



Reply to: 2880 Geologic Services and Resources

Date: August 7, 1984

Subject: Land Stability of the Six Mile Ponds Area

To: William H. Boley, Forest Engineer

On July 25, 1984, I conducted a land stability field review of the Six Mile Ponds and surrounding area at your request. No one accompanied me on the field examination.

The purpose of the examination was to assess the stability of the Six Mile Ponds area and to identify possible stability problems that may be associated with the reconstruction of the Upper Six Mile Ponds dam.

The subject area is located in the NE $\frac{1}{4}$ of Section 2, T19S, R3E (map 1). The dam associated with the Upper Pond failed and was subsequently breached in 1975. Reconstruction of the dam is now being evaluated for recreational purposes.

GEOLOGY

The Six Mile Ponds are situated on a bench at the foot of Black Mountain. The bench area is composed of unconsolidated colluvial and glacial deposits underlain by the North Horn Formation. Shales and minor amounts of sandstones are exposed on the lower slopes of Black Mountain. The upper cliff faces are Flagstaff Limestone. There is a fault west of the Six Mile Ponds area.

SPECIFIC OBSERVATIONS

There are debris flows on the steep slopes of Black Mountain. These slides are small, shallow, and elongated in shape. Some rock fall from the Flagstaff Limestone is involved in the slides originating further up slope. These slides mobilize soil, vegetation, and unconsolidated material, and deposit the debris on the more gently sloped base of the mountain. If these slides or new ones were to move, the energy from their movements would most likely be dissipated once reaching the gentler slope near the base of the mountains. Many of these debris flows are older than 1981 and a few were formed in the spring of 1984.

There are small earth slumps on the sides of the South Fork of Six Mile Canyon. These slides move along a concave surface of rupture with the main body of unconsolidated material tilted backward toward the slope. Undercutting of the slope by the stream initiated these earth slumps. Most of these slides formed in the spring of 1983 and one in the spring of 1984.



There is a large beaver pond about 500 feet south of the lower pond. The immediate area around the pond is saturated. The beavers are actively working on the dam. Removal of the beaver dam would decrease the degree of saturation of the unconsolidated material and reduce the possibility of a slope failure occurring in the area. The beavers may also enlarge their pond and cause water to flood over the road.

CONCLUSIONS

The Six Mile Ponds area appears to be stable at this time. The existing landslides in the vicinity do not threaten the stability of the ponds. Removal of the beavers, beaver dam, and associated pond would decrease possible future stability problems. No cracks or other surface expressions of slope failure were found near the Upper Pond dam. Reconstruction of the Upper Pond dam should not be affected by the landslides.

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Staff Geologist

R3E R4E

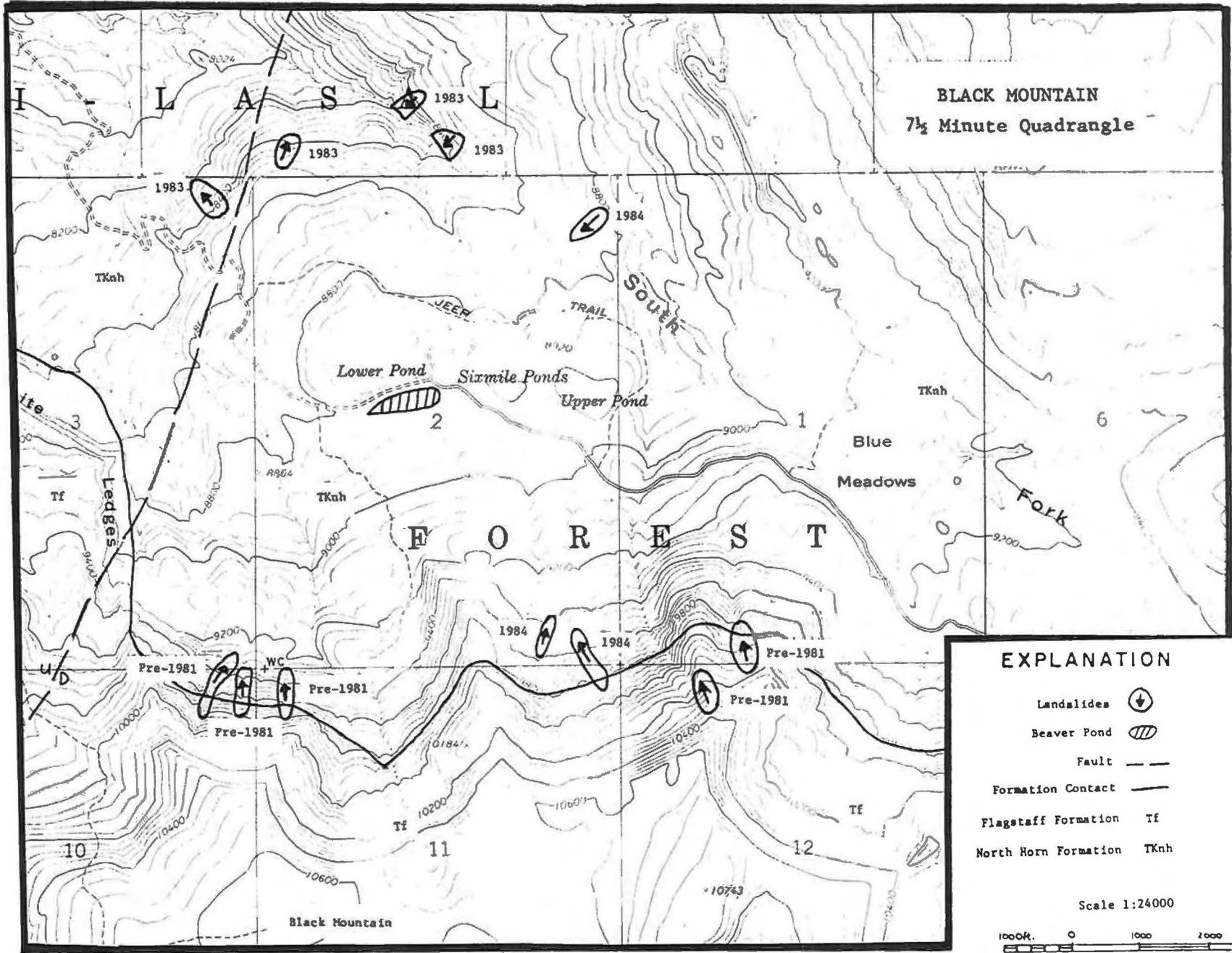
BLACK MOUNTAIN 7½ Minute Quadrangle

T18S

T18S

T19S

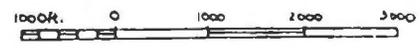
T19S



EXPLANATION

- Landlides 
- Beaver Pond 
- Fault 
- Formation Contact 
- Flagstaff Formation Tf
- North Horn Formation TKnh

Scale 1:24000



Contour Interval 40 Feet



MAP 1