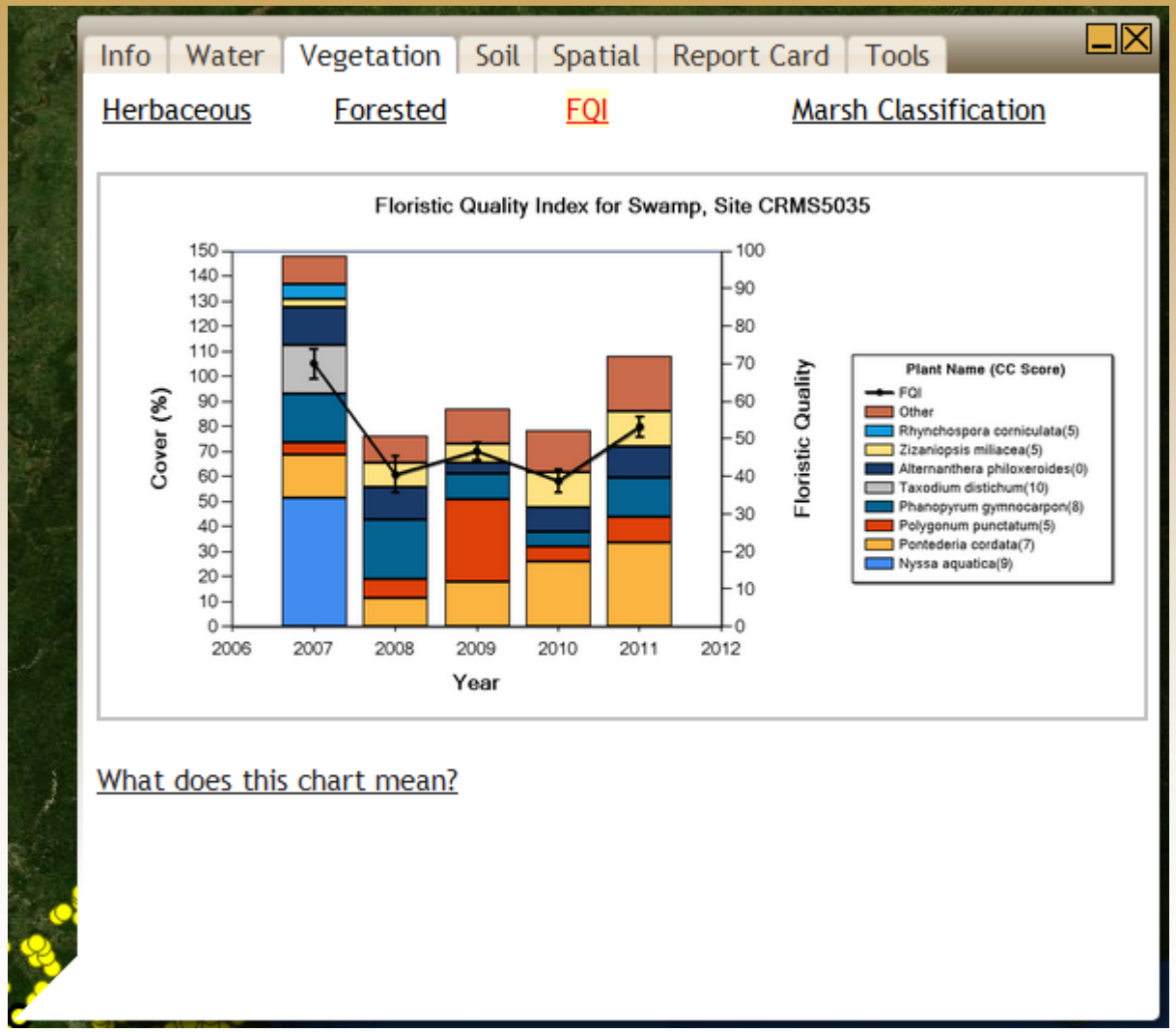
Site Information Bubble



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

Forested – Species driven basal area chart.

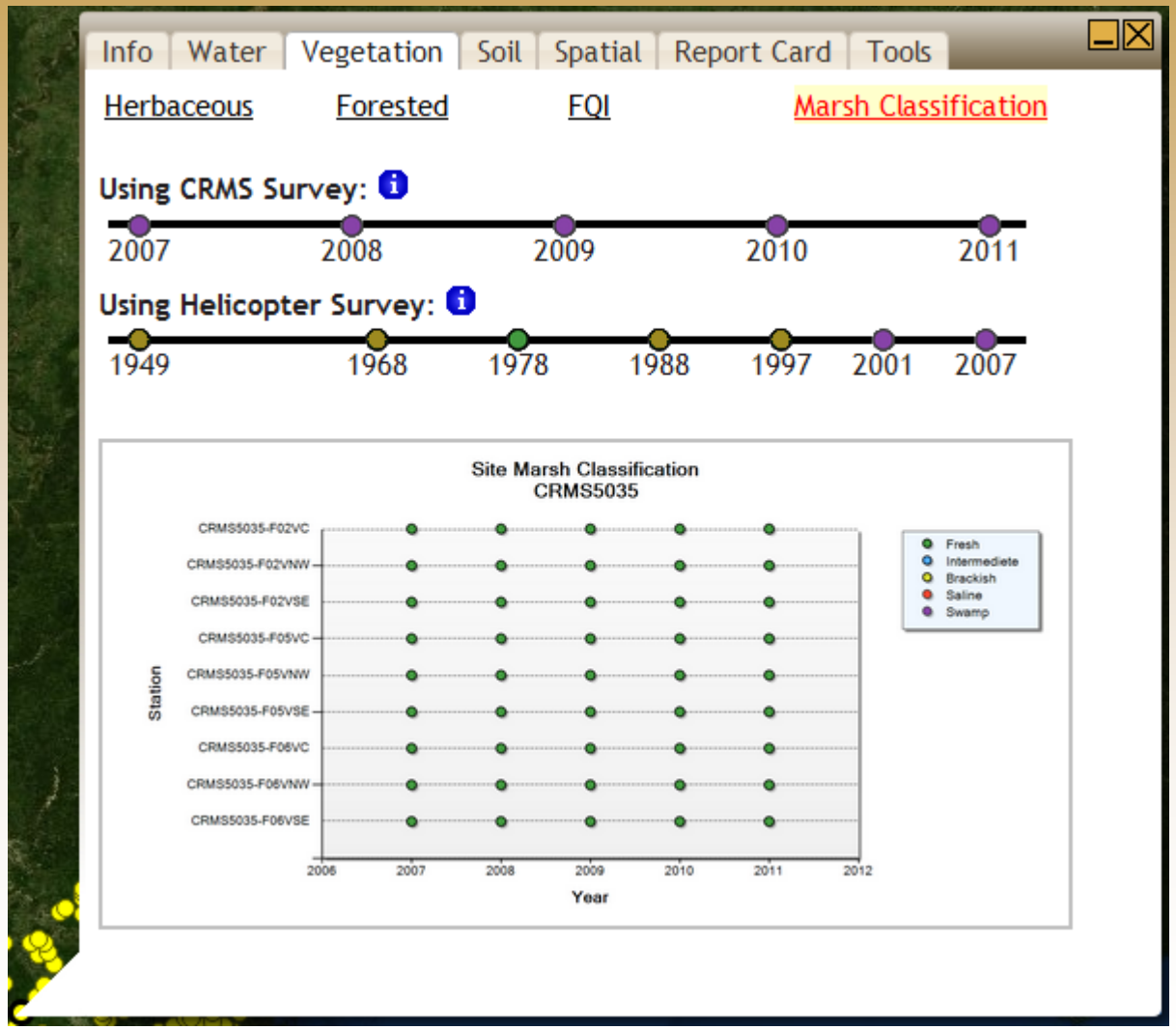
Site Information Bubble



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

Floristic Quality Index

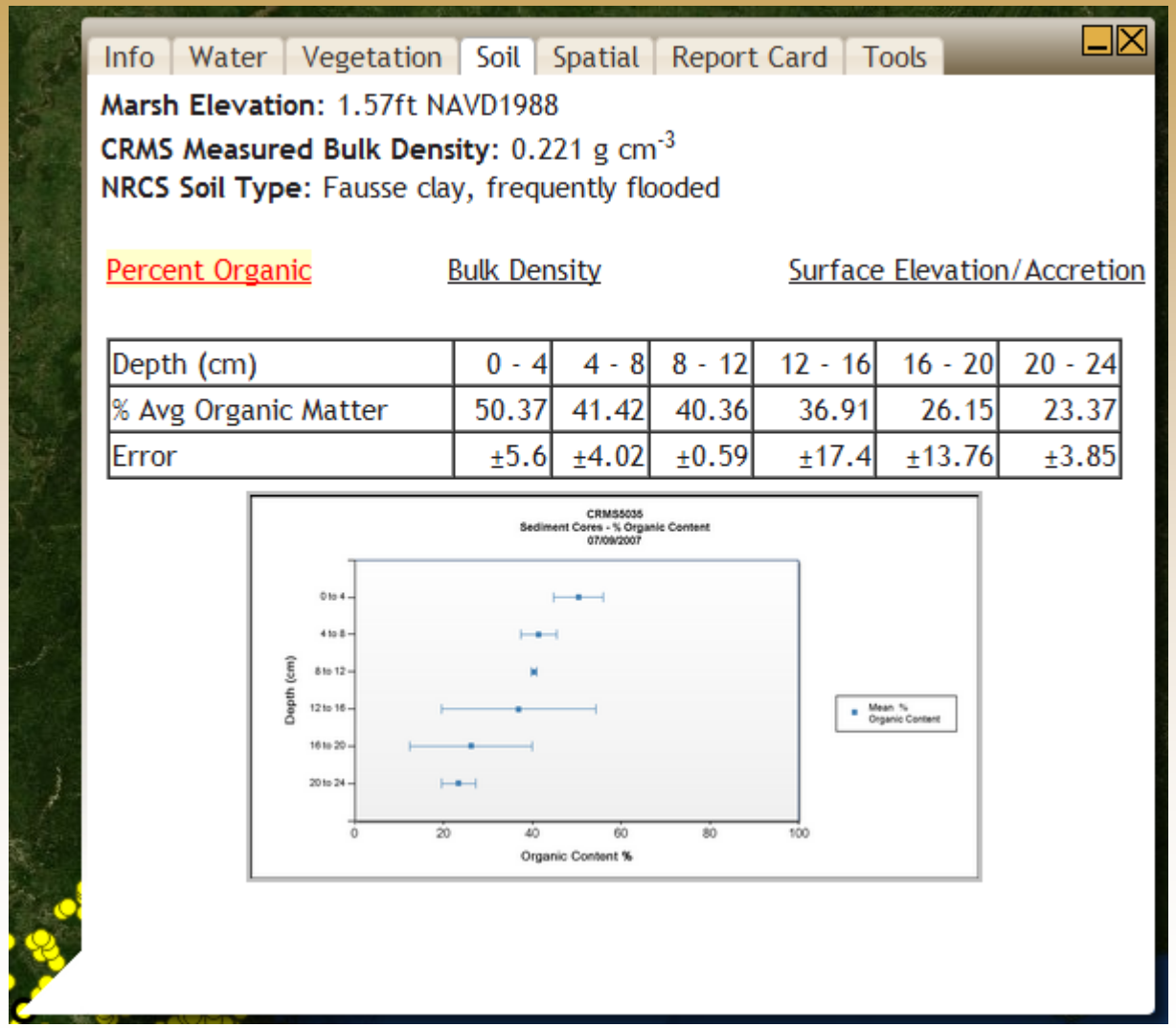
Site Information Bubble



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.

Site Information Bubble

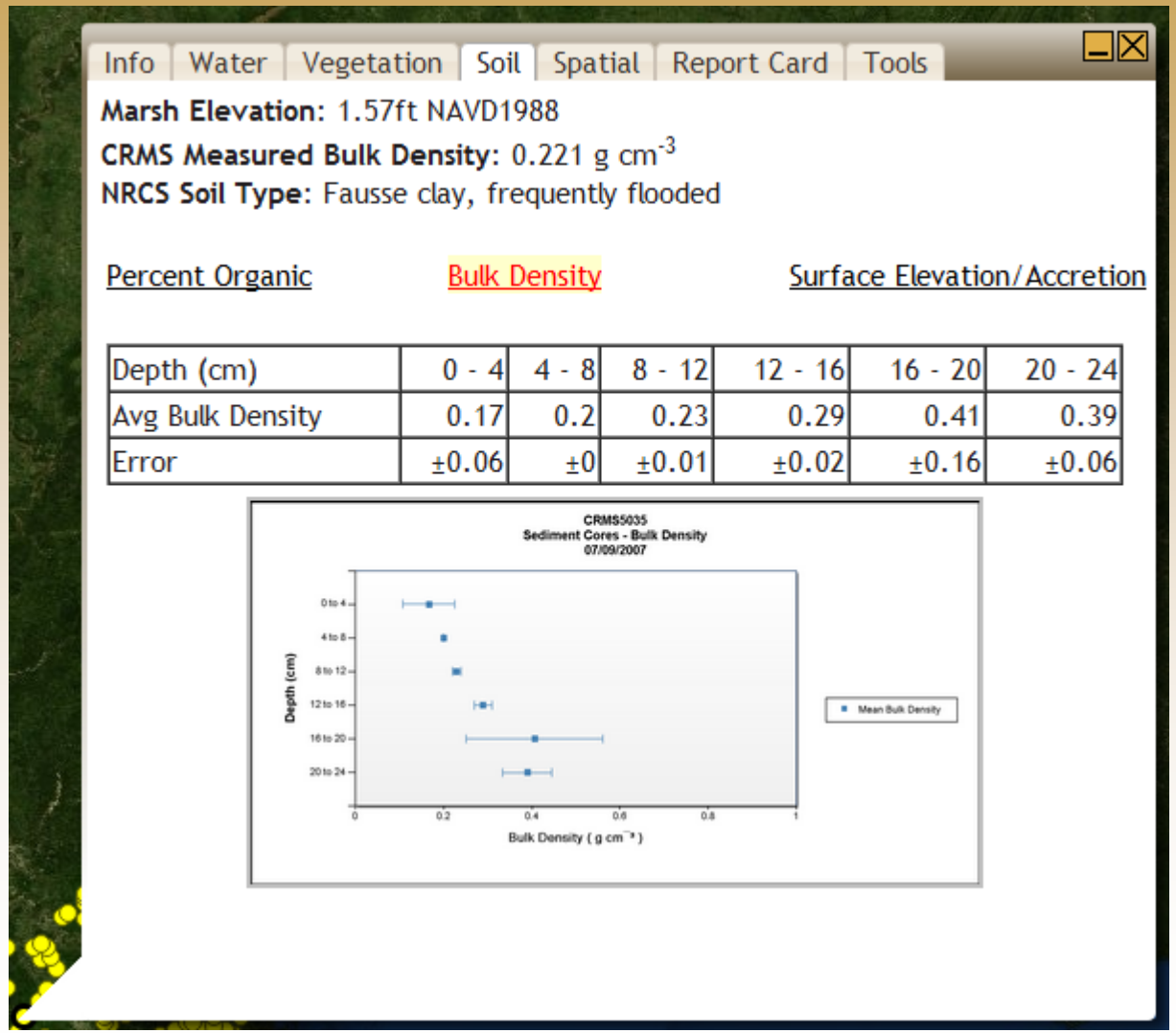


Depth (cm)	0 - 4	4 - 8	8 - 12	12 - 16	16 - 20	20 - 24
% Avg Organic Matter	50.37	41.42	40.36	36.91	26.15	23.37
Error	±5.6	±4.02	±0.59	±17.4	±13.76	±3.85

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

Percent Organic – Soil profiles taken at site establishment.

Site Information Bubble

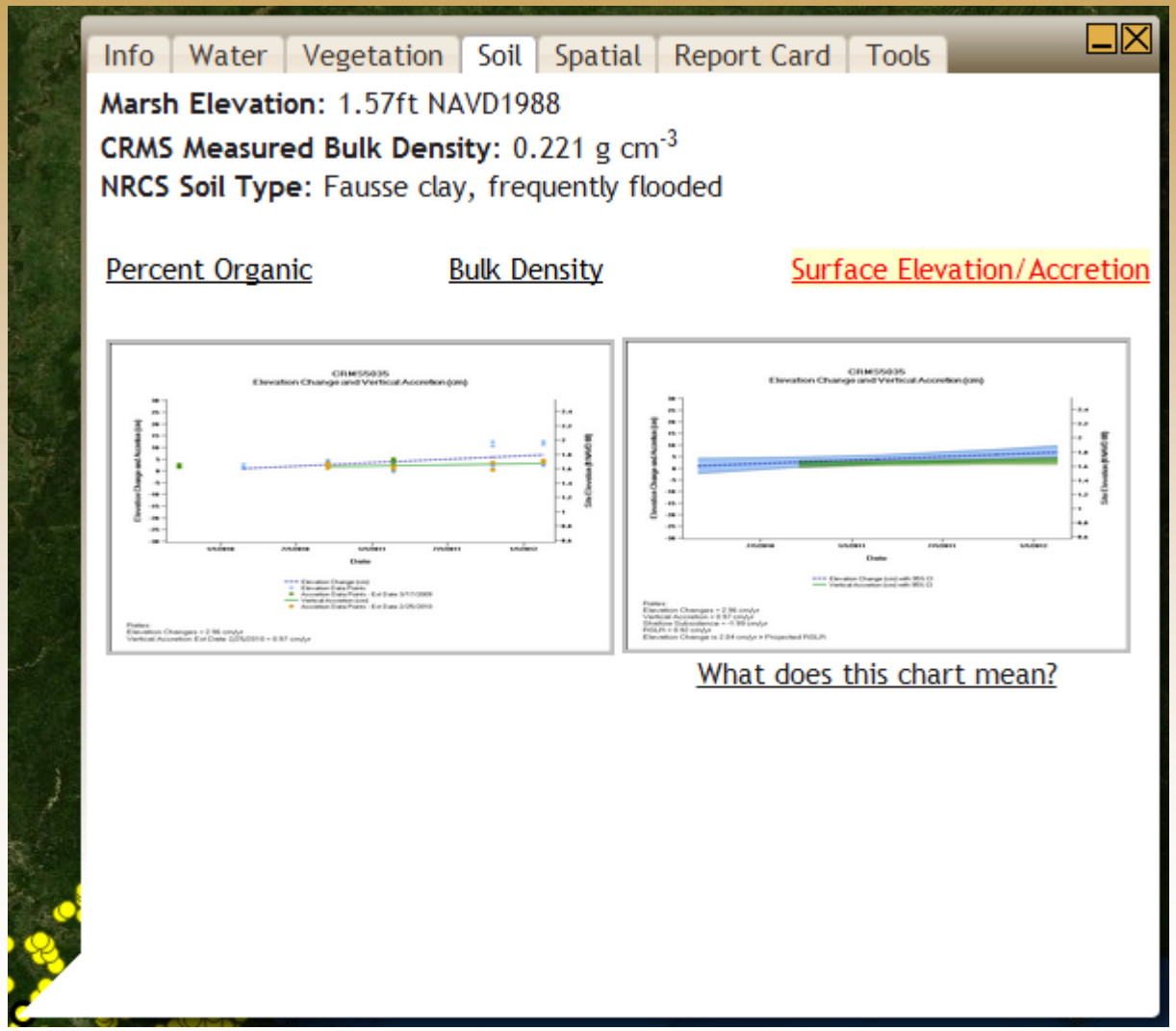


Depth (cm)	0 - 4	4 - 8	8 - 12	12 - 16	16 - 20	20 - 24
Avg Bulk Density	0.17	0.2	0.23	0.29	0.41	0.39
Error	±0.06	±0	±0.01	±0.02	±0.16	±0.06

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

Bulk Density - Soil profiles taken at site establishment.

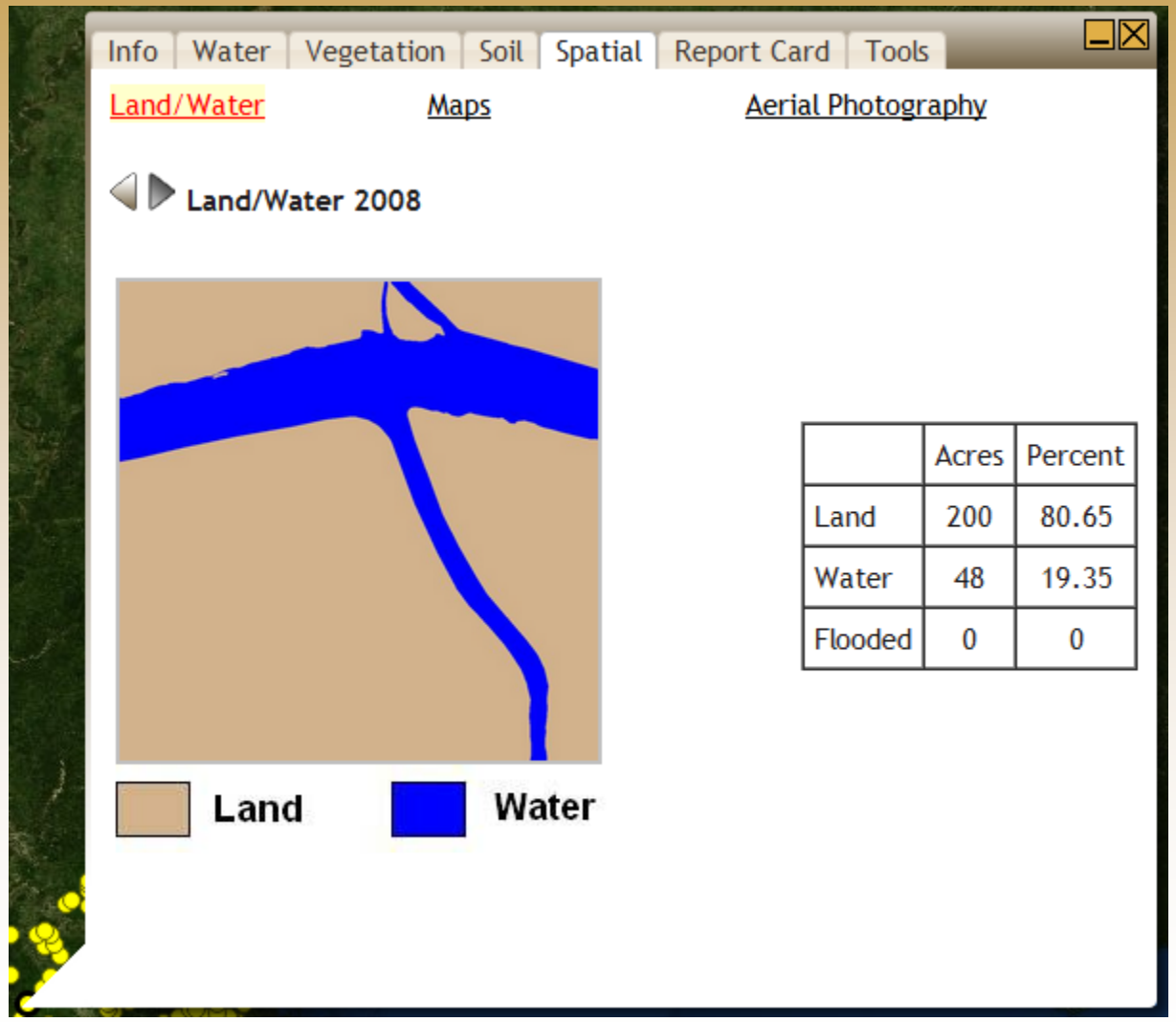
Site Information Bubble



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.

Site Information Bubble

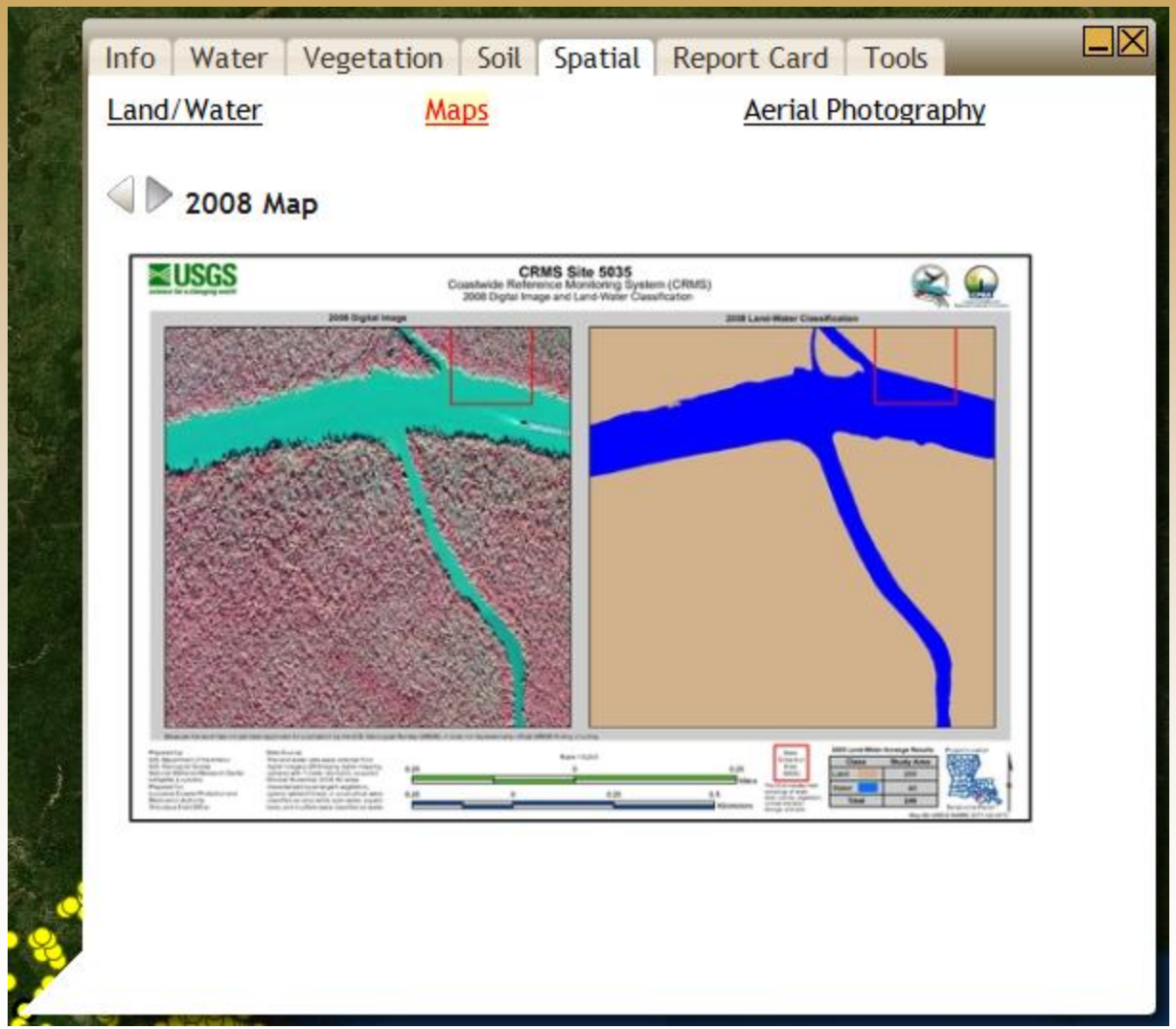


	Acres	Percent
Land	200	80.65
Water	48	19.35
Flooded	0	0

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

Land/Water with acreage breakdowns

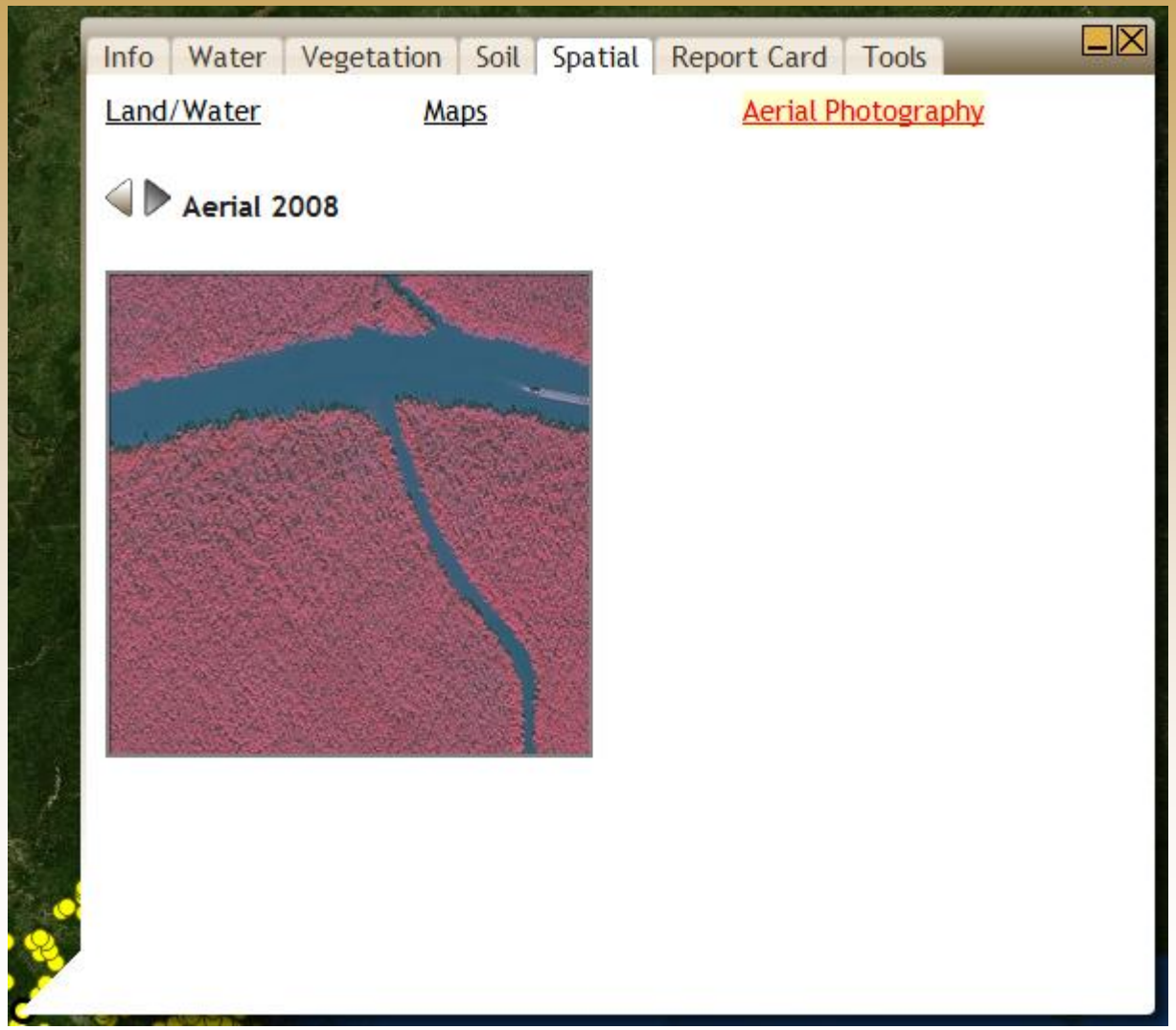
Site Information Bubble



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

Site specific maps at the 1km scale.

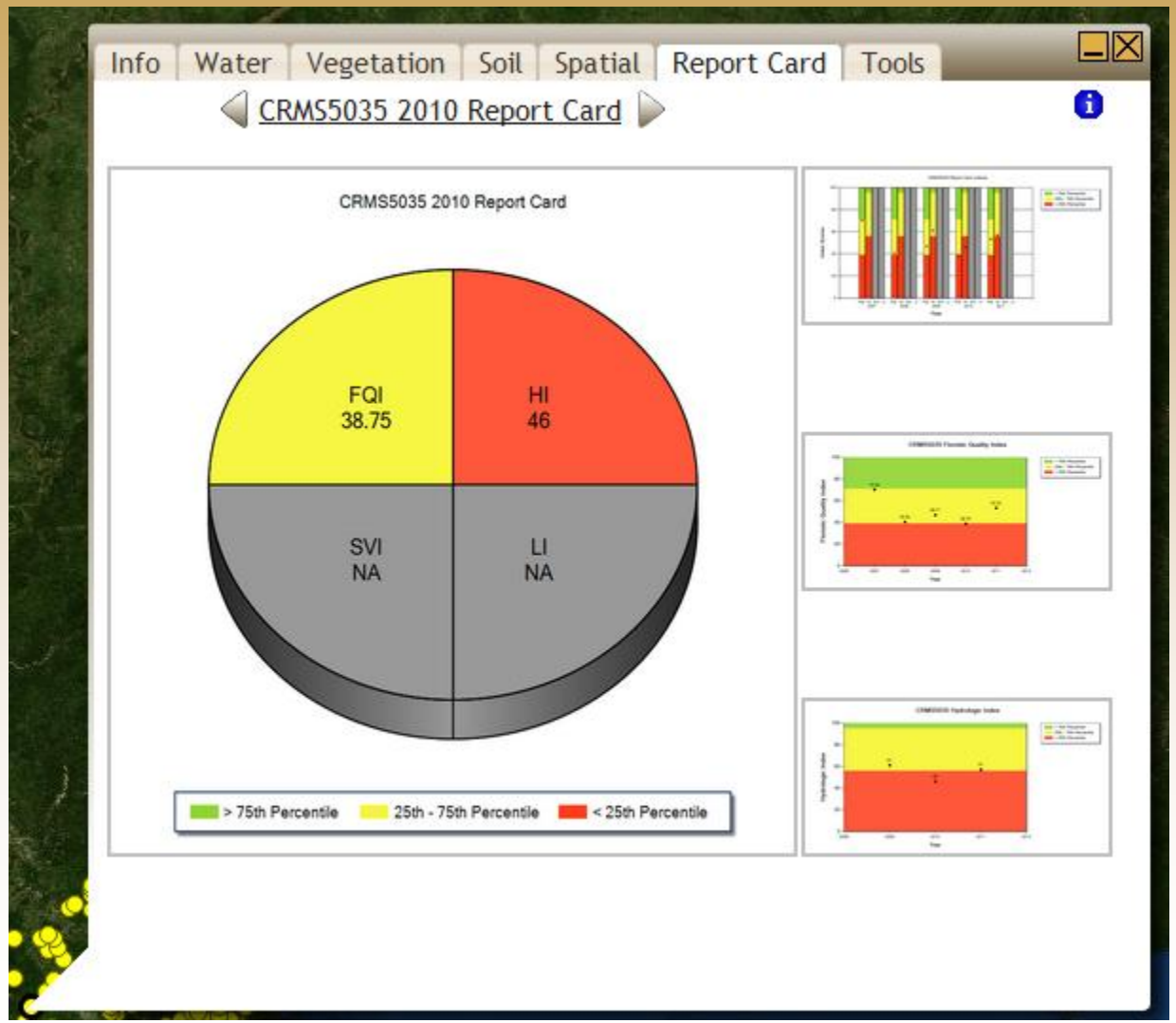
Site Information Bubble



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

Aerial Photography

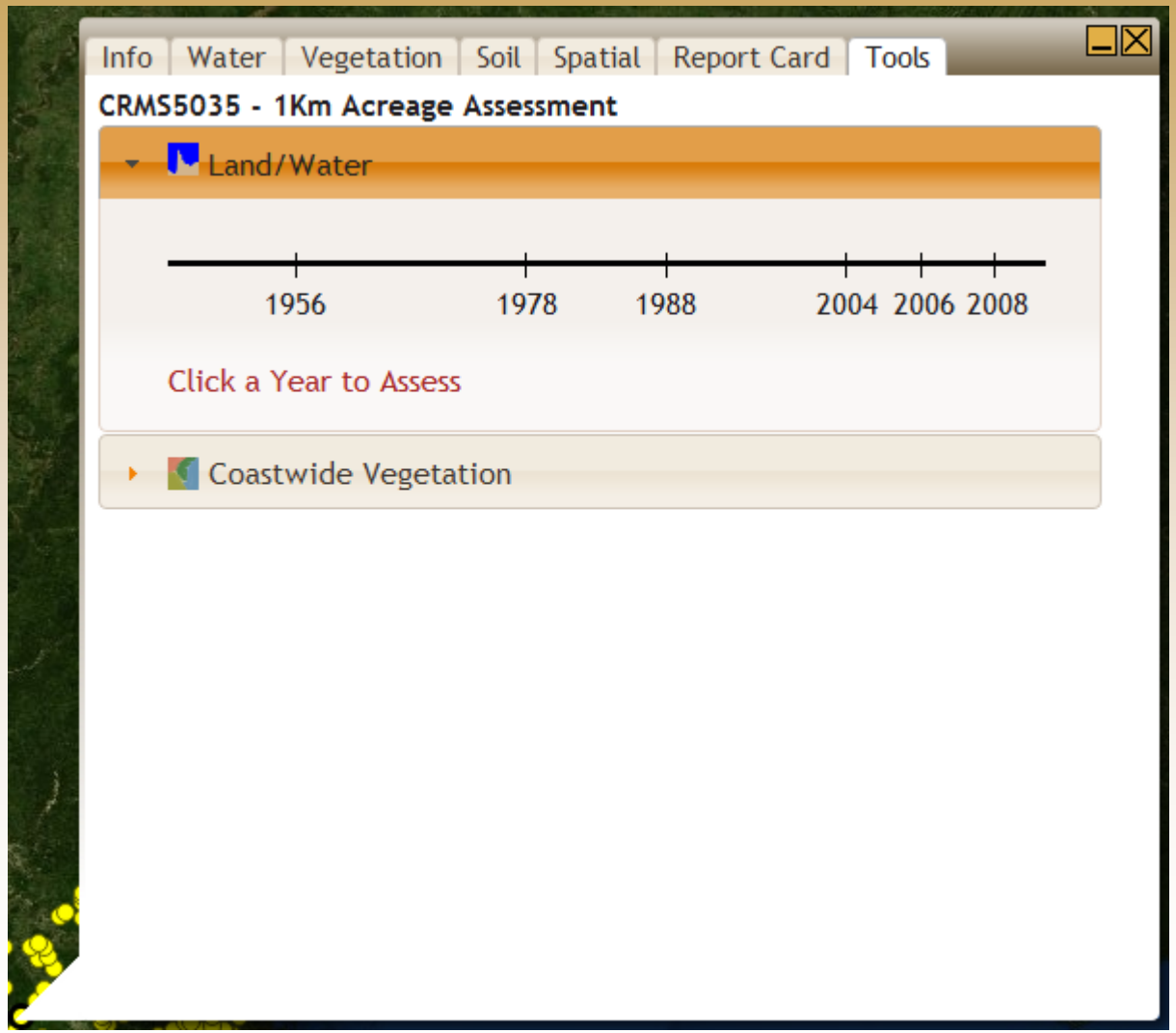
Sitte Information Bubble



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

Report Card

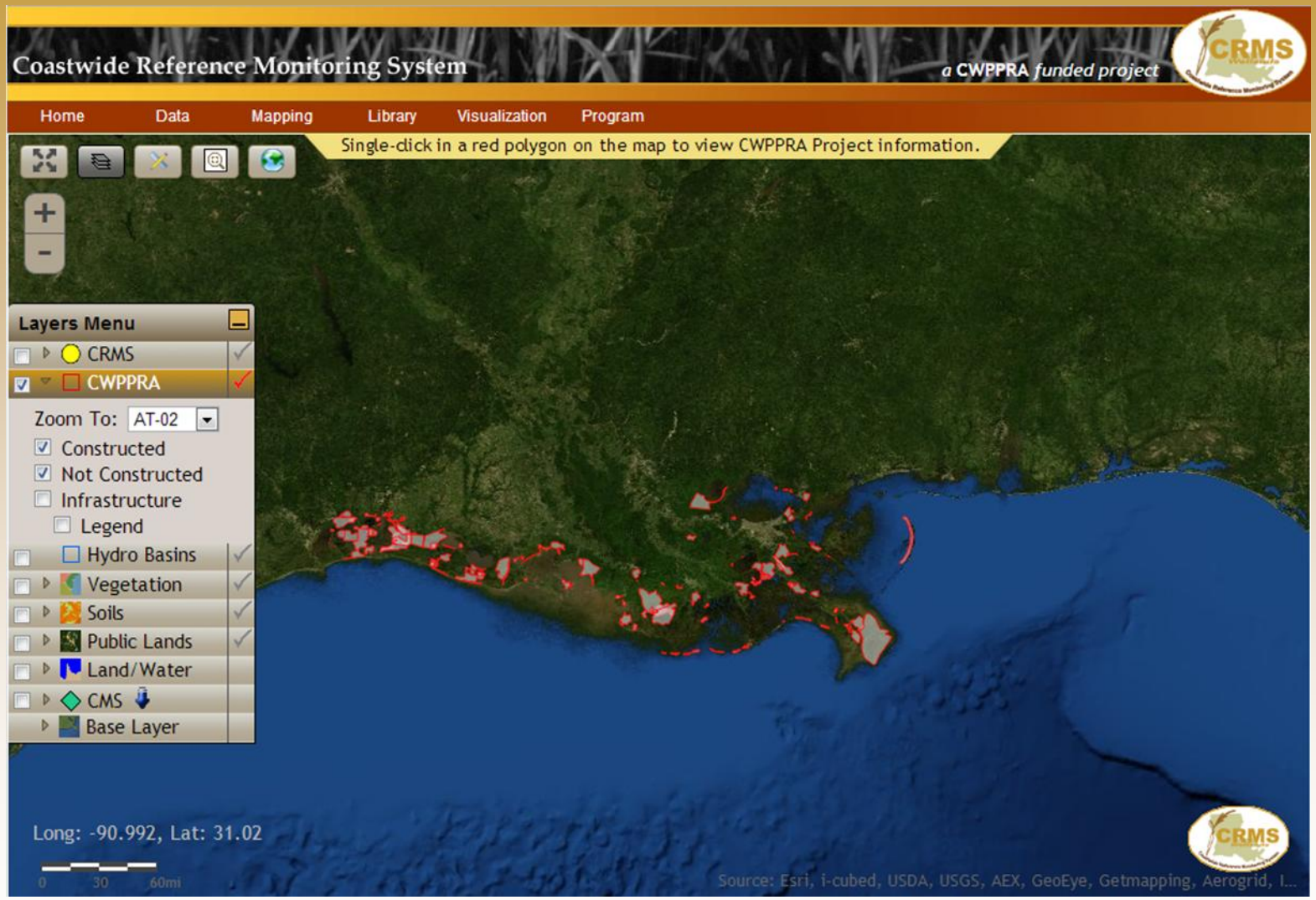
Site Information Bubble



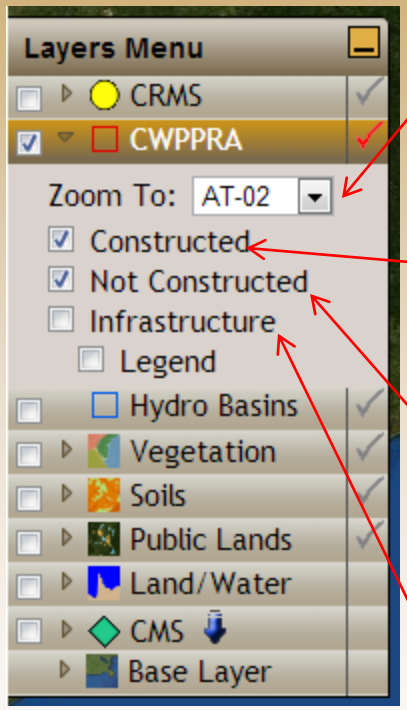
The Tools tab lets you do an Acreage Assessment on the selected site.

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

CWPPRA Active Layer



CWPPRA Active Layer



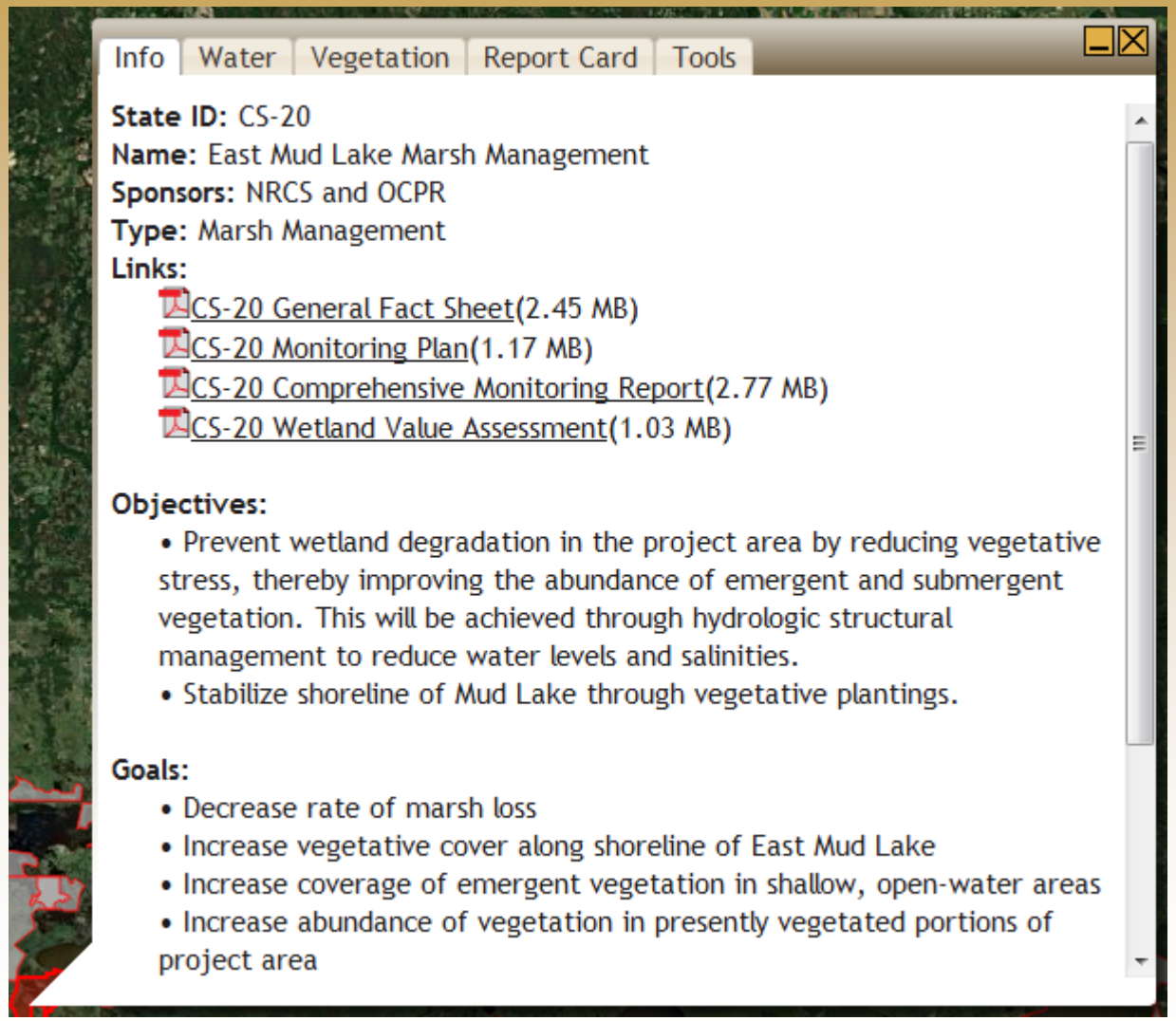
Zoom to function zooms to the project and shows the information bubble for it.

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

Not Constructed checkbox adds/removes the Not Constructed projects layer to the map

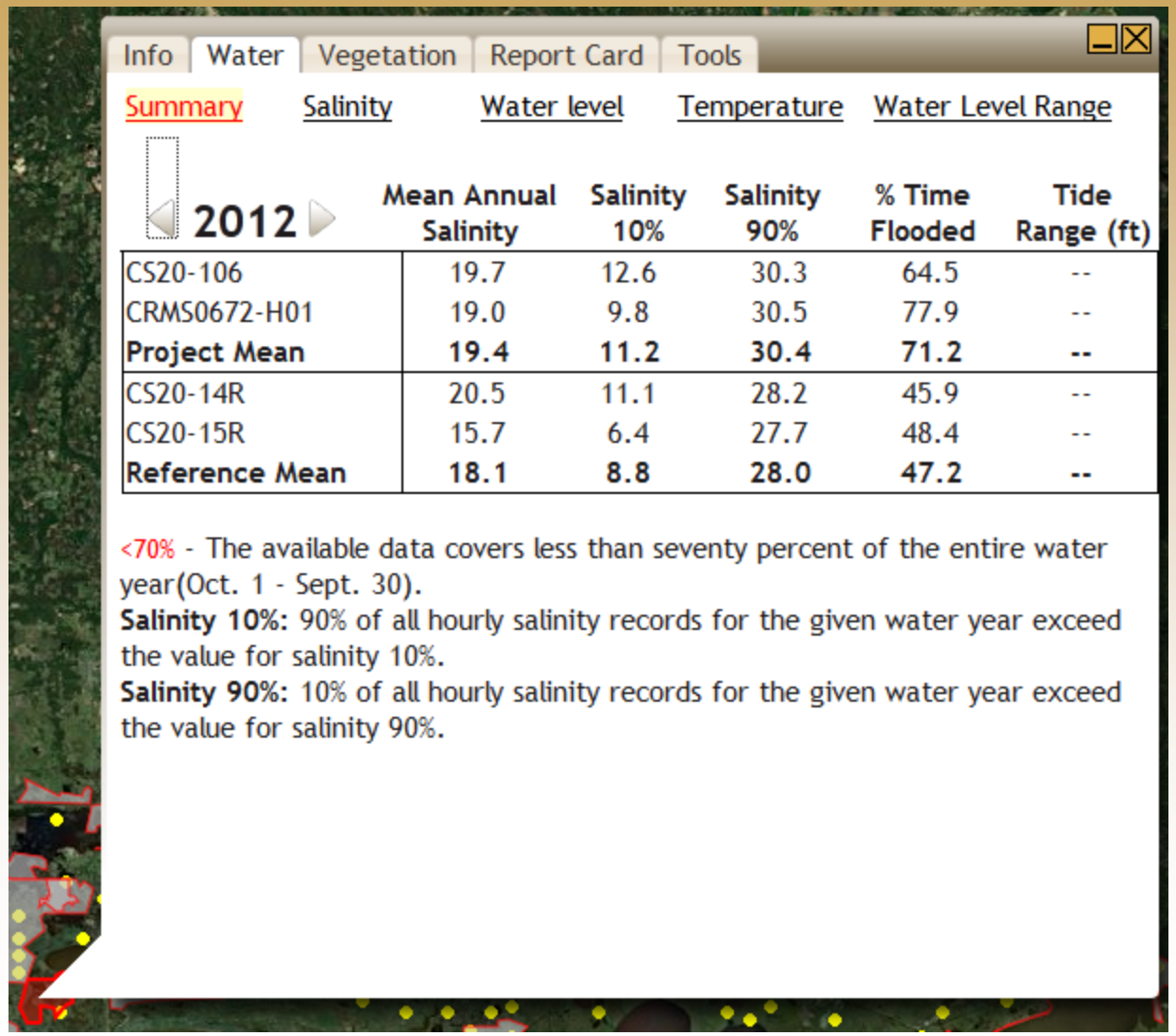
Infrastructure checkbox adds/removes the Project Infrastructure layer to the map and shows the legend.

Project Information Bubble



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.

Project Information Bubble



Info | Water | Vegetation | Report Card | Tools

Summary | Salinity | Water level | Temperature | Water Level Range

2012

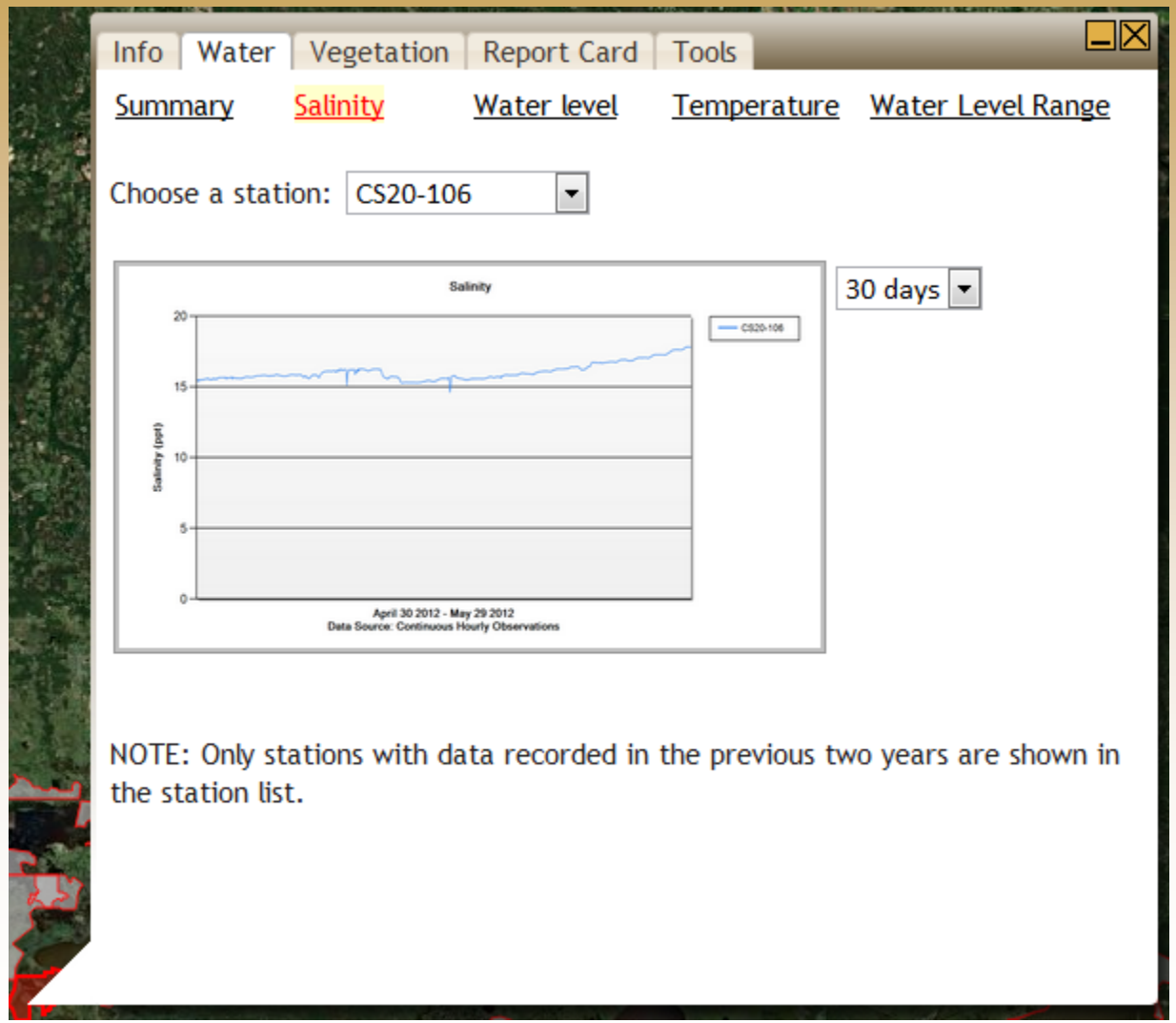
	Mean Annual Salinity	Salinity 10%	Salinity 90%	% Time Flooded	Tide Range (ft)
CS20-106	19.7	12.6	30.3	64.5	--
CRMS0672-H01	19.0	9.8	30.5	77.9	--
Project Mean	**19.4**	**11.2**	**30.4**	**71.2**	**--**
CS20-14R	20.5	11.1	28.2	45.9	--
CS20-15R	15.7	6.4	27.7	48.4	--
Reference Mean	**18.1**	**8.8**	**28.0**	**47.2**	**--**

<70% - The available data covers less than seventy percent of the entire water year(Oct. 1 - Sept. 30).
Salinity 10%: 90% of all hourly salinity records for the given water year exceed the value for salinity 10%.
Salinity 90%: 10% of all hourly salinity records for the given water year exceed the value for salinity 90%.

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

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

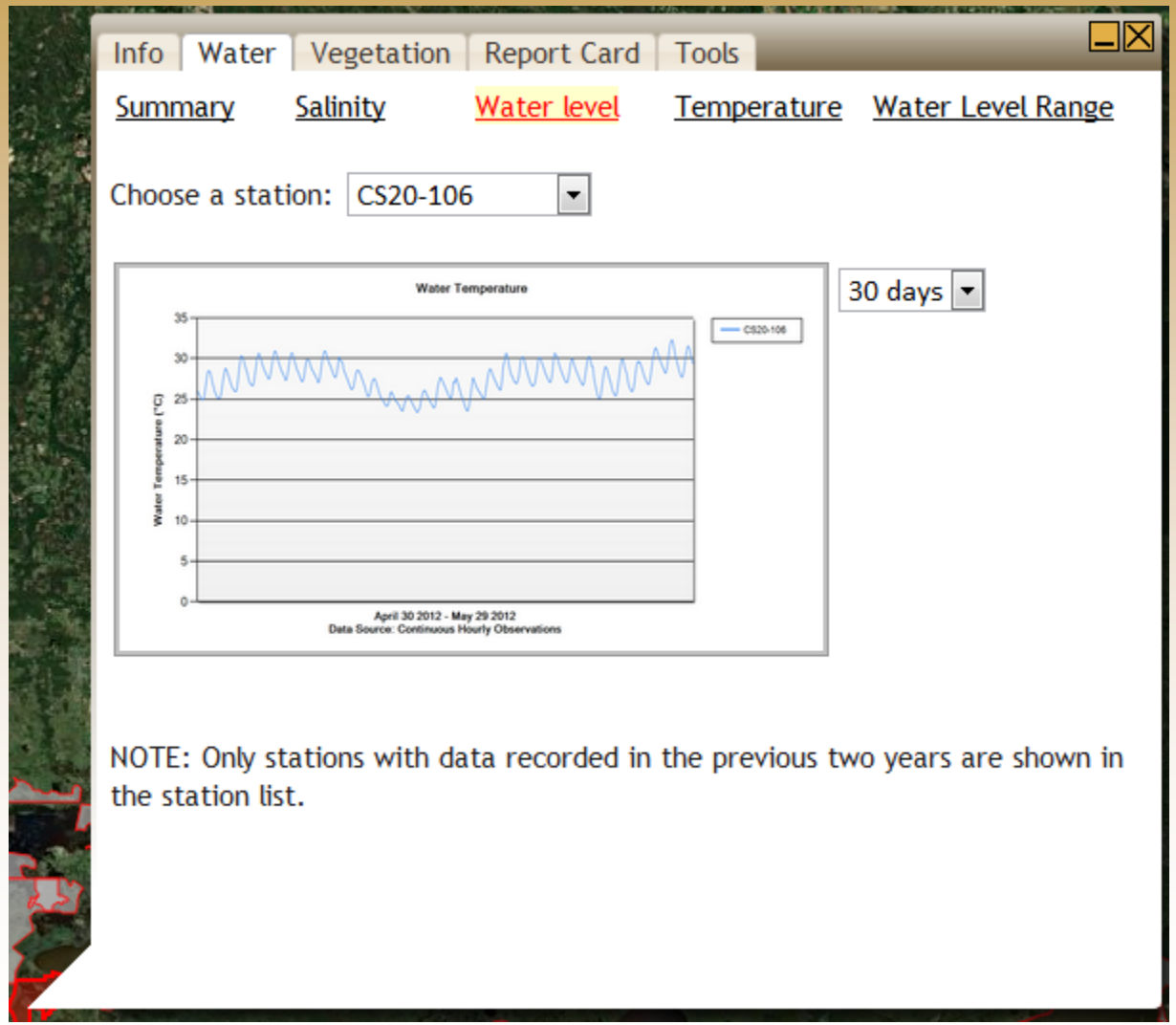
Project Information Bubble



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

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

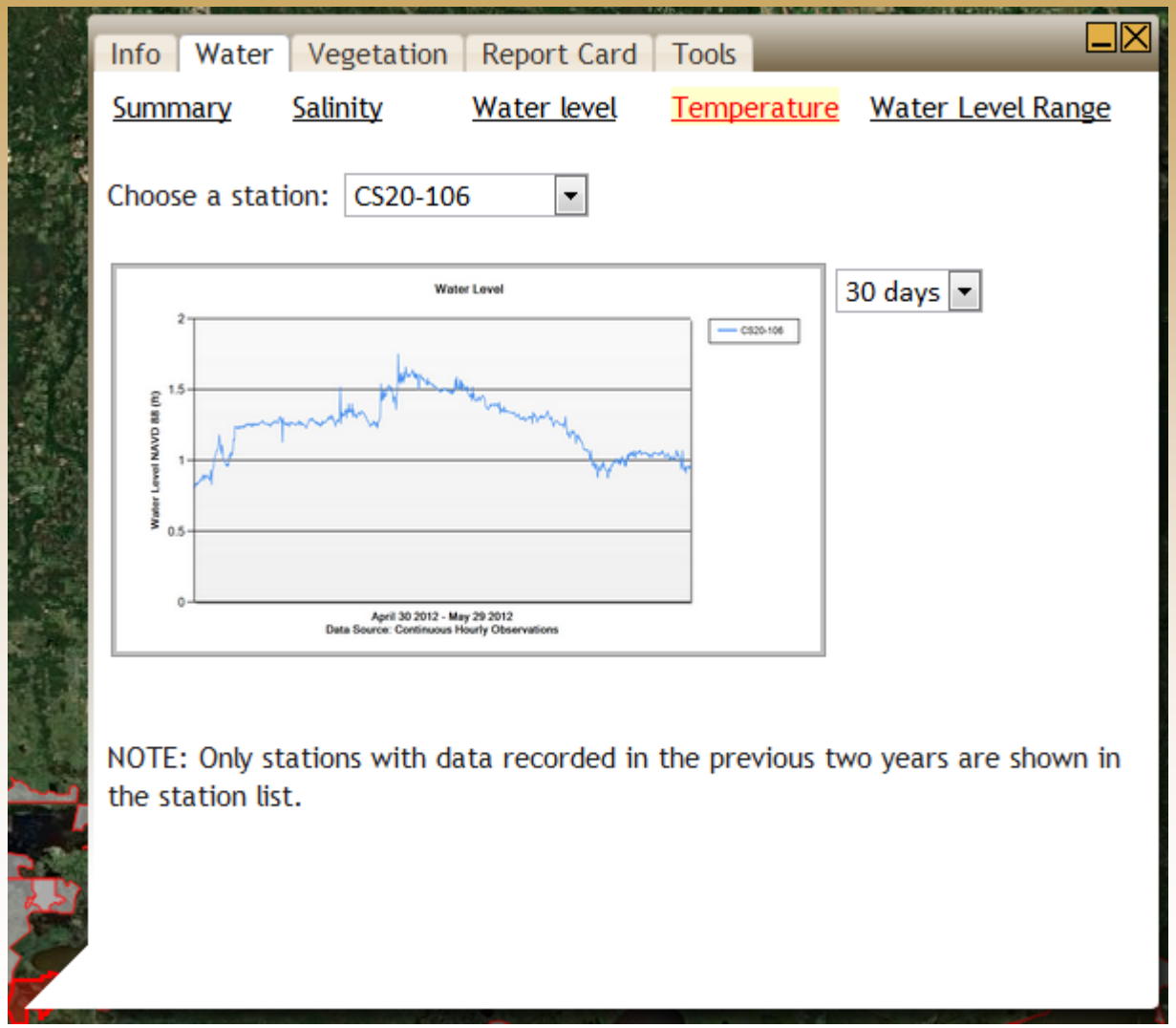
Project Information Bubble



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

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

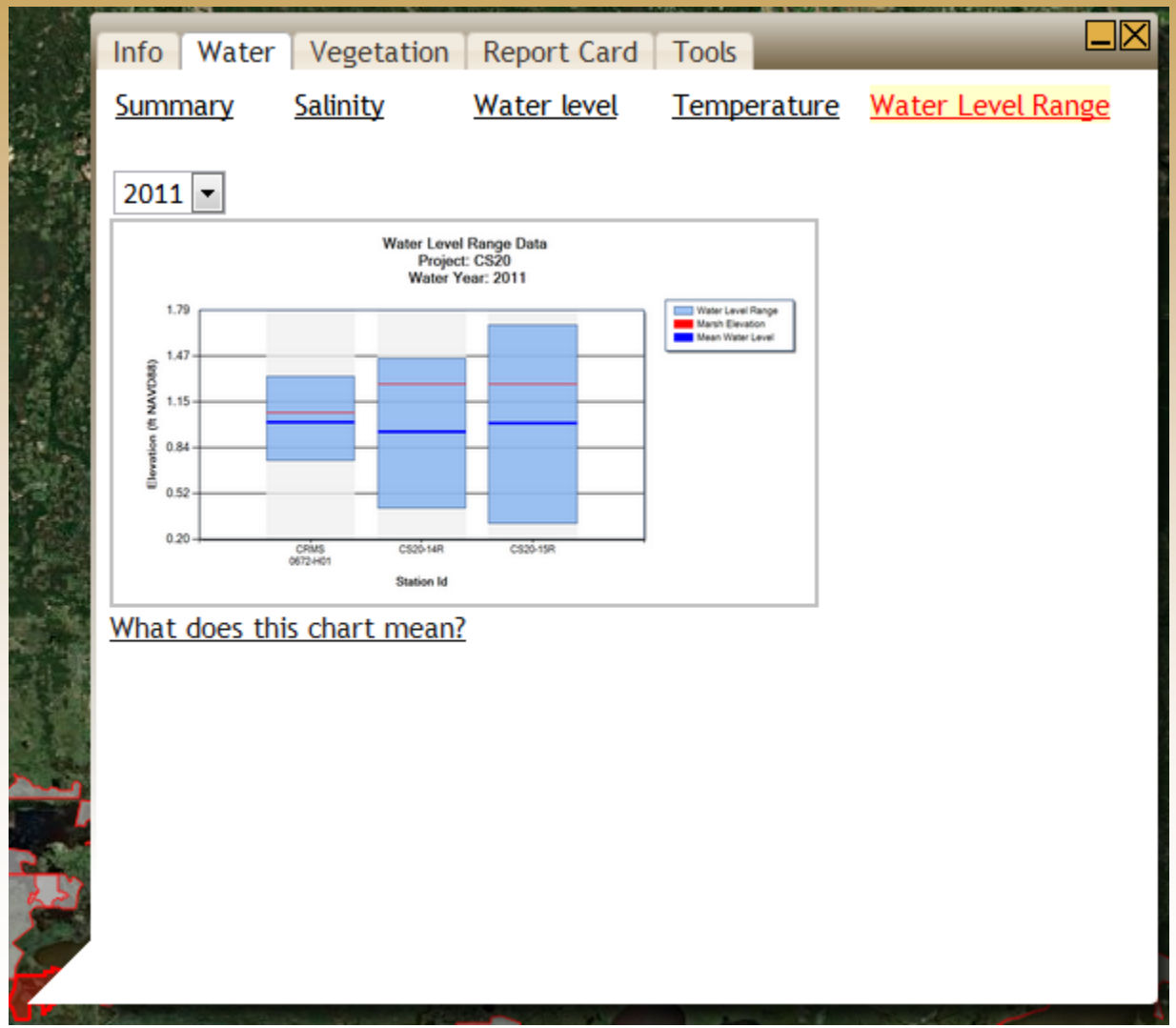
Project Information Bubble



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

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

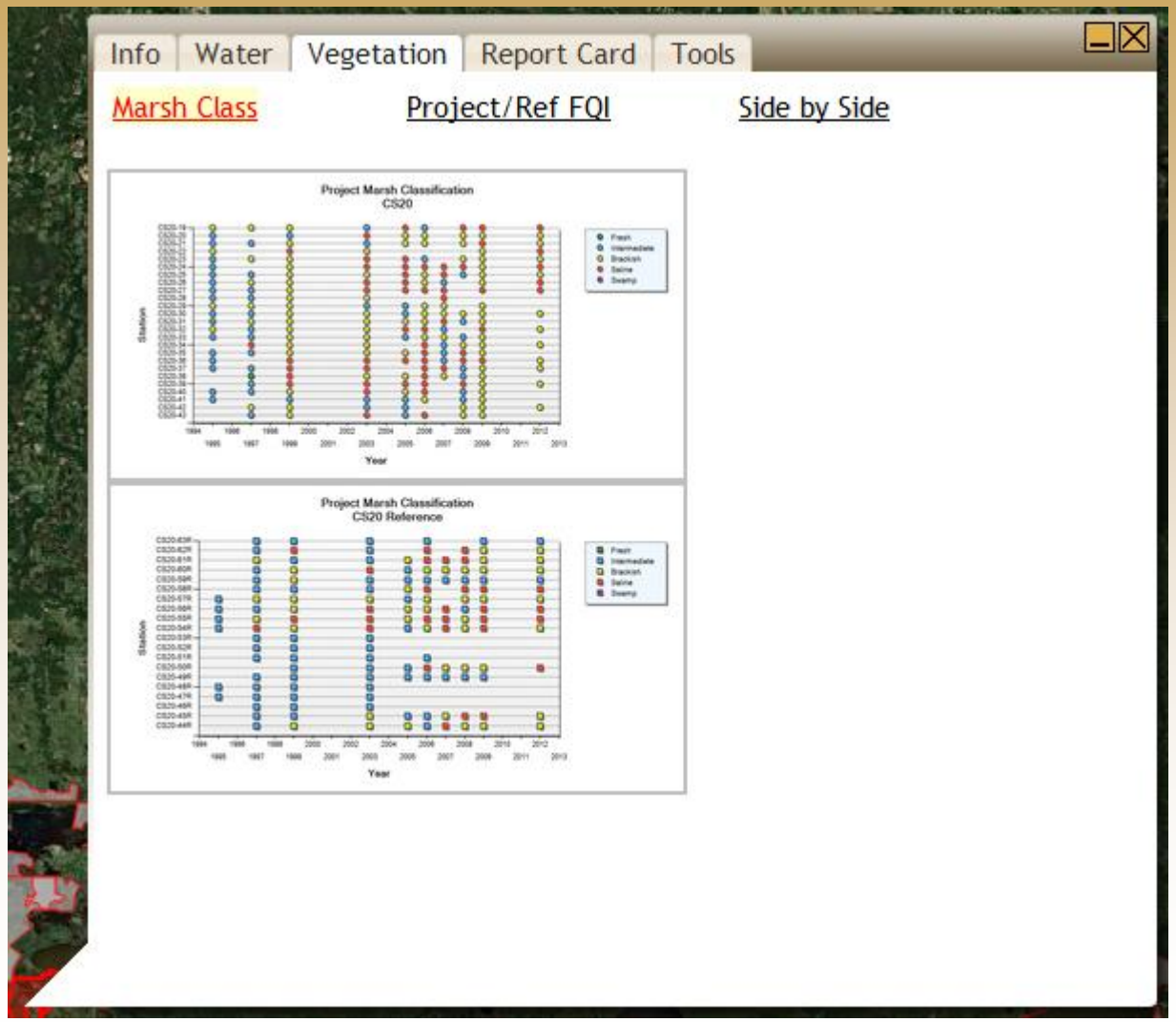
Project Information Bubble



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.

Project Information Bubble



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

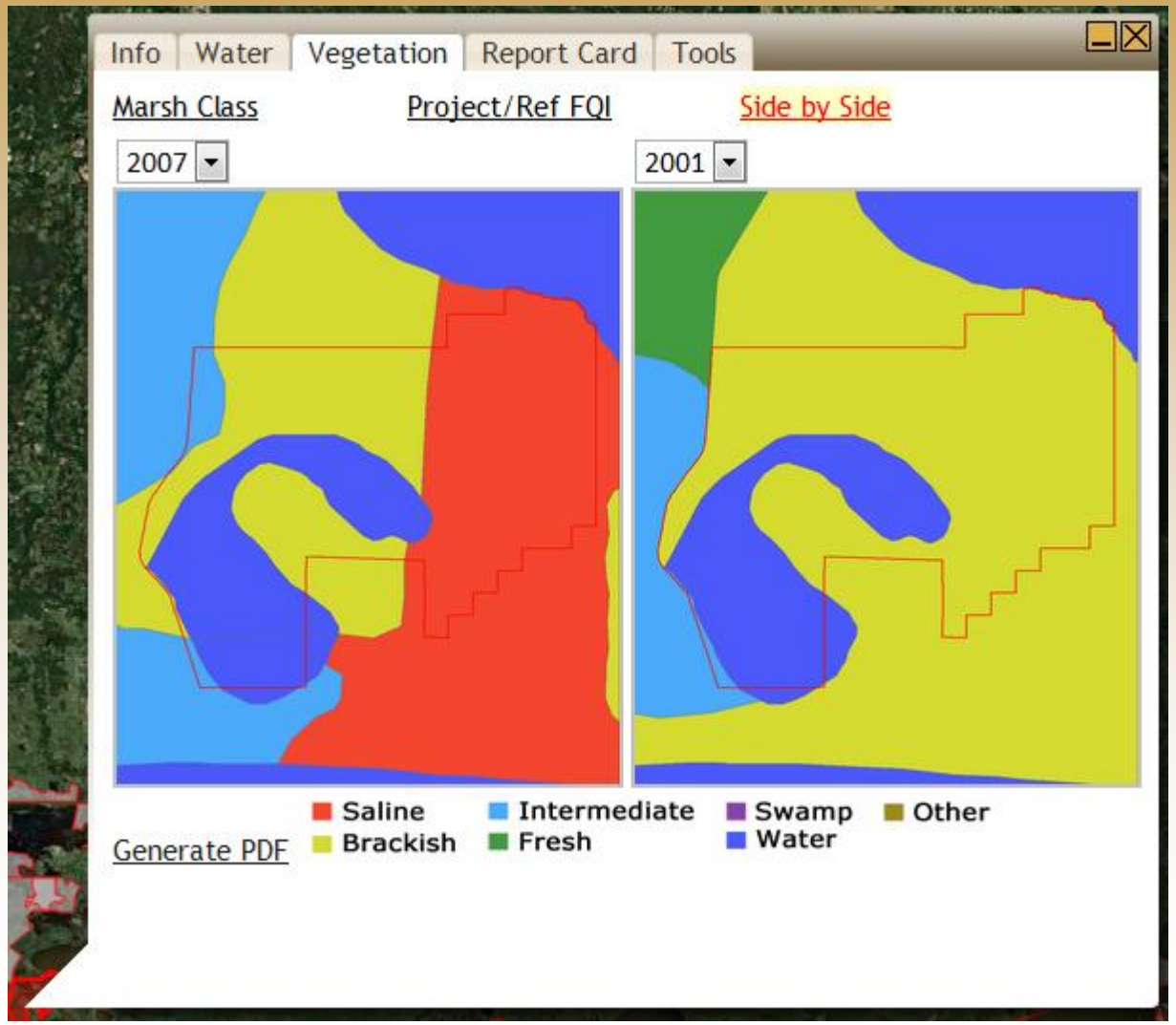
Marsh Class – Charts project and project reference Marsh Classification over multiple years.

Project Information Bubble

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

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

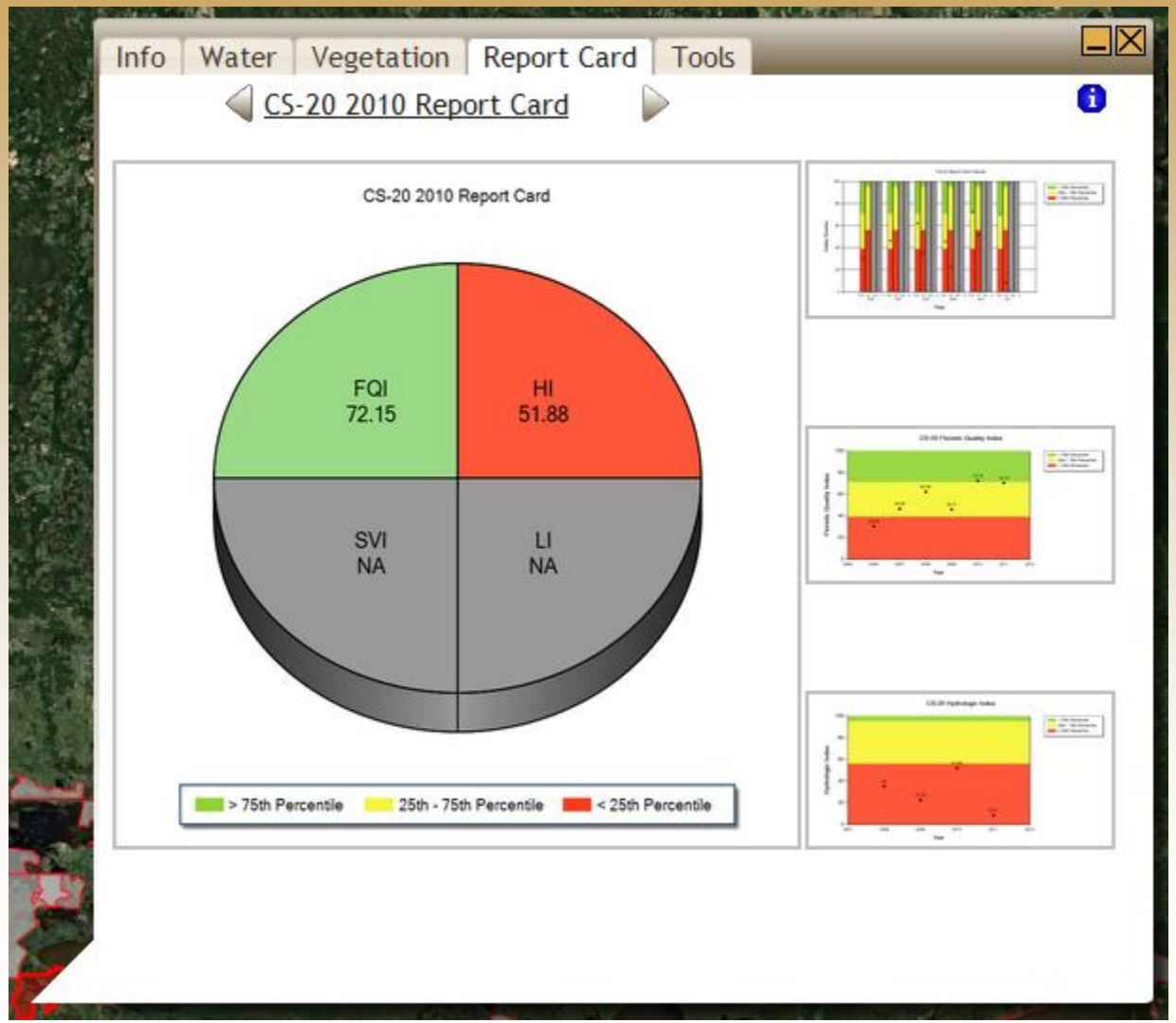
Project Information Bubble



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.

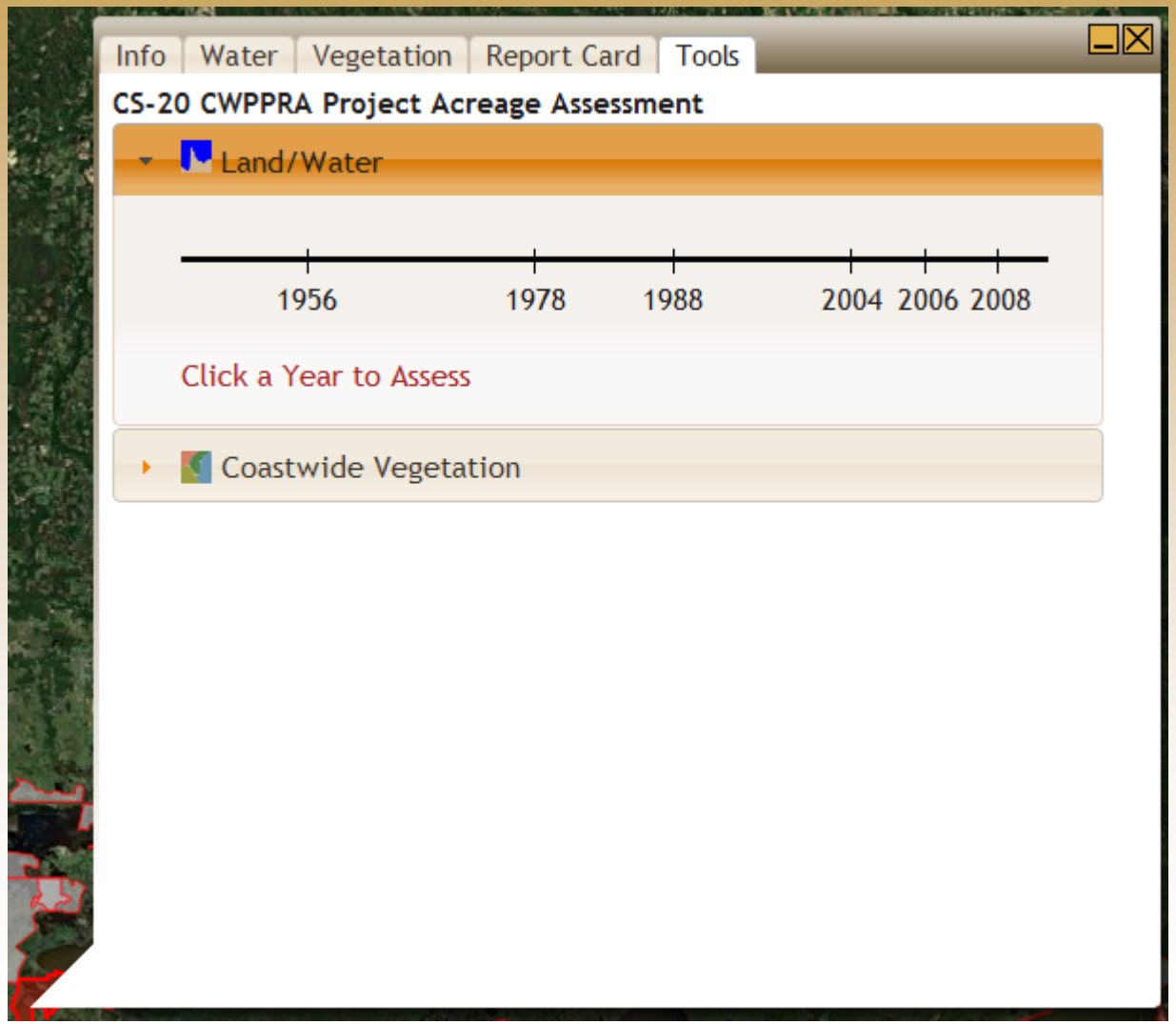
Project Information Bubble



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.

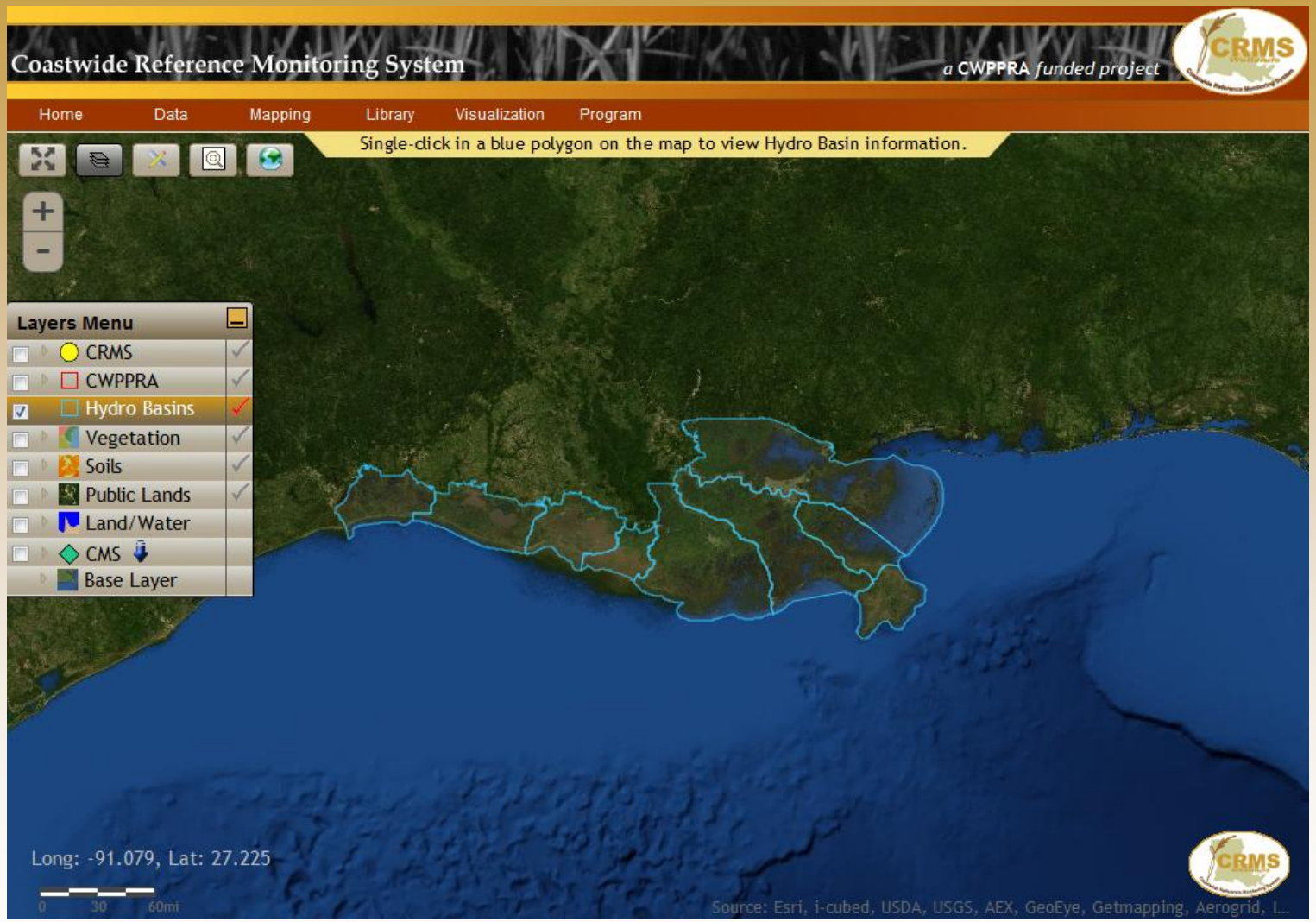
Project Information Bubble



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

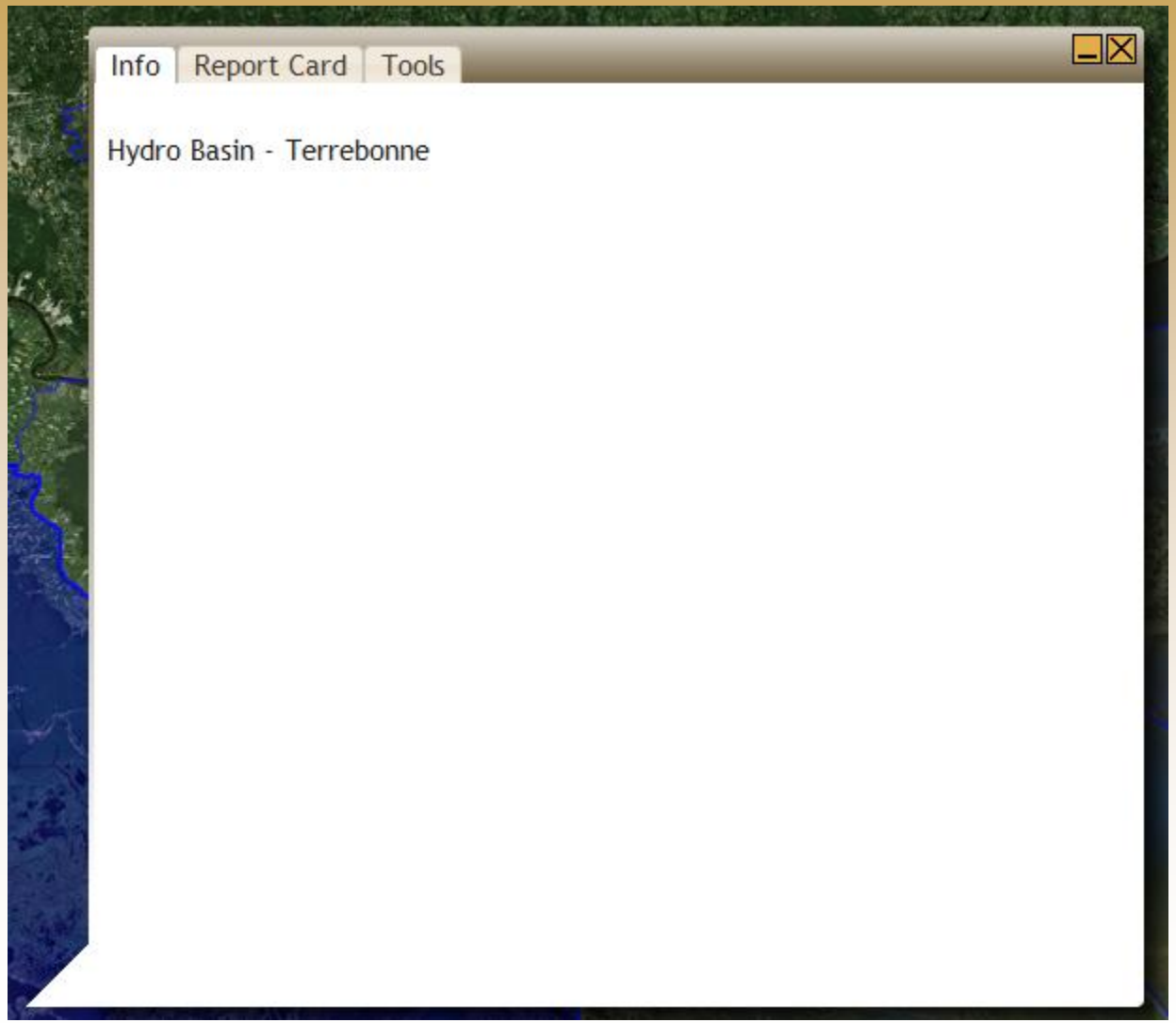
Acreage Assessment – Use the acreage assessment tool to determine acreage breakdowns of the available coastwide vegetation surveys or Land/Water data.

Hydro Basins Active Layer



Hydro Basins Active Layer

Information Bubble

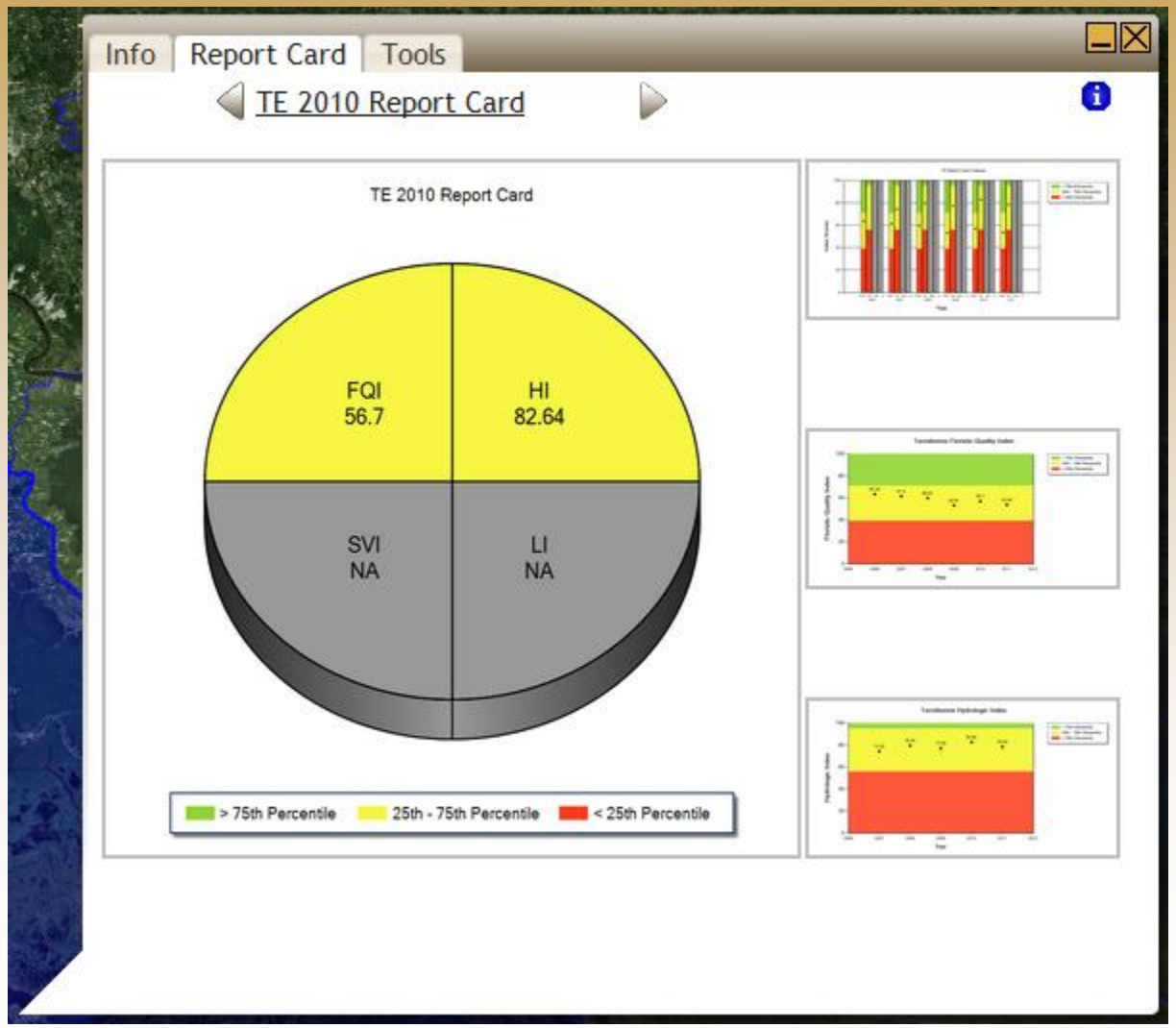


The information bubble appears when a Hydro Basin is clicked. The Basin Info tab is automatically chosen when the bubble pops up on the screen.

More basin level descriptive information will be posted soon….

Hydro Basins Active Layer

Information Bubble

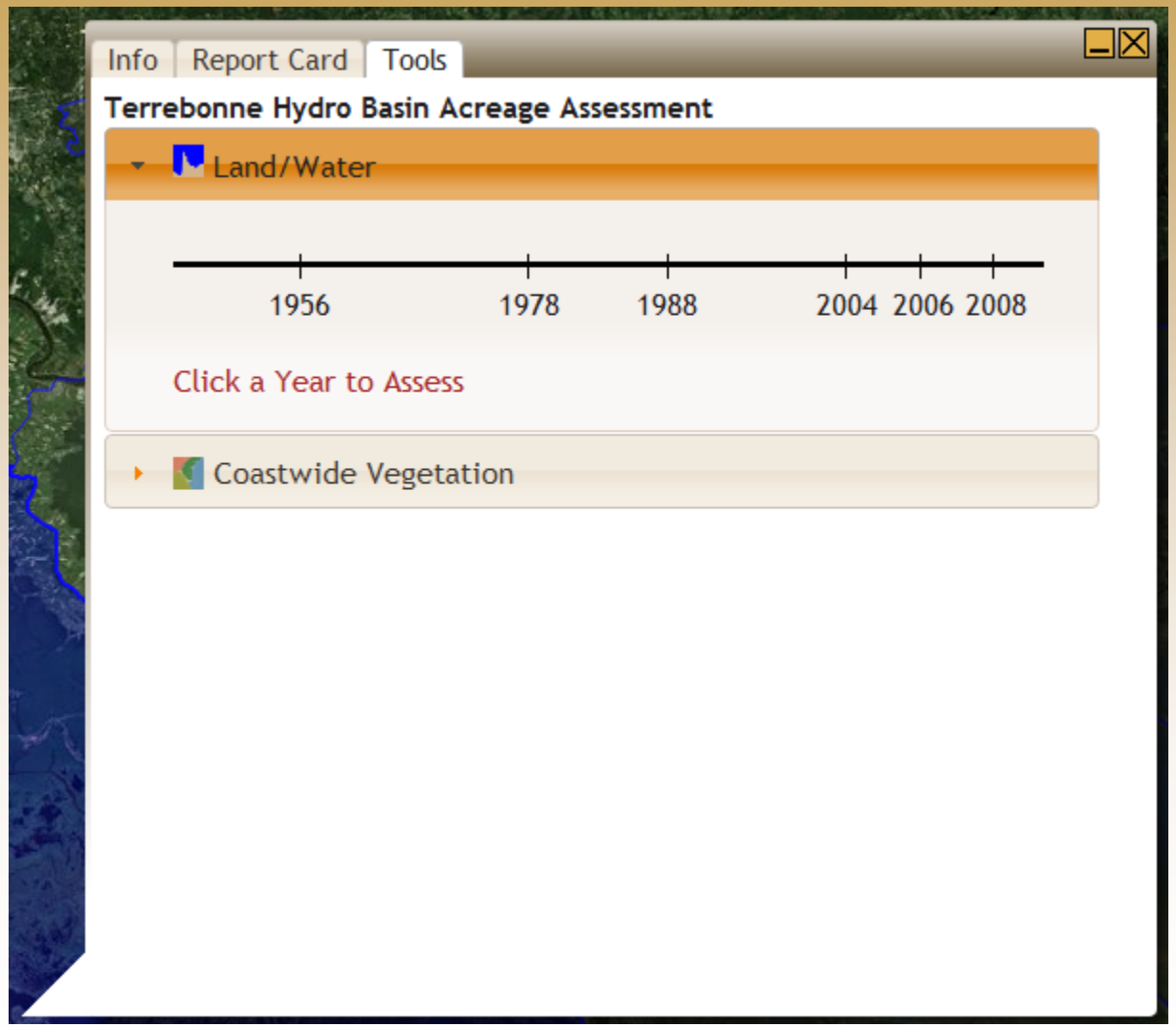


The Report Card tab contains all report card information for the selected basin.

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

Hydro Basins Active Layer

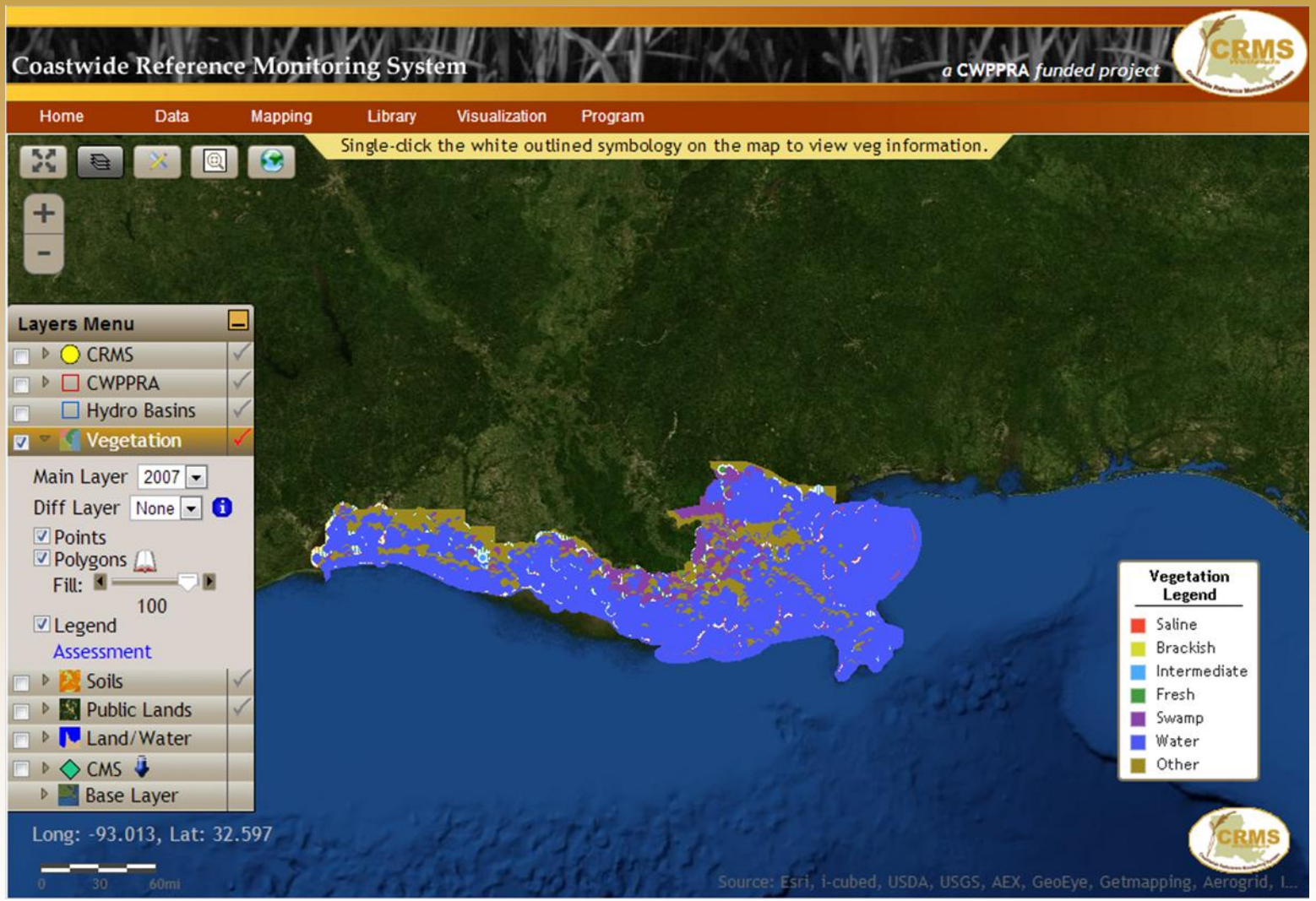
Information Bubble



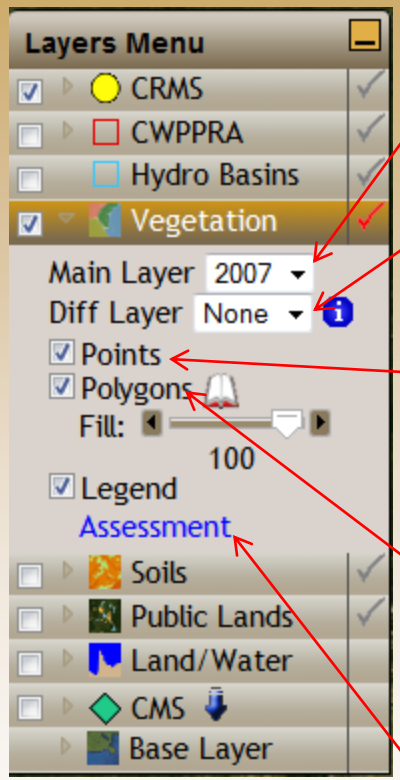
The Tools tab lets you do an Acreage Assessment on the selected basin.

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.

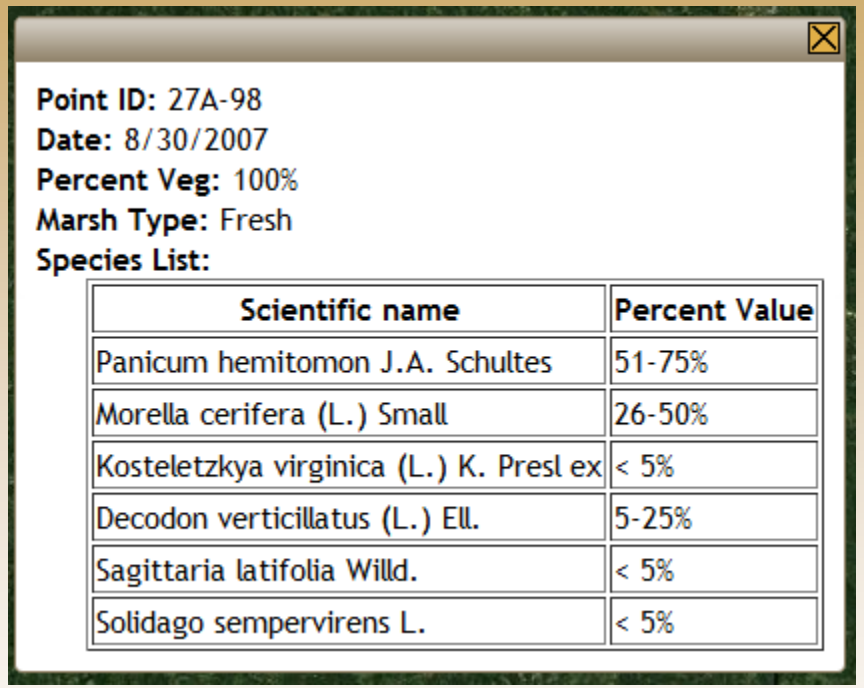
Diff Year selects the secondary polygon layer on the map.

Points checkbox adds/removes the Vegetation data points

Polygons 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.

Vegetation Active Layer

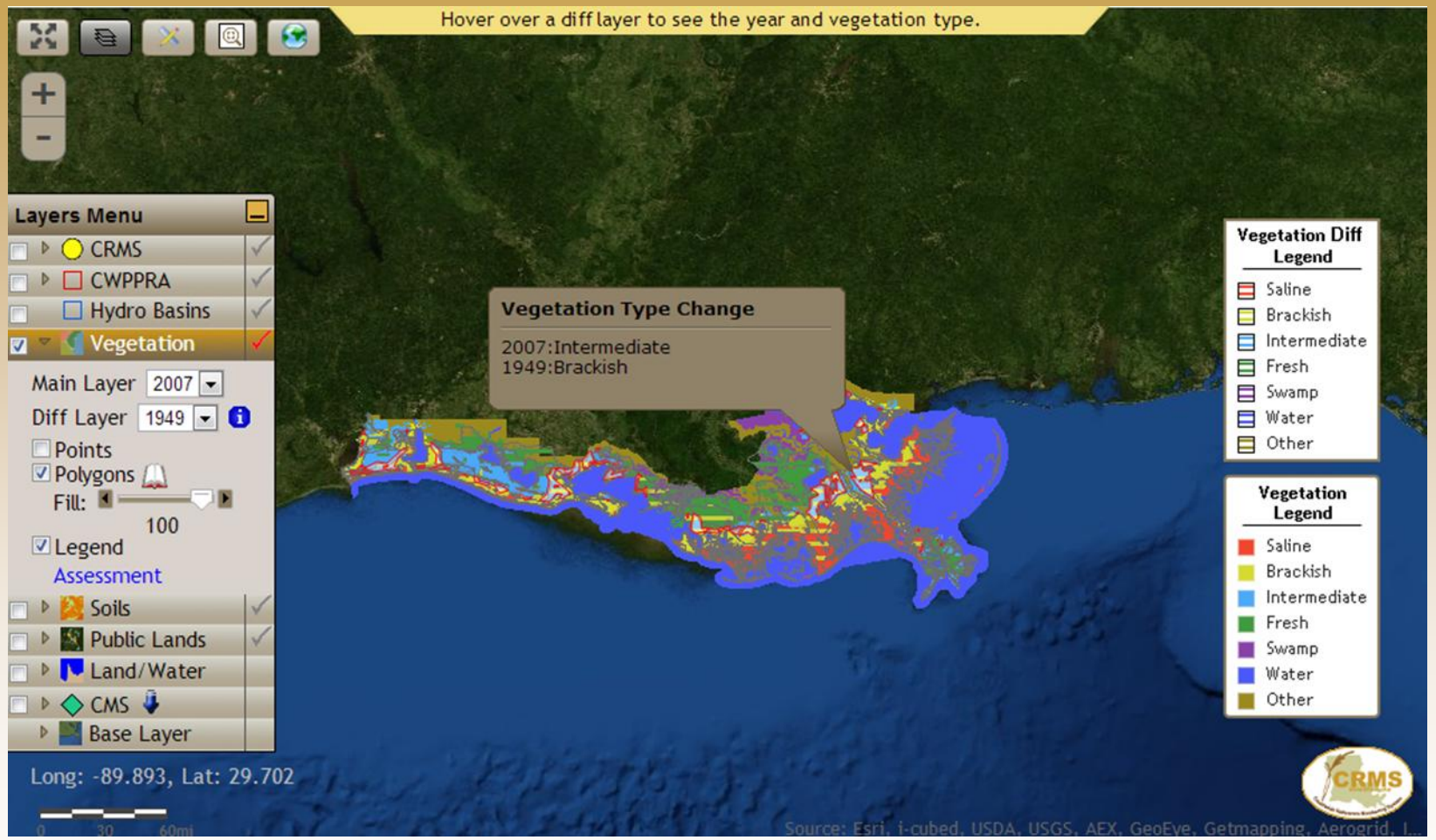


Point ID: 27A-98
Date: 8/30/2007
Percent Veg: 100%
Marsh Type: Fresh
Species List:

Scientific name	Percent Value
Panicum hemitomon J.A. Schultes	51-75%
Morella cerifera (L.) Small	26-50%
Kosteletzkya virginica (L.) K. Presl ex	< 5%
Decodon verticillatus (L.) Ell.	5-25%
Sagittaria latifolia Willd.	< 5%
Solidago sempervirens L.	< 5%

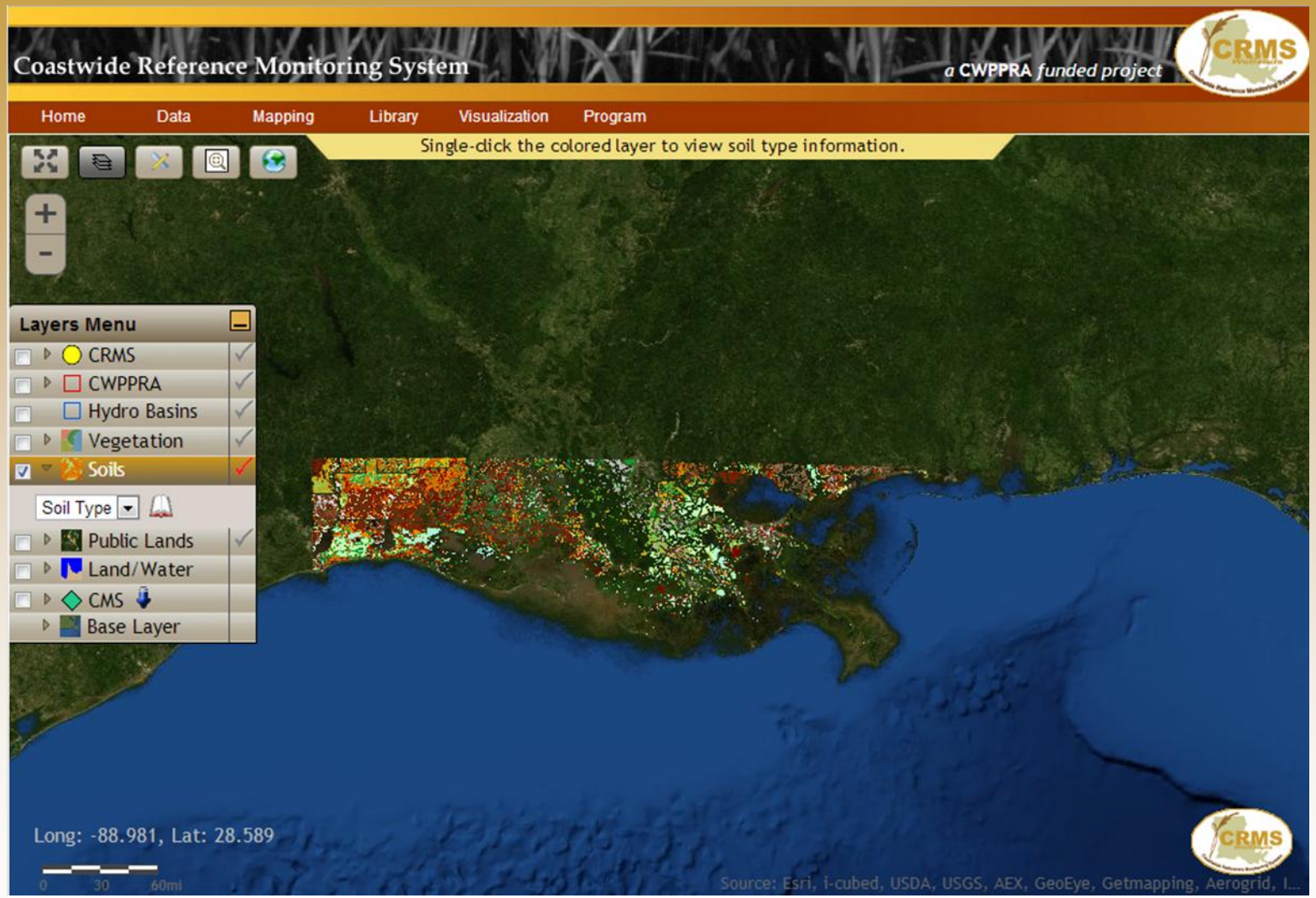
If “Points” is checked, the information on a vegetation data point is shown when clicked.

Vegetation Active Layer



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

Soils Active Layer



Soils Active Layer

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

United States Department of Agriculture
NRCS Natural Resources Conservation Service

Soils

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- Soil Geography Hierarchy Diagrams
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Description of Soil Survey Geographic (SSURGO) Database

The SSURGO database contains information about soil as collected by the National Cooperative Soil Survey over the course of a century. The information can be displayed in tables or as maps and is available for most areas in the United States and the Territories, Commonwealths, and Island Nations served by the USDA-NRCS. The information was gathered by walking over the land and observing the soil. Many soil samples were analyzed in laboratories. The maps outline areas called map units. The map units describe soils and other components that have unique properties, interpretations, and productivity. The information was collected at scales ranging from 1:12,000 to 1:63,360. More details were gathered at a scale of 1:12,000 than at a scale of 1:63,360. The mapping is intended for natural resource planning and management by landowners, townships, and counties. Some knowledge of soils data and map scale is necessary to avoid misunderstandings.

The maps are linked in the database to information about the component soils and their properties for each map unit. Each map unit may contain one to three major components and some minor components. The map units are typically named for the major components. Examples of information available from the database include available water capacity, soil reaction, electrical conductivity, and frequency of flooding; yields for cropland, woodland, rangeland, and pastureland; and limitations affecting recreational development, building site development, and other engineering uses.

SSURGO datasets consist of map data, tabular data, and information about how the maps and tables were created. The extent of a SSURGO dataset is a soil survey area, which may consist of a single county, multiple counties, or parts of multiple counties. SSURGO map data can be viewed in the Web Soil Survey or downloaded in ESRI® Shapefile format. The coordinate systems are Geographic. Attribute data can be downloaded in text format that can be imported into a Microsoft® Access® database.

This map requires Acrobat Reader.

Status Map of Soil Surveys Available from the Soil Data Mart (revised daily) (PDF; 1.25 MB)

Metadata

SSURGO/STATSGO2 Structural Metadata and Documentation

Recommended Data Citation

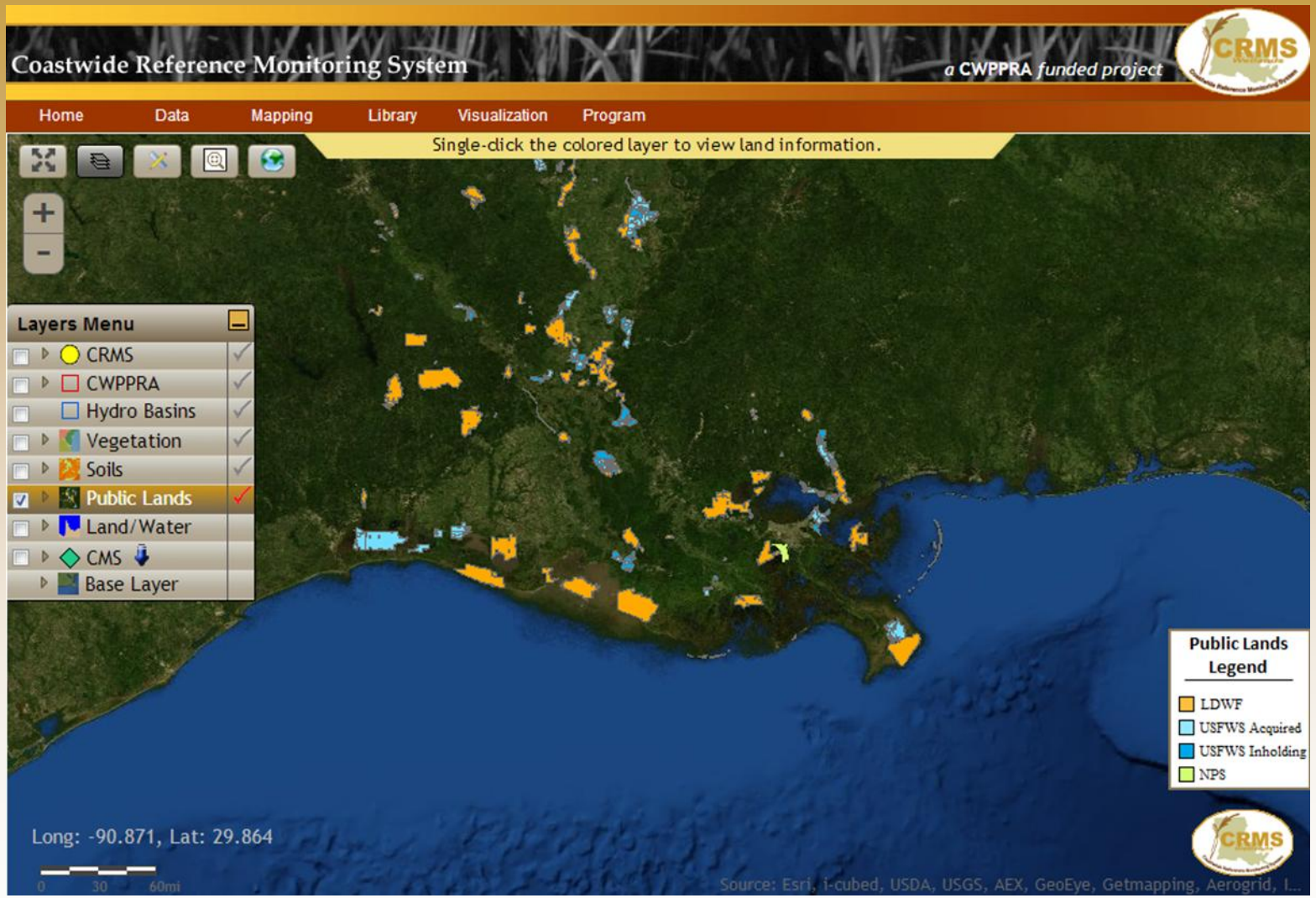
Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for [Survey Area, State]. Available online at http://soildatamart.nrcs.usda.gov. Accessed [month/day/year].

Technical Information

To obtain technical information about the use of soil data, please contact the NRCS State Soil Scientist in your state, or:

Soils Hotline Staff
Telephone: (402) 437-5378 (Steve Speidel) or (402) 437-5379 (Tammy Cheever)

Public Lands Active Layer



Public Lands Active Layer

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

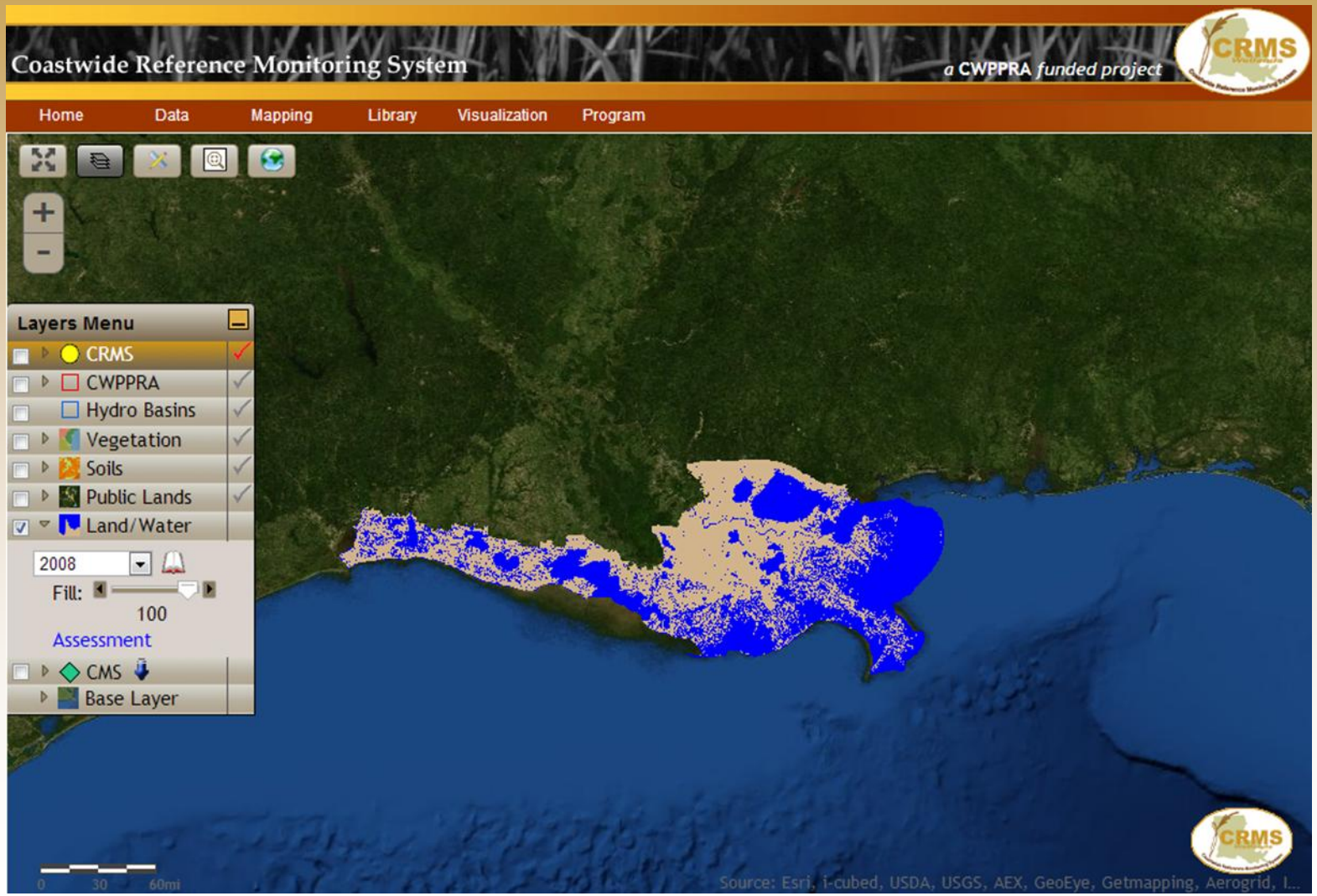
Federal Lands checkbox adds/removes National Park Service and US Fish and Wildlife Service.

Public Lands Active Layer

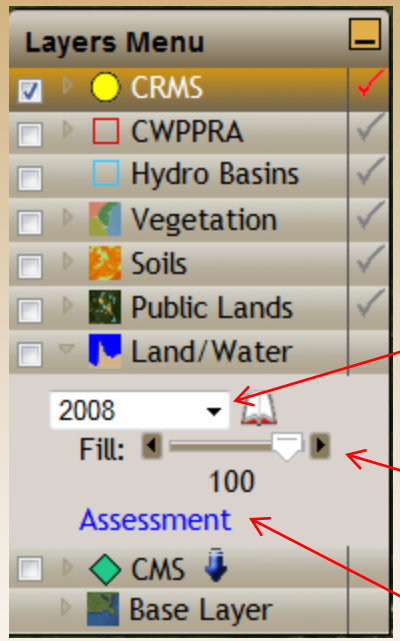
The Public Lands information window pops up when a Public Lands polygon is clicked.

Other Layers

Land/Water



Land/Water



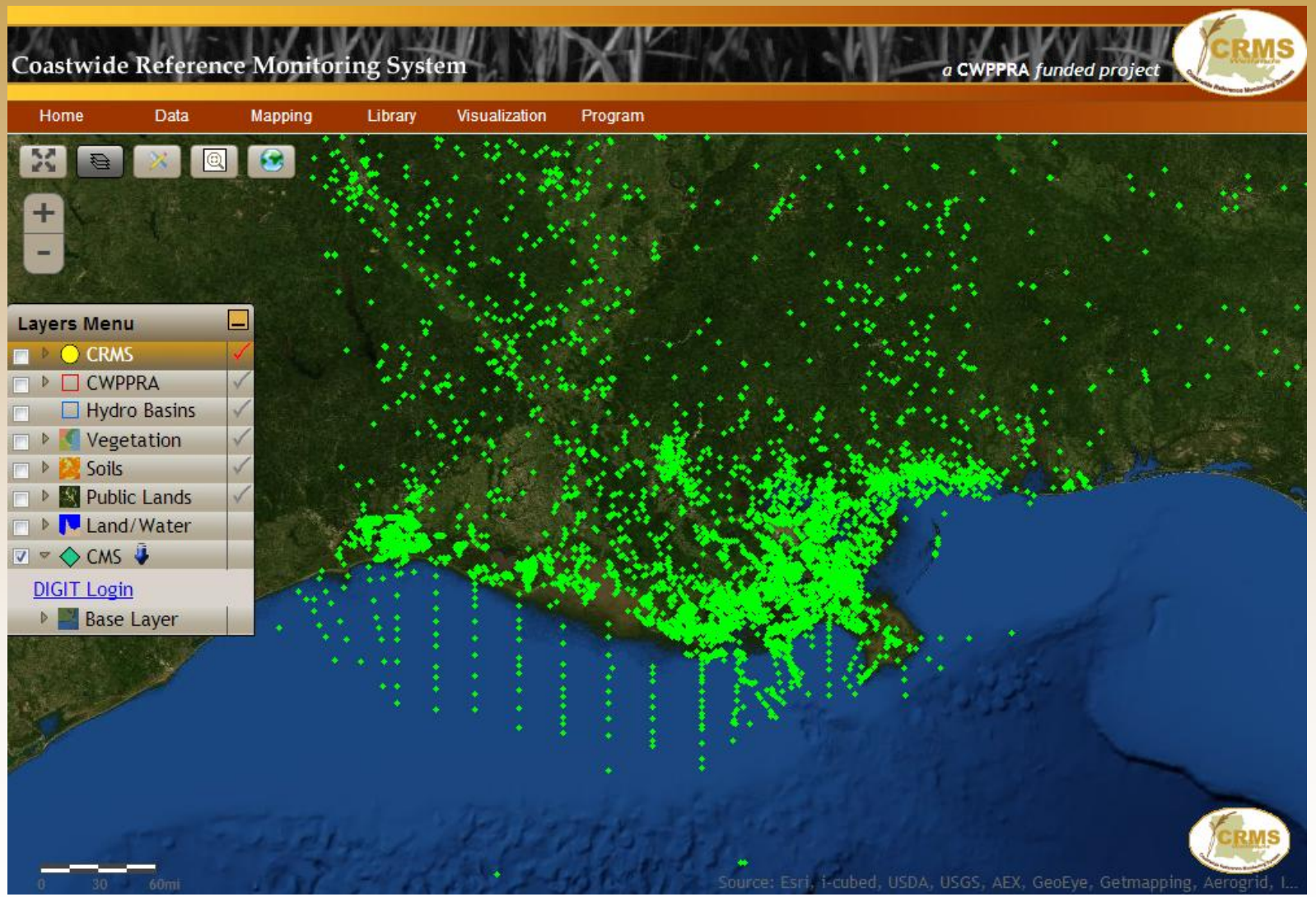
Year selector changes the Land/Water layer's year.

Slider changes the transparency of the layer.

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

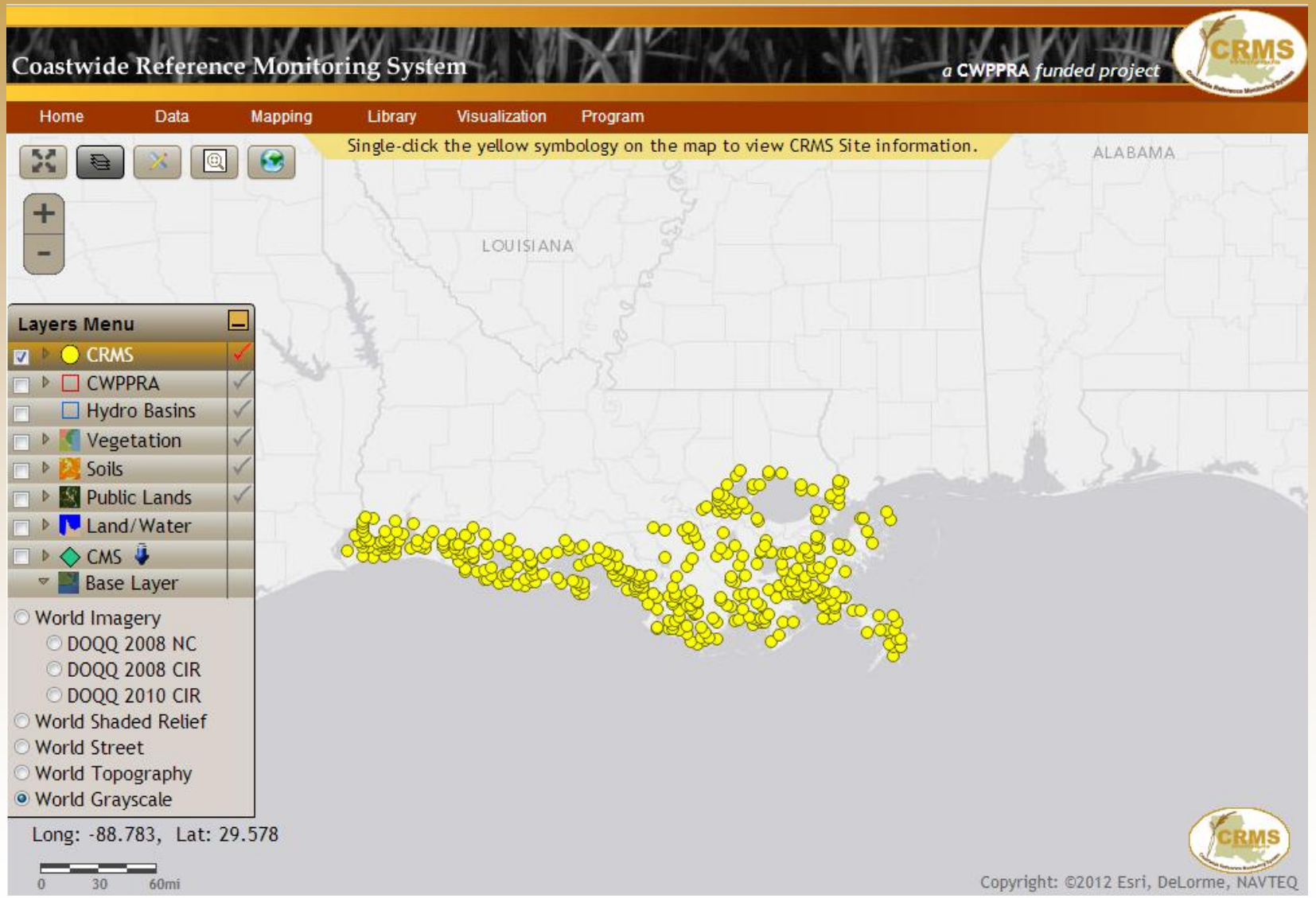
Other Layers

CMS

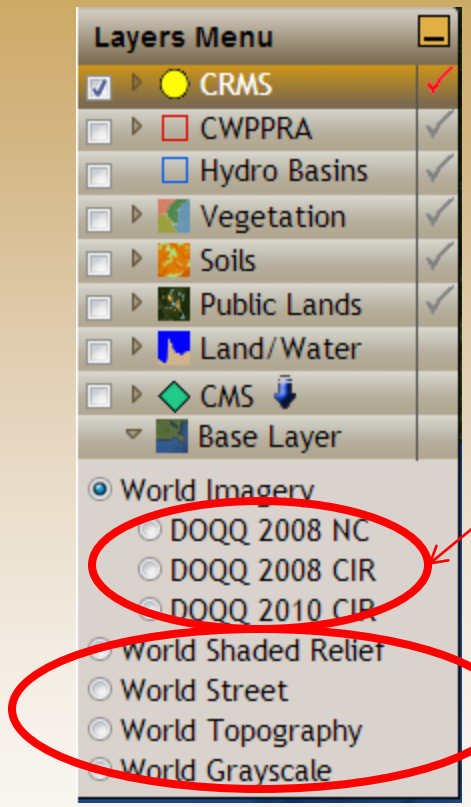


Other Layers

Base Layers



Base Layers



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

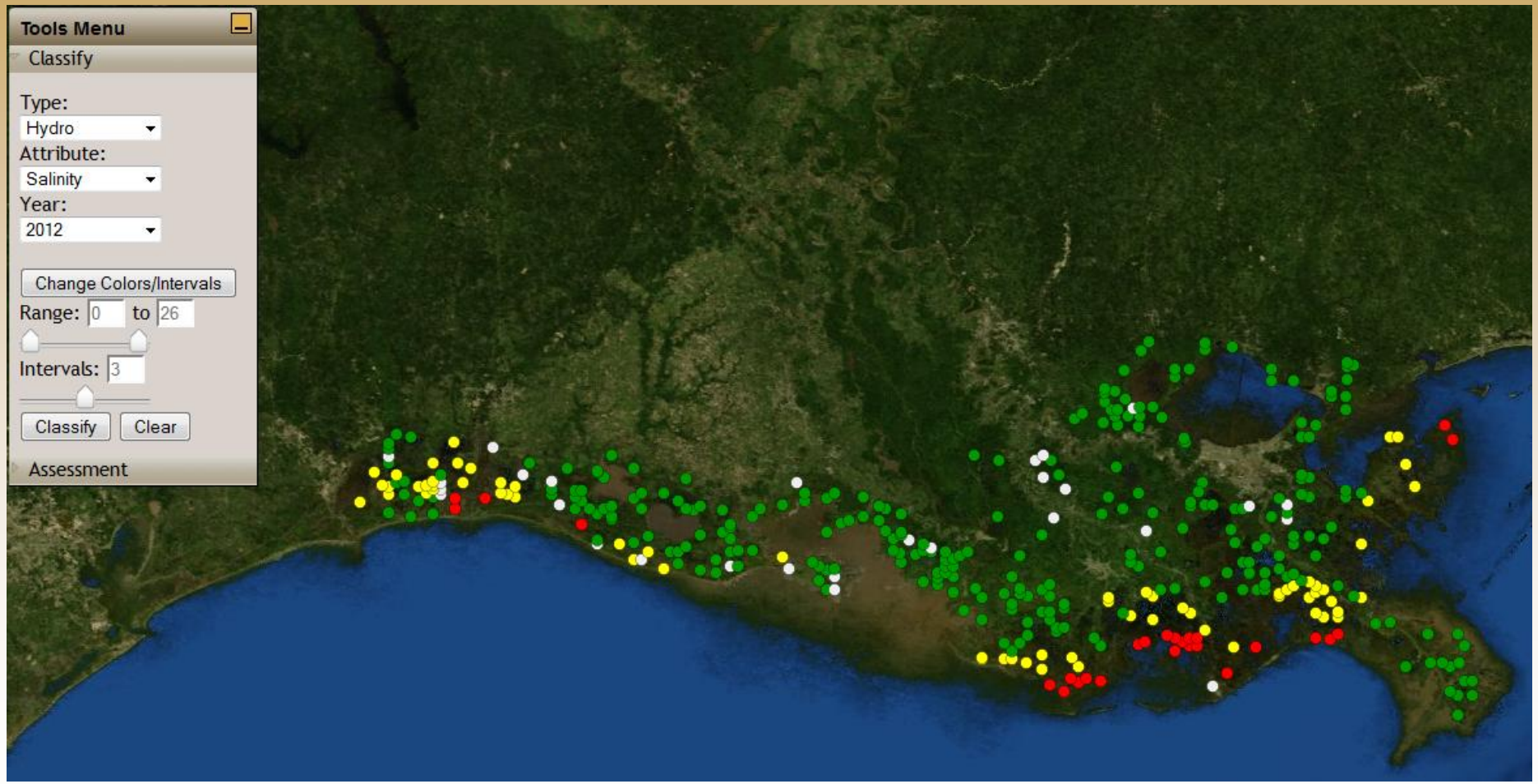
Other radio buttons change the base/background layer of the map.

Classify Tool

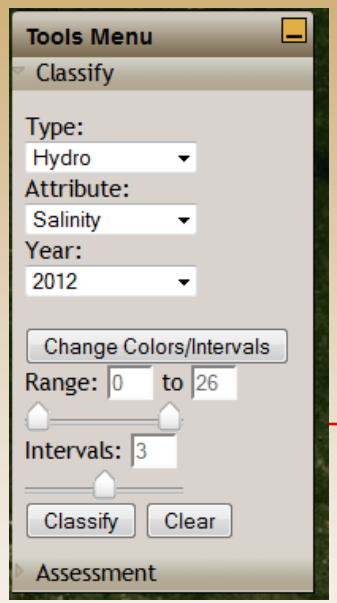
A Type, Attribute, and Year must be chosen to Classify the CRMS sites. All of the Attributes except for the Marsh Classification have a color chooser option.

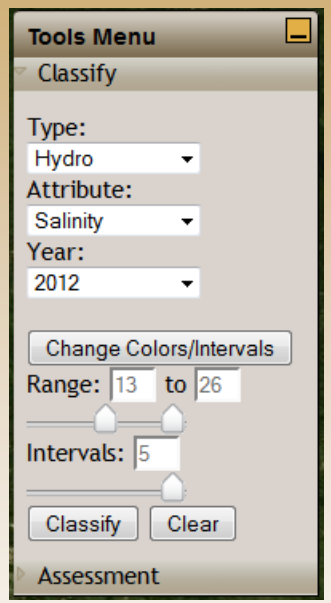
- Vegetation
  - FQI
  - Marsh Classification
- Hydro
  - Hydro Index
  - Salinity
  - Water Level

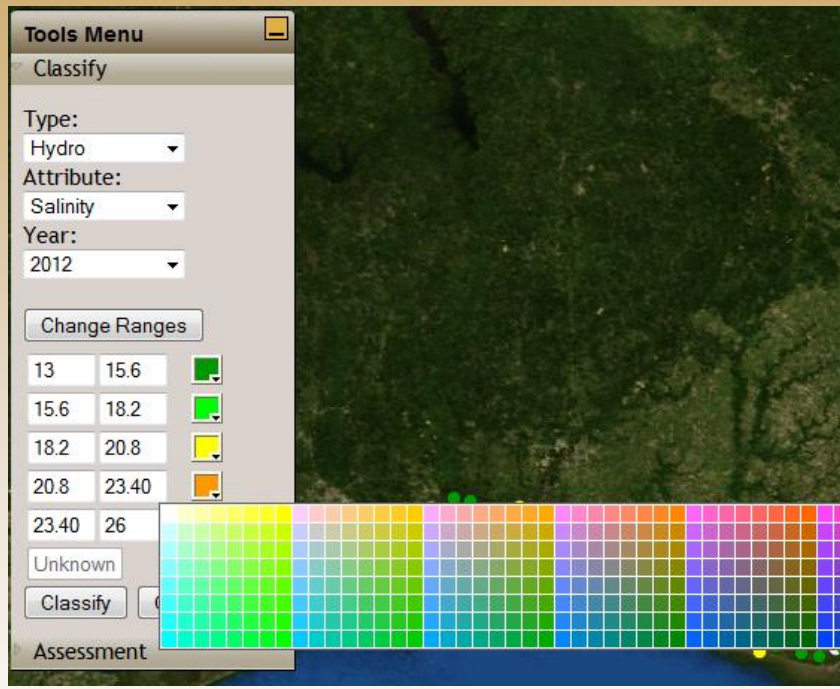
Classify Tool



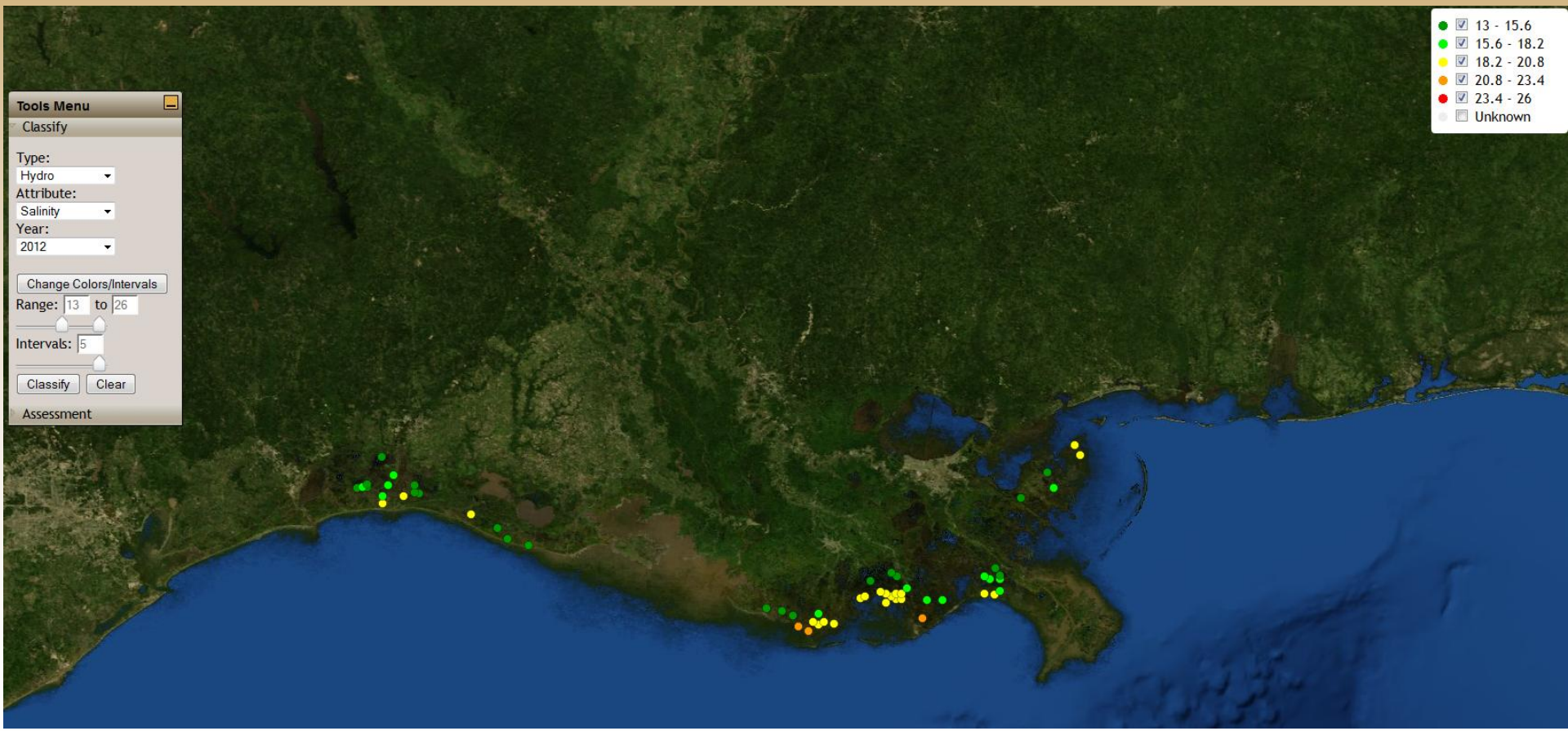
Classify Tool







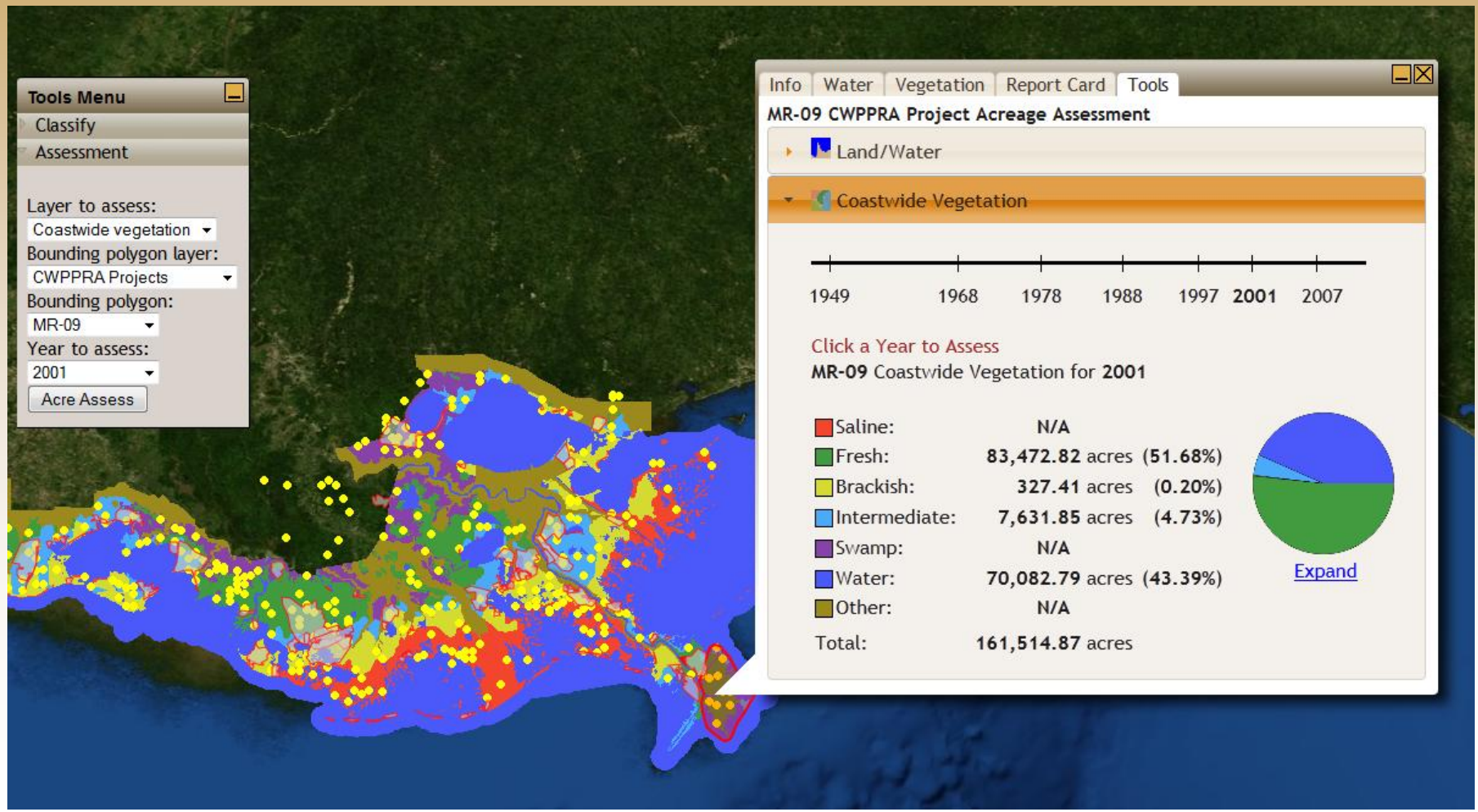
Classify Tool



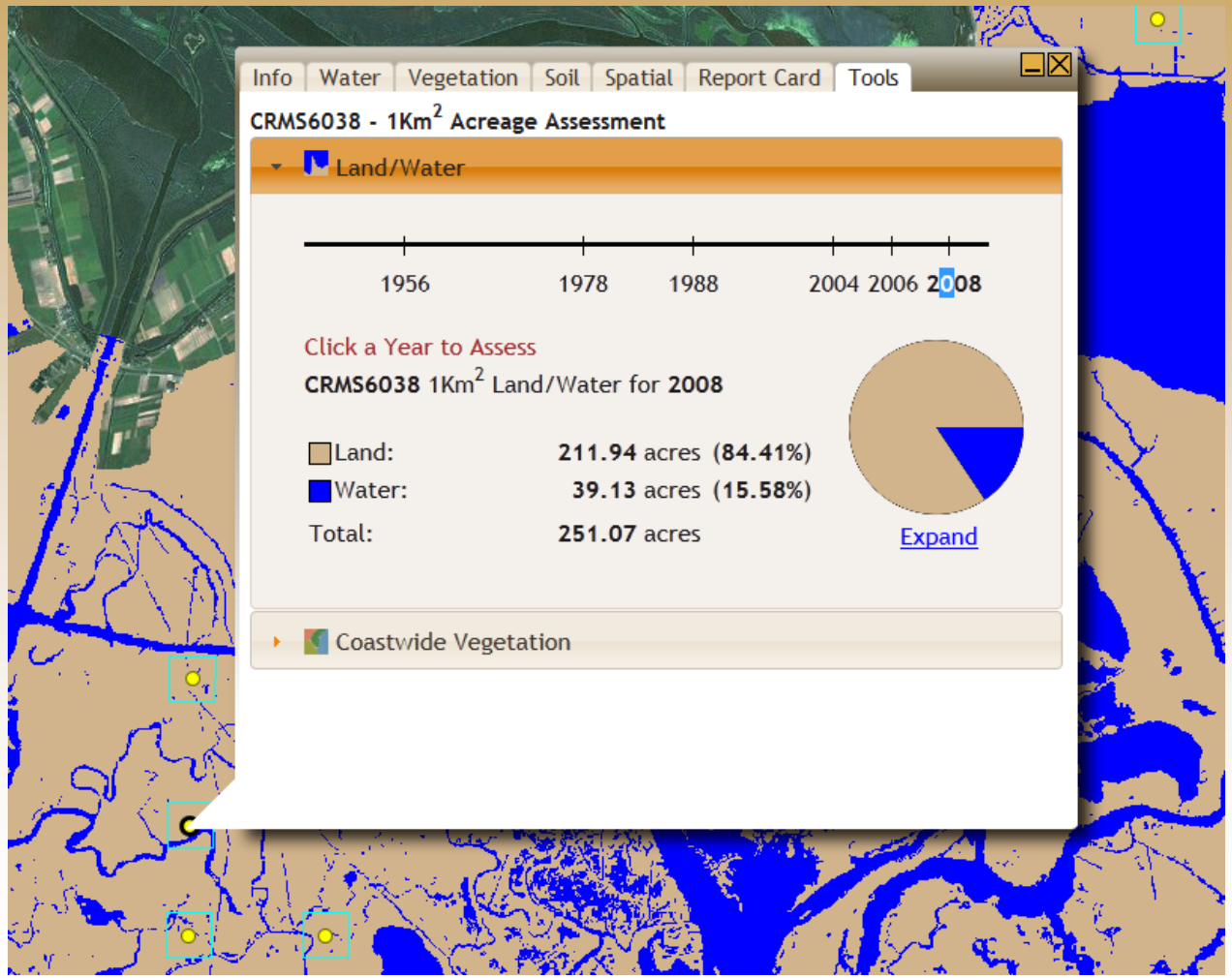
Acreage Assessment Tool

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.

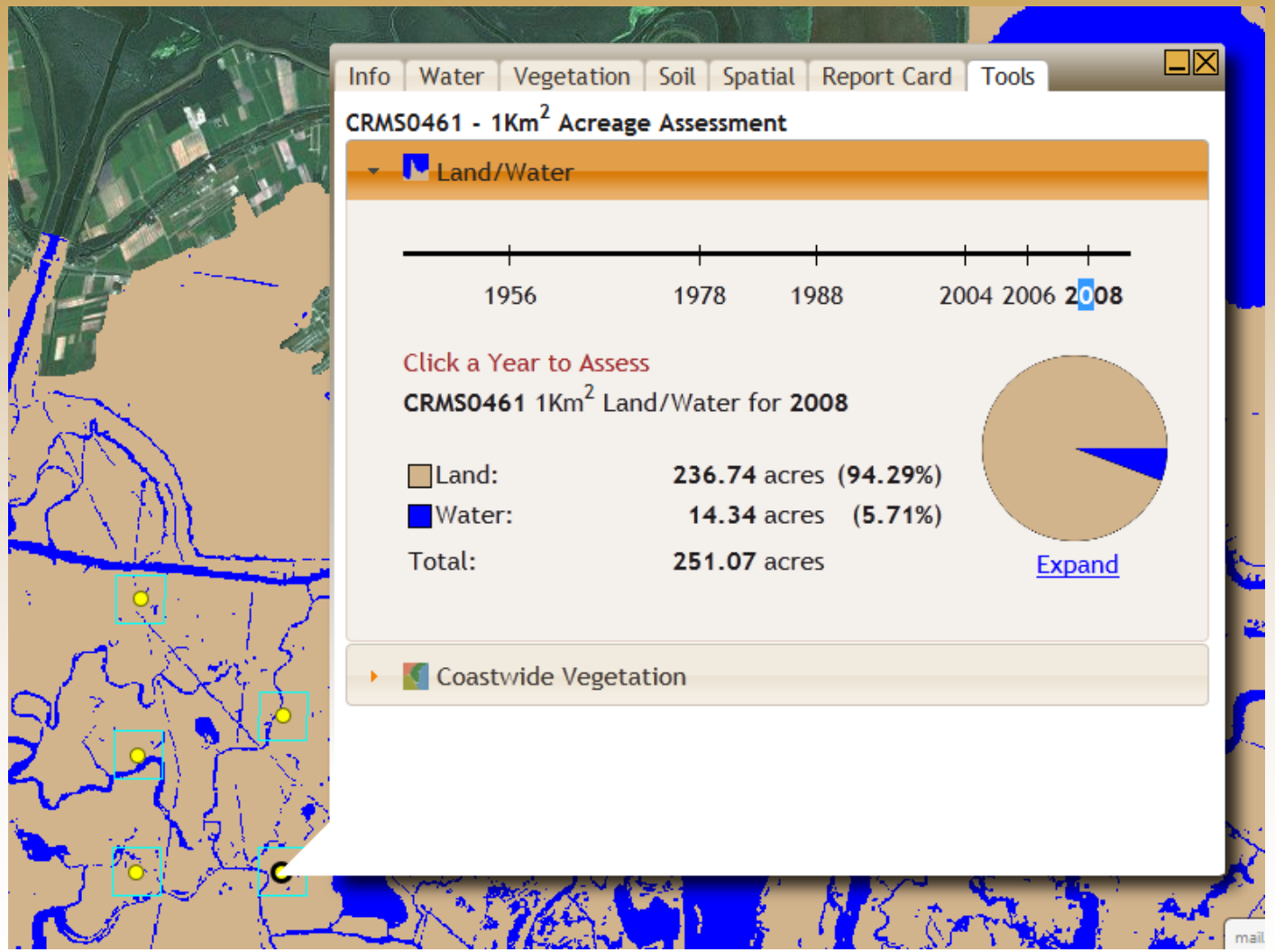
Acreage Assessment Tool



Tools Tab Persistence



Tools Tab Persistence



Questions?

Web Site: http://www.lacoast.gov/crms

piazzas@usgs.gov