

Field Safety and How to Lead an Expedition

Travel within the United States

- Determine permit requirements early (one year in advance or at least 9 months in advance).
- If traveling to National Parks, the NPS has an online system (<https://www.nps.gov/nama/planyourvisit/permitsandreservations.htm>) for applying for collecting permits.
- If traveling to other parks (State, County, Local), you need to determine who the resource manager is and contact them for collecting permission.
- Never travel alone and always let someone at your institution know your planned itinerary.
- If traveling to a remote site, carry a satellite phone with you (for example, Garmin has some small satellite phones that work in an emergency: <https://www.garmin.com/en-US/c/outdoor-recreation/satellite-communicators/>).
- Carry extra critical supplies including: headlamps, batteries, vials, ethanol, preservative (e.g., propylene glycol), tarps to cover gear.

Travel outside the United States

- Establish collaboration with an in-country colleague. Don't even attempt fieldwork in another country without such a contact/collaborator.
- Determine exactly what permits are required. You will need not only collecting permits in-country but will also need to acquire export permits to get material out of that country, AND you will need to contact the US Fish & Wildlife Service IN ADVANCE of your return to import the material into the US.
- Work with your in-country collaborator to identify field sites. The in-country collaborator will know what areas are safe, which areas are unsafe, and which areas have officials open to researchers.
- When visiting each locale, it is often advised to meet with the local government officials (e.g., municipal leaders or police) to advise them about your planned activities in the area – particularly if you are doing research at night.
- Follow all advice as outlined above for US field expeditions including:
 - Never travel alone and always let someone at your institution know your planned itinerary and
 - If you are leading a team of students/interns/researchers, see advice below.
 - If traveling to a remote site, carry a satellite phone with you.
 - Carry extra critical supplies including: headlamps, batteries, vials, ethanol, preservative (e.g., propylene glycol), tarps to cover gear.

- Make sure all team members have appropriate field cloths such as good hiking boots, long-sleeved shirts, long pants, wide-brimmed hat.
- Establish safety protocols and expectations of all team members including: staying hydrated, avoiding risk-taking under any circumstances, avoiding wandering off alone.

Advice on Leading a Field Team

- Designate a trip leader – yourself, presumably, or, if you have to go to a different site for a day or two during your expedition, make it clear to the remaining team members who you have assigned as a trip leader. Otherwise, students/interns may not know what they need to do or whose advice/directions to follow.
- Organize your equipment. If it is a long expedition to many sites, have a box with kitchen utensils; a box for field equipment; a box for shared camp supplies (e.g., toilet paper, wet wipes, soap).
- Make it absolutely clear to all team members that if they remove an item from a box, that item **MUST** be returned to the same box.
- Make sure all team members have appropriate field clothes such as good hiking boots, long-sleeved shirts, long pants, wide-brimmed hat, etc.
- Establish safety protocols and expectations of all team members including: staying hydrated, avoiding risk-taking* under any circumstances, avoiding wandering off alone.
 - *Never allow students/volunteers/interns to take unnecessary risks in the field such as climbing cliff faces, rock-scrambling, etc. Not only does this risk personal safety, but if something bad happens, that accident will 1) delay the trip; 2) cost the trip leader money (and time); 3) cause all sorts of institutional headaches.
- Make it clear to all team members about expectations: everyone needs to chip in with cooking, dish-washing, organizing field supplies, sorting specimens.
- Establish rules about processing specimens at each site and maintain those rules. It is a good idea to label all specimens immediately after collecting them.
- Explain to students the basic advice regarding fieldwork including:
 - Stay hydrated at all times. Always carry water with you.
 - In hot climates, wear long sleeved shirts and long pants and wear a wide-brimmed hat.
 - Know the signs of heat exhaustion and stroke: cool, clammy skin that becomes red and dry after heavy sweating, dizziness, cramping, headache, confusion, and fainting.
 - If you get over-heated, stop, return to camp, sip water, get in the shade, apply cool, wet cloths to your skin, and rest.
 - Avoid camping in arroyos or dry washes.
 - If on a mesa, avoid setting up your tent next to the tallest object (tower, tree) – sudden storms mean sudden lightning risks.
 - Always set up camp **FIRST** before going off to collect; otherwise, you may find yourself trying to set up your tent in a sudden downpour.

- Share workload – no one gets to slack off regarding cooking, cleaning dishes, keeping field camps tidy, returning field gear, organizing field gear. EVERY person in a field team should be helping with all these basic camp tasks.