



**GLOBAL**

# **SALVAGE IN ENVIRONMENTALLY SENSITIVE AREAS**

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Bas Coppes, Director of Salvage Operations

# OVERVIEW

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- AGENCIES
- PROJECTS
- MOBILE BALLAST WATER TREATMENT
- LESSONS LEARNED



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# AGENCIES

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## FEDERAL

- Coast Guard
- NOAA, Fish & Wildlife
- Environmental Department (EPA)
- Department of Natural Resources (DNR)

## STATE/PROVINCES

- Department of State/Provinces Lands
- Indigenous Peoples
- Municipalities
- NGO's



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# PALMYRA ATOLL- NATIONAL MARINE MONUMENTS

## US. FISH AND WILDLIFE SERVICE

- Wreck removal of three targets
  - Military barge and two fishing boats
- Fish and Wildlife
  - Biologists onsite
- USCG/NOAA oversight
- Methodology
  - Sectional barges
  - Shallow draft jack up rig
  - Minimal environmental impact



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# ESF-10 HURRICANE HARVEY AND IRMA

## UNITED STATES COAST GUARD

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- Best Management Practices (BMP's)
  - Sea grass
    - “Anchor in unconsolidated sediment only and avoid all hard bottom and seagrass beds”
  - Manatee protocol
    - “All in water operations, including vessels must be shut down if a manatee comes within 50ft of the operation”
  - Sea Turtles
    - “Maintain a minimum distance of 150ft”
  - Mangrove management
    - “Bending vs Cutting”



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# PENN COVE MUSSEL FARM

WASHINGTON STATE DEPARTMENT OF ECOLOGY, USCG

- 128ft fishing vessel maliciously set ablaze and sunk in protected shellfish farm
- 125,000lbs (56,700 kg's) of mussel production/yr
- Capacity of 30,000 gallons of fuel
- Protection Strategies
  - Underwater defueling
  - Testing of contamination



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# REMOTE SHORE LINE CLEARANCE

- CREW SAFETY / WILDLIFE HAZING PROCEDURE



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# TSUNAMI DEBRIS DOCK REMOVAL

## MARINE SANCTUARY- OLYMPIC NATIONAL PARK, WASHINGTON

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- Utilizing helicopters instead of building 6 mile road through protected rain forest
- 152 helicopter trips
- Invasive species on the dock
  - Scraped and neutralized



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# MOBILE BALLAST WATER TREATMENT

- Grant through US Geological Service
- In partnership with Glosten
- Specifically for ballast water treatment in salvage situations
- Coos Bay, Oregon and Great Lakes deployment complete



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# LESSONS LEARNED

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- Permitting
- Training
- Communication
- Technology
- Ballast Water Treatment
- Baiting on Invasive Species
- In House Scientists
- Wildlife Management



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