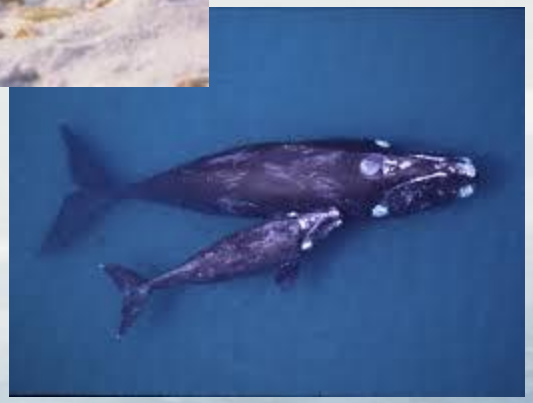
# An Evaluation of Environmental Windows on Dredging Projects in Florida, USA



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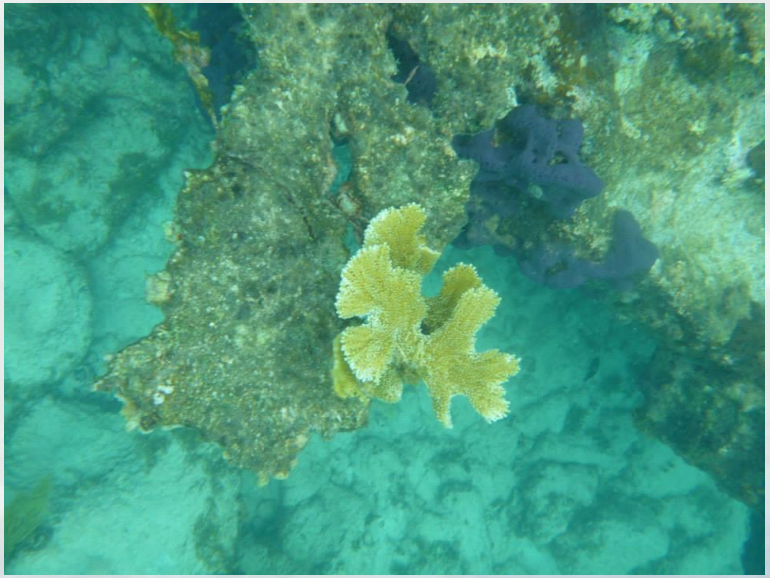
## Florida Shore and Beach Technical Meeting
## Clearwater Beach, FL Feb 4-6, 2015

# What Are Windows?

- **Limitations on when particular activities can be conducted**
- **Limitations on where particular activities can be conducted**
- **Limitations on particular types of equipment that may be used to conduct a project**

# Reasons for Windows

- **Protect specific listed species in specific areas**
- **Protect specific habitats used by listed species at certain times.**



# Reasons for Windows

Breaking/crushing due to contact with equipment

Entrainment/ Crushing

Burial of critical/ Foraging habitats

Ship Strike

# Reasons for Windows

**Based on Water Temp. & Nesting Timeline**

**Hatching**

**Nesting**

***JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC***

# History of Windows

- **Dredging**
  - 1988 - Canaveral Harbor. No use of a hopper dredge except in emergencies
  - 1992 – ***Rigid timeframes*** based on water temperature thresholds; specific channels in SE US
  - 1995 – Covers all O&M dredging and sand mining in SARBO (1997 carries this through)
  - 2003 – 2007 GRBO has window ***recommendations*** instead of requirements
- **Beach Placement**
  - <2011 SBPO – project specific placement windows
  - >2011 SBPO – "regional" placement windows based on nesting densities

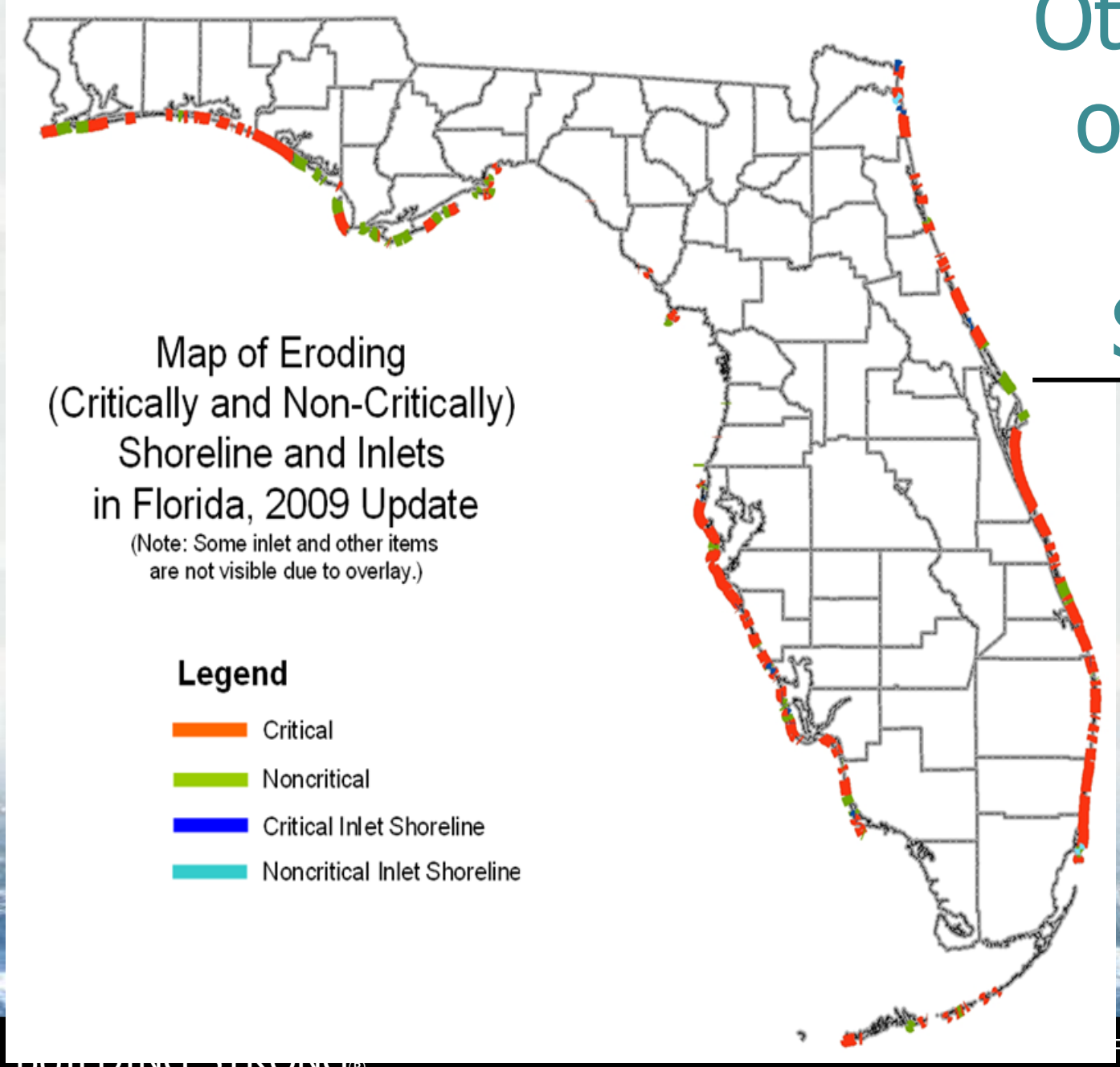
NAVIGATION

# Jacksonville Program

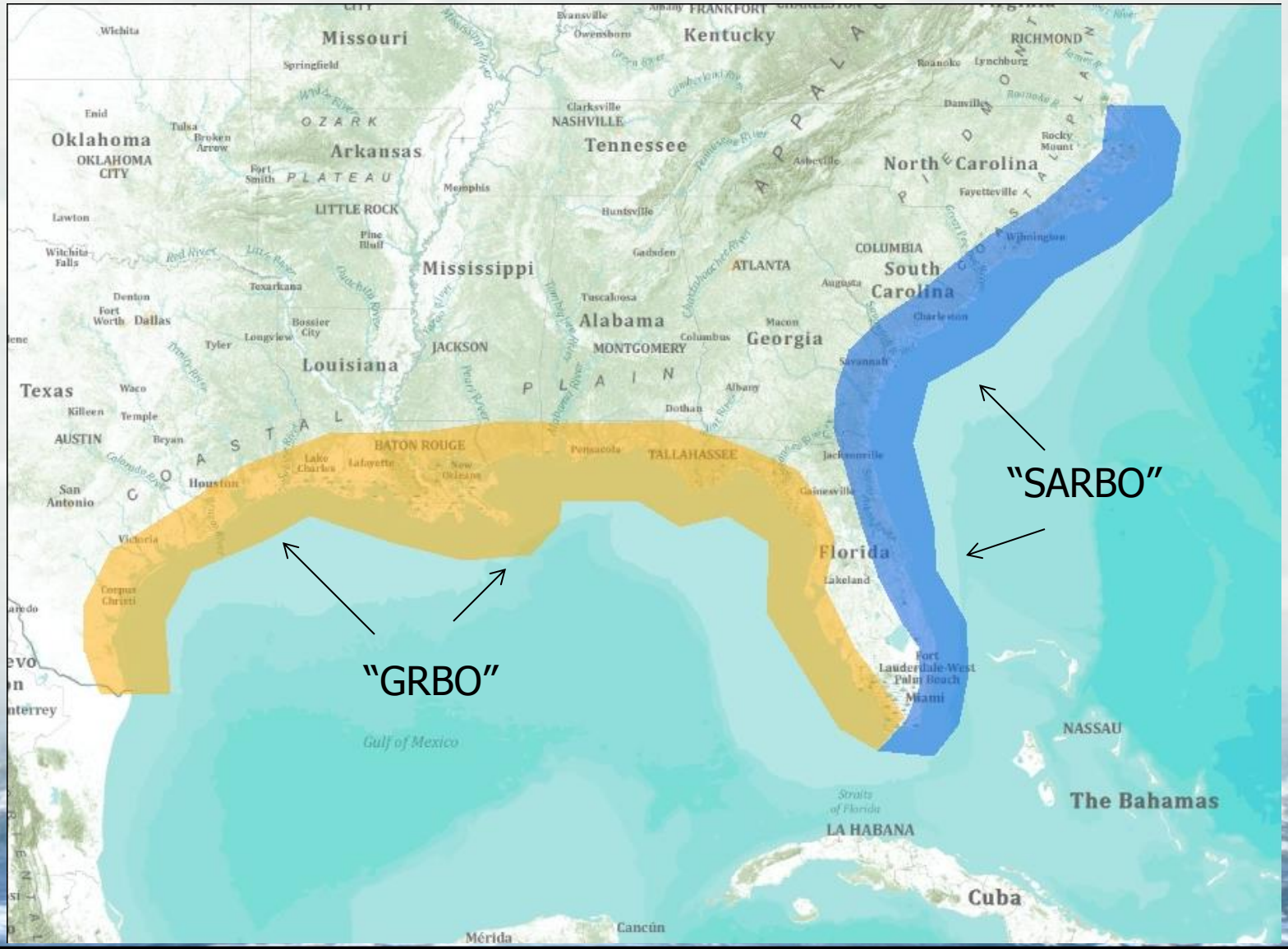
# HURRICANE AND STORM DAMAGE REDUCTION (HSDR)
# Jacksonville Program

(for more detailed information go to http://www.dep.state.fl.us/beaches/programs/coasteng.htm).

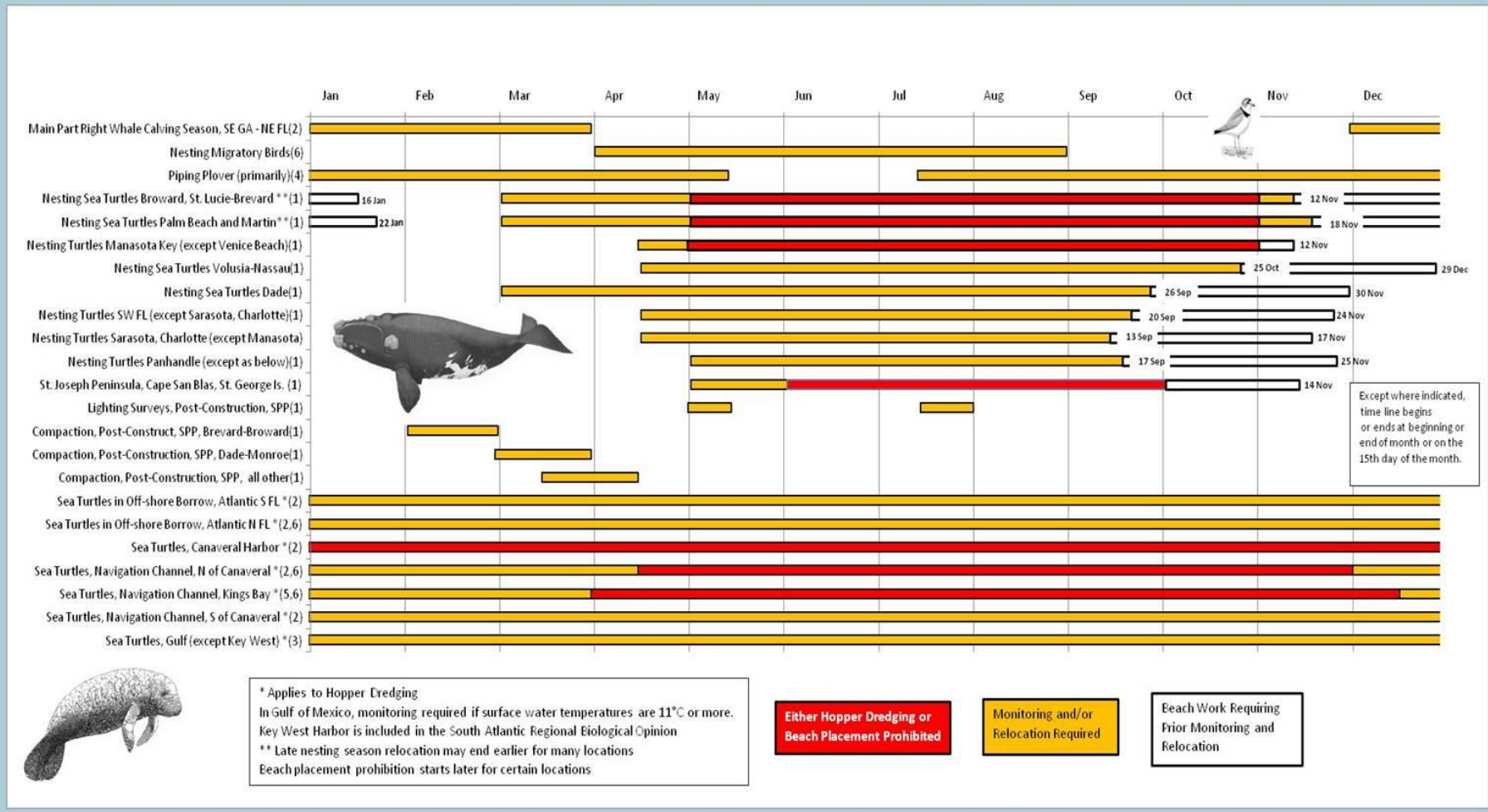
# Other Eroded or Critically Eroded Shoreline




# Where Are the Windows?



# What We Currently Have




References: (1) Statewide Programmatic Biological Opinion, 22 Aug 2011, FWS (2014 revision) (2) South Atlantic Regional Biological Opinion, 1995, NMFS (3) Gulf Regional Biological Opinion, 2007 revision, NMFS
(4) Programmatic Piping Plover Biological Opinion (T&C 8), 22 May 2013, FWS (5) SAD Management Protocol for SARBO (6) SAJ Guide Specs 3.1.5.12a (Migraotory Birds) and 3.1.5.2 (Hopper dredge)
(7) For restrictions in Important Manatee Areas, see maps http://www.saj.usace.army.mil/Portals/44/docs/regulatory/sourcebook/endangered_species/Manatee/County_Maps_2013.pdf
For post-construction monitoring requirements for sea turtle nesting, see terms and conditions of Statewide Programmatic Biological Opinion.
For late season monitoring: 7 days without a nests, can stop monitoring once electronic mail concurrence is received from FWS or FWC.
Generally, monitoring and relocation of sea turtle nests during nesting season begins 65 days prior to start of work (70 days prior for the Panhandle) or at the beginning of the nesting season whichever comes last.

# Dredge Basics

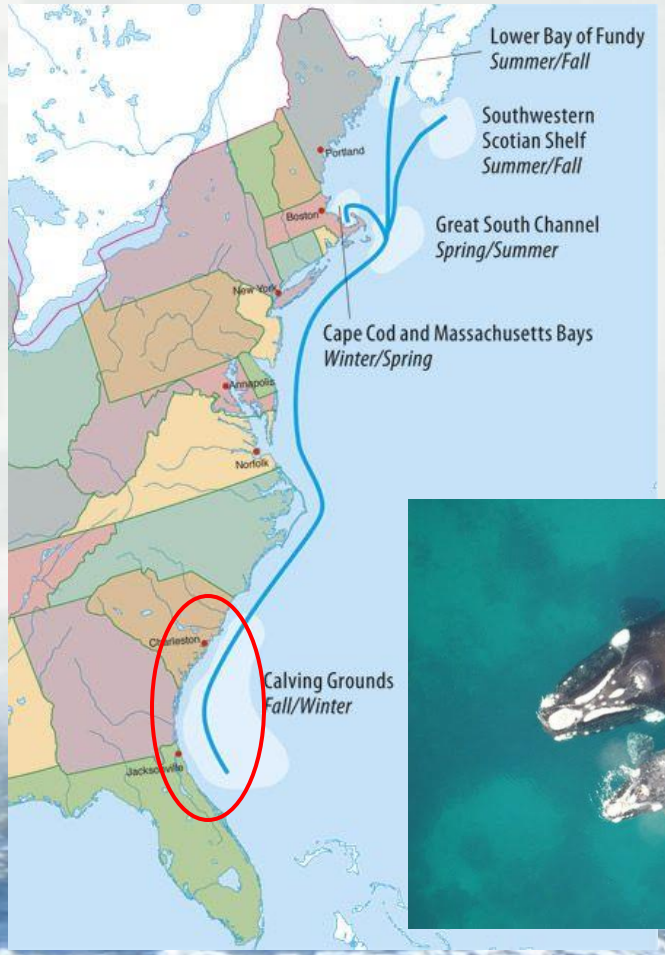
- **Hopper Dredge***
  - Safety (Kings Bay)
  - Distance of borrow site or disposal site (pumping prohibitive)
  - Only dredge type with expected take of sea turtles and sturgeon.
- **Clamshell**
- **Backhoe**
- **Cutterhead**

# Impacts to Projects

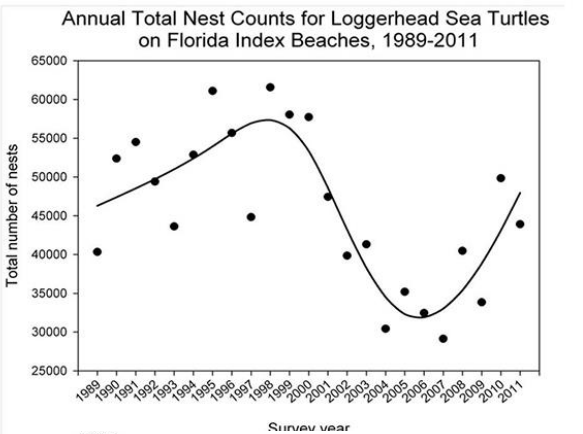
- **Competition**
  - FL projects compete with TX, AL, MS, GA, SC, NC as well as NE projects (Norfolk/New England) all within a limited time in a limited authorized window for many areas.
  - FL has at least 4 harbor projects that use hopper dredges annually w/in the window
  - USACE Civil Works projects vs Local govt projects
- **Can result in increased costs due to limited dredging "ok" time and much of this "ok" time is in the winter – weather delays, faster erosion of the newly built beach.**

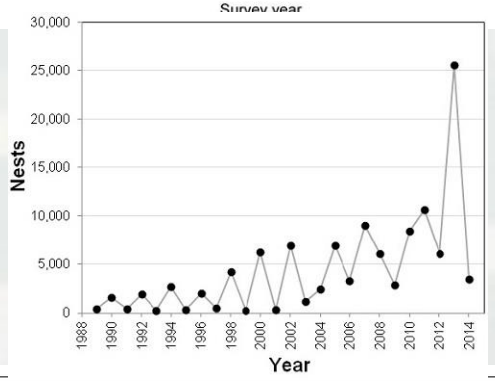
# Creates Potential Species Conflicts

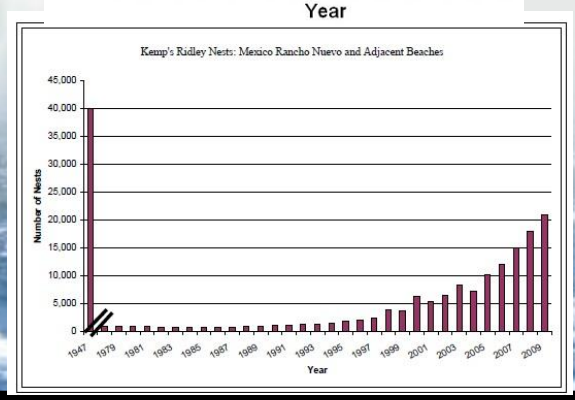
- **Right whales vs turtles**
  - Dredging in winter forces dredges to be in the areas which would have higher right whale concentrations with lower sea turtle concentrations




# Lessons Learned



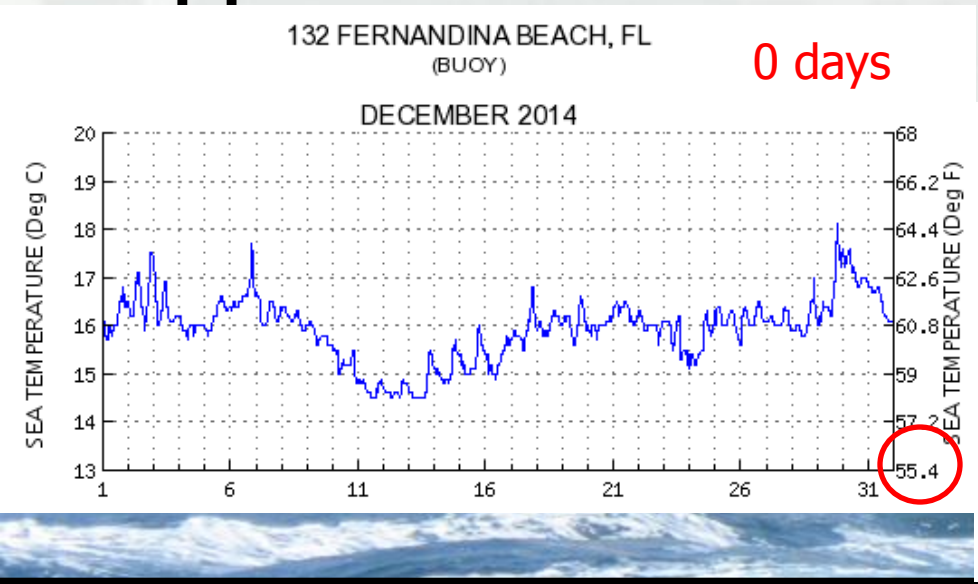



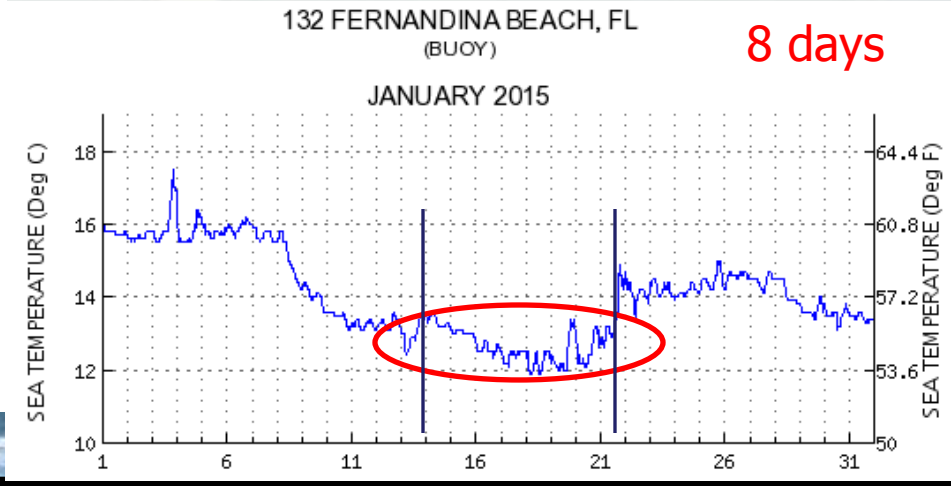




- Every Project is unique
- Some channels have turtles "hunker down" in the channel, burying themselves in the mud, in direct path of dragheads.
- Turtle population and range expanded significantly since 1991 SARBO was written. Seeing species in areas they haven't been seen in more than 20 years.

# Lessons Learned

- South Atlantic windows have been in place ~20 years.
- Kings Bay is northern-most Florida channel – water temp rarely drops below 55°F for long periods of time, thus the 55°F threshold is rarely applicable to Florida.

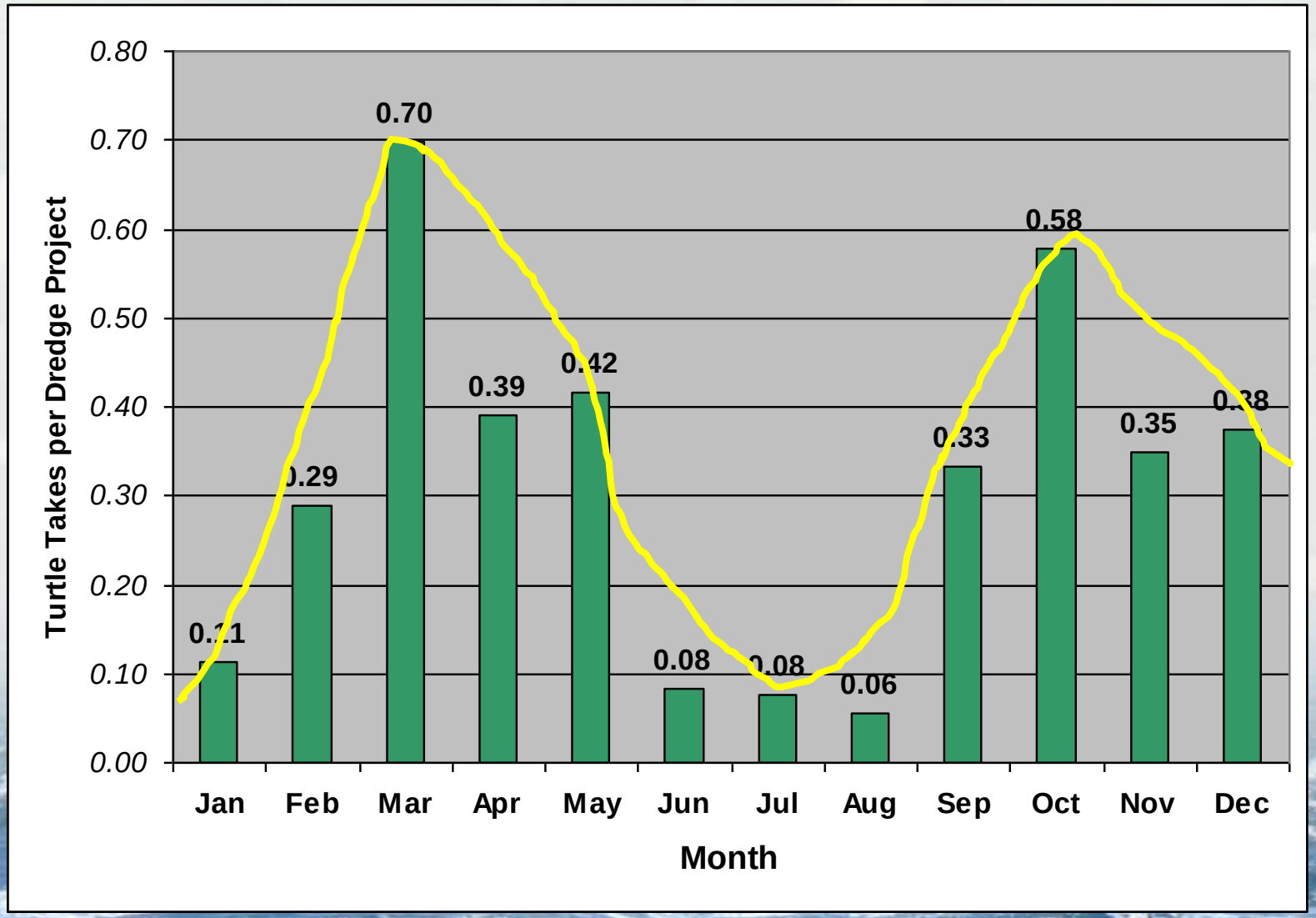


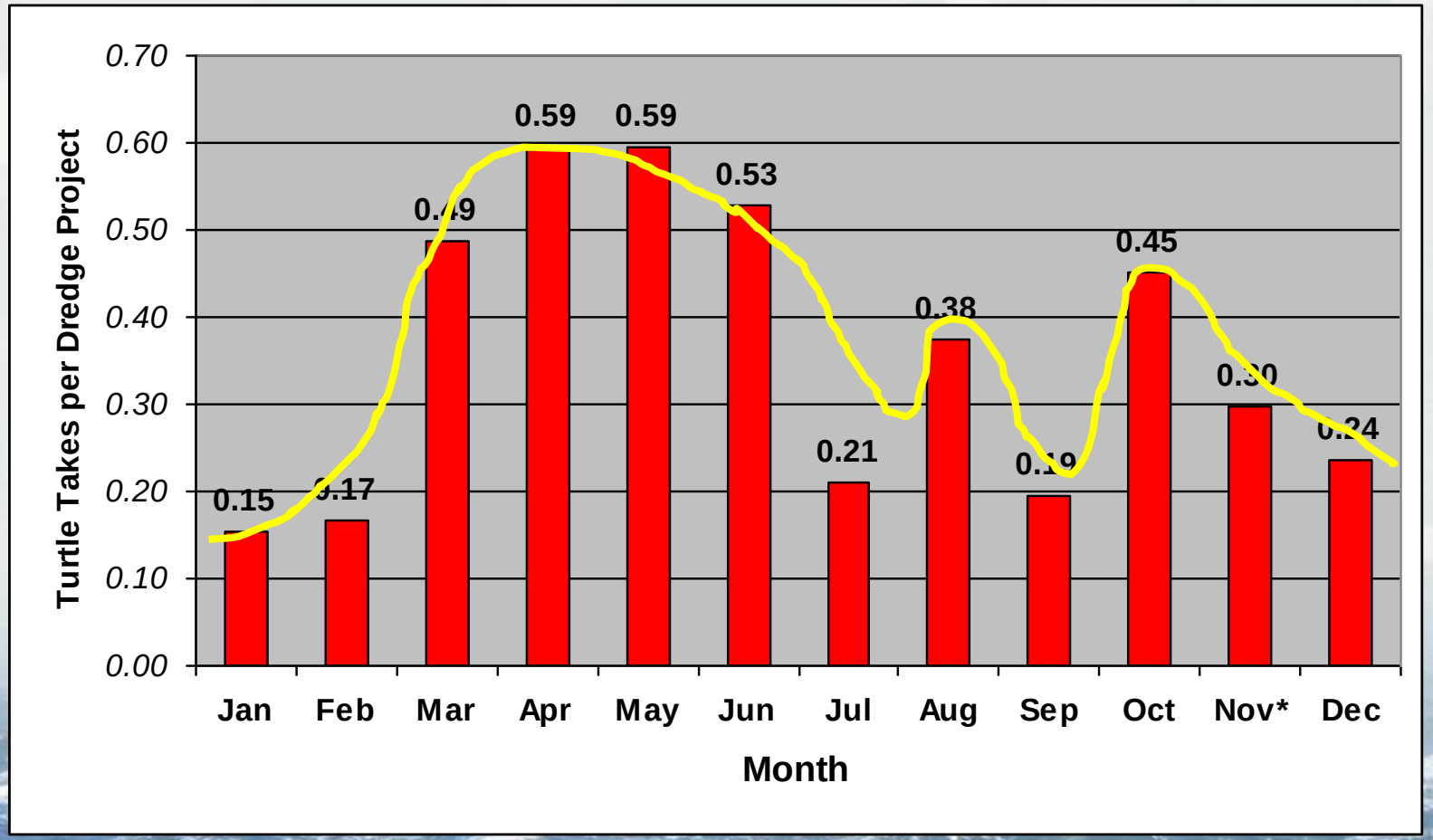
# Lessons Learned

- Entrance Channels within shallow bays may see turtles come and go in high numbers as temperatures fluctuate as fronts pass through during the winter (Tampa)
- Take levels are higher in spring and fall as compared to winter and summer.
- Port Canaveral can be dredged with a hopper dredge with NO/LOW sea turtle take (2004 emergency dredging experience).

# South Atlantic Historic Take Levels 1995-2008



# Gulf of Mexico Historic Take Levels 1995-2008



# Potential Changes

- **Ways to decrease turtle take by hopper dredge**
  - Drag bar
  - Relocation Trawling
  - Opening windows throughout SARBO area, mimic recommendations like in the GRBO – Allow dredges to work in winter in high nesting areas
- **Open Canaveral to Hopper Dredge (2004 lessons learned)**

# Potential Changes

- Dredge entrance channels during summer with placement of material in nearshore and ODMDS where placement on the beach cannot be done due to sea turtle nesting, sea birds or beach mouse use.
- Place sand from entrance channels on down drift beaches outside of winter months in those locations where turtles nests can be relocated outside of the placement footprint.

# Benefits of Changes

- **Less take with changes to windows**
  - Turtles not hunkered down when water is warmer – less take in some of the northern channels using this method.
- **Create additional nesting habitat for sea turtles/shore birds**

# Thank you!

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