

Geology 412 / 612
MAP INTERPRETATION PROJECT, FALL 2003

Due: 9 a.m., December 12th
(100 points)

You, being an expert geomorphologist, have been asked to lead a group of professional geologists on a tour of this quadrangle. You are to point out to them representative geomorphologic features and processes (to be demonstrated at specific map localities).

Not having ever visited this region, you find yourself busy with this map planning likely points to visit and making *safe* interpolations of the geology. Your tour with this group will last only three hours, and you therefore want to make the best use of your (and their!) time.

Neatly prepare a typed guidebook for your group, listing the stops and briefly describing the geology that *with confidence* will be viewed there. Each locality should be specified by township-range to the quarter-of-a-quarter section (on maps where township-range is not used, use latitude and longitude to the nearest minute). Because your guidebook will serve as a future reference to other geologists, your detail in locating these points is essential.

Remember, the tour lasts only three hours. The stops therefore must be organized in such a manner that your vans can get to all of the stops in a reasonable, sensible manner. Remember that your interpretation will be constantly subject to criticism and questions from your group. *Be a competent geomorphologist!*

Your guidebook will be judged on its completeness, depth, sense, and your ability to select localities that present the applied geomorphology of the region in meaningful manner. Use any resources that you wish, including your textbook and the materials available via the NDSU Libraries (Mr. Jeremy Brown is Physical Sciences librarian). All external sources and diagrams should be properly cited and full references provided at the end of your text. The more you input into this effort, the greater the reward both academically and in your grade.

Each guidebook should open with a well-developed interpretive section. See attached example for formatting reference.

All maps are to be returned, intact and without any marks, along with your project.

GUIDEBOOK TO THE GEOMORPHOLOGY OF THE
STRAWBERRY LAKE, PA., 7.5' QUADRANGLE

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Introduction

The Strawberry Lake 7.5' quadrangle lies within the Allegheny Plateau province of unglaciated north-central Pennsylvania. Bedrock maps by Flaskerud (1939) and by Lepper and Eidukat (1977) show the region to be underlain by silicate-rich horizontally-bedded sedimentary rocks of Mississippian and Pennsylvania age. Base level for the quadrangle is set by the Schlater River which, as evidenced by the maturity of its broad floodplain, has achieved a graded condition. (*Your "Introduction" section will continue further*).

Our tour today is confined to representative site of geomorphologic interest on the quadrangle. The tour departs from the east (U.S. Hwy 791) side of the Hatzenbuhler Diner at 9:00 a.m.

U.S. Hwy. 791 north 2.3 miles to east-west unpaved road. Turn right (east). Follow road eastward 1.2 miles to the Schlater River bridge.

STOP 1: Floodplain Features of the Schlater River valley (44°33'22"N, 88°38'56"W).

The view southward along the floodplain of the Schlater River presents classic examples of landforms characteristic of an alluvial river in a graded condition. Immediately below the bridge, point bar scrolling shows that . . . (*continue further with your description, providing diagrams if appropriate*).

Continue eastward along the unpaved road 0.8 miles to stop sign. Turn left (north) onto the paved road (State Hwy 34). Strawberry Lake can be seen off in the distance. Follow Hwy. 34 northward 1.7 miles to "Ashworth School. Park behind the school and walk to the beach overlook.

STOP 2: Coastal features of Strawberry Lake (44°35'02"N, 88°38'12"W). The eastward longshore drift movement seen below is a consequence of prevailing westerlies driving wavefronts to arrive obliquely southeastward along the shore. Groins have been installed to stabilize the shoreline. Although we can see that they are effective in trapping sediment in the region of Ashworth School, their installation has led to obvious sediment starvation immediately downcoast. Figure 1 (below) shows . . . (*continue further with your description, providing diagrams if appropriate*).

Etc., etc.

References Cited

- Easterbrook, D.J. 1993. Surface processes and landforms: New York, Macmillan Press.
- Flaskerud, S. 1939. Bedrock geology of the Strawberry Lake quadrangle, Weihrach County, Pennsylvania: Pennsylvania Geological Survey Bulletin v. 32, p. 22-29.
- Lepper, K. and Eidukat, B. 1977. Reinterpretation of Flaskerud's bedrock analyses of the Strawberry Lake quadrangle, Weihrach County, Pennsylvania: Geological Society of America Bulletin v. 88, p.214-217.