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To: Jane Summerson/YD/RWDOE@CRWMS  
cc: Joseph Rivers/YD/RWDOE@CRWMS, Joanne Stover/YD/RWDOE@CRWMS  
Subject: SEIS Data transfer - Biological Resource Information

User Filed as: Not Categorized in ERMS

Not privileged  
JS 7/6/07

The attached file contains information requested to support the SEIS - Biological Resources Analyses.  
Specifically, this file contains information on:

1. Any new land cover type identified in the land withdrawal area as a result of field surveys, if any conducted after publication of the FEIS.
2. Any new special-status species not listed in previously prepared documentation (such as the Draft Environmental Assessment for the Proposed Infrastructure Improvements for the Yucca Mountain Project, Nevada, and the forthcoming Supplemental YM Rail Corridor and Rail Alignment EIS). Newly acquired NNHP data, if available, will be used to identify documented occurrences of special-status species (e.g., more recent than DIRS 174379-NNHP 2004).
3. Any new information on land reclamation activities.



Jan 2007 data call bio resources.doc

In addition, any other information that may result in soil disturbance, not related to direct land disturbance from facility construction or repository activities was requested. BSC is unaware of any other information that would support this last item. We are available for a round table discussion that may enlighten the process.

## SEIS REQUEST FOR BIOLOGICAL RESOURCES INFORMATION

This paper addresses a request for information on biological resources needed to support the Supplemental Environmental Impact Statement (EIS).

### 1. LAND COVER TYPES AT YUCCA MOUNTAIN

Vegetation associations within a 173-km<sup>2</sup> area of Yucca Mountain are described in the *Classification and Map of Vegetation at Yucca Mountain* (CRWMS M&O 1998c [DIRS 104589]). This report is based on field work conducted in 1997 and 1998. No new land cover types have been identified within the land withdrawal area and no new maps or reports have been prepared for the Yucca Mountain Project since the development of the Final EIS (DOE 2002 [DIRS 155970]). Maps of vegetation at Yucca Mountain prepared prior to 1999 are described in Section 2.1.2.1 of the *Environmental Baseline File for Biological Resources* (CRWMS M&O 1999 [DIRS 104593]).

### 2. SPECIAL-STATUS SPECIES

The description of special-status species at Yucca Mountain included in the Final EIS (DOE 2002 [DIRS 155970]) was developed from a series of reports that describe field investigations and studies conducted at Yucca Mountain from about 1975 to 1999, and from a version of the Nevada Natural Heritage Program (NNHP) database obtained in 1999. Those reports are described in the *Environmental Baseline File for Biological Resources* (CRWMS M&O 1999 [DIRS 104593]). No additional studies that describe the flora or fauna at Yucca Mountain have been written since 1999.

Since the completion of the *Environmental Baseline File* (CRWMS M&O 1999 [DIRS 104593]), approximately 315 additional acres of surveys for desert tortoises and other special-status species have been conducted in the Yucca Mountain area. Most of those surveys were in Midway Valley within about 2 km of the Exploratory Studies Facilities. No additional special-status species were observed during those surveys or other work conducted at Yucca Mountain.

Table 1 lists the special-status species that are known to occur within or near the proposed land withdrawal area. The list is based on all surveys and studies of plants and animals conducted at Yucca Mountain and data from a 2005 version of the NNHP database. That database was queried to identify observations of plants and animals tracked by the NNHP that occur within 5 km of the proposed land withdrawal area.

Within the NNHP database, there are records of five species of animals and four species of plants within five km of the proposed land withdrawal area (Figure 1), including 16 observations of the desert tortoise. This threatened species is known to occur throughout the area at elevations below about 1,500 m (CRWMS M&O 1997 [DIRS 102869]; Rautenstrauch and O'Farrell 1998 [DIRS 101914]).

There is one recorded observation of the fringed myotis in the database. This bat, which is classified as protected by Nevada and sensitive by the Nevada office of the Bureau of

Land Management (BLM), was captured infrequently at Yucca Mountain during studies conducted in 1991 through 1993 (CRWMS M&O 1998a [DIRS 104590]). Six or seven other protected bat species also have been found within the land withdrawal area (Table 1).

Three beetles classified as sensitive by the Nevada office of the BLM have been found at Big Dune, which is about 4.7 km from the southwest corner of land withdrawal area and 24 km from the Exploratory Studies Facilities (Figure 1). There is no dune habitat within the land withdrawal area.

Two species of beardtongue that are classified as sensitive by the Nevada office of the BLM have been observed just outside of the proposed land withdrawal area (Figure 1). Death Valley beardtongue has been found in the Striped Hills, 0.6 to 1.3 km southeast of the proposed land withdrawal area. This species generally occurs on limestone soils in sandy or gravelly washes and gravel and cobble-sized rubble of canyon slopes at elevations of 1,000 to 1,580 m. White-margined beardtongue has been found south of the Striped Hills about 2.3 km southeast of the proposed land withdrawal area. This species is found at elevations of 1,520 to 3,590 m on soils with little or no profile development in flat wash bottoms of outwash canyons and adjacent slopes. Neither species has been found on the Nevada Test Site (Blomquist et al. 1995 [DIRS 103377]).

Rock purpusia has been found about 1.1 km east of the proposed land withdrawal area on the west side of Shoshone Mountain at an elevation of about 1,830 m (Figure 1). This species is classified as sensitive by the Nevada office of the Bureau of Land Management.

Two populations of Bullfrog Hills sweetpea have been found at the north end of Yucca Wash at elevations of 1555 to 1,675 feet. One of these observations is within the proposed land withdrawal and the second is about 1 km north of the boundary. This plant is not classified as protected or sensitive by any government agency.

### **3. LAND DISTURBANCE AND RECLAMATION ACTIVITIES**

The amount of land disturbed by activities conducted to support the Yucca Mountain Project has been measured since 1991. As of December 31, 2006, 146.5 ha of land has been disturbed. Updated estimates of land disturbances are provided to DOE quarterly.

Aerial photographs were examined to estimate that about 247 ha of land were disturbed prior to 1991 in an approximately 220-km<sup>2</sup> area at Yucca Mountain. It is important to note that the area examined includes only a portion of the proposed land withdrawal area (EG&G Energy Measurements, Figure 1 [DIRS none]).

Reclamation is implemented on long-term topsoil stockpiles and on sites that are no longer needed for the Project and that have been decommissioned. Final reclamation includes spreading and contouring topsoil; creating erosion-control structures; ripping, seeding, spreading, and anchoring mulch; and fencing to reduce loss of new vegetation to herbivores. The total amount of disturbed land reclaimed for the Project is 36.5 ha.

Standards used to determine the success of reclamation are contained in the *Reclamation Implementation Plan* (YMP 2001, Section 6.1 [DIRS 154386]). Reclamation is considered successful if plant cover, density, and species richness of native perennial vegetation are equal to, or exceed, 60 percent of the value of the same parameters in undisturbed reference areas. If reclaimed sites meet these criteria, they can be released from additional monitoring. To date 110 sites, totaling 10.6 ha have been successfully reclaimed and released from further monitoring and remediation. Reports will be available by May 2007 that summarize the release of additional reclaimed sites.

## REFERENCES

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- Blomquist, K.W.; Lindemann, T.A.; Lyon, G.E.; Steen, D.C.; Wills, C.A.; Flick, S.A.; and Ostler, W.K. 1995. *Current Distribution, Habitat, and Status of Category 2 Candidate Plant Species on and Near the U.S. Department of Energy's Nevada Test Site*. EGG 11265-1149. Las Vegas, Nevada: EG&G Energy Measurements. TIC: 240434. [DIRS 103377]
- CRWMS M&O 1997. *The Distribution and Relative Abundance of Desert Tortoises at Yucca Mountain*. B00000000-01717-5705-00033. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19980123.0643. [DIRS 102869]
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- CRWMS M&O 1998b. *The Birds of Yucca Mountain, Nevada, and Vicinity*. B00000000-01717-5705-00092 REV 00. Las Vegas, Nevada: CRWMS M&O. A CC: MOL.19981014.0303. [DIRS 103163]
- CRWMS M&O 1998c. *Classification and Map of Vegetation at Yucca and Little Skull Mountains, Nevada*. B00000000-01717-5705-00083 REV 00. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19990615.0237. [DIRS 104589]
- CRWMS M&O 1999. *Environmental Baseline File for Biological Resources*. B00000000-01717-5700-00009 REV 00. Las Vegas, Nevada: CRWMS M&O. ACC: MOL.19990302.0181; MOL.19990330.0560. [DIRS 104593]

DOE (U.S. Department of Energy) 2002. *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada*. DOE/EIS-0250. Washington, D.C.: U.S. Department of Energy, Office of Civilian Radioactive Waste Management. ACC: MOL.20020524.0314; MOL.20020524.0315; MOL.20020524.0316; MOL.20020524.0317; MOL.20020524.0318; MOL.20020524.0319; MOL.20020524.0320. [DIRS 155970]

EG&G Energy Measurements. 1995. *Habitat Disturbances Associated with the Yucca Mountain Site Characterization Project June 21, 1991–June 30, 1995*. EGG-11265-1168. Las Vegas, Nevada: EG&G Energy Measurements, Las Vegas Area Operations. MOL.19960418.0266. [DIRS none]

Rautenstrauch, K.R. and O'Farrell, T.P. 1998. "Relative Abundance of Desert Tortoises on the Nevada Test Site." *Southwestern Naturalist*, 43, (3), 407-411. Lubbock, Texas: Southwestern Association of Naturalists. TIC: 242257. [DIRS 101914]

YMP (Yucca Mountain Site Characterization Project) 2001. *Reclamation Implementation Plan*. YMP/91-14, Rev. 2. Las Vegas, Nevada: Yucca Mountain Site Characterization Office. ACC: MOL.20010301.0238. [DIRS 154386]

**Table 1**  
**Special-Status Species Observed At or Near Yucca Mountain <sup>(1)</sup>**

Common Name/ Scientific Name	Status: USFWS/State/BLM	Evaluation of Potential for Occurrence at Yucca Mountain
<b>Birds<sup>(2,3)</sup></b>		
Golden Eagle ( <i>Aquila chrysaetos</i> )	BLM – Sensitive	Known to occur at Yucca Mountain.
Short-eared owl ( <i>Asio flammeus</i> )	BLM – Sensitive	Known to occur at Yucca Mountain.
Long-eared owl ( <i>Asio otus</i> )	BLM – Sensitive	Known to occur at Yucca Mountain.
Western Burrowing Owl ( <i>Athene cunicularia hypugaea</i> )	BLM – Sensitive	Known to nest at Yucca Mountain.
Ferruginous hawk ( <i>Buteo regalis</i> )	BLM – Sensitive	Known to occur at Yucca Mountain.
Swainson's hawk ( <i>Buteo swainsoni</i> )	BLM – Sensitive	Known to occur at Yucca Mountain.
Prairie falcon ( <i>Falco mexicanus</i> )	BLM – Sensitive	Known to occur at Yucca Mountain.
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	Nevada – Sensitive BLM – Sensitive	Known to nest at Yucca Mountain.
Long-billed curlew ( <i>Numenius americanus</i> )	BLM – Sensitive	Known to occur at Yucca Mountain.
LeConte's thrasher ( <i>Toxostoma lecontei</i> )	BLM – Sensitive	Known to occur at Yucca Mountain.
<b>Mammals<sup>(4)</sup></b>		
Pallid bat ( <i>Antrozous pallidus</i> )	Nevada – Protected BLM – Sensitive	Common in the Yucca Mountain region
Hoary bat ( <i>Lasiurus cinereus</i> )	BLM – Sensitive	Rare in the Yucca Mountain region
California myotis ( <i>Myotis californicus</i> ) or Small-footed myotis ( <i>Myotis ciliolabrum</i> )	BLM – Sensitive	Common in the Yucca Mountain region. (The two species could not be confidently distinguished in the field.)
Fringed myotis ( <i>Myotis thysanodes</i> )	Nevada – Protected BLM – Sensitive	Rare in the Yucca Mountain region
Long-legged myotis ( <i>Myotis volans</i> )	BLM – Sensitive	Rare in the Yucca Mountain region
Western pipistrelle ( <i>Pipistrellus hesperus</i> )	BLM – Sensitive	Most common bat species observed at Yucca Mountain
Brazilian free-tailed bat ( <i>Tadarida brasiliensis</i> )	Nevada – Protected BLM – Sensitive	Rare in the Yucca Mountain region
<b>Reptiles</b>		
Desert tortoise ( <i>Gopherus agassizii</i> )	Federal – Threatened Nevada – Threatened BLM – Sensitive	Found in low abundance throughout affected environment
Western red-tailed skink ( <i>Eumeces gilberti rubricaudatus</i> )	BLM – Sensitive	Has been observed once at Yucca Mountain
Western chuckwalla ( <i>Sauromalus obesus obesus</i> )	BLM – Sensitive	Found in rocky habitat on ridges in affected environment
<b>Plants</b>		
Death Valley beardtongue ( <i>Penstemon fruticiformis</i> spp. <i>Amargosea</i> )	BLM – Sensitive	Found in Striped Hills in gravelly wash bottom and limestone talus slopes
White-margined beardtongue ( <i>Penstemon albomarginatus</i> )	BLM – Sensitive	Found in Striped Hills in sandy washes and adjacent slopes
Rock purpusia ( <i>Ivesia arizonica</i> var. <i>saxosa</i> )	BLM – Sensitive	Found on Shoshone Mountain at 6,000 feet on volcanic slope
<p><sup>(1)</sup> Special-status species include (1) species that are listed by the U.S. Fish and Wildlife Service as endangered or threatened under the Endangered Species Act and species that are proposed for listing or are designated as candidates for potential future listing under the Act; (2) species considered sensitive by the BLM as designated by the State BLM Director (BLM 2003 [DIRS 172900]); and (3) flora classified as fully protected (NAC 527) and protected wild mammals, birds, fish, reptiles and amphibians classified as endangered, threatened or sensitive (NAC 503) by the State of Nevada.</p> <p><sup>(2)</sup> All migratory birds are classified by Nevada as protected.</p>		

**Table 1. Continued**

<sup>(3)</sup> Only special-status birds observed in the affected environment or surrounding region are listed, based on CRWMS M&O (1998b [DIRS 103163]). Other special-status bird species may be uncommon migrants in the region.

<sup>(4)</sup> Only special-status mammals observed in the affected environment or surrounding region are listed, based on CRWMS M&O (1998a; 1999 [DIRS 104590, 104593]). Other special-status species of bats may be uncommon in the region.

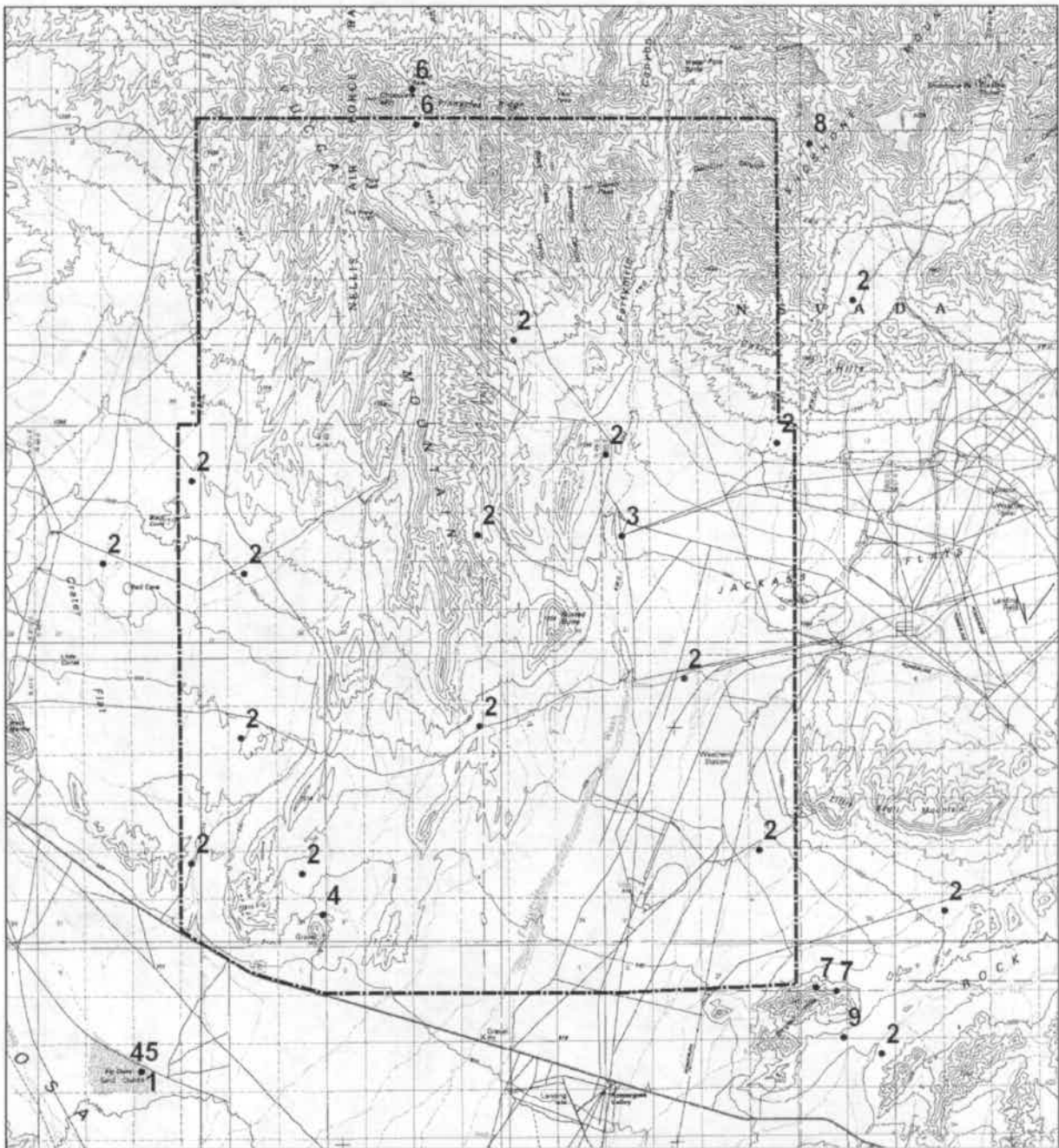


Figure 1. NNHP Data Points Within 5 km of the Land Withdrawal Area

Species Codes

- |   |   |
|---|---|
| 1 Big Dune miloderes weevil ( <i>Miloderes</i> sp. 1)       | 6 Bullfrog Hills sweetpea ( <i>Lathyrus hitchcockianus</i> )                        |
| 2 Desert tortoise ( <i>Gopherus agassizii</i> )             | 7 Death Valley beardtongue ( <i>Penstemon fruticiformis</i> spp. <i>amargosae</i> ) |
| 3 Fringed myotis ( <i>Myotis thysanodes</i> )               | 8 Rock purpusia ( <i>Ivesia arizonica</i> var. <i>saxosa</i> )                      |
| 4 Giuliani's dune scarab ( <i>Pseudocotalpa giulianii</i> ) | 9 White-margined beardtongue ( <i>Penstemon albomarginatus</i> )                    |
| 5 Large aegialian scarab ( <i>Aegialia magnifica</i> )      |   |

----- Land Withdrawal Boundary

0 1 2 4 6 8 10 Kilometers

