Rationale for Natural and Nature-Based Features

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Why NNBF?

- Global and regional degradation and losses
- Increasing populations in regions with degraded NNBF
- Climate & human stressors
- National & global directives
- Part of the integrated water cycle

Benefits

- Ecosystem – habitat, nursery, biodiversity
- Economic – food, water, fiber, fuel, fisheries
- Engineering – reduction in storm surge, wave, wind; long-term erosion
- Social benefits – water & air purification, carbon sequestration, aesthetics, ecotourism….

Resiliency – ability to naturally recover & adapt
Why NNBF?

- United Nations World Water Assessment Programme, 2003: Half world’s wetlands lost since 1900
  
  “The key role that rapidly diminishing wetlands play in supporting human life and biodiversity needs to be recognized and integrated into decision-making as a vital component of the transition to a resource-efficient, sustainable world economy…”

- United Nations: over 25% of earth’s lands are considered “highly degraded”
  - Deforestation, desertification, wetland destruction, erosion, contamination

Why NNBF? U.S. Feds

...directs all Federal agencies to incorporate the value of natural, or “green,” infrastructure and ecosystem services into Federal planning and decision making.

How powerful it would be to leverage a multi-nation approach for NNBF science & engineering....
CZMC….Telling The Story

- Explain why in layperson visuals
- Show *future-without condition*
- Visualize *future-with NNBF* or integrated natural, nature-based, non-structural, and structural system
- Engineer the system considering adaptation
  - Unexpected, multiple-hazard, Black Swan events
  - Prepare to be agile to recover rapidly
- Demonstrate the design and long-term adaptation measures in layperson visuals
- Build, monitor, and document pilot studies through *experiments of opportunity*