Cetacean stranding data collection

Level A data

- The stranding network is required to complete a standardized form for each stranded animal and submit it to the NOAA MMHSRP National Database within 30 days of the stranding.

- Level A data include details of each stranding including as species, date, location, condition, human interaction, sampling and disposition.

- NMFS provides training and Level A data entry policies to improve consistency of data collection.

- The SEFSC reviews SER Level A data and validates the Level A data (using an established validation policy) as resources allow.
Cetacean stranding data collection

Level B and C data

• Includes things like measurement forms, gross necropsy reports, and results of any tissue analysis (e.g. histopathology, virology, etc.)

• Enhanced necropsy and sampling protocols and submission of Level B and C data may be required during event investigations (UMEs, oil spill response, mass strandings, etc.)
What are stranding data used for?

Stranding data are important for research on:

• Species distribution and stock structure
• Health and disease
• Human interactions (e.g. Fishery interactions, vessel strikes)
• Other threats to marine mammal populations
• Life history parameters (including age, diet, reproductive biology)
• Anatomy and physiology

Long-term consistent data sets from stranded animals are critical for:

• Informing management decisions
• Identifying unusual events
• Understanding changes to health and mortality trends
Summary of GoM Cetacean strandings

• Using 15 year Level A data set – 2000-2014
• Data from Monroe County, FL to Texas
• GoM averages 375 strandings per year
• 85% bottlenose dolphins
• Highest strandings January – April; peak in March
GoM Strandings: Species

- Bottlenose dolphin, 85%
- Other, 15%
- Unidentified Kogia
- Dwarf sperm whale
- Other Stenella spp.
- Blackfish
- Sperm whale
- Atlantic spotted dolphin
- Pygmy sperm whale
- Rough-toothed dolphin **
- Beaked whales
- Baleen whales
- Unidentified to Genus
- Short-finned pilot whale **

** Commonly mass stranded
Mass Strandings 2000 - 2014

Genus
- Globicephala
- Steno
- Other

Gulf of Mexico

NOAA FISHERIES

U.S. Department of Commerce | National Oceanic and Atmospheric Administration | NOAA Fisheries
• <20% of *Tursiops* strand alive or fresh dead
• 74% of other species strand alive or fresh dead
• Approx. 75% of live stranded (then died) or fresh dead carcasses were necropsied
Of those to rehab:
65% died or were euthanized
19% were released
16% were deemed non-releasable
GoM Strandings
Human Interactions

Of those that are Yes:

- Yes 8%
- No 17%
- CBD 75%

** includes: marine debris, mutilation, rope marks, etc.

Most of the FIs in the GoM *Tursiops* consist of line markings, trap pot gear, or are hook and line
GoM Strandings by State and Year

Fl Panhandle (3) and Central West FL UMEs
All confirmed biotoxin events

Texas UMEs – both (Feb – Mar)
Cause unknown

2011 TX UME – Investigation ongoing

NGUME – 2010 to present - Event and investigation ongoing

UME, FL Panhandle (3) and Central West FL UMEs
All confirmed biotoxin events

2011 TX UME – Investigation ongoing

NGUME – 2010 to present - Event and investigation ongoing
Northern Gulf of Mexico
Cetacean Unusual Mortality Event (NGUME)

- Largest die-off of bottlenose dolphins in the Gulf of Mexico
- UME was initially declared for the FL Panhandle, AL, MS, LA with a start date Feb 2010
- ~1350 cetacean strandings through March 2015
- 87% were bottlenose dolphins
- 94% stranded dead
- Over 30,000 tissue samples have been collected

Ongoing NGUME Investigation

- Morbilliviruses and biotoxins have been ruled out as primary causes.

- Analysis through June 2013 showed the UME had multiple clusters of bottlenose dolphin mortalities. All but one of which occurred after the DWH spill.

- The largest most prolonged cluster was in Barataria Bay, LA (Aug 2010 – 2011). One of the most heavily oiled areas.

- The Florida Panhandle, though part of the original UME declaration, was not consistently high for Tursiops.

- Texas and the west coast of Florida were not consistently high.

Venn-Watson et al. 2015. Demographic clusters identified within the northern Gulf of Mexico common bottlenose dolphin (Tursiops truncatus) unusual mortality event: January 2010- June 2013. PLoS ONE 10(2): e0117248. doi:10.1371/journal.pone.0117248
2011 Texas UME – Investigation ongoing

- Nov. 2011 – March 2012, 126 bottlenose dolphins
- Marked increase in the number of juveniles and yearling age classes
- Histopathology sent for 7 animals, majority too decomposed
- Concurrent HAB blooms Sept 2011-Feb 2012 (PbTx, DA, OA)
- Fish, bird and coyote mortalities; shellfish closures
- Investigation is continuing to evaluate all potential contributing factors including the role of HABs

Summary

- GoM Stranding data has important uses for management of marine mammals including:
  - Monitoring health trends and population threats
  - Understanding stock structure & species distribution
  - Assessing and monitoring human impacts
- Standings are an important source of data and samples for research including topics such as:
  - Life history, anatomy and physiology, ecosystem health, marine mammal health, emerging diseases, biotoxins, and much more
Summary

Continued needs for:

• Enhancing the stranding network capacity
• Continued long-term standardized data collection
• Increase diagnostic and analytical capacity Gulf wide
• Shared/collaborative databases among NOAA, the network partners and researchers with access to Level B and C data
• Integrate stranding data with other health and environmental datasets
THANK YOU !!!!

Thank you to our Gulf of Mexico Stranding Network partners for all of your hard work!

The collection of stranding data would not be possible without you!