

SAFETY INFORMATION

Detailed safety information will vary among research sites and institutional guidelines, so each research team will need to work with the local Principle Investigator (PI) to determine what is most appropriate for them. The following guidelines, however, were written for people working at the University of Connecticut's research sites and cover many basic issues relevant to everyone. If you have questions about any of these issues, contact the PI responsible for your study site.

Please read the following information and review it frequently. This document and any important fact sheets will be available in a SHARP 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 truck (or whatever vehicle you are using); 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. If you are working independently from the main field team, talk to the local PI about ensuring that you have access to first aid materials. Each field crew leader should check each of the first aid kits frequently to ensure that they contain all basic supplies.

In past field seasons, we have had a couple of people get foot infections while working in the marsh. If you get any cut or abrasion, make sure you clean it IMMEDIATELY. If you subsequently notice anything unusual (pain, redness, swelling, etc.), first contact a doctor and then, as soon as possible, contact your immediate supervisor or the local PI. DO NOT wait a few days to see how things turn out. It is far worse for you if you delay when you should have seen a doctor (note that delaying will be worse for the project too – we do not need any martyrs to our science).

If anyone gets injured in any way while doing research work, first take care of the injury, and then contact your supervisor and the local 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. Employees of other institutions should talk to the local PI to determine the appropriate contact. 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.

CANOE AND KAYAK SAFETY

Use of canoes and kayaks probably represents the greatest safety hazard faced during our research work. Before beginning field work, all personnel should read the Connecticut Department of Energy and Environmental Protection's (DEEP; formerly DEP) guidelines on basic canoe/kayak safety, which is posted on-line here:

http://www.ct.gov/dep/cwp/view.asp?a=2686&q=322304&Nav_GID=1620

All personnel must verify that they can swim before starting to work on the project. If you cannot swim you should not get into a canoe or kayak. If this is an issue, contact the local PI immediately.

When in a canoe or kayak all personnel are required to wear a life jacket. Life jackets should be checked frequently to ensure that the webbing, buckles, and seams are not damaged. If a jacket appears to be compromised in any way, contact the local PI immediately.

Anyone who does not have prior experience with canoes/kayaks should notify the local PI immediately so that they can receive basic training in how to paddle. They should not use boats alone until they have satisfied the field crew leader that they are proficient. Most of our work requires paddling in relatively small channels and slow-flowing rivers within marshes, but currents can sometimes be strong, especially in larger channels on a falling tide. If you lack experience paddling under these conditions, or are uncomfortable doing so, then seek advice or additional training immediately.

Except when crossing small river channels within marshes, no one should paddle alone. At all times it is important that members of the field crew know where each other is. Usually people will be working in the same area, and their whereabouts should be recorded on the field research calendar. If someone works separate from the main group they should make sure that the others all know where they are going and when they expect to be back.

If there is any hint of a thunder storm while doing field work, get out of the marsh and off the water. The marsh is very open and you will be one of the tallest things out there. If you are carrying metal mist net poles the risk is likely greater. Do not take chances on this. If you're not sure if it is safe to be out, then come in.

All personnel should learn how to lift canoes on and off of field vehicles properly. If you have not been shown how to do this, contact your supervisor or the local PI immediately. Great care should be taken, especially when lifting a large canoe onto the top of a truck. Advice on this topic is provided on various web sites, including these:

<http://www.rei.com/expertadvice/articles/lifting+carrying+canoes.html>
<http://www.merrimackcanoes.com/canoe-tips-carry.html>

When transporting a canoe or kayak on top of a vehicle be sure to tie it off securely at the front and back and to use straps across the central portion of the boat. Test that it is secure by trying to slide it from side to side before you drive.

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/biotransport.htm>

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.

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 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, needlesticks, 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 can 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

Blood sampling. It is recommended that personnel wear nitrile gloves when taking blood samples to reduce risks from zoonotic pathogens. Nitrile gloves, however, reduce dexterity and potentially increase the risk of a needle stick and thus the risk to personnel, especially when handling small birds. They also tend to mess up the birds plumage and potentially cause increased feather damage. If use of gloves is not feasible, then it is especially important to use hand sanitizer after handling each bird and to wash hands carefully with soap and warm water as soon as you are able to do so. Even when gloves are used, frequent hand sanitizing and hand washing are strongly recommended.

Sharps (needles, capillary tubes, syringes, etc.). Taking blood samples requires the use of needles and capillary tubes, which have potential to puncture your skin. All personnel should be trained in the safe use of sharps before using them unsupervised. Needles should remain capped right up until the time when they are used and disposed of immediately after use (do not recap them). Capillary tubes also should be disposed of immediately after use. All sharps should be disposed of in an official sharps container, and no sampling should be conducted unless an appropriate container is taken into the field. Any swabs or other materials that come into contact with the bird’s blood should be disposed of in the same container and treated as biohazard material.

Used sharps containers should be returned to EH&S, who will pick them up from the lab. To request pickup and replacement containers, go to: <http://www.ehs.uconn.edu/bwc/request.php>

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.

Marshes have uneven surfaces, with occasional small holes and mosquito ditches that must be crossed by jumping. The ground is wet and muddy, and as the tide rises the marsh surface can become covered. All personnel should wear rubber boots to protect their feet, and walk carefully in the marsh. When crossing ditches be careful to identify where you will jump to (test the landing spot with a pole). Whenever possible, cross ditches in known locations. Take special care when walking to study sites during low light conditions (e.g., in early morning and evening).

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. Ticks are uncommon in the marsh, but they are commonly encountered in the brush around the edges and are ubiquitous in most natural vegetation in the state. 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”). Lyme disease, and other tick-borne diseases, can lead to very serious illness. For more information see the web sites below:

http://www.cdc.gov/ncidod/diseases/submenus/sub_lyme.htm

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

<http://content.nejm.org/cgi/reprint/348/24/2424.pdf?ijkey=LruxMS3G8zCPA&keytype=ref&siteid=nejm>

Poison ivy. Poison ivy does not grow right in the marsh, but is common around the edges. Care should be taken to avoid exposure to skin and clothes. If you are not familiar with the many growth forms of poison ivy 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. Marshes are very exposed with little to no shade, and the risk of sunburn is high. Most field work occurs during the morning and evening, so as to avoid the heat of the day, but exposure to higher temperatures is likely at times. To reduce risk, wear long-sleeved clothing, a hat, 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.

Lightning. 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. Because marshes are open and exposed, and you will be among the tallest things in the marsh, there is a risk of exposure to lightning. The risk is amplified if you are carrying metal poles or in a canoe. Check the weather forecast daily and be aware of changing weather conditions. If lightning is 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 marsh, then cancel field work until the risk passes.