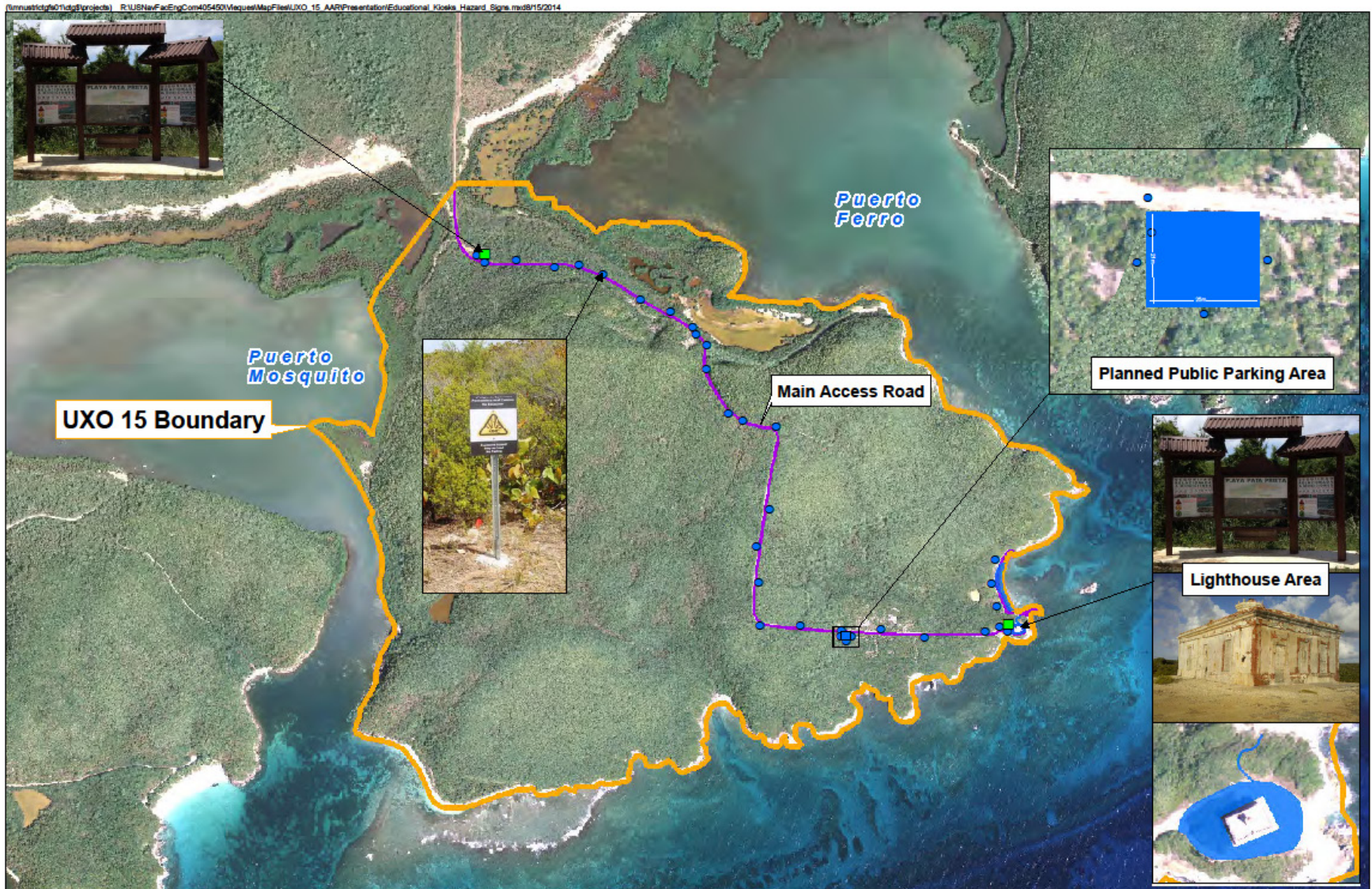




Puerto Ferro/UXO 15 Non-Time Critical Removal Action

**Vieques Restoration Advisory Board Meeting
August 21, 2014**

Site Features



Verdiales Historic Lighthouse at Puerto Ferro



Verdiales Historic Lighthouse at Puerto Ferro



Munitions Clearance around Historic Lighthouse



Munitions Clearance along Beach



Digging Up a Subsurface Anomaly





Hazard Warning Signs



Educational Kiosk



Blue Beach/PAOC EE Time Critical Removal Action

**Vieques Restoration Advisory Board Meeting
August 21, 2014**



TCRA Progress





Silt Fencing



Turtle Nesting Monitoring Training by USFWS



Turtle Nesting Monitoring Training by USFWS



Munitions Clearance in Turtle Nesting Zone



Subsurface Anomaly Removal



Munitions Clearance



Munitions Clearance

Laguna Anones Sampling

**Vieques Restoration Advisory Board Meeting
August 21, 2014**

Bahía Icacos

Laguna Anones

SIA

LIA

*Bahía Salina
del Sur*

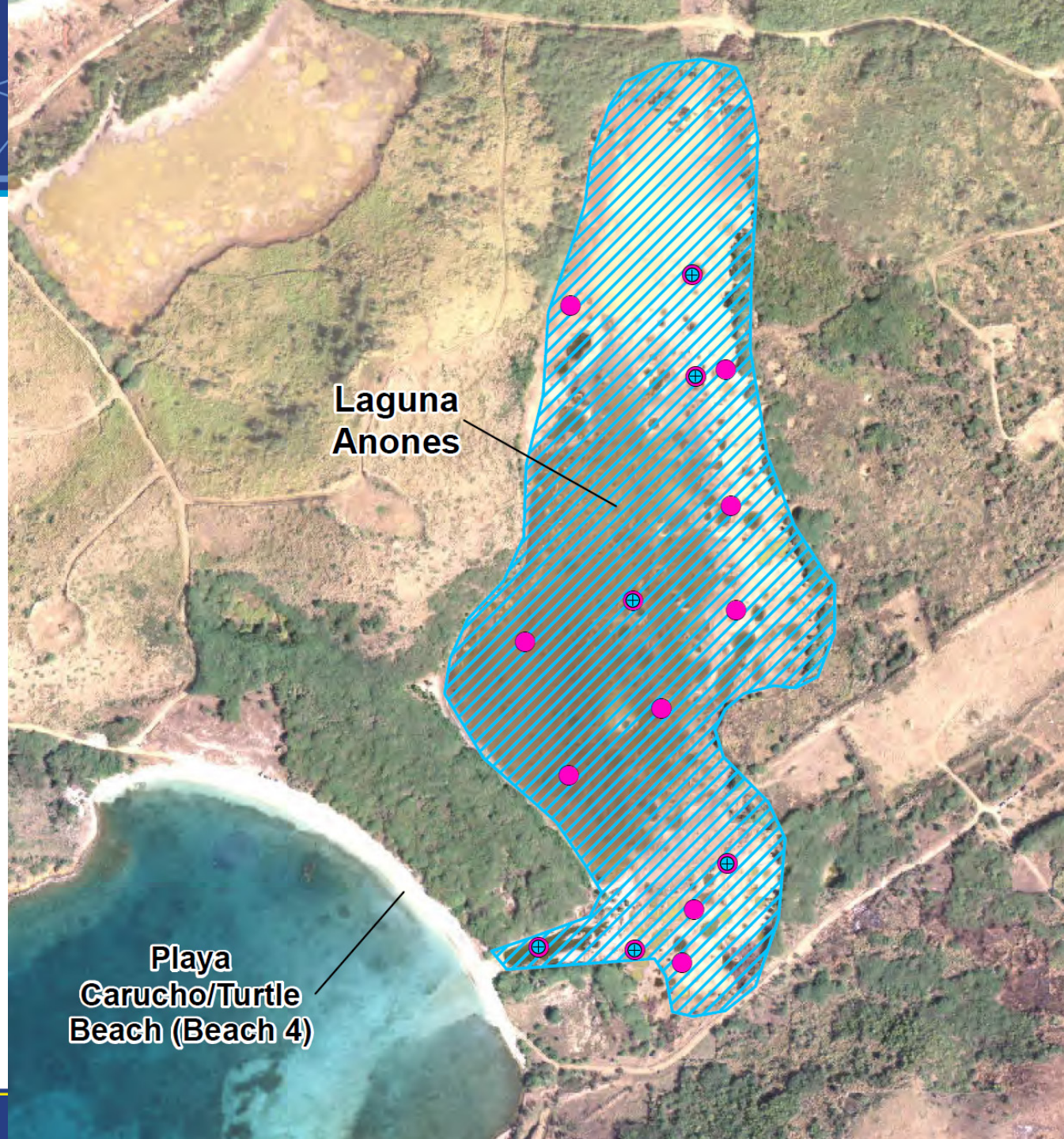




Laguna Anones



Playa Carucho



Surface Water and Sediment Sample Locations

Collecting Sediment Samples



Collecting Surface Water Samples



Sampling Results

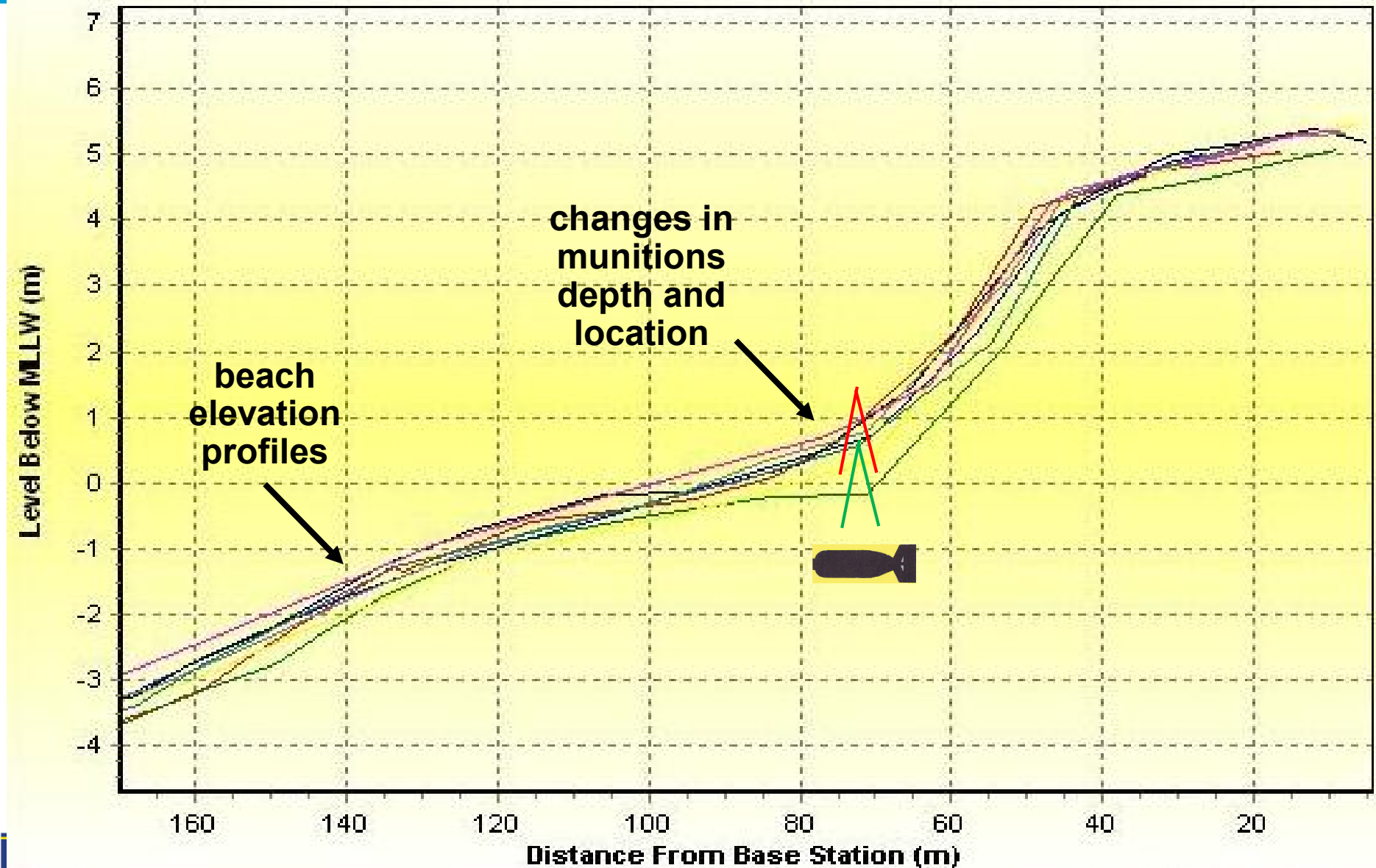


- **No explosives were detected in surface water or sediment samples**

Beach Dynamics Study

**Vieques Restoration Advisory Board Meeting
August 21, 2014**

Effects of beach dynamics on munitions

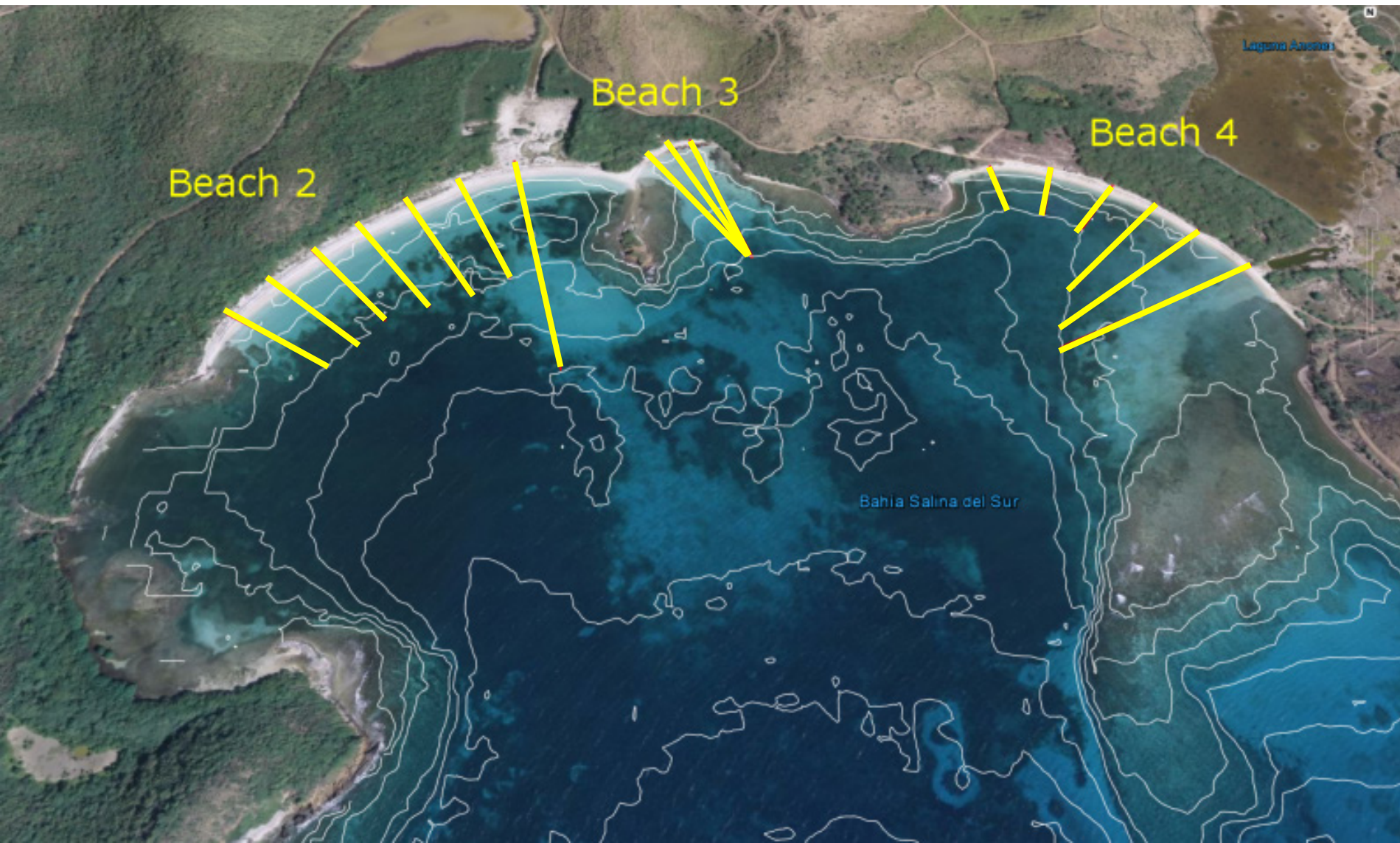




11 Beaches to be Surveyed



Measuring Beach Elevation Changes - Transects



Beach Elevation Survey



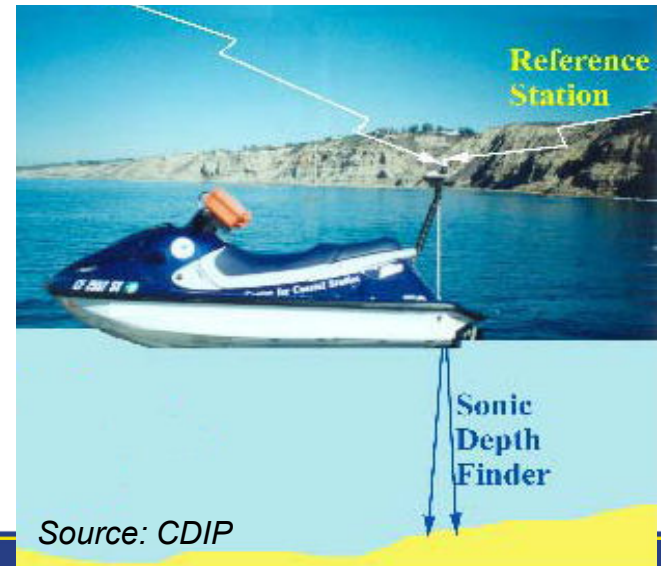
Boating Near-shore Survey



Wading Near-shore Survey



Shallow-draft Near-shore Survey



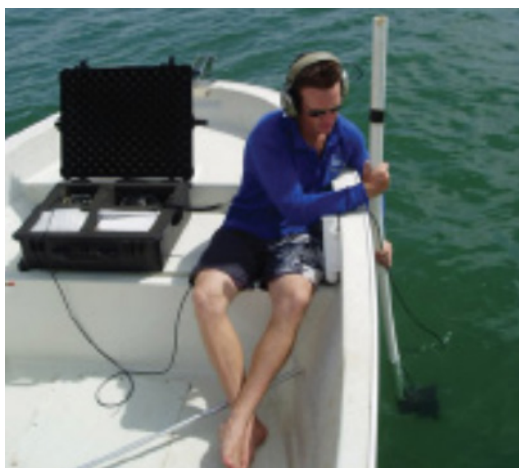
Munitions Surrogate Monitoring



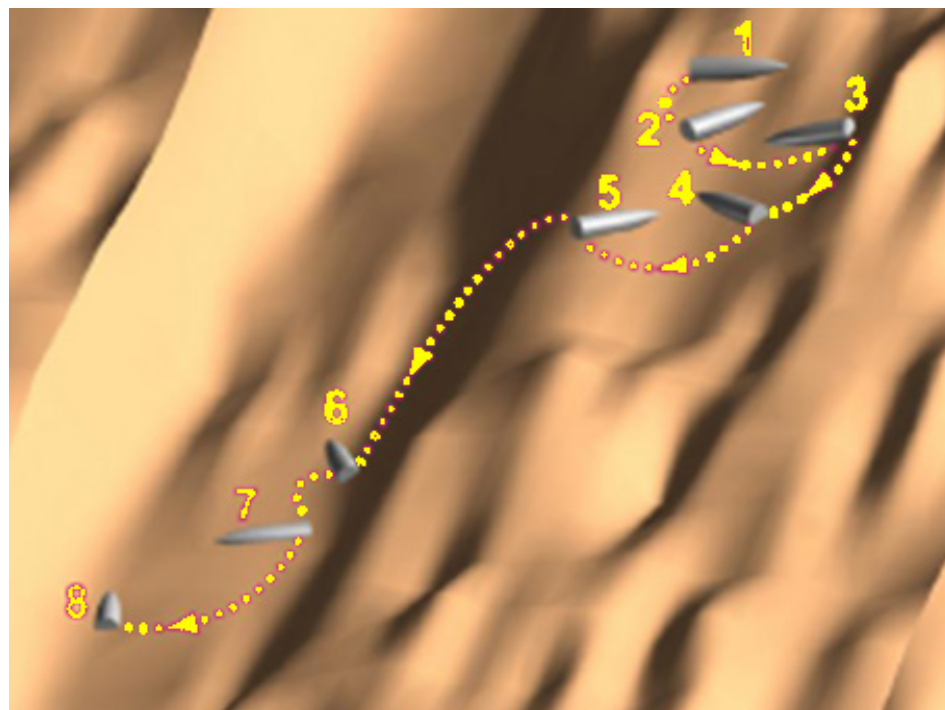
Munitions Surrogates



**Acoustic
Fingerprint**



Hydrophone



Munitions Movement Underwater

How Will The Data Be Used?



- **Understand the changing beaches**
 - Buried munitions may become exposed
 - Exposed munitions may become buried
 - Munitions on beach may move into the surf zone
 - Munitions in surf zone may move onto beach
- **Use the above information to plan investigations, cleanup, and monitoring**