

# **Wetlands Mitigation Status Report Investigation Area H1 and Installation Restoration Site 5**

**Dwight Gemar  
Weston Solutions, Inc.**

**January 26, 2012  
Restoration Advisory Board Meeting**





# Wetlands Compensatory Mitigation Requirements



- Non-tidal wetlands located adjacent to the former Facility Landfill within Investigation Area (IA-H1) impacted by oil and debris disposal
- The IA-H1 final approved remedy included backfill of impacted wetlands with an overlying engineered cap
- Clean Water Act prohibits discharge of fill into waters unless authorized
- For unavoidable impacts, **compensatory mitigation** is required to replace the loss of wetlands



# Investigation Area H1 (IA-H1)



# IA-H1 Wetlands Mitigation Challenges

- Pickleweed habitat located within about 2 acres of the 7 acres impacted wetlands
  - Potential for presence of endangered salt marsh harvest mice
  - A Federal and State endangered species, no impacts or “take” allowed
- Biological Opinion (BO) provided by US Fish and Wildlife Service to ensure compliance with the Endangered Species Act (ESA)
  - Trapping and passive relocation allowed to protect any SMHM
  - 200 traps set over eight nights
  - One SMHM recovered and relocated
  - Two SMHM observed during passive relocation





# IA-H1 Wetland Creation Activities



- A minimum 8.25 acres required by BO to replace the 7 acres of wetlands backfilled within IA-H1 under the engineered cap
- Actions:
  - Nursery propagation of seedlings began in Nov-Dec 2004
  - 58,000 cubic yards of soil removed to create new wetlands in 2006-2007 within former upland areas
  - Wetland replanting completed in Jan–Apr 2007
- 8.62 acres of new wetlands were created
  - 7.07 acres of pickleweed-dominated wetland
  - 1.55 acres of seasonally ponded/open water habitat
- Routed clean stormwater runoff from landfill cap to wetlands to improve hydrology

# Pickleweed "Seedlings"





# Created Wetlands Planting





# IA-H1 Wetlands Current Status (Year 4)





# IA-H1 Wetlands Current Status (Year 4)



- Year 4 Quantitative Vegetation Survey Results
  - Native salt marsh plant cover at 82.5 percent compared with the Year 4 performance standard of 65 percent
  - Pickleweed cover at 45.5 percent, representing good progress toward the Year 5 goal of 60 percent
- Based on Year 4 results, the wetland plant community is making favorable progress toward achieving the Year 5 performance criteria



# Seasonal Ponding/Open Water Habitat





# Installation Restoration Site 05 (IR05) Wetlands Mitigation Location





# IR05 Wetlands Mitigation Activities



- June 2009 Biological Opinion (BO) prepared to ensure compliance with the Endangered Species Act (ESA)
  - Compensation required for 2 acres of pickleweed-dominated wetlands impacted by contaminated soil
  - Vegetation removal conducted to passively relocate SMHM
- Restoration actions:
  - Excavated areas backfilled to an elevation of 5.5 to 6 feet above mean sea level to establish a muted tidal environment
  - Pickleweed plantings harvested in November 2010 and planted in the graded wetland creation area
  - A total of 4.72 acres of pickleweed-dominated wetlands were created/restored (2.72 acres more than required)



# IR-05 Wetland Excavation





# DP7S Pickleweed Harvesting



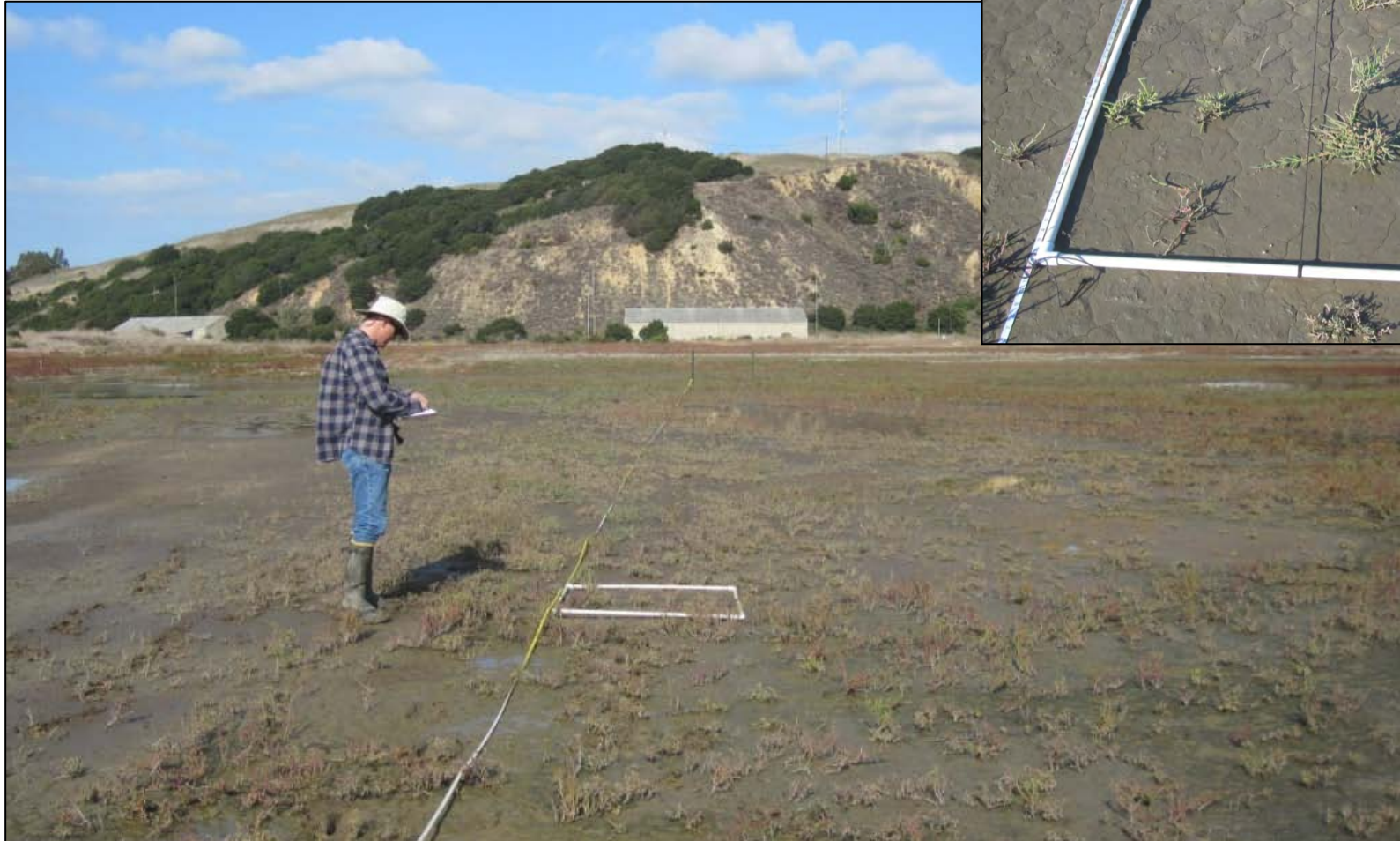


# Pickleweed Planting at IR05





# Quantitative Vegetation Monitoring





# IR05 Current Status (Year 1)



- Restored wetland areas of IR05:
  - Total native salt marsh plant cover averaged 19 percent of the restored area
  - Pickleweed comprises 58 percent of the cover (11.1 percent of the total area)
  - Values indicate a robust re-vegetation is underway
- Dredge Pond 7S pickleweed harvest area:
  - Cover has returned to pre-harvest levels
- Year 5 goals for the restored pickleweed-dominated wetland habitat:
  - Minimum of 90 percent cover of native wetland plant species
  - Minimum of 60 percent cover of pickleweed
  - Less than 5 percent cover of non-native plant species



# IR05 Current Status (Year 1)



QUESTIONS?