

**Department of Energy, Office of Legacy Management
Monticello Mill Tailings Site Operable Unit III (MMTS OU III)**

Summary of Program Directive #: MSG-05-01

Subject: Wildlife surveys to determine avian species diversity in three wetland areas and the sediment pond at the MMTS.

Directive/Task Changes: Attachment 1 to Program Directive MSG-05-01 specifies the plan for surveying avian wildlife presence and diversity to establish a baseline of species that could be affected should selenium concentrations exceed benchmarks in sediments and surface water in the constructed wetlands and sediment pond.

Affected Program Documents: Monticello Mill Tailings Operable Unit III Post-Record of Decision Monitoring Plan

Justification: The scope of Program Directive MSG-05-01 is limited to avian species (wetland and open water habitats) based on a meeting held at the site on October 7, 2004, with the U.S. Environmental Protection Agency Region VIII, U.S. Fish and Wildlife, and the Utah Department of Environmental Quality. Avian receptors could be affected (directly and indirectly) if selenium concentrations in the wetlands and sediment pond area exceed protective benchmarks in sediments and surface water. Due to changes in habitat since wildlife surveys were completed in 1995 and 1996, additional surveys are necessary to determine avian species presence and diversity.

Effective Date: January 15, 2005

Expiration Date: September 30, 2005

Wildlife Surveys – Avian Wetland Species Monitoring Plan

I. Purpose

Wildlife surveys will be conducted in the spring and summer of 2005 in the vicinity of the three constructed wetland areas and the sediment retention pond (Figure 1 - attached) at the Monticello Mill Tailings Site (MMTS). The surveys are necessary to satisfy the requirements of Section 6.3 of the *Monticello Mill Tailings Site Operable Unit III Post-Record of Decision Monitoring Plan* (DOE 2004). Specifically, the wildlife surveys will determine “the most appropriate ecological receptors” (aka indicator or “target” species) for estimating the potential for risks associated with potentially elevated levels of selenium in surface water and sediments.

II. Survey Scope

The monitoring plan (DOE 2004) requires that the wildlife surveys focus on “wetlands areas and their uses”, and include “the same sensitive and endangered species identified in previous surveys”. However in a field meeting held among Department of Energy’s (DOE’s) contractor, and several state and federal agencies (i.e. EPA Region VIII, U.S. Fish and Wildlife Service, Utah Department of Environmental Quality) on October 5, 2004, it was determined that the surveys would be limited to avian receptor species that are commonly associated with wetland and small open water habitats. Amphibians, reptiles, fish and mammals are specifically excluded from the scope of the surveys.

III. Background and Need for Surveys

The MMTS, located south of the town of Monticello, in southeastern Utah, consisted of a former uranium and vanadium ore-processing mill. In 1989, the site was placed on the National Priorities List under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The DOE, EPA Region VIII, and other Federal and state agencies have worked together for the past several years to remediate contaminated soils, surface water and ground water at the MMTS.

Following completion of remediation of Operable Unit (OU) III, it is suspected that selenium concentrations may be increasing in surface water and sediments in three manmade wetlands, and a sedimentation pond (Figure 1) located approximately one mile east of the wetlands. The monitoring plan (DOE 2004) specifies the benchmarks for selenium of 4 milligrams per kilogram in sediments, and 5 micrograms per liter for surface water. The sources and concentrations are being investigated under Program Directive MSG-04-01, and are scheduled to continue thorough 2006. Should concentrations exceed these benchmarks, additional macroinvertebrate sampling would be necessary, and will be addressed under a separate program directive. Should macroinvertebrate sampling result in concentrations that exceed seven (7) milligrams per kilogram, the need to sample bird eggs for evidence of toxicity would be evaluated (DOE 2004) in the future.

Avian receptors, including embryo, fledgling, and adult life stages, could be adversely affected (directly and indirectly) if selenium concentrations exceed protective benchmarks in sediments and surface water. Direct effects include contact with, and ingestion of, contaminated water and

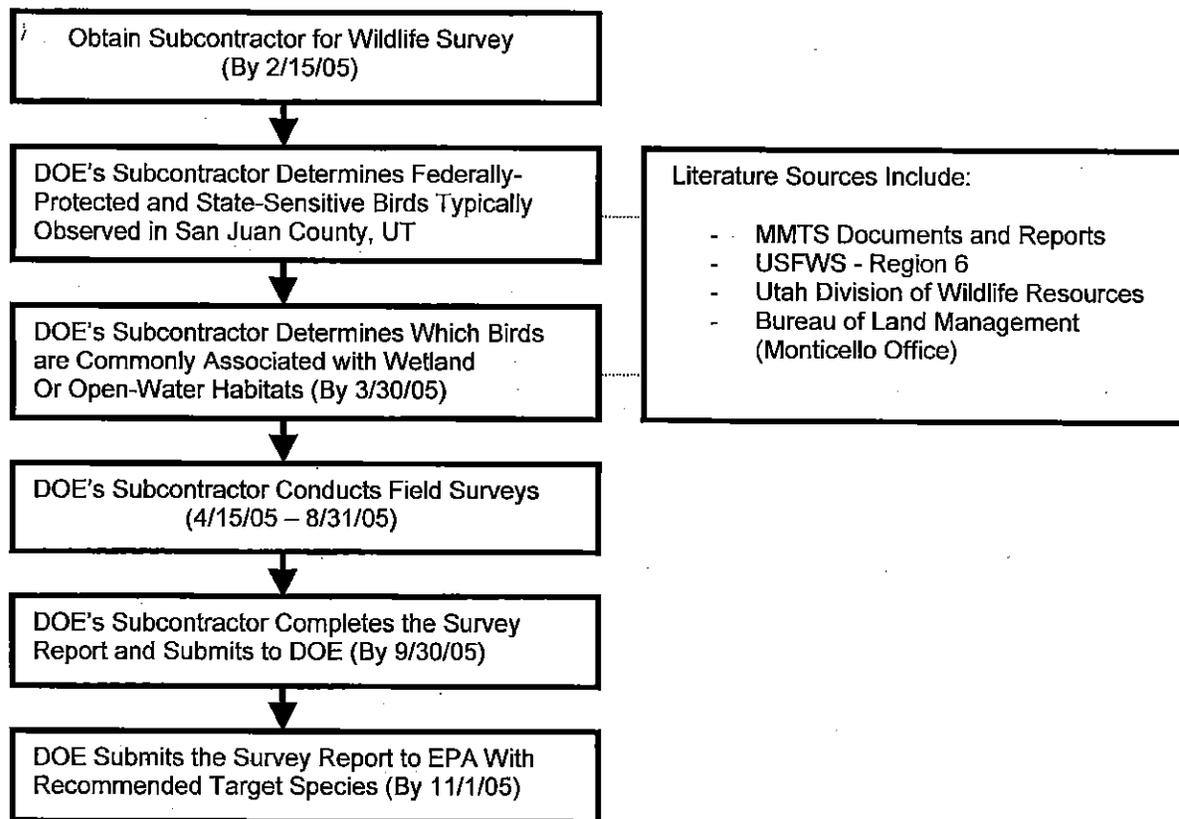
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sediments. Indirect effects include consumption of prey in the food chain, such as macroinvertebrates that bioaccumulate selenium. The *Monticello Mill Tailings Site Operable Unit III Remedial Investigation, Volume VII, Appendix M – Ecological Risk Assessment* (DOE 1998) discusses the potential receptors and exposure pathways in detail.

IV. Survey Approach and Schedule

A graded approach will be used to determine Target Species. Based on their ecological status and significance, federally-protected and state-sensitive birds, including threatened, endangered and migratory species are the focus of this monitoring plan. Figure 2 provides an overview of the approach, which will include a literature search, communication with federal and state wildlife agencies, field observations, and field studies, as necessary. Scheduled completion dates have been incorporated.

Figure 2. Overview of Survey Approach to Determine Target Species



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V. Obtain Subcontractor for Wildlife Surveys

DOE is considering two options for contracting the wildlife surveys:

- 1) Use Federal or state agency seasonal employees/interns
- 2) Contract with an environmental company (e.g. bird expert)

DOE's contractor biologists would spend some time in the field under either option to supervise the surveys to ensure BTAG goals are accomplished. DOE has made arrangements in the past (i.e. Moab Site) to use Utah Division of Wildlife seasonal interns, which has been mutually beneficial. However, discussion with UDWR would be required to secure this option. Option 2 would require contracting with a professional environmental company, preferably one in the Moab/Monticello area. Minimum surveyor requirements include:

- AS or BA in Natural Resources, Forestry, Wildlife Biology, or related science, with at least 2 years focus on bird and nest identification, or current employment with a federal or state agency with recognized expertise (by that agency) in bird and nest identification
- Knowledge of federal and state threatened and endangered species found in Utah
- Knowledge of Utah Species of Special Concern
- Knowledge of migratory birds in Mountain Prairie Region, USFWS Region 6
- Experience in using the "point count" system, and mapping bird populations
- Experience with completing bird survey forms and writing reports
- Knowledge and use of GPS equipment
- Good working relationship with federal and state wildlife agencies

In either option, the selected surveyors would be required to provide all appropriate field equipment, including binoculars, spotting scopes, song tapes, GPS units, etc. The objectives, scope, frequency, duration of the surveys, and reporting requirements are outlined in Section VIII and IX of this attachment.

VI. Avian Species that May Occur in San Juan County, Utah

A literature search will focus on historical data and reports, habitat preferences, and potential seasonal presence using readily available information. The Department of Energy has conducted extensive research concerning Federally-protected and state-sensitive avian species in Grand and San Juan Counties over the past 15 years due to federally mandated remedial action projects. Species that may occur in the vicinity of the MMTS were identified in the MMTS Ecological Risk Assessment (DOE 1998). Most recently, DOE has consulted extensively with the USFWS, Utah Division of Wildlife Resources, and Bureau of Land Management concerning avian species that may occur in the vicinity of the Moab Uranium Mill Tailings Radiation Control Act (UMTRCA) site. Although this site is located approximately 60 miles to the north of the MMTS, and at a lower elevation, it shares many similar habitats with the MMTS. In addition, one of the remediation alternatives in the environmental impact statement for the Moab site includes transportation routes in the vicinity of the MMTS.

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On the basis of DOE's previous consultations with federal and state agencies, existing documents and reports, and field observations by DOE's contractor environmental staff, DOE has determined that the following federally-listed endangered, threatened and candidate species occur, or may occur, in San Juan County, Utah.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened
California Condor	<i>Gymnogyps californianus</i>	Experimental
Gunnison Sage Grouse	<i>Centrocercus minimus</i>	Candidate
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	Threatened
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	Endangered
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Candidate

In addition to the species listed above, DOE has selected the following species protected as migratory birds (USFWS 2004), and federal and state species of special concern (UDWR 2004), as representative of avian species potentially occurring in San Juan County, Utah. This list is not comprehensive, and does not duplicate species listed above that are protected under the Endangered Species Act.

<u>Common Name</u>	<u>Scientific Name</u>
Black rail	<i>Laterallus jamaicensis</i>
Black Tern	<i>Chlidonias niger</i>
Canada Goose	<i>Branta canadensis</i>
Common Snipe	<i>Gallinago gallinago</i>
Green-winged teal	<i>Anas crecca</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Peregrine falcon	<i>Falco peregrinus</i>
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>
Northern goshawk	<i>Accipiter gentiles</i>
Northern Pintail	<i>Anus acuta</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Wood duck	<i>Aix Sponsa</i>

VII. Avian Species Commonly Associated with Wetland or Open-Water Habitats

The three wetland areas at the MMTS are dominated by dense stands of cattails, with zero to approximately 14 inches of water, depending upon the time of year. The sedimentation pond, located approximately one mile to the east of the wetland area, is approximately one acre in size, with approximately 60% of the pond ranging in depth from five to seven feet.

Of the species list above, those species that frequent wetland and open-water habitats would be considered primary candidates as target species. For the three wetland areas, the Red-winged blackbird would be considered a primary candidate. For the sedimentation pond and adjacent wetlands, dabbling ducks, geese and shorebirds would be considered primary candidates.

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Although the Monticello site is within the migratory range of the Southwestern willow flycatcher, the survey protocol conducted in 1997 (letter dated July 17, 1997, from Mr. Donald Metzler, DOE to Mr. Keith Rose, USFWS) revealed that the species was unlikely to occur, primarily based on the lack of suitable habitat. Although wetlands are developing, good habitat suitable for the flycatcher is still not evident. However, DOE will document observations of this species, if present.

VIII. Conducting Field Surveys

Field surveys will be conducted based on the literature search. The lists provided above are not intended to limit the scope of field observations and studies, but provide a list of species that DOE, EPA, and USFWS have determined as requiring a higher level of consideration in the final survey report (Section IX). The field surveys will consist of two components: 1) field observations, and 2) field studies. Field observations will be conducted using the standardized “point count” system to determine species diversity and abundance. Field studies will be conducted to determine nesting locations and species. The attached sample survey form, or comparable as agreed to among the BTAG agencies, will be used to document field observations and studies. Surveys will be conducted according to the schedule outlined below (personal communication between R. Bleil, Stoller and Chris Cline, USFWS on December 21, 2004).

Field surveys will be initiated between April 15th and May 1st depending upon weather and ground conditions (e.g. snow). The initial survey will require two days in the field. DOE’s contractor staff (including the contractor wildlife biologist) will be present the first day of the survey to familiarize the selected surveyors with the site, locations, and to clarify survey expectations. In addition, observation points will be established the first day for future “point counts”, and will be located using a GPS. Point counts are a standard cost-effective method of estimating the relative abundance of birds during the breeding season (Johnson 1995, Hamel et al. 1996).

Two points will be established at each of the four areas to be monitored (8 points total). BTAG team members, including EPA and the USFWS have the option of attending. On the second day, field observations will be initiated by the subcontractor. All surveys will be conducted during fair weather conditions. Surveys will not be conducted during extreme weather conditions (e.g. snow, heavy rain, high winds).

Field Observations

Observation “points” will be used by the selected surveyors. Following the initial field observation day, eight additional field days will be required to conduct point counts on a bi-monthly basis (2 per month) from May 1st through August 31st. There must be at least 1 week between field days. This will result in completion of 18 survey forms for field observations (two per day times nine days). Using professionally accepted criteria (Hamel et al. 1996, Conway 2002), field observations will be conducted between the hours of 6:00 AM (approximately 30 minutes before sunrise) and 9:00 AM, and again between the hours of 6:00 PM and 9:00 PM (approximately dusk). Start locations will be alternated between the pond and 3 wetland locations. At least 15 minutes will be spent in each location.

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The surveyors will use both visual and audible observations and calls, as appropriate depending upon species anticipated to be present. Due to the open nature of the terrain, size of the survey areas, and strategic location of observation points, visual observations would likely be sufficient for most species.

Using a graded approach, as many species as possible, and their relative abundance, will be documented during the initial survey, both May surveys, and the first of the two surveys in June. Beginning with the second survey in June, observations and documentation should focus on those species whose population abundance is moderate to high (see survey form).

Locations that are frequented (consistently observed over the entire survey period) by the top two or three species (population abundance) in each area will be plotted on maps provided by DOE. For example, during the BTAG site visit on October 6, 2004, a high number of Red-winged blackbirds were observed frequenting the east end of the third (easternmost) wetland. This was not observed in the other two wetland locations. If this were a consistent observation for more than half the surveys, and the population abundance is moderate to high, the general boundary for this species concentration should be plotted.

Field Studies

Two of the survey days will include field studies to determine if nests and eggs are present. The timeframe for these studies will be determined in consultation with USFWS and UDWR. However, it is recommended that the two field studies be conducted in late June and early July, generally the middle to the end of the nesting season. (It may be easier to determine nesting activity if eggs or young birds are heard or observed). Due to the relatively small size of all four survey areas (1 – 3 acres), reliable data can be gathered by a pedestrian perimeter survey, or “elliptical transect”. The surveyor will walk the perimeter of each area, and will determine nesting activity 10 meters (approximately 30 feet) on each side of the transect. Approximately one hour will be spent in each area/day (total 4 hours per field study). Emphasis will be placed on areas where species of moderate to high abundance have been observed during point counts. If nests, eggs, or hatchlings are located, the surveyor will determine the species (if possible).

Results of field nesting studies will be documented on the attached survey form or equivalent. Nest locations will be located using a GPS, and the general location also plotted on the maps provided by DOE.

IX. Survey Report

A survey report will be submitted to DOE by September 30, 2005. The report will include the following information.

- A summary of the dates, times and locations of the surveys
- Any communications with federal and state agencies, and professional biologists
- Any communications or direction from DOE.
- A summary of the field observations and field studies
- A recommendation for target species

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- Education/qualifications of surveyor(s)
- Copies of the field notes and survey forms
- GPS Data for observation points and nest locations
- Any maps documenting required information
- References

The report will be reviewed by DOE and transmitted to EPA and UDEQ by November 1, 2005.

X. Reference Information

The following reference information was used to develop this directive, or has been used by DOE and its contractor for other DOE sites. In many cases, it is not a complete citation because the reference was forwarded (in part) to DOE, and was not in a published format (e.g., faxed information, unpublished information unique to a Regional USFWS office). In some cases the entire reference citation was not readily available to DOE, or the information was obtained from federal and state wildlife agency websites.

Conway, C.J., 2002. *Standardized North American Marsh Bird Monitoring Protocols*, report to USGS-BRD for USDA Project No. 5004789.

DOE (U.S. Department of Energy), 1998. *Operable Unit III Remedial Investigation*, GJO-97-6-TAR, Appendix M, *Ecological Risk Assessment*, GJO-97-9-TAR, U.S. Department of Energy Grand Junction Office, Grand Junction, Colorado, January.

Hamel, P.B., W.P. Smith, D.J. Twedt, J.R. Woehr, E. Morris, R.B. Hamilton, and R.J. Cooper, 1996. *A Land Manager's Guide to Point Counts of Birds in the Southeast*, U.S. Department of Agriculture, Forest Service, Southern Research Station, General Technical Report SO-I 20, Asheville, North Carolina, September.

Johnson, D.H., 1995. *Point Counts of Birds: What are we estimating?*, in C.J. Ralph, J.R. Sauer, and S. Droege, technical editors, U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Berkeley, California, General Technical Report PSW-GTR-149. Available online at <http://www.npwrc.usgs.gov/resource/birds/ptcounts/ptcounts.htm> (version 05 October 2000).

UDWR (Utah Division of Wildlife Resources), 2004. "Utah's State Listed Species by County," Utah Division of Wildlife Resources, Utah Conservation Data Center, <http://dwrcdc.nr.utah.gov/ucdc/>, report available online at http://dwrcdc.nr.utah.gov/ucdc/ViewReports/sscounty_20040922.pdf.

USFWS (U.S. Fish and Wildlife Service), 2004. *Migratory Birds in the Mountain Prairie Region*, U.S. Department of the Interior, U.S. Fish and Wildlife Service, Region 6 (Mountain-Prairie Region), available online at <http://www.r6.fws.gov/migbirds/trust.htm>.