

GLACIERS IN ROCKY

JULY 18, 2020 COURSE #: S3018

COURSE LEVEL: II

FEE: \$80 PER ADULT AGES 16 AND OLDER



INSTRUCTOR: DR. DAVID LINDSEY

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**LOCATION: Rocky Mountain Conservancy – Field Institute & Conference Center
1895 Fall River Road, Estes Park, Colorado**

TIME: 8:00 AM – 5:00 PM

COURSE DESCRIPTION: During the ice ages, glaciers moved down the valleys of the Fall River and the Big Thompson. These glaciers left behind many calling cards in the form of glacial erratics, U-shaped valleys, and natural dams of glacial debris at their terminus. The ebb and flow of glacial advance is controlled by astronomical phenomena that move in cycles and combine to produce glacial maxima about every 100,000 years. Since the last glacial maxima, the earth has warmed in fits and starts that reflect other complex but poorly understood processes. Today, these natural processes are further affected by man’s activities. The class will examine classical glacial features in the Fall River, Big Thompson, Cache la Poudre, and upper Colorado River valleys and discuss the processes that formed them.

COURSE LEVEL: II

Short-distance walks through the day primarily on level terrain.

Note: Significant course time will be spent at elevations above 11,000 feet.

BRIEF INSTRUCTOR BIOGRAPHY (additional information available at www.rmconservancy.org):

David earned a Ph.D. degree in geology at Johns Hopkins University in 1967. He served as a research geologist and administrator at the U.S. Geological Survey for more than 30 years. He is currently a scientist emeritus at the U.S.G.S. in Lakewood, Colorado, where he volunteers his time on research projects. In addition to many research papers and geologic maps, he has produced three U.S. Geological Survey published pamphlets for the public. These pamphlets are “Precambrian Time—The Story of the Early Earth,” “The Geologic Story of Colorado’s Sangre de Cristo Range,” and “Geology Along Mosca Pass Trail, Great Sand Dunes National Park and Preserve, Colorado.” He enjoys speaking to groups, leading or going on field trips, and travelling to places near and far.

EXPECTATIONS: Professional conduct will be expected from participants at all times. Individual ideas will be respected. Except during course breaks, cellular phones, pagers, and personal entertainment devices are strictly prohibited in the classroom and during field sessions.

CAR-POOLING: Rocky Mountain Conservancy - Field Institute courses utilize car-pooling to limit vehicles traveling into the park. Car-pooling makes it easier to keep the group together, reduces transit time, and allows courses greater access because fewer parking spaces are required at destinations. In addition, it provides an opportunity for participants to discuss course material in small groups during transit. Typically, a few participants from each course volunteer the use of their vehicles for car-pooling to course locations.

TENTATIVE COURSE SCHEDULE:

- 8:00 AM – 8:45 AM Welcome and introductions at Rocky Mountain Conservancy - Field Institute
- 8:45 AM – 5:00 PM STOP 1: The last ice age (Sheep Lakes)
STOP 2: Glacial and stream deposits compared (Alluvial Fan – restrooms available)
STOP 3: Features left by retreating glaciers (Small pullout below Alluvial Fan)
STOP 4: Streams and fans (Horseshoe Park Overlook)
STOP 5: Erosion surfaces, glacial moraines and exfoliation domes (Many Parks Curve)
STOP 6: Overview and review, Fall River valley (Rainbow Curve – restrooms available)
STOP 7: Alpine glacial erosion, permafrost (Forest Canyon)
STOP 8: Glacial cirque close-up (Lava Cliffs)
STOP 9: Cache la Poudre glacial valley (Medicine Bow)
STOP 10: Sheeprock, a classic subglacial landform (Milner Pass)
STOP 11: Headwaters of the Colorado River glacier (Farview Curve)
TURN AROUND and return to Rocky Mountain Conservancy - Field Institute
- 5:00 PM Arrive at Rocky Mountain Conservancy - Field Institute.

WHAT TO BRING:

- Sack lunch, snacks, energy bars, **WATER**
- Notebook
- Binocular may be useful.
- Weatherproof jacket
- Pens, pencils
- Hand lens may be useful.
- Hat or cap
- Book by Raup (Recommended Reading)
- Comfortable shoes (Sneakers are fine)

REMEMBER TO BRING THE 10 ESSENTIALS:

Rocky Mountain National Park recommends that hikers always carry the 10 essentials in their daypacks.

- Raingear
- Sunglasses and sunscreen
- Pocketknife
- Sack lunch, snacks, water
- Map and compass
- Candles
- First-aid kit
- Flashlight or headlamp
- Matches or other fire starter
- Extra layers of clothing

Note: Rocky Mountain – Field Institute recommends that participants for all courses dress in layers and wear comfortable, sturdy hiking boots/shoes. Participants should be prepared for sudden changes in temperature and weather conditions.

RECOMMENDED READING:

Raup, O.B., 2016, *Geology along Trail Ridge Road: A Self-guided Tour for Motorists* (3rd ed.): Estes Park, Colo., Rocky Mountain Nature Association

REFUND POLICY:

Cancellations received at least 14 days prior to the start of a class will qualify for a refund minus a cancellation fee of \$25 per participant for a one-day class, \$50 for a multi-day class, \$5 per kid's class and \$15 per half-day class or bus tour seat. Registration money transferred to another class will be subject to a \$10 switch fee. Cancellations received less than 14 days prior to the start of a class or bus tour will not generate a refund. If the Field Institute cancels a class, every effort will be made to place the participant in another class; otherwise, a full refund will be given.

TEACHER RECERTIFICATION CREDIT:

Most classes are eligible for teacher recertification credit through the Centennial Board of Cooperative Education Services (BOCES). The fee is \$25 per class (.5 unit) or \$25 per series of threaded classes (1.0 - 3.0 units). A list of threaded classes can be found online at www.rmconservancy.org. Participants must enroll in all classes of a threaded series in order to qualify for the \$25 multi-unit fee. Please be prepared to pay for this credit with a check, made payable to BOCES, on the first day of a class or on the final day of a threaded series of classes.