

86th Annual Field Conference of Pennsylvania Geologists
**DATING IN THE PLEISTOCENE-ESTABLISHING A GLACIAL
CHRONOLOGY IN NORTHWESTERN PENNSYLVANIA**

Titusville, PA

Thursday, October 6, 2022 – Preconference Trips
Friday and Saturday, October 7-8, 2022 – Field Trip

Trip Leaders and Guidebook Contributors:

Gary Fleeger, PA Geological Survey (retired)

Eric Straffin, Edinboro University

Frank Pazzaglia, Lehigh University

Fred Zelt, Earth Science Excursions, LLC

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Todd Grote, Indiana University Southeast

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Michael Simoneau

******Headquarters******

[Cross Creek Resort](#) 3815 State Rt. 8

Titusville, PA 16354 (814) 827-9611



Glacial lake sediments (most likely Lake Warren) over Ashtabula Till at Erie Bluffs State Park.

The 2022 Field Conference of Pennsylvania Geologists will examine aspects of the glaciation of northwestern Pennsylvania, including beginning to develop an absolute chronology, as well as drainage evolution in Mercer, Lawrence, Butler, and Venango Counties. A number of luminescence, cosmogenic, and radiocarbon dating sites will be visited and their context will be discussed toward an understanding of those themes of glacial chronology and drainage history.

Day 1 is planned to visit sites in Crawford and Erie Counties, where we will visit sites of recent dating of the glaciation and deglaciation of NW PA. Stops will include Late Glacial Maximum (LGM) sites, as well as post-glacial Erie basin lake site at Erie Bluffs State Park, and Late Glacial (LG) deglaciation of Conneaut Lake and Marsh region, and a lunch-time presentation of Edinboro Lake geology.

Day 2 will travel to the southern part of the glaciated region. It will start with a continuation of Day 1's theme with a stop of Optically Stimulated Luminescence (OSL) dates for the Titusville or Mapledale glaciation (we have not yet received the lab results as of this writing) near Franklin. Then we will proceed to Lawrence and Butler Counties, for more dating, as well as discussing the drainage history of the Slippery Rock and Wolf Creeks. We will also visit a site with a middle Wisconsinan age, similar to the well-known Titusville peat site.

SCHEDULE OF EVENTS:

Thursday, October 6, 2022

- PRE-CONFERENCE FIELD TRIPS - Four preconference trips are planned. See descriptions below.
- CONFERENCE REGISTRATION - 4:00 PM - 10:00 PM – **Emerald Room**
- ORIENTATION AND RECEPTION - 7:00 PM - 10:00 PM – **Emerald Room**
Reception includes beer, hors d'oeuvres, rock swap, map blast, student posters, and silent auction.
- OVERVIEW OF FIELD TRIP - 8:00 PM – 9:00 PM – **Emerald Room**

Friday, October 7, 2022

- REGISTRATION - 6:00 AM - 7:20 AM - **Follow signs from main lobby**
- BREAKFAST – 6:00-7:15 - **Emerald Room**
- FIELD TRIP - 7:30 AM - 5:00 PM - Buses depart from Cross Creek Resort promptly at 7:30 AM. Lunch, doughnuts, fruit, coffee and other beverages will be provided.
- RECEPTION - 6:00 PM - 7:00 PM - **Emerald Room** Hors d'oeuvres and cash bar will be available.
- ANNUAL BANQUET AND BUSINESS MEETING - 7:00 PM - 10:00 - **Emerald Room**
Guest Speaker – Al Guisepppe, P.G., Geoscience Manager, Pennsylvania Geological Survey, on the “Northwest Glaciated Bedrock Elevation Project.”



Cross Creek Resort, Titusville, PA

Saturday, October 8, 2022

- BREAKFAST – 6:00-7:15- **Emerald Room**
- FIELD TRIP - 7:30 AM - 5:30 PM - Buses depart from the Cross Creek Resort promptly at 7:30 AM. Lunch, doughnuts, fruit, coffee and other beverages will be provided.

ATTENDANCE - The number of conference attendees is strictly limited this year to 170. If the attendance limit is reached, a waiting list will be developed. The Field Conference is intended for geologists, earth science teachers and students, including graduate students and undergraduates with a faculty recommendation. Please note, to encourage student participation, the Field Conference is offering a half-price registration scholarship. Four full scholarships are also available. Twenty student spaces will be held until September 15, then, if unfilled, will be released to the waiting list. Students should visit the student registration page at <https://www.fcopg.org/students> for more information on scholarships or contact [Kristen Hand](#).

PROFESSIONAL DEVELOPMENT HOURS - Participants will receive a certificate of attendance. It will be your responsibility to track and report the number of professional development hours obtained based on the FCOPG agenda.

ROAD LOG & GUIDEBOOK – A printed copy of the road log with stop descriptions and background information will be included with registration. A printed guidebook will be available for \$50. Both the road log and the guidebook will be available digitally for free.

IMPORTANT NOTES

TRANSPORTATION - Transportation is by bus only. **No private cars** are allowed since parking space and traffic control require that we limit the number of vehicles. We plan to have a geologic tour guide on each bus. A minivan will be available to assist those who are not quite as mobile as they used to be.

REGISTRATION- Registration is required for all conferees. To register, complete the registration form, FCOPG Release and Hold Harmless Waiver, and ACA Sand and Gravel Hazard Training & Recognition Checklist and **email all three completed forms to RA-NRFCOPG@pa.gov.**

Registrations will be accepted in the order received based on email time stamp. Failure to complete and return all three documents will result in the return of your registration without a reserved space. A confirmation of registration email containing payment instructions will be sent to you by close of business August 5.

Since several of the stops will be in quarries you must bring a hard hat, boots and safety vest. The field conference will have extra safety vests for sale.

REFUND POLICY - If you need to cancel before September 15th, 2022, a full refund will be given. If you cancel after that date, refunds will be given only if your space can be filled.

ACCOMODATIONS

Lodging: The conference headquarters is the **Cross Creek Resort, 3815 State Rt. 8, Titusville, PA 16354 (800) 461-3173.** Rooms are available at the rate of \$65+tax per night. When making your reservation, be sure to indicate that you are with Field Conference of PA Geologists. **Rooms at Cross Creek are limited and will fill up very quickly. Sharing a room with another conference attendee is strongly encouraged.**

Additional nearby lodging is available at:

Quality Inn Titusville (814-827-0041) 511 West Central Avenue, Titusville, PA, 16354. A block of 10 rooms has been reserved at the rate of \$110.21+tax per night. You must call to reserve a room and mention the Field Conference of Pennsylvania Geologists/Kristen Hand.

Oil Creek Campground

340 Shreve Rd., Titusville, PA 16354
(814) 827-1023
Camper and rustic cabin rentals
\$47-\$130 per night
\$38 RV hook-up

Caboose Motel

407 S. Perry St., Titusville, PA 16354
(814) 827-5730
\$91.95 per night

McMullen House Bed & Breakfast

430 E. Main St., Titusville, PA 16354
(814) 775-0005
\$145 per night

Buses will pick up attendees at Cross Creek Resort. Commuters may park at the resort for the day.

Preconference Field Trips, October 6, 2022

Only contact the leaders if you have questions, otherwise sign up with the registration form!

Pennsylvanian Stratigraphy near Kittanning, PA (\$20)

Leader: Bill Bragonier, PA Geological Survey (retired), billbragonier@yahoo.com

Limit: 14 or 28 if enough interest for two vans

Exertion Level: Moderate

Other: On-your-own lunch, boots (or sandals) for walking in small stream, safety vest

Meet at: Rosebud Mining Parking Lot, Downtown Kittanning, at 10:00 a.m.

The first stop is a repeat of a stop on the 2016 Field Conference which will examine the paleogeography of the Upper Freeport coal, including a discussion of a “single event” deposit overlying the Upper Freeport coal in a geographically removed deep mine and its relation to exposures at the stop. The stop will be highlighted by a walk in a small stream bed that contains an extensive exposure of a fallen fossilized forest where hundreds of trees have been preserved. The second stop is an extensive roadcut exposing the Pine Creek marine zone and surrounding rocks of the Conemaugh Group’s Glenshaw Formation with emphasis on the paleotopography of the soil horizon developed prior to deposition of the Pine Creek marine zone where a *paleocatena* and a *toposequence* will be defined and observed within the roadcut.



Drowned fossil forest, hammer for scale

Geologic Cruise on Lake Arthur, Moraine State Park (\$17)

Leader: Gary Fleegeer, PA Geological Survey (retired), gmgfgeology@gmail.com

Limit: 40 attendees (minimum of 24)

Exertion Level: Easy

Meet at: Owllet gift shop at McDanel’s boat launch, North Shore, Moraine State Park, at noon.

Join us on a 1 ½-2 hour pontoon boat geologic tour of Lake Arthur in Moraine State Park, a recreation of a Pleistocene glacier-dammed lake. We’ll cover the bedrock, glacial and mineral industry history of the park, and why the dam was placed where it is, one of at least 15 locations considered. What better way to get some PG hours than on a pleasant lake cruise.



Tour boat on Lake Arthur



Aerial view of Lake Arthur

Penn-Dixie Fossil Park and Nature Preserve, Blasdell, New York (\$10)

Leader: Bill Kochanov, PA Geological Survey (retired),
wkochanov4@gmail.com

Limit: 25 attendees (minimum of 10)

Exertion Level: Easy to Moderate

Other: Geo-hammers, (chisel headed varieties better), small 2-3 pound sledge, chisel, pry bars, safety goggles, newspaper/bubble wrap, bags for storage of wrapped fossils

Meet at: The trip will leave Conference headquarters at 10:00 a.m.

[Penn-Dixie](#), a former cement quarry, is now a 54-acre park where visitors can collect and keep Middle Devonian (Hamilton Group, Moscow Formation, Windom Shale Member) invertebrate fossils. If you have never collected from the Windom shale before, this trip would be an excellent opportunity to dip your toes into the Middle Devonian of western New York. The diverse paleofauna, characteristic of the Windom should satisfy even the discriminating collector. [Official Penn Dixie Field Guide](#)



Brachiopod fossils found at Penn-Dixie Fossil Park and Nature Preserve. Photo courtesy of Penn-Dixie Fossil Park and Nature Preserve.



Trilobite fossils found at Penn-Dixie Fossil Park and Nature Preserve. Photo courtesy of Penn-Dixie Fossil Park and Nature Preserve.

Special Geologic Features of the Erie Lakeshore, Northwestern Pennsylvania (free)

Leader: Fred Zelt, Earth Science Excursions, LLC, fbzelt@aol.com

Limit: 10

Exertion Level: Moderate due to uneven terrain and distance to walk

Other: Sturdy hiking boots that can get wet, walking stick, hard hat, sack lunch, water, hand lens, camera, smartphone or navigation system, dress for weather.

Meet at: Lake Erie Community Park, Girard Township, Erie County, near Lake City, PA, 10:00 a.m. The itinerary will depend on the condition of the bluffs and beaches, and will be sent to participants the week before the trip.

This trip highlights special geologic features of the Erie lakeshore west of Erie in as many as three Pennsylvania locations. We will observe lakeshore bluffs with till, an ancient beach ridge, and visit one or two present-day beaches with upper Devonian shale and sandstone bedrock, till, and a wide variety of till-derived exotic pebbles, cobbles and boulders from Canada. Difficulty is Moderate because we may walk as far as 3 miles through a natural area with uneven ground to reach a beach and return.



Fresh exposure of Devonian shale in lakeshore bedrock near Eagley Park, Springfield Township, Erie County, Pennsylvania

Harlansburg Cave (free)

Leader: Katie Schmid, PA Geological Survey

kschmid@pa.gov

Limit: 12 attendees

Exertion Level: Hard

Other: Hard hat and boots needed. Wear rugged clothing and bring a head lamp or two if you can. Dress for temperatures in the mid-50's. It is recommended to bring a compass, snack bar, and water. Bring a change of clothes to change into after the trip and a garbage bag for muddy gear.

Meet at: Meeting location, start time, and end time: TBD

This trip will go into [Harlansburg Cave](#) in Harlansburg, Pennsylvania. Harlansburg Cave is a cave leased and managed by the Mid Atlantic Karst Conservancy.

We will need to do some crawling to get into the cave. In the cave, we will do some walking, some crawling, and some climbing. We will also be going through some muddy water – water depth will depend on the weather. In this cave, we will see mud, passages in the Vanport Limestone, lots of iron ore, mud, casts of Lycopods, probably some crinoid fossils, and more mud.

Important Items

- 1. Registration and waiver forms are available digitally and can be submitted by email. If printing, print the waiver form on the backside of the registration form to reduce paper waste. (p. 7-9)**
- 2. We now accept credit cards via PayPal. Visit www.fcopg.org.**
- 3. You will receive an email indicating your registration has been accepted or you have been placed on the waiting list. A confirmation of registration email containing payment instructions will be sent to you by close of business August 5. Student spaces will be held until September 15, then if unfilled, released for the waiting list. Emails will be sent out every Monday. Please be patient.**
- 4. Please sign the Field Conference waiver.**
- 5. Hard hats and boots are required this year.**
- 6. For PA State employees who plan to have their registration paid by the state, our Federal ID # is 25-1592474. Our SAP Vendor #151625.**