

**U.S. DEPARTMENT OF ENERGY  
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

**NUCLEAR WASTE TECHNICAL REVIEW BOARD  
FULL BOARD MEETING**

**SUBJECT: ENVIRONMENTAL MONITORING  
STUDIES AND  
1994 ACCOMPLISHMENTS**

**PRESENTER: WENDY R. DIXON**

**PRESENTER'S TITLE  
AND ORGANIZATION: ASSISTANT MANAGER FOR ENVIRONMENT, SAFETY & HEALTH  
YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT  
LAS VEGAS, NEVADA**

**PRESENTER'S  
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**BEATTY, NEVADA  
JANUARY 10, 1995**

# Environmental Program

- **Environmental Compliance**
  - Permits
  - Hazardous waste management
  - Compliance audits/surveillances
- **Environmental Field Programs**
  - Air quality
  - Meteorology
  - Archaeological resources
  - Native American studies
  - Radiological monitoring
  - Water resources
  - **Terrestrial ecosystems**

# Reclamation Program

## **Purpose:**

- **To return sites disturbed by site characterization activities to a stable ecological state with form and productivity similar to undisturbed sites.**

# **Reclamation Program 1994 Accomplishments**

- **Completed final reclamation on 4 sites and interim reclamation on 56 sites**
- **Completed draft report on natural plant succession on disturbed sites**
  - **Recovery rate to a similar form and productivity is 20 - 800 years**
  - **Many species on disturbances were not major components of undisturbed sites**
  - **Research is necessary to determine whether species dominating disturbed sites are facilitators, inhibitors, or tolerators**

# **Desert Tortoise Program**

**Goal: To conserve the tortoise population at Yucca Mountain and ensure compliance with the Endangered Species Act**

## **History of Program:**

- Petitioned for Listing in 1984**
- Emergency Listed as Endangered in August 1989**
- Biological Assessment Written in 1989**
- "No Jeopardy" Biological Opinion Issued in February 1990**
- Reclassified as Threatened in April 1990**
- Incidental Take of 15 Tortoises Allowed**
- Terms and Conditions Required Specific Actions**

# **Desert Tortoise Program 1994 Accomplishments**

- **Monitored 70 adult radiomarked tortoises to assess potential impacts of site characterization activities**
  - **None of these tortoises died**
- **Monitored tortoise reproduction (27 nests):**
  - **≈ 50% survival to hibernation**

# **Desert Tortoise Program 1994 Accomplishments**

(continued)

- **Changes to be made in 1995 based on an evaluation of data and sample size requirements:**
  - **The number of radiomarked adult tortoises monitored will be reduced**
  - **Raven abundance surveys will be reduced by 40% based on an evaluation of minimum sample size requirements**
  - **Blood sampling for disease monitoring will be reduced to once each year**

# Biological Survey Program

- **Objectives:**
  - **Identify the potential direct impacts of site characterization activities on important species and biological resources**
  - **Recommend impact mitigation measures**
  - **Implement recommended mitigation measures as they relate to important biological resources**



# **Biological Survey Program 1994 Accomplishments**

- **Conducted 16 preactivity surveys ( 630 acres)**
  - **Made recommendations to avoid important biological resources**
- **Monitored tortoises during construction activities.**
  - **Five tortoises were displaced to prevent death or injury**
  - **One tortoise was killed by construction activity. This is the second incidental take for the project.**

# **Site Characterization Effects Monitoring Program**

## **Objective:**

- **Monitor and document potential effects of Site Characterization Activities (SCA) on biological resources at Yucca Mountain**

## **History:**

- **Program was designed in 1988 and implemented in 1989, prior to the start of SCA, to gather pre-disturbance data. Monitoring has continued through 1994. Program was redesigned in 1994. The new experimental design will be implemented in 1995.**

# Precipitation at Yucca Mountain

