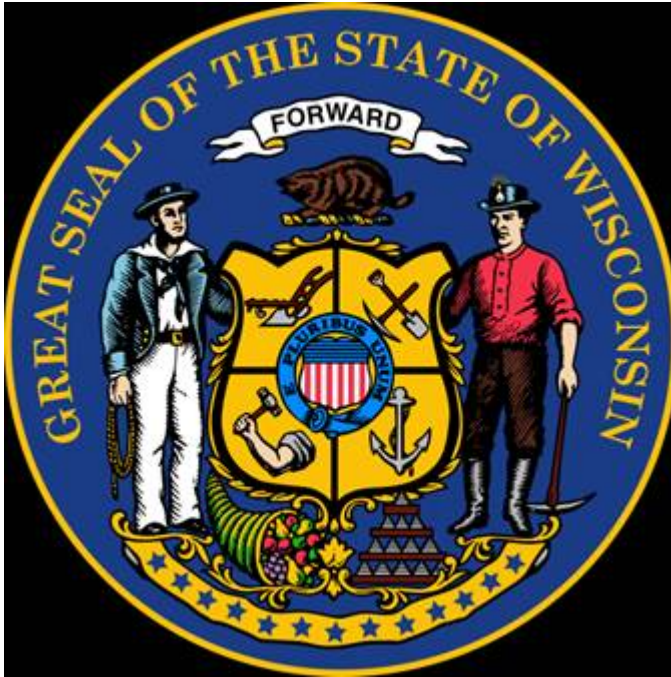


Field Trip in Geo: Wisconsin Reconnaissance
 Lecture 1: F8 Science B347
 Lab 1: periodic weekends on-site

Office Hours: on-line; on-site during trips
 e-mail: nheywood@uwsp.edu
 Office: Sci D333, or in our tents and vehicles

Another world lies before you. Go there. Know there. And contribute.



Come out of this course able to tell us what all this symbolism means, from then and for now.

This is still your State Seal.

Also, take some notice of what you DO NOT see. No depiction whatsoever then of women, children, First Peoples, veterans, forestry, wildlife, finance, education, recreation, faith, food processing (i.e., “Packers”?)—or even the beer (i.e., “Brewers”?)!

Back in 1848, the priorities were quite different from the landscapes that we have now become.



<http://wisconsin.gov/Pages/dmv/vehicles/title-plates/special-list.aspx>

I intend, by this course in your face, to rattle into your consciousness some sense of our *shared* heritage.

GEO 393 Excursions 2017 Fall Schedule (Field; EL, CIM)

SEPTEMBER	OCTOBER	NOVEMBER
08 West Wisconsin plan	06-08 Southwest Wisconsin	03-05 Central Wisconsin
15-17 West Wisconsin	13 notes review	10 notes review
22 notes review	20 remaining Wisconsin plans	17 poster preparations
29 Southwest Wisconsin plan	27-29 Southeast Wisconsin	23-26 Holiday Break

Tentative* Destinations

- West Wisconsin:** Willow River CG; Ladysmith, St. Croix NWSR, New Richmond, Rock Elm, Wazee Lake
- Southwest Wisconsin:** Nelson Dewey CG; Wyalusing bluffs, Belmont 1st capital, Pendarvis mines
- Southeast Wisconsin:** Bong CG; Des Plaines source, land rehabilitation, Lake Michigan shores
- Central Wisconsin:** Petenwell CG; Roche-a-Cri mound, Dyracuse motor recreation, pulp lands

3 cr course fee = \$200.00, above the tuition charges. This covers the transportation and lodging costs.

Students *must* participate in three of these four trips to earn three credit hours. One trip is one credit hour.

****All dates, events, and locations are subject to adjustment as local conditions may warrant.***

This is an expedition and engagement course, in which you shall contribute to data acquisition for genuine research needs within Wisconsin. Accordingly, my expectation for your project and field conduct will be quite high. I expect outcomes of broadening your personal skills and awareness, and also of benefit to your peers and our local hosts. You cannot obtain my endorsement by any spirit or participation for less, but most participants succeed admirably.

All course projects are collaborative, and all course data (including notes and photographs) are **joint** property. You are part of an expedition working to address a research issue. These projects also are for assistance to the land management staff. Those local professionals and/or the course faculty may have selected your research topics; the student teams will design specific task methodologies, acquire the field data, and compile initial findings.

Field teams shall consist of no fewer than two, and no more than four, students *at all times*. The entire class will meet weekly before departure for orientation sessions, at which I shall further apprise you of conditions you should expect, and my stern expectations of you. We face 1200 miles, many kinds of learning, our project objectives, and a service obligation—and with but nine road days to achieve it. We assess all at our mandatory post-trip meeting.

I will *only* accept your on-site data in your field notebook. Any word processing must be in the current *campus* version of MicroSoft Word, all journals/spreadsheets in MicroSoft Excel, and all presentations must use MicroSoft PowerPoint. I will NOT accept any materials that are in inappropriate format. Submit all digital work *via* the [D2L](#) dropbox for each of you. By this same procedure I shall return feedback and comments. Please do NOT e-mail large attachments (e.g., videos, massive datasets, or technical report drafts with embedded graphics).

TEXT: There is no textbook for this course. There are course readings available on [D2L](#) that I expect you to examine before departure, or in a binder during the hours-long rides to our initial stops; *you will need advance awareness of those contents.*

ATTENDANCE/GRADE: I always take roll before each day's deployment, during which your attendance and participation are mandatory. You should practice that same habit; it is imperative that you know the whereabouts of your teammates at all times. ***Nobody ever ventures out alone!*** Your course grade derives from participation (20%), your field notebook (20%), a final field report (20%), a poster (20%), and your post-trip presentation (20%).

WRITING EMPHASIS (WE) or COMMUNICATION IN THE MAJOR (CIM): Communication, in various formats and for an assortment of professional purposes, is an essential skill for success in a modern career. Beyond appropriate articulation, however, sound writing further promotes the refinement of initial concepts into operational practices, and peers value a colleague who communicates quickly and consistently well.

GEO 393 thus will have rather a different emphasis from what you might experience in other communication courses. You will write—much—but NOT with the sole objective of a final polished paper. Rather, our focus will be upon planning, documentation, and reconstructable field data. On-site field writing tends to be quite “sloppy”, but that does not mean it lacks worth. Rather, crudeness reflects genuine on-site development and adaptation, and can be crucial to adjusting a research agenda and findings appropriate to fresh discoveries in the field. You will receive my personal feedback and suggestions frequently while still on-site; please heed them subsequently as you acquire further field notes and communicate findings.

Therefore part of the course learning outcomes that you should expect, at a professional level, will include:

1. receive instruction and familiarization with styles appropriate to field work;
2. acquaint yourself, and practice with, various field writing and communication structures, including:
 - field narratives, logs, and descriptive sketching;
 - qualitative and quantitative documentation;
 - persuasive *versus* descriptive communication;
 - principal (central product) *versus* augmentation (ancillary) functions;
 - annotated presentation outlines and “talking points”; and

3.
 - techniques to obtain and preserve audience interest; exercise with a variety of writing formats applicable in the profession, including:
 - budgets and logistics;

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- conceptual plans, projections, and proposals;
 - critiques, of various nature;
 - a technical report summary of your field project
 - editorial revision process;
 - reviews and accountability reports; and
4. tailor your writing—upon demand—to address specific audiences, such as by:
- age;
 - education;
 - disciplinary involvement;
 - sponsor/benefactor/supervisor capacity; and
 - colleagues, subordinates, and trainees.

Please utilize the scoring rubrics and style guide below. This course requires considerable reading, participation, communication about experiences, and exposure to various professional approaches for reception and transfer of information. The objective is to afford you practice of pre-trip, on-site, and post-trip communication within your discipline and profession.

RESPONSIBILITIES: Please also examine the document that explains **Community Rights and Responsibilities** below for the UWSP campus community, including required behavior by students and faculty within the classroom [*including off-campus site visit “classrooms”*] environment. The participation component of your course grade depends in no small part upon compliance with these guidelines; of necessity this often is a subjective instructor’s judgment. You can view more detail of my 393 conduct expectations below at **Field Demeanor** and **Field Participation**. If you serve as one of our drivers, see and adhere also to **Driving**. I am an unabashed anal orifice about compliance on GEO 393 excursions.

To participate on this excursion you have signed a legally binding liability waiver agreeing to conform with all of these expectations, and you will be the first ever that I send home prematurely if you violate them. By the way, I do not, nor have I any obligation, to post bail bond. We may be in sensitive environments; do not acquire contraband temptations of any sort. I won’t think twice about excising you for *your* misdeeds once I extract the rest of the class. We also may travel through counties with recent legal changes, but we remain bound by UW-System policy, so therefore “contraband” in our vehicles at any time includes underage alcohol, purloined geologic or archaeological artifacts, and medicinal or recreational *Cannabis*.

Campus Conduct

There are six criteria affecting your participation score while on the UWSP campus:

- Attend ALL pre-departure meetings, (including drivers' as applicable).
- Advise me [privately] of all medications and their location.
- Park NO vehicles on campus during the trip. That includes bicycles.
- Clean all vehicle interiors upon return.
- Return all UWSP equipment on time, and in form.
- Attend the final post-trip meeting.

RENDEZVOUS

Departure: noon on Fridays at Parking Lot D behind the UWSP Science Building. Students must arrange for vehicle storage; vehicles may NOT remain untended at UWSP overnight.

Return: Sunday afternoons to Parking Lot D. It is possible that times sometimes might have to change because of weather or road conditions; if so we shall call ahead.

Potty Stops – a GEO 393 Scatological Tutorial [“Lifelong Learning for the Field”]



Some find field sanitation vexing, and improvise more familiar accommodations on-site. OK; but notice what is missing in this picture? [He soon “reported” back about this.]



Even when accommodations exist, they likely will often be chillier than expected. This can be a winter trip; plan to adapt. [Cardboard flatbread sleeves work pretty good, too.]



Make no late-night assumptions about the furnishings that you may encounter. It’s a different culture out here, and you’ll soon wear out your welcome if you misinterpret.



Check beneath outhouse seats BEFORE use. In case you needed to know, 88% of all black widow spider bites are to the genitals! (Now I wonder what grad student did *that* bit of empirical research?)



If, on-site, you encounter some unfamiliar object, please be cautious and inquire of me immediately. For example, one student some years ago decided to discreetly change out of sweaty undergarments and reported a funky camouflaged box hanging in a nearby tree. Within 20 minutes half the Kane County Sheriff's Department was visiting us inquiring about lewd conduct in front of their surveillance game camera [I'm NOT making this up!].

And no, folks, the item circled above actually is NOT a toothbrush rack or purse holder convenience.

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Wait, wait... you're telling me...



If I pee in the yard, I get a TREAT?

Yeah; much better than in *OUR* tent!

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393 Travel Gear



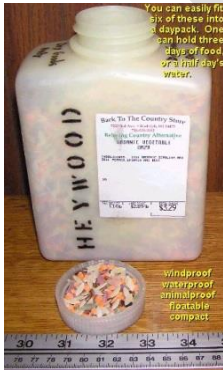
photo by M. Marcoe

We will be visiting a wide array of environments at a very rapid pace. We shall also rely on our own shelter and provisions for most days, and although there may be stays at campgrounds with showers, laundry and major PERSONAL reprovisioning will occur only a few times.

The suggestion list below is the *minimum* of PERSONAL clothing and equipment to ensure your health and comfort, but it must be as compact as possible, as we will have all of us AND our gear traveling in the vehicles. Capitalized items on the provisions and gear lists are *per person ESSENTIAL!* Limit your personal gear to ONE duffel bag/pack and one daypack. Please cap or tape any sharp frame edges that might cut or puncture others' tightly packed gear.



Bring suitable personal items, food, and beverages. All food must have sealed and hygienic storage, in animal-proof containers that you keep in the vehicle. I recommend rectangular Nalgene bottles with screw tops.



You can easily fit six of these into 6 daypacks. One can hold three days of food, or a military's water.

Windproof, waterproof, animalproof, frostproof, tamper-resistant.

ITEM	Remarks	Qty
BANDANAS	vivid colors	2
BUMMED HAT	ball cap OK; better with sun/wind flaps	1
DAY PACK	LABEL with name!, bright color.	1
DUFFLE BAG/PACK	do not bring rigid suitcases	1
GLOVES	light-leather garden pair	1
KNITTED CAP	conserves heat in sleep	1
LAUNDRY BAG	net mesh	1
LONG PANTS	avoid cotton; light color	3
OUTER SHIRTS	avoid cotton; long-sleeves	3
RAIN JACKET	compact for day packing	1
SHOES	one heavy tread; one lightweight	1
SHORT PANTS	for hot springs, swimming	1
SOCKS	avoid cotton; 1 pair; battery-heated	6
SUN GLASSES	ABSOLUTELY ESSENTIAL!	1
SWEATER	avoid cotton	1
TOILETRY KIT	soap, shampoo, facecloth, towel, toothbrush, comb	1
UNDERCLOTHING SETS	avoid cotton	3
WINTER JACKET	fast-dry fabric; -10°C	1
LEGGINGS (CHAPS)	cut-off jean legs or leather; to resist plant spines	1
BATTERY	bring up as spares on CD	1
FIELD NOTEBOOK	use provided; NO alternatives acceptable for grade	1
FLASHLIGHT	Wham AA photo batteries, fare bead	2
IDENTIFICATION	valid passport, or 2 photo IDs	1
PERSONAL MEDS	traveler's kit	200
SLEEPING BAG	water-resistant (-20°C) w/ one TOPO summer-weight bag; sleeping pad	1
WATER CONTAINERS	1-liter	2
2-burner PROPANE stove	NO white gas please	3
4-8 person tent w/ tarp	make sure all parts present and you know how to set up	1
cleaning set	have 1 already; dishpan, scouring pads, pan scraper, 1	1
compact PROPANE lantern	NO white gas please	3
cock sets	water-resistant (-20°C) w/ one TOPO summer-weight bag; sleeping pad	1
Duct, or metal sheath	in travel cases	1
GPS receivers		4
large dining table	25" x 32"	4
portable PBS radios	do NOT use CB	6
water casks	7-gallon rigid w/ spout	6
water filter	1 micron ceramic cartridge; 1 micron approved	1

Personal Clothing

Personal Field Gear

Communal Equipment

ITEM	Amount/type	Qty	Cost
analgesic tablets	small 2-packs	1	\$ 1.00
antacid tablets	small 2-packs	1	\$ 1.00
antibacterial ointment	single tube	1	\$ 3.00
antibacterial towelettes	10-pack	1	\$ 1.00
anti-diarrheal tablets	small 2-packs	1	\$ 1.00
bandaids	single set	1	\$ 1.00
band warmers	6-pack (vermicutite)	1	\$ 2.00
light stick	2-pack (green)	1	\$ 2.00
lighter or matches	single waterproof	1	\$ 1.00
lip balm	single stick	1	\$ 1.00
moleskin	2"x4" sheet	1	\$ 2.00
phone card	one hour	1	\$ 6.00
prescription medicines	1 antibiotic containers	1	
razor / soap	single set (disposable)	3	\$ 3.00
stretch bandage	4 roll	1	\$ 2.00
sunscreen	single tube; SPF 30 or more	1	\$ 4.00
toilet paper	single roll	1	\$ 1.00
toothbrush / paste	single set	1	\$ 2.00
tweezers	single set	1	\$ 1.00
ziplock cover bag	one and spare	2	\$ 2.00
aluminum foil	single roll; 6 yds (good w/ burnies)	1	\$ 1.00
beer (w/ 4 quart)	metal w/ lid	1	\$ 2.00
drinking cup	waterlight and animal-proof	1	\$ 3.00
food container	single set	1	\$ 2.00
metal bowl, spoon	metal with lid	1	\$ 1.00
meal bowl	metal with cover	1	\$ 1.00
scouring pads	2-pack	6	\$ 6.00
sinks or piers	single set	1	\$ 3.00
towels (flat dry)	one and spare	2	\$ 3.00
water containers	1-liter	2	\$ 3.00
candy	6-oz bags	2	\$ 3.00
canned cheeses	6-oz tins	4	\$ 6.00
canned meats	6-oz tins	6	\$ 12.00
canned nuts	6-oz tins	2	\$ 4.00
canned soups	10-oz cans	4	\$ 4.00
canned vegetables	6-oz tins	6	\$ 6.00
crackers/small-loaf bread	6-oz packages	4	\$ 6.00
dehydrated cereal	1-oz packets	24	\$ 6.00
dehydrated dinner	single meal	1	\$ 7.00
dehydrated drink mixes	4-oz packets (incl. coffee/tea)	6	\$ 12.00
dehydrated fruit	6-oz packages	4	\$ 10.00
dry phosphate mix	6-oz boxes	6	\$ 9.00
seasonings	2-oz tins (sweeteners, salt)	2	\$ 4.00
			\$ 155.00

Hygiene/First-aid

Camp Utility

Food

Demeanor: Expectations for Group Endeavors...



You will perhaps think my demands are draconian, or Sergeant Yorkish *a la* good fairy, or whatever. Too bad. Thrice now I have watched my parents bury their children, and I will not risk such an experience for your family, nor yourself. Plan on safety; plan on cooperation; plan on compliance. FOREMOST!

We are going to have to work in teams, and we fail in that purpose if we abandon any of our own. Sometimes this is not easy. Those having less experience may lag, or perhaps wish not to admit sub-Olympian skills. Others may feel that they pose a schedule impediment, even while they obtain "good stuff". More might feel that they have offended others beyond communication. It always amazes me how such perceptions almost always prove *inaccurate*. *Every one of you brings a unique array of valuable skills to the class teams*. Good teams adjust. With 393 students, almost always I've seen good teams.

393 in many ways is as much a course in personal development as it is for academic accomplishment, and so it goes much beyond landscape experience and some sort of research agenda. Interpersonal bonding and the consequent intellectual growth--practice and acquisition of cooperative skills--has always been remarkable on these trips. You come along with us to gain that, too.

But if you come along, there are some conduct standards that I impose upon *ALL* of us. If you cannot accept these, please go on some other trip; I cannot compromise here.

Personal Conduct

Much of this is just common sense, but for the record, here are some conduct policies with which I expect that all trip participants *must* be familiar and comply:

- **ALCOHOL:** Use discretion. I do not ban alcohol, but I will not tolerate drunkenness, nor will I tolerate any alcohol use in the backcountry; on-site it could jeopardize your teammates. Keep it at camp. At the end of a busy day, I like sipping a beer while sorting and cleaning gear just as much as the next person. But, no one can do a nightly twelve-pack without so affecting field work that a grade impact is avoidable. We WILL comply with local regulations (age limits, dry counties, etc.). Also, alcohol is a diuretic; it accelerates dehydration by about 1 hour for each 4 oz drink or 12 oz beer, even after consumption ceases. This can become quite dangerous to you *and the rest of us* at desert or high altitude sites.
- **TOBACCO:** There is no tobacco use permissible at any time in any University vehicle. At most sites, indoor tobacco use bans are in effect, and common courtesy dictates that this applies to all restaurants and other public facilities. Because of fire hazard, there must be no tobacco use inside of any tent, and comply with *all* smoking bans on trails.
- **FIREARMS:** Sorry. This is not a hunting trip; we will not need to rob any banks; and nobody is going to attack us--you have no need for firearms. *Leave your guns at home*; you are going to be far too busy to hold any target practice.
- **CONTROLLED SUBSTANCES:** None acceptable; discussion over. Yes, we occasionally have encountered it, but never among 393 participants. I will *personally* turn over any violators or evidence to the gentle hands of the DEA or state police. And I won't care if your Mommy gets mad. ***DON'T DO IT!!!***

- **MEDICATIONS:** I ask that you provide me a list of your health insurance, medical conditions, and all medications; please be accurate. However, I am neither nurse nor gossip. Unless in dire disability, I expect you to properly administer your own prescriptions. Please have these labeled and at a location where I can find them for you in any emergency. As we may be in DEA priority areas, be sure that you have proper pharmaceutical labels on ALL prescription drugs. I, in turn, promise that I will NEVER reveal your medical data to anyone other than medical personnel, and I promise to destroy my listings immediately upon our return to UWSP. That you all know, I am severely allergic to bee-sting; dump any kind of antihistamine into me if I appear in shock, then rush me to nearest first aid station for observation.
- **TENTING:** Most nights we will sleep in tents. Some of these may be loaners, and if so we must be careful not to damage them. Of more immediate concern will be our tent occupancy; in cold weather (which we must expect) a tent is more heat efficient when we fully occupy it, but concurrently we must leave room for personal gear, and nothing must touch the tent walls (lest they leak). Winter camping requires extra gear, and therefore space. My own guideline is to divide the advertised tent occupancy rating in half, and then add one person.
- **PARTY SIZES:** In campsites, there often cannot be more than eight occupants. Therefore, on some nights we may have to split the class to comply with this rule. The same applies along some trails. Anytime we have multiple parties in the field, your FRS radio monitoring must be continuous. Always have extra batteries. And, **NOBODY EVER TRAVELS ALONE!**
- **NOISE:** At lodging, on guided tours, and in restaurants you *WILL* keep noise to reasonable levels. "Reasonable" means that no other visitors find us annoying. After 10 PM (and yes, we may have some arrivals after this hour), the management and our fellow occupants will not appreciate loud parties, undue cheering, tent stake hammering, engine revs, etc. It is reduction to your participation grade if I receive noise complaints.
- **HARASSMENT:** I have absolutely NO tolerance for any form of racial, ethnic, gender, religious, linguistic, departmental, or other bigotry. We will be in close quarters for most of these trips, and we will encounter a wide variety of fellow travelers and local people. I do have recourse options that I can apply toward anyone I catch engaging in derogatory remarks or actions, and any transgressor will find these extremely costly in their own dollars and course grade. However, you are legal adults. I cannot interfere with your interpersonal relationships, unless they pose risk or impediment to the class. We have never had any occasion for concerns about harassment. Please don't you be a first.
- **VEHICLES:** See the Transit and the Driver info (even if you will not drive) about my expectations. Please remember that the vehicles do not belong to us, and so they should not receive excessive wear, nor should we convert them into roaming landfills. Vehicles **SHOULD** receive a thorough communal cleaning daily, and drivers must inspect and report fluids, wipers, lights, and mechanical soundness *daily*. No one should ever remove any vehicle paperwork from a vehicle, except upon request of a law enforcement officer. Vehicles are notoriously poor as safe deposit vaults; do NOT leave valuables unattended in a vehicle. No one should regard any part of any vehicle as personal "closet space"; keep your gear compact and with you at night. However, please always **DO** use vehicles as a secure overnight food/trash repository (but keep these in wrapped containers, *please*).
- **FINANCE:** We know from experience that group procurement and record-keeping is simplest by using ONE instructor's corporate credit card. Accordingly, we ask that the entire group channel all mutual expenditures through a trip "banker". Aside from provisions, souvenirs, and personal phone calls, you should have rather few cash needs during this trip. Consult with the instructor and your classmates before making equipment purchases—we may already have it! Do not feel ashamed if you need to request cash from the instructor. That "banker" once was a student, too, and will be discrete. Obviously, this cannot become a regular habit, and you must repay at first ATM opportunity (there are severe legal limitations to student-staff transactions), but please do not miss an opportunity because of a crumby twentybucks.
- **SECURITY:** In years past we had little reason for concern about this, other than the time I left the University credit card sitting at a cash register in Gallup NM (our ADA got it back). However, times have changed. While the prospect for trouble is small, I must raise awareness about several security issues.
 1. Theft or "planted" contraband is a potential problem for unlocked vehicles, untended luggage, and visible valuables. Lock all vehicles and conceal luggage and valuables inside whenever none of our party is present, including backcountry stops. Label all of your personal items with permanent marker, and record serial numbers. **KEEP ALL BANK CARDS, KEYS, MEDICATIONS, AND YOUR PERSONAL IDENTIFICATION WITH YOU AT ALL TIMES!** Never reveal large amounts of cash, electronics, or jewelry.

2. ALWAYS use the "buddy system". Just like in the Scouts, always keep at least one other member of our party within voice range. For greater visibility, wear "garish" colors, and one of your party must carry an FRS radio anytime you are away from our vehicles. If it is night, you and your "buddies" should EACH have a functional illumination device (flashlight, glowstick, etc.). Advise me immediately of your location and situation should you observe any suspicious individual or behavior.
 3. Comply IMMEDIATELY with any Border Patrol, Park Ranger or Host, military, or other law enforcement officer directive. These people are present for our safety and welfare, and you should be certain that they will be observing us. A law officer's job is to ensure that legitimate visitors have safe and satisfying experiences, but they also must watch for narcotics or other security threats; no easy task. However, these armed officers know none of us personally, and may respond "forcefully" if they sense any dangerous or evasive actions.
 4. If a law officer stops you, be courteous and compliant, but ask them for (and note) official identity, and request permission to contact the course instructor. KEEP YOUR HANDS VISIBLE AT ALL TIMES! These folks have had altogether too many experiences with vicious miscreants, and understandably they are sensitive (they have lives and families, too). Remember, they are here for YOU. In all likelihood, an inquiring officer will assist and accommodate you, as it provides them an opportunity for acquainting with our entire party and our purpose. Should they direct us to leave a location, we will do so ASAP (it is likely for our own good). Never become uncooperative or offensive, lest you and/or all of us spend the night at a local "hospitality suite" (the kind with bars). Should that happen for any reason, I will personally place you onto the next available cut-rate transportation AT YOUR EXPENSE AND A COURSE FAILURE.
- **INSUBORDINATION:** Like it or not, the instructor of this course bears legal and moral responsibility for the safe conduct and academic performance of all participants. Therefore, any instructor's demand, on any matter during this trip, requires obligatory and immediate compliance. While I shall attempt to minimize exercise of this, when it does occur there is no exemption. There is recourse toward anyone disregarding my conduct instructions. Violators will find them very costly, in dollars and course grade. In many years of 393, I never have had occasion to exercise this option; let's keep it this way. Please!
 - **DATA:** All raw data (handouts, measurements, photographs, summarizations, etc.) are joint class property that will be available to everyone participating, regardless of origin or condition. For this I will establish a D2L repository accessible to all participants.

Participation: Expectations for Scheduled Excursions...



Twenty percent of your grade derives from the quality of your field participation. This is a somewhat subjective evaluation, as there are various specific goals or objectives that student teams are trying to achieve. Much of the participation score is simply common sense, given the circumstances of group travel over long distances into unfamiliar places. The guidelines below clarify what we shall consider for this element of your course grade.

We have planned, and you paid for, many major hiking trips at sites important to the course objectives. These are *mandatory* walking trips ranging from one to ten kilometers miles (use the links below for maps). They also will occur in very diverse landscapes. Expect (for grade) that you shall 1) take ALL of these hikes (barring extraordinary personal circumstances), and 2) be prepared for them.

Preparation includes many things. You must have appropriate clothing, provisions, and gear for conditions not only at departure, but also for any contingencies (e.g., weather changes, altitude, etc.) that are likely on our trail. You also must have your research needs in order, such as proper stowage and practice with instrumentation and data recording materials. Further, you should depart already familiar with your objectives, task assignments, and restrictions--attempting to gain such familiarity after departure is a recipe for an oversight disaster.

Another very important element of fieldwork is courtesy. Obviously you must cooperate with others in the party, but

equally important is respect and compliance with the customs and requests of local hosts and other visitors. We

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may receive unusual privileges to visit places ordinarily closed to the public (e.g., private lands, Native American sacred sites). At such sites you will adhere to ALL host instructions, lest we lose future opportunity by acquiring reputation as desecrators.

Timeliness and communications are essential in group excursions. Although some flexibility is understandable, repeated individual tardiness impedes group objectives, and the party will quickly ostracize deadbeats and slackers. While in the field it is also imperative that all persons remain in contact, not so much for the rare emergencies as rather for the likelihood of sharing interesting finds. You should plan to be prompt in your communication with others, at all times on all hiking excursions.

The parking lot pariah who chronically sits behind with the vehicles, takes knowing and unnecessary risks, behaves rudely, or (once pried onto the trail) refuses to communicate or heed should expect an extreme decline in their course grade, commensurate with fellow student impact and instructor annoyance.

DRIVING

Unavoidably (at least until Scottie's transporter room becomes available on university revenues), we shall have to endure vehicle-bound days each way. During this cramped time please observe some basic passenger courtesies.

- WEAR SEAT BELTS (the driver does not deserve your ticket; I will ensure that YOU will pay it).
- BRING YOUR OWN ENTERTAINMENT DEVICE (avoid radio fights). I like to remove the knobs from vehicle radios in case you forget.
- WEAR HEADPHONES. It might be possible that your neighbors will not appreciate five straight hours of Ozzy Osborne dueting Cornball Billy's harpsichord and bagpipe chamber ensemble in "*Gru Disemboweling Donner and Blitzen at a Jet Engine Test Factory*", and other such classics. You get the picture...**headphones**. Otherwise, I might retaliate with all nine **polka** versions of "*Stairway to Heaven*", followed by an acapella version of "*In a Gadda Da Vida*" (and, yes, I havethose!).
- USE (AND SEAL) LITTERBAGS; do not landfill the back seats. However, DO store camp trash in vehicles overnight, and dispose of it at first proper opportunity.
- Refrain from any unsolicited advice to the driver. I will do that, if needed.
- Stow your SMALL personal coolers near you. Buddy-system with these, and CLEAN THEM regularly. There is still a toxic cooler and a HAZMAT team at a Flagstaff motel from our 2001 student who left unwrapped and eventually chartreuse bologna underneath the car heater for four days.
- NO OPEN ALCOHOL BEVERAGES IN MOVING VEHICLES AT ANY TIME! If you acquire our driver a citation, I will support their small-claims court restitution case against you.
- Minimize aromatics (no tobacco, perfume, aftershave, soap, shampoo, lutefisk, aged brick cheese, cooking fuel, etc.) should ever be open in our vehicles (or in your tent). BTW, bag your old socks.
- TURN CELL PHONES AND GPS RECEIVERS **OFF** (when on the interstate). Switching cells at highway velocity rapidly wears down the battery, and our power inverters' priority will be for recharging field equipment (cameras, computer, etc.), not your cell phone.
- Synchronize your bladder with the whole group. We stop about once every two hours. Stopping every half hour delays the entire class from what it paid for.
- Keep your road meal times reasonable (30 minutes maximum). Ditto the previous point about delays.
- Observe motel & campground courtesy. That includes all waste disposals.
- Load out and load in promptly at tent camps, and on time (15 minutes should do it).
- Advise driver/instructors IMMEDIATELY of any vehicle or equipment defects.



(

Drivers: We will be relying upon some of you to assist with the driving, and we have done so on numerous past trips with exemplary motor vehicle conduct. However, it is likely that you will encounter some driving conditions outside your previous experience during this trip; therefore, you must know of and be compliant with my very strict driving policies.



LIGHTS AND DISTANCE



Note skid's terminus!



Canyon floods



Convoy dust



Road surfaces



Open range livestock



Landslides



Glare

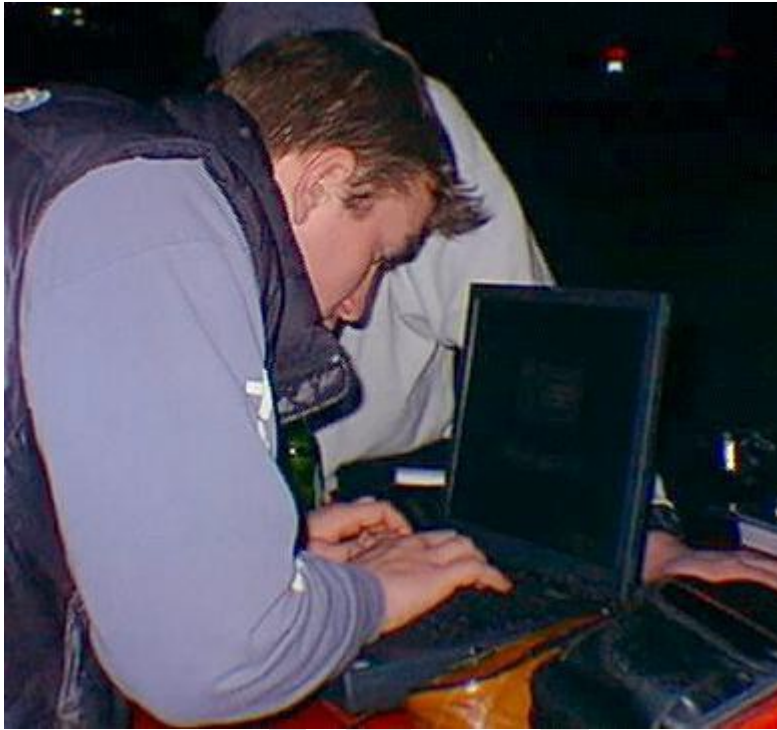
Review the state fleet policy and procedure manual and other information at UWSP [Transportation Services](#). These apply to rental and private vehicles also. I will personally and immediately remove any driver who breaches my rules. Even the most momentary lapse of road safety can turn a wonderful field experience into a lifelong regret for every person on this trip. I have zero tolerance for any driver thoughtlessly imposing this prospect onto the rest of our expedition party. As the person signing out these vehicles, my standards below are non-negotiable.

Don't try me; I give NO "second chances". If you habitually rely upon second chances and extra credit in life, don't take up skydiving, heart surgery, or nuclear hand grenades. Or drive for 393.

ALL DRIVERS MUST MEET WITH ME BEFORE DEPARTURE. No meeting, no driving, discussion over.

- Nobody else drives your vehicle. That means that *nobody*, including passengers who may offer all kinds of advice, can relieve you of YOUR responsibility for YOUR driving performance. Regardless of how vociferous your passengers' suggestions, remember that we selected you because we respected YOUR judgment and maturity. Although sometimes hard, you must stand firm on YOUR decisions even when peer pressure seems overwhelming. YOU are the captain of your car; YOU have obligation to get everyone home safely.
- You may NOT drive any UWSP or rental vehicle unless you have a valid driving license upon your person.
- You may not borrow any faculty member's PRIVATE vehicle. You have no insurance for faculty vehicles.
- You may not drive any vehicle at any time on this trip if you have ANY moving infractions during the past twenty-four months. UWSP will check on your record, annually.
- Always err on the side of caution. Do not try to "run the risk" for anything, no matter how urgent you think the situation. If I ever believe that you are taking excessive risk (and I am the sole judge on the road), you will drive no more for us.
- If at any time I have reason to believe that you are driving under impaired ability (alcohol, hangover, injury, indigestion, medication, emotional stress, etc.) I will remove you from the driver pool until I am satisfied that you are back to safe functionality. These standards are mine alone to judge.
- ALL passengers at ALL times when a vehicle is moving *WILL* wear safety restraints. As the driver, remember that YOU personally are liable, and that the University will NOT pay your seatbelt citations.
- There is NO smoking or alcohol whatsoever permitted in any University or rental vehicle.
- Drivers must immediately provide all fuel and maintenance receipts to the trip faculty. You must report any apparent vehicle defect immediately. Please check the oil and radiator fluid each day.
- **Headlights must be ON** anytime the vehicle is moving, day or night.
- The obvious: you *WILL* comply with ALL posted speed limits and traffic regulations. The University will NOT pay for any of your traffic citations. This includes any parking infractions.

READINGS



Our [D2L](#) (see Content-Readings) holds various text and graphic references. *Please review these prior to departure*, so that you have some advance knowledge of what to expect on-site. Contrary to what the photo above might suggest, you should expect no WiFi access once we are on-site; download and attach all necessary references (as indicated) as hardcopy into your fieldbook before departure!

Pre-trip Assignments and Attendance

Twenty percent of your grade derives from pre-trip activities, which include excursion planning and budgeting assignments specific to your ambitions. We will meet as a class prior to departure to discuss these.

393 Field Notebook

Twenty percent of your grade derives from the quality of your field notebook. **YOU MUST SUBMIT THE FIELD NOTEBOOK THAT I PROVIDE YOU, REGARDLESS OF ITS CONDITION; I WILL ACCEPT NO ALTERNATIVES.**

Label whether Geography or Geology on the first page.

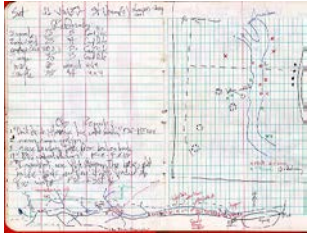
Field notebooks have no universally acceptable format, content, or data/computation requirements, nor can they. The guiding rule that I suggest is that **your notes should contain written documentation and annotated graphics sufficient to enable reconstruction, by anyone and at any time subsequent to the end of your excursion, of all experiences germane to addressing your research question.** Your purpose is to record detailed and reconstructable evidence.

I suggest that, in addition to writing your identification info (name, address, phone, e-mail, etc.), you should also write your **SPECIFIC** research question on the very first page of your notebook. Refer often to this to keep focus.

I sometimes receive field notebooks so ornate and finished in appearance that they would shame Michelangelo. These are immediately suspect. A field notebook is your record of on-site observations, often made under conditions of haste, inclement weather, distraction, and fatigue. Although your field notetaking should meet the objectives below, it is unrealistic that you will have polished appearance and form. In field notebooks content is what counts most, not "prettiness". As an

example of how raw these can (or should?) look, below is an excerpt from my own 1988 PhD dissertation field notebook:

DRAFT



Pretty sloppy, but what can you expect from a note taker carrying gear and recording data for five hours, over seven miles, and across 2300 feet of relief? "Scribbly" notes were still useable to me, so you need not attempt to be Mr. or Ms. Clean yourself.

Content

By the diversity of topics it is difficult to give generic advice about what any particular student should seek for content. For each of the visit sites we have provided some suggestions for what you should watch for and take notes about, but please do not simply parrot our precise words or limit yourself to the concepts we describe on the "watch for" list--it is very likely (and quite valuable) when students record observations of additional phenomena in their own words.

However, certain content *characteristics* warrant your attention. These should include:

- a prose description of the landscape, including paraphrasing of relevant displays/exhibits. Describe also your objectives and purposes, and write a summarization of each day's activities.
- *any* measurements that you make (including GPS), *and* the procedures you used to make them. It probably is a good idea to also note why these measurements were worthwhile to your research question. Note any measurements, regardless of quality, but if suspect note why you have reservations about them. Indicate any computation methods that you used in the field, why you used them, whether they worked, and especially if you used them to make further field data decisions (type, method modifications, etc.).
- a description of your methods, why you used them, and when you used them. Also, when they failed.
- summarization of local personnel presentations
- draw sketch diagrams (maps, landscape profiles)
- use pre-made tables
- a logistics table of travel days, dates, locations, and costs (I recommend time/date stamps as available; see below)

What the field book should NOT be is a "Dear Diary" record of gossip and complaints. Unless necessary to reconstruct matters pertaining to your project objective, itemization of "who said what about whom" are frivolous and inappropriate. You **SHOULD**, however, record the name of another person if they have obtained information (photos, books, etc.) that you may later want to borrow.

Format

- use pencil (erases if necessary, but will not run or fade)
- record date, time, location, personnel, etc. at top
- organize measurements by column and row; LABEL!
- indicate special data (photos) time/location in notes
- classify & use multiple colors (in PENCIL) in notes
- label everything on sketch diagrams

Inclusions

- photos; include only most relevant in notebook; **INCLUDE A STANDARDIZED SIZE AND COLOR SCALE!**
- maps; reference any in use by name & purpose
- sketch copies of relevant exhibit diagrams
- document (site, date, significance, etc.) ANY sample

References

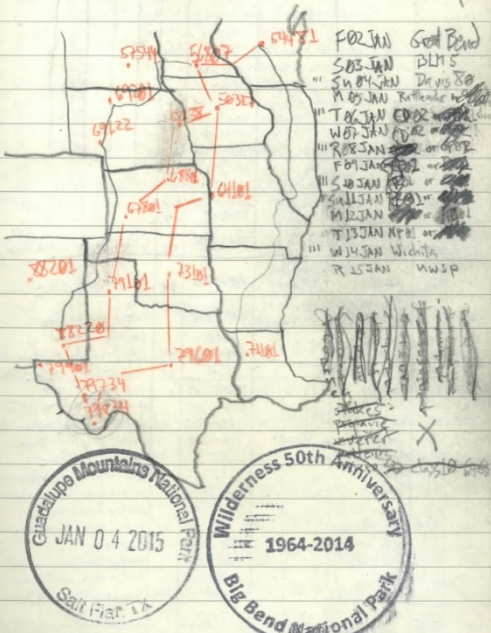
- FULLY record references (guides, maps, date, etc.)
- record discussants (name, address, topic, date)
- collect and record literature (brochures, etc.)
- if in doubt, cite the source!

You of course are welcome to show your notes and seek consultation from the instructors and your peers during the trip. Keep very careful track of your notebook's location, but should it turn up missing inform an instructor IMMEDIATELY--we *will* dispatch a retrieval party if the loss is within the past few hours.

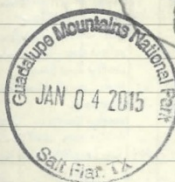
ITEM	DATE	HR	WEAX	COST	ODMETER	LOCALE
berries	22 JAN 10	1532	—	51.85	—3912	Stations Point
mel	"	—	—	32.94	—3912	"
banana	19 JAN 10	—	—	166.55	—3912	"
fruit	"	11	14 on 55	26.41	8059	Albert Lea TX
"	"	17	32 on 55	24.91	8416	Sears NB
"	"	22	22 on 55	159.46	8659	Great Bend KS
"	"	29	29 on 55	28.52	8788	Neac KS
"	"	17	45 on 50	37.91	9188	Seminole TX
"	"	19	44 on 55	391.08	9288	Carlsbad NM 1935
"	"	23	44 on 55	68.72	—	25 dr W5
"	"	23	5E15 on 55	70.08	9370	Carlsbad Cactus Spill
"	"	11	32 dr	21.26	9376	Cat's bad
"	"	11	32 dr	22.05	9396	"
"	"	17	31 dr	25.05	9655	H Davis SP80
"	"	19	3A on 55	3.58	7683	Higley TX
"	"	22	44 on 55	21.58	9293	Wichita KS TX
"	"	13	66 on 55	—	9314	Rattlesnake
"	"	27	25 on 55	11.55	9686	Alpine TX 37mhr
"	"	28	59 on 55	14.45	9723	Redington TX
"	"	16	48 on 55	25.26	9984	Panther Jet TX
"	"	19	34 on 55	29.18	9930	Camellia 45 dr
"	"	27	41 on 55	—	10076	Palmer TX
"	"	29	41 on 55	—	10076	Canada TX
"	"	14	42 on 55	—	10125	Grand TX 28 on 55
"	"	29	29 on 55	16.04	10145	Rio Grande Village
"	"	28	27 on 55	15.62	10167	Rio Grande Village
"	"	28	42 on 55	7.63	10175	Rio Grande Village
"	"	17	35 on 55	—	10280	K-Bar BL 31 on 55
"	"	11	32 on 55	182.03	10303	Chase Lake
"	"	17	52 on 55	25.66	10317	Panther Jet
"	"	15	58 on 55	—	10320	K-Bar BL 31 on 55
"	"	15	68 on 55	31.31	10499	Pjo Grande Village
"	"	16	59 on 55	—	10499	K-Bar BL 22 on 55
"	"	12	38 on 55	31.61	10513	Hogwings TX
"	"	15	32 on 55	25.21	10583	background
"	"	28	28 on 55	162.22	11267	Wichita KS
"	"	28	23 on 55	23.52	11767	Des Moines IA
"	"	29	19 on 55	35.05	11864	House Log TX
"	"	11	18 on 55	35.94	42066	Stations Point
"	"	12	11 on 55	518.4	42079	"

393 TRAVEL PLAN 02-16 JAN 15
 GPS: NH-20; KL-21; AP-22; MS-25
 whole: VIN: F7538655 Plate: 429-VGA
 201000055 W5
 201000055 W5
 201000055 W5

WOM - 2424 BT
 Start date: 7/12
 Stop date: 1/2019
 2010
 Make: Journey



- FOR JAN Good Bend
- S03 JAN DLM5
- S04 JAN Davis 80
- T05 JAN Redington
- W07 JAN Chase Lake
- FOR JAN Hogwings
- S04 JAN Palmer
- S05 JAN Rattlesnake
- T03 JAN Redington
- W04 JAN Wichita
- R05 JAN Wisp



cell success: E17, E15, E05, K-Bar, Redington, Last Three, Chase Lake

DRAFT

POST-TRIP PRESENTATIONS & EXHIBITS

Twenty percent of your 393 grade derives your project presentation, and twenty more from your poster, upon return. The faculty regard communication of research findings as an essential skill, and this course requirement is our way to give you practice at it on topics that you know better than anyone else by virtue of first-hand experience. This is an opportunity.

Upon completion of the excursion, we assume and encourage that you share your experiences with others back here at home, and elsewhere. Most of you have already received some considerable training in publicity vehicles, such as web sites, lecture graphics, and personal discussions. These are valuable skills! We want you to construct a public exhibition poster of what you experienced, and share it with those who could not accompany you.

Let's you think your work can only go back into some UWSP prof's office, be aware that past 393 students have produced successful capstone projects and have made professional presentations from their field work at Stevens Point, La Crosse, Madison, Reno NV, Washington DC, and elsewhere. We encourage you to extend your fieldwork into other courses and public presentations. This can be the most satisfying part of your experience!

We require you to develop team posters and presentations (see scoring rubrics). Not only does this foster creativity through collaboration, but it also captures some very favorable audience acclaim, and provides flexibility in light of busy schedules among the teammates. Think also about what successful teamwork experience shows to employers.

Ensure that your final submission is suitable for presentation to the public. **PROOFREAD your work! BE SURE TO INCLUDE PROPER CITATIONS!!!** We may place your product in a public display, and your name(s) will appear on it.



University of Wisconsin-Stevens Point

Determining the Paleoenvironments of Mesozoic Fossils as seen along Fossil Discovery Trail in Dinosaur National Monument

BY: NELLI M. SUTHERLAND
GEO 393 SUMMER 2015

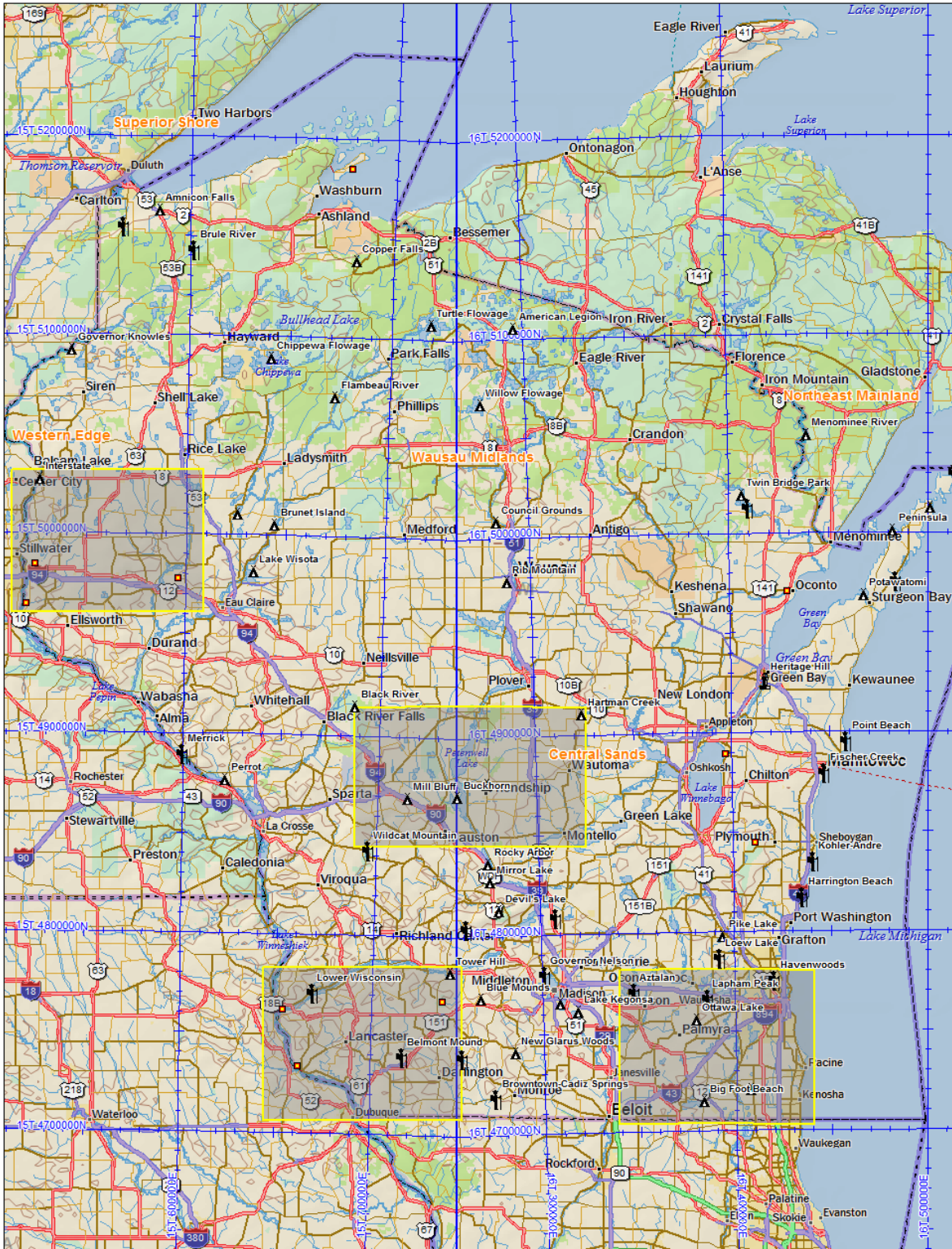
Introduction
When Paleontology burst in the 1870s, there was a race to find and collect fossils. They paid little attention to the information that could be gathered from the rock. They had basic information on each of the formations, however (Lambert 1971). Today, paleontologists study the depositional context of fossils in order to gain a better understanding of the ancient environment. The Fossil Discovery Trail in Dinosaur National Monument is a great location for collecting photographs to be taken with an interest in the depositional context of fossils. This poster is a walk through of these fossils looking at evidence that leads paleontologists to their conclusions of what this ancient landscape may have looked like.

Looking at the Evidence
There is some evidence left behind for each environment over the course of the Earth's history. It is useful to look at as many clues as are available. Fossils (or the absence of) give us information on the type of environment in which that particular organism may have lived. We can also determine the type of environment simply based on the type of rock deposited. Many modern day environments are depositing the same rock types as those deposited in the past (Klein, et al., 1963, 2005). We can also use formations such as rivers and trail tracks as additional evidence. The following is each Mesozoic layer (containing fossils) along the Fossil Discovery Trail and the evidence found for the environment, arranged from the oldest to youngest.

Stump Formation (Lower)
Middle Jurassic (~165 mya)
-Siltstone and shale over Sandstone
-Fossiliferous Sandstone, Shale, siltstone seen on trail see image 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Stump Formation (Lower)
Middle Jurassic (~165 mya)
-Siltstone and shale over Sandstone
-Fossiliferous Sandstone, Shale, siltstone seen on trail see image 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

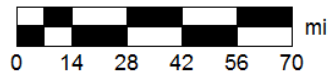
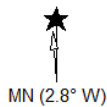
Stump Formation (Lower)
Middle Jurassic (~165 mya)
-Siltstone and shale over Sandstone
-Fossiliferous Sandstone, Shale, siltstone seen on trail see image 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289,



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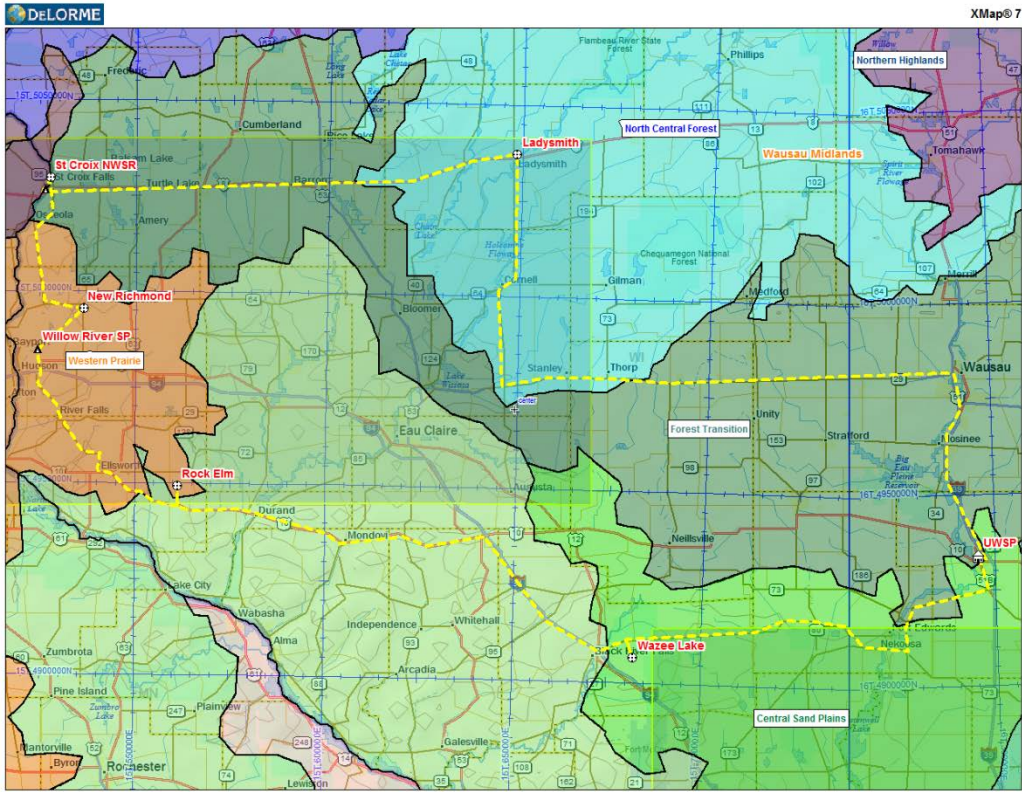


Data Zoom 6-3

Tentative GEO 393 Fall 2017 weekend areas

DRAFT

West Wisconsin 15-17SEP2017



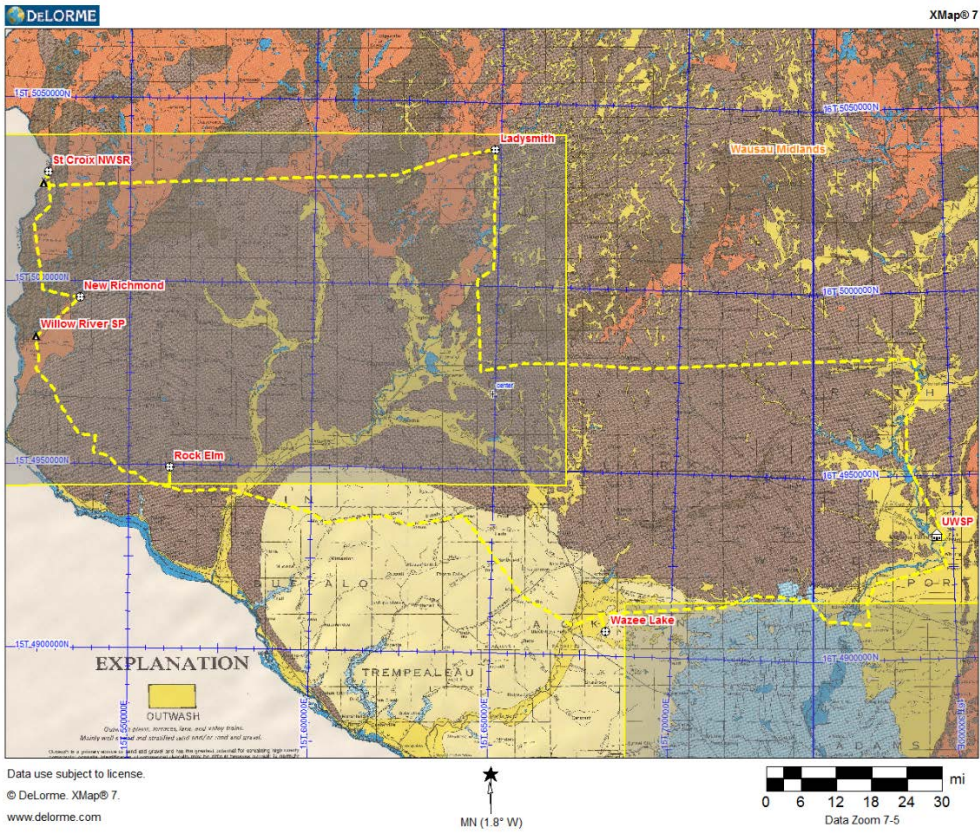
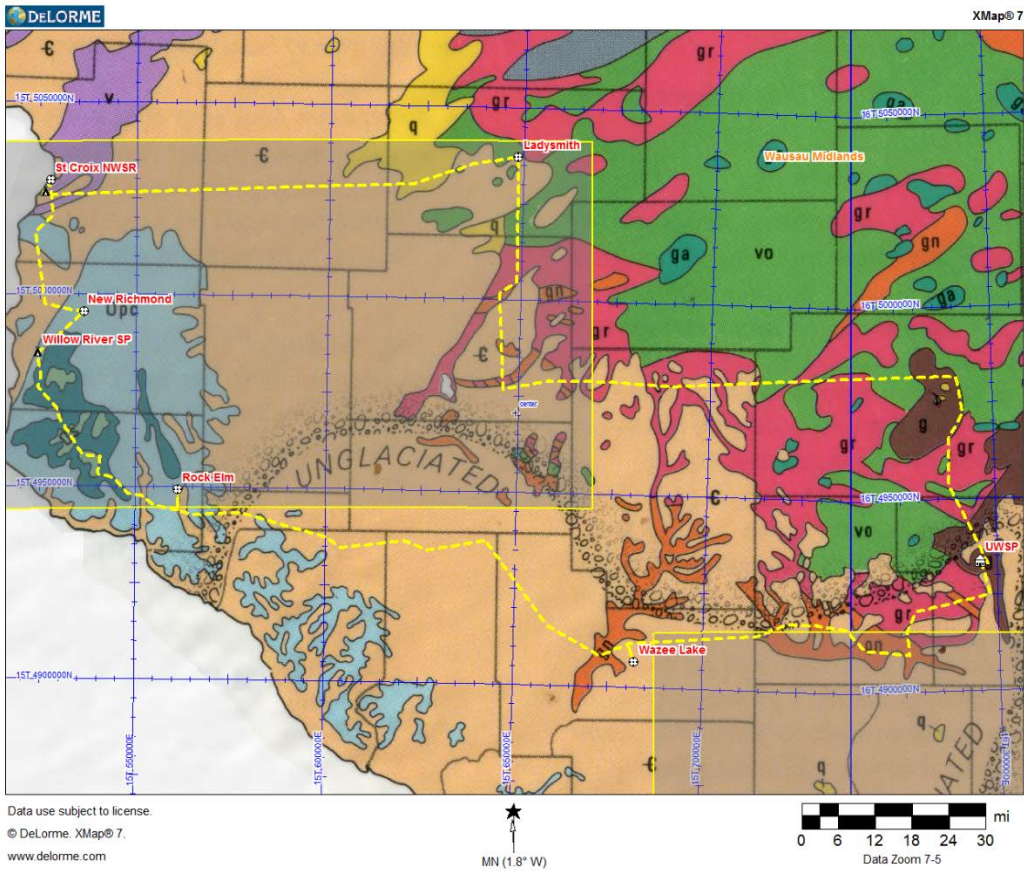
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MN (1.8" W)

0 6 12 18 24 30 mi
Data Zoom 7-5

Ecology

DRY



The entire historical museum consists of sixteen buildings displaying thousands of donations from the citizens of Rusk County to be shared with the many visitors each year to the museum.

Exhibits housed in the museum buildings include:

- military uniforms dating from 1914-2006
- military memorabilia
- early farming tools
- large collection of log stamping hammers, logging photos and artifacts
- printed historical perspectives from many early Rusk county pioneers
- Gates/Rusk County Courthouse furnishing from 1902
- historical medical display
- vintage clothing
- a private collection of over 200 straight edge razors

Open in 2016—new agriculture building!



The remains of the Ladysmith saw, tower that was destroyed during the 2000 Labor Day tornado in Rusk County



The Gates County Courthouse which houses many artifacts from the years 1901-1905. During these years the county of Rusk was named Gates County.

Rusk County Historical Society

John Terrill, President 715-532-3059
 Janet Platteter, Curator 715-415-3114 cell
 jplatteter@yahoo.com
 or Contact the
 Rusk County Visitor Center/Rail Museum
 715-532-2642

www.ruskcounty.org



Find us on Facebook
www.facebook.com
 Rusk County Historical Museum

Exhibits are sponsored
 and maintained by the
Rusk County Historical Society

Rusk County Historical Museum



**Weekends:
 Memorial Day
 thru Labor Day
 12:30 - 4:30 p.m.**

Donations Appreciated

—Handicap Accessible—

The Little Red Schoolhouse has continued to be the premier exhibit at the museum

Go back in time at the Rusk County Historical Museum.

See and experience the breath of Rusk County history at one site. Sit in the desks of the 1900 one room schoolhouse. Take a walk into the lumberjack bunkhouse to see how the early lumberjacks lived. The farm equipment display shows the early days of pioneer farming.



1900 one room schoolhouse



Medical display of early Rusk County Physicians



Historical photos and resource materials for Rusk County villages and towns



Replica of a 1899 lumberjack bunkhouse



Military display serves as a tribute to military service men and women of Rusk County

Take a Fascinating Trip into the Past

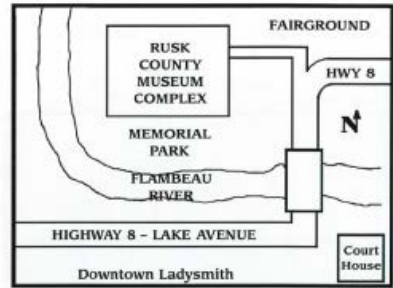
at the Rusk County Historical Museum!



Vintage Kitchen



Civilian Conservation Corps (Camp Rusk)



The Rusk County Historical Museum is located on the Rusk County Fairground, which is across the Flambeau River Bridge from downtown Ladysmith, and just north of Memorial Park.

DRAFT

Rusk County Historical Society History

The Rusk County Historical Society was incorporated in 1955 and is a non-profit organization. The objectives of the society are the discovery, preservation, and public dissemination of the history of Rusk County and the state of Wisconsin.

SOO LINE EQUIPMENT AT THE RUSK COUNTY VISITOR'S CENTER AND RAILROAD MUSEUM



Soo Line Diesel #500

Soo Line diesel #500 was one of the first passenger diesels on the Minneapolis, St. Paul and Sault St. Marie Railroad ("Soo Line"). The FP7 was built in November of 1949 by the Electro-Motive Division of General Motors in La Grange, IL, and was an EMD demonstrator until being acquired by the Soo Line in the spring of 1950. Before 1950 all Soo Line passenger trains were pulled by steam locomotives, which produced the steam used to heat the passenger cars during the cold winter months. The FP7 diesel, however, had a steam generator for that purpose, and the railroad decided to purchase two FP7s with F7 cabless boosters in May of 1950.

The 500 pulled the first regularly scheduled diesel-powered passenger train on the Soo Line on May 22, 1950. That train was the Soo-Domination. By 1955 diesels had replaced the venerable steam locomotives. The 5—was used for passenger service until the Soo Line discontinued its passenger trains in the mid 1960s. It pulled freight trains in succeeding years before being relegated to snow plowing service. It was retired in 1985. Since being in Ladysmith the 500, which is owned by the City of Ladysmith, has been painted twice. The second time under the guidance of Bill Morgan and Ray Carlson.

Passenger-Baggage 358

Soo Line combine (passenger-baggage) car 358, like so many cars was rebuilt at the Soo Line Shoreham shops to meet a changing world. The car was built in December of 1913 by Barney & Smith as Soo Line sleeping car 1240, named the "Bruce" after the Village of Bruce. The 121,000 pound car had a state room on one end and a smoking room on the other. The green plush seats in the center of the car converted into lower berths. The upper berths pulled out from above. In 1941 it was rebuilt by the Soo Line as a passenger-baggage car 358. The rear 28 feet of the 81-foot-long steel car had 13 seats in gray mohair fabric, two toilets, a wash stand and a coal heater. The seating capacity was 26. The front 43 feet of the six-axled car carried baggage. Its last function was as a combination cooking-eating-sleeping car for the section crew. It was numbered 1470.

RPO-REA 552

Rail Post Office-Railway Express Agency car 552 was built by Barney & Smith in October 1911 as Soo Line parlor car 400. The 81.5 foot long steel car was elegant. There was leaded glass gothic window trim. On either side of the center aisle were individual plush green velvet seats

that faced the windows. There was a drawing room on one end and a large ladies toilet on the other. The 138,500 pound, six-axel car was rebuilt into its present configuration in October of 1941 by the Soo Line. The front 15 feet of the car was a rail Post Office where rail postal workers sorted mail en route. Mail was picked up and dropped off at stations, often "on the fly." There are still mail slots on each side where people could mail their letters from the depot platform. The car normally was coupled immediately behind the steam locomotive/diesel or in the back of the milk car which carried fresh cream and butter. The car was converted to a section car 602 in 1968 and served as a cook car until retirement to the Shoreham coach year in Minneapolis.

Coach 998

Soo Line first class coach 998 was built in August of 1911 by Barney & Smith of Dayton, Ohio. The 74-foot-long steel car feather green plush upholstery and in later years brown friezes. It had a seating capacity of 76. The six-axel, 131,000 pound car was a heavyweight and afforded a good ride. Unlike other railroads, the Soo Line never replaced its vintage passenger equipment with streamlined lightweight cars. The Soo Line installed a Waukesha air conditioning system in the car in May of 1940. The coach was used in passenger service until the mid 1960s when the Soo Line discontinued its passenger trains. The car was converted in 1968 to B&B section crew dining car 603, and it was used into the 1980s.

The last run of passenger trains 7 and 8, east-west through Ladysmith, was in March of 1960. The last run of passenger trains 3 and 4 (previously 17 and 18), north-south through Ladysmith was in January of 1965.

Caboose 99103

American Car and Foundry Co. built caboose 99103 for the Soo Line railroad in August of 1911 as part of an order of 15. The "99" prefix on its numbering indicates the 34-foot-long wooden caboose was used on the Wisconsin Central Railway, which was leased by the Soo Line. The caboose saw approximately 70 years of freight service, making runs primarily in the Fox River Valley. A caboose was both an office and home away from home for the conductor. It contained a coal burning stove, bunks, kerosene lights, a desk, seats, and a toilet. The 16 ton caboose, owned by City of Ladysmith, has undergone two extensive restorations by volunteers. Then venerable caboose has no doubt logged several million rail miles, and it is typical of early wooden cabooses used on the M.St.P.&S.Ste.M. and Wisconsin Central Railways, both of which were part of the "Soo Line."

Thank You Volunteers.....

The rail display has been undergoing a two year revitalization led by Bill Morgan and Ray Carlson with assistance from Mike Hraban, Ken Phillips, Dennis Wiemer, folks from the Flambeau Correctional Center, and other volunteers. Please take time to thank them today.

RUSK COUNTY WISCONSIN

NATURE

AWAITS YOU

Reclaimed Flambeau Mine Nature Trails & Recreation Area

HIKING • BIKING • BIRDWATCHING • RIVER FISHING AND MORE

RULES

To ensure the Reclaimed Flambeau Mine Nature Trails & Recreation Area is enjoyable for all who visit, please be aware of the following rules:

- No motorized vehicles of any kind
- Dogs are welcome if they are under control at all times
- No horseback riding on the hiking trails
- No hunting is allowed
- Fishing is allowed at the Flambeau River, but not in wetland areas
- Always stay on the marked trails
- While using the site, you are responsible for your own health and safety

LOCATION

The Reclaimed Flambeau Mine Nature Trails & Recreation Area is located on Highway 27, about 1.5 miles south of Ladysmith in Rusk County, Wisconsin. Free parking for visitors is located at N4339 Highway 27.

For more information, visit www.flambeaumine.com.

Photos by Jana Murphy and Jeff Miller

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reclaimed. made. progress. best

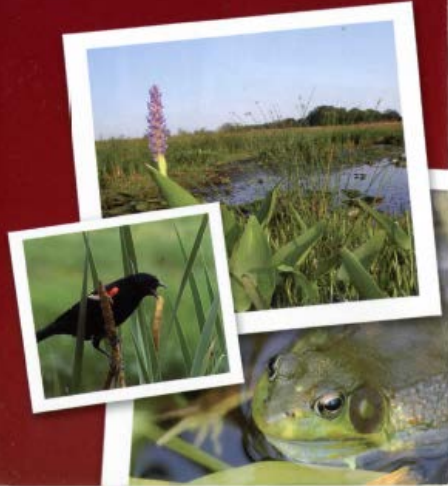
reclaimed. made. progress. best



RECLAIMED FLAMBEAU MINE

Nature Trails & Recreation Area

NATURE AWAITS YOU!



Whether it's on foot or snowshoe, alone or with family and friends, the Reclaimed Flambeau Mine Nature Trails & Recreation Area provides much to see. Features along the four miles of nature trails include:

■ **Information Stations** – Throughout the site there are several information stations that provide visitors with an overview of the history, significance and habitat of the site.

■ **Woodlands** – The site features more than two dozen species of trees and shrubs. The woodlands are a favorite nesting site for goldfinches, and kingbirds are frequently seen perched atop the trees scanning the area for insect prey.

■ **Grasslands** – More than 100 native plant species are thriving on the site, including Big Bluestem, Canada Wild Rye, New England Aster and Stiff Goldenrod. The grasslands provide a critical habitat to many animal species that have lost habitat to agriculture and other development.

■ **Wetlands** – The site's two wetland areas cover more than 10 acres and provide a self-supporting habitat for wildlife. More than 200 species of native plants are growing in these wetlands, and frogs – one of the best barometers of a healthy environment – thrive here. Several species of waterfowl – including hooded mergansers and coots – also raise their young within these wetlands.

★ **Copper Park Equestrian Trails** – These horseback riding trails cover about 5 miles and run along the Flambeau River on land adjacent to the reclaimed site. Developed cooperatively by the Flambeau Mining Company, the City of Ladysmith and the Flambeau Riders club, these are the first public trails developed for equestrian use in Rusk County. Hikers are encouraged to use the trails as well.

■ **Flambeau River** – Rest, picnic or fish along the Flambeau River – one of Wisconsin's most beautiful and scenic waterways. It's a popular site for canoeing, kayaking, whitewater rafting and more.

DRAFT

RECLAIMED FLAMBEAU MINE NATURE TRAILS



DRAFT



HISTORY & SIGNIFICANCE

The site is beautiful and inspiring, and also has a rich history. The Flambeau Mine operated from 1993 to 1997 and produced tons of copper, silver and gold. In fact, the orebody is one of the richest ever identified in the world, and the minerals it supplied were used worldwide to manufacture electrical wiring, computers, cars, surgical equipment, church bells and more.



The Flambeau Mine also is historically important to Wisconsin, as it was the first mine to be approved and operated under the state's stringent mining standards. As part of that approval, and the company's Sustainable Development Policy, the Flambeau Mining Company made many promises to the state and local communities. The company promised to bring economic opportunity, provide safe and family-supporting jobs, protect the environment and the Flambeau River, enhance community and educational resources and reclaim the site.



The Reclaimed Flambeau Mine Nature Trails & Recreation Area, which is the result of a \$20 million reclamation effort by the Flambeau Mining Company, is just one example of how all of those promises were kept.



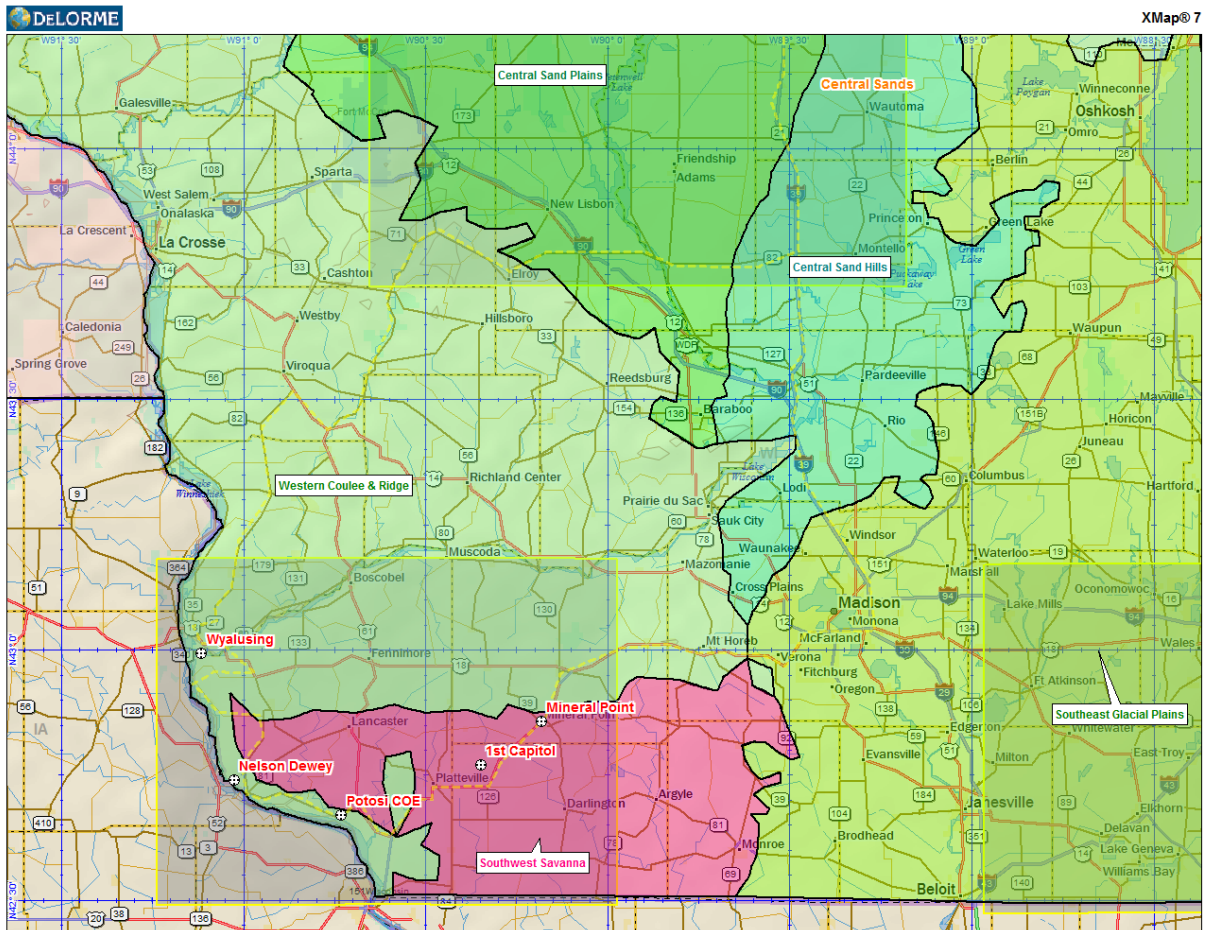
THE RECLAIMED Flambeau Mine Nature Trails & Recreation Area is an environmental and educational destination located in Rusk County, Wisconsin. The 150-acre site, once home to the historic Flambeau Mine, today has been reclaimed to allow the land to serve as a recreational resource for the community and its visitors.

The site is **free and open to the public** year round, from dawn to dusk. Just a few of the activities encouraged at the site include:

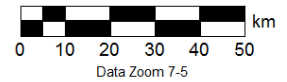
- Hiking
- Biking
- Birdwatching
- Dog walking
- Snowshoeing
- Cross country skiing
- Fishing and Picnicking along the Flambeau River
- Community and fitness events
- School fieldtrips
- Geocaching

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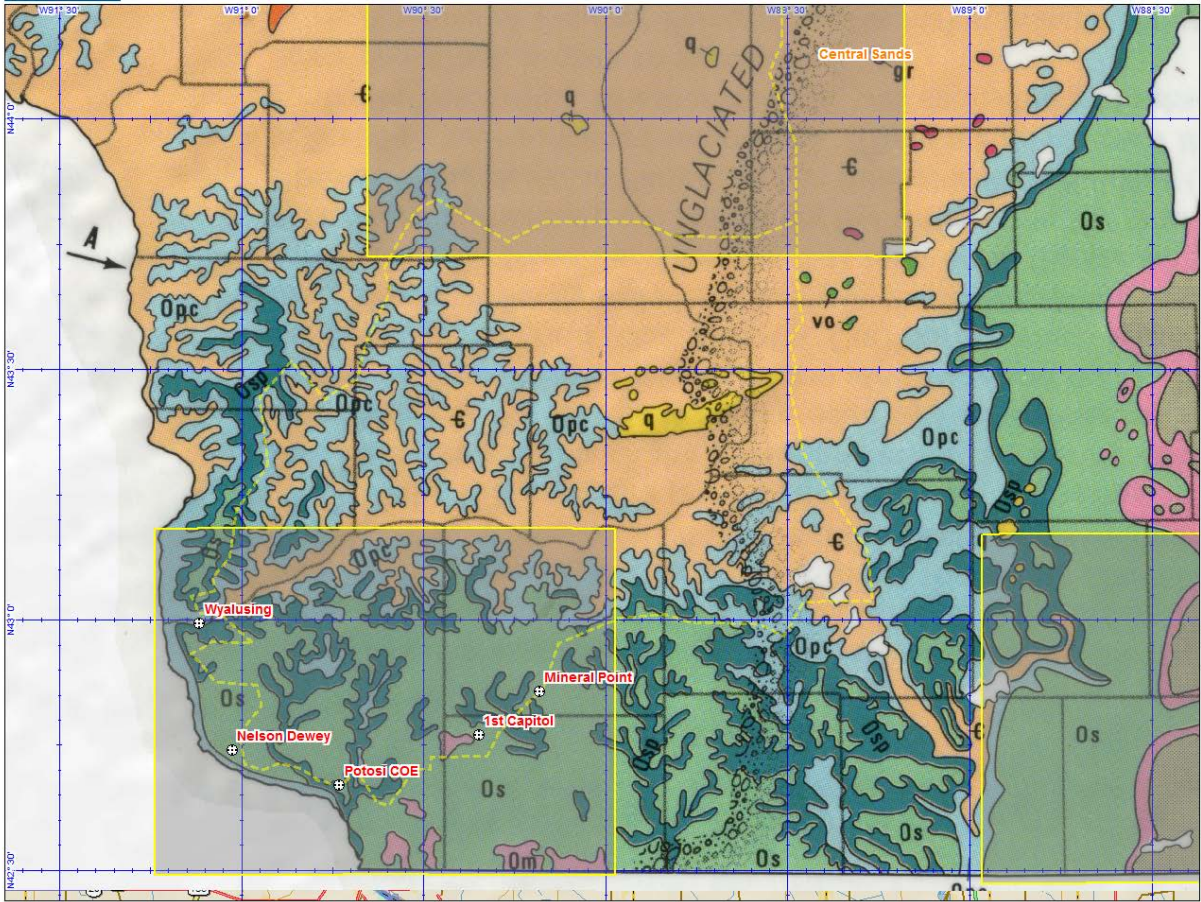
Southwest Wisconsin 06-08OCT2017



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Ecology



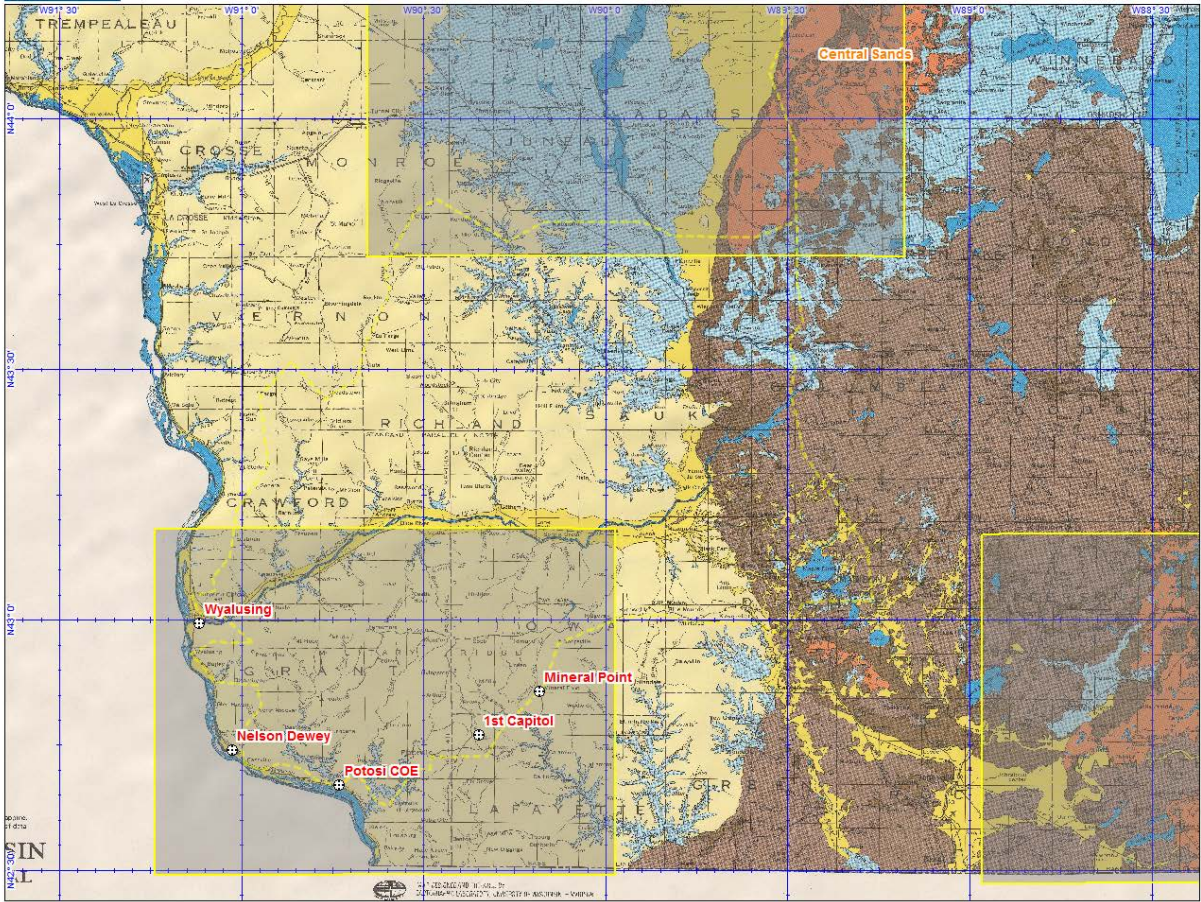
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MN (2.5° W)

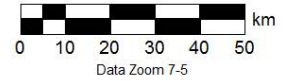
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Data Zoom 7-5

Geology





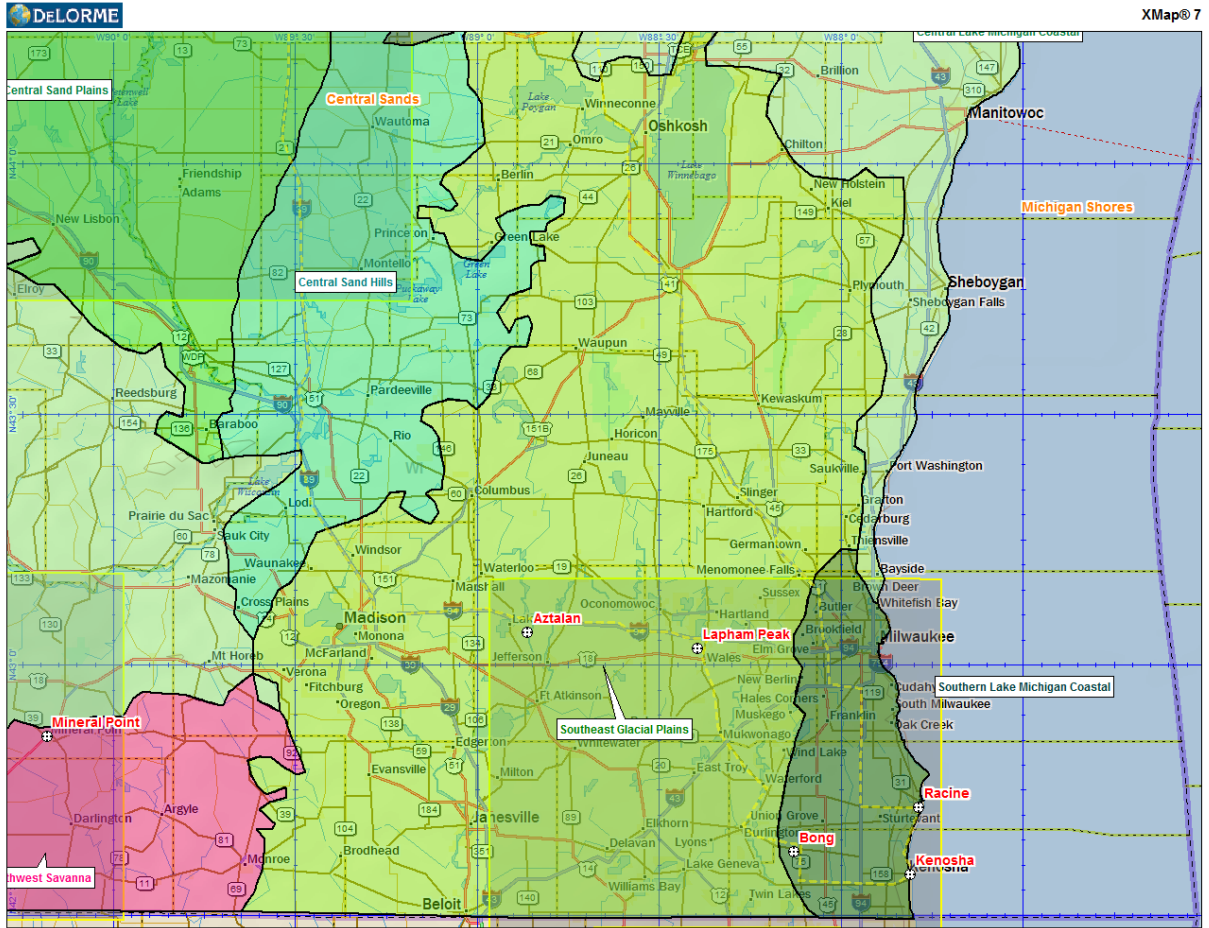
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Glacial



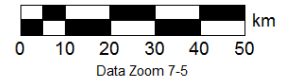
Southeast Wisconsin 27-29OCT2017



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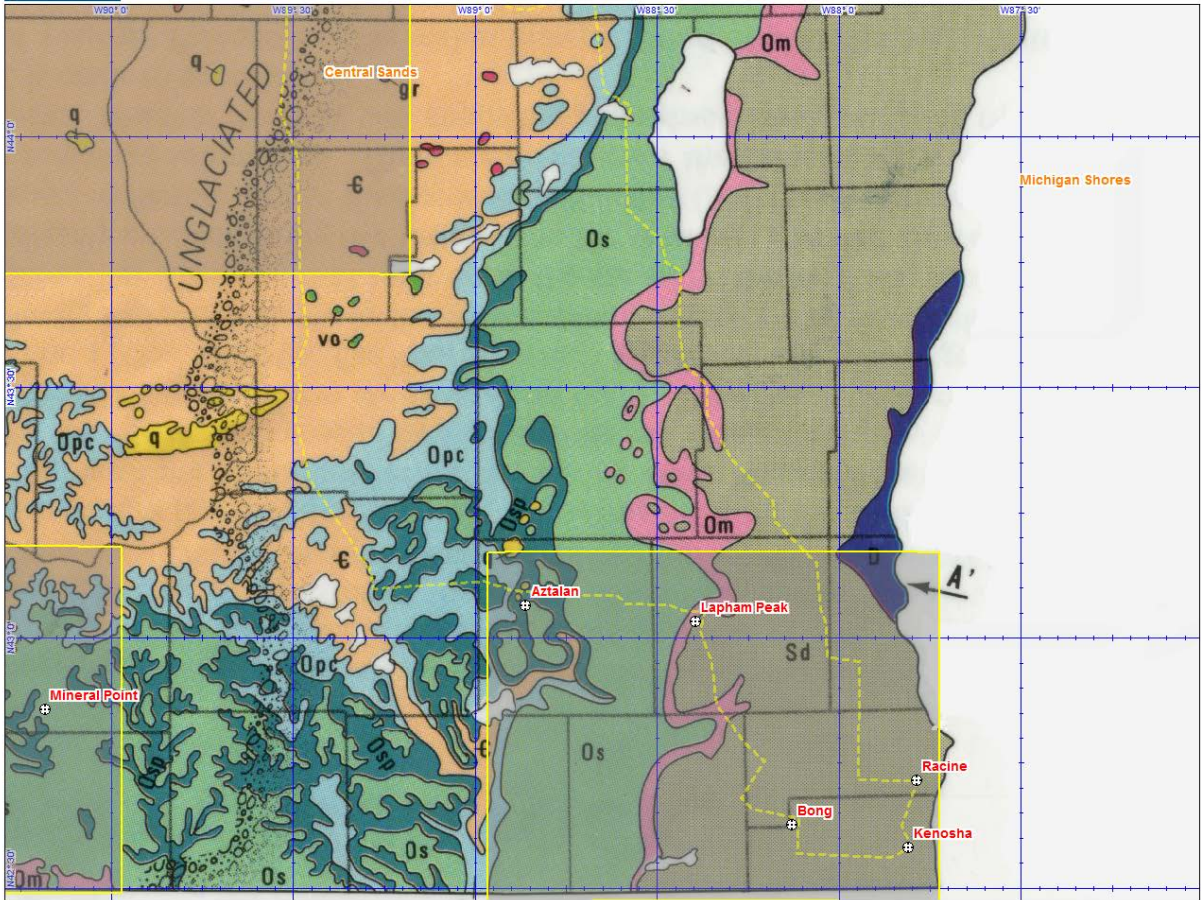
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Ecology





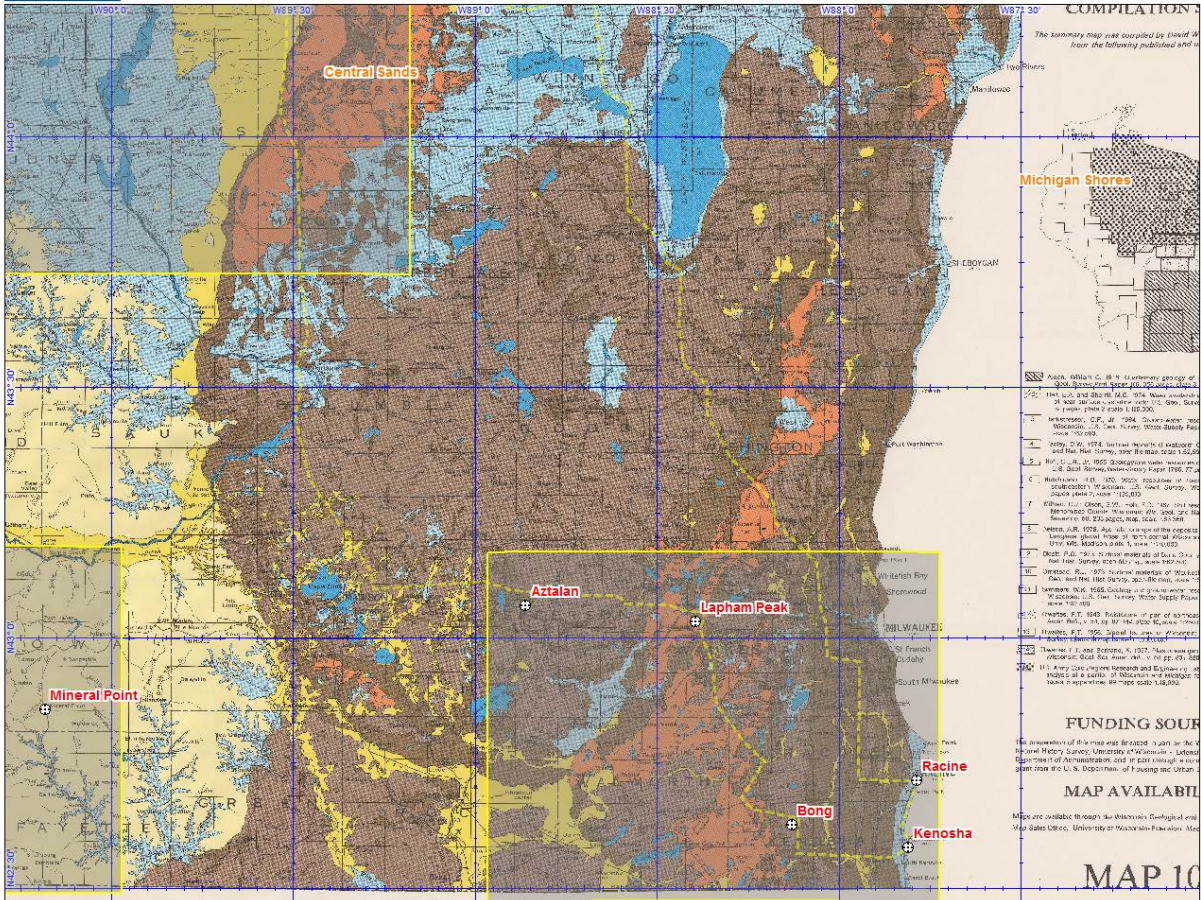
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MN (3.5° W)

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Data Zoom 7-5

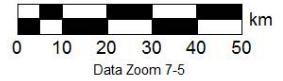
Geology





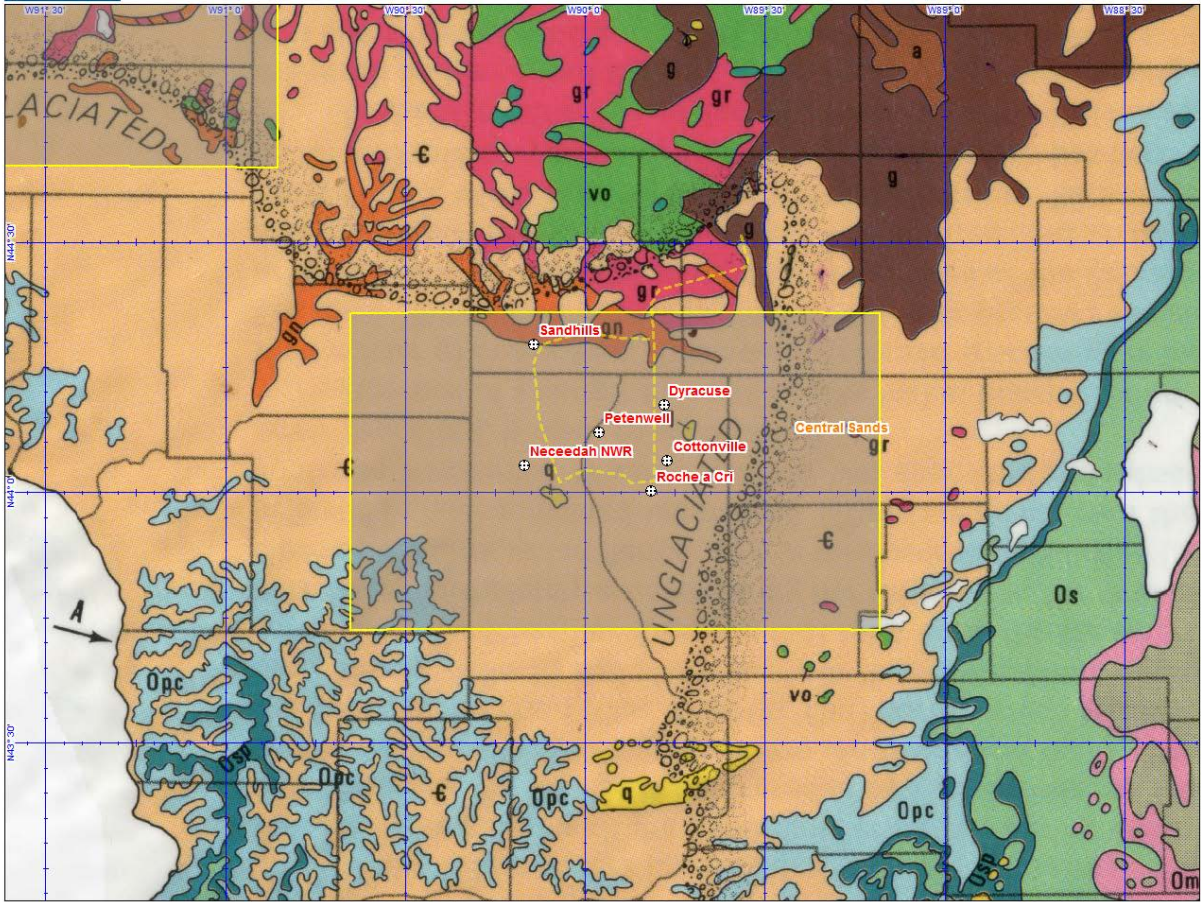
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★
 MN (3.5° W)



Glacial



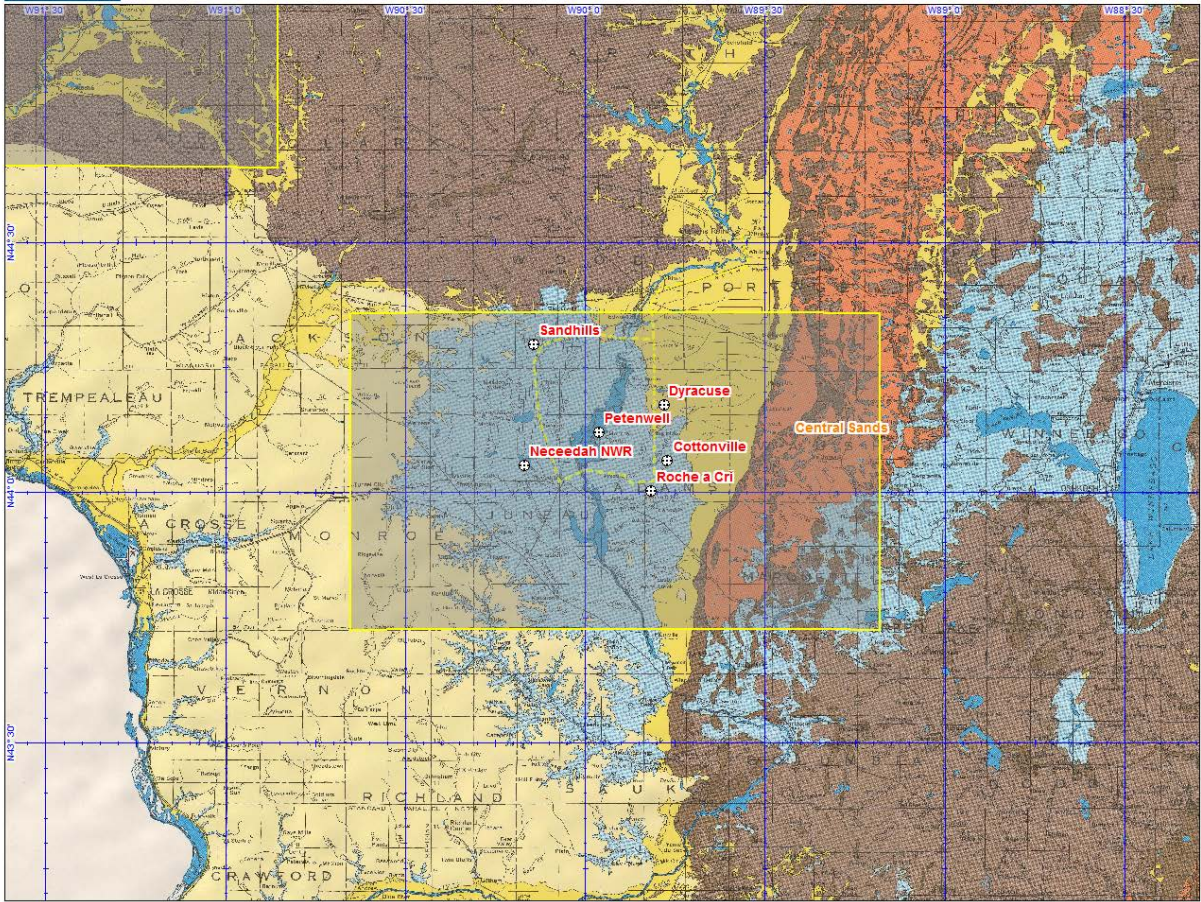


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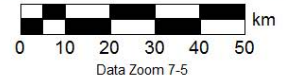
MN (2.6° W)

0 10 20 30 40 50 km
Data Zoom 7-5

Geology



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Glacial

