



**NOAA**  
**FISHERIES**

# NOAA National Marine Fisheries Service Office of Protected Resources

## Engineering with Nature and Benefits to NOAA Trust Resources

Sustainable Sediment Management and  
Dredging Seminar

Galveston District

November 28, 2018

# NOAA's Mission

## *NOAA's Mission: Science, Service & Stewardship*

- To conserve and manage coastal and marine ecosystems and resources

## *NOAA Fisheries (NMFS)*

- Responsible for the stewardship of the nation's ocean resources and their habitat
- Protect and restore habitat & maintain coastal ecosystems

## *NOAA National Ocean Service*

- Provides data, tools and services that support coastal economies
- Preparedness and risk reduction (storms and flooding)



## NOAA Trust Resources



# Engineering with Nature® and NOAA's Priorities

- USACE: Engineering with Nature (EWN®)
  - Leveraging nature for engineering value
- NOAA: Mission Priorities
  - Protecting coastlines
  - Benefits to trust resources
  - Promoting Federal partnerships



# NOAA: Current Efforts

- NOAA Living Shorelines
- Systems Approach to Geomorphic Engineering (SAGE)
  - Promote green-gray approaches for shoreline resistance
  - Broaden science, engineering, policy, and marketing activity
  - Engage community partners





# NOAA: Current Efforts

- Address Science Gaps
  - Understanding habitat trade-offs
  - Wave energy modeling
  - Coastal risk assessment
- Community Engagement
  - Outreach to landowners, public officials
  - Training for marine contractors, realtors
  - Information exchange; SAGE, Workshops



# NOAA and EWN<sup>®</sup>: Current Cooperation

- Impact: USACE projects potential to co-occur with NOAA trust resources
- Research and Monitoring
  - USACE-led project: Mordecai Island, NJ
- Natural and Nature-Based Features Guidelines
  - Participation across NOAA
- Collaboration Meetings
  - USACE Districts, NOAA Regional Offices, and State Partners
  - Emergency Supplemental Funding
- Efforts to use EWN<sup>®</sup> practices
  - ESA Section 7 consultations



# EWN<sup>®</sup>, Habitat, and Applicable Statutes

- Endangered Species Act
  - Section 7 consultations
- Magnuson Stevens Act
  - Essential Fish Habitat consultations





# Value: Trust Resources

- Coastal Protection and Habitat Restoration
  - Barrier Island Restoration
    - Barataria Basin, LA
    - Creating marsh habitat
  - Beach Nourishment
    - Thompsons Beach, NJ
    - Benefits to shorebirds, horseshoe crabs
- Partnerships





# Value: Trust Resources

- Seattle Seawall: Creation of nearshore habitat for salmonids
  - (Toft et al. 2013)
- Artificial Reefs: Foraging opportunities for Nassau grouper and hawksbill sea turtles
  - (Beets and Hixon 1994; Gorham et al. 2014)
- Dredge Material Islands: Brown pelican nesting habitat
  - (Robinson and Dindo 2011)



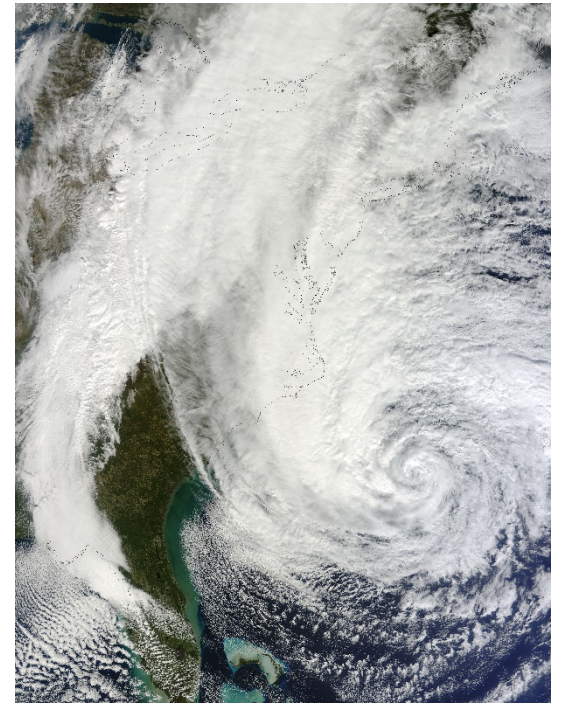
# Benefits: Regulatory Processes

- Efficiencies to Consultation Process
  - Familiar, low-impact techniques, less time during consultation
- Reduced Mitigation
  - Incorporating practices with possible benefits to species and habitat
- Ease of Implementation
  - USACE District “proving grounds”; NNBF Guidelines
- Environmental Compliance
  - Aid Federal Agencies in responsibilities (ESA Section 7)
- Additional Support



# Near-term and Future Work

- Collaboration with Regions, Districts, Partners
  - NNBF Guidelines Development
  - Discussions on Projects for the Emergency Supplemental Funding
- Institutional Familiarity
  - NNBF Guidelines: Process for EWN<sup>®</sup> Projects
  - Place at the Table during Project Development
- EWN<sup>®</sup> Projects for Trust Resources Benefits
  - Opportunities for Species, Habitat
  - Mutually beneficial mission goals





# EWN<sup>®</sup>: Partnerships, Benefits

- Partnerships
- Project Expansion and Collaboration
- EWN<sup>®</sup> Techniques and Multiple Benefits
  - Coastal resiliency, flood risk reduction
  - Restoring habitat and ecological function
  - Avenue to environmental compliance
  - Habitat-related recovery goals



# Questions?

