



NOAA
FISHERIES

NOAA National Marine Fisheries Service Office of Protected Resources

Engineering with Nature and Benefits to
Threatened and Endangered Species

Western Dredging Association Summit and Expo

June 26, 2018

NOAA NMFS Office of Protected Resources

- Office of Protected Resources works to:
 - Conserve, protect, and recover species under the Endangered Species Act and the Marine Mammal Protection Act
- Office of Protected Resources works with:
 - Regional Offices, Science Centers, and various partners



Endangered Species Act: Overview

- Purpose: to provide for the conservation of threatened and endangered species and the ecosystems on which they depend
- 2,300 species listed under the Endangered Species Act (ESA)
- ESA Section 7 responsibilities
 - Conserving ESA species' habitat
 - Seeking out new opportunities



Engineering with Nature and the Endangered Species Act

- Connecting the Endangered Species Act and EWN
 - Tangible benefits to endangered species and critical habitat
 - Providing guidance to create ESA regulatory efficiencies
- Promoting EWN techniques through ESA Section 7
 - Easier for Federal agencies to implement
 - Aid Federal agencies in their Section 7(a)(1) responsibilities



Engineering with Nature: Background

- Impact: Projects occur all over the nation, potential to co-occur with protected resources
- Cooperation with the
 - Natural and Nature-Based Materials
 - NOAA Living Shoreline
- Endangered Species recovery of protected



EWN and Benefits to Protected Species

- Bioretention reversing effects of toxic stormwater on coho salmon and its prey (McIntyre et al. 2015)
- Seattle Seawall: Creation of nearshore habitat for salmonids (Toft et al. 2013)
- Artificial Reefs: Foraging opportunities for Nassau grouper and hawksbill sea turtles (Gorham et al. 2014)
- Dredge Material Islands: Brown pelican nesting habitat (Robinson and Dindo 2011)



Ecological Use of Dredged Material

- Creation of Dredge Material Islands
 - Barataria Bay barrier islands and marsh creation
- Dredged Material and Beaches
 - Coastal resiliency and flood protection
- Benefits
- Dredging Best Management Practices



Ecological Use of Dredged Material

- Thin-layer placement projects
 - Examples from GARFO
 - Ninigrit, RI
 - Quonochontaug Pond, RI
 - Example from the Mid-Atlantic
 - Blackwater National Wildlife Refuge
- Benefits
- Partnerships
 - NOAA Office of Habitat Conservation, USACE, Federal, state, and local agencies, et al.



EWN and NOAA Fisheries

- NOAA Fisheries Greater Atlantic Regional Fisheries Office and the USACE North Atlantic Division
- Collaborative efforts to use EWN practices
 - Baltimore and Norfolk Districts' Chesapeake Bay Comprehensive Water Resources and Restoration planning efforts
- Formal Consultation
 - Thin layer placement
 - Beneficial use of dredged material
 - Atlantic sturgeon habitat



EWN and Regulatory Connections, Ecological Benefits

- US Fish and Wildlife Service and US Army Corps of Engineers
 - Developed conservation plan under Section 7(a)(1)
 - Conservation Plan for the Interior Least Tern, Pallid Sturgeon, and Fat Pocketbook Mussel in the Lower Mississippi River
 - Measures to improve habitat included:
 - Dike notching to improve habitat complexity
 - Placement of woody debris (fish habitat)
 - Minimize impacts of dredging
 - Distance buffers, timing windows
 - Beneficial placement of dredged material



Broad Scope of Engineering with Nature

- Projects that are the result of the efforts of multiple partners
 - Broadening the scope of EWN projects can create partnerships
 - Look to maximize benefits of using EWN practices
- EWN techniques
 - Achieving multiple goals
 - Coastal resiliency, flood risk reduction
 - Restoring habitat and ecological function
 - Avenue to environmental compliance
 - Habitat-related recovery goals for endangered species



Questions



Photo Credit: New York Times, Oscar Sosa. Gulf Sturgeon



Photo Credit: Delaware Dept. of Natural Resources and Environmental Control. Indian River Living Shoreline.

