

Field Safety Plan

Sevilleta Long-Term Ecological Research Program

Revised July 2025



Before You Go	2
Plan Your Visit	2
Prepare Your Gear	2
Prepare Your Crew	2
Project-Specific Plan	3
Overview	3
Equipment and Activities	4
Roster and Acknowledgement	5
Site-Specific Details	6
NWR Grasslands and Shrublands (Black, Blue, Creosote)	6
NWR Woodlands (PJ, JSav)	10
UNM Field Station	13
NWR Westside Met Stations	15
NWR South Gate Met Station	18
Sites Outside the Refuge	22
Flux Jsav	22
Appendix	25
I. Planning for Hazards	25

Before You Go

Plan Your Visit

- ☐ **Review the refuge regulations given to you with your permit.**
- ☐ Be prepared to navigate to your site. Visitors are not allowed to stop outside of their permitted area.
 - ☐ Prepare a paper map or downloaded digital map, for if you lose service.
 - ☐ Determine alternative routes to and from the site in case of emergency.
- ☐ Be aware of the fuel level of your vehicle and the air pressure of the tires. The nearest gas and air is about 30 miles from the Luna gate.
- ☐ Complete a Project-Specific Safety Plan (on the next page)

Prepare Your Gear

- ☐ Bring at least a gallon of water per day per participant. There is no potable water available on the refuge, except at the field station.
- ☐ Ensure enough food for each participant. No food is available on or near the refuge.
- ☐ Field clothing should protect against sun, wildlife, and terrain:
 - ☐ For sun: shade hat, sunglasses, light long-sleeve shirt, long pants
 - ☐ For animals and spiny plants: long pants and high-ankle thick-soled boots or shoes, optional snake gaiters and/or work gloves
- ☐ First aid kits should include, at the minimum:
 - ☐ Mechanisms for cleaning minor wounds (water irrigator or antiseptic wipes, ointment)
 - ☐ Materials for covering wounds (gauze, band-aids)
 - ☐ Materials for stabilizing breaks or sprains (tape, bandages, ideally a sam splint)
- ☐ PPE such as gloves, safety goggles, and dust masks must be provided when using certain protocols and/or tools. Consider the necessary PPE for your activity.

Prepare Your Crew

- ☐ Brief your crew on your Project-Specific Plan and have all participants sign the roster.
- ☐ Ensure all participants are aware of the procedures for responding to an emergency.
- ☐ Share your plans with at least one person outside of the research group, who can check in at a specified time at the end of the day to see if the group has returned safely.
- ☐ Inform all participants of the signs of heat stroke, as well as your group's heat plan. This may include providing shade or vehicle access.
- ☐ You may choose to create a list of participants' allergies and medications.

Project-Specific Plan

Overview

Field Team	Is anyone working alone? ☐ Yes ☐ No If yes, develop a communications plan with strict check-in procedures; if cell coverage is unreliable, carry a satellite communication device or personal locator beacon. Primary Field Team Leader: Name, phone number Secondary Field Team Leader: Name, phone number ☐ Field Team/Participant list is attached as training documentation ☐ Other attachment: e.g. course roster
Physical Demands	<i>List any physical demands required for this trip and training/certification provided. e.g. hiking, climbing, high altitudes, respirators, heights, confined, restricted spaces, etc.</i>
Mental Demands	<i>List any unique mental demands required for this trip, e.g. long travel days, high stress environments, different cultural norms, etc</i>
First Aid Training and Supplies	<i>Requires at least one trained person (with current certification) for work at remote sites. CPR is also recommended. List team members trained in first aid and the type of training received</i> <i>Location and description of group medical/first aid kit: Who is carrying it, where is it stored. Brief description of contents.</i> ☐ Field Team/Participant list is attached as training documentation

Equipment and Activities

Research Activities	<i>Briefly describe the goal of your field operations, e.g. collection of samples, observation of animals/environment, interviews with human subjects, etc</i>
Site Coordinates	<i>Provide precise coordinates of the sites that will be visited.</i>
Field Transportation	<i>What vehicles will be used during field operations? e.g. car, ATV, truck with trailer, etc. Include all.</i>
Research Tools	<i>Briefly describe tools or equipment that will be used to access the research site or during research activities. Indicate specific training required before use, e.g. sharps (knives, razors, needles), hand tools, chainsaws, power tools, heavy machinery, tractors, specialty equipment, firearms; lasers, portable welding/soldering devices; other hazardous equipment or tools.</i>
Chemicals and Hazardous Materials	<i>Identify chemicals/hazardous materials that will be used during research activities. Indicate specific training required before use and identify hazards, e.g. flammables, corrosives, etc. Ensure chemicals are properly labeled (name & hazards, minimum, stored within secondary containment during transport and a spill kit is available. Attach all associated SOPs and SDSs.</i>
Other Research Hazards	<i>Describe other potential research-associated hazards e.g. handling or shipping hazardous materials (chemical, biological, radiation, and explosives), handling animals, climbing or working at heights, rigging; shoring/trenching, digging/entering excavations, caves, other confined spaces; drone use.</i>
Personal Protective Equipment	<i>Required—e.g. boots, safety glasses, PFDs, hardhats, etc.</i> <i>Recommended – e.g. walking sticks, gloves, long pants, hats, insect repellent, sunscreen</i>

Roster and Acknowledgement

By signing below I verify that I have read this Field Safety Plan, understand its contents, and agree to comply with its requirements.

Name	Phone Number	Signature and Date	Emergency Contact Number

Signature of PI or Supervisor

I acknowledge this Field Safety Plan has been prepared for field work under my supervision.

Name	Phone Number	Signature and Date

Site-Specific Details

NWR Grasslands and Shrublands (Black, Blue, Creosote)

Sites on the Sevilleta National Wildlife Refuge ranging from the foothills of Los Pinos mountains to the Rio Grande floodplain, south of NM highway 60 East of I-25 at mile marker 174.

Elevation: 5,000 - 6,000ft

Emergency Services and Contact Information	
Emergency Medical Services (EMS)	If EMS is needed, call 911 or send an SOS using the InReach. The dispatcher may choose for EMS to meet you at the northernmost gate to the Sevilleta grasslands (Hwy 60 east, mile marker 174). If the injured party cannot be moved, give the latitude and longitude of the site from the following table, as well as detailed driving instructions and the gate code. Report the injury to the Program Manager as soon as possible.
Nearest Hospital	If the injury is serious but not life-threatening, transport the injured party to UNM Hospital (2211 Lomas Blvd NE, Albuquerque, NM 87106) , approximately 60 minutes drive-time from the gate. From the northern gate of the Sevilleta, head west on Hwy 60, then north on i-25. Turn off i-25 onto Lomas Blvd, and the hospital will be approximately a mile down the road on your left. Inform the hospital staff if the injured person is a UNM employee, and report the injury to the Program Manager as soon as possible.
Local Contact	Kim Royle, Field Station Program Manager, 505-627-2753 Arturo Benavidez, Field Station Facilities Manager, 575-518-8811
FWS Contacts	(Emergency Only) Jeff Sanchez, Refuge Manager, 505-350-7159 Daniel Boykin, Refuge Law Enforcement Officer, 575-246-8270
University Contacts	April Bermudez, Program Manager, 909-470-1031 Jennifer (Jenn) Rudgers, Program Director, 845-705-0363 UNM Automotive, 505-659-2336
Cell Coverage	Good at most northern sites, spotty at southern sites • JSAV - Walk about 200ft west of where the trucks get parked (away from MVE) • PJ - Walk up the hill east of MVE
Nearby Facilities	Nearest gas stations: - UNM field station (UNM employees only), 27 miles from gate - Veguita Trading Post (1249 NM-304, Veguita, NM 87062), 11 miles from gate Nearest water: - UNM field station

Site Information	
Site Access	Sites may be accessed through the northern gate off Hwy 60, on Luna Rd just past mile marker 174. The gate code is 4486. The road passes through private land before continuing to a second gate. Grassland sites are located near maintained roads and are generally accessible by passenger vehicle, although caution should be taken on the southern route between the Five Points area and sites in the foothills of Los Pinos. As with all roads on the refuge, the speed limit is 25 mph.
No-Go Criteria	- Road closures - Visible smoke or fire on or near refuge - Heavy rain during field work or in 12 hours prior (road must be dry enough that vehicles will not leave ruts) - Snow deep enough to not melt by mid-morning - Forecasted wind gusts over 35mph - Heat precautions must be taken in temperatures over 95°F (35°C)
Environmental Hazards	This list is not comprehensive. Please see “Preparing for Hazards” for information on precautions that should be taken against specific hazards, and appropriate responses to injury. - Extreme heat up to 110°F (43°C) - Intense sun exposure - Venomous snakes - Venomous arthropods - Poisonous and spiny plants - Uneven terrain - Flash floods - Unmarked obstacles - Lightning - Wildlife - Wildfire
Expected Weather	- Heat and sun - Sudden intense rain (usually in the afternoon or later day, but can happen any time) - Hail (not necessarily accompanied by rain) - Lightning (not necessarily accompanied by rain)
Drinking Water Availability	None. Water must be supplied by the research team. Nearest water available is at the UNM Field Station. ☐ Water cooler with ice provided ☐ Bottled water provided
Access to Shade/Shelter	No natural shade available. If the forecast exceeds 80°F, shade must be provided by natural or artificial means for rest breaks. ☐ Building/Structure ☐ Trees ☐ Temporary Canopy/Umbrella ☐ Vehicle with A/C ☐ Other _____
High Heat	Required when temperatures are expected to exceed 95°F: If possible, limit

Procedures	strenuous tasks to morning or late afternoon hours. Rest breaks in shade must be provided at least 10 minutes every 2 hours (or more if needed). Effective means of communication, observation and monitoring for signs of heat illness are required at all times. Pre-work safety discussion required. ☐ Direct supervision ☐ Buddy system ☐ Reliable cell or radio contact ☐ Other: _____
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Site Locations

Area Name	Centroid Lat/Long	Directions from Luna Gate
Nunn Flats (Dust Study, Met 51)	34.361340, -106.631676	Heading south, take the second left (at the water tanks). Several sites are located on the south side of this road. Met 51 is located north on a secondary road, just before the main road turns south.
Blue Grama (Core E, EDGE, MVE, New Flux, Met 50)	34.343696, -106.621844	Heading south, take the second left (at the water tanks). Follow the road to where it approaches Los Pinos and turns south. At the curve a secondary road turns right, toward the new flux tower. The main road continues to the other sites.
Mixed Shrub (Mixed Shrub, ISO Webs, Met 52)	34.311288, -106.694997	Heading south, follow the main road straight down past the shrubland transition zone. Turn left at the first intersection and follow the road to where it dips lower and shrubs other than creosote begin to appear. These sites can also be reached from the blue grama sites by following the road south and taking a right at each juncture.
Black Grama (Core G, EDGE, MVE, MRME, Met 49)	34.339606, -106.727885	Heading south, follow the main road straight down past the shrubland transition zone. Turn right at the first intersection. Black grama core will be to the right off of this road. The first road on the right leads to the experiments and met station.
Creosote Shrubland (Core, MVE, Flux)	34.337473, -106.738779	Heading south, follow the main road straight down past the shrubland transition zone. Turn right at the first intersection. To get to the core site, turn left at the first road and follow to a parking area on the left. MVE and flux are further down the main shrubland road, marked by a parking area on the left.
“Five Points” Creosote (Miller Creosote Transects)	34.322248, -106.702533	Heading south, follow the main road straight down past the shrubland transition zone. The juncture of several roads marks the five points area.

Ecotone (Line Intercept, Chung Seedlings)	34.336148, -106.701539	Heading south, follow the main road straight down. Sites are at the grassland-shrubland transition.
Deep Well (WENNDEx, Flux, Met 40)	34.359661, -106.690538	Heading south, follow the main road straight down. The trail to the sites is marked by a parking area on the right.
Black Butte (NFert)	34.405071, -106.678548	Sites are in the immediate area of the second gate.

NWR Woodlands (PJ, JSav)

Sites on the Sevilleta National Wildlife Refuge in Los Pinos mountains, south of NM highway 60 East, east of NM hwy 47 junction. Elevation: 5,600 - 7,100 ft

Emergency Services and Contact Information	
Emergency Medical Services (EMS)	If EMS is needed, call 911 or send an SOS using the InReach. The dispatcher may choose for EMS to meet you at the northernmost gate to Los Pinos (Hwy 60 east, mile marker 184, just east of the junction with Hwy 47). If the injured party cannot be moved, give the latitude and longitude of the site from the following table, as well as detailed driving instructions and the gate code. Report the injury to the Program Manager as soon as possible.
Nearest Hospital	If the injury is serious but not life-threatening, transport the injured party to UNM Hospital (2211 Lomas Blvd NE, Albuquerque, NM 87106) , approximately 75 minutes drive-time from the gate. From the northern gate of the Sevilleta, head west on Hwy 60, then north on i-25. Turn off i-25 onto Lomas Blvd, and the hospital will be approximately a mile down the road on your left. Inform the hospital staff if the injured person is a UNM employee, and report the injury to the Program Manager as soon as possible.
Local Contact	Kim Royle, Field Station Program Manager, 505-627-2753 Arturo Benavidez, Field Station Facilities Director, 575-518-8811
FWS Contact	(Emergency Only) Jeff Sanchez, Refuge Manager, 505-350-7159 Daniel Boykin, Refuge Law Enforcement Officer, 575-246-8270
University Contacts	April Bermudez, Program Manager, 909-470-1031 Jennifer (Jenn) Rudgers, Program Director, 845-705-0363 UNM Automotive, 505-659-2336
Cell Coverage	Spotty at all sites, no coverage at some sites
Nearby Facilities	Nearest gas stations: - UNM field station (UNM employees only), 37 miles from gate - Veguita Trading Post (1249 NM-304, Veguita, NM 87062), 21 miles from gate Nearest water: - UNM field station
Site Information	
Site Access	Sites may be accessed through the gate off Hwy 60, beyond the junction with Hwy 47, just past a house with a flag pole near mile marker 187. The gate code is 4486. Sites in Los Pinos are generally located near a road, but the roads may be in variable condition, with rills and gullies across the road

	in some places. Passenger cars should not be used in this area, but trucks and vehicles with high clearance and four-wheel drive will pass easily. The main road follows an arroyo, which will be sandy in all seasons and soft/wet during rain – be prepared to use four-wheel drive if needed. As with all roads on the refuge, the speed limit is 25 mph.
No-Go Criteria	- Road closures - Visible smoke or fire on or near refuge - Any rain during field work or in 12 hours prior (road must be dry enough that vehicles will not leave ruts) - Snow deep enough to not melt by mid-morning - Forecasted wind gusts over 35mph - Heat precautions must be taken in temperatures over 95°F (35°C)
Environmental Hazards	This list is not comprehensive. Please see “Preparing for Hazards” for information on precautions that should be taken against specific hazards, and appropriate responses to injury. - Altitude (can cause sickness if unacclimated) - Extreme heat up to 110°F (43°C) - Intense sun exposure - Venomous snakes - Venomous arthropods - Poisonous and spiny plants - Uneven terrain - Flash floods - Unmarked obstacles - Lightning - Wildlife including bears - Wildfire
Expected Weather	- Heat and sun - Sudden intense rain (usually in the afternoon or later day, but can happen any time) - Hail (not necessarily accompanied by rain) - Lightning (not necessarily accompanied by rain)
Drinking Water Availability	None. Water must be supplied by the research team. Nearest water available is at the UNM Field Station. ☐ Water cooler with ice provided ☐ Bottled water provided
Access to Shade/Shelter	Natural shade is available by tree cover in most areas. If the forecast exceeds 80°F, shade must be provided by natural or artificial means for rest breaks. ☐ Building/Structure ☐ Trees ☐ Temporary Canopy/Tarp ☐ Vehicle with A/C ☐ Other _____
High Heat Procedures	Required when temperatures are expected to exceed 95°F: If possible, limit strenuous tasks to morning or late afternoon hours. Rest breaks in shade must be provided at least 10 minutes every 2 hours (or more if needed).

	Effective means of communication, observation and monitoring for signs of heat illness are required at all times. Pre-work safety discussion required. ☐ Direct supervision ☐ Buddy system ☐ Reliable cell or radio contact ☐ Other: _____
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Site Locations

Site Name	Centroid Lat/Long	Directions from Los Pinos Gate
Goat Draw (Stomp, Mast Study, Met 48)	34.415022, -106.523860	Heading south, the sites are within a mile of the gate along the main road.
PJ MVE	34.387706, -106.523840	Heading south, the site is on the left approximately 2 miles down the main road. Alternatively, this site can be reached by entering from the BLM gate east of our Los Pinos gate (see map).
Cerro Montoso (Mast, Pockman Drought, Met 42)	34.368600, -106.537000	Heading south, the site is on the right, a little over 3 miles down the main road. The sites are up a trail marked with a sign for the met station.
JSav (MVE, phenology)	34.322367, -106.560973	Heading south, pass temporarily through private land. After the second gate, the site is on your left, approximately 6 miles south of hwy 60. Alternatively, this site can be reached from the grasslands (see map).

UNM Field Station

At or near the UNM Field Station facilities, 6 miles south of Hwy 60 on i-25.

Elevation: 4,800 - 5,000 ft

Emergency Services and Contact Information	
Emergency Medical Services (EMS)	If EMS is needed, call 911 and tell the dispatcher your location. Meet them at the field station gate if it is past working hours. Report the injury to the Program Manager as soon as possible.
Nearest Hospital	If the injury is serious but not life-threatening, transport the injured party to Socorro General Hospital (1202 Highway 60 West, Socorro, NM 87801) , approximately 25 minutes drive-time. Head south on i-25, and take the first exit for Socorro (California St.). Follow this street south through town, then take a right onto Spring St. Follow Spring St to where it curves and becomes Hwy 60 West. The hospital is on your left. Report the injury to your immediate supervisor and the Program Manager as soon as possible. Socorro general does not carry snake antivenom. In case of snake bite, go to UNM Hospital.
Local Contact	Kim Royle, Field Station Program Manager, 505-627-2753 Arturo Benavidez, Field Station Facilities Director, 575-518-8811
FWS Contact	(Emergency Only) Jeff Sanchez, Refuge Manager, 505-350-7159 Daniel Boykin, Refuge Law Enforcement Officer, 575-246-8270
University Contacts	April Bermudez, Program Manager, 909-470-1031 Jennifer (Jenn) Rudgers, Program Director, 845-705-0363 UNM Automotive, 505-659-2336
Cell Coverage	Good in most places, wifi calling available
Nearby Facilities	Nearest gas stations: - UNM field station (UNM employees only) - Phillips 66 (1304 S Main St, Belen, NM 87002), 31 miles
Site Information	
Site Access	The field station is accessed via a paved/gravel road accessible by any vehicle. From i-25, take the exit for Sevilleta Wildlife Refuge and turn west after the off ramp. The gate is closed after hours – ask the Field Station Manager for the code.
No-Go Criteria	- Closures specified by Field Station Manager
Environmental Hazards	This list is not comprehensive. Please see “Preparing for Hazards” for information on precautions that should be taken against specific hazards, and appropriate responses to injury.

	- Extreme heat up to 110°F (43°C) - Intense sun exposure - Venomous snakes - Venomous arthropods - Poisonous and spiny plants - Uneven terrain - Flash floods - Unmarked obstacles - Lightning - Wildlife including bears - Wildfire
Expected Weather	- Heat and sun - Sudden intense rain (usually in the afternoon or later day, but can happen any time) - Hail (not necessarily accompanied by rain) - Lightning (not necessarily accompanied by rain)
Drinking Water Availability	Filtered plumbed water is available, although it is somewhat salty in taste.
Access to Shade/Shelter	Buildings and vehicles with A/C can provide shelter, as well as trees and shrubs.
High Heat Procedures	Required when temperatures are expected to exceed 95°F: If possible, limit strenuous tasks to morning or late afternoon hours. Rest breaks in shade must be provided at least 10 minutes every 2 hours (or more if needed). Effective means of communication, observation and monitoring for signs of heat illness are required at all times. Pre-work safety discussion required. ☐ Direct supervision ☐ Buddy system ☐ Reliable cell or radio contact ☐ Other: _____

Coordinates

Site Name	Centroid Lat/Long	Directions
Field Station	34.351788, -106.883227	Follow signage for Sevilleta National Wildlife Refuge from I-25. Field station is behind a gate on the west side of the highway.

NWR Westside Met Stations

Extremely remote sites on the Sevilleta National Wildlife Refuge located from the foothills of Ladron peak, down to the Rio Grande floodplain West of I-25. Elevation: 4,800 - 5,600

Emergency Services and Contact Information	
Emergency Medical Services (EMS)	If EMS is needed, call 911 or send an SOS using the InReach. The dispatcher may choose for EMS to meet you at the nearest gate. If the injured party cannot be moved, give the latitude and longitude of the site from the following table, as well as detailed driving instructions and the gate code. Report the injury to the Program Manager as soon as possible.
Nearest Hospital	If the injury is serious but not life-threatening, transport the injured party to UNM Hospital (2211 Lomas Blvd NE, Albuquerque, NM 87106) , approximately 45 minutes drive-time from the i-25/ Hwy 60 juncture, or Socorro General Hospital (1202 Highway 60 West, Socorro, NM 87801) , 20 minutes from San Acacia exit. For UNMH: head north on i-25. Turn off i-25 onto Lomas Blvd, and the hospital will be approximately a mile down the road on your left. Inform the hospital staff if the injured person is a UNM employee, and report the injury to the Program Manager as soon as possible. For Socorro general: head south on i-25. Take the first exit for Socorro (California St), and follow this street through town. Take a right on Spring St, and follow Spring St. as it turns into Hwy 60 West. The hospital is on your left. Socorro general does not carry antivenom. If bitten by a snake go to UNMH.
Local Contact	Daniel Boykin, Refuge Law Enforcement Officer, 575-246-8270
FWS Contact	(Emergency Only) Jeff Sanchez, Refuge Manager, 505-350-7159
University Contacts	April Bermudez, Program Manager, 909-470-1031 Jennifer (Jenn) Rudgers, Program Director, 845-705-0363 Tim L'Esperance, UNM Automotive, 505-659-2336
Cell Coverage	Very little coverage
Nearby Facilities	Nearest gas stations: - UNM field station (UNM employees only), 37 miles from gate - Veguita Trading Post (1249 NM-304, Veguita, NM 87062), 21 miles from gate Nearest water: - UNM field station
Site Information	
Site Access	As with all roads on the refuge, the speed limit is 25 mph, although the roads on the west side of the refuge are in major disrepair and should be

	driven very carefully. The roads are impassable to a passenger vehicle, and pass over rills, gullies, and deep sand.
No-Go Criteria	- Road closures - Visible smoke or fire on or near refuge - Any rain during field work or in 12 hours prior (road must be dry enough that vehicles will not leave ruts) - Snow deep enough to not melt by mid-morning - Forecasted wind gusts over 35mph - Heat precautions must be taken in temperatures over 95°F (35°C)
Environmental Hazards	This list is not comprehensive. Please see “Preparing for Hazards” for information on precautions that should be taken against specific hazards, and appropriate responses to injury. - Altitude (can cause sickness if unacclimated) - Extreme heat up to 110°F (43°C) - Intense sun exposure - Venomous snakes - Venomous arthropods - Poisonous and spiny plants - Uneven terrain - Flash floods - Unmarked obstacles - Lightning - Wildlife including bears - Wildfire
Expected Weather	- Heat and sun - Sudden intense rain (usually in the afternoon or later day, but can happen any time) - Hail (not necessarily accompanied by rain) - Lightning (not necessarily accompanied by rain)
Drinking Water Availability	None. Water must be supplied by the research team. Nearest water available is at the UNM Field Station. ☐ Water cooler with ice provided ☐ Bottled water provided
Access to Shade/Shelter	Natural shade is available by tree cover in most areas. If the forecast exceeds 80°F, shade must be provided by natural or artificial means for rest breaks. ☐ Building/Structure ☐ Trees ☐ Temporary Canopy/Tarp ☐ Vehicle with A/C ☐ Other _____
High Heat Procedures	Required when temperatures are expected to exceed 95°F: If possible, limit strenuous tasks to morning or late afternoon hours. Rest breaks in shade must be provided at least 10 minutes every 2 hours (or more if needed). Effective means of communication, observation and monitoring for signs of heat illness are required at all times. Pre-work safety discussion required. ☐ Direct supervision ☐ Buddy system ☐ Reliable cell or radio contact ☐

	Other: _____
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Site Locations

Site Name	Lat/Long	Directions from I-25
Bronco Well (Met 45)	34.405640, -106.934048	Heading south, take the exit for hwy 60 east toward Bernardo (as if heading toward the east-side). On the curve of the off ramp, take a left onto the road with the stop sign, toward the RV park. Follow this road past the bridge to where it makes a T at the refuge gate. Stay under the power lines, passing Popotosa Rd on the left, until you come to another power line perpendicular to the road. Just past the second power line, there is a spur road to the left. Follow this to where it loops around. The met station is a short walk south of the spur, within view of the parking spot.
Rio Salado (Met 44)	34.295965, -106.926673	Heading south past the field station and the Walking Sands rest area, take the exit for San Acacia / Alamillo. Head right from the off ramp, and take your first right onto the frontage road parallel to the interstate. This dead ends at the refuge gate. Past the gate, take the first left off the pavement onto Esquivel road, and follow the road to a power line running perpendicular. The met station is ahead of the parking area, beyond the sign post just past the power line.

NWR South Gate Met Station

Extremely remote sites on the Sevilleta National Wildlife Refuge located in the canyonlands south of the grassland/shrubland sites. Elevation: 4,800 - 5,600

Emergency Services and Contact Information	
Emergency Medical Services (EMS)	If EMS is needed, call 911 or send an SOS using the InReach. The dispatcher may choose for EMS to meet you at the nearest gate. If the injured party cannot be moved, give the latitude and longitude of the site from the following table, as well as detailed driving instructions and the gate code. Report the injury to the Program Manager as soon as possible.
Nearest Hospital	If the injury is serious but not life-threatening, transport the injured party to UNM Hospital (2211 Lomas Blvd NE, Albuquerque, NM 87106) , approximately 45 minutes drive-time from the i-25/ Hwy 60 juncture, or Socorro General Hospital (1202 Highway 60 West, Socorro, NM 87801) , 20 minutes from San Acacia exit. For UNMH: head north on i-25. Turn off i-25 onto Lomas Blvd, and the hospital will be approximately a mile down the road on your left. Inform the hospital staff if the injured person is a UNM employee, and report the injury to the Program Manager as soon as possible. For Socorro general: head south on i-25. Take the first exit for Socorro (California St), and follow this street through town. Take a right on Spring St, and follow Spring St. as it turns into Hwy 60 West. The hospital is on your left. Socorro general does not carry antivenom. If bitten by a snake go to UNMH.
Local Contact	Kim Royle, Field Station Program Manager, 505-627-2753 Arturo Benavidez, Field Station Facilities Director, 575-518-8811
FWS Contact	(Emergency Only) Jeff Sanchez, Refuge Manager, 505-350-7159 Daniel Boykin, Refuge Law Enforcement Officer, 575-246-8270
University Contacts	April Bermudez, Program Manager, 909-470-1031 Jennifer (Jenn) Rudgers, Program Director, 845-705-0363 UNM Automotive, 505-659-2336
Cell Coverage	Very little coverage
Nearby Facilities	Nearest gas stations: - UNM field station (UNM employees only), 37 miles from gate - Veguita Trading Post (1249 NM-304, Veguita, NM 87062), 21 miles from gate Nearest water: - UNM field station
Site Information	

Site Access	As with all roads on the refuge, the speed limit is 25 mph, although the roads on the south side of the refuge are very remote and should be driven carefully. The roads are impassable to a passenger vehicle, and pass over rills, gullies, and deep sand.
No-Go Criteria	- Road closures - Visible smoke or fire on or near refuge - Any rain during field work or in 12 hours prior (road must be dry enough that vehicles will not leave ruts) - Snow deep enough to not melt by mid-morning - Forecasted wind gusts over 35mph - Heat precautions must be taken in temperatures over 95°F (35°C)
Environmental Hazards	This list is not comprehensive. Please see “Preparing for Hazards” for information on precautions that should be taken against specific hazards, and appropriate responses to injury. - Altitude (can cause sickness if unacclimated) - Extreme heat up to 110°F (43°C) - Intense sun exposure - Venomous snakes - Venomous arthropods - Poisonous and spiny plants - Uneven terrain - Flash floods - Unmarked obstacles - Lightning - Wildlife including bears - Wildfire
Expected Weather	- Heat and sun - Sudden intense rain (usually in the afternoon or later day, but can happen any time) - Hail (not necessarily accompanied by rain) - Lightning (not necessarily accompanied by rain)
Drinking Water Availability	None. Water must be supplied by the research team. Nearest water available is at the UNM Field Station. ☐ Water cooler with ice provided ☐ Bottled water provided
Access to Shade/Shelter	Natural shade is available by tree cover in most areas. If the forecast exceeds 80°F, shade must be provided by natural or artificial means for rest breaks. ☐ Building/Structure ☐ Trees ☐ Temporary Canopy/Tarp ☐ Vehicle with A/C ☐ Other _____
High Heat Procedures	Required when temperatures are expected to exceed 95°F: If possible, limit strenuous tasks to morning or late afternoon hours. Rest breaks in shade must be provided at least 10 minutes every 2 hours (or more if needed). Effective means of communication, observation and monitoring for signs of

	heat illness are required at all times. Pre-work safety discussion required. ☐ Direct supervision ☐ Buddy system ☐ Reliable cell or radio contact ☐ Other: _____
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Site Locations

Site Name	Lat/Long	Directions from Luna Gate
South Gate (Met 41)	34.2167, -106.795	Head south along the main road and continue on past the Five Points juncture, down into the canyonlands. Take a left at the first juncture, 2-3 miles from Five Points. Stay left at the next juncture past the arroyo. At the next juncture, take a right toward the low hills. The met station will be on your left in a field of tall grass. Alternatively, this met station can be reached via Lemitar/Escondida (see map).

Sites Outside the Refuge

Flux Jsav

Marcy Litvak lab juniper savanna flux tower site located on the 7-up 7-down ranch near Willard, NM. Elevation: 6,200 - 7,200 ft

Emergency Services and Contact Information	
Emergency Medical Services (EMS)	If EMS is needed, call 911 or send an SOS using the InReach. The dispatcher may choose for EMS to meet you at the nearest pavement. If the injured party cannot be moved, give the latitude and longitude of the site from the following table, as well as detailed driving instructions and the gate code. Report the injury to the Program Manager as soon as possible.
Nearest Hospital	If the injury is serious but not life-threatening, transport the injured party to UNM Hospital (2211 Lomas Blvd NE, Albuquerque, NM 87106) , approximately 95 minutes drive-time from the gate. From Mountainair, head west on Hwy 60, then north on i-25. Turn off i-25 onto Lomas Blvd, and the hospital will be approximately a mile down the road on your left. Inform the hospital staff if the injured person is a UNM employee, and report the injury to the Program Manager as soon as possible.
Local Contact	Tom Carroll, Deer Canyon Preserve Neighborhood Association President, tf_carroll@msn.com
University Contacts	April Bermudez, Program Manager, 909-470-1031 Jennifer (Jenn) Rudgers, Program Director, 845-705-0363 Marcy Litvak, Principal Investigator, mlitvak@unm.edu UNM Automotive, 505-659-2336
Cell Coverage	Spotty at all sites, no coverage at some sites
Nearby Facilities	Nearest gas stations: - Seven Eleven (603 W Broadway, Mountainair, NM 87036) Nearest water: - Mountainair (PJC and PJG), Willard (JSav)
Site Information	
Site Access	The sites are accessed from county-maintained dirt roads and dirt two-track roads on private property. They are impassable in passenger vehicles and should only be attempted in vehicles with high clearance and four-wheel drive. These roads should not be accessed after heavy rain or freeze-thaw cycles with snow.

No-Go Criteria	- Road closures (contact Tom Carroll for information) - Visible smoke or fire at or near sites - Any rain during field work or in 12 hours prior (road must be dry enough that vehicles will not leave ruts) - Snow deep enough to not melt by mid-morning - Forecasted wind gusts over 35mph - Heat precautions must be taken in temperatures over 95°F (35°C)
Environmental Hazards	This list is not comprehensive. Please see “Preparing for Hazards” for information on precautions that should be taken against specific hazards, and appropriate responses to injury. - Altitude (can cause sickness if unacclimated) - Extreme heat up to 110°F (43°C) - Intense sun exposure - Venomous snakes - Venomous arthropods - Poisonous and spiny plants - Uneven terrain - Flash floods - Unmarked obstacles - Lightning - Wildlife including bears - Wildfire
Expected Weather	- Heat and sun - Sudden intense rain (usually in the afternoon or later day, but can happen any time) - Hail (not necessarily accompanied by rain) - Lightning (not necessarily accompanied by rain)
Drinking Water Availability	None. Water must be supplied by the research team. Water may be purchased in Mountainair. ☐ Water cooler with ice provided ☐ Bottled water provided
Access to Shade/Shelter	Natural shade is available by tree cover in most areas. If the forecast exceeds 80°F, shade must be provided by natural or artificial means for rest breaks. ☐ Building/Structure ☐ Trees ☐ Temporary Canopy/Tarp ☐ Vehicle with A/C ☐ Other _____
High Heat Procedures	Required when temperatures are expected to exceed 95°F: If possible, limit strenuous tasks to morning or late afternoon hours. Rest breaks in shade must be provided at least 10 minutes every 2 hours (or more if needed). Effective means of communication, observation and monitoring for signs of heat illness are required at all times. Pre-work safety discussion required. ☐ Direct supervision ☐ Buddy system ☐ Reliable cell or radio contact ☐ Other: _____

Site Locations

Site Name	Lat/Long	Directions from Nearest Town
JSav	34.4255, -105.8615	From Willard, NM , head south at the intersection with the blinking light, on NM 42. Pass the train tracks and continue ~14 miles to a dirt road on the right hand side called Center of NM Trail (marked by a sign for 7-up 7-down ranch). Turn right onto this road, and follow it past the ranch house, over a cattle guard. About 0.6 miles past the cattle guard, take the second right onto a dirt two-track, which will lead you to the tower.
PJControl (PJC)	34.438278, -106.23858	From Mountainair, NM , head south at the intersection with the blinking light, onto NM 55. Less than a mile south of the intersection, the highway curves left – instead of following the curve, continue straight onto the dirt road. This leads to the gated entrance to Deer Canyon Preserve. Take the third left after the gate onto Jumano Rd, and then the second left onto Moho Trail. This road will head up the mesa, and curve to the right and down. Take a right into a dirt two-track in a meadow, past the turn-off for Goat Canyon Overlook. Follow this road to where it peters out, and take a left into the woodland. Follow this road through a gate to the site.
PJGirdle (PJG)	34.446687, -106.214290	From Mountainair, NM , head south at the intersection with the blinking light, onto NM 55. Less than a mile south of the intersection, the highway curves left – instead of following the curve, continue straight onto the dirt road. This leads to the gated entrance to Deer Canyon Preserve. Take the third left after the gate onto Jumano Rd, and then the second left onto Moho Trail. This road will head up the mesa. At the top, the road takes a sharp right, with a much less-used dirt two-track heading to the left. Take the two-track past another gate to the site.

Appendix

I. Planning for Hazards

Hazard	Prevention	Response
Extreme heat up to 110°F (43°C)	Start field work as early in the day as possible, follow heat safety procedures as outlined, halt work if needed.	Provide a break with shade or A/C and water for anyone showing heat stress. Halt work if needed.
Intense sun exposure	Light long-sleeved shirts and long pants can help prevent sunburn, as well as sunscreen and a hat. Sunglasses protect eyes from permanent damage.	Anyone showing visible or tangible signs of a sunburn (heat, sensitivity, itchiness, possibly red skin) should be excused from working in the sun for the rest of the day and retreat to shade or a vehicle if possible. Serious sunburn can cause permanent damage.
High altitude	People from low elevations will generally become acclimated to the altitude within a few days. Early signs can be curtailed with rest breaks.	The only way to cure altitude sickness is to go to a lower altitude. However, most cases are mild and will resolve quickly.
Venomous snakes including	Snake bites may be prevented by use of snake gaiters worn over the ankles, or high ankle boots and thick pants. Use caution walking through grassy and rocky areas, and when picking up supplies that have been on the ground. Snakes are well camouflaged, so look very carefully. Do not approach snakes or corner them.	If someone is bitten, drive them immediately to UNM Hospital. Socorro General Hospital does not carry antivenin. The person should attempt to remain as calm and still as they can. Identify the snake if possible, to help in the choice of antivenin.
Biting Insects	Be aware of venomous species in the area. Do not touch or approach unknown species. If working near ants, tucking your pants into your socks may help keep them out. A bandana or buff can protect your face from sweat bees and gnats.	If bitten by an arthropod, keep an eye on the bite for at least a week and see a doctor if the condition worsens. If the condition worsens significantly in a short period of time, go to the hospital.
Poisonous and spiny plants	Do not eat any plant on the refuge. Injury from spines can be prevented by wearing thick pants and sturdy boots,	If a poisonous or unknown plant is ingested, monitor the person's condition. If they show any signs of

	as well as work gloves if necessary.	fatigue, illness, confusion, or respiratory distress, immediately take them to the hospital and call poison control on the drive to determine appropriate immediate action (1-800-222-1222).
Uneven terrain	Ankle sprains may be prevented by wearing sturdy high-ankle boots, and avoiding areas with obvious animal burrowing.	In event of an ankle injury, err on the side of caution. If there's any swelling, or pain lasting more than 15 minutes, excuse the person from work and splint the injury. Serious sprains or breaks may require immediate medical attention to prevent permanent damage.
Flash floods in low-lying areas and arroyos	Flash floods can happen even when it is not raining in your location. Do not park in arroyos if there is any storm nearby, and never drive into flowing water, even if it seems shallow. The majority of deaths from flash floods occur inside of vehicles. If it is raining heavily or for more than a half hour, halt work for the day and leave, as road conditions will become unpredictable.	If a flash flood begins in your area, retreat to high ground (even if it means leaving your vehicle). If you are trapped in the refuge by flowing water, attempt to leave via an alternate route.
Lightning	Lightning often strikes in parts of the storm where it is not currently raining. If you see lightning, take a break in the truck for 30 minutes after the lightning passes. If not near a vehicle, take the break away from any metal structures or electrical wire. If necessary for lightning or flood risk, halt work for the day.	If someone is struck by lightning, immediately call 911 and begin CPR, if trained.
Wildlife	Feral dogs have been seen on the refuge, as well as cougars, bobcats, and bears. If you see any of these animals, remain in your vehicle. If not in a vehicle, try to get on the other side of an obstacle such as a shrub and back away slowly. Bear spray or mace may be carried as a precaution.	If anyone is bitten or injured by a wild animal, immediately take them to the hospital.
Unmarked Obstacles	In addition to natural obstacles such as branches and animal burrows, many sites have unmarked infrastructure.	Injuries from unmarked obstacles may be treated with the first aid kit in the truck, or may require a hospital trip. If

	This can include rebar, survey flags with only the metal pin remaining, nails, and pieces of broken plastic or metal. Use caution while walking off a path, and when reaching into unseen areas such as under shrubs.	the injury is from metal, a tetanus shot may be required.
Wildfire	Under red flag weather conditions, the refuge will limit use of machinery, chainsaws, etc. Under no circumstance is fire allowed on the refuge without express consent and direct supervision by the Fish and Wildlife Service.	In the event of a known fire, the roads will be closed and permittees informed. If you see smoke or fire on or near the refuge, call 911 and leave the refuge immediately. See the attached road map if you need to determine an alternate route to avoid the area.