

Appendix H7
WAG Biological Field Surveys

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Attachment 1—Potential Use by Sensitive Species at Habitats Within and Surrounding Facilities at the Idaho National Engineering and Environmental Laboratory

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Appendix H7

WAG Biological Field Surveys

H7-1. INTRODUCTION

Data gaps that must be filled prior to performing the Operable Unit (OU) 10-04 ecological risk assessment (ERA) have been documented in a technical memorandum (INEL 1996). One gap identified in this memorandum is the need for more complete information regarding the status of threatened or endangered (T/E) and species of concern (formerly designated C2) at the Idaho National Engineering and Environmental Laboratory (INEEL). This information is required to support the interpretation and characterization of ecological risk that may be predicted by the Waste Area Group (WAG) and OU 10-04 ERAs. To obtain this information, a biological survey of state and federal T/E and species of concern that may inhabit or frequent contaminated sites and areas within facilities and other areas of the INEEL (as defined by the Federal Facility Agreement and Consent Order [FFA/CO]) has been conducted for WAGs 1, 2, 3, 4, 5, 6, 7, 9, and 10.

The objectives of this survey are to gather site-specific data to replace conservative assumptions and allow quantitative/qualitative evaluation of ERA risk estimates, and to meet the following federal and state regulatory requirements regarding T/E and species of concern¹:

- “The Endangered Species Act requires the preparation of a biological assessment if federally endangered or threatened species inhabit or visit the CERCLA site or are located in areas adjacent to the site likely to be impacted by hazardous substances released at the site. Candidate species (C2 designation) for federal listing should also be evaluated for inclusion in the biological assessment.”
- “The draft biological assessment must be submitted to the appropriate regional office of the (Fish and Wildlife Service) FWS for review”...“After review of the draft biological assessment, the FWS determines whether formal consultation is necessary.” (i.e., under Section 7 of the experimental safety analysis (ESA) the FWS may request revisions to the draft assessment for submittal as a formal report).
- “The FWS will prepare a *biological opinion*...” “The biological opinion will conclude that the project will or will not lead to further decline of the species...”

The biological assessment is as quantitative as possible (given scheduling and budget constraints) and follows prescribed protocols to meet the scrutiny of trustees and FWS with regard to presence of species and/or suitable habitat and interpretation of any calculated ecological risk.

Information gathered is intended to support an evaluation (scientific and empirical data supported by professional judgement) of (1) presence or absence of T/E and C2 species at or in close proximity to the WAGs, (2) the likelihood for exposure to contaminated areas, and (3) risk to species individuals and populations shown by an ERA. Species specifically addressed by the survey are listed in Table H7-1.

¹. Excerpts from DOE Office of Environmental Guidance (June 1994) "Incorporating Ecological Risk Assessment into Remedial Investigation/Feasibility Study Work Plans"(Pages II-57 through II-62).

Table H7-1. T/E and species of concern^a included in the biological survey.^b

Birds:

Bald eagle (Federal LT)^c
Peregrine falcon (Delisted August, 1999)^c
Trumpeter swan (FWS and state species of concern)
Black tern (FWS species of concern)
White-faced ibis (FWS species of concern)
Ferruginous hawk (FWS and state species of concern)
Northern goshawk (FWS and state species of concern)
Loggerhead shrike (FWS and state species of concern)
Burrowing owl (FWS and state species of concern)

Mammals:

Pygmy rabbit (FWS and state species of concern)
Gray wolf (Federal LE; XN)^c
Merriam's shrew (state species of concern)
Townsend's western big-eared bat (FWS and state species of concern)
Long-eared myotis (FWS species of concern)
Small-footed myotis (FWS species of concern)

Reptiles:

Northern sagebrush lizard (FWS species of concern)

Plants:

Lemhi milkvetch (state species of concern)
Plains milkvetch (state species of concern)
Winged-seed evening primrose (state species of concern)
Spreading gilia (state species of concern)

a. The U.S. Fish and Wildlife Service (USFWS) no longer maintains a candidate (C2) species listing but addresses former listed species as "species of concern" (USFWS April 30, 1996). The designation "species of concern" is also applied by state agencies.

b. This list was compiled from the USFWS (letter dated July 16, 1997) the Idaho Department of Fish and Game Conservation Data Center threatened, endangered, and sensitive species for the State of Idaho (CDC 1994 and IDFG web site 1997) and Radiological and Environmental Sciences Laboratory (RESL) documentation for the INEEL (Reynolds et al. 1986).

c. Status Codes: LE = listed endangered; LT = listed threatened; XN = experimental population, nonessential.

H7-2. BIOLOGICAL FIELD SURVEY METHODS

In 1996, biological field surveys were conducted in the *areas surrounding* WAG facilities (not inside WAG boundaries) to assess the presence and use of those areas by T/E species or other species of concern (i.e., species formerly designated as C2). Those species are listed in Table H7-1. The surveys were performed by the Environmental Science and Research Foundation and findings for WAGs 1, 2, 3, 4, 5, 6, 7, 9, and 10 have been documented in a report (see Attachment 1) that includes (a) survey protocols, (b) results for individual WAGs, and (c) an interpretive summary for the ERA conducted as part of the OU 10-04 investigation (Morris 2001). Specific information collected and reported includes

- Date and conditions under which the surveys were conducted
- Area encompassed by the surveys (Global Positioning System [GPS] mapping where practical)
- GPS locations for observed habitat, sign, and species sighted (where practicable)
- Habitat description, the proximity to WAG or site, and an estimate of whether contaminated sites or areas are within the home range of members of the species in question
- Species presence, abundance, current site use, past site use (historical sightings or surveys), and anticipated site use (professional judgement)
- An estimated site or area population (where possible)
- Surveys for some species were also supported by Geographic Information System (GIS) analyses using recently developed habitat models and existing long term data sets (i.e., Breeding Bird Survey [BBS] data).

Field surveys were conducted for *individual sites of concern* within WAG facilities that have been or are currently being evaluated as part the WAG ERAs. An onsite inspection was conducted and each site of contamination was evaluated for habitat qualities and potential to support INEEL T/E species or other species of concern. A suite of site habitat attributes was evaluated with regard to suitability for each species. The attributes evaluated included

- Size
- Substrate (gravel, asphalt, lawn, etc.)
- Natural or manmade features that entice wildlife (water, lights, etc.)
- Proximity to areas or sites of facility activity
- Presence and availability of food or prey
- Availability of nesting, roosting, or resting habitat
- Signs of wildlife use
- Prior history, known sightings, or use.

Attributes were subjectively rated for positive contribution to overall habitat suitability. A rating of high, medium, low, or none (indicated by a blank cell) was assigned based on the number of positive habitat features and probability that the species of concern may or does use the site. The convention upon which ratings were assigned for individual habitat attributes are summarized in Table H7-2. Although T/E and species of concern were of primary consideration, potential use by game species and unique populations (i.e., spadefoot toad, Merriam's shrew) was also assessed. Some sites rated overall as "low" are those having one or two positive attributes and therefore potential for incidental use by wildlife. These sites may generally be discounted as contributing significantly to chronic exposures to contaminants of potential concern (COPCs) by wildlife. The duration and stringency of these surveys was not adequate to verify presence or frequency of species occurrence. These surveys were conducted to provide information to allow evaluation of WAG sites of concern in an ecological context. It should be noted that these ratings are subjective, based on professional opinion supported by limited observation.

Surveys of sites of concern and surrounding areas have been completed for WAGs 1, 2, 3, 4, 5, 6, 7, 9, and 10. Survey results for those WAGs are presented in the following sections and are summarized for sensitive species in Table H7-3.

Table H7-2. Habitat rating conventions for WAG sites of concern.

| Attribute | Examples |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Size | Areas having physical dimensions too small to support species of interest were rated "none" unless enhanced by other attributes. Large, unconfined areas adequate to support wildlife were assigned higher ratings. |
| Substrate | Asphalt = none, gravel = low, lawn, soil = medium-high for some species, disturbed vegetation community = medium to high, natural vegetation community = high. |
| Natural or manmade features | Water = high (water [permanent or ephemeral] is an important component in desert systems); lights = medium (both attract insects and consequently bats and insectivorous birds [i.e., swallows, nighthawks]) |
| Proximity to areas of activity | Proximity to areas or sites of moderate or heavy activity may reduce desirability. Sites associated with buildings and facilities may be more suitable if abandoned or little used. |
| Nesting, roosting, or loafing habitat | Structures such as fence and power poles adjacent to open fields afford perches for roosting, hunting, etc. |
| Signs of wildlife use | Signs of wildlife use are considerations that qualitatively feed the evaluation. Examples of these signs include observation of animal tracks, hair, or scat. |
| Prior history | Documented or reported sightings. |

Table H7-3. Summary of sensitive species surveys for WAGs 1, 2, 3, 4, 5, and 9.

| | WAG 1 7 sites | WAG 2 16 sites | WAG 3 30 sites | WAG 4 12 sites | WAG 5 16 sites | WAG 7 5 sites | WAG 9 12 sites | WAG 6 & 10 17 sites |
|-------------------|------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|------------------------|
| Black tern | ● | | | | | ● | ● | |
| Trumpeter swan | | | | | | | ● | |
| White-faced ibis | ■ | | | | | ● | ● | |
| Burrowing owl | ▼ | ■ | ● | ● | ▼ | | ● | ▼ |
| Ferruginous hawk | ◆ | ■ | ● | ■ | ▼ | ● | ● | ◆ |
| Peregrine falcon | ◆ | ■ | ● | ■ | ▼ | ● | ● | ◆ |
| Loggerhead shrike | ◆ | ■ | ● | ■ | ▼ | ● | ● | ▼ |
| Bald eagle | ▼ | ● | | ● | ▼ | | | ● |
| Bats | ▼ | ◆ | ● | ■ | ▼ | ■ | ■ | ◆ |
| Merriam's shrew | ● | | | ● | ● | | ■ | ● |
| Pygmy rabbit | | | ● | ● | ■ | | ● | ▼ |
| Sagebrush lizard | ▲ | ■ | ● | ■ | ◆ | ■ | ■ | ◆ |
| Spadefoot toad | ● | ● | | | | ● | ● | ● |
| Game species | ◆ | ■ | ● | ■ | ◆ | ● | ■ | ◆ |

● > 0% to ≤ 25% of the sites have at least one positive habitat attribute.
 ■ > 25% to ≤ 50% of the sites have at least one positive habitat attribute.
 ▼ > 50% to ≤ 75% of the sites have at least one positive habitat attribute.
 ◆ > 75% to ≤ 100% of the sites have at least one positive habitat attribute.
 ▲ 100% of the sites have at least one positive habitat attribute.

H7-3. BIOLOGICAL FIELD SURVEY RESULTS FOR WAGS

H7-3.1 WAG 1 Survey Results

A survey of the WAG 1 ecological sites of concern was conducted in August 1997. The results of the survey are summarized in Table H7-4. Interpretation of high, medium, and low ratings is further explained in Table H7-2.

Habitat with high to medium potential for a wide variety of sensitive species is found at WAG 1 in the area of TSF-07 (Disposal Pond). This habitat includes standing water, cattails, sagebrush areas, and roosting areas. Also, habitat areas with high to medium potential are found at WRRTF-03 (mammalian and avian species, high for sagebrush lizards) and, to a slightly lesser degree, at WRRTF-01 (avian species). Medium habitat potential for sensitive species is found at TSF-08 (Mercury Spill) and at LOFT-02. Habitat potential in the area of TSF-03 is primarily low (except for the burrowing owl for which the habitat potential is medium). Habitat potential at WRRTF-13 is also low.

H7-3.2 WAG 2 Survey Results

A survey of WAG 2 ecological sites of concern was conducted in August 1997. Results of the survey are shown in Table H7-5. Interpretation of high, medium, and low ratings is further explained in Table H7-2.

The best potential habitat for sensitive species at WAG 2 is found at TRA-03 (Warm Waste Pond Sediments) and TRA-08 (Cold Waste Pond). These areas rated as medium to low, with high ratings for game species. Several other areas, including TRA-13 (Sewage Leach Pond – Berm and Soil Contamination Area), TRA-06 (Chemical Waste Pond), TRA-04/05 (Retention Basin Sediments), and TRA-02, had habitat potential ranging up to medium but were primarily of low potential. Another area, TRA-34 (North Storage Area), also had habitat potential ranked low, but was ranked as medium for game species.

H7-3.3 WAG 3 Survey Results

A survey of WAG 3 ecological sites of concern was conducted in August 1997. Results of the survey are shown in Table H7-6. Interpretation of high, medium, and low ratings is further explained in Table H7-2.

Habitat potential at WAG 3, the former Idaho Chemical Processing Plant, was predominantly low to no rank. Exceptions to this trend are found at CPP-22, which is ranked as medium for the Spadefoot toad. Habitat at CPP-65, which consists of sewage lagoons, was ranked as high for bats and game species, due to the presence of lights and observed wildlife use.

H7-3.4 WAG 4 Survey Results

A survey of WAG 4 sites of concern was conducted in August 1997. The survey results are presented in Table H7-7. Interpretation of high, medium, and low ratings is further explained in Table H7-2.

The Pond at CFA-04 received high habitat potential ratings for several sensitive species, including burrowing owls, ferruginous hawks, peregrine falcons, loggerhead shrike, sagebrush lizards, and game species, and was also ranked medium for bald eagles, bats, and Pygmy rabbits. Habitat at CFA-01 also

ranked as high for several sensitive species. The Motor Pool Pond (CFA-05) rated low to medium for several species, but rated high for habitat potential for sagebrush lizards. Other areas at WAG 4 were ranked low or received no ranking on the basis of the habitat attributes evaluated.

H7-3.5 WAG 5 Survey Results

A survey of WAG 5 ecological sites of concern was conducted in August 1997. The results of the survey are presented in Table H7-8. Interpretation of high, medium, and low ratings is further explained in Table H7-2.

Many of the areas at WAG 5 had habitat potential ranked as high to medium for most of the sensitive species of concern. These areas included ARA-12 (ARA-III Radioactive Waste Leach Pond), ARA-23, ARA-24, PBF-16 (PBF SPERT-II Leach Pond), PBF-22 (PBF SPERT-IV Leach Pond), and PBF-26 (PBF SPERT-IV Lake). The PBF SPERT-III Large Leach Pond (PBF-21) was ranked primarily as medium for habitat potential, but was also ranked high for sagebrush lizards and game species. Three areas at WAG 5, ARA-01 (Chemical Evaporation Pond), ARA-02 (Sanitary Waste Leach Field and Seepage Pit), and ARA-03 (Lead Sheetting Pond near ARA-627), were ranked high to low for several sensitive species, but ranked high for sagebrush lizards and game species. ARA-06 ranked predominantly medium, but had high potential habitat for sagebrush lizards.

H7-3.6 WAG 7 Survey Results

A survey of WAG 7 sites of concern was conducted on September 1, 1999. Results of the survey are shown in Table H7-9. Interpretation of high, medium, and low ratings is further explained in Table H7-2.

Although an ecological risk assessment has not yet been performed at WAG 7, habitat at this facility was evaluated for potential use by sensitive species. Two of the areas (TSA and the Sewage Lagoons) at WAG 7 ranked high for bats, and the sewage lagoons also ranked high for game species. The Subsurface Disposal Area was ranked medium for peregrine falcon and loggerhead shrike. The Pit 9 complex was ranked medium for bats on the basis of night lighting and building roost sites. Other areas at WAG 7 were unranked.

H7-3.7 WAG 9 Survey Results

A survey of WAG 9 sites of concern was conducted in August 1997. Results of the survey are shown in Table H7-10. Interpretation of high, medium, and low ratings is further explained in Table H7-2.

Two of the areas at WAG 9, ANL-01 and ANL-04, received high to medium rankings for habitat potential for several sensitive species and high rankings for game species. These areas consist of industrial waste ponds, and sewage lagoons. The burn pits at ANL-04 were also ranked as high potential habitat, but were unranked for game species. ANL-01A (Main Cooling Tower Blowdown Ditch) and ANL-09 (ANL Interceptor Canal) were ranked as medium to low (high in the case of ANL-01A for the M. shrew) for some of the sensitive species based on the occasional presence of water. Other areas at WAG 9 received medium to low habitat potential rankings, but these were for only one or two sensitive species and were unranked for other species.

H7-3.8 WAG 6 and 10 Survey Results

A survey of WAGs 6 and 10 sites of concern was conducted on June 29 and July 8, 1999. Results of the survey are shown in Table H7-11. Interpretation of high, medium, and low ratings is further explained in Table H7-2.

The only area within WAG 6 determined to have habitat potential for sensitive species was the WAG 6 complex. Rankings for this area ranged from high to low, with medium rankings determined for most of the sensitive species. For game species, the area was ranked as medium. Other areas within WAG 6, including the reactor building, burial area, and miscellaneous dump sites, were unranked

Several areas within WAG 10, including the Mass Detonation Area, Unexploded Ordnance East of TRA, the Naval Ordnance Disposal Area, the Fuse Burn Area, the RWMC test area, the Juniper Mine, Powerline, and NOTF, contained habitat ranked high to medium for several sensitive species. These areas also ranked high for game species. Other areas, such as the Experimental Field Station, the Rail Car Explosion Area, and the bunker north of INTEC, were ranked as medium to low for sensitive species, but ranked high to medium for game species. The Craters East of INTEC/PPP were primarily ranked medium to low, but were ranked high for ferruginous hawks. Other areas within WAG 10 were ranked high to medium or low for selected species, but were primarily unranked.

Table H7-5. Summary of sensitive species survey at WAG 2.

| WAG 2 Site # | B. Tern | T. Swan | W.f. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. B. Lizard | S. toad | Game <small>emys</small> | Comments |
|--------------|---------|---------|-----------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|-----------------------------|-----------------------------------------------------------------------------------------------------------|
| TRA-02 | | | | L | L | L | L | L | | | | L | L | L | Terminus of ditch - borrow pit adjacent to paved road, low cover, gravel substrate, intermittent water |
| TRA-03 | | | | M | M | M | M | L | L | | | M | | H | Crested wheatgrass planting, nondifferentiated soil cover, small burrows, fence and power pole perches |
| TRA-04/05 | | | | L | L | L | L | L | | | | L | | | Gravel substrate, open area, sparse kochia, adjacent power poles and structures |
| TRA-06 | | | | L | L | L | L | M | L | | | M | | L | Chem. pond, fairly deep, gravel berm, intermittent water, shrubs and grasses in bottom, adjacent lighting |
| TRA-08 | | | | M | M | M | M | L | L | | | M | L | H | Shallow pond with shrub cover, intermittent water, adjacent perches, forage, substandard fencing |
| TRA-13 | | | | L | M | M | M | L | L | | | M | | | Shallow ditch with gravel substrate, weed and shrubs, 2-strand wire fence, adjacent native community |
| TRA-15 | | | | | | | | L | | | | L | | | Sparse vegetation, large mesh fence, some cover, adjacent lighting and pole perches |
| TRA-16 | | | | | | | | | | | | | | | Asphalt adjacent to building |
| TRA-19 | | | | | | | | L | | | | | | | Gravel area between buildings, weedy annuals and cheatgrass, remediation planned |
| TRA-34 | | | | L | L | L | L | L | L | | | L | | M | North storage area, large unfenced revegetated area, primarily weeds, adjacent pole perches and lighting |
| TRA-36 | | | | | | | | L | | | | | | | Gravel substrate, sparse vegetation, adjacent lighting, intermittent water, mud |
| TRA-38 | | | | | | | | M | | | | | | | Advanced Test Reactor (ATR) cooling towers, roosting structures, adjacent lighting, gravel weed substrate |
| TRA-619 | | | | | | | | L | | | | | | | Transformer, gravel pad, adjacent lighting, roosting structures |
| TRA-626 | | | | | | | | L | | | | | | | Small spill near building, gravel substrate and weeds surrounded by asphalt, adjacent lighting |
| TRA-653 | | | | | | | | L | | | | | | | Transformer, gravel substrate, sparse weeds, adjacent lighting on building walls, next to high bay door |
| Brass cap | | | | | | | | | | | | | | | Concrete adjacent to building |

H = High

M = Medium

L = Low

TRA = Test Reactor Area

H7-10

Table H7-6. Summary of sensitive species survey at WAG 3.

| WAG 3 Site # | B. Tern | T. Swan | W.f. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. B. Lizard | S. toad | Game | Comments |
|--------------|---------|---------|-----------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|------|------------------------------------------------------------------------------------------------|
| CPP-06 | | | | | | | | | | | | | | | Gravel substrate |
| CPP 13 | | | | | | | | | | | | | | | Gravel berm, remedial action completed, swallows in area |
| CPP-14 | | | | | | | | | | | | | | | Gravel substrate, former sewage lagoon, remedial action complete |
| CPP-19 | | | | | | | | | | | | | | | Gravel and asphalt substrate, higher levels below surface, no vegetation, subsurface soil |
| CPP-22 | | | L | L | L | L | | | | | M | | L | | Air release to areas south outside fence, sagebrush and weeds, gravel substrate inside fences |
| CPP-34 | | | | | L | L | L | | L | | | | | L | Weed cover, gravel substrate, adjacent power poles/lighting, adjacent to sewage disposal ponds |
| CPP-37A | | | | | L | L | L | | | | | | | | Outside fence, weedy annuals |
| CPP-37B | | | | | | | | | L | | | | | | Ditch with significant, periodic water, weedy annuals |
| CPP-39 | | | | | | | | | | | | | | | Gravel and asphalt substrate, remedial action |
| CPP-40 | | | | | | | | | | | | | | | Gravel berm, remedial action completed |
| CPP-42 | | | | | | | | | | | | | | | Shallow ditch, gravel substrate, sparse weeds (Russian thistle), intermittent water |
| CPP-44 | | | | | | | | | | | | | | | Gravel substrate |
| CPP-46 | | | | | | | | | | | | | | | Gravel substrate |
| CPP-48 | | | | | | | | | | | | | | | Gravel substrate, remedial action completed, sparse weeds (Russian thistle) |
| CPP-54 | | | | | | | | | | | | | | | Gravel substrate, sparse weeds (Kochia) |
| CPP-55 | | | | | | | | | | | | | | | Gravel substrate, sparse weeds (Russian thistle) |
| CPP-56 | | | | | | | | | | | | | | | Gravel substrate, removal action in progress, adjacent buildings/structures |
| CPP-59 (2) | | | | | | | | | | | | | | | Gravel berms, sparse weeds (Kochia and Russian thistle) |
| CPP-61 | | | | | | | | | | | | | | | Gravel substrate |
| CPP-65 | | | | | | | | | H | | | | | H | Sewage lagoons, permanent water, lights, observed wildlife use |
| CPP-66 | | | | | | | | | | | | | | | Gravel and asphalt substrates |

Table H7-6. (continued).

| WAG 3 Site # | B. Tern | T. Swan | W.f. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. B. Lizard | S. toad | Game | Comments |
|-----------------------------------------------------------------------------------|---------|---------|-----------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|------|-----------------------------------------------------------------------------------------------|
| CPP-78 | | | | | | | | | | | | | | | Tiny area, gravel substrate and asphalt, no vegetation |
| CPP-84 | | | | | | | | | | | | | | | Beneath existing building |
| CPP-86 | | | | | | | | | | | | | | | Below ground, remediation in progress |
| CPP-87 | | | | | | | | | | | | | | | Gravel substrate, adjacent roosting structures |
| CPP-88 | | | | | | | | | | | | | | | Large general areas of contaminated soil inside fences |
| CPP-90 | | | | | | | | | | | | | | | Gravel substrate, remedial action complete, adjacent roosting, little potential for exposures |
| CPP-93 | | | | | | | | | | | | | | | Gravel berm |
| Percolation ponds | | | | | | | | | | | | | | | |
| Tank farm | | | | | | | | | | | | | | | |
| 10-06 sites assessed separately | | | | | | | | | | | | | | | |
| <p>H = High M = Medium L = Low CPP = Chemical Processing Plant</p> | | | | | | | | | | | | | | | |

H7-12

Table H7-7. Summary of sensitive species survey at WAG 4.

| WAG 4 Site # | B. Tern | T. Swan | W. F. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. B. Lizard | S. toad | Game | Comments |
|--------------|---------|---------|------------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|------|--------------------------------------------------------------------------------------------------------|
| CFA-01 | | H | H | H | M | M | L | M | L | H | M | M | M | M | Landfills, crested wheatgrass plantings, power lines, and fence perching |
| CFA-02 | | | | | | | | | | | | | | | |
| CFA-03 | | | | | | | | | | | | | | | |
| CFA-04 | | H | H | H | M | M | M | M | M | H | H | H | H | H | Unfenced, ephemeral water, native and planted communities, good perches, low activity |
| CFA-05 | | M | L | L | L | L | L | L | L | L | H | M | M | M | Unfenced, native community, gravel substrate, intermittent water, adjacent powerlines |
| CFA-10 | | | L | L | L | L | L | L | L | M | L | L | L | L | Small area, gravel substrate, open gates, weedy and good cover for small mammals |
| CFA-12 | | | | | | | | | | | L | L | L | L | Adjacent to building wall, landscaped bed, adjacent lawn, removal action, rabbits, killdeer, mule deer |
| CFA-26 | | | | | | | | | | | | | | | Asphalt adjacent to railroad tracks, building overties site |
| CFA-40 | | | | | | | | | | | L | | | | Gravel substrate, open wire fencing, adjacent to warehouse, excessed equipment, small animal cover |
| CFA-41 | | | | | | | | | | | | L | | | Gravel substrate, open wire fencing, adjacent to warehouse, excessed equipment, small animal cover |
| CFA-43 | | | | | | | | | | | | | | | Lead storage area |
| CFA -50 | | | | | | | | | | | | | | | Gravel substrate, adjacent to railroad tracks, shallow well, removal action, elevated metals |

H = High
M = Medium
L = Low
CFA = Central Facilities Area

Table H7-8. Summary of sensitive species survey at WAG 5.

| WAG 5 Site # | B. Tern | T. Swan | W.f. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. B. Lizard | S. toad | Game | Comments |
|--------------|---------|---------|-----------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|------|------------------------------------------------------------------------------------------------------------|
| ARA-01 | | | | M | M | M | H | L | L | | | H | | H | Leach pond complex, open wire fences, crested wheatgrass and shrubs, posts, adjacent native vegetation |
| ARA-02 | | | | M | M | M | H | L | L | | | H | | H | Leach pond complex, open wire fences, crested wheatgrass and shrubs, posts, adjacent native vegetation |
| ARA-03 | | | | M | M | M | H | L | L | | | H | | H | Leach pond complex, open wire fences, crested wheatgrass and shrubs, posts, adjacent native vegetation |
| ARA-06 | | | | M | M | M | M | M | L | | | H | | | SLI, Record of Decision (ROD) signed, fenced site, large basalt rip-rap surrounded by revegetation, fenced |
| ARA-10 | | | | L | L | L | L | | L | | | | | L | Fenced area inside chainlink/cyclone, power poles, weeds, gravel substrate |
| ARA-12 | | | | H | H | H | H | M | M | L | L | H | | H | Unfenced area in depression, junipers, willows, good cover, intermittent water, shrike use, basalt cover |
| ARA-16 | | | | | | | | | | | | M | | L | Buried tank, weedy area surrounding shallow hole, collects water, signs of animal use, fenced w/openings |
| ARA-23 | | | | H | H | H | H | H | H | | M | H | | H | 200 acre windblown, native shrub/grass communities, see isopleths |
| ARA-24 | | | | H | H | H | H | H | H | | M | H | | H | Plume areas—see isopleths |
| PBF-04 | | | | | | | | | | | | | | | Gravel substrate inside substation containment fence, native sagebrush community surrounding |
| PBF-10 | | | | | | | | | | | | | | M | Unfenced, revegetated with native grasses and forbs |
| PBF-16 | | | | H | H | H | H | M | | | | H | | | Juniper, tall sagebrush, shallow depression, roosting/nesting, small mammal sign |
| PBF-20 | | | | | | | | | M | | | | | M | Bermed depression containing grasses and annuals, intermittent water, adjacent roost sites, unfenced |
| PBF-21 | | | | M | M | M | M | M | M | | M | H | | H | Large open area of native revegetation bordered by native sagebrush community |
| PBF-22 | | | | H | H | H | H | M | M | | L | H | | H | Tall sagebrush, grasses, rabbitbrush, deep ditch |
| PBF-26 | | | | H | H | H | H | M | M | | L | H | | H | Low area next to 22, crested wheatgrass planting, adjacent tall sagebrush, basalt outcrops, power poles |

H = High
M = Medium
L = Low

ARA = Auxiliary Reactor Area
PBF = Power Burst Facility

Table H7-10. Summary of sensitive species survey at WAG 9.

| WAG 9 Site # | B. Tern | T. Swan | W.f. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. B. Lizard | S. toad | species | Comments |
|-----------------------------|---------|---------|-----------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ANL-01 ^a | H | M | H | | | | | | H | H | | L | H | H | Industrial waste pond, periodic standing water, cattails, unfenced, waterfowl, big game, other wildlife use documented |
| ANL-01A ^a | | | | | | | | | M | H | | L | | | Cooling tower ditch, periodic water source, cattails, doves, killdeer nest, swallows, rushes, fenced, weed control, gravel substrate, potential bat roosting in cooling towers, adjacent lighting |
| ANL-01 ditch A | | | | | | | | | | | | | | | Ditch section from auxiliary cooling tower and intermittent surface water runoff. Gravel substrate |
| ANL-01 ditch B ^a | | | | | | | | | | M | | | | | Ditch section, periodic water up to 10 gal/minute, grassland to fence, cattails, cheatgrass |
| ANL-01 ditch C | | | | | | | | | | L | | L | | | Short above ground ditch section transitions to belowground, heavy weed areas, small amounts of water, gravel substrate |
| ANL-04 ^a | H | M | H | | | | | | H | | | | M | | Sewage lagoons, waterfowl, swallows, butterflies, nighthawk, algae, sparse shore vegetation |
| ANL-05 | | | | H | H | H | H | | | | M | H | | H | Burn pits, outside fences, sagebrush/basalt, patches of basin wildrye, adjacent to large areas of natural vegetation, poles for perches |
| ANL-09 | | | | | | | | | M | | L | M | | L | Interceptor canal, outside fence, sparse vegetation/weeds on banks |
| ANL-29 | | | | | | | | | L | | | | | | Lift station, gravel substrate, perching structures, lighting |
| ANL-35 ^a | | | | | | | | | M | | | | | | Lifts station discharge ditch, running water, cattails |
| ANL-36 | | | | | | | | | | | | L | L | | Photo lab ditch drifted in with silt from 1994 burn area, sparse vegetation, no water |
| ANL-61A | | | | | | | | | | | | | | | Polychlorinated biphenyl (PCB) spill, gravel substrate adjacent building |
| ANL-62 | | | | | | | | | | | | | | | Boiler building hotwell, gravel substrate, 7-ft deep, enclosed |

a. ANL-01, ANL-01A, ANL-01B, ANL-04 and ANL-35 will be remediated under the WAG 9 ROD.

H = High

M = Medium

L = Low

ANL = Argonne National Laboratory

Table H7-11. Summary of biological field survey for WAG 10.

| WAG 10 Site: | B. Tern | T. Swan | W.f. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. b. Lizard | S. toad | Game | Comments |
|----------------------------------------------|---------|---------|-----------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10-01 (LCCDA) | | | | L | L | L | | | | | | L | | | Open crested wheatgrass planting, weeds, few shrubs |
| 10-02 (OMRE-1) | | | | | | | | | | | | M | | | Area of heavy construction, decontamination and dismantlement (D&D) activity, perching poles, closed fence with crested wheatgrass plantings and scattered rabbitbrush |
| Fire Training N Fire Training S / NOAA | | | | | | | | | | | | H | M | | Sagebrush/rabbitbrush and crested wheatgrass plantings, areas of native vegetation. Near road, unfenced, adjacent to major road, adjacent power lines are single poles/w insulator/line on top |
| Experimental Field Station | | | | L | M | M | L | | L | | | M | M | | Surrounded by rabbitbrush and primarily crested wheatgrass, good patches of taller sagebrush |
| Rail Car Explosion | | | | | L | L | M | | M | | M | M | | H | Large sagebrush in crater and along river, soil in crater probably compacted, native grass and shrubby rabbitbrush surrounding depression, unfenced, adjacent to Big Lost River, low human activity, sign of antelope |
| Mass Detonation Area | | | | M | M | M | H | | M | | M | H | L | H | Large areas of sagebrush/rabbitbrush, canal along N boundary with burrowing activities of larger mammals (badger, etc.), antelope and rabbit sign, observed burrowing owl, fairly removed from activity, area bounded on North by Big Lost River, roosts, raptors, doves, nighthawk sightings |
| Unexploded ordnance east of TRA | | | | L | M | M | M | | M | | M | H | | H | Good open sagebrush/grass and ground cover, generally native habitat, rabbit and owl pellets |
| Bunker north of INTEC | | | | L | M | M | M | | M | | M | | | M | Concrete rubble pile covered with weedy vegetation and large sagebrush, surrounded by sagebrush/rabbitbrush – recent burrowing of larger mammals beneath concrete, rabbit sign, fairly close to powerlines and poles |
| Craters East of CPP | | | | M | H | M | M | | L | | | M | | L | Depressions in large crested wheatgrass seeding, also cw in craters, bounded on the east by native sagebrush/grass community – bisected by power lines – double w/ cross poles, rodent burrows in and around craters |

L1-LH

Table H7-11. (continued).

| WAG 10 Site: | B. Tern | T. Swan | W.f. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. b. Lizard | S. toad | Game | Comments |
|----------------|---------|---------|-----------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NODA | | | | M | H | M | H | | H | M | M | M | L | H | North of firing range, area adjacent to section of Big Lost River, much reseeded area, weedy and rabbit brush, scattered sagebrush in remediated areas – Large sagebrush and narrow riparian vegetation along river, snags and juniper nearby |
| Fuse Burn Area | | | | M | H | H | H | | H | | H | H | | H | Good native sagebrush/grass areas, cultural sites, removed from activity, some crested wheatgrass plantings, rabbit and coyote sign |
| RWMC test area | | | | L | M | M | H | | M | M | H | H | M | H | South of BLR reststop along Highway 20, Metal fragments, no contamination associated, good sagebrush habitat – but cheatgrass in interspaces, in close proximity to Big Lost River, rodent activity, many raptors, nighthawks, flickers, etc. |
| Juniper Mine | | | | | H | L | M | L | H | | M | M | | H | No pathway to receptors, good juniper habitat |
| Powerline | | | | M | H | M | L | L | M | | M | H | | H | Inert projectiles, no contaminants – generally crested wheatgrass seedings |
| NOTF | | | | M | M | M | H | | M | | H | H | | M | Along railroad tracks east of RWMC, Loggerhead shrike observed, good sagebrush habitat, patches of larger, dense plants adjacent, also areas of thistle, rabbitbrush and weeds around structures and berm w/ concrete wall on N side |
| Land Farm | | | | | | | | | M | | | | | | Cultivated bioremediation project – weeds, open, near active areas, manure mulch, facilities/substation for roosting, night lighting in vicinity |
| CFA-633 | | | | | | | | | L | | L | | | | Highly disturbed area covered with asphalt. Human activity prevalent in the surrounding area. |

H = High

M = Medium

L = Low

OMRE = Organic-Moderated Reactor Experiment

LCCDA = Liquid Corrosive Chemical Disposal Area

NOAA = National Oceanic and Atmospheric Administration

NOTF = Naval Ordnance Test Facility

INTEC = Idaho Nuclear Technology and Engineering Center

NODA = Naval Ordnance Disposal Area

RWMC = Radioactive Waste Management Complex

Table H7-12. Summary of biological field survey for WAG 6.

| WAG 6 Sites: | B. Tern | T. Swan | W.f. Ibis | B. Owl | F. Hawk | P. Falcon | L. Shrike | B. Eagle | Bats | M. Shrew | P. Rabbit | S. b. Lizard | S. toad | Game | Comments |
|-------------------------------------------------------------------------|---------|---------|-----------|--------|---------|-----------|-----------|----------|------|----------|-----------|--------------|---------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WAG 6 complex Reactor Bld Burial area Misc. sites dump, etc | | | | M | L | M | M | | M | | M | H | | M | General area includes 2 fenced sites, one w/biobarrier, one with concrete slab surrounded by bareground/weeds. Fences allow for perching/hunting in general area. Area is in close proximity to the main road to RWMC. |
| <hr/> H = High M = Medium L = Low | | | | | | | | | | | | | | | |

H7-3.9 References

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- Reynolds, et al., 1986 "Vertebrate Fauna of the Idaho National Environmental Research Park," *Great Basin Naturalist*, Vol. 26, pp. 513–527.
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