



**Field Operations Safety Manual**

**Environmental Health, Safety and Risk Management**

**Occupational Health and Safety Program**

**October 9, 2023**

## **PART 1 – INTRODUCTION**

### **1.1 OVERVIEW**

The University of Texas Rio Grande Valley's Department of Environmental, Health, Safety, and Risk Management coordinates and monitors laboratory and field safety functions and guidelines associated with research and teaching laboratories. In fulfilling these responsibilities, the UTRGV developed the Field Operations Safety Manual. This manual provides safety guidelines for all individuals participating in field activities including but not limited to area managers, instructors, teaching assistants, course coordinators, staff, volunteers, and students.

### **1.2 GENERAL REQUIREMENTS**

To set forth policies, procedures and practices of informing employees and students at the UTRGV about the health hazards associated with activities conducted in field sites. The traditional campus resources such as Environmental, Health, Safety, and Risk Management are typically not available at remote field sites. Field work should be carefully planned prior to departure to the field site(s). Due to the constantly changing conditions of field research, the emphasis on proper training and preparedness is of utmost importance for all people entering the field. All fieldwork warrants pre-trip training regarding foreseen hazards, appropriate precautions, communication options, and emergency procedures. All participants in field-based activities have a responsibility to promote a safe working environment, and all activities will be designed, conducted, and operated in a manner that reasonably protects human health and safety. Adherence to these principles is necessary for the University to achieve its mission.

### **1.3 PURPOSE**

Conducting field work is an exciting and important component of UTRGV's teaching and research programs, but precautions must be taken to ensure a safe and productive experience. Special risks related to travel, being outside, and interactions with strangers are inherent to field work. This manual provides useful information regarding health and

safety issues that may arise in the field and how they should be dealt with while physically away from the UTRGV campus support system.

Planning for work in the field should include local emergency contact information, appropriate communication equipment (radio, cell, or satellite phone), personal protective equipment, first aid supplies, and boat/vehicle emergency kits. Appropriate training, standard operating procedures, insurance, permitting, and vaccinations should be obtained. A Field Research Plan containing the names and emergency contact information of all participants must be supplied to a person outside of the field team who will communicate with the team and be responsible for acting on their behalf should an emergency arise. Please report all incidents to EHSRM.

This document is meant to be a general guide to assist faculty, staff, students, and volunteers in the planning of field work. It is not intended to be all-inclusive, and individuals are encouraged to further investigate the specific hazards associated with their research. Please refer to the back of this manual for important resources, references, and checklists to use in planning field work.

## **1.4 DEFINITIONS**

- 141** *Designated Contact* – An individual not accompanying the field excursion supplied with all Field Safety Plan information. This individual will conduct the established check-in communications with the field group and act on the field group’s behalf should an emergency arise. Individual must have 24 hour / 7 days a week availability and be able to execute emergency procedures if needed.
- 142** *Field Group* – group of individuals actively engaged in research activities at the field site.
- 143** *Field Safety Briefing* – must occur prior to departure when students are participating and should include a review of the hazard and risk assessment, provision of emergency contact information, emergency procedures, and the schedule of work.
- 144** *Field Site* – Any site where field work or research is being conducted in an outdoor environment and may include (but is not limited to) field stations, natural reserves, private lands, public lands or parks, wilderness areas, coastline, or waterways, including those

owned and managed by UT System, and more controlled sites such as construction areas, excavations, green houses, agricultural fields, commercial facilities and mines.

- 145** *Field-Site Kit* - a collection of materials appropriate to the location and nature of field-activities.
- 146** *Field Trip Leader* – designated individual responsible for the safety of all field group personnel, as well as the safety of all equipment, vehicles and structures involved.
- 147** *Field work* - research and educational activities taking place outside of the traditional classroom or lab setting.
- 148** *Fording Points* - a place where a river or other body of water is shallow enough to be crossed by wading.
- 149** *Go / No Go Criteria* - an individual group determination based on possible risks to the field group during the planned research time.
- 1410** *Hazard Assessment* - a process of identifying hazards, evaluating the risks presented by those hazards, and managing the risks of the hazards to be performed by incorporating appropriate hazard controls into the experimental design process.

## **1.5 ROLES and RESPONSIBILITIES**

- 151** The Department of Origin assists the participant with training and preparation and approves the Field Research plan. The Sponsoring Agency is the organizational entity in charge of the field research site. Review accidents and have procedures in place to become aware of accidents affecting operations within your department. Ensure corrective actions are taken, if necessary, to prevent accident recurrence.
- 152** The Sponsoring Agency is responsible for the safety of the participant at the field research site.
- 153** A Field Site Supervisor (FSS) is any person who directs, guides, or mentors the participant at the field research site. The FSS is in charge of the field research site and is responsible for safety of participants, risk assessments, and hazard remediation at the site.
- 154** The participant is the UTRGV-associated person who conducts research at the field site. The participant gathers information about hazards, prepares hazard risk assessments, and submits a Field Research Plan to the UTRGV Department Head or their designated representatives. Report unsafe conditions to your safety officer, a faculty member, your

immediate supervisor, the departmental safety officer, or EHSRM (956-665-3690).

- 155** Environmental, Health, Safety & Risk Management (EHSRM) acts as a safety information resource and provides training and guidance to all parties at UTRGV. Implement University policies related to public, occupational, and environmental health and safety.

## **PART 2 – PLANNING FOR FIELD WORK**

### **2.1 INITIAL PREPARATIONS**

Planning and preparation for your trip is essential to a safe and successful venture for all participants. The responsible party or field site supervisor for a field operation or activity should consider these key steps of preparation in the early stages of planning the trip:

- 2.1.1** Develop your emergency response plan.
- 2.1.2** Take first aid training and procure a first aid kit.
- 2.1.3** Discuss security risks and personal safety.
- 2.1.4** Start to draft a UTRGV Field Research Plan .

Depending on the location of your activities and the tasks involved, there is a variety of additional preparations to consider and complete. Use the following lists as a starting point for this.

### **2.2 EMERGENCY RESPONSE PLANNING**

The Emergency Response Plan (ERP) is a document containing contact information and contingency plans to be used in emergencies. The plan remains with the participant at all times and it must be made available to the participant's UTRGV Department of Origin and the Sponsoring Agency at the field research site. The following items should be part of the ERP:

- 2.2.1** The name(s) of the participant(s) and emergency contact information
- 2.2.2** Contact information for local police, fire, and/emergency rescue services. If possible, the emergency services should be consulted to get their estimate on

- response times to the participant's field residence and the field research site
- 223** Location of the medical facility with route plans from field site(s) and domicile(s).
  - 224** Contact information for local people who can assist in an emergency.
  - 225** Contact information for the US Consulate (as needed)
  - 226** Contact information for International SOS (as needed)
  - 227** Identification of allergies and location of emergency medications such as auto-injectors.
  - 228** Contingency plans for location-specific hazards such as sudden inclement weather, political unrest, etc.
  - 229** Verification of communications/check-in times.
  - 2210** Special communication procedures in the event phone or internet are not functioning.

### **2.3 FIRST AID TRAINING/FIRST AID KIT/CPR**

The field research site may be some distance from adequate medical support facilities. Part of the safety considerations for the field site may be the need for a first aid training and a kit supplied with components sufficient to deal with the types of injuries that might occur at the field research site. The participant must consider the need for this and address it in the Field Safety Plan. There is no perfect first aid kit, but here are some guidelines to help assemble one for the site:

- 231** Have the first aid kit checked by a physician who is familiar with the hazards at the field research site.
- 232** All researchers at the site must be trained on how to use ALL components of the kit
- 233** Customize your kit for your destination, tasks, group size, and level of training.
- 234** Pack extra gloves.
- 235** Re-pack your first aid kit for each trip; replenish used or expired items.
- 236** Check for expiration dates on medications and sterile items; replace items that may have been torn open or damaged.

If an injured person is not breathing, then they will need Cardiopulmonary Resuscitation (CPR). Classes for CPR are offered by EHSRM and elsewhere on campus, but may

require scheduling weeks in advance. The participant should include CPR training in the planning phase if such training is necessary.

## **2.4 FIELD RESEARCH PLAN**

### **241 Prepare UTRGV Field Research Plan (Appendix A).**

The UTRGV Field Research Plan summarizes important information about the field work. This includes team leader designation, itinerary, emergency, and local contact information, a check-in schedule, and a description of the field work and anticipated hazards associated with it. This form must be completed and supplied to all team members and the Principal Investigator. In addition the plan must be submitted to the Department Chair or their designee. Someone outside the field team should be selected to be responsible for monitoring the check-ins and responding appropriately should communications fail. Scientific Divers should file a float plan with the Scientific Diving Office. Boaters should also file a Float Plan with the responsible departmental party. (Appendix B)

### **242 Assemble Safety Provisions**

Depending on the type of work being done, these may include steel-toed or snake-proof boots, hard hats and gloves, vehicle emergency kits, sunscreen, sunglasses, water, insect repellent, flashlights, and batteries. All fieldwork provisions should include a first aid kit containing appropriate medicines such as allergy or seasickness tablets. Consider any special medical needs of team members. All fieldwork should be conducted with at least two people. Appropriate thought should be given to the type of communication equipment (cell phone, radio, satellite phone) that will be most reliable where the fieldwork is to be conducted.

### **243 Obtain Training**

The team leader should have up to date CPR and First Aid certification or make sure that someone on the team does. For Scientific Diving, the UTRGV Diving Safety Office requires Scientific Diving Certification. Individuals required to operate a small boat for research must also complete vessel training with the Boating Safety Office. Field Group members must complete UTRGV EHSRM Pre-Trip Training.

### **244 Obtain Standard Procedures**

Obtain or write standard operating procedures for specific field activities. These protocols describe the work being done, the equipment needed, and safety precautions

## **245 Verify Insurance Coverage is Adequate**

The State of Texas provides basic insurance coverage for University-owned buildings and building contents for specific causes of loss, as well as liability coverage for UTRGV faculty, staff, and official volunteers for their actions within the course and scope of their jobs. However, the University does not automatically extend coverage for scientific equipment, electronics, or other property brought into the field, including vehicles. Therefore, equipment that is damaged in the course of field work will likely not be covered by insurance. For more information regarding insurance coverage options for scientific or other equipment, or for other questions regarding insurance or liability, please contact Environmental, Health, Safety, and Risk Management at (956) 665-3690.

## **2.5 OBTAIN PERMITS, LICENSES, AND REGISTRATIONS AS NEEDED, INCLUDING UTRGV APPROVALS AND LOCAL PERMITS**

### **251 [UTRGV Student International Travel](#)**

### **252 UTRGV Research Integrity and Compliance (RIC)**

- 2.5.2.1** The Institutional Animal Care and Use Committee (IACUC) must approve use of vertebrate animals in experiments.
- 2.5.2.2** The Institutional Biosafety Committee (IBC) must approve any work involving recombinant DNA (rDNA), infectious agents, select agents, and/or biological toxins.
- 2.5.2.3** The Institutional Review Board (IRB) must approve studies involving the participation of human beings.
- 2.5.2.4** The Diving Safety Office oversees scientific diving for all disciplines on all campuses.
- 2.5.2.5** The Boating Safety Program oversees the operation of small vessels used for research, regardless of ownership. Operators must take a required UTRGV Boating Safety Course.
- 2.5.2.6** The Radiation Safety Office must approve of research activities using radioactive materials, X-rays, or lasers.

### **253 The Texas Fish and Wildlife Conservation Commission requires permits to do research involving wildlife.**



## **254 Department of Transportation**

**2.5.4.1** The transportation of hazardous materials by road in the United States is regulated under this federal agency. DOT regulations do not apply to transportation of hazardous materials in personal vehicles, but this practice is not recommended. Insurance companies may not cover claims involving the transportation of hazardous materials.

## **255 Verify Vaccinations**

**2.5.5.1** Tetanus immunizations should be current. The UTRGV Student Health Services offers travel counseling. The Centers for Disease Control and Prevention website provides .

## **PART 3 – HAZARD INFORMATION**

### **3.1 UNDERWATER DIVING**

**3.1.1** Underwater diving is a high-risk activity which requires mandatory certification. Participants must have a current physical fitness evaluation and complete a safety diving course offered by an appropriately certified professional--the Diving Safety Officer or (DSO).

### **3.2 BOATING**

**3.2.1** Participants operating a motorized boat must complete a UTS 157 Motor Vehicle Training. Non-motorized boats (kayaks, canoes, rowboats, sailboats, etc) do not require UTS 157 Motor Vehicle Training., but the participant should complete a safety course in practical boating skills offering instruction in the following skills:

**3.2.1.1** Familiarity with boating terminology and types of boats

**3.2.1.2** Basic boat inspections

**3.2.1.3** Paddling Techniques

**3.2.1.4** Weight distribution in a small boat

**3.2.1.5** Safety equipment such as personal floatation devices (PFD)

**3.2.1.6** Emergency procedures

**3.2.1.7** Weather and water conditions for safe boating

**3.2.1.8** Knots, lashings, and tiedowns

**3.2.1.9** Basic/survival swimming instructions

**3.2.2** Float plan - A float plan must be completed for each boating trip. (Appendix B)

**3.2.2.1** Inspect vehicle to see if it is in safe operating condition and pack appropriate emergency supplies (Appendix C). Become familiar with the vehicle/vessel's operation and local laws. Be alert to hazards such as fatigue, animals, logs, rocks, and barbed wire. Do not drive a vehicle into water of unknown depth. Anyone operating a boat under the auspices of UTRGV is required to complete a Boating Safety Course.

### **3.3 CLINICAL WORK OR HANDLING BIOLOGICAL SPECIMENS**

**3.3.1** Any clinical work or research involving human body fluid or tissue samples carries with it the risk of infection from bloodborne pathogens and other agents. Participants who expect to work in a clinic, or in a laboratory where unfixed human body fluids and tissues are analyzed, must protect themselves with a combination of engineering controls, training, work practices, PPE, medical examinations, vaccinations, and post-exposure prophylaxis which may vary considerably depending on the nature of the hazards. UTRGV EHSRM Biosafety should be contacted to assist the participant with hazard and risk assessments and to select appropriate control measures for any of the following:

**3.3.1.1** Tuberculosis and tuberculosis awareness training.

**3.3.1.2** Any research involving recombinant DNA (rDNA) viruses or viral components.

**3.3.1.3** Known human pathogens.

**3.3.1.4** Known animal pathogens.

**3.3.1.5** Biological toxins.

**3.3.2** Common biological hazards include insects, snakes, bears, alligators, poison ivy, oak, or sumac, red tide, jellies, and sharks. Become familiar with the types of wildlife that may be encountered and learn how to avoid attacks and treat stings and bites. Wear protective clothing. Shake clothing and bedding before use and don't set up near nests or burrows. Wildlife may transmit diseases like rabies, Lyme disease, tetanus, West Nile virus, and St. Louis encephalitis. Microorganisms in water cause giardiasis and other ailments. Carry drinking water, use purification tablets, or bring water to a rolling boiling for at least one

minute before consuming.

### **3.4 HANDLING HAZARDOUS MATERIALS, CHEMICAL, RADIOLOGICAL**

**3.4.1** Participants who expect to conduct field research using hazardous materials, hazardous chemical reagents, or radioactive isotopes must contact UTRGV EHSRM Chemical Safety Office or UTRGV EHSRM Radiation Safety Office for guidance and training. The safe use of such materials requires the proper combination of engineering controls, training, administrative controls, and PPE. Proper storage, use, and disposal of hazardous chemicals and radiological agents is governed by numerous US regulatory entities.

**3.4.1.1** Flammable chemicals

**3.4.1.2** Corrosive chemicals

**3.4.1.3** Toxic chemicals

**3.4.1.4** Strong oxidizers

**3.4.1.5** Explosive, pyrophoric, or water reactive chemicals

**3.4.1.6** Radiological isotopes of any type

### **3.5 PHYSICAL HAZARDS**

**3.5.1** Check the weather forecast. Be mindful of the danger of sun exposure by using sunscreen and protective clothing and working in the morning and evening. Excessive heat can bring about heat exhaustion and heat stroke. Drink plenty of cool liquids and avoid strenuous activity during hot weather. Take shelter inside a building or vehicle during a thunderstorm. If caught away from shelter, get away from tall objects and crouch on the ground to make yourself as small as possible. Lightning may start wildfires. Find out if the field work area is prone to flooding. It is not safe to be on the water in a thunderstorm. Return to shore if possible. If not, shelter in the cabin or keep low in an open boat.

### **3.6 PERSONAL SAFETY**

**3.6.1** Research can place workers in vulnerable situations. They may face the risk of

violence from strangers or psychological stress from the working environment. Complete a risk assessment identifying risks associated with travel, location, and study subjects, and consider controls, such as training and emergency communication, for each risk. Work with a partner, do not give out personal information, and consider scheduling interviews in a neutral location. When travelling abroad, dress and act in alignment with local laws and customs. Visit [www.travel.state.gov](http://www.travel.state.gov) for more information and to sign up for STEP, a free traveler alert program. UTRGV Education Abroad provides risk and safety resources for international work.

### **3.7 ACCIDENT, INCIDENT, and NEAR-MISS REPORTING**

**3.7.1** An incident is any event that has a impact on safety. An accident is an incident where there is injury or property damage. A near-miss is an incident where injury or property damage was narrowly averted. All incidents should be recorded. Ideally, the Department of Origin and the Sponsoring Agency should agree on a report format that satisfies both their needs. Comments should be solicited from participants, supervisors, and other staff, ideally in an after-action review (AAR) setting, addressing the following concerns;

**3.7.1.1** How and why the incident occurred.

**3.7.1.2** How the incident have been prevented.

**3.7.1.3** What was done during and after the incident.

**3.7.1.4** What worked well and what went wrong.

**3.7.1.5** Review and/or modification of the ERP or other plans.

**3.7.2** The responsible person for completing the report should be put in writing beforehand. For example, incidents at the field research site are the responsibility of the FSS, but incidents occurring at the participants living quarters are the responsibility of the Sponsoring Agency administrator.

### **3.8 AFTER ACTION REVIEW**

**3.8.1** The FSS should allot time at the end of the day for a brief after action review (AAR)

of the day's events. All participants must be present. The AAR consists of a review of the timeline of events, what went right, what went wrong, and corrective actions to be taken in the future. The safety watch can help facilitate the AAR by keeping a running log of all unsafe acts observed during the day, but all group members must be encouraged to take part in the discussion.

**For questions related to this document please call:**

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## Appendix B: Float Plan

All boat operators must complete a UTRGV Boating Safety Course.

<http://www.floatplancentral.org/download/USCGFloatPlan.pdf>

Below is not the actual Float Plan from the link above. The link above is a more thorough float plan.

Radio(s) <input type="checkbox"/> YES <input type="checkbox"/> NO		
Frequency:		Call Sign:
<b>VESSEL AND VEHICLE REGISTRATION</b>		
Vessel Registration Document		Name of Vessel
Make	Model	Length
Vehicle Make	Vehicle Model	Tag Number
<b>TRIP EXPECTATIONS</b>		
Leaving From		Date & Time
Boat Ramp		Latitude & Longitude
Destination		
Returning to		Date & Time
<b>PERSONS ON BOARD</b>		
Person Filing this Plan	Phone Number	Emergency Contact Number
<b>FIELD TEAM MEMBERS CONTACT INFORMATION</b>		
Name	Phone Number	Emergency Contact Number

## Appendix C: Vehicle Checklist

### VISIBILITY

- Lights (headlights, tail lights, brake lights, turn signal lights, hazard lights)
- Windshield (Cracks, wipers)
- Mirrors (Side and rearview)
- Window defroster
- Horn

### MECHANICAL

- Fluid levels (brake, steering, oil, water, windshield)
- Fuel
- Brakes (also parking brake)
- Seatbelts
- Running boards, steps
- Tire air pressure
- Review maintenance records

### EMERGENCY

- Spare tire, jack and lug wrench
- Air compressor
- Foam tire sealant, tire repair kit
- Cell phone
- First aid kit
- Fire extinguisher (charged and inspected)
- Warning light, hazard triangle, flares
- Jumper cables or jumper battery pack
- Flashlight
- Roadside-assistance number
- Pen and paper
- Water and nonperishable food
- Sleeping bags/blanket
- Basic tools (socket set, pliers, screwdrivers)
- Shovel and axe

### MISCELLANEOUS

- Money for tolls