



# Engineering With Nature<sup>®</sup> to Increase Infrastructure Resilience

May 4, 2023, 10:30 a.m.



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# Engineering With Nature to Increase Infrastructure Resilience

**Moderator:** Hollie Janson Schmidt, Jacobs

## **Agenda:**

- **Leveraging Engineering With Nature® (EWN®) to Support Military Readiness and Installation Resilience**
  - **Dr. Burton Suedel**, Research biologist, U.S. Army Engineer Research and Development Center
- **Engineering With Nature® (EWN®) for the Department of the Navy**
  - **Hollie Janson Schmidt**, Global Senior Director, Sustainability & Climate Response – Americas, Jacobs
- **Implementing Nature Based Infrastructure (NBI)**
  - **Sam Whitin**, National Service Line Program Manager for Coastal Resilience, EA Engineering, Science, and Technology
- **Intentional Alignment of Engineering and Natural Processes**
  - **Scott Pippin**, Public Service Associate; Strategic Operations And Planning Assistance, University of Georgia Institute for Resilient Infrastructure Systems (IRIS)



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# Introduction



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MISSION  
SUCCESS  
STARTS  
HERE  
SAMEJETC.ORG

MAY  
2-4  
2023

San Antonio,  
TEXAS



# Hollie Janson Schmidt



Global Senior Director,  
Sustainability & Climate Response –  
Americas, Jacobs

**Jacobs**

- Landscape Architect, Master Planner, Site Selection SME with 28 years experience.
- Project Executive for the Engineering With Nature (EWN) Program for Jacobs.
- Leadership for the overall rebuild strategy, pre-design guidance approach for the rebuild of Tyndall AFB.
- Leads large-scale, complex projects for integrated delivery teams as Director of the Resilience & Sustainability Business Advisory.
- Responsible for driving resilience, sustainability, climate action and ESG into all markets and clients at Jacobs.



# Engineering With Nature<sup>®</sup> (EWN<sup>®</sup>) for the Department of the Navy

**Hollie Janson Schmidt**

Global Senior Director,  
Sustainability & Climate Response – Americas, Jacobs

JETC San Antonio, Texas  
4 May 2023



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# Engineering With Nature<sup>®</sup> for the Department of Defense



11

DoD Installation  
Participated

30+

Projects Discussed

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## CURRENT AND FUTURE SCOPE OF WORK

The goal of **current scope** of work is to



1.

Series of in-person and virtual workshops for project identification



2.

Site visit and project refinement



3.

Project definition



# The goal of future scope of work is to



1.  
Next step studies



2.  
Funding strategy



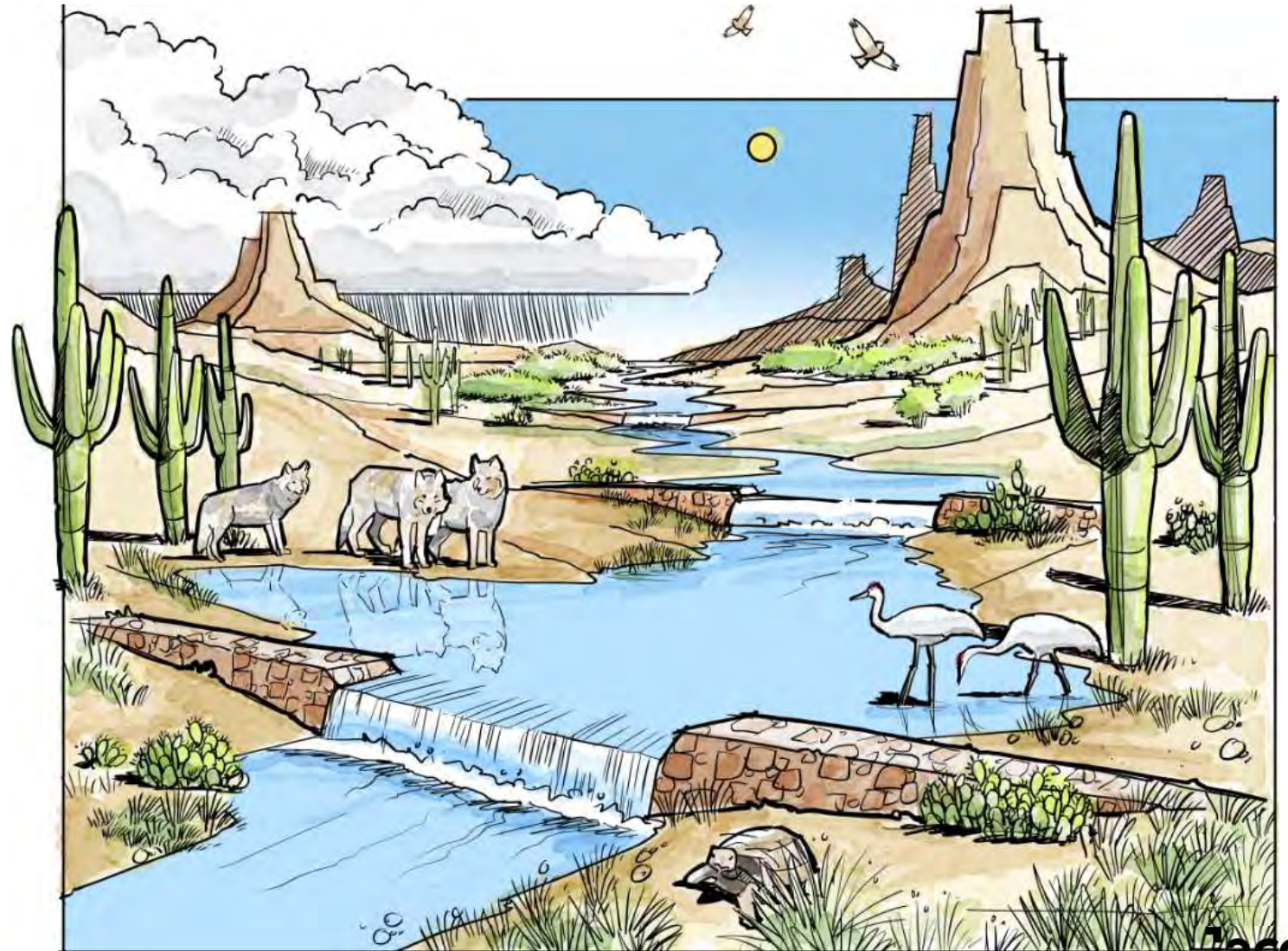
3.  
Phasing & implementation



# Engineering With Nature for DoD Facilities Adaptation Planning

## Check Dam Deployment at MCAS Yuma

- Mimic Beaver's "check dams"
- Slows the water flow, allows sedimentation, encourage biodiversity, potentially mitigate flooding



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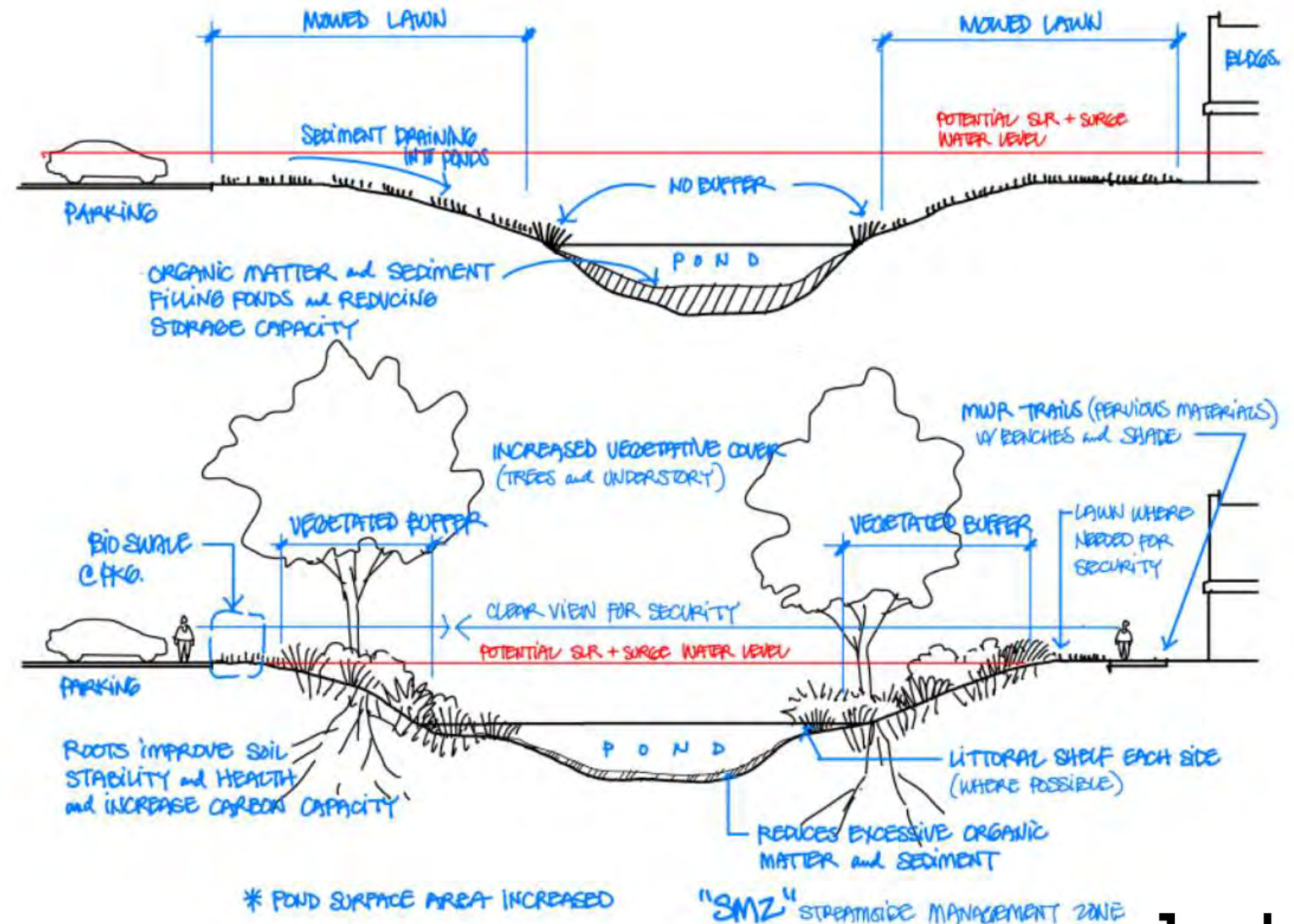
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# Engineering With Nature for DoD Facilities Adaptation Planning

## Pond Enhancement at NSA Panama City

- Expand non-mowing zone to better protect pond and improve water quality
- Add native understory plants and trees for better soil health and water retention capacity
- Properly select plant species, incorporate considerations for visibility/security



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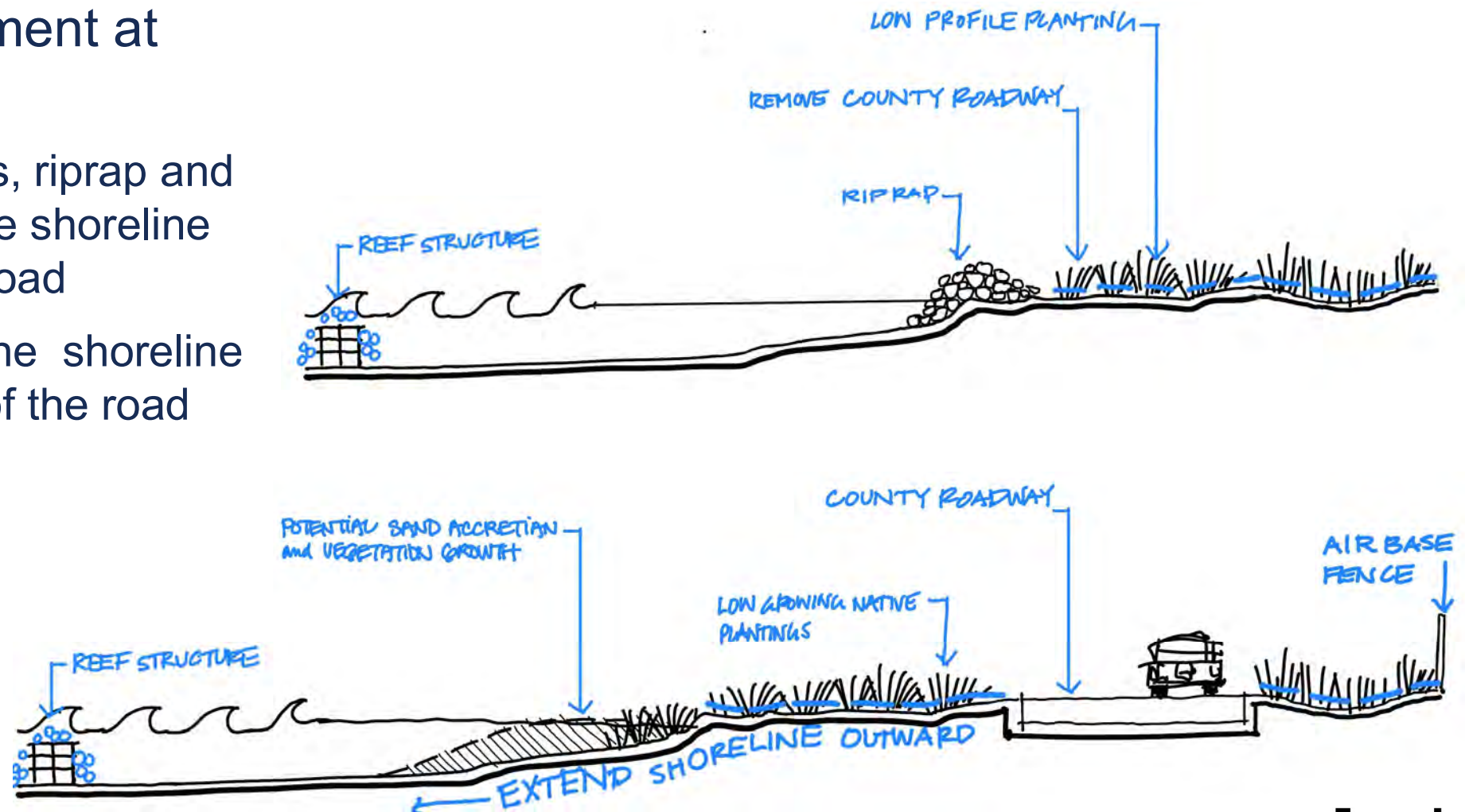


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# Engineering With Nature for DoD Facilities Adaptation Planning

## Near shore enhancement at NAS Key West

- In water reef structures, riprap and planting to enhance the shoreline with the removal of a road
- Extend and enhance the shoreline with the preservation of the road



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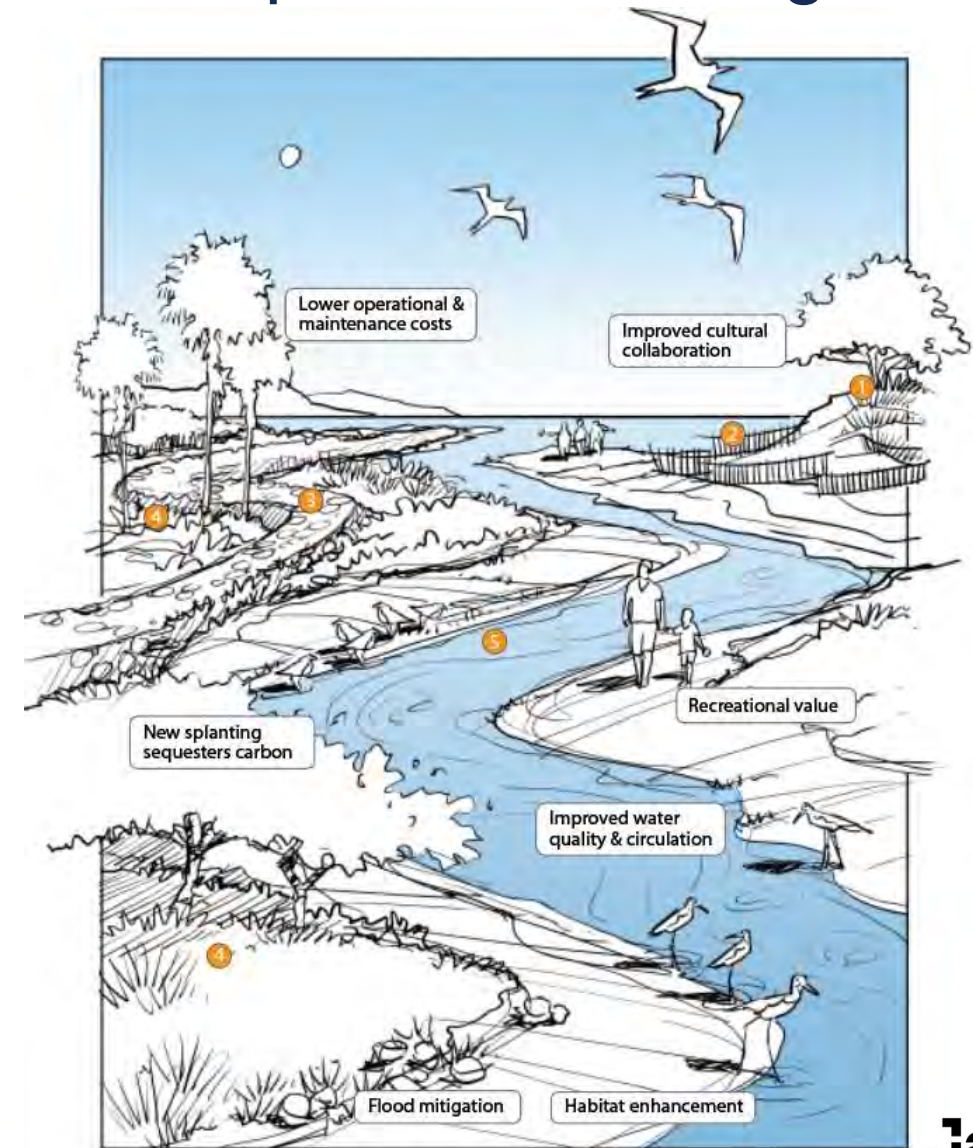


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# Engineering With Nature for DoD Facilities Adaptation Planning

## Stream Restoration at Marine Corps Base Hawaii

- Dune restoration
- Dune fencing
- Jetty repair and extension
- Invasive trees removal and new planting
- Channel dredge



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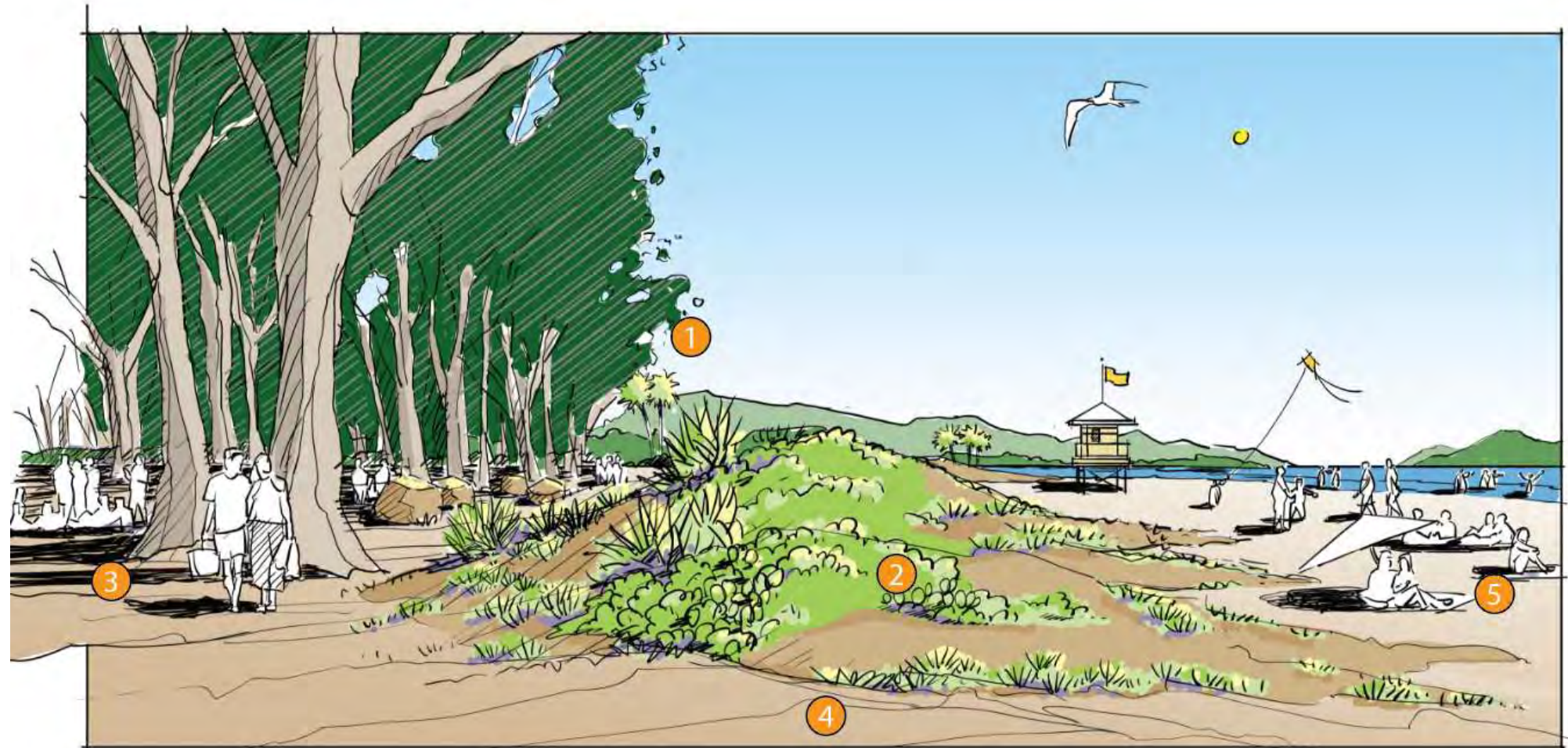


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# Engineering With Nature for DoD Facilities Adaptation Planning

## Dune Restoration at Marine Corps Base Hawaii:

- Restore and vegetate dune systems for shoreline erosion mitigation
- Continue to provide access for training and public use
- Maintain and enhance community amenity areas



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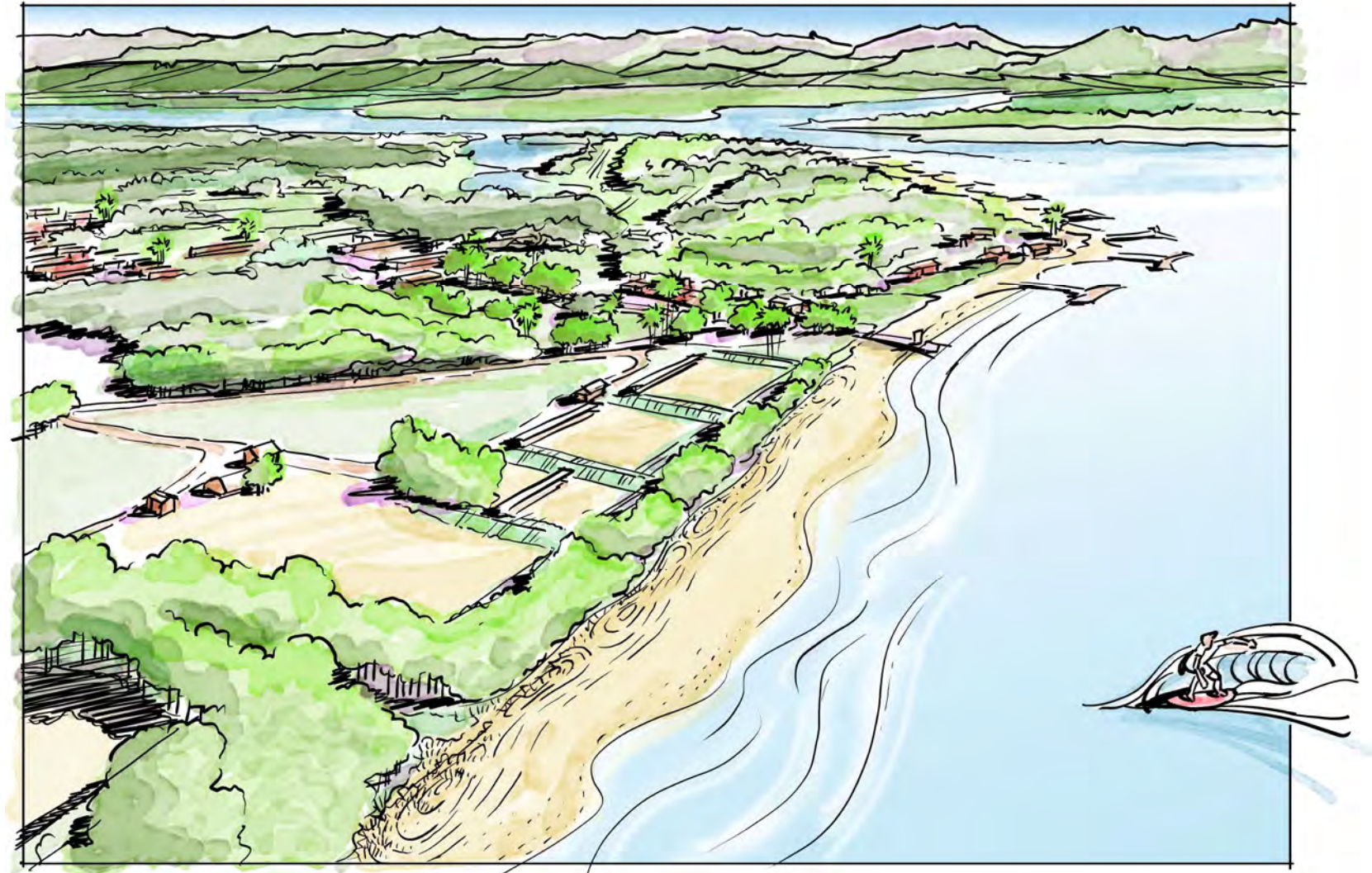


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# Engineering With Nature for DoD Facilities Adaptation Planning

## Shoreline protection at Marine Corps Base Hawaii

- Re-establish protective seaward dunes at toe of range berms
- Near shore wave attenuation while still allowing for surfing conditions beyond reefs
- Enhance existing recreational area with trees and security elements.



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