



# Florida Keys National Marine Sanctuary Water Quality Protection Program Data Integration System

- *Corals (CREMP)*
- *Seagrasses*
- *Water Quality*
- *Special Projects*



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# Presentation Summary

- STORET Update
- Website status
- Future Plans



# STORET

- **STO**rage and **RET**rieval (epa.gov)
- FWRI has completed a ‘technical’ User Manual to explain complexities regarding raw data received from field offices and the processes needed to prepare data for STORET input. This is intended to supplement the user manuals that accompany the FDEP STORET system, and is an internal document.

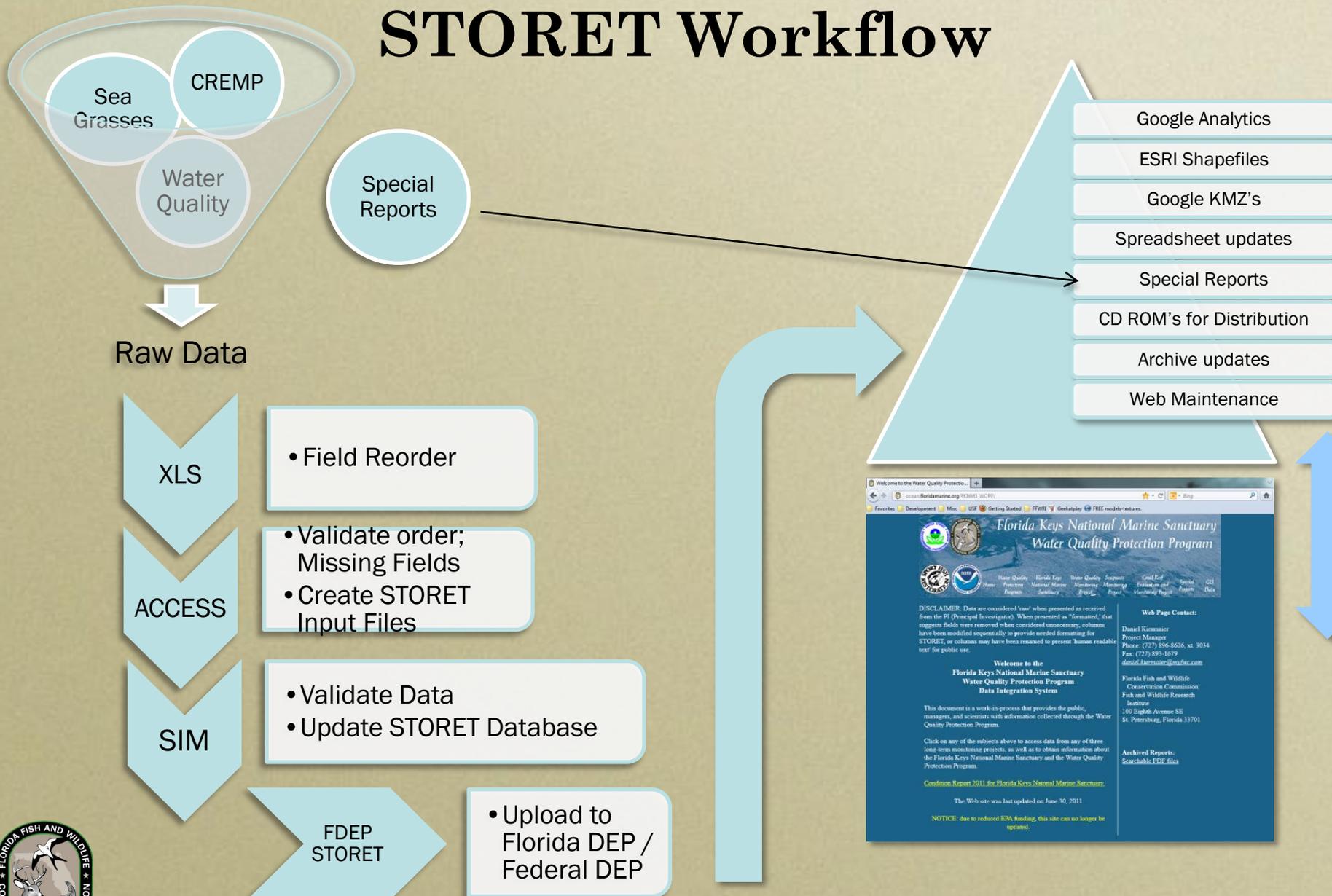


# STORET

- FWRI continues to upload monitoring programs' data to Florida DEP and STORET National Warehouse.
- FWRI works with Florida DEP as needed to edit/reformat WQPP data so they may be used to calculate Total Maximum Daily Loads (TMDLs).



# STORET Workflow



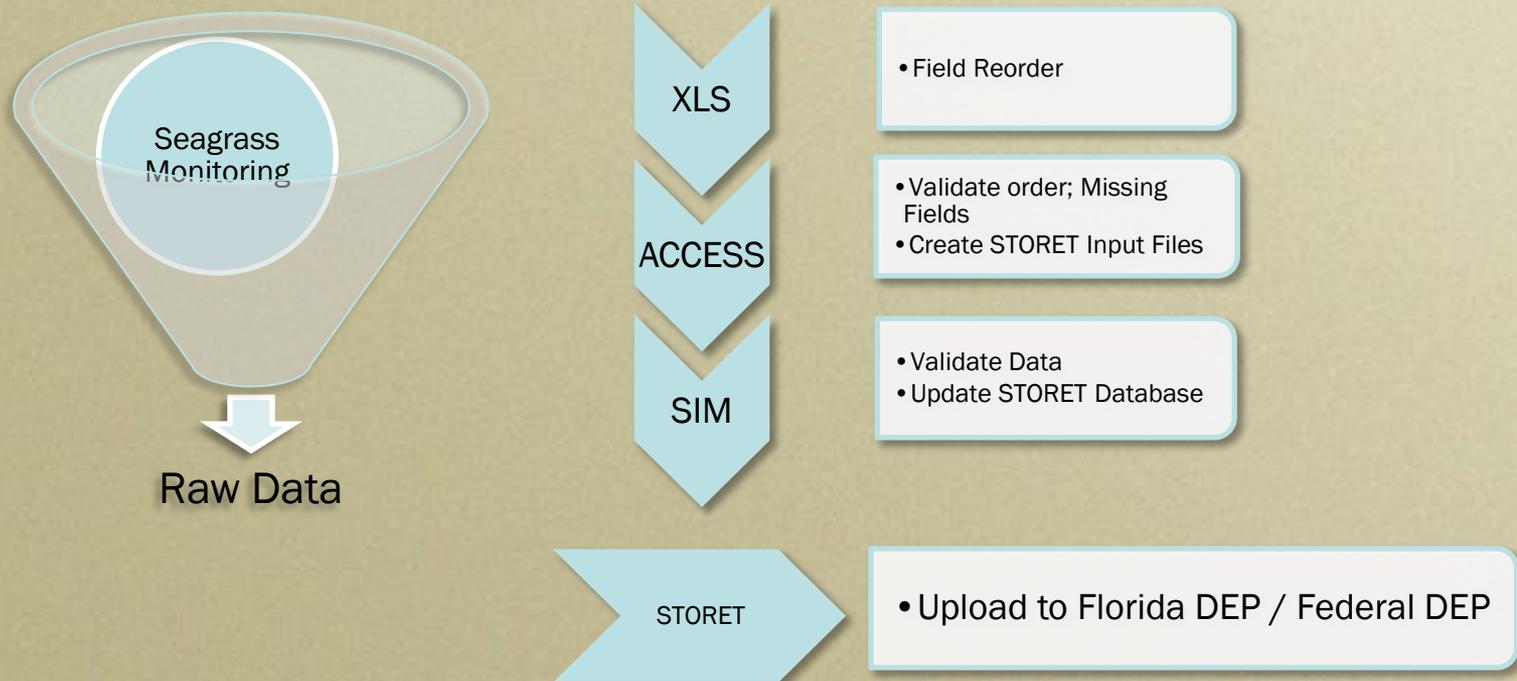
# STORET

- CREMP data (corals):
  - Coral Reef Evaluation and Monitoring Project
  - 2013 CREMP data were entered into STORET and uploaded to the National STORET Database and Florida STORET.
  
- CREMP archives:
  - Updated through 2013; considered current
  - Usually a year in arrears



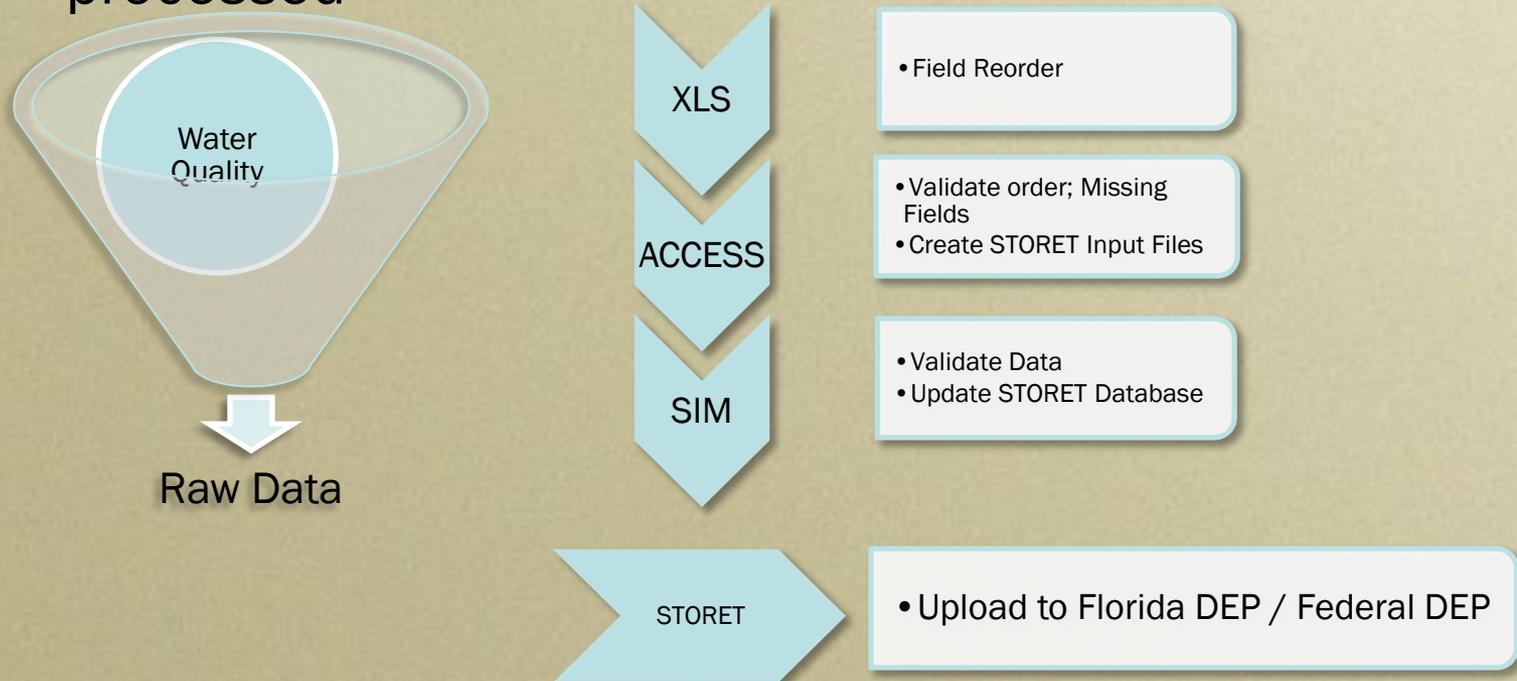
# STORET

- Seagrass Monitoring:
  - Data for 2014 received from field lab and processed



# STORET

- Water Quality Monitoring:
  - Surveys 71 through 75 (February, 2014 through December, 2014) received from field lab and processed



# NASA Data

- Through an agreement between FWRI and the EPA, the FKNMS website is privileged to host new and upcoming NASA data related to the Florida Keys and the National Marine Sanctuary.
- Data from the ROSES project, dealing with water clarity, and can be located under “Special Projects” at this time. There were 16 visits to this area for 2014 with an average stay of 01:37.



# Special Projects

## 2013 Special Reports:

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Hu and Barnes from the University of South Florida modified the Lee et al. (2005) algorithm to derive 'true'  $K_d$  (without bottom effect), or the diffuse light attenuation coefficient, from MODIS data. In situ samples from April 2011 to August 2012 validated the algorithm with an  $R^2$  of 0.68. All data from stations 5 m. or shallower were excluded from this analysis, thus 5 m represents the minimum depth range that this algorithm should be applied. Amplitude (1/2 wave height) of the seasonal cycle was derived from MODIS data for 2002 to 2011 and represents the seasonal variation for all MODIS data for this time period in  $m^{-1}$ .

### Purpose:

This dataset was created under the objectives of a NASA ROSES grant to Luke McEachron (co-PI), FWC grant # 2839, titled "Satellite Earth Image Products Applied to Development of Regulatory Water Quality Standards."

[Metadata - Diffuse Light Attenuation Coefficient \(PDF, 71 KB\)](#)

[Kd Mean shapefile \(ZIP, 747 KB\)](#)

[Kd Amplitude shapefile \(ZIP, 2.23 MB\)](#)



# Data Archives

- Storage of raw and synthesized data collected by the monitoring programs and special projects
  - Back-up if data are lost (e.g. hurricanes)
- Stored in waterproof fire safe at FWRI; copy kept offsite as well.
- Latest additions
  - Monitoring program data (CREMP, SGMP, WQMP) for last 4 quarters (since January, 2014)



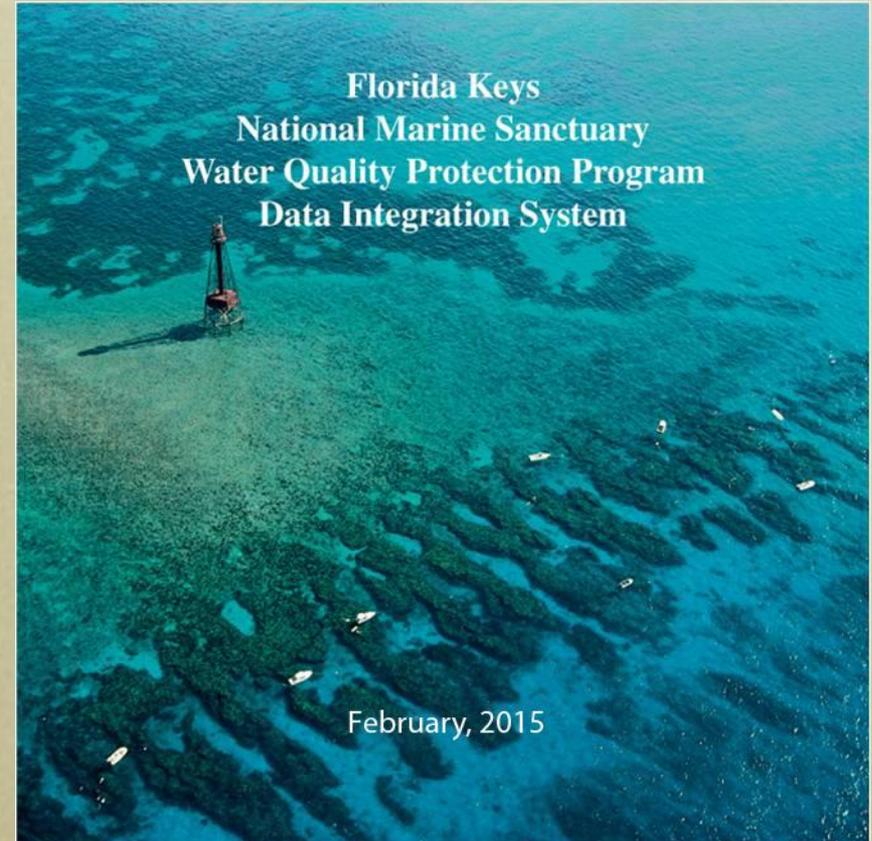
# Web Site and CD-ROM

- Contains raw data, metadata, reports, movies, and links to the monitoring program's web sites
- Also contains links to Monitoring Program data (text files, shapefiles, metadata)
- Google Earth .KMZ files were created for current Monitoring Project data and are available on Web site and CD-ROM.



# Web Site and CD-ROM

- Users without access to the Web can still query data on the CD-ROM when available.
- New version is created each time the Web site is updated. Current version is February 2015.



# Web Site

[http://ocean.floridamarine.org/FKNMS\\_wqpp](http://ocean.floridamarine.org/FKNMS_wqpp)

Florida Keys National Marine Sanctuary  
Water Quality Protection Program

Water Quality Home Program   Florida Keys National Marine Sanctuary   Water Quality Monitoring Project   Seagrass Monitoring Project   Coral Reef Evaluation and Monitoring Project   Special Projects   GIS Data

## Welcome to the Florida Keys National Marine Sanctuary Water Quality Protection Program Data Integration System

This document is a work in process that provides the public, managers, and scientists with information collected through the Water Quality Protection Program.

Click on any of the subjects above to access data from any of three long-term monitoring projects, as well as to obtain information about the Florida Keys National Marine Sanctuary and the Water Quality Protection Program.

['Value added' materials \(ESRI Shapefiles and Google KMZ's\), as well as reformatted 'User Friendly' data will be in the GIS Data section - top right tab.](#)

**DISCLAIMER:** Data are considered 'raw' when presented as received from the field PI (Principal Investigator). When presented as 'formatted,' that suggests fields were removed when considered unnecessary, columns have been modified sequentially to provide needed formatting for STORET, or columns may have been renamed to present 'human readable text' for public use.

Web site was last updated on February 20, 2015

### Web Page Contact:

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**Archived Reports:**  
[Searchable PDF files](#)



# Annual Visits – A Brief History



*Jan. 1, 2014 to Dec. 31, 2014 (total: 3,888 visits)*

*Jan. 1, 2013 to Dec. 31, 2013 (total: 5,679 visits)*

*Jan. 1, 2012 to Dec. 31, 2012 (total: 3,230 visits)*

*Jan. 1, 2011 to Dec. 31, 2011 (total: 2,003 visits)*



# Percent Distribution of Selections



Period: *Jan. 1, 2014 to Dec. 31, 2014 (total: 3,887 visits)*

<u>8 of 25 areas</u>	<u>Visits</u>	<u>Percent</u>
Home:	1,390	19.6%
Water Quality PGM:	998	14.0%
FKNMS:	1,232	17.4%
Water Quality Mon:	733	10.3%
Seagrass:	403	05.7%
Corals:	561	07.9%
Special Projects:	287	04.1%
GIS data:	1,281	18.1%



# Google Analytics

## (Generalized Metrics)

### Site Usage (2013):

- Visits – 5,679
- Unique Visitors – 1,942
- Page views – 5,679
- Average time on site – 00:03:20
- Average Daily Visits - 40

### Site Usage (2014):

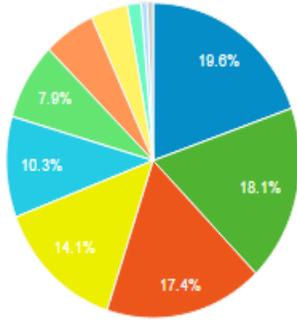
- Visits – 3,888
- Unique Visitors – 5,728
- Page views – 7,084
- Average time on site – 00:01:59
- Average Daily Visits - 11

### Traffic Sources

Browser ?	Acquisition		
	Sessions ? ↓	% New Sessions ?	New Users ?
	<b>3,888</b> <small>% of Total: 100.00% (3,888)</small>	<b>73.02%</b> <small>Avg for View: 73.02% (0.00%)</small>	<b>2,839</b> <small>% of Total: 100.00% (2,839)</small>
1. Chrome	1,664 (42.80%)	70.13%	1,167 (41.11%)
2. Internet Explorer	938 (24.13%)	68.34%	641 (22.58%)
3. Safari	622 (16.00%)	76.69%	477 (16.80%)
4. Firefox	554 (14.25%)	82.31%	456 (16.06%)
5. Android Browser	49 (1.26%)	81.63%	40 (1.41%)
6. Safari (in-app)	18 (0.46%)	100.00%	18 (0.63%)
7. Opera Mini	11 (0.28%)	100.00%	11 (0.39%)
8. Opera	6 (0.15%)	83.33%	5 (0.18%)
9. Amazon Silk	5 (0.13%)	100.00%	5 (0.18%)
10. Mozilla Compatible Agent	5 (0.13%)	80.00%	4 (0.14%)

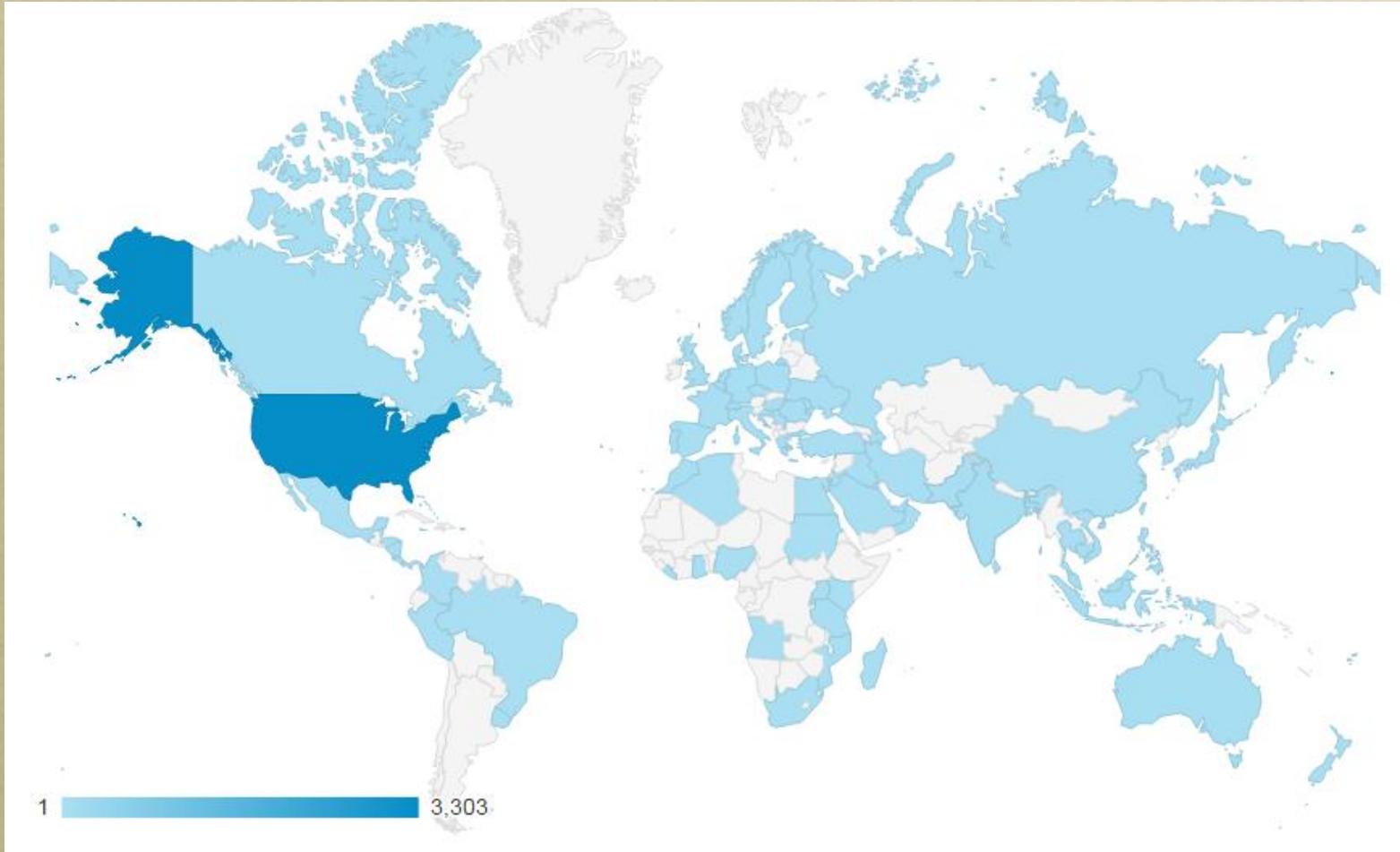


# Top 10 Page Titles

Page Title	Pageviews <input type="text" value="7,086"/> ↓	Pageviews	Contribution to total: <input type="text" value="7,086"/>
	<b>7,086</b> % of Total: 100.00% (7,086)	<b>7,086</b> % of Total: 100.00% (7,086)	
1.  Welcome to the Water Quality Protection Program Data Integration System	<b>1,390</b>	<b>19.62%</b>	
2.  GIS Data	<b>1,281</b>	<b>18.08%</b>	
3.  Florida Keys National Marine Sanctuary	<b>1,232</b>	<b>17.39%</b>	
4.  Water Quality Protection Program	<b>998</b>	<b>14.08%</b>	
5.  Water Quality Monitoring Project	<b>733</b>	<b>10.34%</b>	
6.  Coral Reef Evaluation and Monitoring Project	<b>561</b>	<b>7.92%</b>	
7.  Seagrass Monitoring Project	<b>403</b>	<b>5.69%</b>	
8.  Special Projects	<b>287</b>	<b>4.05%</b>	
9.  NASA Data	<b>108</b>	<b>1.52%</b>	
10.  Canal Restoration Data	<b>47</b>	<b>0.66%</b>	



# International Distribution



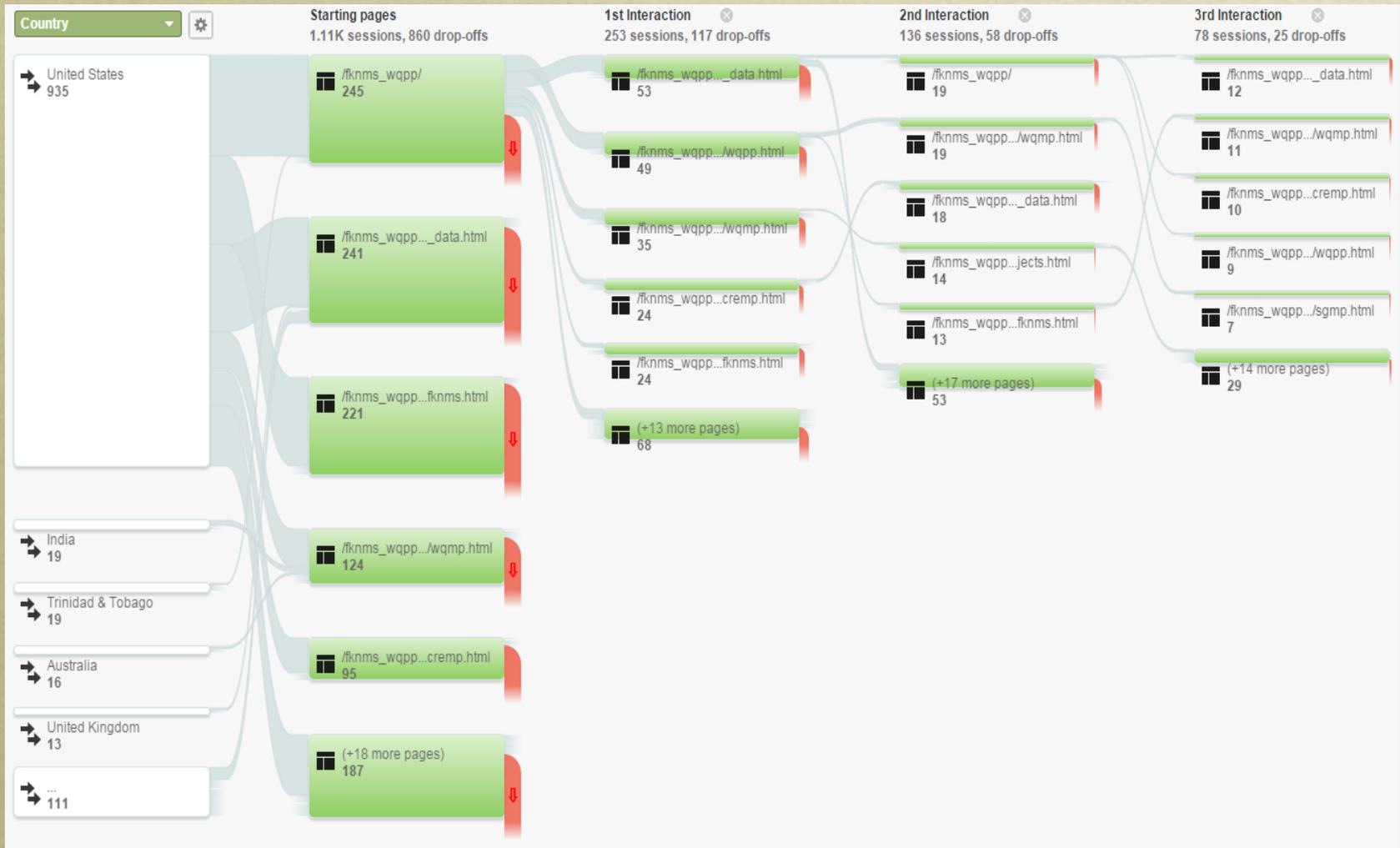
# International Distribution

(top 10 of 50)

Country	Sessions	% Sessions
1.  United States	3,303	 84.98%
2.  India	52	1.34%
3.  Canada	50	1.29%
4.  United Kingdom	47	1.21%
5.  Australia	42	1.08%
6.  Philippines	28	0.72%
7.  Portugal	21	0.54%
8.  Germany	20	0.51%
9.  Trinidad & Tobago	20	0.51%
10.  Netherlands	18	0.46%



# Visitor Flow / Behavior



# Future Efforts

- Continue to develop online GIS tools for viewing, querying, and analyzing Monitoring Project data.
  - ESRI's ArcServer (Shapefiles for Professional use)
  - Google KMZ files (for Public without ArcGIS)
  - Data can be displayed in many formats
    - Raw data
    - Synthesized data
    - Charts and graphs
    - Pivot Tables
  - CD's are available to anyone who requests one.



# Florida Keys National Marine Sanctuary

