Disaster on the Grandview Trail:
Repair, Rehabilitate, or Rebuild?

Grand Canyon National Park Backcountry Workshop
January 31, 2006
by
Mike Anderson, NPS Cultural Resource Specialist
The original upper Grandview Trail was completed in 1893 by Pete Berry, Ralph & Niles Cameron, Ed Gale, and “Black Bob” Ferguson--canyon prospectors all, who had discovered rich copper deposits on Horseshoe Mesa a couple years earlier. The original trail proceeded from Berry’s 5-acre mill site at the rim, near the Grandview Hotel, about 1/3 mile south and east of today’s trailhead. It joined today’s trail in the Toroweap formation at the 14th tangent down, then proceeded along the present alignment to Horseshoe Mesa. About 1902, Berry and others constructed today’s upper trail down through the Kaibab cliffs, an area that has now experienced at least two major landslides within the past century.

In February 2005 a portion of the Kaibab cliff cracked from the pressures of invasive pine roots and started the slide. The 7th through 16th trail tangents (switchbacks) were destroyed or damaged before the almost-spent material leapt over the Coconino rim into Grapevine Canyon. Park personnel considered resurrecting the pre-1902 trail to avoid most of this damage, but after surveying the old alignment decided that it would be quicker to repair the modern trail where possible, rehabilitate the remainder, and in a few small segments rebuild.
The cliffs and steep slopes of the upper Grandview Trail have a history of landslides. The most recent major slide before February 2005 occurred in 1972 when trail crew setoff a charge that was just a little too hot. This slide resulted in several hundred feet of realignment in the upper trail. The February slide was slightly west (right) of this one.
The February 2005 landslide began 25 feet above the middle of Tangent 7. Note the large pine root that had infiltrated the Kaibab cliff face. With all the precipitation in the 6 months preceding the event, coupled with freeze and thaw, the cliff cracked and started the rock to rolling.
Damage to Tangent 7  Cribbing rebuilt in the same place
Lower segment of Tangent 7

Repairs to the same segment
Damage to the bottom of Tangent 7 and the switchback corner to Tangent 8 (left). Beginning of Tangent 8 (right). Some cribbing dating to the late 1970s / early 1980s was entirely wiped out in Tangents 7-10. Otherwise portions of the trail through the Kaibab cliffs simply sloughed off and joined the slide. Elsewhere, boulders, dirt, trees, and other uprooted vegetation littered the trail.
Repairs in Tangent 8
Continuing damage down Tangents 8 - 10

Grandview Landslide
UTM 12 S 416990 2968310 ~ 37°
Facing east, Tangent 8 was very short, and its end with a switchback left Tangent 9 obliterated

Red pin flags marking former Tangent 10
Damage in Tangents 9 and 10
Looking down the slide through Tangents 11-16 to the head of Grapevine Canyon
Tangent 11 in Toroweap slope

Same view after the project
Damage to Tangent 13 (left) and 16. The upper tangents in the Toroweap (11-13) had to be cleared and re-benched through somewhat unstable slope. The lower tangents (14-16) simply had to be cleared.
Trail in the Toroweap upper tangents after the work
Cleared trail in Tangent 16
New semi-coursed rubble wall in Tangent 15
“Cribbing” is a trail building technique that enables builders to create trail where no good surface exists. Here our crew is entirely rebuilding Tangent 9 in the lower Kaibab cliffs that had been swept away. Tightly-laid, notched juniper logs with dirt and rock fill create a ramp, with log checks on the walking tread above.
Ranger Dan Davis (depicted here, or in the following slide) in the mid-1950s, assessing the condition of Pete Berry’s Grandview Trail and original cribbing. Berry used whatever logs and stone were available near the building site (some pine, some juniper), and used baling wire to fasten logs together. All of this original cribbing is long gone.
Original cribbing as it appeared half a century ago. Trail crew remembrances and a few archival documents indicate that this was replaced in the late 1970s and/or early 1980s. The cribbing/ramp on the right was abandoned after the 1972 landslide
Cribbing of the late 1970s/early 1980s at the top of the Coconino. Photograph taken in 1990 by Debra Sutphen. This cribbing is still in place following the February 2005 slide.
Three styles of cribbing over the years. Today’s (left), 25 years ago (upper right), and the original pioneer style (lower right, the “vernacular” style or no style at all)
In 1972 the NPS trail crew waited nearly a year before repairing the trail, letting
the cliffs and slopes settle before beginning their work. Similarly, today’s trail
crew quickly assessed the damage, formulated a plan, and staged materials in
March through May 2005, but did not begin repairs until the summer. Even so,
the Grandview was open again in September, hardly the worse for wear