2019 DEPARTMENT OF FOREST RESOURCES
ADVANCED FOREST AND NATURAL RESOURCE MANAGEMENT FIELD SESSION
May 15 – June 7
Cloquet Forestry Center
University of Minnesota
175 University Road
Cloquet, MN 55720-9594
http://cfc.cfans.umn.edu/

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Program information: Charlie Blinn – (612) 624-3788, cblinn@umn.edu, 330b Green Hall
Registration information: Tracene Marshall – (612) 625-0266, marsh318@umn.edu, 130 Coffey Hall
Grant McCormack – (612) 624-3521, grantkm@umn.edu, 130 Coffey Hall

The field session is coordinated by the Department of Forest Resources and the Student Services Office located in 190 Coffey Hall, 1420 Eckles Avenue, St. Paul, MN 55108.
WHO SHOULD ATTEND

The Department of Forest Resources’ Advanced Forest and Natural Resource Management Field Session is designed for students who wish to become directly involved in forest land management or find positions in specialized areas such as resource measurements, analysis and planning, silviculture, timber harvesting, hydrology, forest protection, or policy development. It provides unique hands-on learning experiences for undergraduate and graduate students that build upon previous coursework and knowledge.

All undergraduate Forest and Natural Resources Management majors within the Forest Ecosystem Management and Conservation (FEMC) specialization are required to attend. FEMC specialization students must attend at least two of the three classes offered.

Graduate students who are interested in on-the-ground practices and field skills development are also encouraged to attend. They may take the course at either the 4xxx or 5xxx level, depending upon their need for credits. Additionally, graduate students focusing on how society values and makes decisions about the use, management, and protection of natural and environmental resources will also benefit from attending the session.

WHAT STUDENTS STUDY

The session is an intensive experience where students learn the field techniques and applications of remote sensing and resource survey, silviculture, and timber harvesting and road planning. Extensive time is spent examining and applying advanced concepts in the field. Each course is taught independently, yet builds upon the previous classes. The three courses included in the session are described below. For additional information on the courses and faculty, see www.forestry.umn.edu.

FNRM 4511 (2 credits) and FNRM 5611 (1 credit/graduate students only) – Field Silviculture, Marcella Campione-Windmuller, Instructor

Students learn how to collect field data and prepare/write silvicultural prescriptions for achieving management objectives within the context of stand, landscape, watershed, and wildlife habitat/biodiversity issues. They conduct field exercises that consider forest entomology, pathology, tree improvement, forest soils, and nontimber forest products. As a major part of the course, students work in groups to develop a “stewardship plan” for a Cloquet-area landowner’ property. This involves identifying landowner goals and objectives, inventorying and evaluating the land, and developing short- and long-term management prescriptions. Prerequisites for undergraduate students: FNRM 3104, 3411, or instructor consent.

FNRM 4515 (2 credits) and FNRM 5615 (1 credit/graduate students only) – Field Remote Sensing and Resource Survey, Joe Knight and John Zobel, Instructors

This course builds student knowledge and skills in remote sensing and sampling and measurement methods for inventory, mapping, monitoring and analysis of forest and related natural resources. Students conduct exercises in field data collection and image interpretation, data synthesis and reporting, and learn about resource survey design options. These exercises expose students to a range of approaches and technologies for data capture, analysis and reporting. Problems considered range from describing trees and stands on the Cloquet Forestry Center to larger landscape and regional levels and
issues from describing land use, resource condition, future condition, and management practices, including the impact of practices. Prerequisites for undergraduate students: FNRM 3218 and 3262 or instructor consent.

FNRM 4521 (2 credits) and FNRM 5621 (1 credit/graduate students only) – Field Applications of Timber Harvesting and Road Planning, Charlie Blinn, Instructor

Students learn about the process of planning and conducting timber harvesting and forest road design considering the economic, environmental, and social influences which impact those operations. The intent is to present and discuss those issues in the context of implementing natural resource management plans. Course emphasis is on providing field-based experiences with the various aspects of timber harvesting and road planning. As site and stand conditions, landowner objectives, regulations, and other factors vary across the landscape, there are a variety of approaches used to accomplish timber harvesting and road planning. The course will address many of the different methods, presenting more detail for some than others. The course includes field trips to forests managed by public and private landowners to view on-the-ground practices. Grading is based on four exercises (application of forest management guidelines, timber appraisal, road design, and timber sale design) and a final exam. Prerequisites for undergraduate students: FNRM 3411 and 3431, or instructor consent.

REGISTRATION

Registration is on-line. If you do not fulfill course prerequisites, you will need to get permission from the faculty member(s) in charge of the course.

For students who are currently admitted to a degree program at the University of Minnesota, registration for this session began on March 7.

For students who are not currently enrolled in a degree program at the University of Minnesota and visiting students, registration for this session begins on March 14.

Non-degree seeking students who wish to attend the Advanced Field Session are required to submit an Application for Non-Degree Admission to the Student Services Office as soon as possible. Non-Degree students are not required to pay an application fee and receive instructor approval. Registration for Non-degree students starts on March 14.

Non-major students may register for the Advanced Field Session if they have completed the prerequisites or if they get permission from the faculty member(s) in charge of the course.

Graduate students may register for the Advanced Field session beginning on March 7. If they haven’t completed course prerequisites, students should discuss their enrollment in a course with their advisor and the appropriate instructor(s) prior to registering for the session.
APPROXIMATE TUITION AND FEES

Tuition (per credit)

<table>
<thead>
<tr>
<th>Student category</th>
<th>Resident</th>
<th>Nonresident (returning)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Students</td>
<td>$502.25</td>
<td>$933.00</td>
</tr>
<tr>
<td>Graduate Students (part-time)</td>
<td>$1,422.00</td>
<td>$2,201.00</td>
</tr>
</tbody>
</table>

Note: Undergraduate students may be eligible for financial aid if they register for 6 credits. Additionally, the College and/or Department of Forest Resources may be able to provide scholarship support for the session for those students who applied through the CFANS scholarship process. Given those possibilities, students should register early.

Estimated fees

- University Sponsored Student Health Benefit Plan (SHBP) $612.00*
- College and Program Fee $110.00 < 6 credits

Course fees for lodging at the Cloquet Forestry Center

<table>
<thead>
<tr>
<th>Course number</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNRM 4511/5611</td>
<td>$84.00</td>
</tr>
<tr>
<td>FNRM 4515/5615</td>
<td>$70.00</td>
</tr>
<tr>
<td>FNRM 4521/5621</td>
<td>$84.00</td>
</tr>
</tbody>
</table>

*The fee shown is for Summer Term only. If you are 1) admitted to a degree program, and 2) registered for 3 or more credits during summer term that count towards the automatic assessment of the Student Services Fee, you are required by the University of Minnesota to have health plan coverage. If you meet both of these criteria you will be automatically enrolled in the University-sponsored Student Health Benefit Plan. If you were enrolled in the Student Health Benefit Plan during the spring semester, you will be automatically covered through the summer term at no additional cost. Non-degree students do not need to purchase the plan. By requiring students to have health plan coverage, the University ensures all students have access to medical care and can maintain good health, which is essential for academic success. You may choose to waive the University-sponsored Student Health Benefit Plan by providing proof of enrollment in an alternative eligible health plan.

Summary of estimated total tuition and fees for undergraduate students

<table>
<thead>
<tr>
<th>Student category</th>
<th>Student with own health insurance</th>
<th>Student with U of M SHBP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident undergraduate student taking 4 credits, including FNRM 4515</td>
<td>$2,273.00</td>
<td>$2,885.00</td>
</tr>
<tr>
<td>Resident undergraduate student only taking FNRM 4511 and FNRM 4521</td>
<td>$2,287.00</td>
<td>$2,899.00</td>
</tr>
<tr>
<td>Resident undergraduate student taking all 6 credits</td>
<td>$3,361.50</td>
<td>$3,973.50</td>
</tr>
</tbody>
</table>
### Summary of estimated total tuition and fees for graduate students

<table>
<thead>
<tr>
<th>Student category</th>
<th>Student on a Research Assistantship previous Fall and Spring Semesters</th>
<th>Student NOT on a Research Assistantship previous Fall and Spring Semesters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident graduate student only taking FNRM 5615</td>
<td>$1,602.00</td>
<td>$2,214.00</td>
</tr>
<tr>
<td>Resident graduate student only taking FNRM 5611 or FNRM 5621</td>
<td>$1,700.00</td>
<td>$2,312.00</td>
</tr>
<tr>
<td>Resident graduate student taking 2 credits at the 5XXX-level, including FNRM 5615</td>
<td>$3,108.00</td>
<td>$3,720.00</td>
</tr>
<tr>
<td>Resident graduate student only taking FNRM 5611 and FNRM 5621</td>
<td>$3,122.00</td>
<td>$3,734.00</td>
</tr>
<tr>
<td>Resident graduate student taking all 3 credits at the 5XXX-level</td>
<td>$4,614.00</td>
<td>$5,226.00</td>
</tr>
</tbody>
</table>

A billing statement for tuition and fees will be sent to your student account when you register for the session. These charges must be paid in full by the due date indicated on your billing statement. A late fee will be assessed if payment is not received by that time.

### STUDENT HEALTH

The Advanced Field Session involves sustained physical activity, working alone or in teams, often on uneven terrain and in a variety of weather conditions. A medical examination prior to the session is advised. Students who are required to complete the field session, but will not be able to do so due to medical reasons, should contact Dr. Michael Kilgore (612/624-3400) within the Department of Forest Resources. Students should inform the instructor of any physical problems that might restrict their ability to perform a particular assignment.

Immunization clearance is not required for the session; however, students attending the session should have had a tetanus booster vaccination within the last five years.

While at Cloquet, students who have registered for 3 or more semester credits and who have paid their Student Service Fee are regular members of the University Health Service with medical services provided through Raiter Clinic (218/879-1271), 417 Skyline Blvd., Cloquet. Directions to the Raiter Clinic are noted below Coverage is similar to that available on the Twin Cities Campus. All injuries must be reported immediately to Dr. Andy David (Director, adavid@umn.edu 218-244-6794) or Stephanie Oberg (Facility Coordinator, oberg086@umn.edu 218-726-6401) at the Cloquet Forestry Center and the course Instructor.
Raiter Clinic's hours are 8:00 a.m.-5:00 p.m. Monday-Friday by appointment. After hours medical services are available at the Community Memorial Hospital emergency room (218/879-4641), 512 Skyline Blvd., Cloquet. Directions to the Community Memorial Hospital are noted below.

All medical bills must be submitted to the student's hospitalization insurance carrier first. After their insurance carrier determines the amount they will pay, the student should send the emergency medical service bill and the insurance company's explanation of benefits worksheet (which indicates how much the insurance company paid) to Boynton Health Service, 410 Church St. S.E., Minneapolis, MN 55455, Attention: Patient Accounting Supervisor.

The Cloquet Forestry Center does not stock any medications. If you are susceptible to allergic reactions to pollen, insect bites, or stings, etc. bring your own medication to the session. Northern Minnesota is an area where you should be concerned about tick borne diseases. Additional information about Lyme disease is presented below on Pages 12 – 15 and through the Center for Disease Control, the Minnesota Department of Health and the Minnesota DNR.
**HOUSING**

Students must live on the Center because it greatly simplifies schedules and group assignments and it provides a better learning experience. The Center will apply housing regulations defined within the University’s Community Behavioral Standards ([https://housing.umn.edu/rules](https://housing.umn.edu/rules)). By staying in Center housing, you are agreeing to abide by those policies. Housing is available on the Center in Cabins 45 (students who begin in the second week) and 46 (students who begin in the first week) in single person hotel style rooms. Camping facilities are not available. Cabins 45 and 46 have wireless internet access, as does the Administration Building.

Pillows and mattresses are provided. However, pillow cases, linen for a twin bed, towels, and blankets must be furnished by students. The occupants of each room are expected to keep their room clean (cleaning supplies will be available). The quarters are clean when students arrive and must be clean when they leave. Students are responsible for room clean up prior to their departure. Pets are not allowed in the dorm rooms under any circumstances.

Please respect the buildings. Do not deface any walls by carving or writing. Do not put nails or tacks in the walls. Abnormal breakage or damage to dormitories or dorm rooms will be assessed against the individuals involved. Do not wear hobnail or caulk boots in buildings. Do not move any beds or furniture from one area to another. Smoking is prohibited in all buildings.

**MEALS**

Students are responsible for providing their own meals. Complete cooking facilities (e.g., two full-size refrigerators, a range with an oven, microwave, coffeemaker, dishes, pots and pans, silverware) are available in Cabin 46. Cooking is not permitted in the dorm rooms. You may bring a mini-refrigerator for your room.

**SPECIAL ACCOMMODATIONS**

To request a disability-related accommodation, please contact Stephanie Oberg at the Cloquet Forestry Center (218-726-6401 oberg086@umn.edu) at least two weeks prior to your arrival.

**LOCATION**

The Advanced Field Session is held at the University of Minnesota Cloquet Forestry Center in northern Minnesota. Information about the center can be found here. For directions, see the map below.
ARRIVAL AND DEPARTURE

The Session will begin at the Center on Wednesday, May 15 at 3:00 p.m. in the Administration Building with class and lodging check-in, equipment sign-out, briefing, and an introductory tour of the forest focused on measurement concepts. This tour is considered a part of the first course, FNRM 4515/5615. Park your car in the large parking area next to Cabin 46. A welcoming BBQ for students and faculty is provided by the Department of Forest Resources immediately following the forest tour. In any case, do not report before 2:30 PM on Wednesday, May 15. If you are unable to report to Cloquet by 3 PM on May 15, please contact Joe Knight (jknight@umn.edu).

Please be advised that your post-session schedule for employment or other activities should take into account the end date for whatever course(s) you are registered to take. Requests for early releases to accommodate personal plans will not be approved. Dorm rooms will be inspected at the end of the session or after your last course to make sure they are clean.

DAILY AND WEEKLY SCHEDULE

Approximate class times are from 8:00 AM to 12:00 PM and 12:45 PM to 4:30 PM, Monday through Saturday. Some evening work will also be scheduled. Class will not meet on Monday, May 27 (Memorial Day). The overall schedule of courses is noted below. Individual instructors may make adjustments in the schedule as necessary for their specific courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>FNRM 4515/5615 (Field Remote Sensing and Resource Survey)</td>
<td>May 15 – 18 and 20 - 22</td>
</tr>
<tr>
<td>FNRM 4511/5611 (Field Silviculture)</td>
<td>May 23, 24, 28 - 31 (no class on May 25 – 27 holiday)</td>
</tr>
<tr>
<td>FNRM 4521/5621 (Field Timber Harvesting and Road Planning)</td>
<td>June 3 – 7</td>
</tr>
</tbody>
</table>
EQUIPMENT

Bring your course notes for all prerequisite classes. The following are required supplies that must be provided by students. The supplies are not available at the Cloquet Forestry Center. Purchase them before you leave the Twin Cities. Some items are available at the Books Underground Bookstore on the St. Paul Campus. For the most part, the expensive items will also be used in other courses and/or in your professional career.

✓ Forester's compass
✓ Tatum holder or clipboard to hold 8 1/2 x 11 inch paper
✓ Paper for reports and a packet of graph paper
✓ Pocket calculator
✓ Flash drive
✓ Pencils, pens, colored pencils, etc. for note taking and report writing
✓ Ruler marked in inches and tenths

The following items are required for FNRM 4515/5615 (Field Remote Sensing and Resource Survey)
✓ Hand lens
✓ Engineer or architect's scale
✓ Protractor

Personal needs
✓ Pillow cases, linen for a twin bed, towels and blankets must be furnished by students; pillows and mattresses are provided.
✓ Field clothes adequate for protection against cold, rain and insects, including ticks. A waterproof hat, jacket, pants, and waterproof boots are an absolute necessity because field work is carried out regardless of the weather.
✓ Footwear appropriate for walking on uneven ground, through dense brush, and when the soil and vegetation are wet and soggy.
✓ Any other clothing deemed necessary for a 3-week field course.
✓ Toiletries.
✓ Insect repellant containing DEET or permethrin - carefully follow the directions on the container.
✓ Sun protection.
✓ Any medications including kits for insect stings, bee stings, etc.
✓ Glasses or other eye protection for working in the woods

Each student will be issued equipment when they check-in for use in one or more courses. Each student is responsible for the care of the equipment they are issued. Tapes, increment borers, and other tools or equipment needing protection from rust should be kept dry. Losses or unwarranted damage will be paid for by the responsible student or crew. Hard hats will be issued and must be worn when you are visiting an active timber sale. Eye and ear protection are available, but if you have your own, bring it with you. Specific items that will be checked out to students at check-in and collected before checkout are:
Equipment issued to all students
100 ft. tape
Diameter tape
Suunto clinometer
Increment borer
Tree and Log Scale Stick with angle gauge (hinge attachment)
Prism 20 BAF
Pocket stereoscope
Hard hat
Safety glasses (optional)

Equipment that may be issued for short periods
Laser rangefinder
GPS receiver
PDA

COURSE-RELATED TRANSPORTATION

In an effort to keep down student costs, transportation will only be rented for FNRM 4511/5611 and FNRM 4521/5621 when significant travel away from the Cloquet Forestry Center is anticipated. At other times, students are expected to provide their own transportation for more local classroom activities. As some local classroom activities require transportation in-woods, students need to consider the off-road capabilities of their personal vehicles. Where appropriate, students are responsible for making equitable arrangements with other students for covering transportation expenses associated with local classroom activities. Students must sign and return a Release of Liability form before they will be allowed to participate in any course-related field trips.

MISCELLANEOUS

Emergency Contact Information – Students must complete and return the Emergency Contact Information form to Charlie Blinn by April 26.

Telephones – Individual dorm rooms do not have phones. The Cloquet Forestry Center office number is 218-726-6400. In addition, several courtesy telephones are located throughout the Center. One is located in the vestibule as you enter the Classroom Administration Building (218-726-6489). A phone is also located in the kitchens units of cabin #45 (218-726-6492) and cabin #46 (218-726-6493).

Computer availability – A 24-station computer lab is available to students for class assignments, e-mail, and internet access via a fiber optic line.

Mail – Mail can be sent to the Forestry Center using the following address. Mail arrives in the mid- to late-afternoon Monday - Friday.

Cloquet Forestry Center
175 University Road
Cloquet, MN 55720-9594
Outgoing mail can be placed in the mailbox located on the road between the Administration Building (#44) and the Forest Management Building (#2). It must be placed in the box by 11:30 a.m. each day.

Laundry – A washer and dryer are available in the basement of cabin 36. Additionally, two laundromats are located in the City of Cloquet.

Alcoholic beverages – As a University of Minnesota campus, CFC adheres to UMN policy regarding alcohol and drug use. In short, students or others housed on or visiting a UMN campus must follow state law, which prohibits possession or consumption of controlled substances without a valid prescription and the consumption, purchase, or possession of alcohol by individuals younger than 21.

Smoking – The Cloquet Forestry Center is a smoke and tobacco-free campus.

Room check for supplies – A member of the Center staff will enter student rooms weekly sometime between 10 AM – Noon on Mondays to check for supply needs, damage, etc.

Storage of miscellaneous items – Do not store items in your room which can block the way in an emergency situation, destroy the interior of a building, or which can cause fire. Specific items which have been a concern in the past include bicycles, car batteries, motorcycles, and canoe paddles. Please store these items outside. Bring a lock to secure them, if necessary.

Pets – Pets are not permitted—do not bring them! This policy is rigidly enforced.

Firearms – As per University Board of Regents policy on the possession and carrying of weapons, (https://regents.umn.edu/sites/regents.umn.edu/files/policies/Possession_CarryingWeapons.pdf), no person, whether a student, employee, or visitor, shall possess or carry a weapon while on University property unless they are a licensed peace officer, security guard, other law enforcement agent or military personnel when acting in the course of their official duties and when authorized to carry weapons; they are participating in military training when acting in the course of their official duties or performing duly assigned tasks involving weapons; acting under University Presidential approval; or for the purposes of lawful storage of a firearm inside a personal motor vehicle.

Photos – Course instructors may take photos of the class at various times for a number of reasons in support of the Department of Forest Resources’ educational, promotional and publicity efforts. Students are requested to sign and return a Photo Release Form to allow the photographs to be used in a publication, print ad, direct mail piece, electronic media (e.g., video, CD-ROM, Internet/WWW), or other form of promotion.
LYME DISEASE
(Prepared by Mayo Clinic staff)

Lyme disease is caused by four main species of bacteria: *Borrelia burgdorferi*, *Borrelia mayonii*, *Borrelia afzelii* and *Borrelia garinii* bacteria. *Borrelia burgdorferi* and *Borrelia mayonii* cause Lyme disease in the United States, while *Borrelia afzelii* and *Borrelia garinii* are the leading causes of Lyme disease in Europe and Asia. The most common tick-borne illness in these regions, Lyme disease is transmitted by the bite of an infected black-legged tick, commonly known as a deer tick.

You're more likely to get Lyme disease if you live or spend time in grassy and heavily wooded areas where ticks carrying the disease thrive. It's important to take common-sense precautions in areas where ticks prevalent.

**Symptoms**

The signs and symptoms of Lyme disease vary and usually appear in stages.

**Early signs and symptoms**

A small, red bump often appears at the site of a tick bite or tick removal and resolves over a few days. This is normal after a tick bite and does not indicate Lyme disease.

However, these signs and symptoms may occur within a month after you've been infected:

- **Rash.** From 3 to 30 days after an infected tick bite, an expanding red area might appear that sometimes clears in the center, forming a bull’s-eye pattern. The rash (*erythema migrans*) expands slowly over days and can spread to 12 inches (30 centimeters) across. It is typically not itchy or painful.

  Erythema migrans is one of the hallmarks of Lyme disease. Some people develop this rash at more than one place on their bodies.

- **Flu-like symptoms.** Fever, chills, fatigue, body aches and a headache may accompany the rash.

**Later signs and symptoms**

If untreated, new signs and symptoms of Lyme infection might appear in the following weeks to months. These include:

- **Erythema migrans** appearing in other areas of your body.

- **Joint pain.** Bouts of severe joint pain and swelling are especially likely to affect your knees, but the pain can shift from one joint to another.
• **Neurological problems.** Weeks, months or even years after infection, you might develop inflammation of the membranes surrounding your brain (meningitis), temporary paralysis of one side of your face (Bell's palsy), numbness or weakness in your limbs, and impaired muscle movement.

Signs and symptoms caused by the bacterium *Borrelia mayonii* may also include:

- Nausea and vomiting
- Diffuse rashes (rather than a single bull's-eye rash commonly associated with Lyme disease)

**Less common signs and symptoms**

Several weeks after infection, some people develop:

- Heart problems, such as an irregular heartbeat. Heart problems rarely last more than a few days or weeks.
- Eye inflammation.
- Liver inflammation (hepatitis).
- Severe fatigue.

**When to see a doctor**

**If you've been bitten by a tick and have symptoms**

Only a minority of blacklegged tick bites leads to Lyme disease. The longer the tick remains attached to your skin, the greater your risk of getting the disease. Lyme infection is unlikely if the tick is attached for less than 36 to 48 hours.

If you think you've been bitten and have signs and symptoms of Lyme disease — particularly if you live in an area where Lyme disease is prevalent — contact your doctor. Treatment for Lyme disease is more effective if begun early.

**See your doctor even if symptoms disappear**

It's important to consult your doctor even if signs and symptoms disappear — the absence of symptoms doesn't mean the disease is gone. Left untreated, Lyme disease can spread to other parts of your body from several months to years after infection, causing arthritis and nervous system problems. Ticks also can transmit other illnesses, such as babesiosis and Colorado tick fever.
Causes

In the United States, Lyme disease is caused by *Borrelia burgdorferi* and *Borrelia mayonii* bacteria, carried primarily by blacklegged or deer ticks. The ticks are brown and, when young, often no bigger than a poppy seed, which can make them nearly impossible to spot.

To contract Lyme disease, an infected deer tick must bite you. The bacteria enter your skin through the bite and eventually make their way into your bloodstream. In most cases, to transmit Lyme disease, a deer tick must be attached for 36 to 48 hours. If you find an attached tick looks swollen, it may have fed long enough to transmit bacteria. Removing the tick as soon as possible may prevent infection.

Risk factors

Where you live or vacation can affect your chances of getting Lyme disease. So can your profession and the outdoor activities you enjoy. The most common risk factors for Lyme disease include:

- **Spending time in wooded or grassy areas.** In the United States, deer ticks are most prevalent in the Northeast and Midwest regions, which have heavily wooded areas where deer ticks thrive. Children who spend a lot of time outdoors in these regions are especially at risk. Adults with outdoor occupations also are at increased risk.

  In the first two stages of life, deer ticks in the United States feed on mice and other rodents, which are a prime reservoir for Lyme disease bacteria. Adult deer ticks feed primarily on white-tailed deer.

- **Having exposed skin.** Ticks attach easily to bare flesh. If you’re in an area where ticks are common, protect yourself and your children by wearing long sleeves and long pants. Don’t allow your pets to wander in tall weeds and grasses.

- **Not removing ticks promptly or properly.** Bacteria from a tick bite can enter your bloodstream if the tick stays attached to your skin for 36 to 48 hours or longer. If you remove a tick within two days, your risk of acquiring Lyme disease is low.

Complications

Left untreated, Lyme disease can cause:

- Chronic joint inflammation (Lyme arthritis), particularly of the knee
- Neurological symptoms, such as facial palsy and neuropathy
- Cognitive defects, such as impaired memory
- Heart rhythm irregularities
Prevention

The best way to prevent Lyme disease is to avoid areas where deer ticks live, especially wooded, bushy areas with long grass. You can decrease your risk of getting Lyme disease with some simple precautions:

- **Cover up.** When in wooded or grassy areas, wear shoes, long pants tucked into your socks, a long-sleeved shirt, a hat and gloves. Try to stick to trails and avoid walking through low bushes and long grass. Keep your dog on a leash.

- **Use insect repellents.** Apply insect repellent with a 20 percent or higher concentration of DEET to your skin. Parents should apply repellant to their children, avoiding their hands, eyes and mouth. Keep in mind that chemical repellents can be toxic, so follow directions carefully. Apply products with permethrin to clothing or buy pretreated clothing.

- **Do your best to tick-proof your yard.** Clear brush and leaves where ticks live. Keep woodpiles in sunny areas.

- **Check yourself, your children and your pets for ticks.** Be especially vigilant after spending time in wooded or grassy areas. Deer ticks are often no bigger than the head of a pin, so you may not discover them unless you search carefully.

  It's helpful to shower as soon as you come indoors. Ticks often remain on your skin for hours before attaching themselves. Showering and using a washcloth might remove unattached ticks.

- **Don't assume you're immune.** You can get Lyme disease more than once.

- **Remove a tick as soon as possible with tweezers.** Gently grasp the tick near its head or mouth. Don't squeeze or crush the tick, but pull carefully and steadily. Once you've removed the entire tick, dispose of it and apply antiseptic to the bite area.
Medical and Emergency Contact Information

Student/Participant name__________________________________________________________

Date____________________

Course(s) (check all that apply)

☐ FNRM 4515/5615 – Field Remote Sensing and Resource Survey
☐ FNRM 4511/5611 – Field Silviculture
☐ FNRM 4521/5621 – Field Applications of Timber Harvesting and Road Planning

Please list any special medical needs we should be aware of (e.g., bee/wasp sting allergy, epilepsy, diabetes, asthma) ____________________________________________________________

************************************************************************************
First Person to Contact__________________________________________________________

Relationship _________________________________________________________________

Home Phone Number ___________________ Cell Number _____________________________

Work Phone Number __________________________

************************************************************************************
Second Person to Contact ______________________________________________________

Relationship _________________________________________________________________

Home Phone Number ___________________ Cell Number _____________________________

Work Phone Number __________________________

************************************************************************************
Third Person to Contact _______________________________________________________

Relationship _________________________________________________________________

Home Phone Number ___________________ Cell Number _____________________________
Work Phone Number ___________________________________________________________
UNIVERSITY OF MINNESOTA

RELEASE OF LIABILITY

I wish to participate in the field trip(s) associated with the Advanced Cloquet Session (FNRM 4511/5611, FNRM 4515/5615, and/or FNRM 4521/5621) offered by the University of Minnesota. I knowingly and voluntarily assume the risk of any injuries, regardless of severity, and including death, and all risk of damage to or loss of property that I may incur due to negligence or accidentally while I am participating in these field trips.

In consideration for the opportunity to participate in these field trips, I, on behalf of myself, my agents, heirs, and next of kin, hereby release the Regents of the University of Minnesota, its Department of Forest Resources, the Cloquet Forestry Center, and their respective employees, agents, members, and representatives and, if applicable, owners and lessors of premises used to conduct the event ("Releasees") from any responsibility or liability for personal injury, including death, and damage to or loss of property that I may incur due to negligence of the groups named above or my own negligence or due to accidental occurrences while I am traveling to or from, engaged in, or otherwise participating in these field trips.

Governing Law and Jurisdiction. The laws of the state of Minnesota shall govern the validity, construction and enforceability of this Agreement, without giving effect to its conflict of laws principles. All suits, actions, claims and causes of action relating to the construction, validity, performance and enforcement of this Agreement shall be in the courts of the State of Minnesota.

I, the undersigned, am at least eighteen (18) years of age and competent to sign this release on my own behalf. I have read carefully and understand and agree to the terms and conditions of this release.

Signature  Date

Print Name  Phone Number

NOTICE

Participants under 18 years of age must have this release co-signed by their parent or guardian.

This is to certify that I, as parent/guardian with legal responsibility for this participant, do consent and agree to his/her release as provided above of all the Releasees, and, for myself, my heirs, assigns, and next of kin, I release and agree to indemnify and hold harmless the Releasees from any and all liabilities incident to my minor child’s involvement or participation in these programs as provided above, EVEN IF ARISING FROM THE NEGLIGENCE OF THE RELEASEES, to the fullest extent permitted by law.

Signature of Parent/Guardian  Date

Print Name  Phone Number
Photo Release Form

I, (please print your name)______________________________, give the Department of Forest Resources and the Cloquet Forestry Center at the University of Minnesota, the right and permission to use my photograph obtained during FNRM 4511/5611 (Field Silviculture), FNRM 4515/5615 (Field Remote Sensing and Resource Survey), and/or FNRM 4521/5621 (Field Applications of Timber Harvesting and Road Planning) in its educational, promotional materials and publicity efforts. I understand that the photographs may be used in a publication, print ad, direct mail piece, electronic media (e.g., video, CD-ROM, Internet/WWW), or other form of promotion with or without my name. I release the Department of Forest Resources, the Cloquet Forestry Center, the photographer, their offices, employees, agents, and designees from liability for any violation of any personal or proprietary right I may have in connection with such use.

Signature:________________________________________________________

Address:________________________________________________________________

City/State/Zip:___________________________________________________________

Phone:____________________________________________

Date:___________________________________________________________________

Signature of guardian if under 18 years of age:_____________________________