



# **DoD Environmental Stewardship in the Marianas: Now and in the Future**

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DoD is a sound steward of the environment

Navy has an impressive track record to include many examples resource agencies may not be aware of

Under Joint Region, environmental management will be consolidated, creating efficiencies and simplifying resource agency involvement

JGPO is the action proponent for the USMC relocation to Guam and associated military realignment; JGPO is aligned with Joint Region

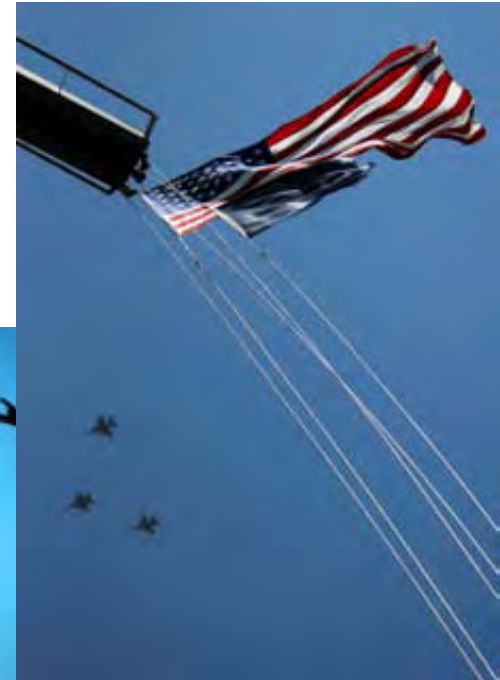
Sound environmental stewardship will continue with the USMC relocation and military realignment



# **DOD Environmental Stewardship**

The US Government is the nation's largest landowner: 652 million acres, or 29%. Of this, DoD has 30 million acres.

The scope of DoD's environmental stewardship includes more than 3,700 locations, in over 140 countries.



# DOD Environmental Stewardship

*“ (GIS)-based analysis using natural heritage species occurrence data. In this 10-year update of a previous analysis, we found that **the Department of Defense and the USDA Forest Service harbor more species** with formal status under the Endangered Species Act (ESA) than other US agencies. The **densities of ESA status species and imperiled species are at least three times higher on military lands**—2.92 and 3.77, respectively, per 100,000 hectares—than on any other agency’s lands. Defense installations in Hawaii are especially significant; more than one-third of all ESA status species on military lands are Hawaiian. These findings highlight the continued importance of public lands for the survival of America’s plant and animal species.”*

“Federal Lands and Endangered Species: The role of military and other federal lands in sustaining biodiversity” BRUCE A. STEIN, CAMERON SCOTT, AND NANCY BENTON; BIOSCIENCE V54 N4; APR 2008



# Department of Navy – Environmental Strategy

- The environment is considered as a part of the National Defense mission
  - Responsible for safeguarding the environment in addition to military mission.
  - Environmental stewardship is integrated into operations, acquisitions, and management.
  - Personnel are empowered to become leaders of environmental stewardship.
  - Partnerships at the international, Federal, state, and local level to organizations, and individuals to more effectively meet our environmental goals.



# 2009 DOD Environmental Awards

## ▪ Marine Corps Base Camp Lejeune

- 156,000 acre installation; habitat for 8 federally protected species
- Integrated Natural Resources Management Plan improves military training and increases protection of sensitive species

## ▪ Navy Region Hawaii

- Pearl Harbor Integrated Cultural Resources Management Plan for more than 10,000 facilities on more than 23,000 acres of land
- Integrated Plans for cultural landscape and historic assets management
- Developed easier way to have design-build projects on historic facilities

## ▪ Marine Corps Base Hawaii

- 106,000 pounds of hazardous waste diverted from the waste stream; saving \$1,640,000 per year on treatment and disposal cost



# **DON Environmental Achievements**

***Since 1992, DON has reduced hazardous waste generation by 73 percent***



# Defense Environmental Funding

- DoD environmental funding ensures Army, Navy, Air Force, Marines and the Defense Agencies have adequate funding to meet mission, legal, and regulatory environmental requirements.
- Defense Environmental Programs Funding - Fiscal Year 2007 Annual Report to Congress (in millions)

Environmental Programs	FY2007 Actual	FY2008 Estimated	FY2009 Requested
Conservation	\$299.6	\$293.6	\$330.0
Restoration	\$1,383.0	\$1,484.5	\$1,505.8
Compliance	\$1,430.8	\$1,596.8	\$1,660.3
Pollution Prevention	\$130.2	\$157.9	\$162.6
<b>Overseas Environmental Funding</b>	\$154.4	\$168.2	\$188.7



# Defense Environmental Programs

Environmental Programs maintain readiness while protecting human health and the environment

- Restoration – identify, assess, and remediate contamination on military lands
- Compliance – comply with all applicable federal, state, local environmental laws and regulations.
- Conservation – protect natural and cultural resources while ensuring military training
- Pollution Prevention - minimize health and safety risks to military personnel and community residents; restoration, compliance and conservation costs.



# **DoD Environmental Programs in the Marianas**

- Restoration – identify, assess, and remediate contamination on military lands
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# Cycad collaboration with U of Guam



← 2003 scale insects found



← Spread to native cycad



# Cycad collaboration with U of Guam



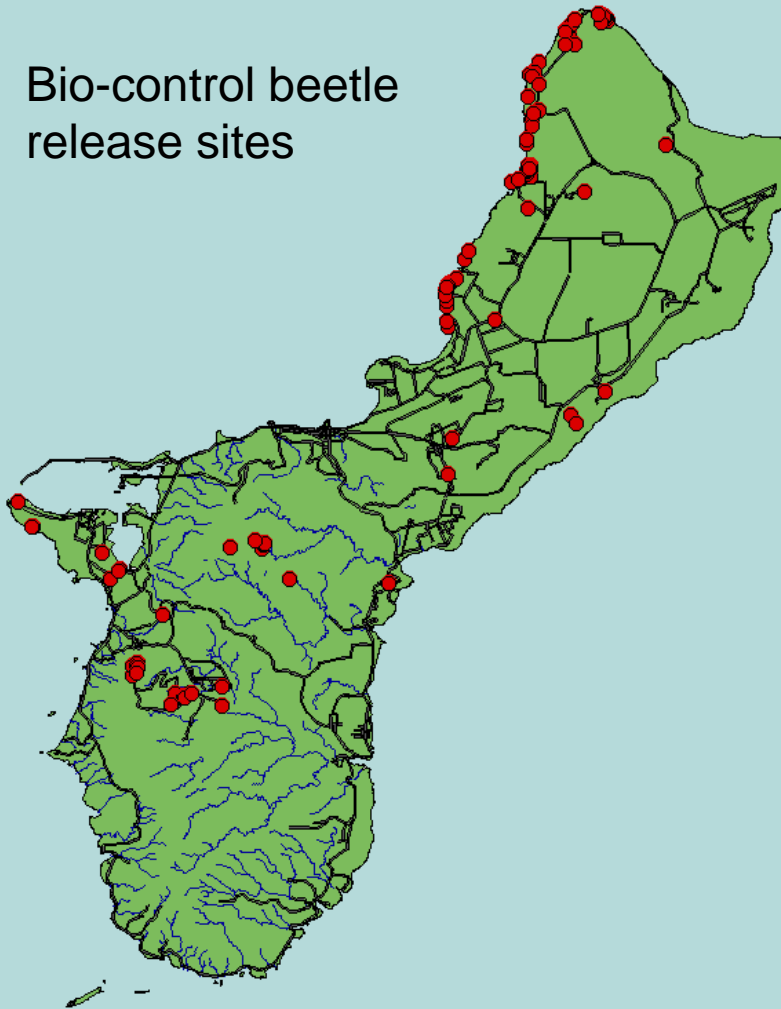
← Black lady beetle

← Collecting and releasing bio-control lady beetles →



# Cycad collaboration with U of Guam

Bio-control beetle  
release sites



Scale that's been eaten by beetles

Today: beetle – scale populations in  
flux; not yet balanced.



# Cycad project on Tinian



No remaining native Cycads

For a Navy forest enhancement project:

- 3,000 seeds collected, cleaned, shipped to Tinian

- Seeds grown in a nursery

- Mapped in plots, maternal plants GPS'd



# Cycad project on Tinian



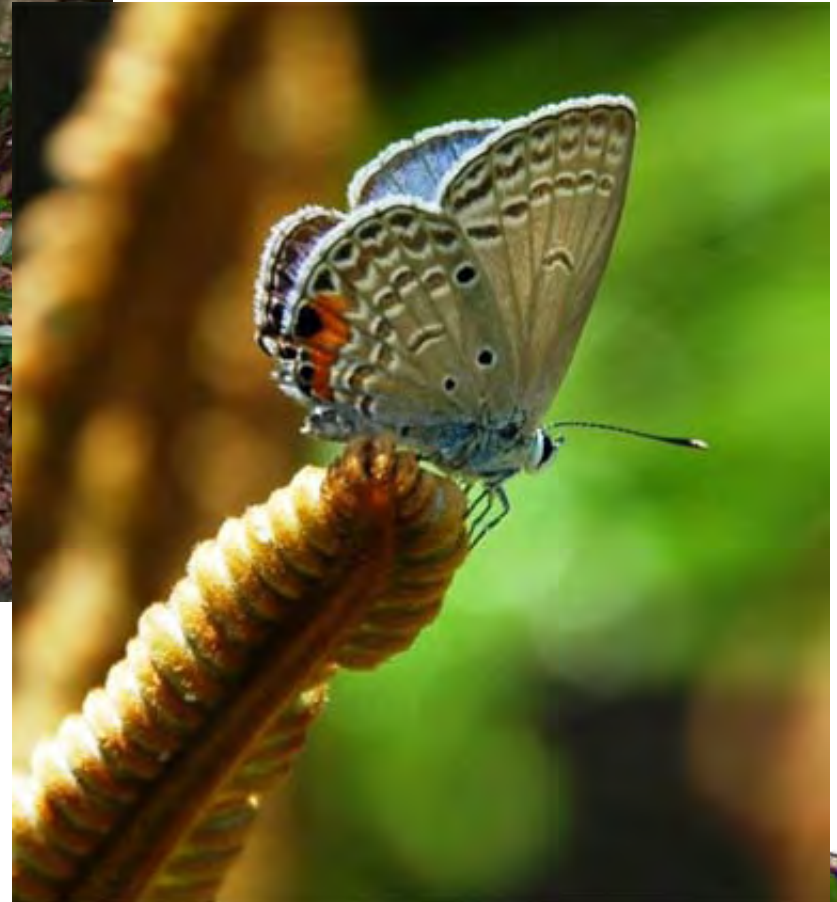
Native nursery for Cycads



# Cycad project on Tinian



← Young cycads planted Jun 2008



Cycads are maintained to prevent infestation from cycad blue butterflies, native to Southeast Asia. Caterpillars kill cycads by eating all emerging leaves. →



# Erosion Control at Cross Island Road Hilltop



←30 Aug 2006

19 July 2007 →



# Erosion Control at Naval Magazine



← June 2007



# Erosion Control at Naval Magazine

Sep 2007 →



← Dec 2007



# Erosion Control at Fena Reservoir

Aug 2006 Upper Plot Eastern Edge →



← Aug 2006 Upper Plot



# Erosion Control at Fena Reservoir

Dec 2007 →



← Jun 2007



# Wildfire Break Acacia Planting



Six year old acacia tree planted  
at Sasa fuel farm

This forms a shaded fuel break  
to stop wildland fires.



# CNMI Endangered Megapode Surveys



Tinian:

Monthly surveys rarely find Megapodes

FDM:

In 2008, 28 Megapodes were observed



# Endangered Mariana Moorhen Surveys

Quarterly  
surveys:

- Fena Reservoir  
(Guam)
- Hagoi (Tinian)



# Endemic Guam Land Snail Surveys



Surveys found 2 species on Navy land:

- NCTS Tweeds Cove
- Haputo Ecological Preserve



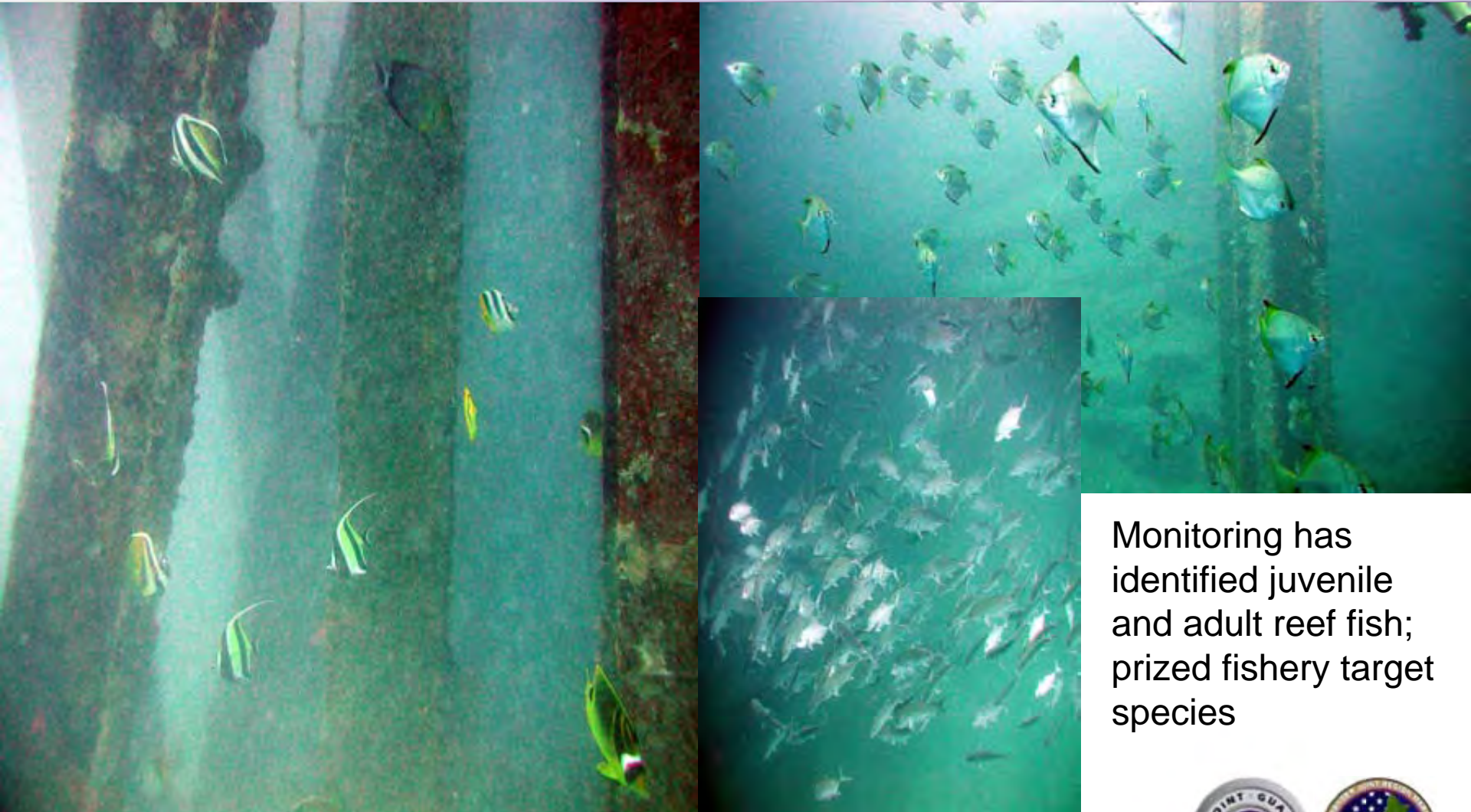
# Endangered Marianas 8 Spot Butterfly



Identified during JGPO  
natural resources  
survey on Guam



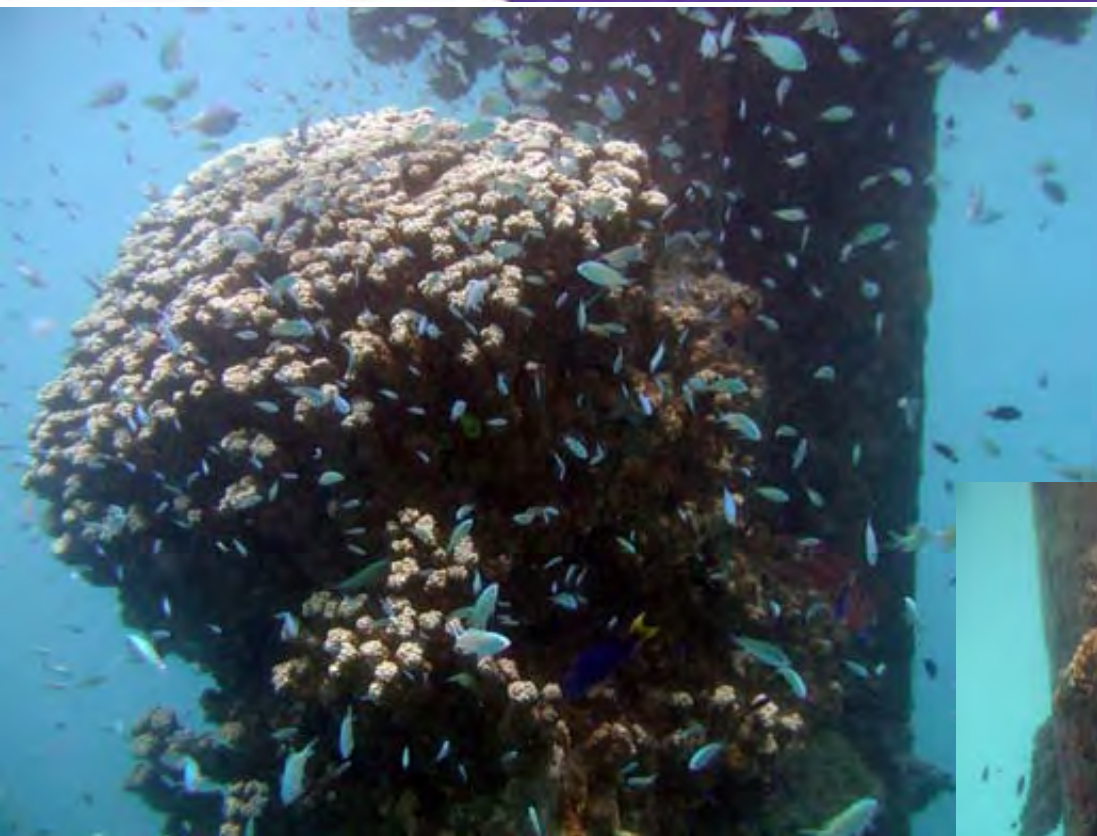
# Navy Pier Marine Monitoring



Monitoring has identified juvenile and adult reef fish; prized fishery target species



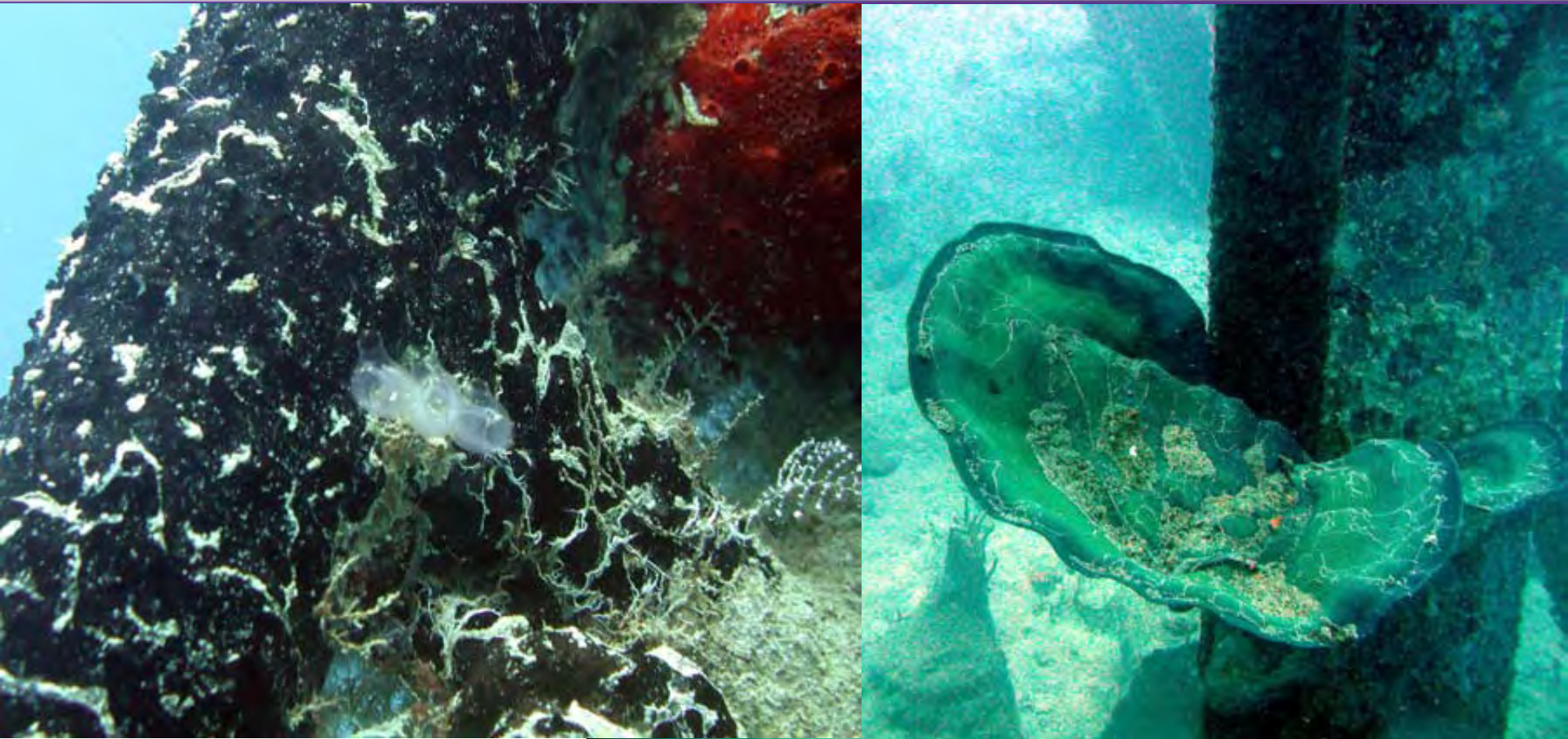
# Navy Pier Marine Monitoring



Diverse coral communities have developed



# Navy Pier Marine Monitoring



A variety of invertebrates, such as the elephant ear sponge are found



# Natural Resources

## Guam

- Swiftlet BTS trapping
- Nesting turtle surveys
- Coconut crab surveys
- Fruit bat counts
- Casurina study
- Frog surveys
- USDA bird netting for Avian influenza
- Deer population assessment
- Coconut rhinoceros beetle monitoring
- Long term vegetation plots
- Vegetative habitat mapping
- Fire management plan
- Marine monitoring plan
- Orote Ecological Reserve Area marine survey
- Ecological Reserve Area management
- Ungulate management plan
- Natural Resources signage
- Migratory bird surveys

## Tinian

- Nesting turtle surveys
- Forest bird surveys
- Fruit bat surveys
- Coconut crab surveys
- Forest enhancement projects
- Herpetological surveys
- Insect surveys
- Butterfly surveys
- Marine surveys at Long Beach and Chulu Beach
- Rat density studies
- Long term vegetative plots
- Insect diversity studies
- Rat exclosure trial

## FDM

- Migratory bird counts
- Marine surveys
- Turtle surveys
- Marine mammal surveys



# Cultural Resources Programs

- Programmatic Agreement with Historic Preservation Offices
- Curation
- Archeological sites
  - Dadi Beach
  - Sumay Village
  - Haputo Basin
  - Orote Point
  - Latte Stone sites
- WWII and post WWII structures



# Compliance

- Air Emissions
- Drinking Water
- Wastewater
- Stormwater
- Hazardous Materials
- Hazardous Waste
- Solid Waste
- Medical Waste



- PCBs
- Asbestos
- Radon
- Lead Based Paint
- Spill Prevention and Response
- USTs
- Pesticides
- Noise
- POL



# Restoration

- Navy Base Guam has 20 restoration sites
  - 6 closed
  - 4 closure pending
  - 6 clean up in progress
  - 4 medium to low risk, pending clean up
  - Long term ground water monitoring at 2 sites
  - Ocean sediment sampling at Sierra Wharf outfall site
- Funds Spent to date: \$89,290,000
- Cost to complete: \$40,730,000
- Remediation Complete FY15



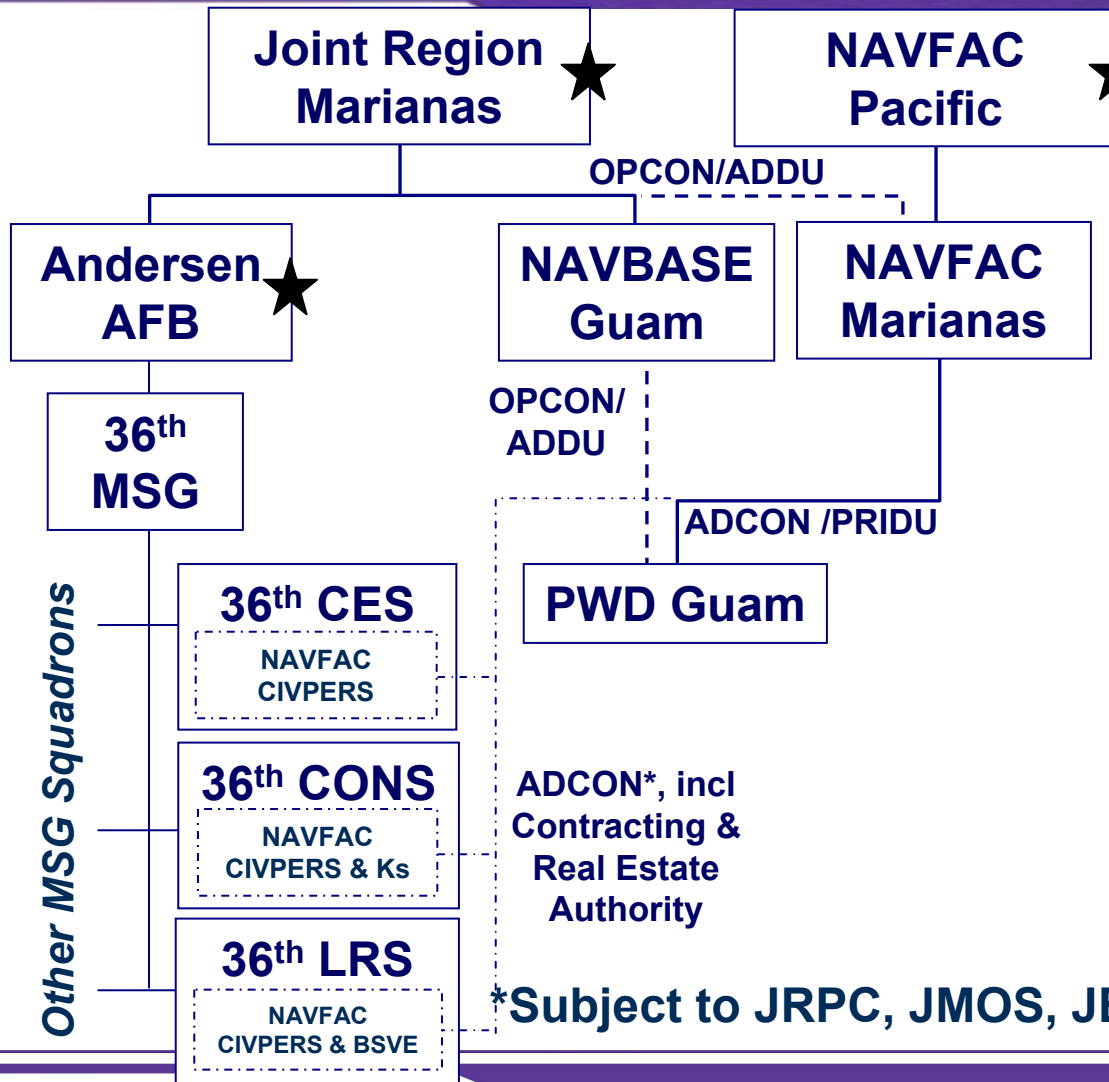
# **Joint Regional Marianas Organizational Construct**

- Individual Base Commanding Officers
  - Operational chain of commands
- Regional Installation Support
  - Common planning, programming, budgeting, and execution
  - Regional delivery of installation support – policies, procedures, contracts
  - Regional program directors working through installation “base codes”
- Navy regional model for installation management



# NAVFAC Marianas Alignment

## Joint Region Marianas



- Region J4
- Transfer of 180+ CIVPERS
- Transfer of Air Force BSVE
- Transfer of Facilities & Environmental contracting
- Transfer of Real Estate authority
- Transfer of Installation Restoration program
- Integration of ROICC Andersen with 36th CES & 36th CONS
- Expansion of WCF beyond current Electrical commodity

**\*Subject to JRPC, JMOS, JBIG, and JRM MOA**



# **Joint Region Marianas Environmental**

- Navy will be responsible for all Environmental Compliance, Conservation, Pollution Prevention and Restoration functions and for the budgeting to meet those requirements
- Navy will be responsible for all existing and future environmental permits, plans, orders and agreements and with the interaction with Federal, State and local regulatory agencies



# **Simplified Environmental Management**

- 1 Integrated Natural Resources Management Plan
- 1 Integrated Cultural Resources Management Plan
- 1 Cultural Resources Programmatic Agreement
- 1 Compliance program
- 1 DoD permitting program
- 1 Installation restoration program
- 1 consistent, collective DoD voice interacting with the regulatory community



# **Realignment of Forces in the Pacific Region**

- Under the October 2005 agreement, “U.S.- Japan Alliance: Transformation and Realignment for the Future” (ATARA), the U.S. and Government of Japan agreed to realign U.S. and Japanese forces throughout the Pacific
- As part of this realignment effort, the USG and GOJ agreed to relocate 8,000 Marines and 9,000 dependents from Okinawa to Guam by 2014
- Relocating to Guam will provide U.S. forces with freedom of action and increased flexibility to respond to regional threats



# Forecast of Future Forces on Guam

## U.S. Navy

### COMNAVMARIANAS

SSNs/Sub Tender  
Logistics Prepos Ships  
MSC Combat Stores Ships  
MSC Ammo Ships  
Maritime Prepo Ships  
H60s  
Transient CVN berthing  
HSVs  
Littoral Combat ship

(Old 4350 AD/ 5230 Dep)  
(New ≈ 5600 AD/ 5280 Dep)

## U.S. Army

1 x Battalion Air Defense  
(≈630 AD/ 950 Dep)



## USAF

### 36<sup>th</sup> Air Wing

Rotational Bombers  
More Based Tankers  
More Periodic Fighters  
Global Hawk

( Old 1930 AD/ 2280 Dep)  
(New ≈4560 AD/ 3730 Dep)

## USMC

III MEF Cmd Element  
Ground Combat Element  
Aviation Combat Element  
Combat Service Support  
Plus:  
Transient Units  
Visiting USMC & Allied Forces

(New ≈8,000 AD/ 9000 Dep)

## USCG

225' Buoy Tender  
110' Patrol Boat  
25' Response Boat

(240 AD/ 180 Dep)

Old Total: 6,520 Active Duty / 7,690 Dependents  
New Total: ≈19,030 Active Duty / 19,140 Dependents

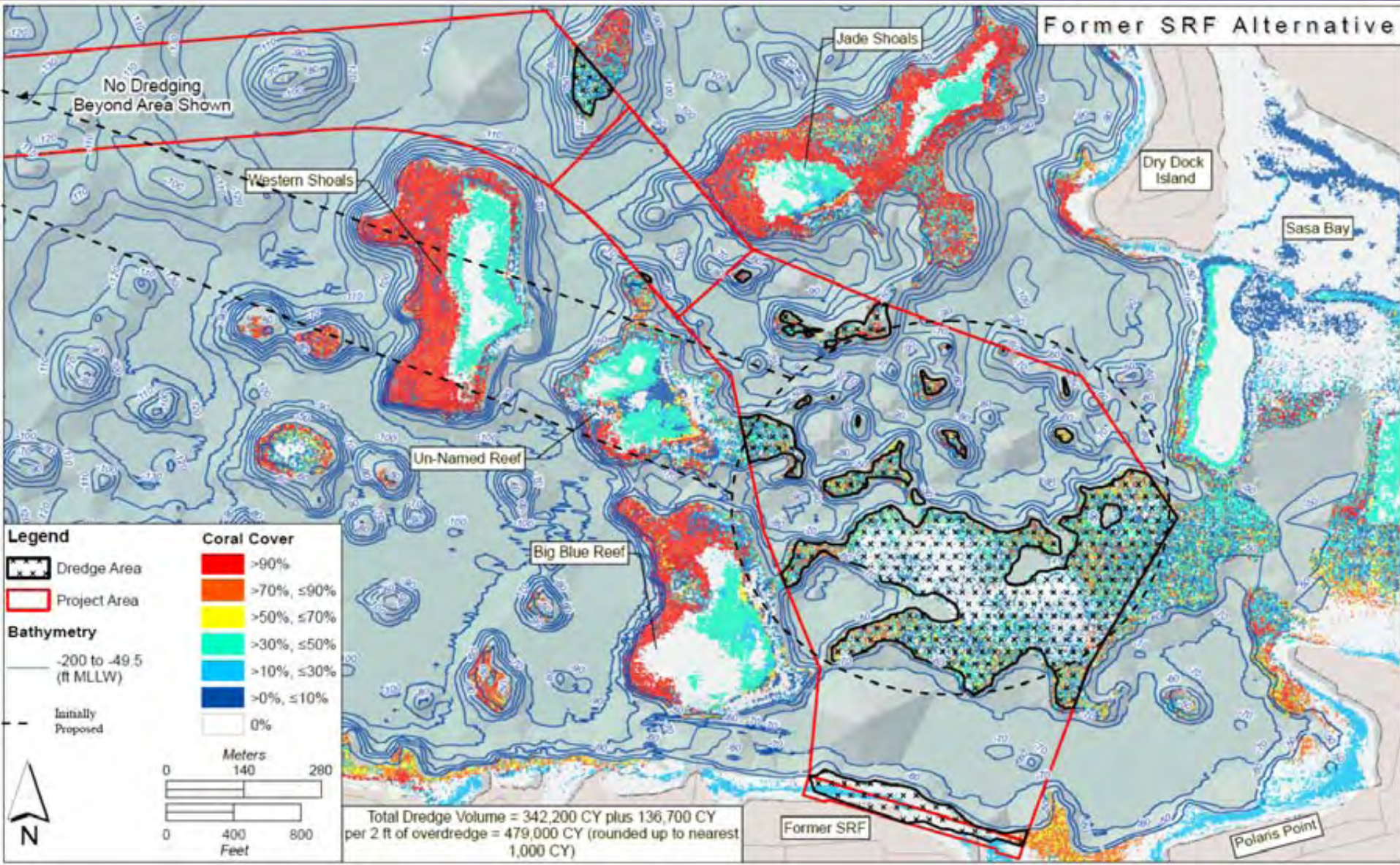
= New



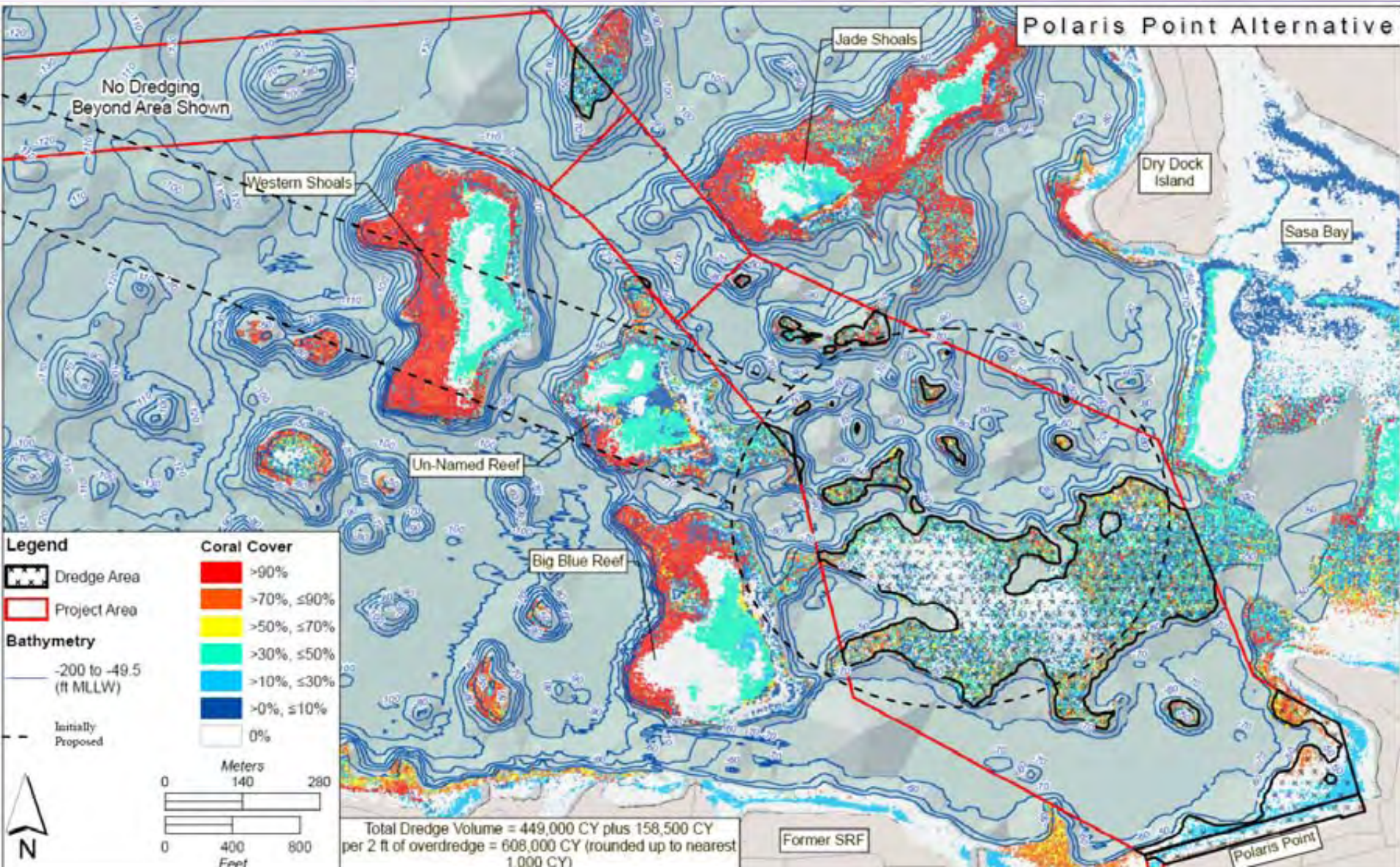
# Transient Aircraft Carrier - Avoiding Environmental Impacts



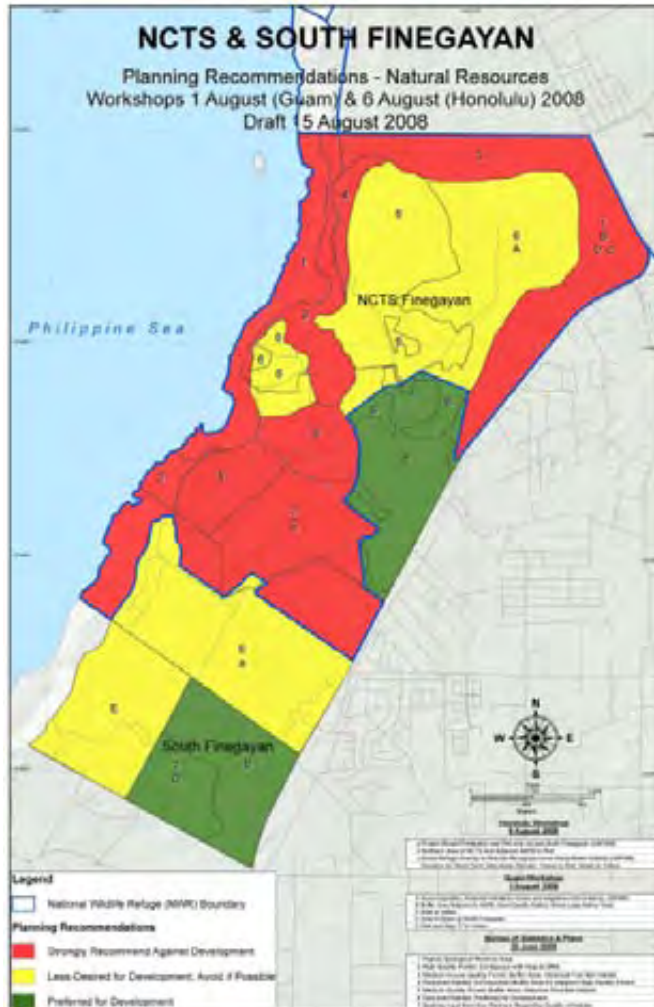
# Avoiding environmental impacts



# Avoiding environmental impacts



# USMC Main Cantonment - Minimizing environmental impacts



# Natural and cultural resource SME constraint mapping with master planners



# **USMC Main Cantonment - Minimizing environmental impacts**

- Smart growth planning
- Navy encroachment planning in collaboration with Guam compatibility sustainability study



# Preserving cultural resources

- Archaeological and historic site surveys of over 8,000 acres on Guam and CNMI
- CNMI HPO staff participated in the archaeological studies of the smaller remote islands in CNMI
- Partnership with the Micronesia Area Research Center in conducting a Traditional Cultural Places study
- Local expertise from HPOs and the local community
- With the help of NPS and HPOs, results of studies will be available to the public in brochures and historical signage

*This is the history of your ancestors, as well as our Nation, and should be shared with you.*



# Preserving cultural resources



Lusong at Pagat site,  
expertise from Guam HPO →

← Latte site at Andersen AFB ,  
expertise from Pohnpei, Yap, CNMI



# **Biosecurity**

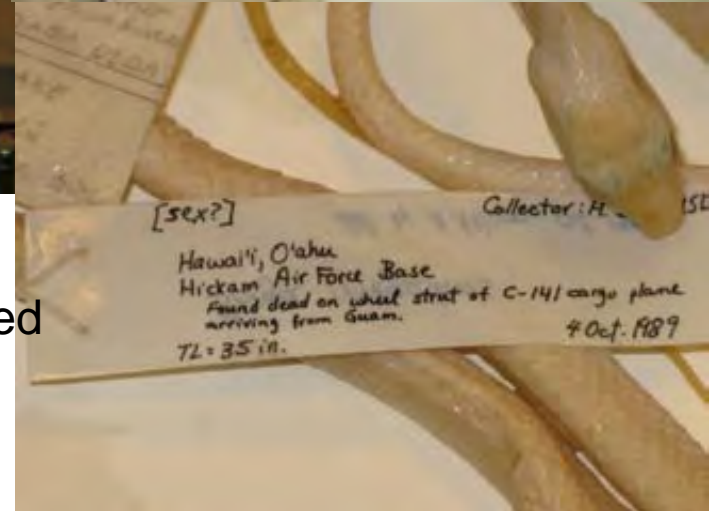
Flora, fauna, or pathogens can be invasive

Biosecurity measures address risk of invasive species being imported and exported

Biosecurity is a shared military and environmental goal



# Biosecurity



Brown Tree Snake specimens are tracked and catalogued

Although BTS is the invasive species poster child, other species could have equal or greater impacts .



# Biosecurity

Coconut Rhinoceros Beetle  
Exotic new castle disease

Fire ants  
Coqui frog

Giant mimosa  
Abandoned pets

Avian influenza  
??????



# **Biosecurity Effort**

- Increased cargo movement/transportation increases biosecurity risk to the Marianas
- Invasive species anywhere within Micronesia could be transported to the Marianas
- Invasive species negatively impact the community, wildlife, and the military mission
- It is in DoD's interest to address biosecurity threats



# Biosecurity

- Biosecurity effort will include a pathway risk analysis and development of a biosecurity plan
- Collaboration between DoD, USDA, USGS, NISC, USFWS, Smithsonian Institute
- Results will benefit the entire Micronesian region, not just DoD



# Questions?

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