

SAFETY INFORMATION

Please read the following information and review it frequently. This document and any important fact sheets will be available in a field manual binder, copies of which will be placed in the lab and in the field vehicle.

FIRST AID AND INJURIES

Each field team should have a first aid kit. The main kit should be kept in the field vehicle; a smaller kit should be kept with the field gear for taking into the field. You should know where the first aid kits are at all times. If you do not know where the first aid kits are, then ask your coworkers and if they cannot be located contact the local PI immediately. Each field crew leader should check each of the first aid kits frequently to ensure that they contain all basic supplies.

If anyone gets injured in any way while doing research work, first take care of the injury, and then contact your supervisor and the PI as soon as is possible. If you do not have contact information for these people make sure you find it out now. All phone numbers and email information will be on the inside cover of the field manual, copies of which should be kept in the field vehicle and in the lab.

If someone sustains an injury while conducting field work, it is likely that Worker's Compensation forms will need to be filled out – UConn employees should talk to Lois Limberger for details (860-486-4315; lois.somers [AT] uconn.edu) as soon as possible after the injury occurs. You should also mention that it is an employment-related injury when seeking treatment.

If an injury occurs during animal handling, then the injury also should be reported to the Department of Environmental Health & Safety (EH&S; 860-486-3613). A copy of the EH&S document "First Aid Instructions for Animal Handlers" should be kept with each first aid kit. If you have not read this document, then you should familiarize yourself with it before going into the field. It can be found as Appendix 1 of the document posted here: <http://www.ehs.uconn.edu/Biological/ahp.pdf>

UConn students should be aware that they can seek treatment at the UConn Student Health Services. SHS can also help with Worker's Comp if a student is also a UConn employee.

ANIMAL HANDLING SAFETY

Personnel working on this project may need to handle wild birds as part of the research. This requires that you know the potential risks associated with exposure to feathers, bird feces, avian diseases, and in some cases blood. All personnel should read and familiarize themselves with the following documents describing the University's Occupational Health and Safety Program for Animal Handlers before they handle any animals:

<http://www.ehs.uconn.edu/Biological/ahp.pdf>

<http://www.ehs.uconn.edu/Biological/ahforms.pdf>

Staff should also do the following training sessions organized by EH&S (or seek equivalent training from the local PI, as appropriate):

- General Biological Safety in Animal Research (required for anyone who will work around animals):
<http://www.ehs.uconn.edu/training/schedule/BioTrainingSchedule.php#4>
- Institutional Animal Care and Use Committee (IACUC) training (required for anyone who will handle animals): <http://iacuc.uconn.edu/training.html>
- Shipping and Transportation of Biological Samples (required for anyone who will be transporting, by vehicle or mail, any biological sample – e.g., blood, eggs, salvaged animals, etc.): <http://www.ehs.uconn.edu/Biological/BioTransport.pdf>

Feather allergies. Feathers can cause allergies and this has been a problem for people working with poultry and other birds in laboratory settings. All of our work will take place outside in well-ventilated areas, so the risk is very minimal. Nonetheless, personnel should be aware that feather allergies exist and if they begin to suspect that contact with birds is generating adverse effects, they should consult a doctor (UConn students can contact SHS).

Zoonotic diseases. Like people, any wild animal is potentially infectious and all personnel should be alert to the need to observe captured individuals for any unusual appearance or behavior. The risk of infection however is very small and basic hygienic practices should reduce the risk further. All personnel handling birds should use hand sanitizer after handling each individual bird.

The Ornithological Council – a consortium of 11 scientific ornithological societies in the Western Hemisphere – has prepared a fact sheet that covers avian influenza, West Nile virus, and other zoonotic diseases likely to be carried by wild birds. This fact sheet is updated regularly and documents current evidence-based recommendations related to the safe use of wild birds in research. It thus represents currently accepted best practice within the field of ornithology. All personnel should read this document and familiarize themselves with its contents. The fact sheet can be found here:

<http://www.nmnh.si.edu/BIRDNET/documents/WNV&H5N1-FactSheet.pdf>

Additional information about avian influenza can be found here:

<http://www.cdc.gov/flu/avianflu/>

Basic practices that should be adhered to when doing any work that involves handling wild birds include:

- No eating and drinking while handling birds.
- Use antiseptic hand sanitizer or wipes frequently while in the field. Developing a habit of using them after handling each bird is ideal as it makes it a standard part of your

- routine, while potentially reducing the risk of transmitting bacteria among birds.
- Wash your hands with soap* and warm water as soon as possible after coming in from field work.
 - Avoid direct contact with bird feces as much as possible. Use antiseptic sanitizer/wipes after contact.
 - Take special care to avoid needle sticks when taking blood samples (see below).
 - If you become ill during the period that you are handling birds, be sure to tell your doctor.
 - After controlling bleeding, cleaning, and covering, seek medical attention immediately for any cuts, puncture wounds, needle sticks, or other wound associated with animal handling.

* Note that “antibacterial” soap is NOT necessary. According to the CDC, there is no evidence for an additional health benefit and there are concerns that unnecessary use of certain antibacterial chemicals contribute to antibiotic resistance. For more information on this topic see this article on the CDC web site:

http://www.cdc.gov/ncidod/eid/vol7no3_supp/levy.htm

And this systematic review of the evidence:

http://cid.oxfordjournals.org/content/45/Supplement_2/S137.short

GENERAL FIELD WORK SAFETY

Most of our field work requires no greater risks than are encountered when hiking, camping, bird-watching, gardening, or conducting many other outdoor activities. Nonetheless, it is important to be aware of certain hazards.

Mountain areas can have uneven ground, steep slopes, and loose, rocky areas. Wear proper footwear at all times, and test your footing while hiking. Avoid travel on steep slopes and talus slopes and avoid cliff edges. Do not attempt to cross rain or snowmelt-swollen streams or rivers. Do not drink untreated water; all water sources carry the risk of giardia. Take plenty of water to avoid dehydration. Never go into the field alone.

Black bears. Black bears are the only species of bear found in the Sierra Nevada. Preventing an encounter with a black bear is best. This can be done by keeping food out of sleeping areas, never approaching a bear, not getting between a mother and her cub(s), wearing a bell or other noisemaker, and staying away from the bear’s food supply. Never run away from a bear, move slowly. Yell loudly and gather in a group to appear larger and more intimidating. If attacked DO NOT PLAY DEAD (this advice works for brown/grizzly bears, but is not appropriate for black bears). Instead, try to escape to a car or building. If this is not possible then fight back, focusing blows on the bear’s face. For more information about bear safety see this National Park Service web site:
<http://www.nps.gov/subjects/bears/safety.htm>.

Mountain lions. As with bears, preventing encounters with mountain lions is best. Wear a bell or other noisemaker, do not approach or corner a mountain lion, and carry pepper

spray. Do NOT run away. Face the animal, speak loudly and firmly, wave your arms, and back away. If attacked, fight back, protect your head and neck; DO NOT play dead.

Insect bites and stings. Field work entails frequent exposure to mosquito bites, and occasional exposure to other biting and stinging insects. Personnel should take reasonable measures to reduce their exposure, by wearing protective clothing such as long sleeve shirts, long pants, and socks. Insect repellents should also be used as required.

Ticks and tick-borne disease. Lyme-disease carrying ticks are found in vegetation across the state, but are more common on western slopes of the Sierra Nevada than on eastern slopes. Follow standard precautions and check yourself carefully for ticks EVERY day. Familiarize yourself with symptoms of Lyme disease (which does not always produce a “bull’s eye mark”), relapsing fever, and Rocky Mountain spotted fever. Lyme disease, relapsing fever, Rocky Mountain spotted fever, and other tick-borne diseases, can lead to very serious illness. For more information see the web sites below:

<http://www.cdc.gov/lyme/>

<http://www.cdc.gov/relapsing-fever/>

<http://www.cdc.gov/rmsf/>

<http://www.cdph.ca.gov/HEALTHINFO/DISCOND/Pages/TickBorneDiseases.aspx>

Rodent-borne diseases. Rodents carry a number of potentially dangerous diseases, with the most likely to be a threat during field work being Hantavirus Pulmonary Syndrome (HPS) (also called Sin Nombre Virus) and Arenavirus (also called White Water Arroyo or WWA). Both are transmitted by inhaling dust or aerosols from the infected rodent’s feces, urine, or saliva. HPS is carried by deer mice (*Peromyscus maniculatus*) and WWA is carried by woodrats (*Neotoma fuscipes*) and other *Neotoma* species. Avoid contact with rodents, especially their feces. Make areas unattractive to rodents by keeping areas clean and storing food carefully. If you encounter a dead rodent or rodent feces, use gloves and spray the rodent and/or feces and area with a solution of 1.5 cups of bleach to 1 gallon of water. Remove and dispose of the rodent or wipe up and dispose of the droppings. Clean the area thoroughly with more bleach solution. For more information see the web sites below:

<http://www.cdc.gov/hantavirus/hps/>

<http://www.cdc.gov/vhf/virus-families/arenaviridae.html>

Poison oak. Poison oak does not generally occur at high elevations, but is frequent at lower elevations. Care should be taken to avoid exposure to skin and clothes. If you are not familiar with poison oak then ask for help learning how to identify the plant. Additional information on the plant, its potential effects, and precautions you can take, are provided here:

<http://www.cdc.gov/niosh/topics/plants/>

UV exposure. To reduce risk, wear long-sleeved clothing, a hat, sunglasses, and apply sunscreen at regular intervals. When banding birds, a temporary banding station will be created with a beach umbrella to provide shade both to the birds and to you while banding.

Thunderstorms. Summer thunderstorms are not infrequent during the field season. Although storms generally occur later in the day, after field work is over, they can occur at any time and it is important to be alert to their likelihood. Check the weather forecast daily and be aware of changing weather conditions. They can bring heavy rain, hail, and lightning. If lightning or hail are likely where you plan to work, consider rearranging the work schedule so that you can visit a different field site. If the risk cannot be avoided, or if a storm develops while in the field, then cancel field work until the risk passes. Get away from peaks, passes, ridges, caves, water, and open areas. Seek shelter in low, forested areas. Avoid lone, tall trees.

Forest fires. Forest fires occur annually throughout the American West and, especially in times of drought, can be expected to occur somewhere in the Sierras most years. Information about active fires is posted on-line in various places and all field team members should take the time to review these web sites daily.

The National Park Service's site is here: <http://www.nps.gov/yose/blogs/fireinfo.htm>

The US Forest Service's site is here: <http://activefiremaps.fs.fed.us/>

Pay close attention to all evacuation orders and do not enter any areas where active fires have been reported. When in the field, act to minimize all potential sources of wildfires wilderness areas. Prior to starting field work, familiarize yourself with basic information on how to minimize wildfire risk. Note that ANY open fire (campfire, barbeque, portable camping stove, etc.) on federally controlled lands or lands that are the property of others requires that you first obtain appropriate permits. Review the information on this web site: <http://www.preventwildfireca.org/>.