

Draft  
ORNL WORK PLAN  
Operations, Maintenance and Services



Work Plan Name / Rev: BIOLOGICAL SURVEYS / 0

WORK SCOPE/DESCRIPTION

Requester (Name/Badge/Division):	Darling, Sara / 03036768 / X035
Location of work (Bldg/Rm/Other):	1507 / / Anywhere in the ORR
Work Plan Title:	Biological and Sensitive Species Surveys

**Description of Service/Work Needed:**

This work plan covers some of the activities associated with wildlife management of the Oak Ridge Reservation (ORR).

These activities include ecological and natural resource research and ecosystem monitoring. Covered activities may include animal surveys, live animal trapping and collection, and wildlife management. This work plan only covers some of the work performed under wildlife and natural resource management work plans. Although information about activities performed by others may be mentioned/referenced here, those activities are controlled by other work control processes. Participants need to have a good understanding of what activities are controlled by this particular work plan.

Be advised that work covered by this work plan is further controlled by other protocols, site-specific training, and equipment-specific training. If any participant has questions or concerns, regarding chemical hazards or equipment hazards, they must discuss them with their upper-line management, PI, or UTB host before engaging in the below-listed tasks/activities. Any research in the field that involves animals must have an approved protocol from the ORNL Animal Care and Use Committee (ORNL ACUC) before performing work.

The following permits for wildlife management work are needed to perform this work:

USFWS Recovery permit, TE05565B-2 - Conditional authorization to collect and band federally listed bat species on ORR

TWRA Scientific Collectors Permit 2283 - Restricted authorization to collect bats, amphibians, reptiles, small mammals, and invertebrates

A pre-job briefing work-aid has been developed for various wildlife management and natural resource field activities. While the use of the work aid is not mandatory, it is highly encouraged. Project task leaders may use the following job aid in performing the pre-job brief:

[https://ornl.sharepoint.com/sites/eesd/ops\\_west/RSSDocuments/LinkedPDFs/BESD\\_START\\_Job\\_Safety\\_Briefing\\_Card\\_Rev\\_0.pdf](https://ornl.sharepoint.com/sites/eesd/ops_west/RSSDocuments/LinkedPDFs/BESD_START_Job_Safety_Briefing_Card_Rev_0.pdf)

It is intended to help field teams recognize and identify known or potential hazards posed by their field activities and the mitigating actions required to address the hazards. Situational awareness is emphasized and encouraged. Contact your Safety Services Representative for assistance in using this work aid, as needed.

Surveys may be conducted on foot in both upland and aquatic habitats, using various trapping methods. Visual inspections of survey areas will be made to determine any unsafe walking surfaces. Surveyors will be cognizant of trip and fall hazards that may be encountered.

Potential research activities include trapping and handling of live and dead animals, and performing biodiversity surveys. Such activities may expose the researchers to animal-borne diseases, such as hantavirus, rabies, Hansen's Disease (leprosy), and others.

For any biodiversity surveys conducted in caves, participants must also be authorized in approved Research Safety Summaries and approved by the appropriate PI in the Environmental Sciences Directorate.

Any research activity on the ORR exposes the individuals to ticks and mosquitoes that can carry Lyme Disease, Rocky Mountain Spotted Fever, St. Louis Encephalitis, West Nile virus, etc. There is also the potential for exposure to bees, venomous insects, snakes, fire ants, and other dangerous animals (e.g., feral dogs, deer, coyotes, foxes, bobcats, black bears, etc.) that can cause injury or illness. Plants such as poison ivy can cause contact dermatitis and may also be encountered during fieldwork.

Projects that involve handling rabies vector species will require the staff (including anyone handling the animals) to receive pre-exposure rabies prophylaxis and maintain a rabies titer high enough to provide immunity; participants must be enrolled in the ORNL zoonotic program to ensure this is checked. Titer will be checked by a qualified laboratory at a frequency recommended by the CDC, and booster doses will be administered as necessary.

Projects involving handling mammals (including bats), birds, reptiles, and amphibians require participants to develop a safety plan approved by ORNL Safety Services Division (SSD) personnel in accordance with current guidance from the Centers for Disease Control (CDC). Such a plan may include wearing protective equipment (respirators, gloves, face shields, etc.), washing of face and hands after handling the animals, and periodic disinfection of traps and equipment exposed to animals and their waste products. The purpose of this document is to describe the methods, materials, and potential hazards associated with conducting small mammal surveys on the Oak Ridge Reservation (ORR). The small mammals targeted during this work include mice, voles, rats, bats, rabbits, groundhogs, raccoons, and possibly other small mammals.

Potential duties of participants on this task include:

- Construction and setting of live traps, mist nets, and pitfall traps
- capturing and handling a variety of small mammals
- identification and documentation of specimens
- euthanizing small mammals
- collecting tissue samples for contaminant analyses

Surveys may be conducted year-round. Personnel will take precautions to avoid dehydration and heat exhaustion in warmer months and hypothermia in colder months. Any required handling of live mammals will be done wearing leather gloves by employees with the proper immunizations. Handling is expected to be limited based on sampling techniques. Small mammals can be easily released from live traps simply by opening the door and letting the animal walk out. Leather gloves will be worn at all times when removing animals from pitfall traps. All traps will be checked once/24-hr period. Pitfall trapping conducted during hot weather will include the availability of a water source or moistened sponge in the pitfall.

Euthanasia may be required when animals are injured or are being used in contaminant studies that require tissue collection. The euthanasia procedure for very small mammals is a two-step process, consisting of (1) anesthetizing with isoflurane, and (2) euthanasia by cervical dislocation. Larger mammals may be euthanized by exposure to carbon dioxide in a specially designed chamber at the Check Station. Participants performing euthanasia must be trained in these techniques by institutional veterinary staff at ORNL. ORNL veterinary staff will be consulted as needed. Latex or nitrile gloves will be used when handling mammals during these procedures. Need to include the reference the work plan for the chamber? I'm not sure.

A diversity of habitats may be sampled on the ORR, including fields, wetlands, second-growth areas, and forests. The following general precautions will be taken during these surveys:

- Adequate water will be taken on survey days to ensure proper hydration.
- Care will be taken to avoid trip/fall hazards inherent in forested areas, ponds, and streams. Such tripping hazards may include downed woody material, depressions, holes, crevices, and slippery rock surfaces. For surveys conducted at night, surveyors will be equipped with flashlights to spot and avoid such hazards.
- Wash hands thoroughly with anti-bacterial soap and/or hand sanitizer after handling all small mammals and before eating or drinking.
- Ticks, mosquitoes, yellow jackets, and other biting/stinging insects may be encountered while conducting small mammal surveys. Insect repellent will be provided to apply to clothing or skin as appropriate and workers shall remain extremely vigilant for yellow jackets and poison ivy. Workers with known allergic reactions shall inform coworkers of their condition and potential epinephrine auto-injector ("EpiPen") use.
- Work may be conducted in remote areas of the ORR. Cell phones and/or radios will be carried during all surveys to allow for immediate communication with the LSS. The LSS will be contacted when working on the ORR after hours. Cell phone(s) and/or radio(s) will be left on at all times during surveys to allow the LSS to have constant communication with the surveyors in case of an incident that may require immediate evacuation from the area.

Equipment that may be needed:

- flashlights
- cell phone and/or radio
- binoculars
- camera
- latex or nitrile gloves
- leather work gloves
- sturdy shoes or boots
- long pants
- hip boots and chest waders
- live traps (e.g., Sherman, Tomahawk, etc.)
- bait (e.g., bird seed, paste bait, lures, etc.)
- mist nets
- pitfall traps
- cloth
- isoflurane with small sealable container to use for euthanasia?
- Various-sized Ziploc plastic bags
- insect repellent
- pens and pencils
- data sheets and clipboard
- first aid kit
- hand sanitizer?

Charge Number, if required:	3x8320wm
Work Plan Grade/Worktype:	1 / A
Author (Name/Badge):	Darling, Sara / 03036768
File Attachments:	
I N S T R U C T I O N S	
Prerequisites/Precautions:	
Directions:	
Post Work Testing:	
Closeout:	
J O B H A Z A R D E V A L U A T I O N	
HAZARDS	PERMITS / CONTROLS

Radiological Work: Work may be authorized in potentially contaminated areas. Contact RCT office at 865-574-6700	<ul style="list-style-type: none"> <li> <a href="#">Radiological Work Permit</a> (Enter RWP no.): RWP(s) will be developed for specific job tasks based on most recent surveys and/or anticipated conditions. </li> </ul>
Ergonomic Conditions (Contact Stress, Vibration, Posture, Force, Repetitive Motion): Work may involved repetitive bending over and extended time walking outside over uneven surfaces	<ul style="list-style-type: none"> <li> <a href="#">Exposure Assessment</a>: Enter or attach justification to classify exposure scenario as low risk, qualitative exposure assessment (QEA), or requirement to conduct quantitative exposure monitoring (QEM) </li> <li>PPE: Specify. Sturdy boots, pants</li> </ul>
Infectious materials	<ul style="list-style-type: none"> <li> <a href="#">Exposure Assessment</a>: Enter or attach justification to classify exposure scenario as low risk, qualitative exposure assessment (QEA), or requirement to conduct quantitative exposure monitoring (QEM) </li> </ul>
Insects/animals/wildlife/parasites: Work is conducted outside in various environments	<ul style="list-style-type: none"> <li>PPE: Specify. sturdy boots, pants, gloves, hat if needed</li> <li>Snake guards: If needed/desired</li> <li>Insect spray: ensure insect spray type - read labels prior to use</li> </ul>

**DOCUMENTATION REVIEW AUTHORIZATION**  
(Approvals are certification of hazards assessment)

Reviewer/Approver Roles	Signature	Date
Accountable Management (Service Provider, Line, Equipment Owner, or Facility Management)	Herold, Jamie	
Author	Darling, Sara	
IS/IH	Smith, Nik	
Other Subject Matter Experts (SMEs)	Glass-Mattie, Dana	
<b>Work Package Concurrence</b>		
Facility Manager		
Operations Supervisor		
<b>Facility Manager Approval To Start Work</b>		
Facility Manager		
<b>Work Start Authorization</b>		
Task Leader		
<b>Work Acknowledged Complete</b>		
Task Leader		
Worker Feedback:		

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<b>PRE-JOB SAFETY REVIEW GUIDE</b>		<b>ID:</b> 61003
<b>Scope of Work:</b> Review work package/plan to ensure all participants understand the work activity.		
<b>Hazards:</b> Review the hazards identified in Job Hazard Evaluation (JHE) / work plan (IOP). ☞ Since the work package / plan was written: 1) Have conditions changed? 2) Are there new hazards? Refer to Field Notes and Focus Areas.		
<b>Hazard Controls / Permits:</b> Review: ☞ Written permits for the work activity. ☞ Precautions, step warnings, Hold Points ... ☞ Personal Protective Equipment (PPE)	☞ Work instructions for information - e.g., steps where hazards are introduced. ☞ ORNL subject area requirements - e.g., non-permit hazard controls.	
<b>Performing Work:</b> ☞ Discuss group/individual responsibilities for safe & effective work. ☞ Follow work instructions & safety procedures. ☞ Availability/location of materials, tools, etc. ☞ Any previous experiences / lessons learned? ☞ Response if work cannot be performed as planned. ☞ What is the worst thing that could happen? ☞ Are there <i>Potential error traps</i> with the job? → → ☞ Take a minute before: work start & leaving work area. ☞ Work Hand-off / Turnover - workers & Task Leader	→ <b>Potential Error Traps:</b> ☞ Time pressures ☞ Distractive environment ☞ High workload ☞ First time evolution ☞ First day back ☞ Vague guidance ☞ Over confidence ☞ Imprecise communications ☞ Work stress	
<b>Abnormal Situation Response:</b>   <u>Stop Work</u> : Observe an unsafe act, activity or condition that creates an imminent danger.   <u>Emergency Response</u> : Discuss egress paths or other responses if problems are encountered.		
<b>Field Notes and Focus Areas:</b> (Use this area as a work space to record notes related to new hazards identified in the field or changed conditions. Record feedback in work package/plan information systems.) <div style="height: 150px; border: 1px solid black; margin-top: 5px;"></div>		

*By signing below, I am indicating that I have been briefed on the potential hazards associated with completing this job.*

Signature / Badge	Date	Signature / Badge	Date