

# The Value of Dead Animal Investigations for Understanding Marine Mammal Issues in the Southeast United States



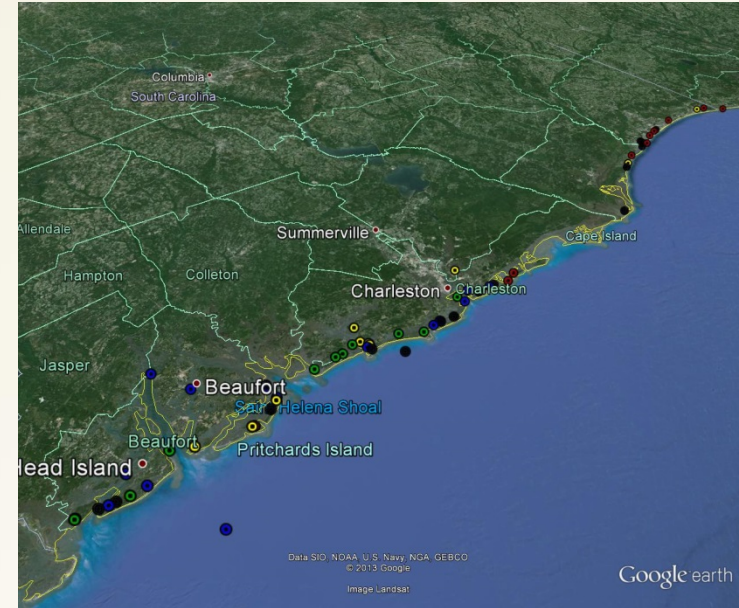
Wayne McFee  
NOAA/NOS/NCCOS/CCEHBR  
Coastal Marine Mammal  
Assessments

# Marine Mammal Issues in the SEUS



# Historical Stranding Information

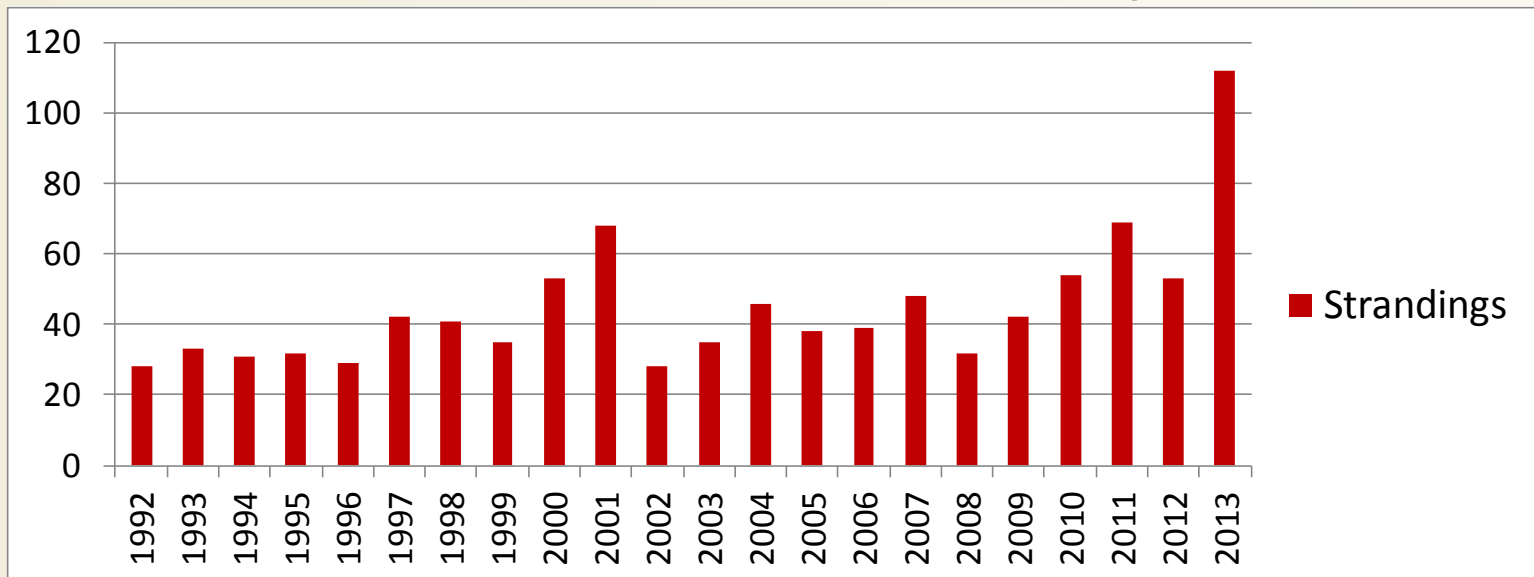
- Stranding Demographics
- Sample collection and Archiving
- Life History Studies
- Provided Baseline Data



Pate and McFee. 2012. Prey species of bottlenose dolphins from South Carolina waters. *Southeastern Naturalist* 11:1-22.

# Strandings and Sentinels of Change

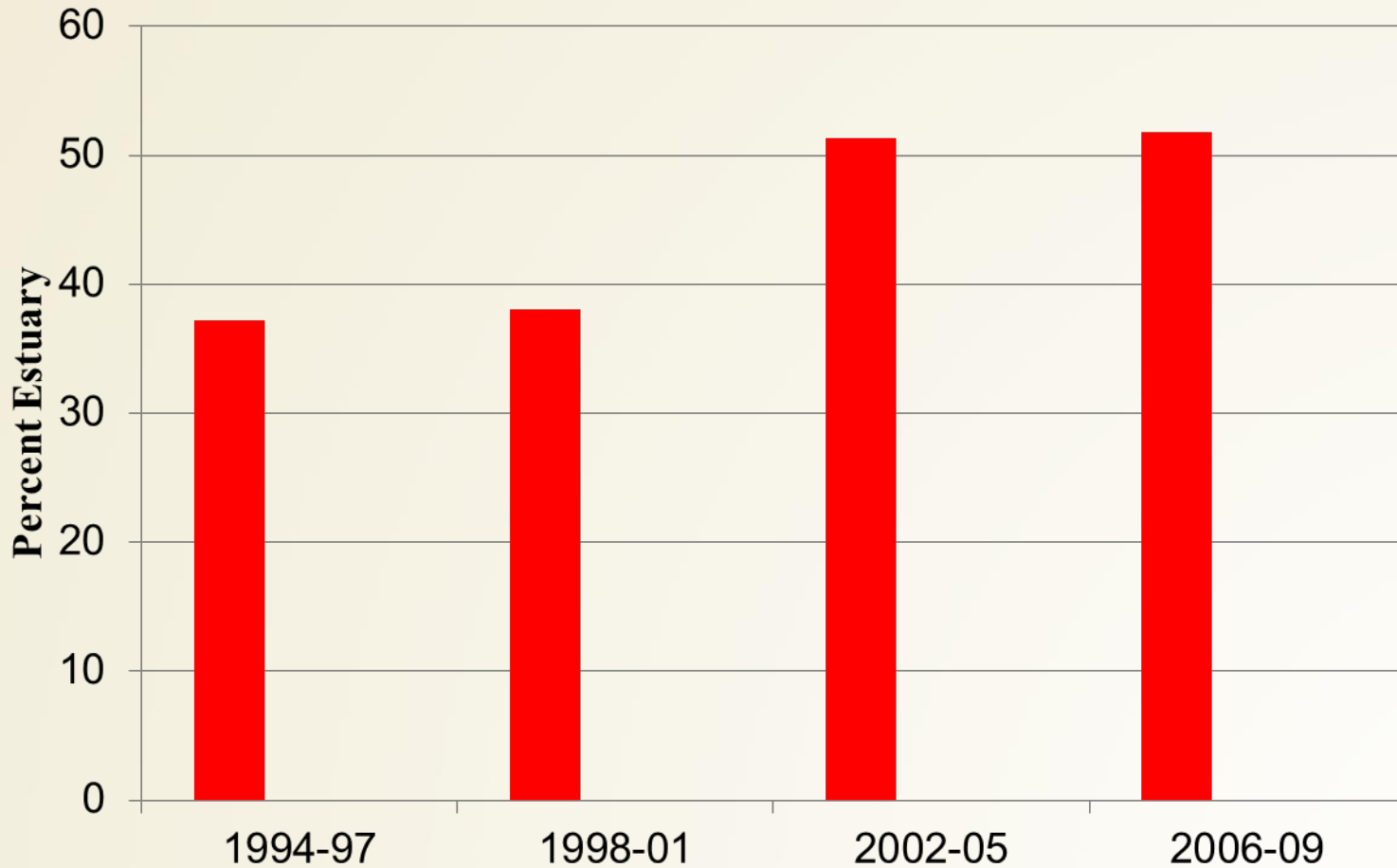
- Monitoring Long-Term Trends (SC -25yrs)
- Population level changes
- Detection of Environmental Change



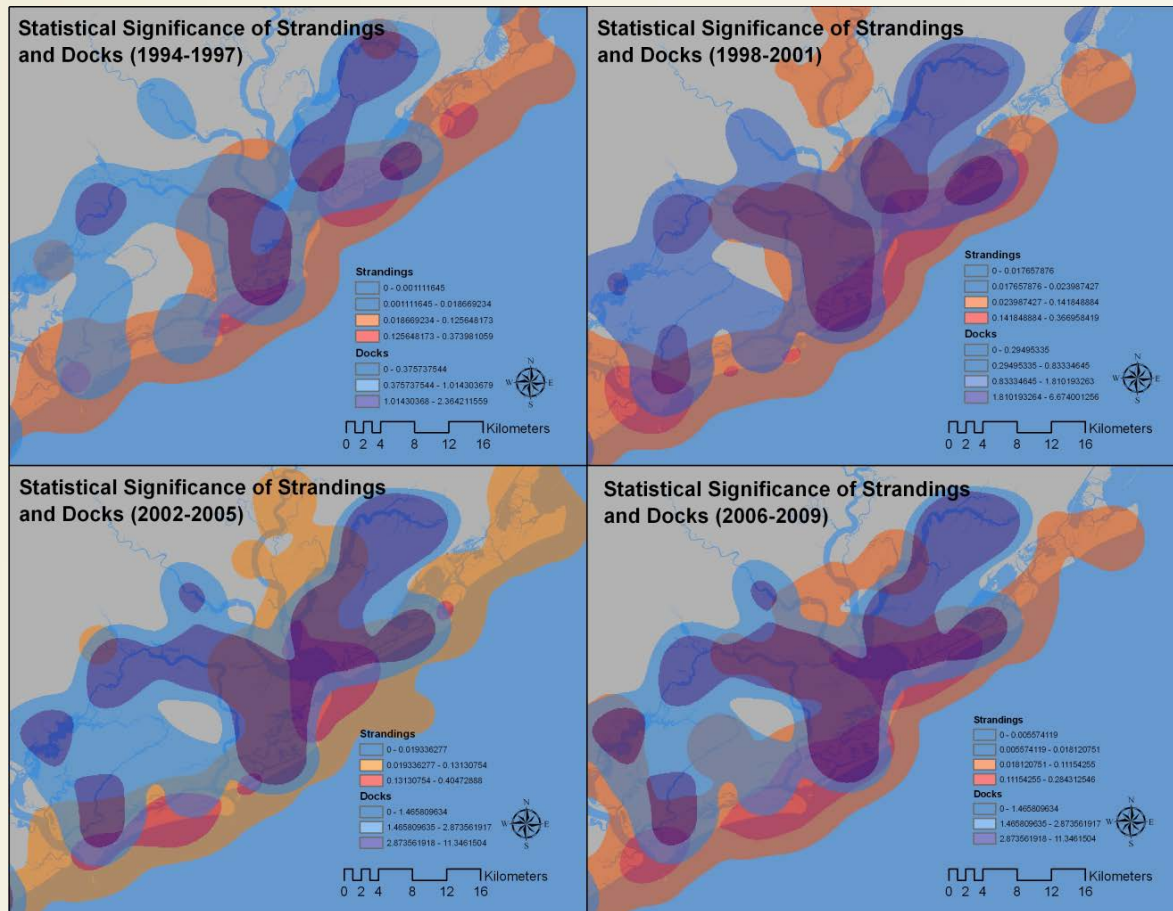
McFee and Hopkins-Murphy. 2002. Bottlenose dolphin strandings in South Carolina, 1992-1996. Fishery Bulletin 100:258-265.

McFee, Hopkins-Murphy and Schwacke. 2006. Trends in bottlenose dolphin strandings in South Carolina, USA, 1997-2003: implications for the Southern NC and SC Management Units. J. Cetacean Res. Manage. 8:195-201.

# Detecting Change – Coastal Development



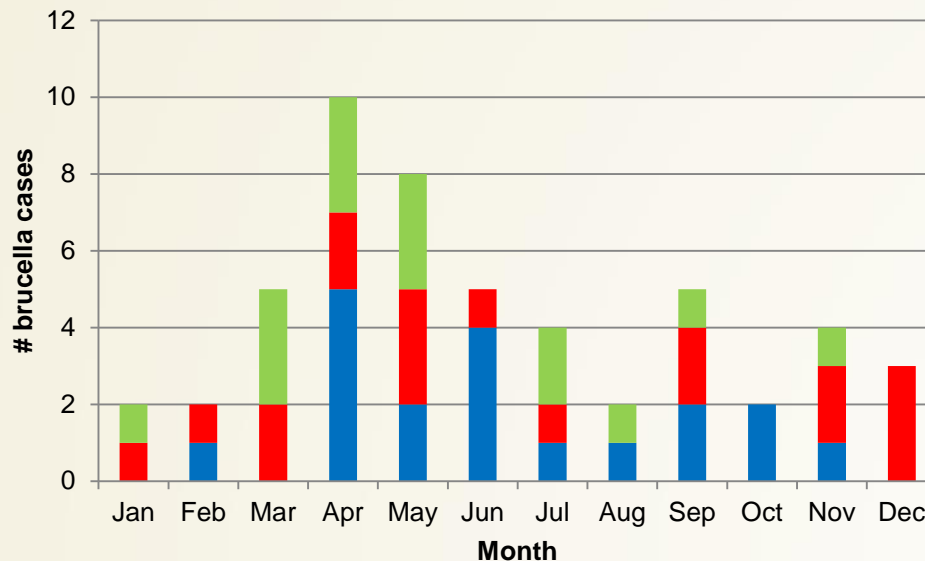
# Detecting Change – Coastal Development



Green, McFee and Levine. 2010. A GIS analysis of coastal development and trends in bottlenose dolphin strandings in Charleston, SC: implications for coastal marine spatial planning. NOAA Tech Memo NOS NCCOS 124

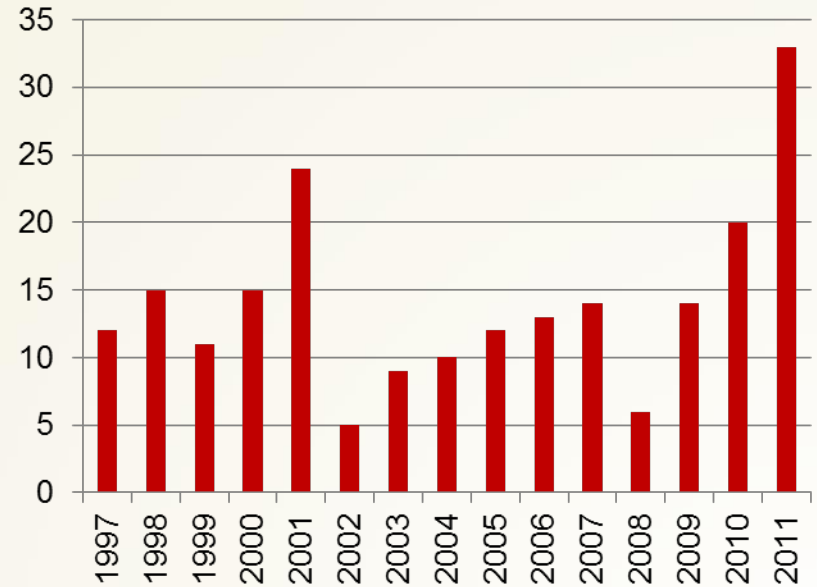
# Detecting Change – UMEs and Disease

- Long-term monitoring needed to detect UMEs
- Brucella, morbillivirus
- Recently orogenital papillomas and herpesvirus
- Emerging diseases and public health concerns



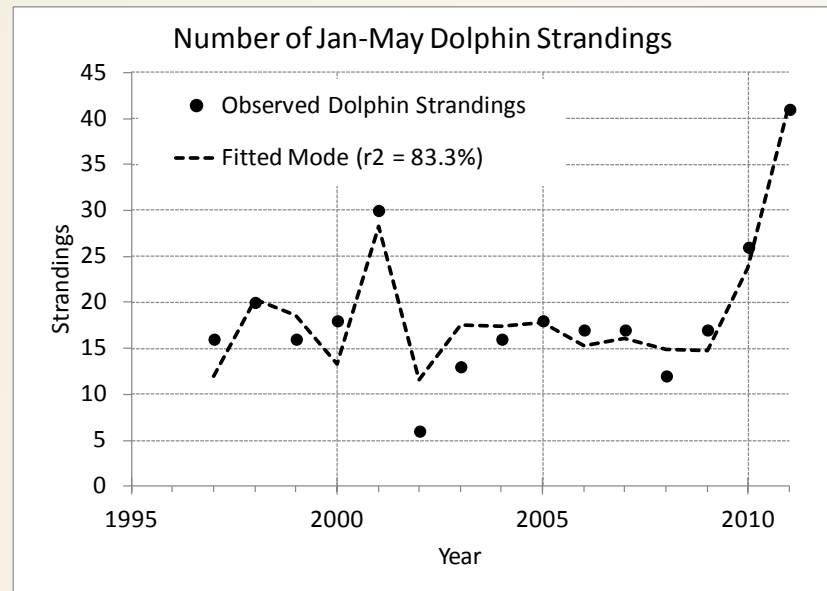
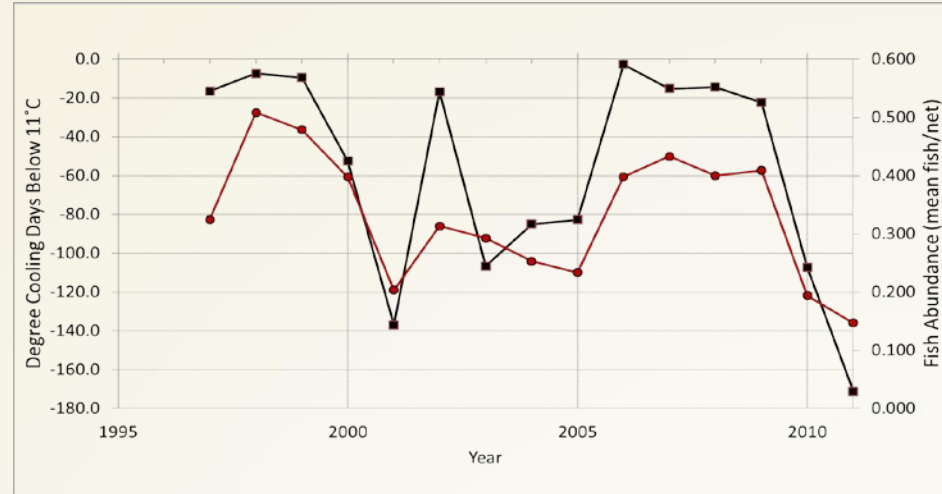
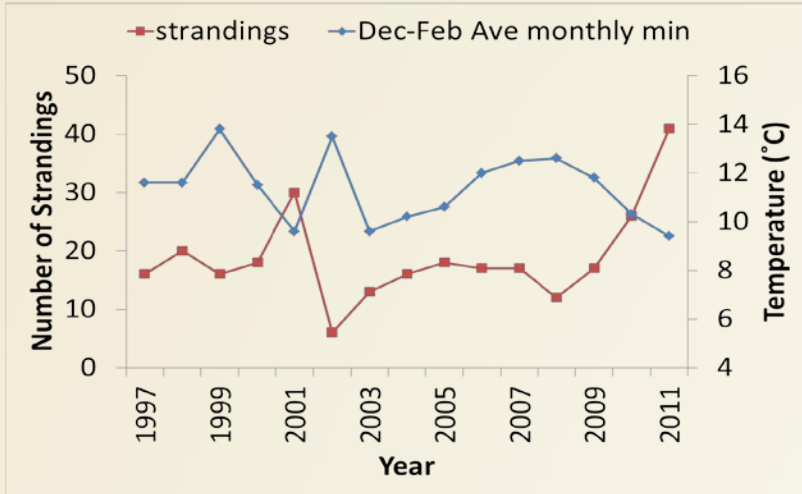
# Detecting Change – Weather Anomalies

- 33 dolphins stranded from Feb 27 – April 30, 2011
- Nearly 2.5 x the average for the first 4 months
- Most animals severely decomposed
- UME declared May 13, 2011





# Detecting Change – Weather Anomalies



# Detection of Human Impacts



Burdett and McFee. 2004. Bycatch of bottlenose dolphins in South Carolina, USA, and an evaluation of the Atlantic blue crab fishery categorisation. *J. Cetacean Res. Manage* 6: 231-240.

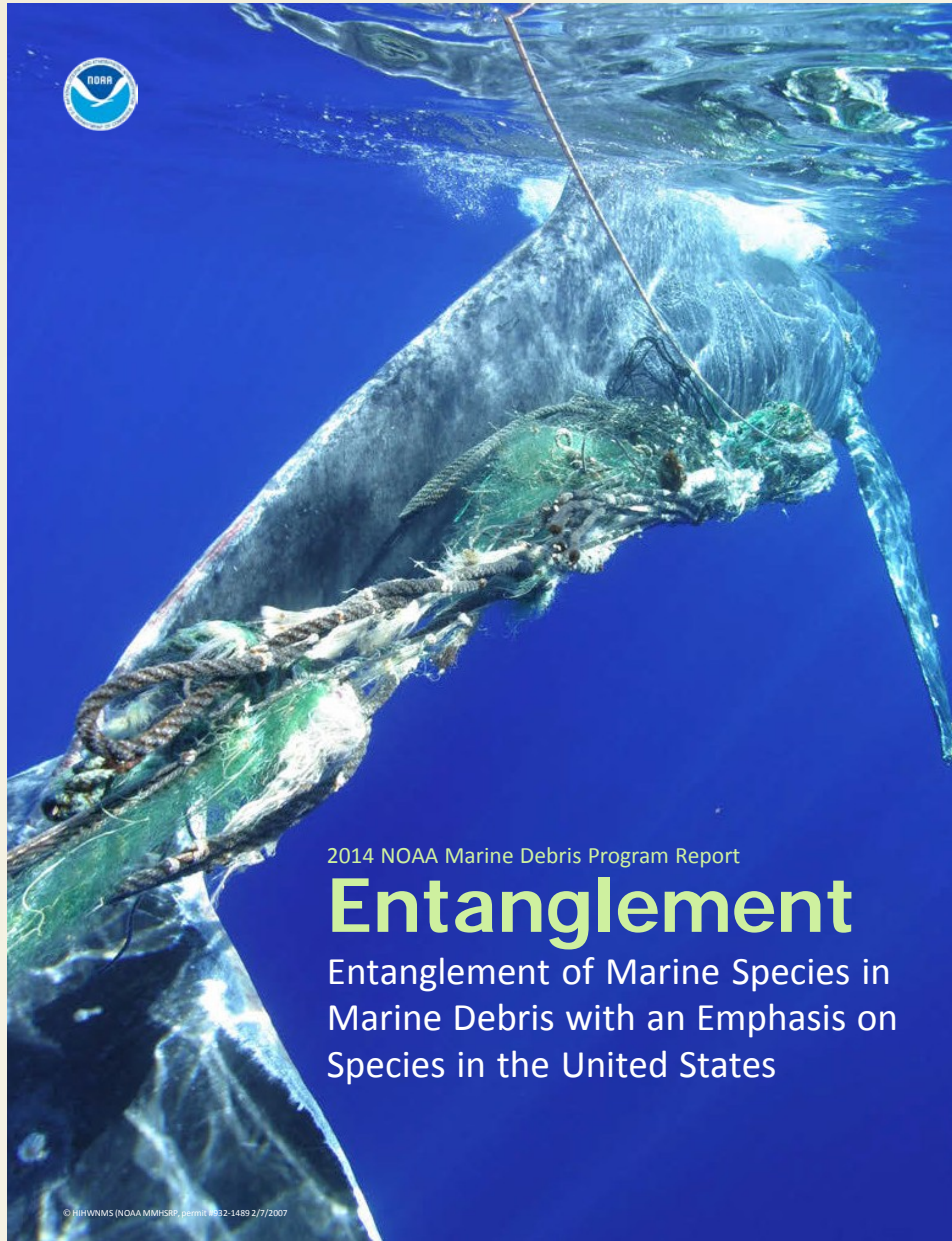
Greenman and McFee. 2014. A characterisation of bottlenose dolphin interactions with the commercial shrimp trawl fishery of South Carolina, USA. *J. Cetacean Res. Manage.* 14:69-79.

# Detection of Human Impacts



Marine Debris





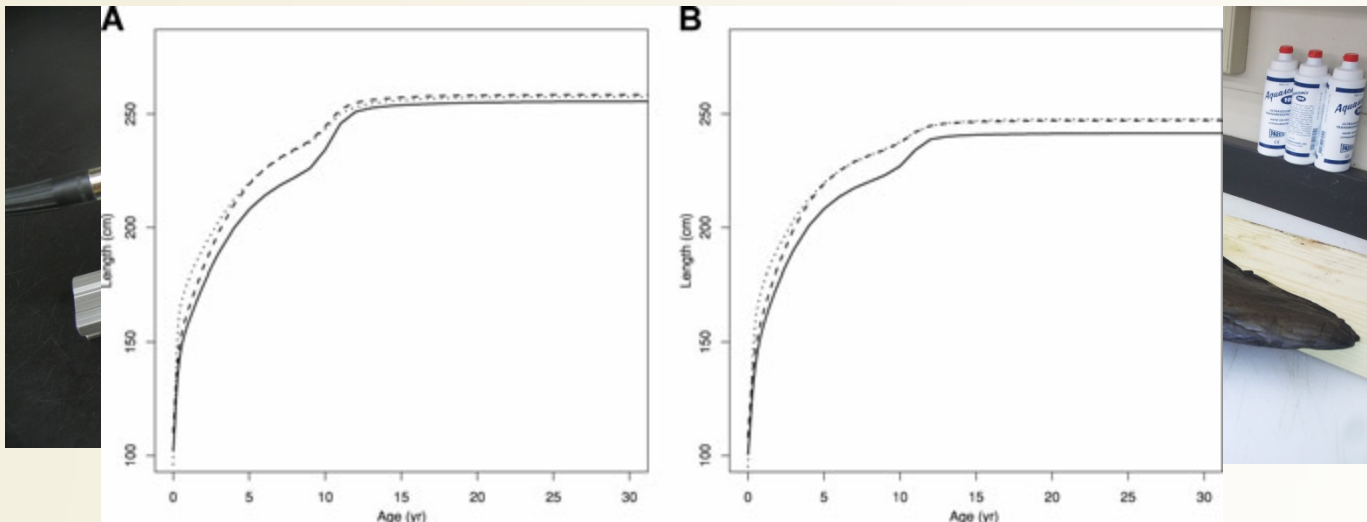
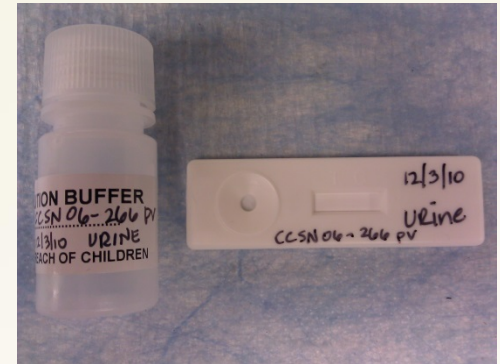
2014 NOAA Marine Debris Program Report

# Entanglement

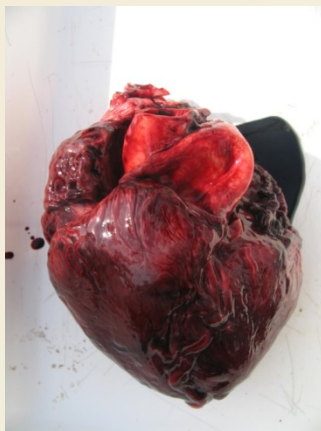
Entanglement of Marine Species in  
Marine Debris with an Emphasis on  
Species in the United States

# New Technologies

- Near Real Time Assays – Pathogens
- Domoic Acid Testing
- Bone Densitometer
- Tooth aging via X-ray
- Age and growth comparisons among regions
- Health assessment and GOM UME tooth aging through NRDA process



# Summary



Life History



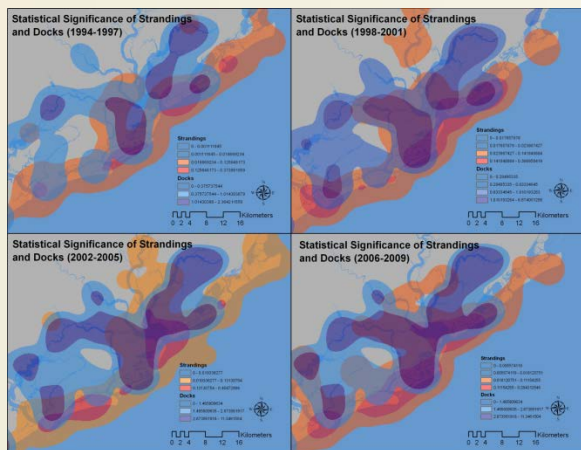
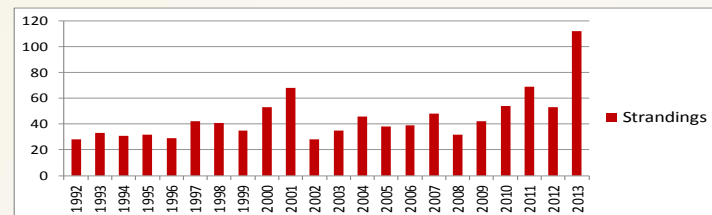
Long Term Monitoring



Change Detection



New Technologies



## Thanks to the many collaborators of the Coastal Marine Mammal Assessments Program

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- Dr. T. Rowles, Blair Mase-Guthrie & NMFS Marine Mammal Health & Stranding Response Program
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- SC & GA Dept of Natural Resources
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- Dr. S. Venn-Watson National Marine Mammal Foundation
- Dr. Kathleen Colegrove Zoological Pathology Program
- Dr. David Rotstein Marine Mammal Pathology Services
- College of Charleston Grice Marine Biology Program & Environmental Studies Program

