

# Desalination in the Monterey Bay National Marine Sanctuary

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# Monterey Bay National Marine Sanctuary



- ❖ **Designated: September 18, 1992**
- ❖ **Seaward Boundary: ~25 miles offshore**
- ❖ **Shoreward Boundary: Mean High Tide**
- ❖ **Shoreline Length: 276 Statute Miles**
- ❖ **Area: 5,322 square statute miles**
- ❖ **Deepest Point: 10,663 ft**

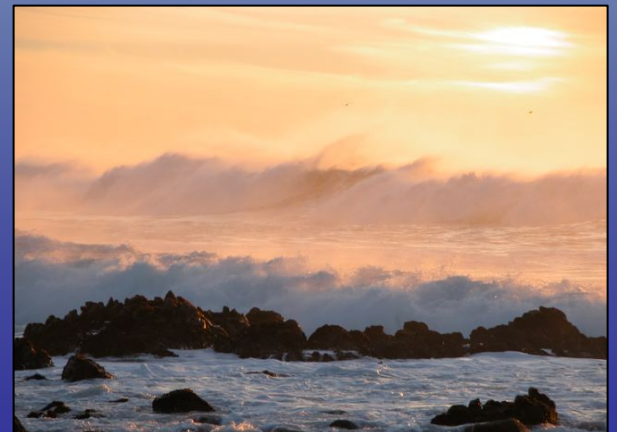
# Overview of Negative Impacts

- Impacts are highly variable from site to site; cannot generalize
- Primary negative impacts include:
  - ✓ construction
  - ✓ intake and discharge
  - ✓ energy use and emissions
  - ✓ land use
  - ✓ socioeconomic impacts
- Impacts can be mitigated through proper site design and operation



# Positive Impacts of Desalination

- **Water supply augmentation**
- **Reclamation of impaired sources**
- **Drought resistant reliable water supply**
- **Diversification of water supply options**
- **Provides high quality drinking water free of contaminants**
- **Potential future environmental benefits**



# Intake and Discharge Impacts

- Brine Discharge
- Impingement
- Entrainment



# Construction Impacts

- Similar issues to any other coastal development projects
- Wildlife disturbance
- Surface water quality degradation
- Impacts to recreational and commercial activities
- Impacts mitigated by using *Best Management Practices*



# Energy Use and Emissions

- **Desalination plants are energy intensive**
- **Desal plants will result in increased emissions which can:**
  - ✓ **impact human health and the environment**
  - ✓ **contribute to global climate change**
- **Mitigation measures include use of renewable energies, tradeoffs, and use of energy saving technologies and practices**



# **Growth Inducing Impacts**

- **Desalination plants have the potential to induce growth by:**
  - ✓ **removing an obstacle to growth**
  - ✓ **adding a new water supply**
- **Can strain existing community services and infrastructure**
- **Can cause indirect environmental impacts**
- **Significant public concern exists regarding growth inducement**
- **Primarily a land use planning issue**



# Socioeconomic Impacts

- **Population, housing, and community structure**
- **Economic growth and development**
- **Environmental Justice issues**
- **Water resource availability**
- **Land and marine use:**
  - ✓ **Recreational conflicts**
  - ✓ **Commercial conflicts**
  - ✓ **Nature conservation conflicts**
- **Utilities and services**



# Other Impacts and Issues

- **Power plant once-through cooling co-location issues**
- **Private vs. public ownership**
- **Coastal erosion and armoring**
- **Impacts to groundwater**
- **Visual impacts**



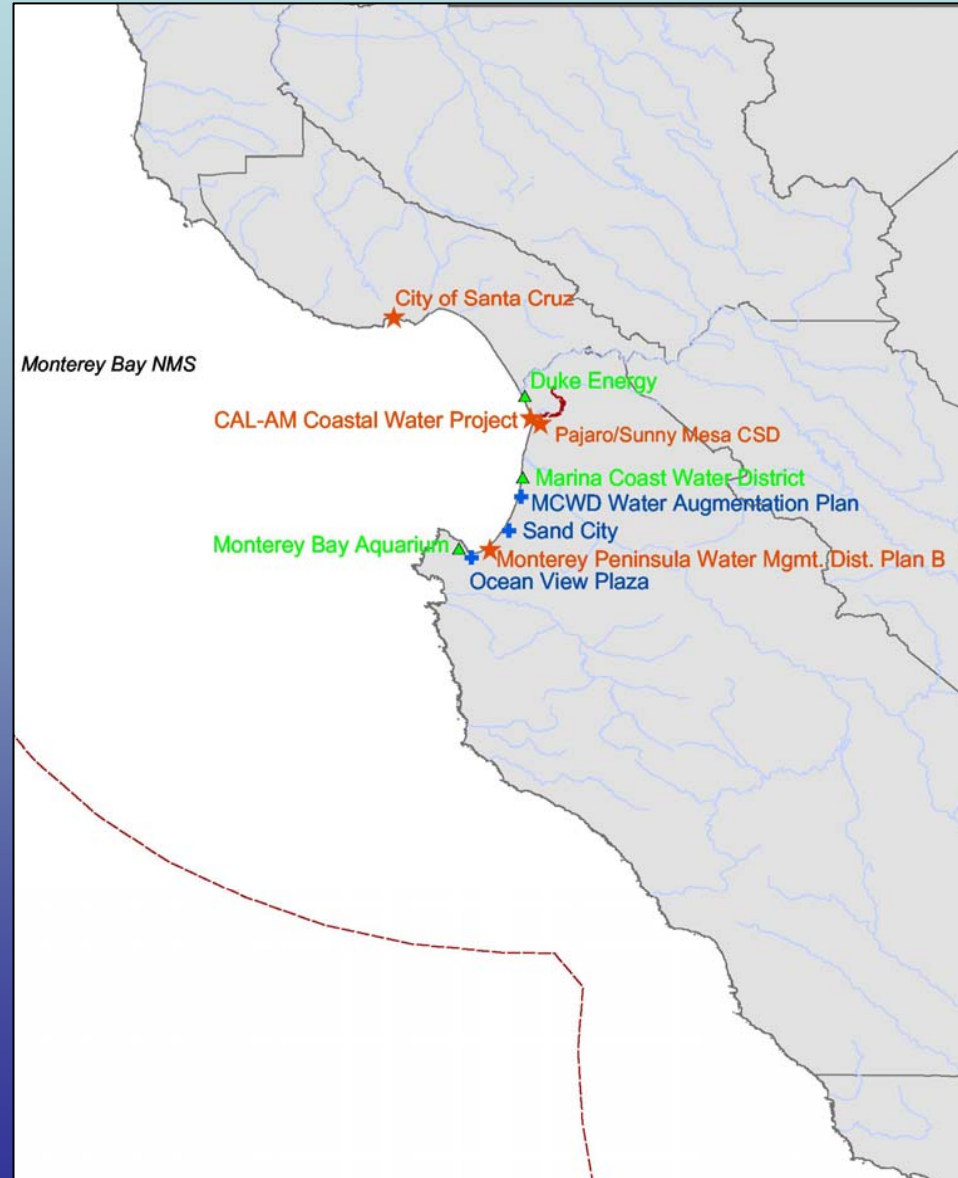
# Existing Monterey Bay Plants

- **Moss Landing Power Plant**
- **Marina Coast Water District**
- **Monterey Bay Aquarium**



# Proposed Plants

- ✓ City of Santa Cruz
- ✓ CalAm Coastal Water Project
- ✓ Pajaro Sunny Mesa  
Community Services District
- ✓ Marina Coast Water District
- ✓ Monterey Peninsula  
Water Management District
- ✓ City of Sand City
- ✓ Ocean View Plaza
- ✓ Cambria





# **Relevant Sanctuary Regulations**

- **It is unlawful for any person to discharge or deposit any material; or other matter except:...**
- **It is unlawful to discharge or deposit from beyond the boundary of the Sanctuary any material or other matter that subsequently enters the Sanctuary...**
- **It is unlawful to drill into dredge, or otherwise alter the seabed, or construct, place, or abandon any structure, material or other matter on the seabed...**



# **MBNMS Desalination Involvement**

- **Joint Management Plan Review--Desalination Action Plan**
- **Commenting on desalination proposals**
- **Public education--workshops/conferences**
- **Multi-Agency partnerships**
- **MBNMS Desalination Guidelines and Recommendations**

# JMPR Priority Issues--MBNMS

- ❖ **Administration**
- ❖ **Big Sur Coastal Ecosystem Coordination**
- ❖ **Coastal Development**
  1. Coastal armoring
  2. **Desalination**
  3. Dredge disposal
  4. Submerged cables
- ❖ **Ecosystem Protection**
  1. Benthic habitats
  2. Davidson Seamount
  3. Emerging issues
  4. Fishing Research and Education
  5. Krill harvesting
  6. Marine reserves
- ❖ **Interpretive Facilities**
- ❖ **Exotic Species**
- ❖ **Multicultural Outreach**
- ❖ **Water Quality**
  1. Beach closures
  2. Protect riparian habitat
  3. Revise MOA
  4. WQPP Implementation
- ❖ **Wildlife Disturbance**
  1. Tidepool protection
  2. Marine mammal disturbance
  3. Motorized Personal Watercraft

# **Desalination: Action Plan Strategies**



**Strategy DESAL-1: Regional Desalination Program**

**Strategy DESAL-2: Facility Siting Guidelines**

**Strategy DESAL-3: Environmental Standards for Facilities**

**Strategy DESAL-4: Modeling and Monitoring Program**

**Strategy DESAL-5: Outreach and Information Exchange**



# Monterey Bay Regional Desalination Study

## Background

- Prop 50 funded study
- Purpose: investigate environmental, economic, and social implications of seawater desalination projects in AMBAG region

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.



# **Monterey Bay Regional Desalination Study**

## **Report Outline:**

- **Water Supply Background**
- **Overview of Marine Habitats in Monterey Bay**
- **Site-selection Considerations for Desal Plants**
- **Desalination Options for Monterey Bay**
- **Environmental and Socioeconomic Impacts/Mitigation Measures**
- **Co-location Issues**
- **Regulatory Considerations**

# Regulatory Agencies Involved

## Federal:

- Army Corps. Of Engineers
- US Coast Guard
- National Marine Fisheries Service
- US Fish and Wildlife Service
- Monterey Bay National Marine Sanctuary

## State:

- California Coastal Commission
- Dept. of Fish and Game
- Department of Health Services
- Dept. of Transportation
- Dept. of Water Resources
- Public Utilities Commission
- State Lands Commission
- State and Regional Water Boards

## Local & Regional:

- City governments
- County government
- Water management districts

# The End

