



2020 Massachusetts Geological Society Cape Cod Field Trip Overview and Registration Details

Byron and Janet Stone, chief compilers of the recently published surficial materials map and geodatabase of Massachusetts, will be leading a field trip to examine the geology of Cape Cod. The trip will visit classic stratigraphic localities that reveal evidence of meltwater processes active in construction of the large glaciodeltaic landforms of the outer Cape. We also will visit fresh pit exposures in large recessional moraines and outwash deposits of the western Cape. Holocene coastal and marine deposits of the Provincetown Hook, Wellfleet Harbor, and seashore beaches will be discussed and visited. Our goal is to provide you with the latest stratigraphic framework of the Cape Cod area and a discussion of this part of the new Quaternary Geologic Map of Massachusetts. The trip also features discussions about the bedrock surface beneath the Cape, distribution of Coastal Plain sediments on top of rock, history of subsurface studies, drill holes, ongoing contamination studies in aquifer zones, offshore geology, the last marine transgression, and developments in Quaternary geochronology of the area. This is a re-run of a portion of the 2019 Northeast Friends of the Pleistocene field trip that is being held just for the Massachusetts Geological Society.

This trip covers parts of three days, beginning on FRIDAY at 5:00 PM. We will assemble at the Marconi Room at the Sheraton Four Points Hotel in Eastham for an ice breaker with cash bar and a room full of maps to look at in preparation for the trip. On SATURDAY we will examine sea cliff exposures and talk about the offshore and subsurface geology. SUNDAY, we will visit sand and gravel excavations in the recessional moraines. An optimistic field trip schedule is below. A final list of field trip stops and assembly times will be forwarded when field trip plans are finalized. If a Friday start does not work for you, you can join the trip on Saturday at Stop 2 (see below).

Friday Evening

5:00-7:00 PM: Assemble at Sheraton Four Points, Eastham, Marconi Room. Ice breaker and map review. Cash bar.

Saturday, Day 1

Assemble 7:30 AM at Sheraton Four Points. Board buses.

Stop 1. 8:00 AM-9:00 AM. Race Point and/or Provincelands Visitor Center. Discussion of spit/dune development and offshore geology. Restrooms.

Stop 2. 9:20 AM-10:00 AM. Pilgrim Springs parking lot. Discussion of dune and Truro outwash. Folks coming down on Saturday morning can meet the group here, park their cars and board buses, which will bring them back at the end of the day. Restrooms.

Stop 3. 10:15 AM-11:45 AM. Highland Light Sea Cliff Exposure. Walk south on wide beach from Highland Beach parking lot to Highland clay sea cliff section beneath Highland Light; discuss beach processes during return walk to bus.

Stop 4. 11:50 AM-12:20 PM. Highland Center. NPS wave observation platform; top of Wellfleet delta plain.

Stop 5. 12:40 PM-1:50 PM. Lunch at Wellfleet Harbor. Discussion of seismic reflection profiling and stratigraphy in Wellfleet Harbor. Restrooms.

Stop 6. 2:05 PM-3:05 PM. Newcomb Hollow Beach. Seacliff with paleosol and Wellfleet foreset beds/topset beds (?).

Stop 7. 3:25 PM-4:15 PM. Lower Cape Sand and Gravel pit, Eastham. Examine fluvial beds in the Eastham Plain deposits. Discuss and view core into bedrock surface at a depth of 503 feet.

Stop 8. 4:25 PM-4:50 PM. Doane Rock. Also called Enos Rock, largest known glacial boulder on Cape Cod.

Stop 9. 5:00 PM-5:30 PM. Coast Guard Beach. Sea cliff exposure of kettle-fill peat and growth-position tree stumps. Return to hotel after stop at 5:45 PM.

6:00 PM Happy Hour and 7:00 PM Buffet Dinner, Sheraton Four Points; Business meeting and short talk

Sunday, Day 2

Complete hotel checkout by 7:30 AM and drive your own car to Cape Cod Canal Visitor Center in Sandwich (50-60-minute drive). By 8:30 AM, board buses. Restrooms.

Stop 10. 8:30 PM. Cape Cod Canal Visitor Center. Visit at end of day.

Stop 11. 8:40 AM-9:10 AM. Glacial Lake Cape Cod spillways at Canal overview site.

Stop 12. 9:30 AM-10:30 AM. Cape Cod Aggregates gravel pit, Falmouth. In Buzzards Bay moraine deposits; entrance via Falmouth Land Trust's Moraine Trail.

Stop 13. 10:35 AM-10:50 AM. Crooked Pond deposit. New map unit.

Stop 14. 11:00 AM-11:30 AM. Colluvial rampart of the Buzzards Bay moraine. Old Campus Drive, west of Gifford Street Extension, north of Falmouth High School.

Lunch 11:40 AM-12:40 PM. Cape Cod Winery. Brick Kiln Road and Oxbow Road. Restrooms.

Stop 15. 12:45 PM-12:55 PM. Furrow cutting distal Mashpee delta plain deposits. Pull buses off side of road for brief discussion of furrows.

Stop 16. 1:20 PM-1:40 PM (optional stop). P.A. Landers Sand and Gravel pit, Forestdale, MA. Mashpee pitted outwash plain deposits.

Stop 17. 1:50 PM-2:50 PM. Cape Cod Aggregates gravel pit, Sandwich, MA. Till overlying Mashpee plain deposits.

3:00 PM. Return to Cape Cod Canal Visitor Center. Restrooms. Disperse.

FIELD TRIP STOPS

Saturday Stops 1-9 Sunday Stops 10-17

