



# Manatees Protection Plans in Northeast Florida and a note about Dolphins too

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Associate Research Scientist



# Duval County Manatee Research Project

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Funded: City Of Jacksonville

Developed: Jacksonville Waterways Commission

Research: Jacksonville University

# Classification of Sirenians

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- Order: Sirenia (manatees & dugongs)
- Family: Trichechidae (manatees)
- Genus species/subspecies:
  - ◆ *Trichechus manatus* - West Indian
  - ◆ *Trichechus manatus latirostris* - Florida
  - ◆ *Trichechus manatus manatus* - Antillean
  
  - ◆ *Trichechus inunguis* – Amazonian
  - ◆ *Trichechus senegalensis* – West African

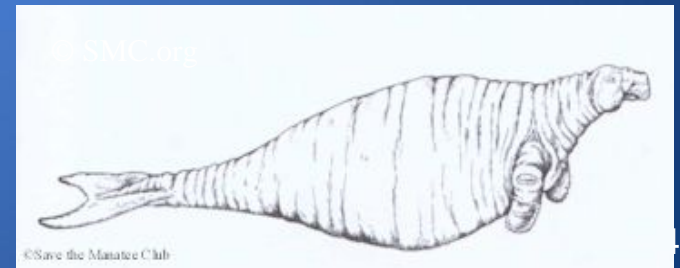


# Classification of Sirenians

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- Order: Sirenia (manatees & dugongs)
- Family: Dugongidae (dugongs & sea cow)
- Genus species:
  - *Dugong dugon* – (dugong)
  - *Hydrodamalis gigas* (extinct Steller's sea cow)
  - 1741-1768 Artic Waters of the Bering Strait (30ft and 4400 Lbs)

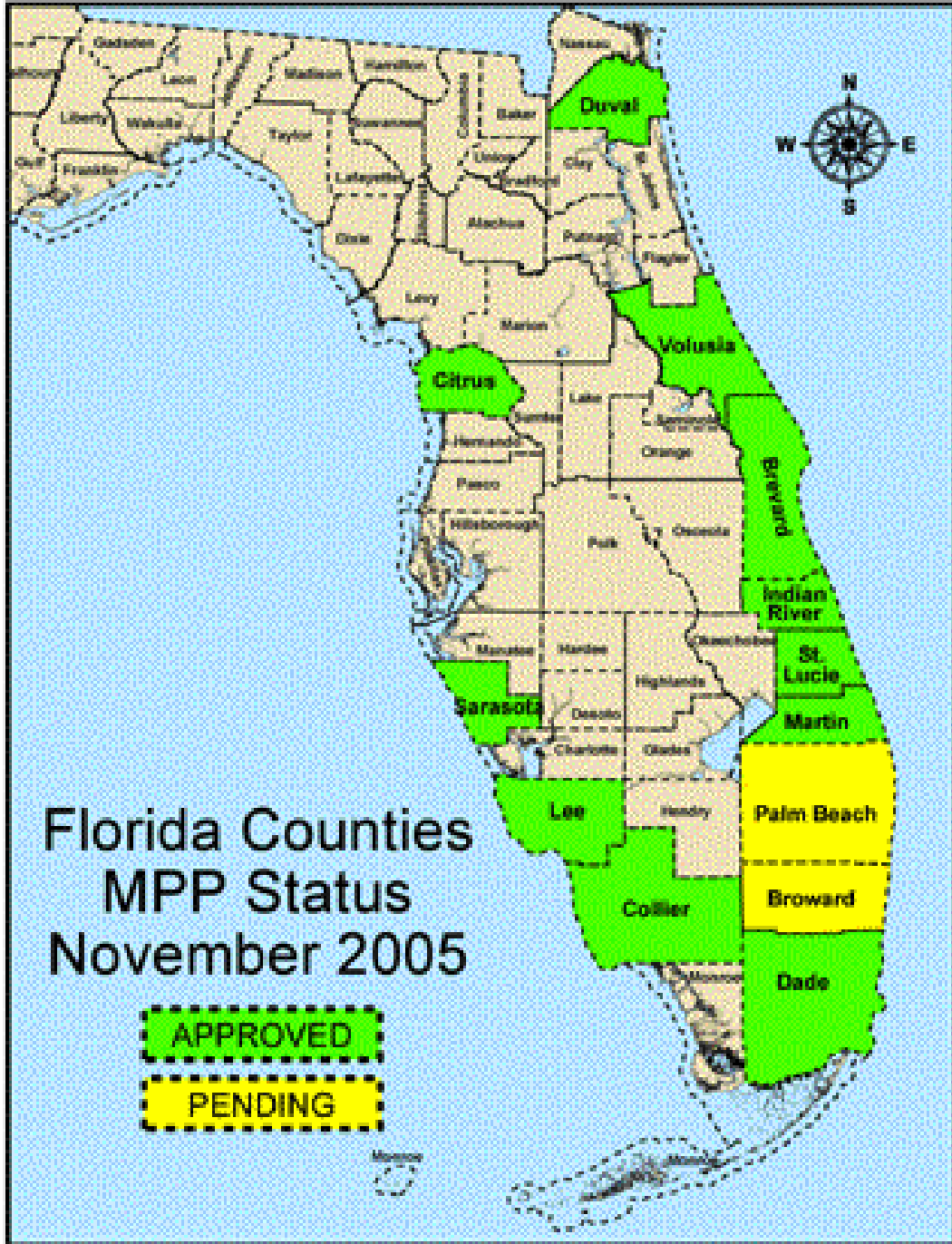


# Federal and State laws protect manatees.

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- US Marine Mammal Protection Act of 1972.
- US Endangered Species Act of 1973  
Federal law violation: \$100, 000 and/or 1 Yr.
- Florida Manatee Sanctuary Act in 1978, allowing the state to establish and enforce boating restrictions in important manatee habitats by Florida Fish and Wildlife Conservation Commission (FWCC).  
State law violation: \$500 and/or up to 60 d.





## State approved MPP's

Brevard	2003
Broward	2007
Citrus	1991
Collier	1995
Miami-Dade	1995
Duval	1999
Lee	2004
Indian River	2000
Martin MPP	2002
Martin BFSP	2002
Palm Beach	2007
Sarasota	2004
St. Lucie	2002
Volusia	2005
Clay	2006

# Research Project Components

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- Aerial surveys
- Submerged Aquatic Vegetation (SAV)
- Water quality monitoring
- Inventory of boat facilities
- Vessel traffic studies
- Power plant surveys
- Manatee protection
- Manatee education and awareness



# Synoptic counts

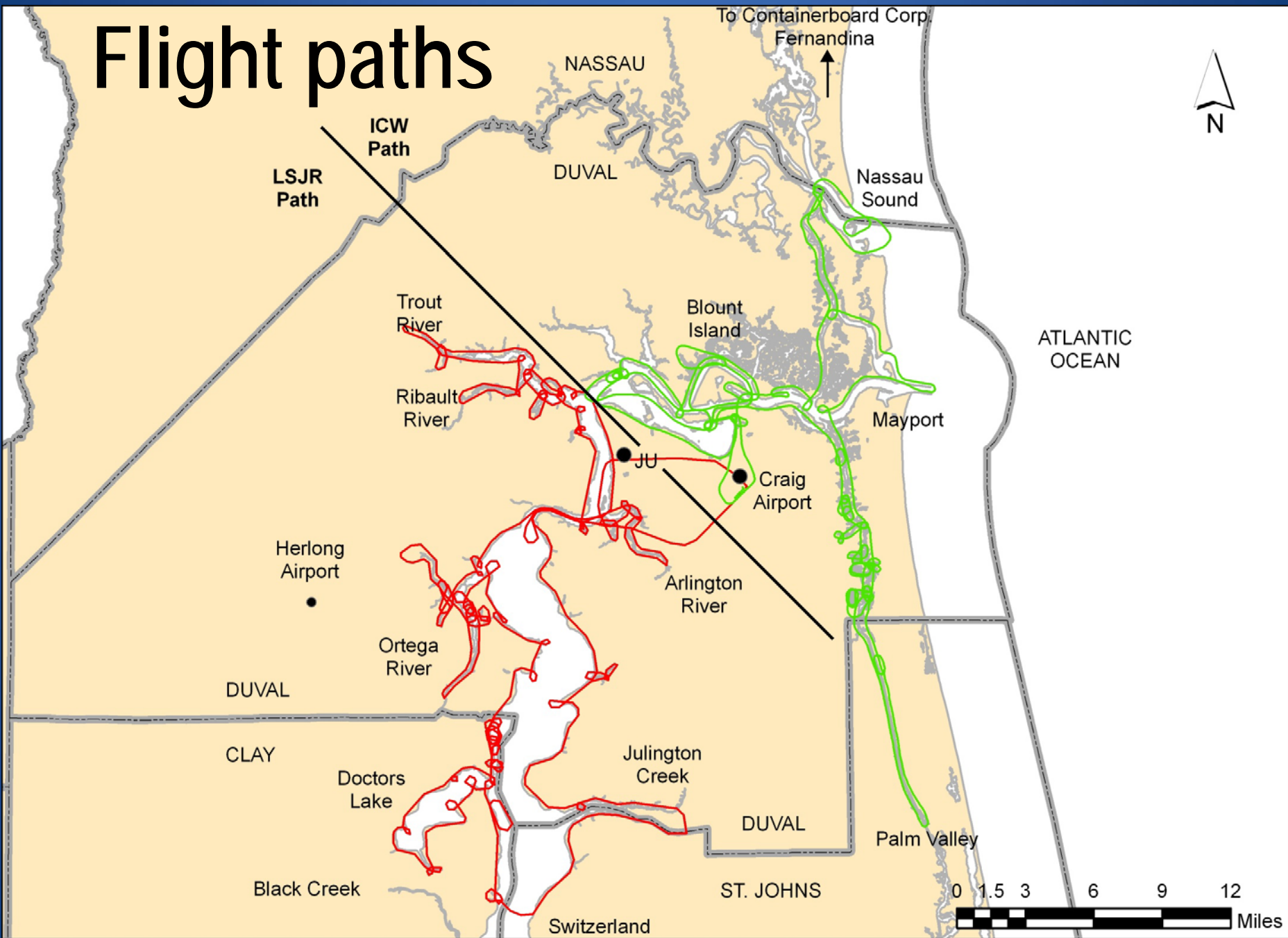
<u>Year</u>	<u>Date</u>	<u>East</u>	<u>West</u>	<u>Total</u>
1991	January 23–24	687	580	1,267
1991	February 17–18	828	650	1,478
1992	January 17–18	904	940	1,844
1995	January 21–22	669	787	1,456
1995	February 06–07	917	906	1,823
1996	January 09–10	1,223	1,054	2,277
1996	February 18–19	1,452	1,178	2,630
1997	January 19–20	906	1,335	2,241
1997	February 13	797	918	1,715
1998	January 29–30	1,110	908	2,018
1999	January 06	842	1,023	1,865
1999	February 23	900	1,123	2,023
1999	March 06	960	1,400	2,360
2000	January 16–17	634	1,012	1,646
2000	January 26–27	1,138	1,085	2,223
2001	January 05–06	1,559	1,741	3,300
2002	March 01	864	894	1,758
2003	January 09	1703	1140	2,843
2003	January 21–22	1813	1314	3,127
2003	January 26–28	1,705	1,311	3,016
2004	February 20	1,198	1,307	2,505
2005	January 26	1,594	1,549	3,143
2006	February 13-17	1,639	1,474	3,113
2007	January 30–February 1	1,412	1,405	2,817
2009	January 19–23	2,153	1,654	3,807
2010	<b>January 12–15</b>	<b>2,780</b>	<b>2,296</b>	<b>5,076</b>
2011	January 20 and 24	2,432	2,402	4,834

[floridamarine.com](http://floridamarine.com)

NOTE:  
No survey in 2008 ?



# Flight paths





North Florida Flight  
Training

Cessna 172 Skyhawk



















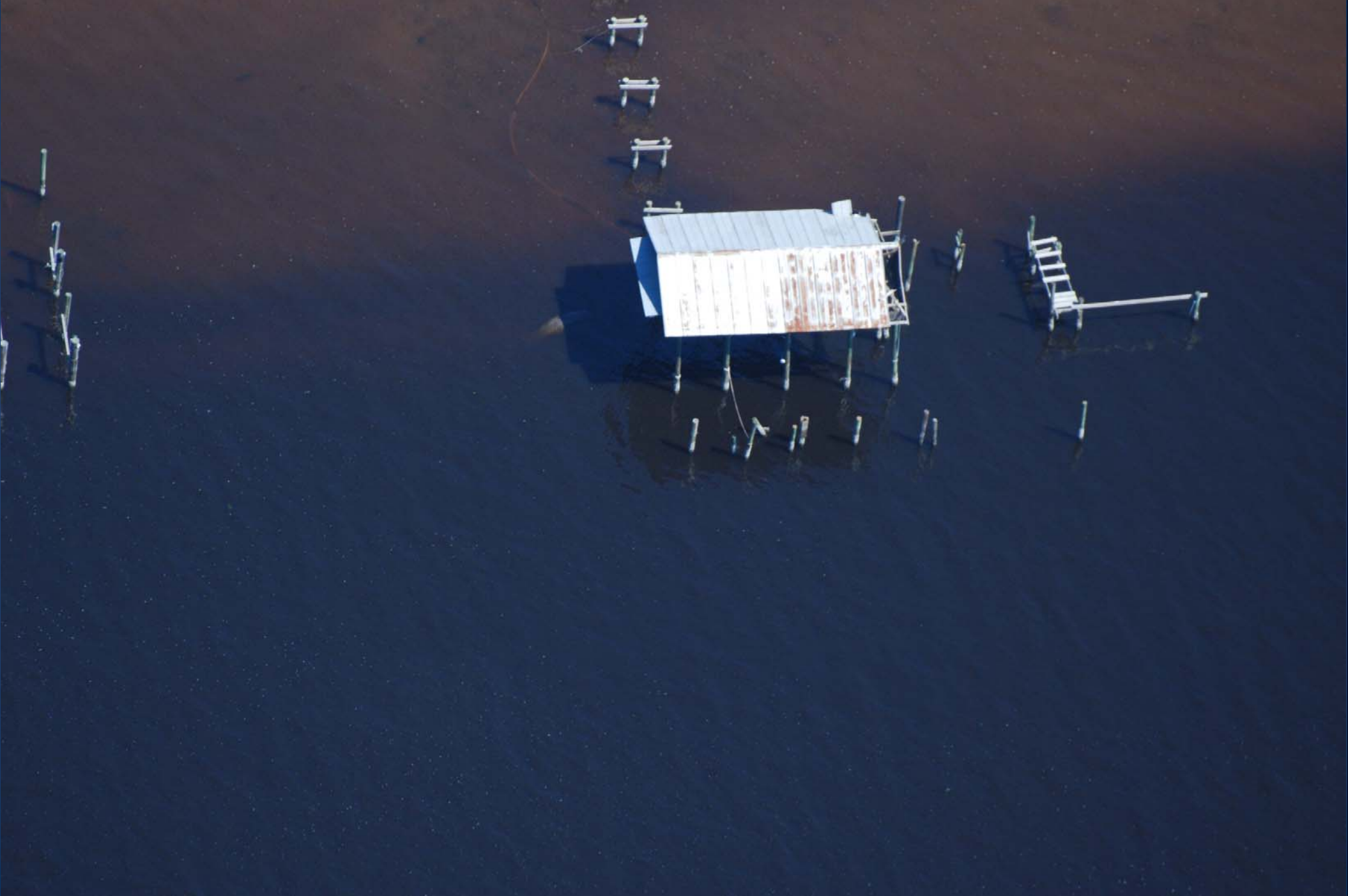




















12/1/2011





Walter Coker\_FOLIO

Walter Coker\_FOLIO



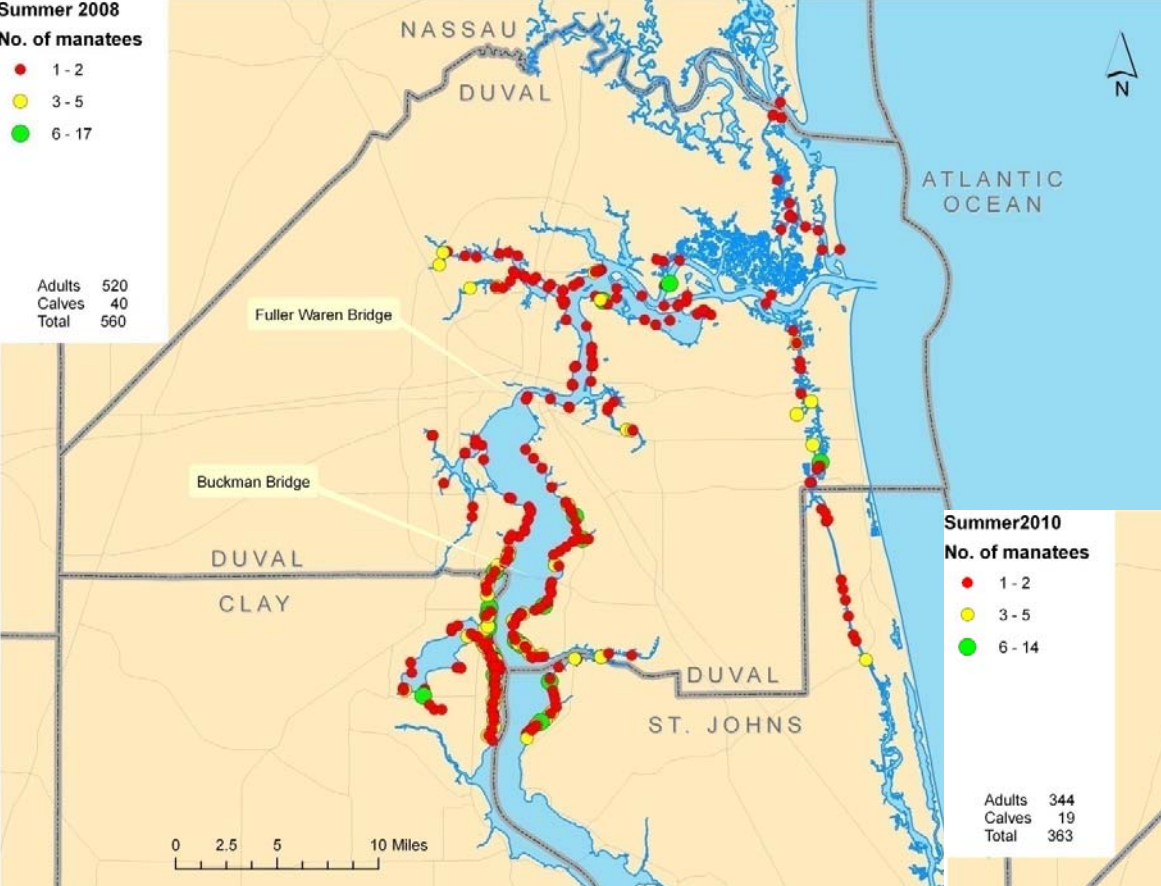


Summer 2008

No. of manatees

- 1 - 2
- 3 - 5
- 6 - 17

Adults	520
Calves	40
Total	560

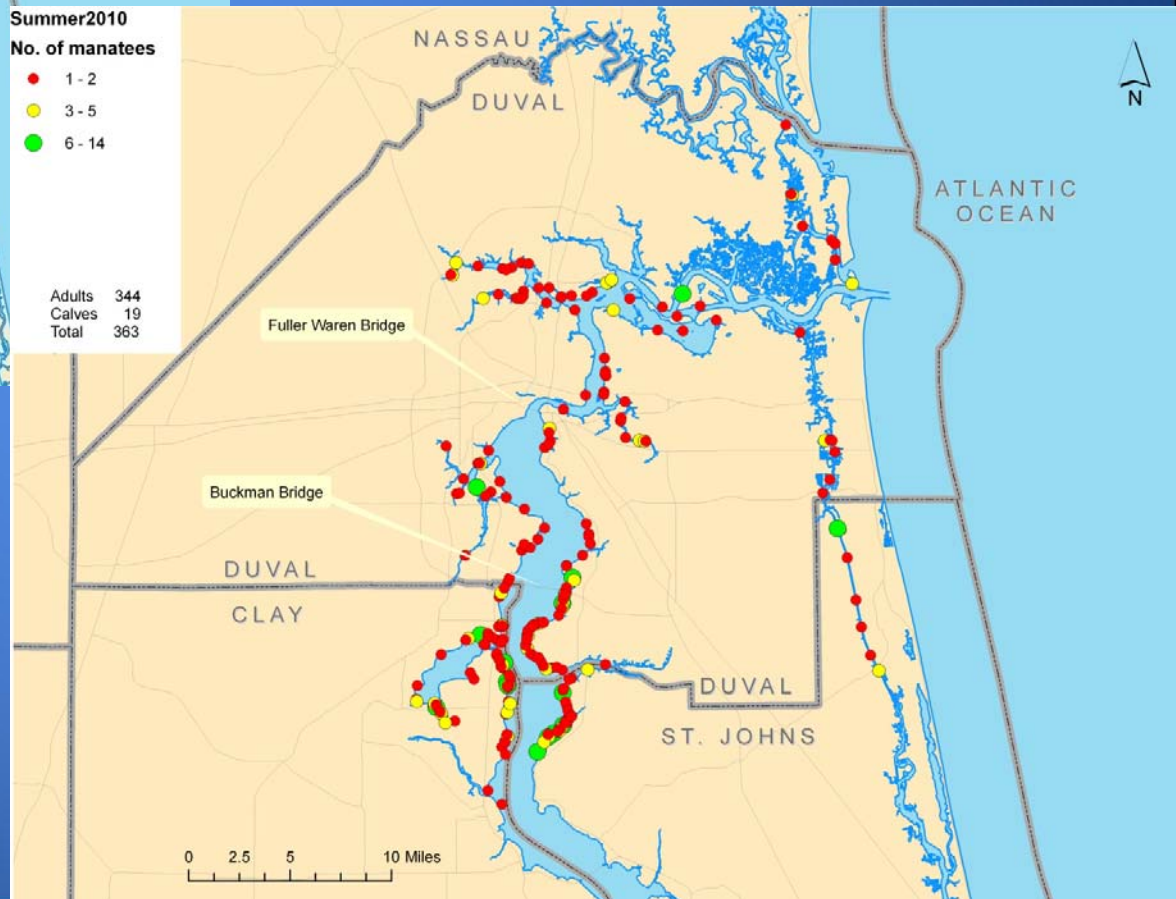


Summer 2010

No. of manatees

- 1 - 2
- 3 - 5
- 6 - 14

Adults	344
Calves	19
Total	363





Fall 2008

No. of manatees

- 1
- 2-3
- 4-8

Adults	35
Calves	5
Total	40



Fall 2009

No. of manatees

- 1-2
- 3-5
- 6-20

Adults	26
Calves	3
Total	29



Winter 2007-2008

No. of manatees

- 1-2
- 3

Mild Winter

Adults 14  
Calves 6  
Total 20



Winter 2009-2010

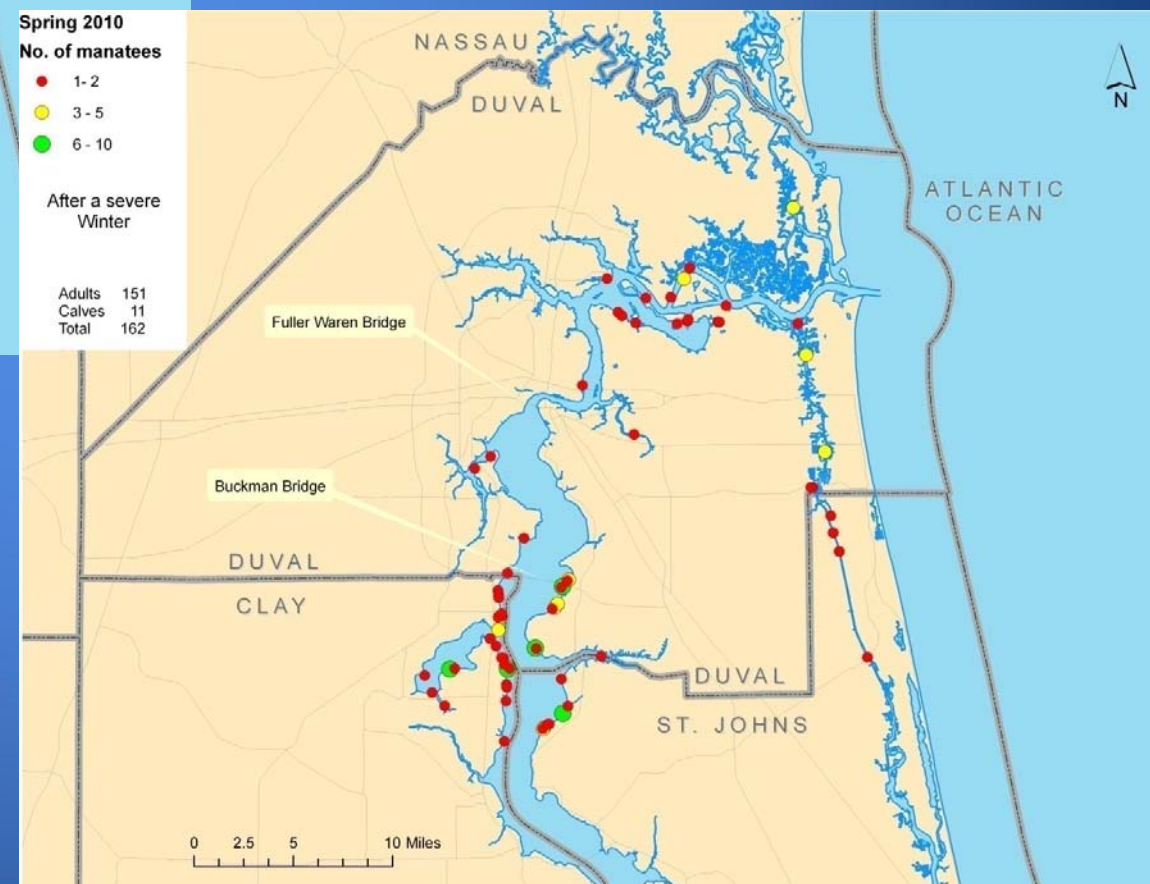
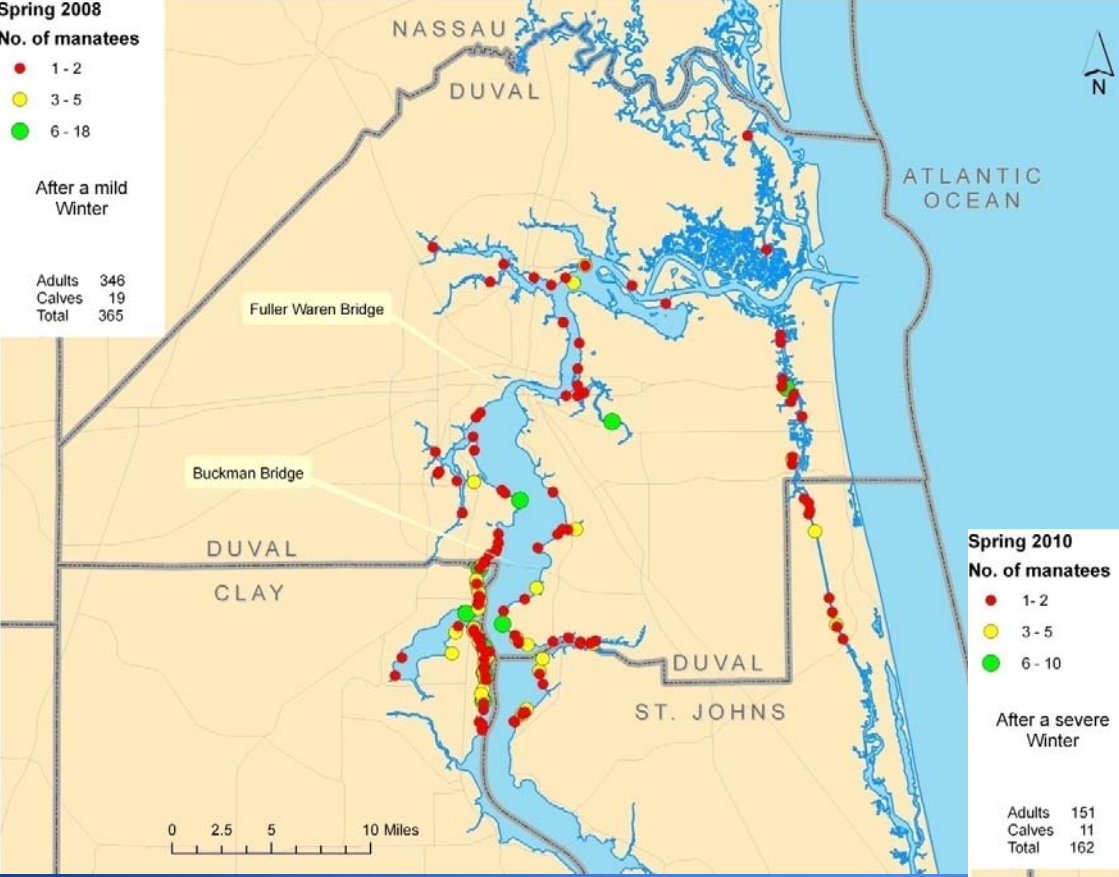
No. of manatees

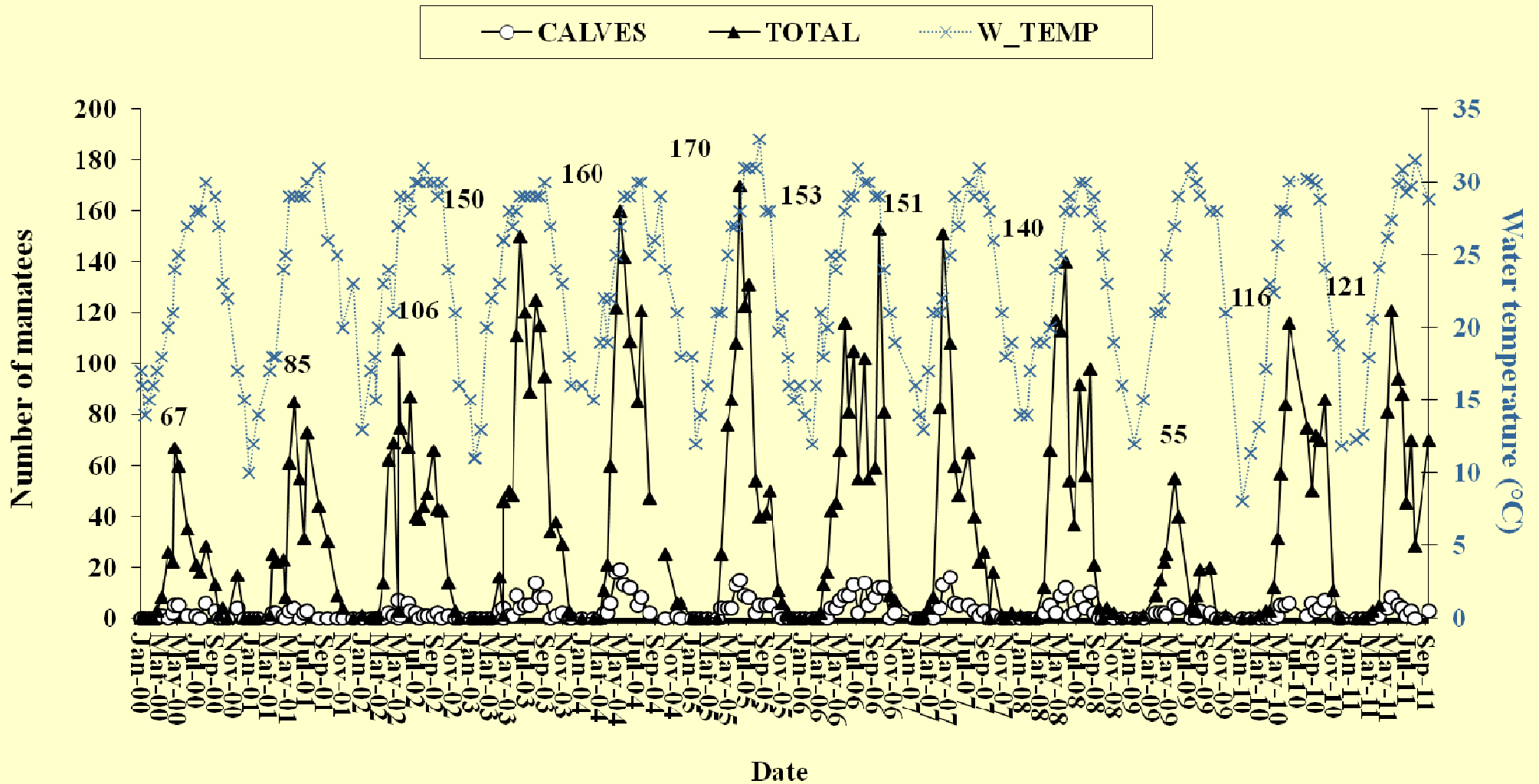
- 2

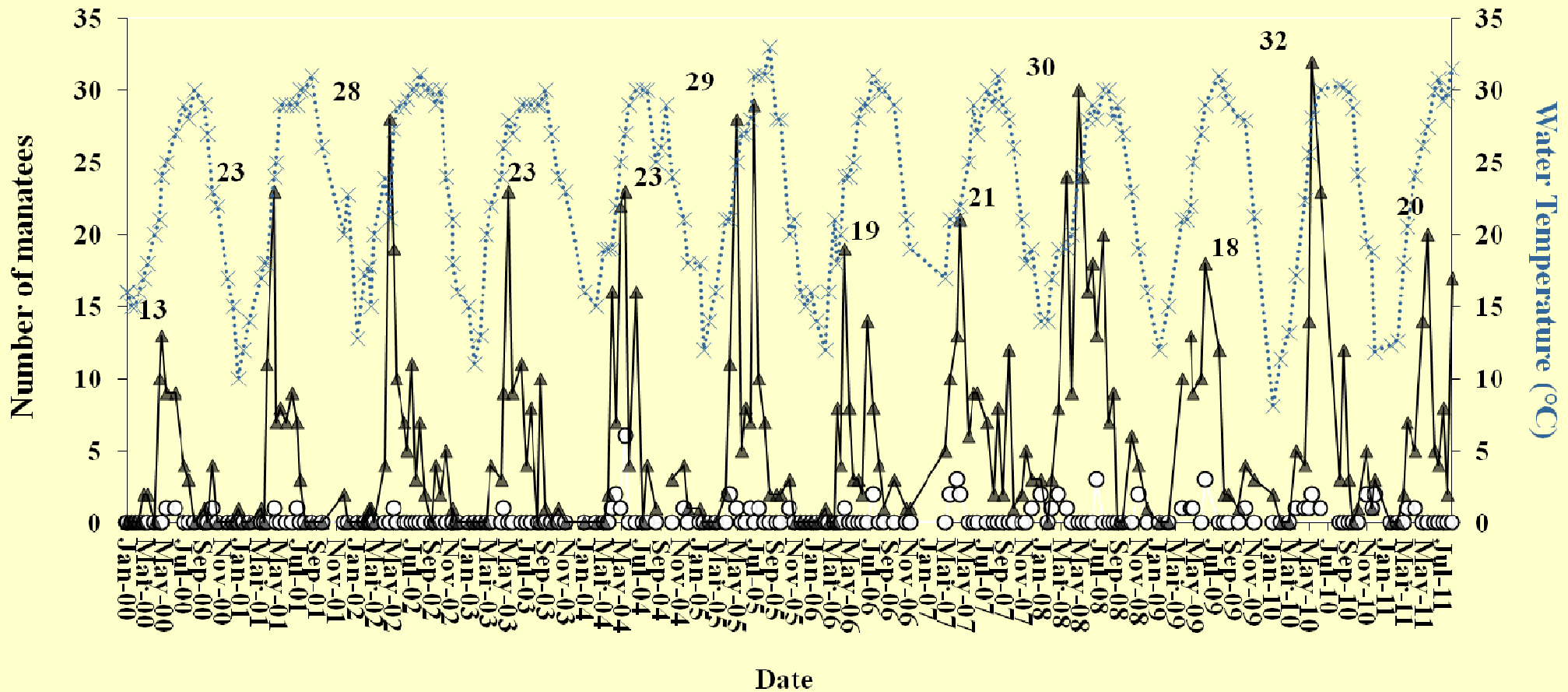
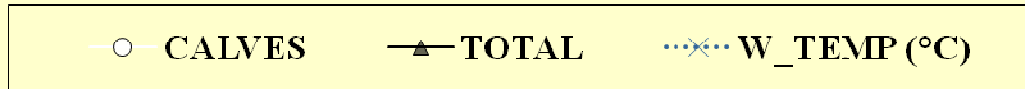
Severe Winter

Adults 2  
Calves 0  
Total 2









# Submerged Aquatic Vegetation (SAV)

## Freshwater

- Tape grass - *Vallisneria americana*
- Hyacinth - *Eichornia sp.*
- Algae - *Hydrilla sp.*

## Marine

- Turtle grass – *Thalassia sp.*
- Manatee grass – *Syringodium sp.*
- Shoal grass – *Halodule sp.*





# Vallisneria americana





# Water Quality Monitoring

- Weekly
- Jacksonville University boat dock
- Water temperature
- Salinity

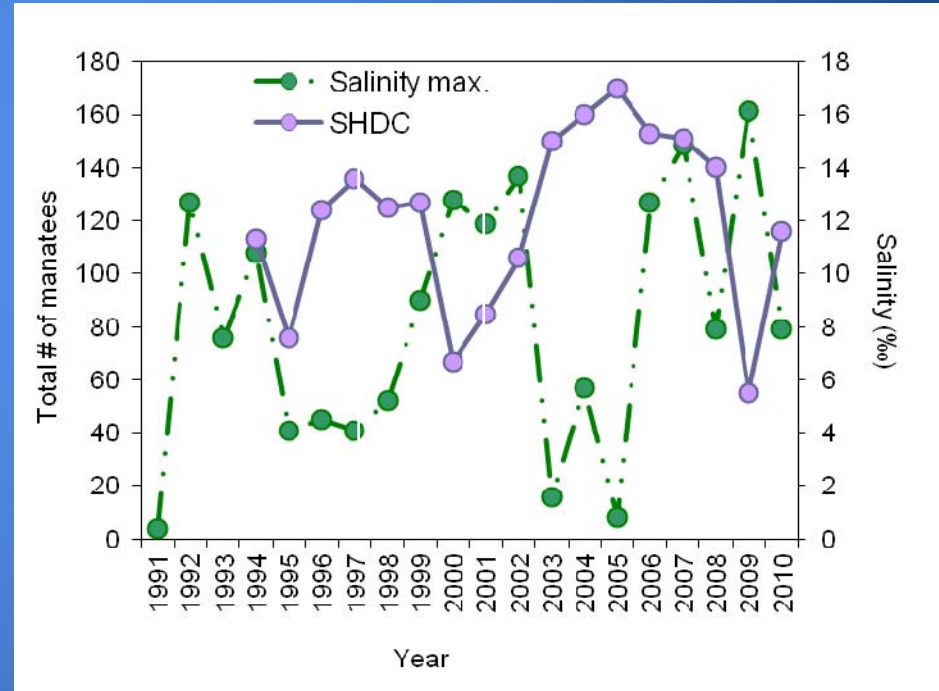
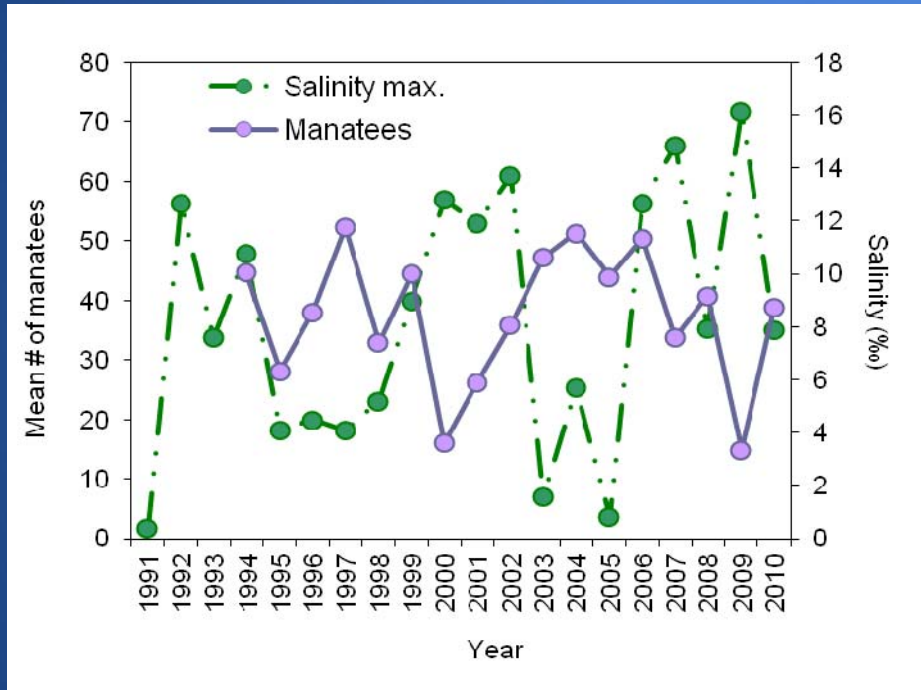




FL 9809-D

# St. Johns River Report

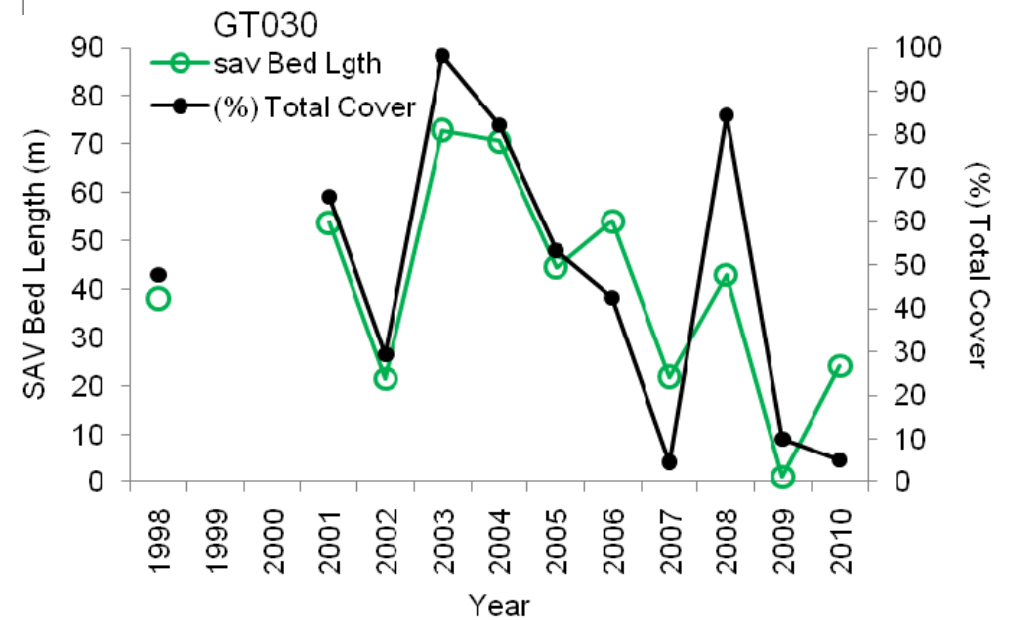
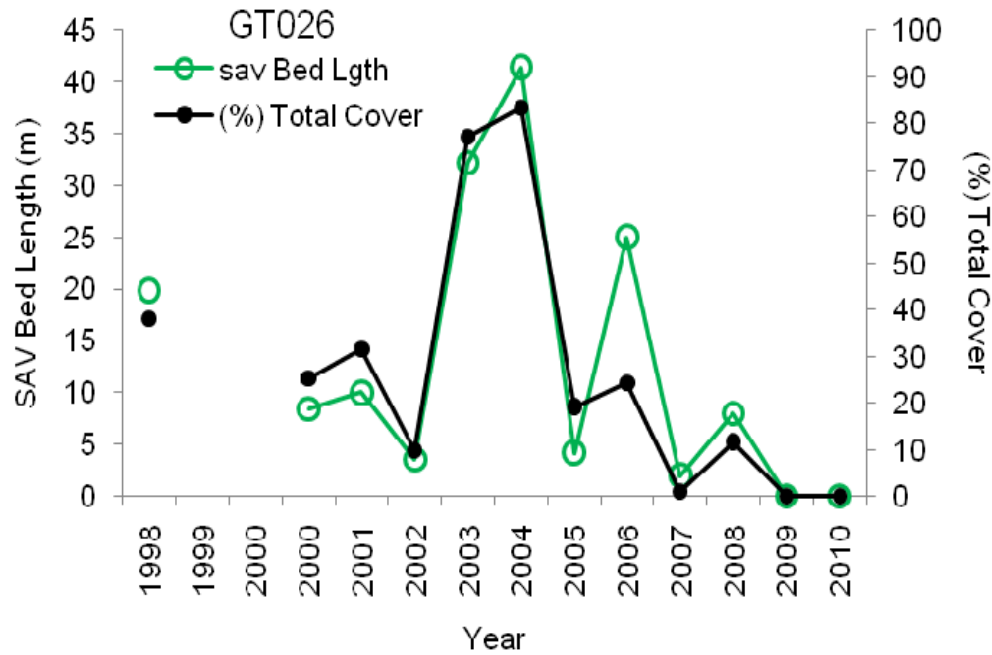
<http://www.sjrreport.com/>



# SJRWMD

GT026 NAS JAX

GT030 NAS JAX s



# Marina Surveys

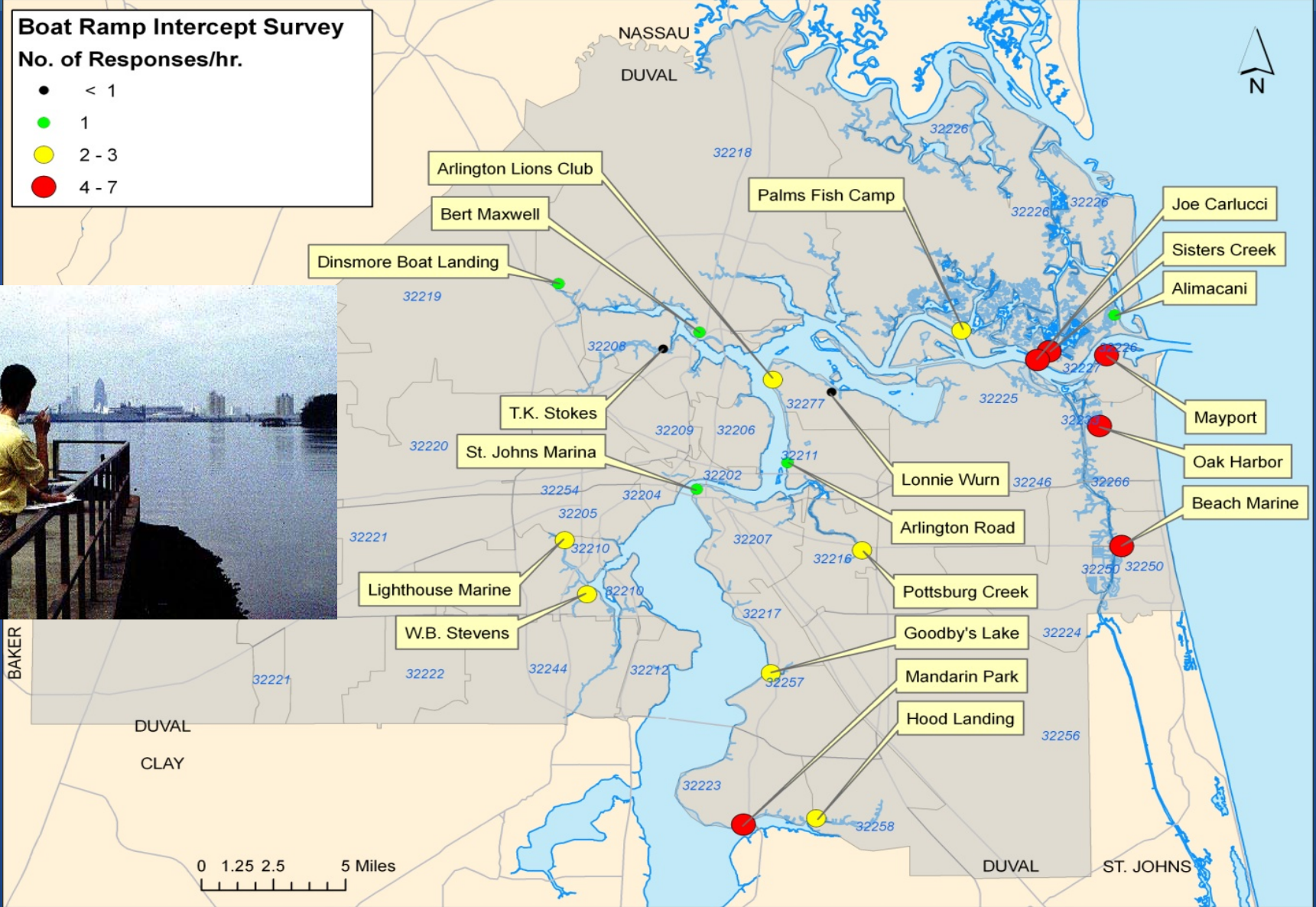
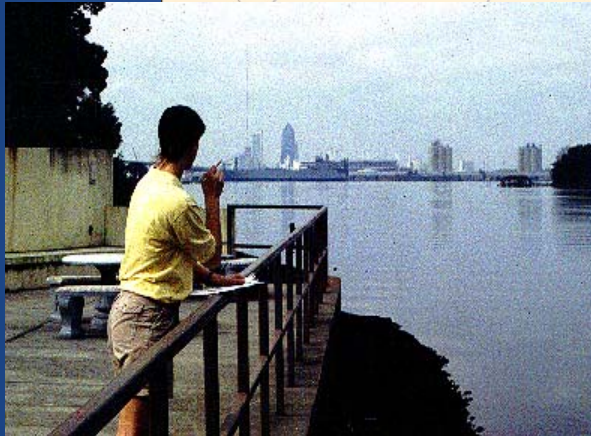




# Vessel Traffic Studies UNF, JU, ATM

**Boat Ramp Intercept Survey**  
**No. of Responses/hr.**

- < 1
- 1
- 2 - 3
- 4 - 7



# Warm Water Sources

- JEA Southside and Kennedy Power Plants
- JEA Waste Water Treatment Outfalls
- Other areas (Ortega Basin)
- Monitored daily between Nov - Feb
- Blue Springs
- Scar patterns recorded













# Manatee Protection

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- Waterways activities/events
- Rescues & carcass recovery
- Other observations
- Special areas





Ron Nelson JEA



Ron Nelson JEA

12/1/2011









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# Moving dredge equipment ICW N.

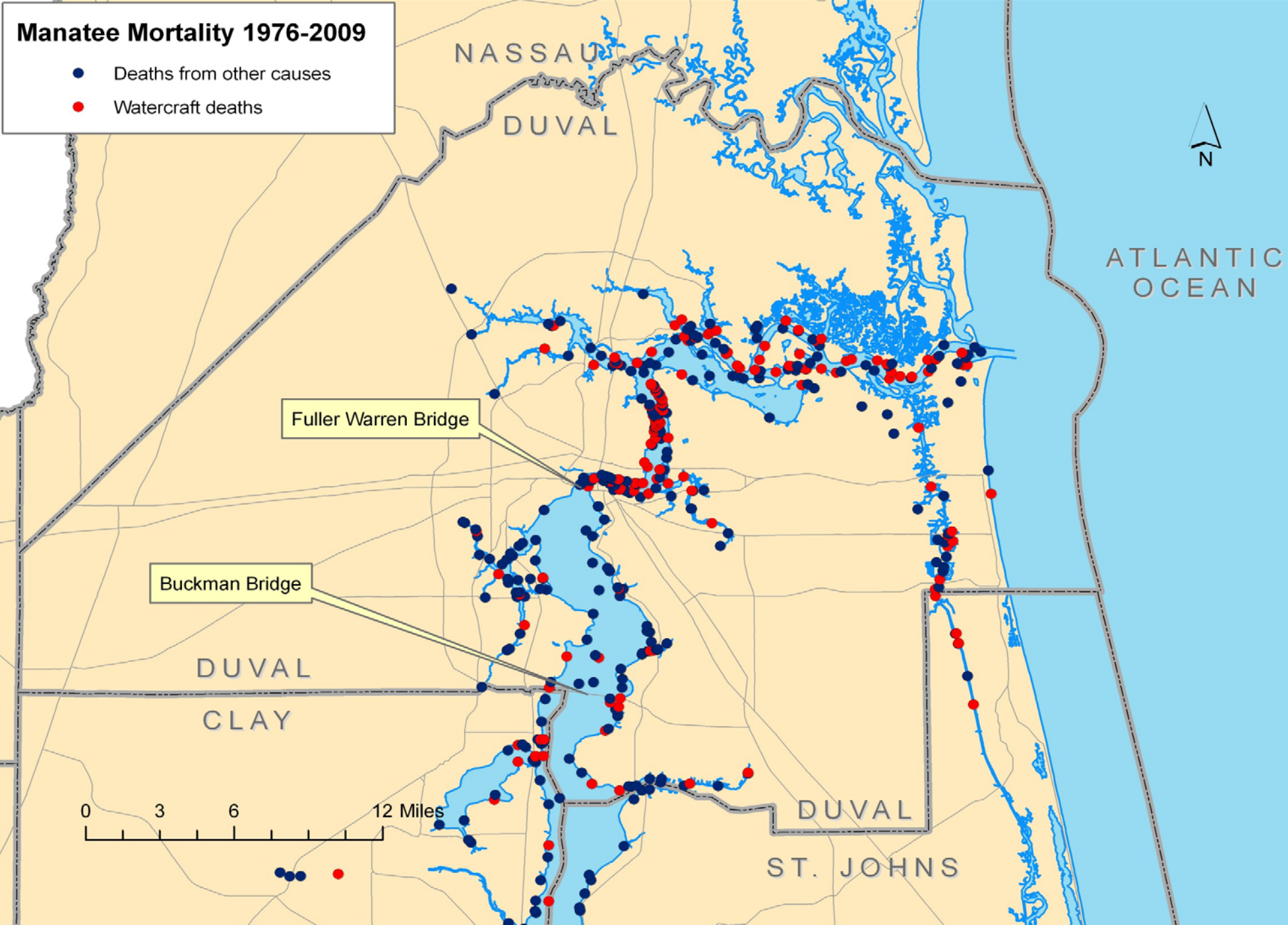


# Acoustics study

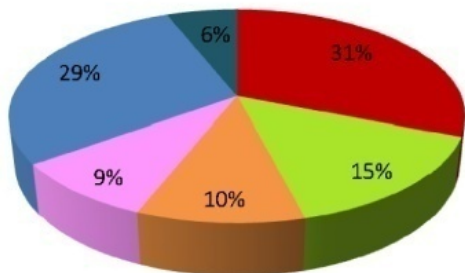


# Manatee Mortality 1976-2009

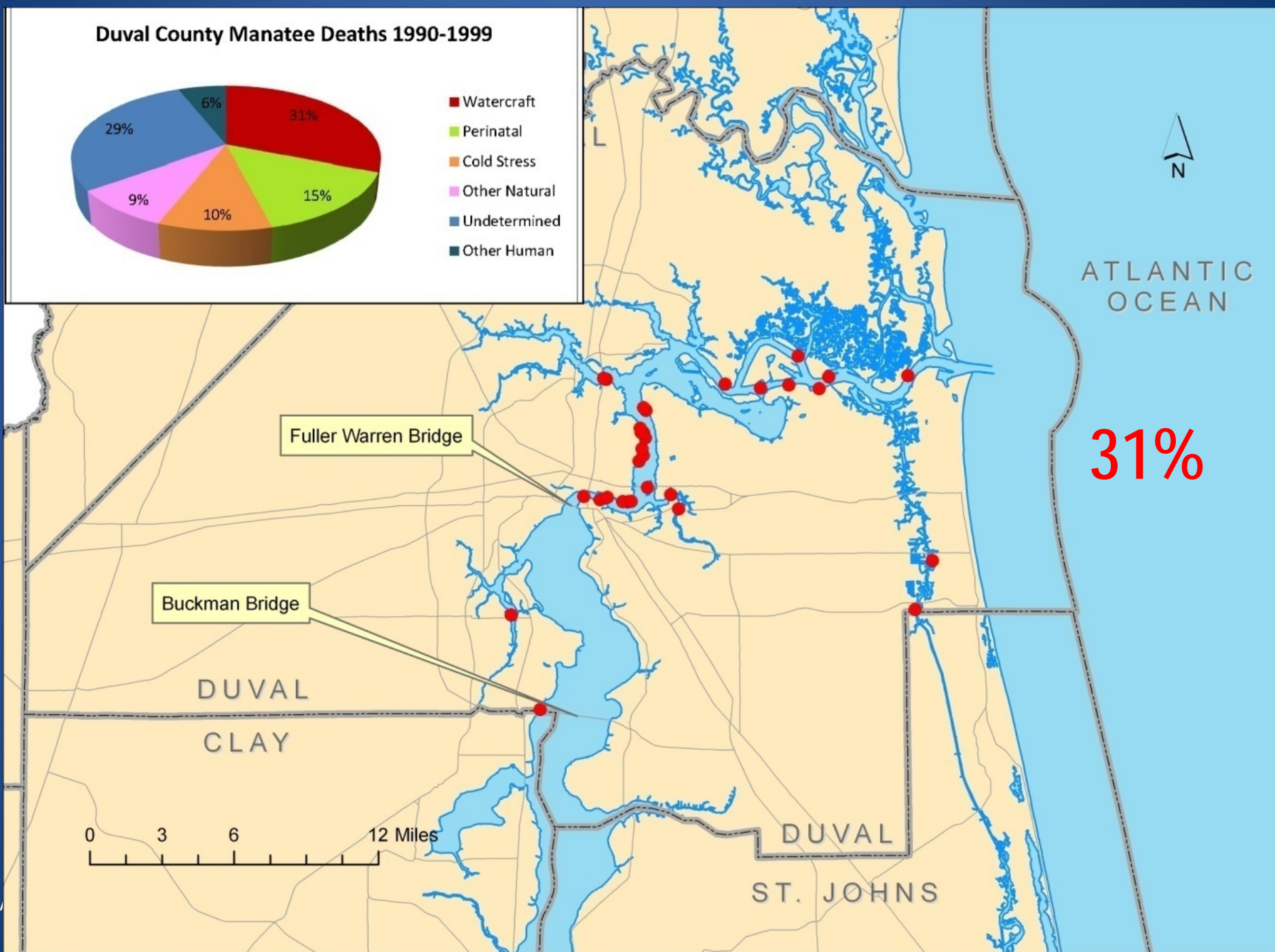
- Deaths from other causes
- Watercraft deaths



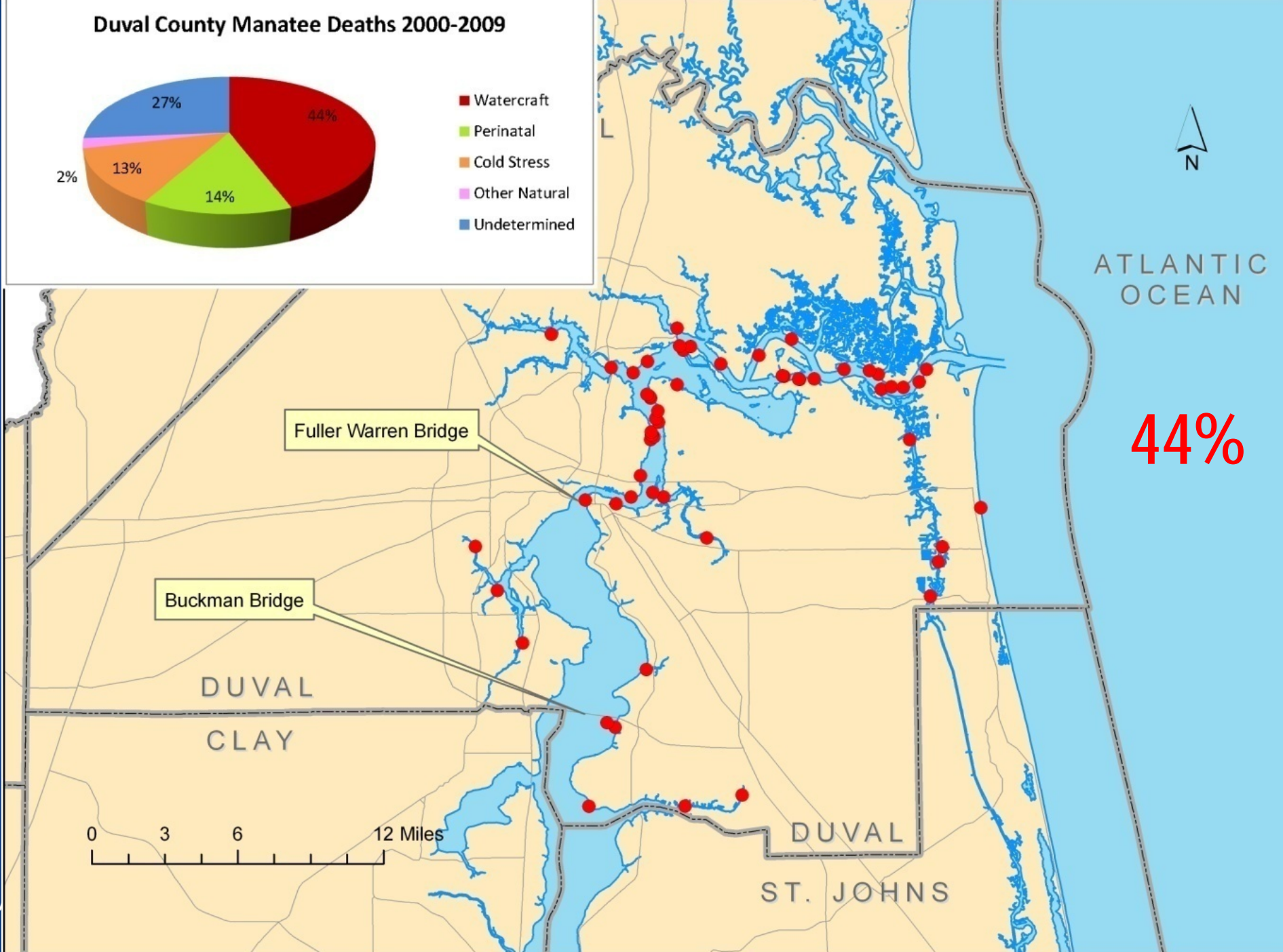
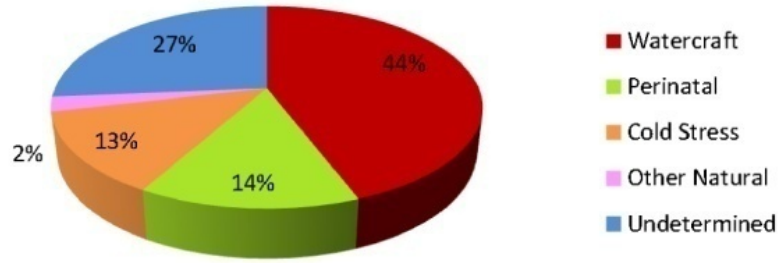
# Duval County Manatee Deaths 1990-1999



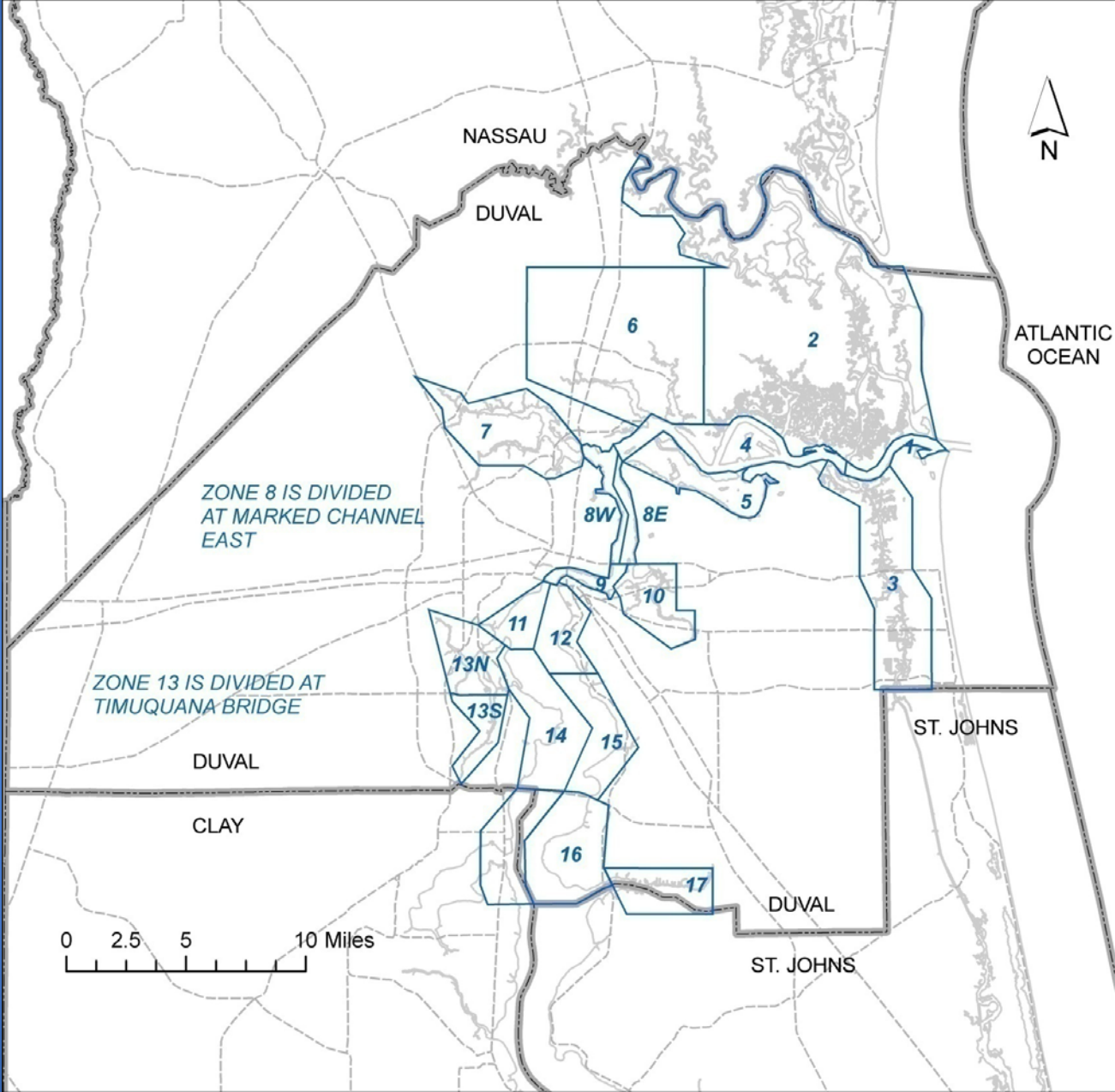
- Watercraft
- Perinatal
- Cold Stress
- Other Natural
- Undetermined
- Other Human



# Duval County Manatee Deaths 2000-2009

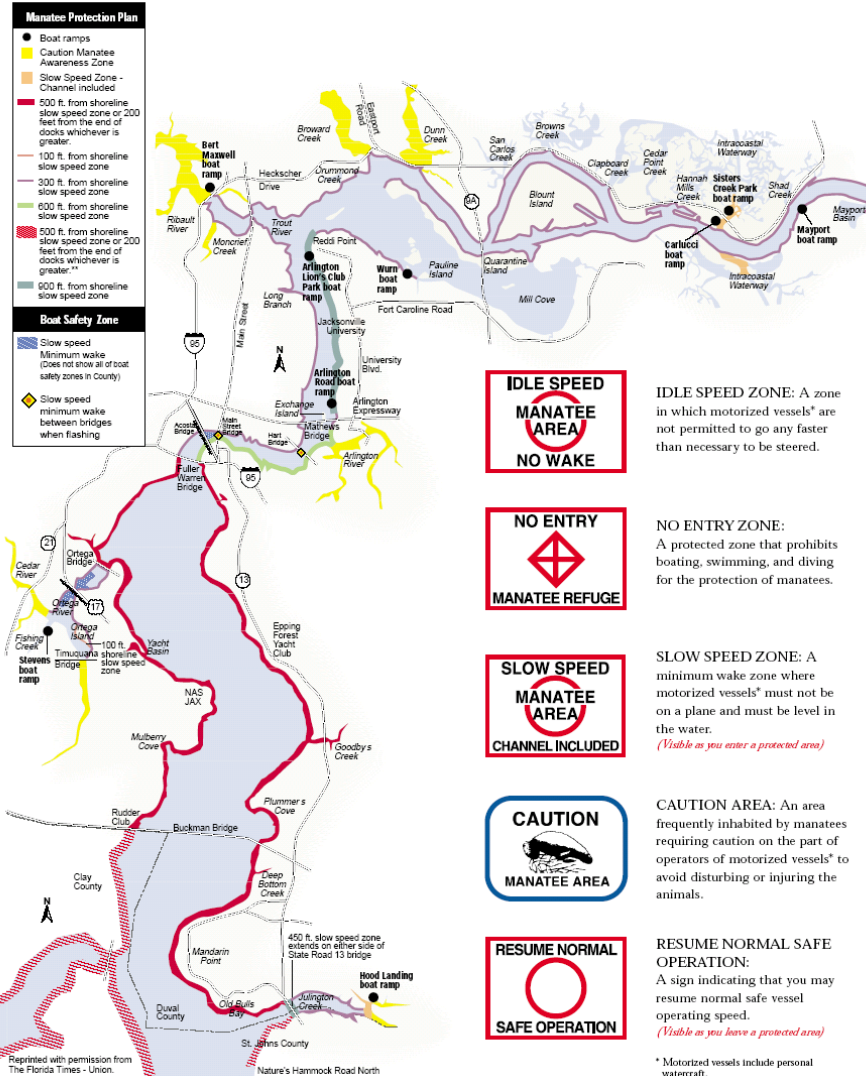


# Zone Map



# Original Zones

# DUVAL COUNTY Manatee Protection Zones

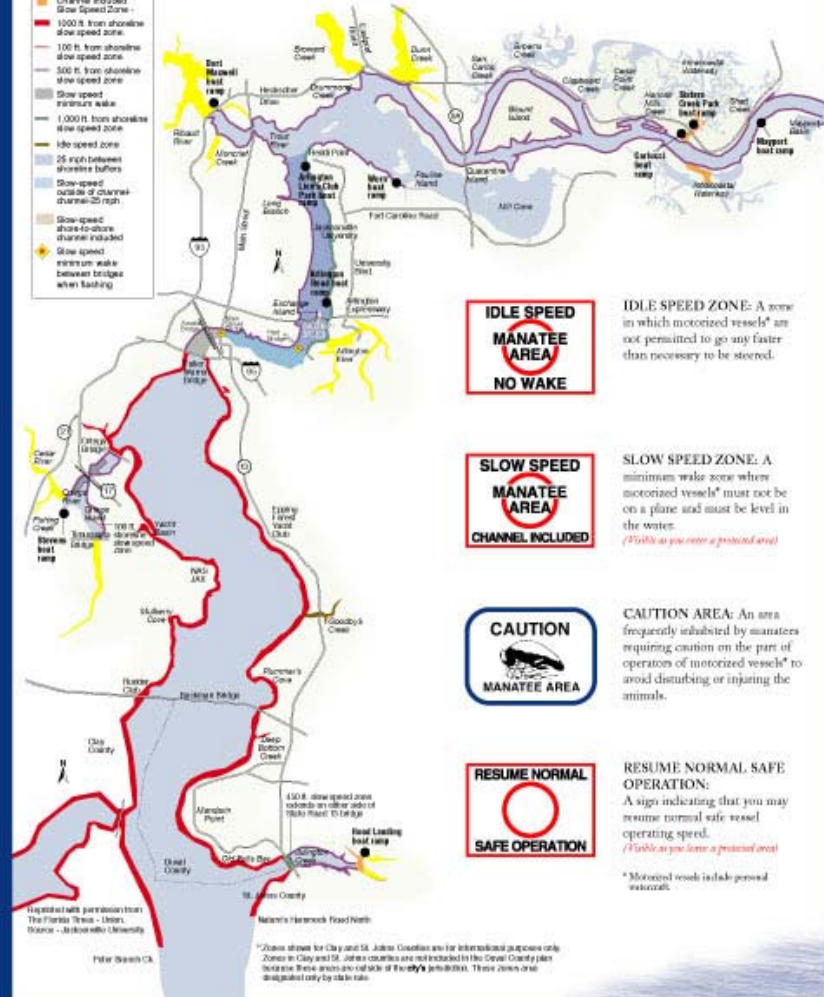




# Current Zones

## DUVAL COUNTY Manatee Protection Zones

- Manatee Protection Plan**
- Boat ramps
  - Caution Manatee Awareness Zone
  - Channel Included Slow Speed Zone
  - 1000 ft. from shoreline slow speed zone
  - 100 ft. from shoreline slow speed zone
  - 500 ft. from shoreline slow speed zone
  - Slow speed entrance wake
  - 1,000 ft. from shoreline slow speed zone
  - No speed zone
  - 25 ft. buffer shoreline buffers
  - Slow-speed outside of channel (channel=35 ft. wide)
  - Slow-speed shore-to-shore channels included
  - Slow speed entrance wake between bridges when boating



**IDLE SPEED ZONE:** A zone in which motorized vessels\* are not permitted to go any faster than necessary to be steered.



**SLOW SPEED ZONE:** A minimum wake zone where motorized vessels\* must not be on a plane and must be level in the water.  
*(Visible as you enter a protected area)*



**CAUTION AREA:** An area frequently inhabited by manatees requiring caution on the part of operators of motorized vessels\* to avoid disturbing or injuring the animals.



**RESUME NORMAL SAFE OPERATION:** A sign indicating that you may resume normal safe vessel operating speed.  
*(Visible as you leave a protected area)*

\* Motorized vessels include personal watercraft.

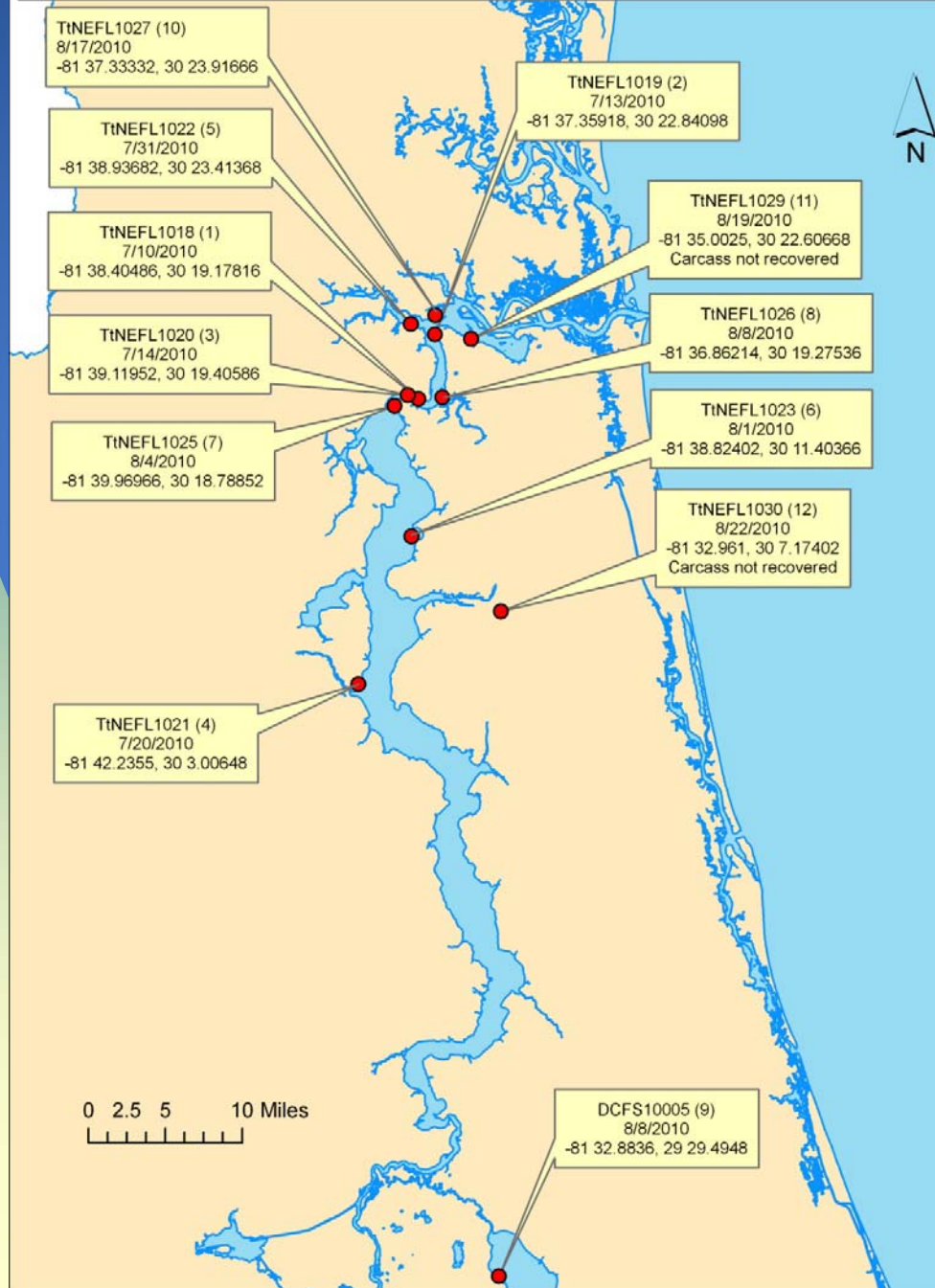
\*Zones shown for Clay and St. Johns Counties are for informational purposes only. Zones in Clay and St. Johns Counties are not included in the Duval County plan because these areas are outside of the city's jurisdiction. These areas are designated only by the state.

# Dolphins

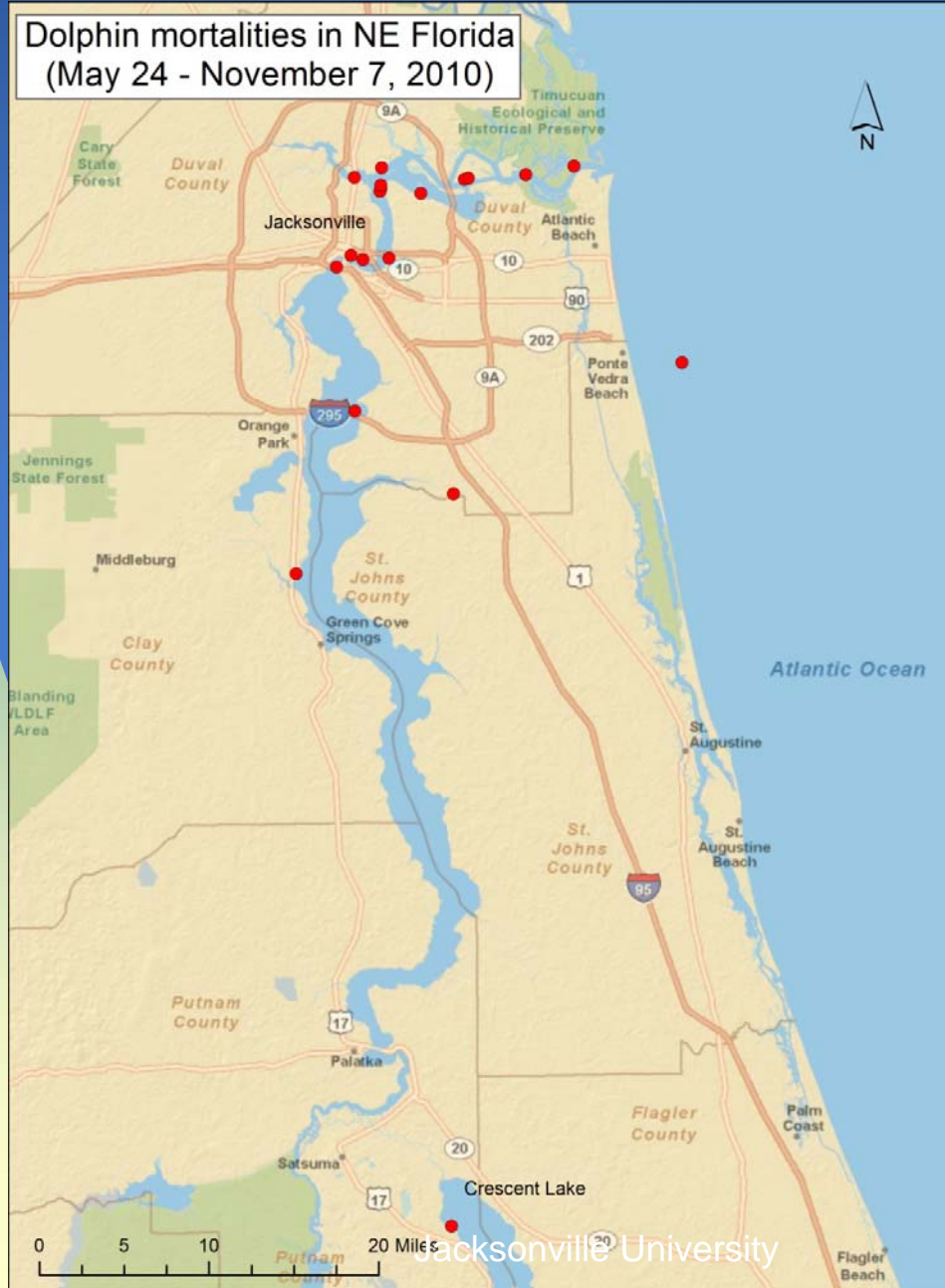
*Nellie at  
Marineland is  
JU's Mascot*



# Bottlenose Dolphin Strandings in St. Johns River, July 10-August 22, 2010.



Dolphin mortalities in NE Florida  
(May 24 - November 7, 2010)





JU, 8-15-2011, Christina Frank  
Photo authorized by NMFS LOC #14157



JU, 8-15-2011, Nadia Gordon  
Photo authorized by NMFS LOC #14157

To report manatee or dolphin sightings and deaths, injuries, orphaned calves, tag sightings or harassment please contact:

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JU

Phone: (904)-256-7575

FWC

Phone: 1-888-404-3922

Cell: \*FWC

Radio: VHF Ch.16

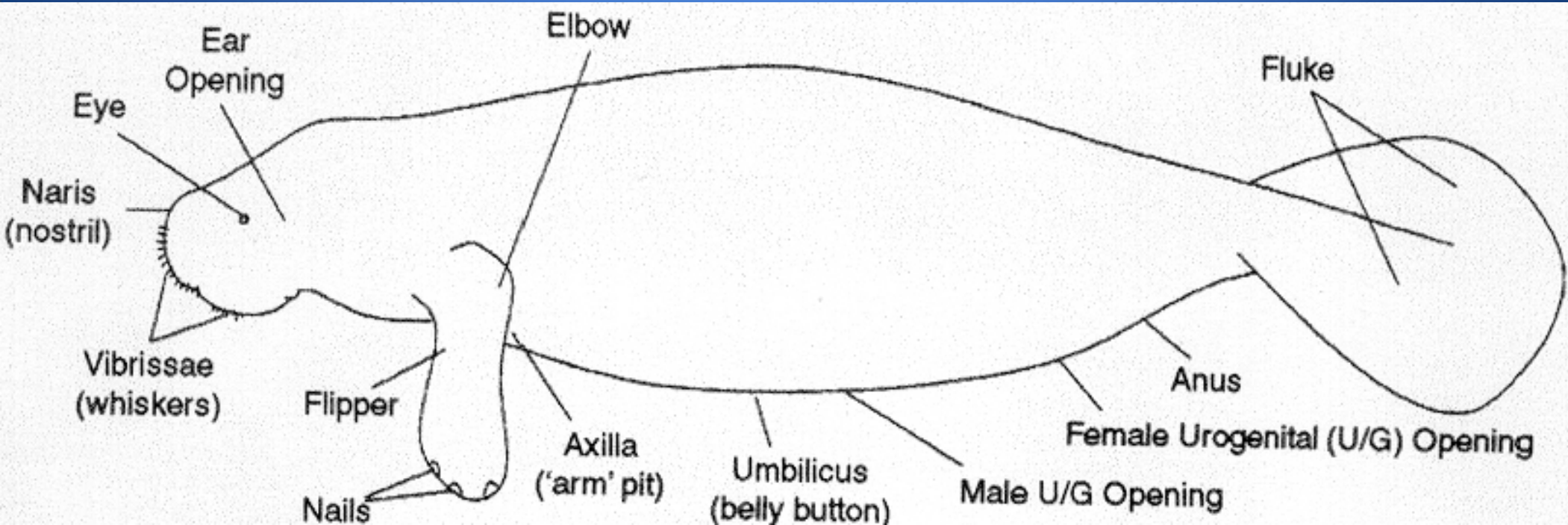


# Marine Science Research Institute

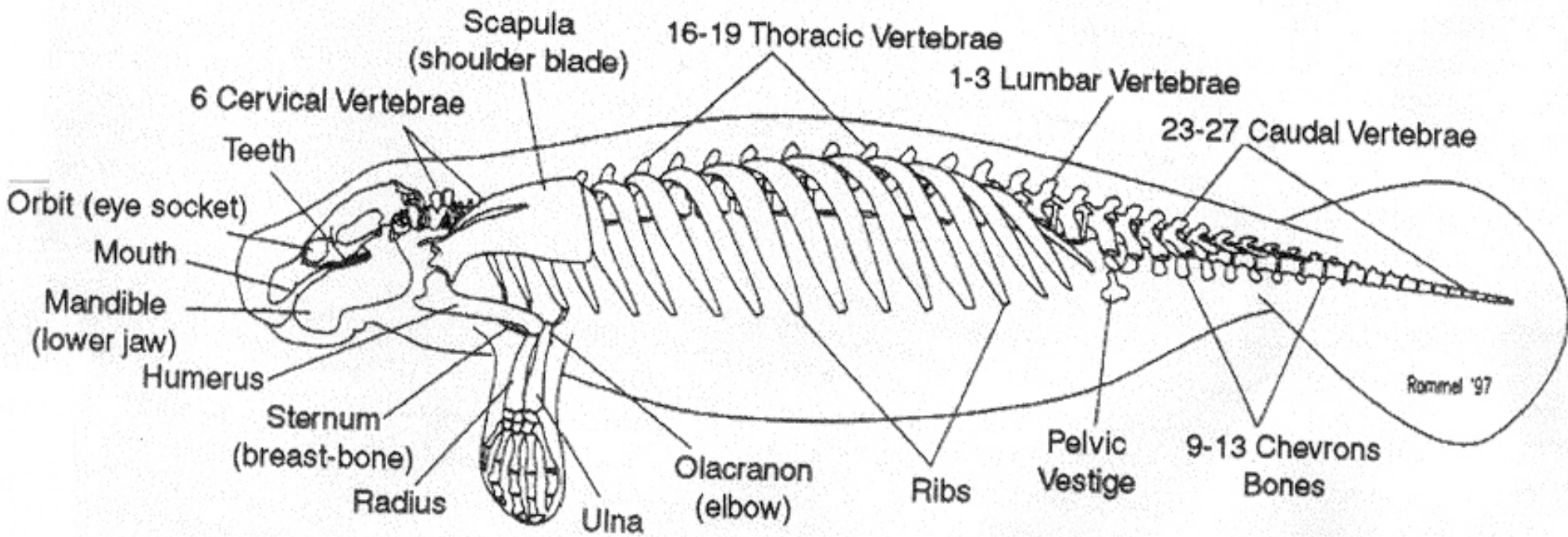




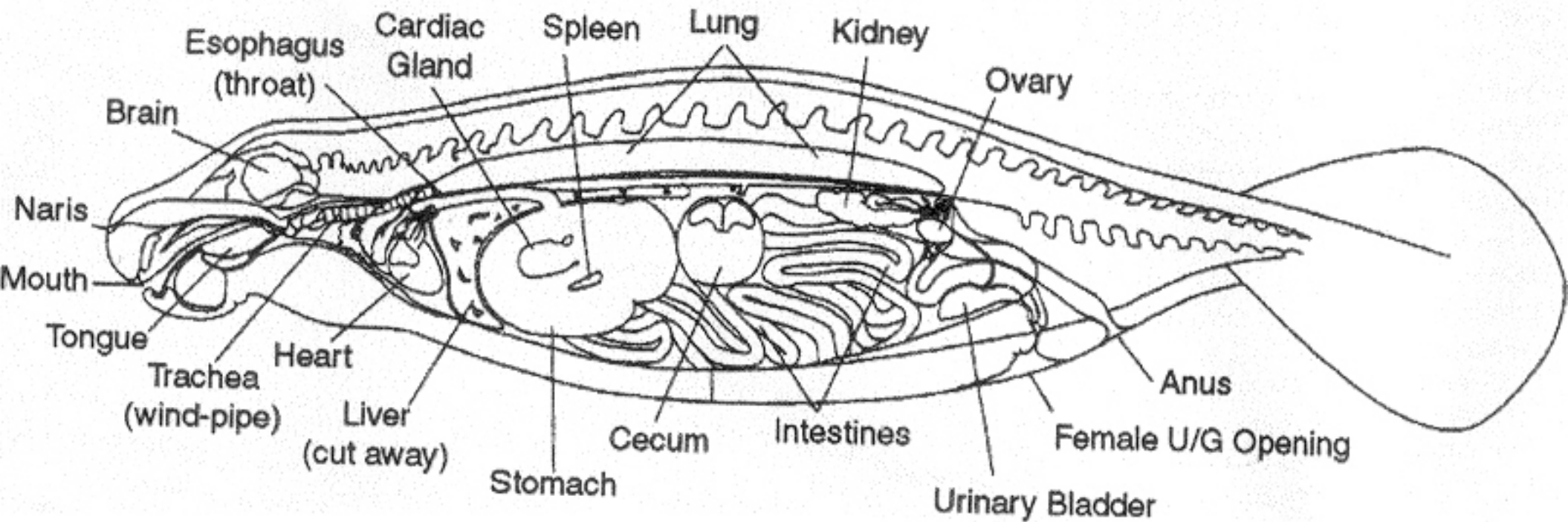




Source: FWCC, DEP, BPSM, FMRI.



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