SPRUCE Facilities Orientation [UPDATED 2019-04-04]

This document provides site-specific information for visitors and users of the SPRUCE research facilities in Grand Rapids, Minnesota. **To conduct laboratory or field work at these facilities, the associated Research Safety Summary and this Orientation are required reading.** Depending upon your research, additional safety training may be required. Details of the SPRUCE project can be found at https://mnspruce.ornl.gov.

Contacts

SPRUCE Operations Staff:

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US Forest Service:

The SPRUCE experimental site is operated and managed by Oak Ridge National Laboratory, but it is located on the USDA Forest Service's Marcell Experimental Forest. SPRUCE project participants are guests of the USDA Forest Service, and they have asked all participants to sign a site use log located at the Marcell Experimental Forest Service Office and Bunkhouse building whenever we visit.

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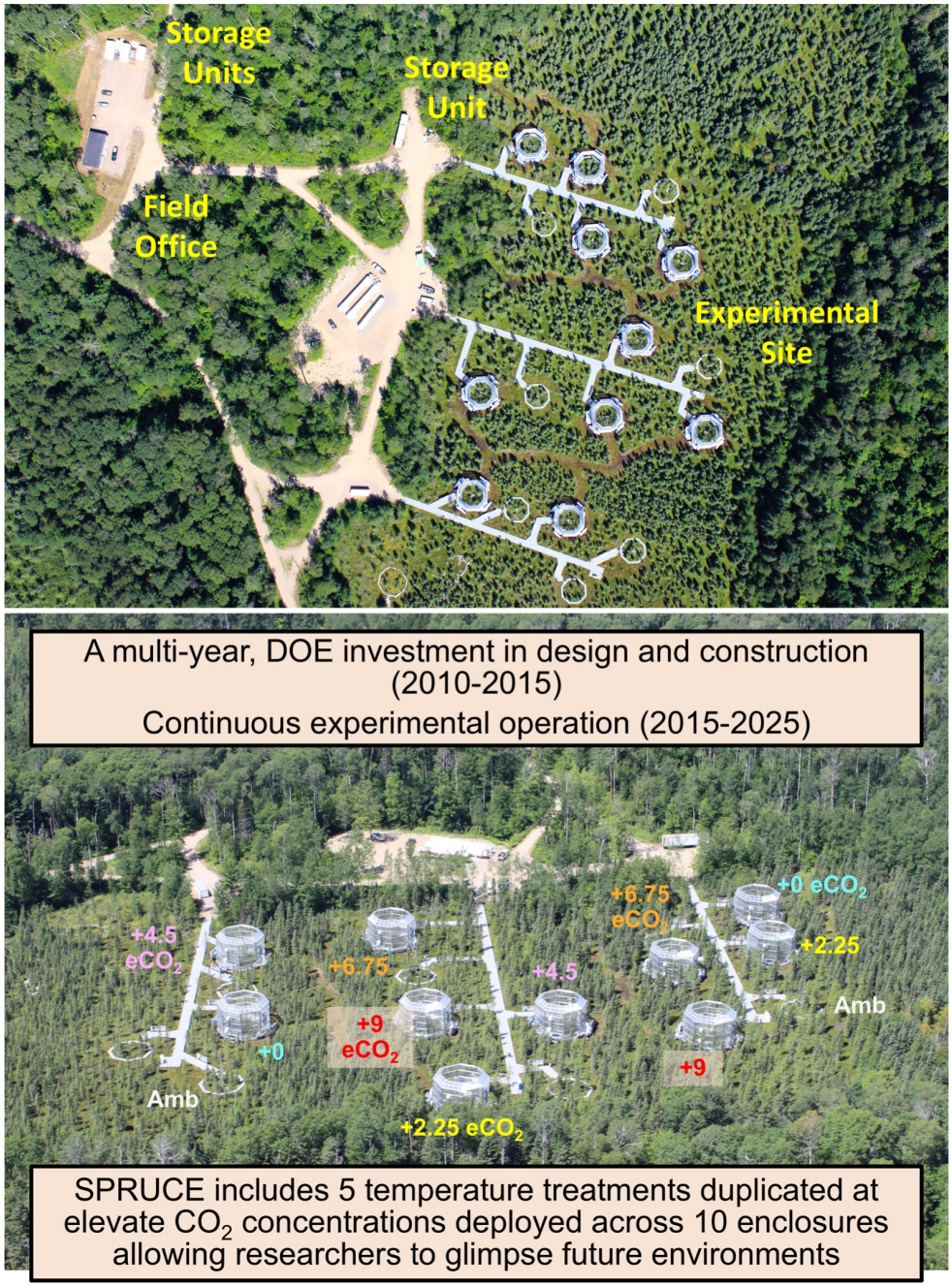
Access to SPRUCE -- SPRUCE has two facilities to support your science

1. **SPRUCE Space -- Downtown Grand Rapids, Minnesota**
2. **SPRUCE Field Experiment Site (see Figure)**

<u>Aerial Images of the SPRUCE Field Research Site and Associated Buildings</u>



1. SPRUCE Space – Grand Rapids Office

Location and Shipping Address:

SPRUCE Office (SPRUCE Space)
102 NE 3rd St, Suite 150
Grand Rapids MN, 55744

The SPRUCE office and light laboratory space (commonly referred to as **SPRUCE Space**) is located near downtown Grand Rapids. This facility can be used for light lab space and contains freezers, drying ovens, reliable internet access and a small amount of storage space. **It is the preferred destination for advance shipment of your supplies.**

Coordinate with the *Operations Manager* to ensure that resources will be available prior to your campaign.

Shipments: Campaign supplies are generally shipped to this location. Use address listed above. Please notify the *Operations Staff* prior to shipping materials and provide tracking information once available.

Access: There is a realtor-style key box outside the loading dock door on the south side of the building that contains a key to the dock door. The combination to this box can be obtained from *Operations Staff*. Please replace the key once you have gained access to the building.

WiFi: The network ID is "SPRUCE" and the password is "Sphagnummagellanicum".

Storage: Long-term storage at SPRUCE Space must be approved by the *Operations Manager*. Refrigeration and freezer space are available in limited quantities for use while on site. Without prior approval of the *Operations Manager* all samples should be shipped to each user's home laboratory or office prior to leaving Grand Rapids, Minnesota.

Drying oven: A drying oven is available for very limited use by collaborators with prior planning and approval.

Last One Out: If you are the last one occupying SPRUCE Space on a given day, please lock up and ensure that all lights are off and both access doors are **fully** closed!

2. Experiment Site – Marcell Experimental Forest (MEF)

Location and Shipping Address:

SPRUCE Experiment Site
43423 Spring Lake Rd
Bovey, Minnesota 55709

The experiment site is located approximately 45 minutes north of Grand Rapids at the MEF. There is a small, climate-controlled **Field Office** that houses the experiment control equipment and networking gear, a small workshop, and a bit of storage and light lab space. The **Experimental Enclosures** in the S1 Bog are a short distance away.

Field Office – General Use

Access: There is a realtor style lockbox outside the main doors that contains a key to the door lock. The combination to this box can be obtained from *Operations Staff*. Please replace the key once you have gained access to the building.

Keys: Inside the door to the right is a key lock box. It contains sets of keys [a key to the building and a key to open all enclosures] on small carabiners. Feel free to borrow a set for the day. Try to share keys with your group if there are many participants working during your stay. Without prior approval, key sets must be returned at the end of each day.

Emergency Equipment: Inside the door to the right you will also find a first aid kit, fire extinguisher, AED, and land line phone. There is also an emergency "Grab Box" clipboard above the key box with instructions on how to deal with a propane or CO_2 emergency.

Bathroom Facilities: A portable toilet is available for participant use on site, but there is no running water. Running water, bathrooms, and a bunkhouse operated by the USDA Forest Service are located at the USFS Marcell Research Center several miles away. That facility can be used **with prior approvals and notification of USDA Forest Service Staff**.

WiFi: High speed internet is now available in the control building and on the experiment docks. The network ID is "SPRUCE_Air" and the password is "SPRUCE_Experiment". There is also a multi-function printer available for use on the network.

Lunch: There is a food refrigerator, coffee pot, and microwave available for use. Bottled water is also available for project participants, there is no running water. If you use all of any consumable materials (i.e., plates, cups, plastic ware) please replace it. Refrigerated items will be disposed of unless labelled.

Cleanup: Be sure to clean out coffee maker and tea pot if used. DO NOT leave water in the teapot. Clean up spills and messes. Dispose of waste in the garbage can. Please place recyclables in the proper bin. Do not leave work materials lying around after use. **DO NOT process biological samples on the lunch table without prior approval and use of a table protector.**

Last One Out: If you are the last one on site, lock up the Field Office, Enclosures, Storage Units, and Dock Gates before leaving the facility.

Field Office – Field and Lab Work

Cautions: DO NOT TOUCH computing or network equipment in the Control Room.

The workshop, tools and supplies are for *Operations Staff* only, be prepared to bring the tools and supplies you think you will need to perform your work. If you need assistance or supplies, please ask. If you use all of something, please replace it.

Storage: Storage of any materials at the SPRUCE Field Office must be approved by the *Operations Manager*. Refrigerator and freezer space is available in very limited quantities for use while on site. Without prior approval of the *Operations Manager* all samples should be shipped to each user's home laboratory or office prior to leaving Grand Rapids, Minnesota.

Experimental Enclosures

Security: Ensure that enclosure doors are locked once you finish working in the plot. Obtain key in Field Office.

Don't climb: DO NOT climb the towers. Ladder usage requires proper training. Contact *Operations Staff* to discuss training requirements.

Bridges: Laydown bridges are available and will be used to access working areas that extend into the plots. Do not touch or stand on bog surface inside plots. Make sure bridges are properly seated in the supports. If you need assistance with the laydown bridges, please let the *Operations Staff* know. Make sure laydown bridges have been removed and stowed once your work has concluded. Do not leave bridges down overnight without prior approval.

Need to install something? DO NOT install **anything** without approval and checking with the *Operations Staff*. We want to ensure that new installations will not present a safety concern or interfere with another experiment or infrastructure.

Last One Out: If you are the last one on site, lock up the Field Office, Enclosures, Storage Units, and ensure the Dock Gates are locked!

Safety -- General

Travel to MEF: You will encounter both paved and graveled forest roads on the way to the remote field facility. Please be prepared to deal with inclement weather and diverse driving conditions. During winter, it is advisable to carry appropriate cold weather clothing in case of an incident. Forest roads can be narrow with low visibility, ruts, soft patches, ice and are frequented by large delivery trucks and wildlife so please drive defensively.

Working at SPRUCE: Due to the remote nature of the facility, if you are working alone let someone know where you will be working and what time you are expecting to finish or contact them. Make contact with this person when you are leaving the facility. You may use the *Operations Staff* for this purpose if needed.

Weather Awareness: We often experience thunderstorms during the summer months. If thunder is present, and especially if you see lightning, stop work and retreat to the Field Office. The docks and enclosures are not safe during a lightning storm. Wait 30 minutes after the thunder has passed before returning to work.

Winter Entry: Snow and ice will accumulate on the Enclosure Frustums above the entry doors. Be aware of this accumulated material and enter and exit the enclosures accordingly to avoid being struck by falling debris. [new 2018-03-06]

Clothing: Appropriate field clothing is required at all times, including closed toed shoes and long pants. **Sandals (even sport sandals) are not allowed**.

Safety – Your Research

Sharps: Dispose of any sharps properly and do not recap them using the two-hand method. A **sharps container** is located in the back room of the Field Office if you forget to bring one. Capping sharps and disposing of them in the normal trash is not allowed.

Safety – Enclosures and Walkways

CO2 Alarms: If a CO2 alarm is activated, a red strobe light will flash and an audible alarm will sound inside the enclosure. Please leave the enclosure immediately and report the event to the *Operations Staff*. Do not re-enter the enclosure until instructed to do so. If you detect or suspect a leak within the CO2 or propane systems, please inform the Operations Staff.

Frost and Ice: During cold season months the walkways and door ramps can become very slippery when covered with frost and perhaps ice. Take extra care when moving about the site under such conditions. Operations staff try to maintain clean walkways, but you may occasionally have to shovel a small amount of snow to obtain enclosure entry. Snow shovels are staged by each enclosure for this purpose. Please do not try to break ice from the walkway with the shovels. This damages the walkway decking and can break the shovels.

Winter Entry: Snow and ice will accumulate on the Enclosure Frustums above the entry doors. Be aware of this accumulated material and enter and exit the enclosures accordingly to avoid being struck by falling debris. [new 2018-03-06]

Static Electricity: Occasional static discharge between persons and site infrastructure is a known issue and should be recognized as being different from an electrical shock from higher voltage sources. If you are "shocked" by a higher voltage source of electricity this is considered a very serious issue and should be reported immediately to *Operations Staff* for diagnosis and preventative action. **Under no circumstances should untrained individuals attempt to access and reset tripped breakers.** Please contact operations staff for this purpose.

General Housekeeping: We have a large number of users and minimal support staff. Please help us all accomplish our tasks without creating more work for others. Please pick up after yourself and leave things as you found them.

Important Location Information

SPRUCE Field Facility Address for Emergency Services:

43423 Spring Lake Road, Bovey, MN 55709

Address for GPS, Google Maps, and Apple Maps:

1 Spring Lake Rd, Bovey, MN 55709

Emergency Contact Information

For All Emergencies: Dial 911

Field Facility Address for EMS: 43423 Spring Lake Road, Bovey, MN 55709

Sheriff's Department: (218) 326-3477 Balsam Volunteer Fire Dept.: (218) 245-2099 Lake Country Power: (218) 741-8137 Lakes Gas (Propane): (218) 326-3030 Praxair (CO_2): (651) 829-3432 **USFS Dispatch: (218) 327-4175** **ORNL LSS: (865) 574-6606**	**Homeland Security, Incident Reports:** **FBI Minneapolis** **Suite 1100** **111 Washington Avenue, South** **Minneapolis, MN 55401-2176** **minneapolis.fbi.gov** **(612) 376-3200**

Medical Contacts: **Grand Itasca Clinic and Hospital** **1601 Golf Course Rd** **Grand Rapids, MN 55744** **(218) 326-3401** **Bigfork Valley Clinic** **41150 Scenic Hwy** **Bovey, MN 55709** **(218) 245-2610** [This facility has limited operating hours please call ahead for availability.]	**Miscellaneous Services:** **TJ Towing** **(218) 326-1097** [Not a 24/7 service.]

U.S. DEPARTMENT OF ENERGY
Office of Science

SPRUCE Project
Spruce and Peatland Responses Under Changing Environments

OAK RIDGE National Laboratory