Water Transfer and Impacts

- QSA provides mitigation water through 2017, at which point sea decline will accelerate.
- Reduction in elevation exposes former lakebed and results in increased amounts of playa and dust.
State Alternative

- **Description of Alternative**
  - **Marine Sea**
    - 45,000 acres
    - <40,000 mg/L
  - **Saline Habitat Complex**
    - 62,000 acres
  - **Brine Sink**
    - 17,000 acres
  - **Exposed Playa**
    - 106,000 acres
  - **Capital Cost**
    - $8.879 Billion
  - **Annual O & M**
    - $142 Million
Early Start Land Use & Habitat Program

- Part of Salton Sea Restoration Plan
- Planning tool
  - Adaptive management
  - Incremental
  - Functional
Treatment Wetlands
Waterfowl Habitat
Shallow Water Habitat
Simulated Salinity (ppm)

2017 QSA Mitigation Water Ends

Salinity

Simulated Elevation (ft)

Year

California Department of Water Resources
Salinity Constraints and Thresholds
California Department of Water Resources

SCH OPERATIONS
Salinity in Ponds

0 ppt 10 20 30 40 50 60 70

Tilapia survival

Emergent vegetation

Selenium Loading

Mosquito control

SCH OPERATIONS
Salinity in Ponds

Mosquitoes Survive

MOSQUITO SUPPRESSION

MORE RISK

LESS RISK

SUPRESS MOST VEGETATION

OPTIMAL SURVIVAL AND REPRODUCTION

LESS RISK

MORE RISK

SUPRESS MOST VEGETATION

OPTIMAL SURVIVAL AND REPRODUCTION
New Vision For The Future

- In 2013, IID joined forces with Imperial County to determine a new plan for the future: *Salton Sea Restoration & Renewable Energy Initiative*
- Leverage renewable energy generation and use funds to help finance air-quality management and habitat restoration
- Planning and implementation driven by Salton Sea Authority with support from the state and member agencies.
Renewable Energy Development

- Known Geothermal Resource Area with 1,700-2,000 megawatts of clean geothermal energy—enough to power more than 1 million homes
  - Designate as renewable energy development area
  - IID pledges land holdings and mineral assets
  - Public-private partnerships to develop new renewable projects
  - Development of new 500-kilovolt transmission line
  - New power purchase agreements with investor-owned utilities
Water Transfer Mitigation
Fresh Water Aquatic Habitat
Jessica Lovecchio

QSA Water Transfer
Fresh Water Aquatic Habitat
Jessica Lovecchio
P1 Cells - Hydrology

- 15 acres 1000 feet long
- Floods across cell from NE to SW
- Water depths vary throughout cell
- Cascade flows to adjacent cells
- Requires active water level management
**P2 Cells - Hydrology**

- Varied acreage – 2000 ft. long
- 3 feet deep moat on perimeter
- Floods across cell from W to E
- Cascade flows to adjacent cell
- Water depths more uniform
- Less management of water depths.
Design Parameters:
• Emergent habitat
• Hydric and mesic vegetation
• More uniform water depth
• ‘Moat-like’ area around perimeter of cell

Results:
• Monotypic vegetation
• Less invasive species
• Less water management
Design Parameters:
- Mimic floodplain habitat
- Willows/cottonwood/mesquite
- Water depth varies across cell

Results:
- Difficulty in managing water depths
- Invasive species control
- High cottonwood mortality
- Groundcover in eastern portion of the cell
**Designed Parameters:**
- Mimic desert riparian habitat
- Willows along edges of channel
- Channels have low-velocity flows
- Adjacent areas are normally dry

**Results:**
- Difficult to maintain open channel
- Wind throw
- Difficulty maintaining vegetation outside of channel