International Association of Oil & Gas Producers

Case Studies - Minimizing Environmental Impacts

Case Studies

- Evaluation of Options to Reduce Impacts
  - Impact Assessment (IA)
  - Human Health and Ecological Risk Assessment (HHERA)
  - Comparative Assessment (CA)
  - Net Environmental Benefit Analysis (NEBA)

- Offshore Examples
  - Artificial Reef – California
  - Habitat Retention through Reefing – Thailand
- Onshore Example
  - Carbon Sequestration

Tools to Determine Best Decommissioning Option

- It is important to justify the decommissioning option that provides the greatest benefits and lowest impacts.
- Several tools can assist in your determination:
- Impact Assessment
  - EIA, SIA, ESHIA
- Human Health and Ecological Risk Assessment (HHERA)
- Multi-Criteria Decision Analysis (MCDA)
  - Comparative Assessment (CA)
  - Net Environmental Benefit Analysis (NEBA)
  - Best Practical Environmental Option (BPEO)

Offshore Decommissioning
Case Study – Bird Island Artificial Reef Development

- Oil pier remnant – 1920's era
  - Two well conductors
  - 12 concrete supports with steel beams inside
  - Damaged by large storms
- Pier has become the southern most nesting site for several marine bird species – including listed species
- The local marine habitat is mostly sand and mud
- Large local fishing industry
- Large local recreational fishing and diving area

Santa Barbara California – 1920s

Santa Barbara California – 1920s

Santa Barbara California – 1995

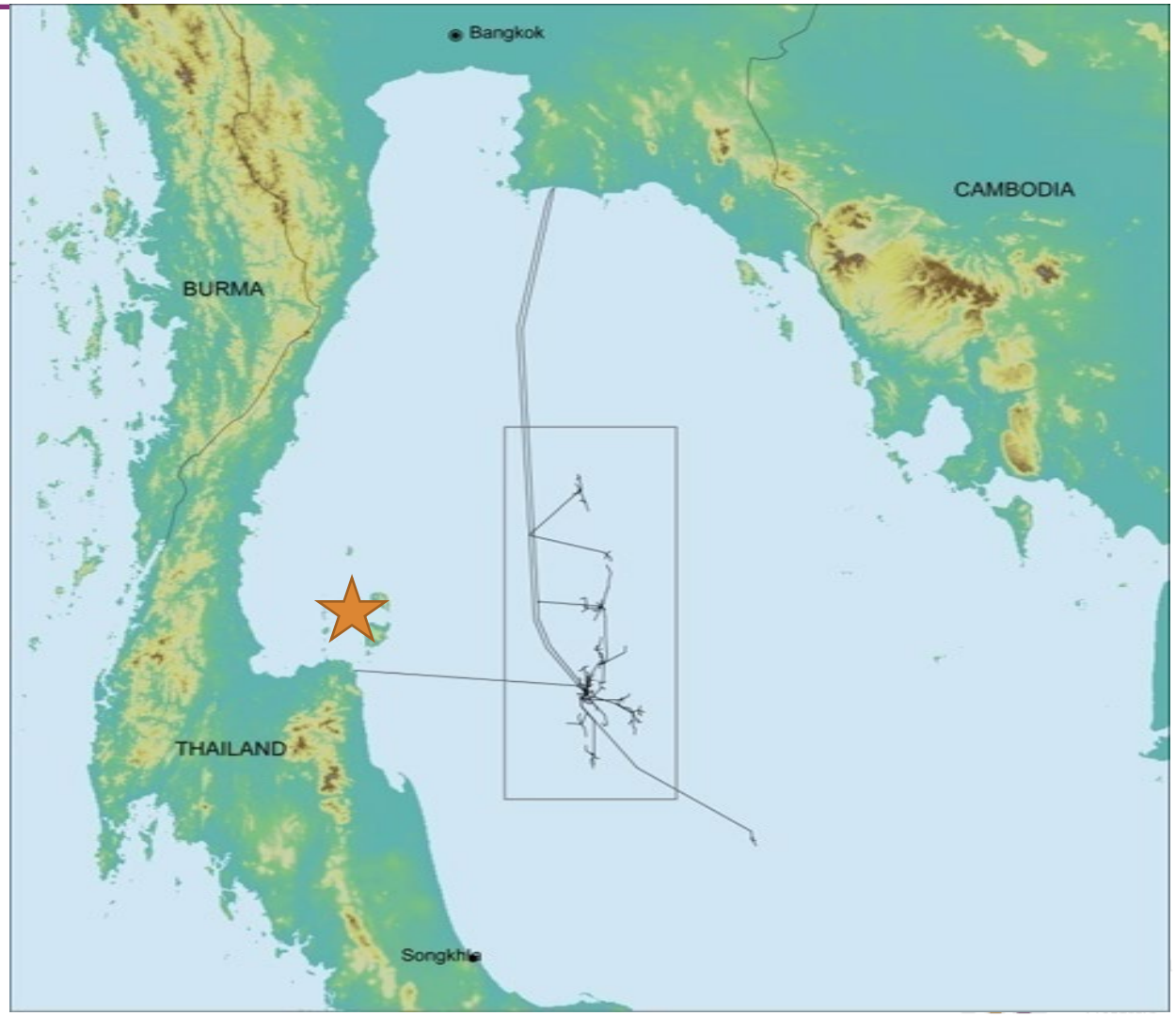
Santa Barbara California – 2005

Santa Barbara California – 2005

Santa Barbara California – 2006 (1 Year Old)

Offshore Decommissioning
Case Study – Habitat Retention Jacket Reefing Thailand

- First ever reefing developed in Gulf of Thailand
- Fishery enhancement and recreation are primary goals
- Eight (8) platform jackets used
- Several tools used to determine optimum project alternative
  - HHERA
  - NEBA
  - CA
  - BPEO



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Offshore Decommissioning
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Onshore Decommissioning
Case Study – Carbon Sequestration

- Restoration and remediation of restoration sites onshore can result in carbon sequestration
- Sequestration offsets GHG produced by project decommissioning
- Can result in large sequestration potential
- Wetlands
- Grasslands
- Forest

Onshore Decommissioning
Case Study – Carbon Sequestration

- Modeling can show carbon sequestration after restoration.
- Test case showed that after five years of growth, more than 5 times the carbon was stored than used in the project.