

C/2-1/83
J

High Water, Floods, Landslides, and Mudflows
Manti-LaSal National Forest
Spring and Summer 1983

Action Plan for the
Preparation of a Damage
Assessment and Rehabilitation Plan

D. Kelly

I. Background Situation Statement

During the Spring of 1983, the Thistle Landslide in _____ told us that our predictions of wet conditions and many landslides were probably true. 1982 was a relatively wet year in terms of snow pack and total precipitation. The relatively heavy fall rains left the area with unusually wet soil mantles which were covered by record snowpacks. The cool spring weather of 1983 added to these snowpacks and delayed melt. In the last two weeks of May, the weather turned warm and then hot.

The record moisture conditions combined with dipping bedrock and historic geologic instability to lubricate and release numerous landslides. All of these factors created uncounted landslides on the west face of the Wasatch Plateau and on Northwestern exposures throughout the Manti Division of the Manti-LaSal National Forest.

II. Summary of Known Incidents

High stream flows have also caused severe damage in portions of the San Pitch Division and on the Moab Ranger District.

One small reservoir high in the Muddy Creek Drainage was over-topped on Sunday, June 19, 1983, and about 50 acre feet of water was released as the dam washed out.

Twin Lakes Reservoir in Twelve Mile Canyon above the small agricultural community of Mayfield was breached by engineers to give a controlled release of _____ acre feet of water on June 16, 1983, just 5 days before the reservoir was cracked by an advancing landslide. Conflicting needs, rugged terrain and equipment shortages plagued this unfolding drama until its successful conclusion on June 16, 1983.

For Oowah Like and Reservoir on the Moab Ranger District in the LaSal Mountains of Southeastern Utah, Engineers built an emergency spillway on _____ and released _____ acre feet of water through the town of Moab in time to prevent the failure of the dam.

The Thistle Landslide in the early spring of 1983 cut off the major transportation corridor to Southeastern Utah, and to the San Pitch River Valley. U.S. Highway 6, a major east west highway, was cut. The Rio Grand Railroad, the only east west railroad connecting Southeastern Utah with the center of the state, was cut. U.S. Highway 89 an important north south arterial was cut.

The State Highway 31 from Fairview to Huntington which provides commutor access to the mining and power industries were cut by landslides during the week of Memorial Day.

Alternate gravel and dirt roads over the Wasatch Plateau were cut by landslides and blocked by heavy snows.

Landslides threatened the Municipal Water Supplies of the community of Ephraim, Manti, Fairview, Sterling, and Mayfield.

The Municipal Water Supply for Levan has been cut off.

High water has threatened the combined Municipal Water Supply for the communities of Cleveland, Lawrence, and Elmo in Emery County.

Huntington Reservoir-high in Huntington Canyon (about 9,000 feet elevation) which supplies irrigation and domestic water to communities downstream came within inches of over-topping and hours of failing. Last minute efforts by irrigation company officials and State and Forest Service Engineers corrected the problems with the outlet works and spillway and completed necessary repairs of the dam structure.

Irrigation water supplies and diversion works have been threatened or washed-out for the farms, depending on supplies from Twelve Mile Canyon, Six Mile Canyon, Manti Canyon, Spring City Creek, Ephraim Canyon, Fairview Canyon, Oaks Creeks, Pigeon Creek, Deep Creek, and Chicken Creeks are threatened by high water, landslides, sediment, and debris. Numerous irrigation diversion systems have been washed-out.

All transportation routes across the Manti Division for recreation, commerce, and Resource Management have been severely impacted.

The snow is still melting. The landslides are still moving. The streams are still very high.

All of these situations and more have been stratified into comprehensible sizes that we have called incidents. So far, we have identified 19 incidents listed below. The list continues to grow as the snow pack melts, and new landslides are triggered or discovered.

The list of incidents on the Manti-LaSal National Forest due to the high water from snow melt and associated landslides and mud flows in the Spring of 1983 is given in Table 1.

Table I.

High water, Landslides, and Mud Flow incidents on the Manti-LaSal National Forest, Spring 1983. As of June 23, 1983.

Incidents

1. Ephraim Canyon
2. Manti Canyon
3. Six Mile Canyon
4. Twelve Mile Canyon
5. Deep Creek above Levan
6. Little Clear Creek - Dairy Fork Road
7. Fairview Canyon
8. Oowah
9. Huntington Canyon
10. Thistle Landslide
11. Skyline Drive - Tucker
12. Skyline Drive - Towhead
13. Dry Creek
15. Chicken Creek near Levan Water System
16. Pidgeon Creek
17. Maple Canyon
18. Bush Reservoir in Muddy Creek
19. Joe's Valley

Based on the Regional Office advice of June 6, 1983 Computer message 169 (Table 2) we classify these incidents according to the categories shown in Table 3.

Table 2.

Hazard categories (R.O. message 169 June 6, 1983).

Category 1 - Life, health, safety; high-value property and/or danger to life. (Potential 403 projects)

Emen Rehab. for natural disasters

Category 2 - Non-403 that has potential to impair other property values and impairment of necessary resource activities and targets.

Category 3 - Damage that may impair other resource values over time.

Table 3

Incident Classification by Category

Incident	Category	Incident	Category
1	1	2	1
3	2	4	1
5	2	6	2
7	1	8	2
9	1	10	2
11	2	12	2
13	2	14	2
15	1	16	2
17	2	18	2
19	2 or 3		

III. Preliminary Damage Assessments by Resource

A. Wildlife

Damages to fish habitats and wildlife migration routes may have occurred. Access for hunting and fishing will be severely curtailed.

B. Fire

Access problems will affect fire detection, control and logistics. The increased use of helicopters for all phases of the fire operations will increase costs.

C. Minerals

Mineral leasing, exploration, and development activities will be affected by loss of access. The servicing of leases, permits, and applications will be difficult because of loss of access. Helicopters may replace the use of surface access for project evaluations with a significant increase in costs.

D. Recreation

Recreation losses include one campground obliterated and several miles of trails cut. Access for dispersed recreation is extremely limited.

Access for fuelwood gathering has been severely impacted.

Ongoing and planned timber sales may be delayed because of loss of access.

E. Transportation

Damages of several types are occurring and will continue to occur over the next several weeks and years. Damage to the transportation system is being monitored and reported in preparation for funding through the ERFO system. Damage to facilities are being monitored and reported through Engineering in accordance with the instructions from the Regional Office. Information about damage to other resources are being collected by incident and assembled in the S.O. Only preliminary reports have

been prepared because of the difficulty of transportation. We are trying to assemble the data according to R.O. message 169, and on the forms delivered by Dick Sanders on June 9, 1983.

F. Land Stability

We have currently mapped 25 landslides. We are aware of damage to six municipal water supplies. We are sure of at least 25 miles of stream channel damage.

G. Range

Known to date our one mile of Range fence and 3 cattleguards have been lost. Many other fences have been partially destroyed. Access for stockwater for their permitted season of use is impossible. Some access may be re-established for a partial season. Many permittees will have extreme difficulty getting their stock to their range allotment. Some grazing fee refunds may be necessary.