



BIOLOGICAL DATA VIEWER FOR FLORIDA'S EVERGLADES & BEYOND

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Joint Ecosystem Modeling (JEM)



Ecological model practitioners in Greater Everglades

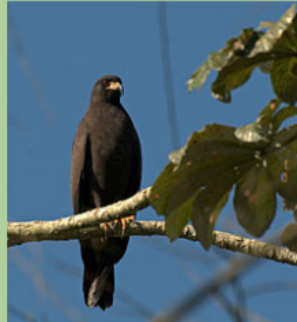
- Many institutions participating

Help visualize the results of scientific discovery for more informed decision making

- Monitoring data
- Models



Biological Data Viewer



www.jem.gov/Data

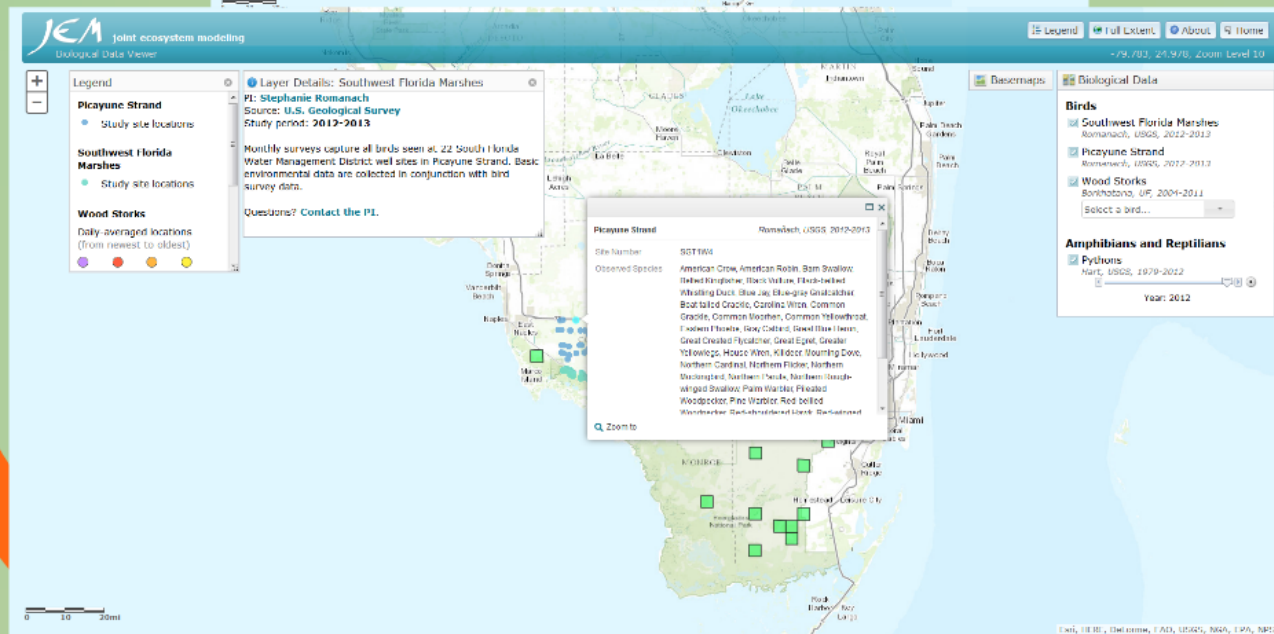
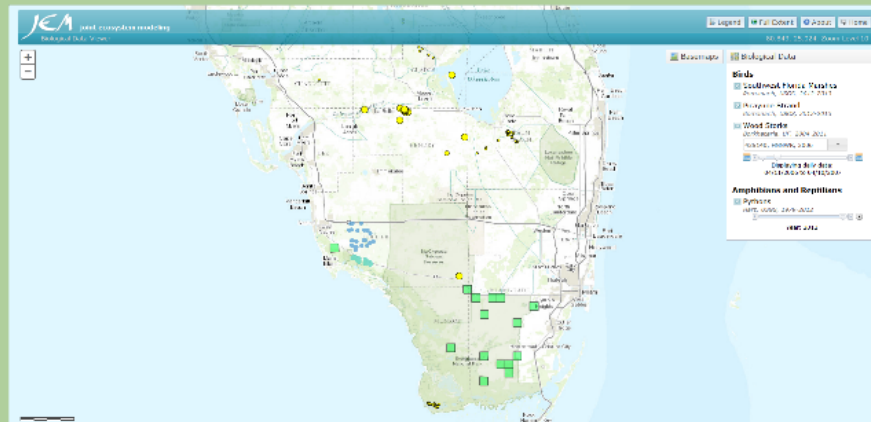


Features

- Monitoring data in accessible format
- Communicates magnitude of findings
- Offers various levels of data exposure
- Potential for real time use



Map interface



Web entry

Ten Thousand Islands & Fakahatchee Coastal Bird Point Counts

Notes (e.g., birds flushed on arrival):

Site Number: 2 Date: 3/4/14 Vehicle Type: Airboat
Time Count Started: 16:23 Count Duration (min): 5
Primary Observer: 6 Secondary Observer: 1
Noise (dB): 36.0 Air Temp (C): 21.2 Wind (kph): 3.7 Cloud(%): 0 Precip (none or light): none
(Using wet erase) Inside distance from bottom of pipe to water surface (cm): Inside distance from top pipe to bottom pipe: _____
Outside distance from top of pipe to soil surface: _____ Three water surface depths within 1 m of pipe (1) 13.0 (2) 10.4 (3) 15.0
Salinity inside pipe (ppt): _____ Salinity outside pipe (ppt): 15.7 Dissolved: _____

Observed by (observer number)	Species	#	Dist (m)	Seen/Heard	Open Water	Spant Veg
6	ST HJ	1	750	5		
1	ST HJ	1	80	1		
	FAWA	1	70			
	FAWA	1	25	5		
	WAB	1	50	5		
	WAB	1	10	5		

COASTAL BIRDS (ROMAÑACH)

Welcome keld | Log Off | Change Password

Home Add Collections View Collections View Invertebrates Switch to Upland Birds

EDIT COLLECTION

Collection Info: Site Number: 2 Date: 03/04/2014 Time Count Started: 16:23 [Delete Collection](#)

1. SITE VISIT INFO

Site Number: 2 Date: 03/04/2014 Sunrise: 06:48
Time Count Started: 16:23 Count Duration: 5 min Vehicle Type: Airboat

Notes:

Observers

Primary: 1 (DAT) Secondary: 5 (KMC)

[Save](#)

2. ENVIRONMENTAL CONDITIONS

3. BIRD OBSERVATIONS

4. DATA SHEET



Behind the scenes

JEM joint ecosystem modeling

COASTAL BIRDS (ROMAÑACH) Welcome romanach | Log Out | Change Password

Home Add Collection View Collections View Invertebrates [Switch to Upland Birds](#)

VIEW COLLECTIONS

Download CSV Survey Period: 04/01/2014–04/03/2014

Site Number	Date	Time Count Started	Primary Observer	Secondary Observer	Total Birds	Notes	Details	Edit	Proof	Status
1	04/01/14	18:52	DAT	MRH	45					✓
2	04/01/14	18:39	MRH	DAT	27					✓
3	04/01/14	18:18	DAT	MRH	16					✓
4	04/01/14	17:59	MRH	DAT	17					✓
5	04/01/14	17:46	DAT							
6	04/01/14	17:32	MRH							
7	04/01/14	17:19	DAT							
8	04/01/14	17:04	MRH							
9	04/01/14	08:29	DAT							
10	04/01/14	08:11	MRH							
11	04/01/14	07:55	DAT							
12	04/01/14	08:42	MRH							
13	04/01/14	09:01	DAT							
14	04/01/14	07:39	MRH							

COLLECTION DETAILS [Open Data Sheet](#) [Proof](#)

SITE VISIT INFO

Site Number: **1** Date: **04/01/14** Survey Period: **04/01/2014–04/03/2014**
 Sunrise Time: **07:18** Time Count Started: **18:52** Count Duration: **5 min** Vehicle type: **Airboat**
 Primary Observer: **DAT** Secondary Observer: **MRH**
 Notes:

MEASUREMENTS

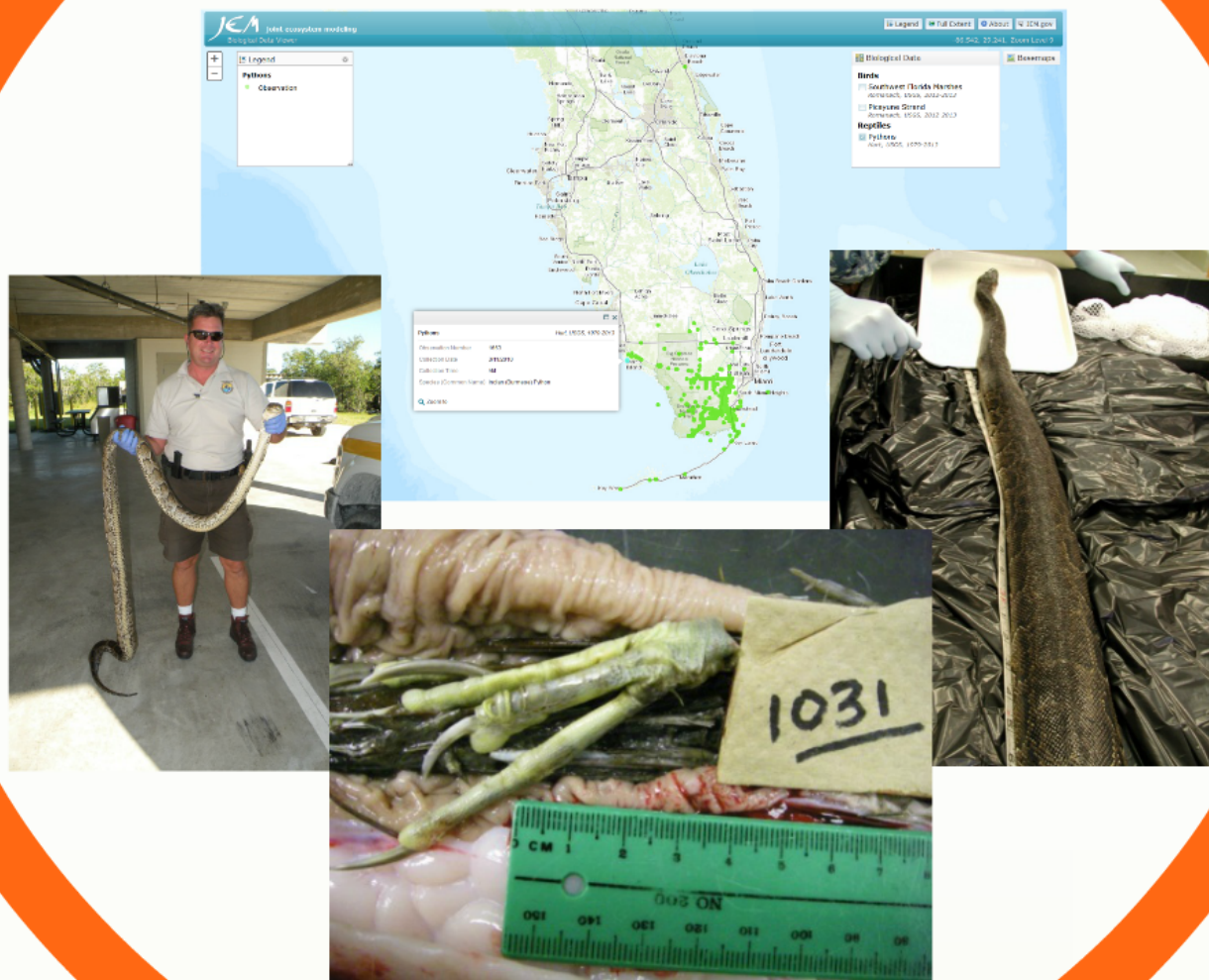
Noise: **38.6 dB** Air Temperature: **24.6 °C** Wind Speed: **6.6 kph** Cloud Cover: **0%**
 Precipitation: **None**
 Inside distance from bottom of pipe to water surface: **63.8 cm**
 Inside distance from top of pipe to bottom of pipe: **149.8 cm**
 Outside distance from top to soil surface: **94.5 cm**
 Three water surface depths within 1 m of pipe: (1) **7 cm** (2) **5 cm** (3) **4.5 cm**
 Inside Salinity: **35.9 ppt** Outside Salinity: **9.7 ppt** Dissolved Oxygen: **1.13 mg/L** Water Temperature: **30.2 °C**

BIRD OBSERVATIONS

Observed By	Species	#	Dist (m)	Seen/Heard	Location	Incidental	Notes
	Lesser Yellowlegs	23	50	Seen	Sparse Veg	★	
	Greater Yellowlegs	2	50	Seen	Sparse Veg	★	
	Double-crested Cormorant	8	40	Seen	In Flight	★	
	Northern Harrier	2	50	Seen	In Flight	★	
1 (DAT)	White-eyed Vireo	3		Heard			
1 (DAT)	Unknown Warbler	2		Heard			
1 (DAT)	Lesser Yellowlegs	1	100	Seen	Open Water		
1 (DAT)	Red-winged Blackbird	1		Heard			



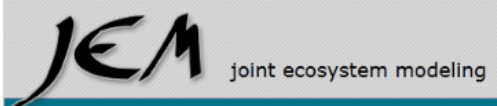
Invasive species: Burmese python



Reporting Tools

The screenshot displays a reporting tool interface with three main components:

- Google Earth:** Shows a map of India with a data point highlighted. A tooltip for Sample Number 1005 provides details: Collection Date: 11/12/2006 12:00:00 AM, Species: Indian (Burmese) Python, and Directions: [To here](#) - [From here](#).
- JEM_Python_Report_Collection_8-23-2013.pdf - Adobe Acrobat Pro:** Displays a 'Python Tracker Report' with the following details:
 - Sample Number: 209, Date: 12/20/2004 12:00:00 AM, Time: 12:00:00 AM, Common Name: Indian (Burmese) Python, Location Description: ENP, Shakti Vihar Tran Road, Location: 20351.000000000,2047513.000000000, HeadCol: Yes, TailCol: Yes, GutCol: Yes, Reptoids: Yes, Neurosp: Yes.
 - Sample Number: 210, Date: 12/4/2004 12:00:00 AM, Time: 12:00:00 AM, Common Name: Indian (Burmese) Python, Location Description: Highway 41, near dark valley, ENP, Location: 20431.600000000,2049283.000000000, HeadCol: Yes, TailCol: Yes, GutCol: Yes, Reptoids: Yes, Neurosp: Yes.
 - Sample Number: 222, Date: 2/2/2005 12:00:00 AM, Time: 12:00:00 AM, Common Name: Indian (Burmese) Python, Location Description: ENP, Main Park Rd., 3.5 miles southwest of Peshawara rd., Location: 195931.000000000,2007950.000000000, HeadCol: Yes, TailCol: Yes, GutCol: Yes, Reptoids: Yes, Neurosp: Yes.
- Python Tracker Web Interface:** Shows the 'REPORTS' section with a 'Report Type' dropdown menu containing:
 - Observations with specimen collected (head, tail, and/or gut)
 - Observations with subsample analysis (isotopes, mercury, and gene)
 - User actions list (returns list of all the actions of a given user)
 A 'Create Report' button is visible at the bottom.
- Excel Spreadsheet:** Displays a data table with columns A through L. The first row (B4) is for date 2/2/2005 12:00:00 AM. The table contains 19 rows of data with columns for observation ID, date, species, location, and various collection status flags (Yes/No).



PYTHON TRACKER
 Home Add Observation Edit Observation Proofing Queries

REPORTS

Report Type

Observations with specimen collected (head, tail, and/or gut)

Observations with subsample analysis (isotopes, mercury, and gene)

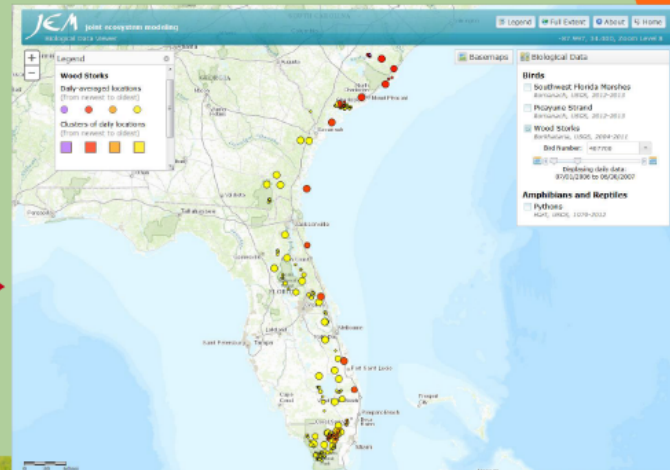
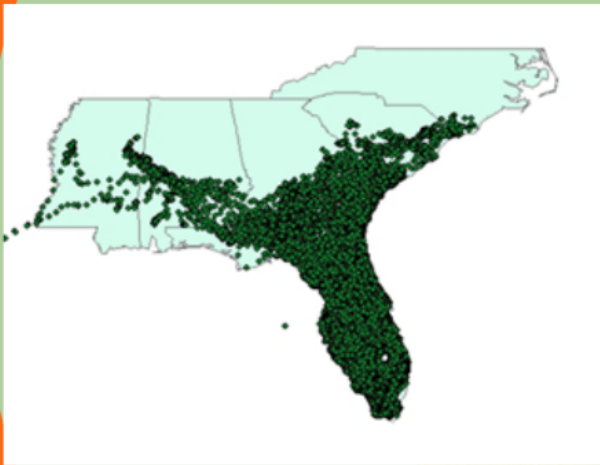
User actions list (returns list of all the actions of a given user)

Create Report

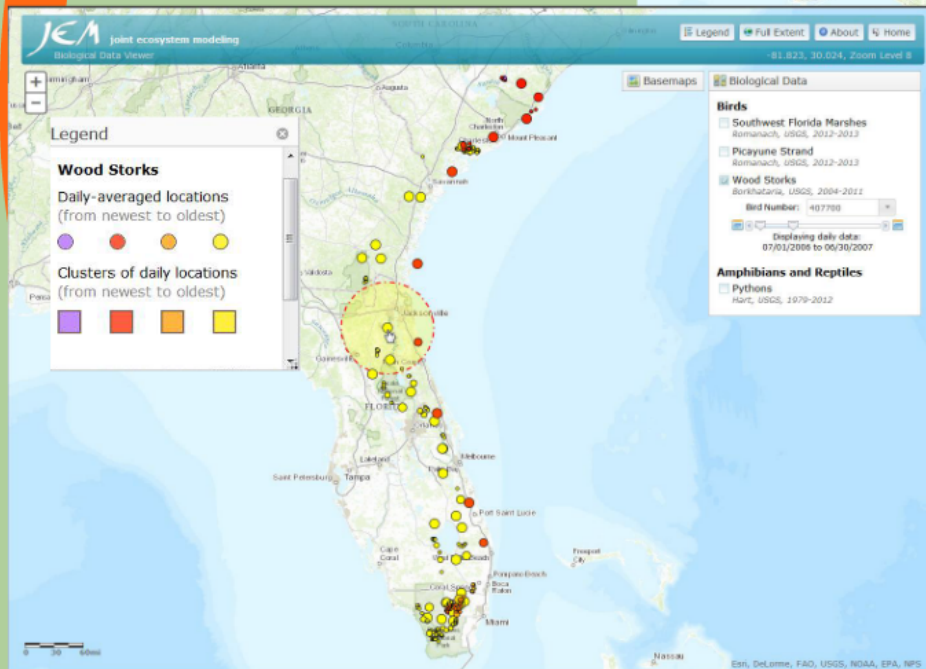
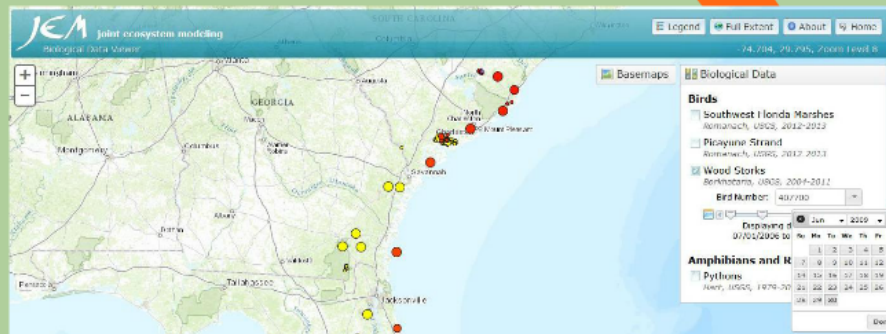
	A	B	C	D	E	F	G	H	I	J	K	L
4	222	2/2/2005 0:00	1909	Indian (Bu ENP, Mair		519532	2807950	Yes	Yes	Yes	Yes	Yes
5	224	2/14/2005 0:00	1105	Indian (Bu L-67Ext ca		532929	2842524	Yes	Yes	Yes	Yes	Yes
6	283	8/4/2005 0:00	133	Indian (Bu ENP, MPK		537841	2810511	Yes	Yes	Yes	Yes	Yes
7	300	10/20/2005 0:00	1042	Indian (Bu Frog Pond		542931	2810116	Yes	Yes	Yes	Yes	Yes
8	306	10/20/2005 0:00		Indian (Bu Frog Pond		543936	2812973	Yes	Yes	Yes	Yes	Yes
9	308	11/4/2005 0:00		Indian (Bu Frog Pond		543805	2812905	Yes	Yes	Yes	Yes	No
10	310	11/7/2005 0:00	2130	Indian (Bu ENP, MPK		510695	2785633	Yes	Yes	Yes	Yes	Yes
11	325	12/13/2005 0:00	1200	Indian (Bu 5332-C, SF		542774	2821186	Yes	Yes	Yes	Yes	No
12	327	12/14/2005 0:00	1215	Indian (Bu L-67x, can		532834	2840684	Yes	Yes	Yes	Yes	No
13	329	12/16/2005 0:00	1430	Indian (Bu Bear Island				Yes	Yes	Yes	TRUE	Yes
14	333	12/20/2005 0:00		Indian (Bu L-67x, can		532842	2845695	Yes	Yes	Yes	Yes	Yes
15	337	1/3/2006 0:00		Indian (Bu ENP, MPK		510719	2785657	Yes	Yes	Yes	Yes	Yes
16	339	1/6/2006 0:00	1630	Indian (Bu ENP, MPK		521897	2810756	Yes	Yes	Yes	Yes	Yes
17	341	1/9/2006 0:00		Indian (Bu L-67x, can		532926	2843244	Yes	Yes	Yes	Yes	Yes
18	342	1/9/2006 0:00	1210	Indian (Bu L-67x, can		532956	2842478	Yes	Yes	Yes	Yes	Yes
19	347	1/12/2006 0:00	1700-1800	Indian (Bu Shark Vall		523400	2843968	Yes	Yes	Yes	Yes	Yes
20	350	1/18/2006 0:00	1530	Indian (Bu W. of Ficu		517342	2806499	Yes	Yes	Yes	Yes	Yes
21	351	1/18/2006 0:00	1530	Indian (Bu W. of Ficu		517342	2806499	Yes	Yes	Yes	Yes	Yes
22	352	1/19/2006 0:00		Indian (Bu L-67x, can		532835	2840678	Yes	Yes	Yes	Yes	Yes



Protected species: Wood Stork



Time of year, specific birds...



Query tool

JEM Joint ecosystem modeling

WOOD STORKS (BOROKHATARIA)

SEARCH THE DATABASE

Select records that meet the following criteria:

- Bird Number(s)**: Filter (e.g., 407700), From, To, Select (407600, 407700, 407710, 407800, 414340)
- Date Range**: Start (11/2017), End (11/2017)
- Location**: Misiones, Paragolosa National Park, Bosque Nacional Park, Puntalones & Tronco Taylor sites

JEM_Woodstork_QueriedData_3-10-2014_635300460830223715.zip

File Edit Format View Help

Bird Tag Number List: 407700
Dates: 01/05/2007 to 12/31/2007
Location: Misiones National Park
Everglades National Park

Opening JEM_Woodstork_QueriedData_3-10-2014_635300460830223715.zip

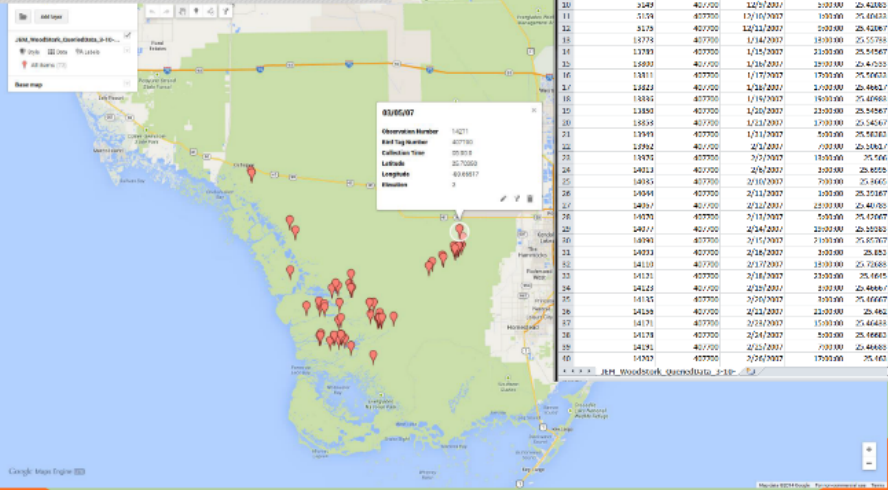
You have chosen to open:

- 3-10-2014_635300460830223715
- which is: Compressed (zipped) Folder
- from: http://mercebapps.cr.usgs.gov

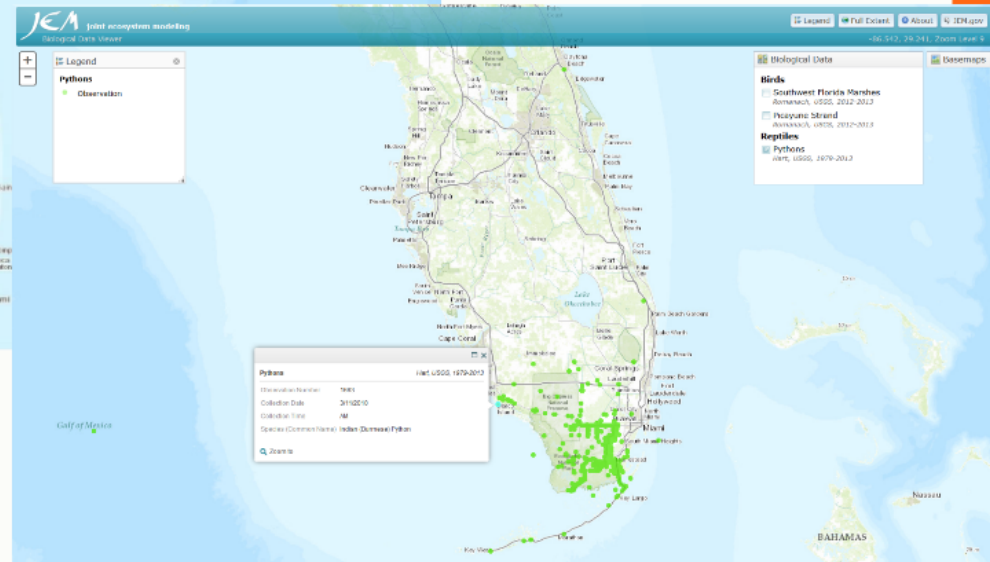
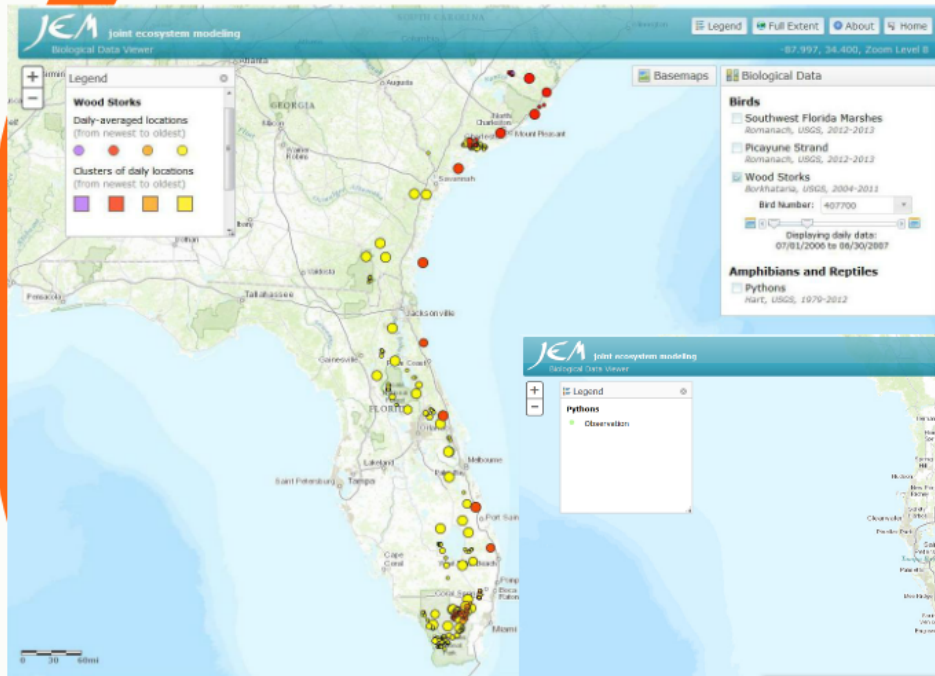
What should Firefox do with this file?

- Open with Windows Explorer (default)
- Save File
- Do this automatically for files like this from now on.

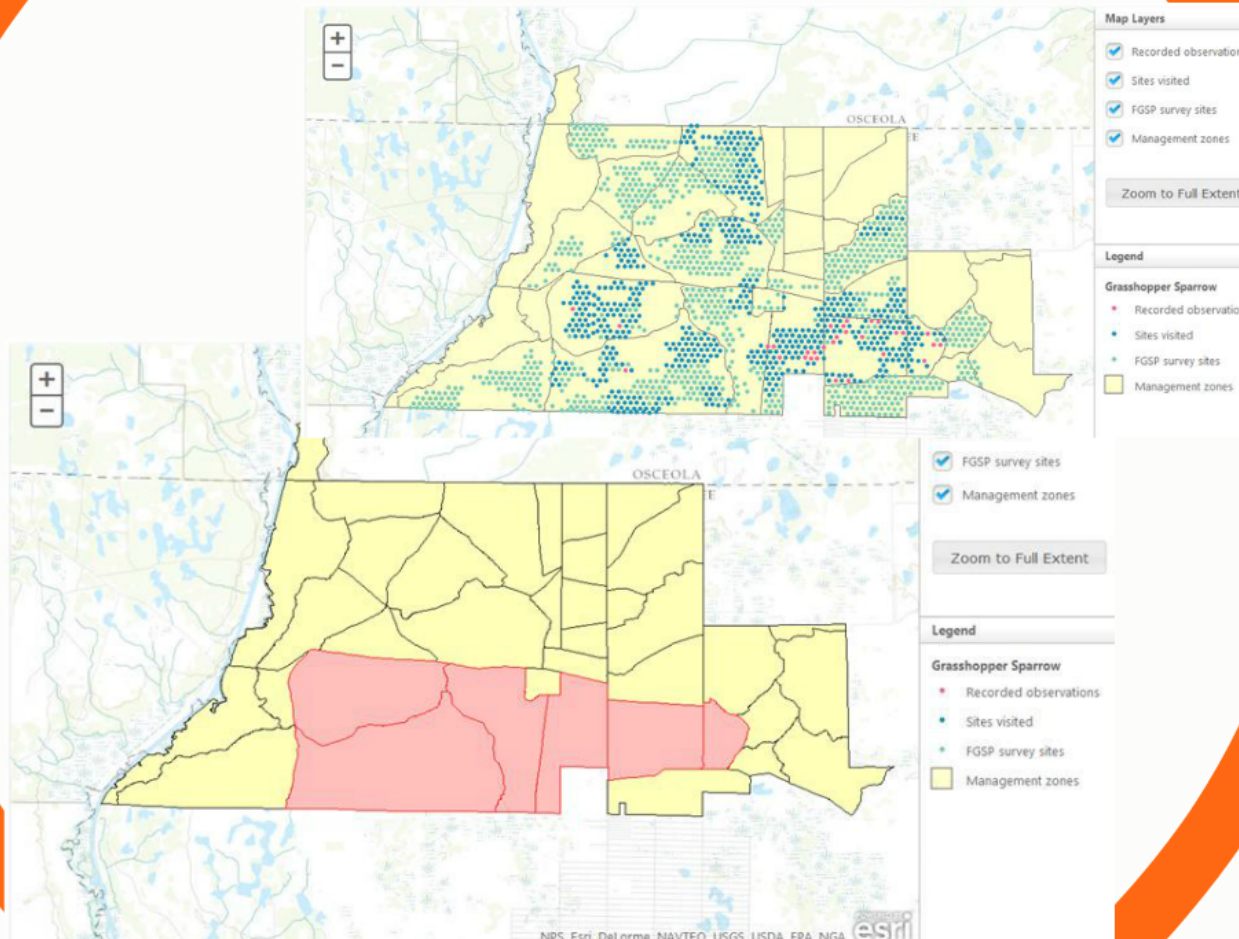
Bird Number	Collection Date	Collection Time	Latitude	Longitude	Elevation
407700	11/24/2007	700000	25.16623	-81.21853	2
407700	11/30/2007	100000	25.16267	-81.22927	5
407700	12/1/2007	200000	25.16100	-81.23000	6
407700	12/4/2007	1000000	25.16668	-81.25313	8
407700	12/5/2007	1700000	25.16517	-81.24333	11
407700	12/6/2007	1700000	25.49167	-81.26349	4
407700	12/9/2007	1000000	25.16583	-81.2526	8
407700	12/9/2007	300000	25.42383	-81.23383	2
407700	12/10/2007	1000000	25.42433	-81.2459	12
407700	12/12/2007	200000	25.42667	-81.22887	2
407700	1/14/2008	1800000	25.15783	-81.40033	6
407700	1/15/2008	2100000	25.15467	-81.35853	7
407700	1/16/2008	2000000	25.40333	-81.229	3/
407700	1/17/2008	1700000	25.16033	-81.23553	207
407700	1/18/2008	2000000	25.42667	-81.22167	360
407700	1/19/2008	1600000	25.42668	-81.25117	6
407700	1/20/2008	2300000	25.15467	-81.35853	17
407700	1/21/2008	1700000	25.15467	-81.369	2
407700	1/21/2008	1600000	25.15268	-81.36657	2
407700	2/2/2008	700000	25.16267	-81.23223	4
407700	3/7/2008	1000000	25.15666	-81.31427	4
407700	2/9/2008	200000	25.42558	-81.23123	3
407700	2/10/2008	700000	25.1665	-81.21313	8
407700	2/11/2008	100000	25.15267	-81.35853	3
407700	2/12/2008	2100000	25.46783	-81.22217	4
407700	2/13/2008	1000000	25.15267	-81.21517	8
407700	2/24/2008	2000000	25.16268	-81.24727	210
407700	2/15/2008	2100000	25.15783	-81.38833	2
407700	2/16/2008	200000	25.162	-81.28133	7
407700	2/17/2008	1800000	25.15786	-81.388	8
407700	2/18/2008	2300000	25.1665	-81.35417	2
407700	2/20/2008	200000	25.42667	-81.24268	6
407700	2/20/2008	1000000	25.16667	-81.35453	7
407700	2/21/2008	2100000	25.1665	-81.27167	2
407700	2/22/2008	1500000	25.42433	-81.31417	6
407700	2/24/2008	1000000	25.16668	-81.30467	6
407700	2/25/2008	700000	25.42668	-81.30467	8
407700	7/24/2007	1700000	25.1667	-81.35717	6



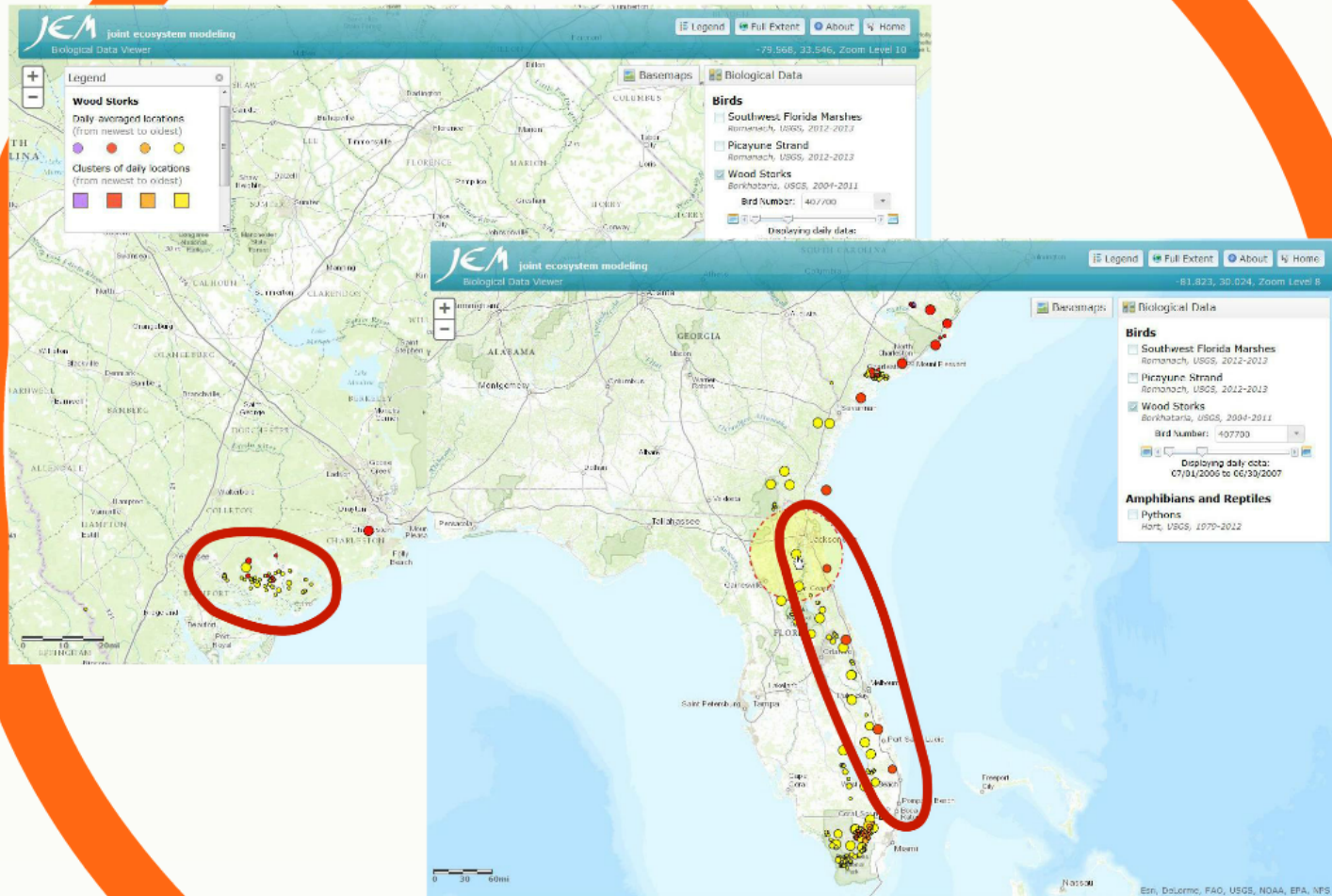
Temporal & spatial masking



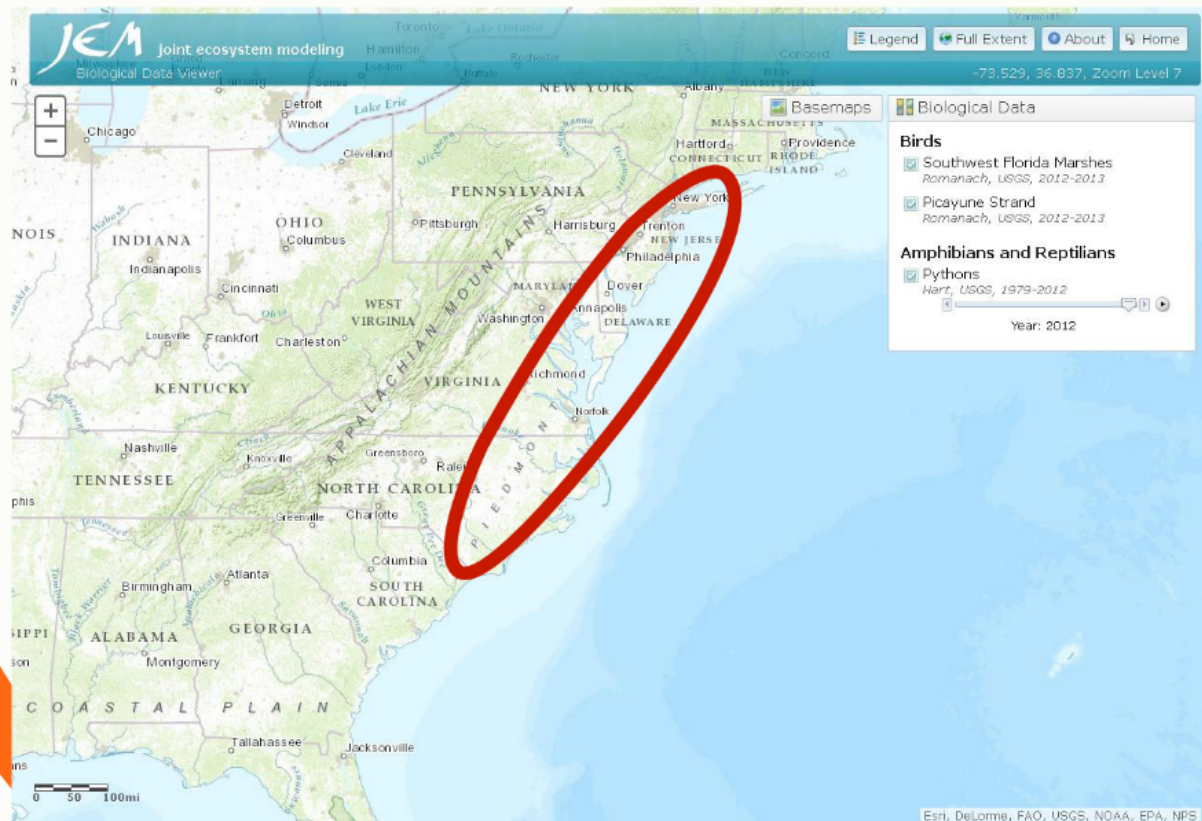
Password protection



Real time alerts



Future: Hurricane Sandy impacted area



Future possibilities

- *real time alerts*
- *incorporating environmental data*
 - *land cover*
 - *hydrology*
- *explain/model biological occurrences*



Thank you

