Preliminary Report On the McDonald Creek Trail Investigation
July 29, 2006
Henry F. Shovic, PhD.
Gallatin National Forest Soil Scientist

On July 26, 2006 I participated in a field investigation of a number of ATV trails recently built on U. S. Forest Service land (T4S, R9E, Section 36) and a small amount of adjacent private land (Wilson) (T5S, R9E, Section 1) just south of the National Forest section.

**Methods:**

These estimates were made during a field investigation. The entire main trail was walked and located using GPS. A sample of spur trails was walked, and an estimate of total spur trail length made by multiplying by the number of identified spur trail origins. Depth of trail ruts was visually estimated. Property boundaries are from USGS topographic maps and may not be as accurate as surveys.

**Results (See attached table and map)**

General Trail Description: Trail averages six feet wide with two tracks. Trails appear to have been built sometime in the last three years, based on tree cuts and condition of bare soils. Multiple passes of a four wheel vehicle are the likely sources of the disturbance.

Vegetation: Grasslands are below point 2. Douglas Fir forest is below point 9999. Lodgepole pine forest above and west of point 9999.

Total estimated trail: 8,065 feet

Total on National Forest: 7,011 feet ( See table segments 1 – 8)
- Total on steep (> 35%) slopes: 1,503 feet
- Total on grassland: 502 feet
- Total in forest: 6,509 feet

Estimated Total Cost for Restoration: $25,948

Total on Private land (in Section 1, Wilson) : 1,054 feet (See table segments 9 – 10)
- Total on steep (> 35%) slopes: 278 feet
- Total on grassland: 0
- Total in forest: 1,054 feet

Estimated Total Cost for Restoration: $ 4,559

Estimate of Repair Costs is general and preliminary. They are from Jonathan Kempff, Gallatin National Forest Engineer on 7-29-2006. Current contract bids for trail obliteration (including compaction reduction, stabilizing tread, adding rocks and waterbars for erosion control, and spreading slash) are $0.90/ linear foot. Recontouring to the original topsoil

level doubles the cost to $1.80/ linear foot. Restoration of this area requires both "obliteration" and "recontouring" to restore land productivity and prevent erosion without the need for future maintenance.

Steep slopes will increase this cost. This addition is estimated at a twenty percent increase, to $2.16/linear foot. For double path-trails (as in ATV trails) all costs are estimated to double, giving the following:

Slopes < 25%: $3.60/ linear foot
Slopes > 25%: $4.32/ linear foot

Steep slope cost is calculated by multiplying the estimated proportion of the segment that is steep by the cost for that slope.

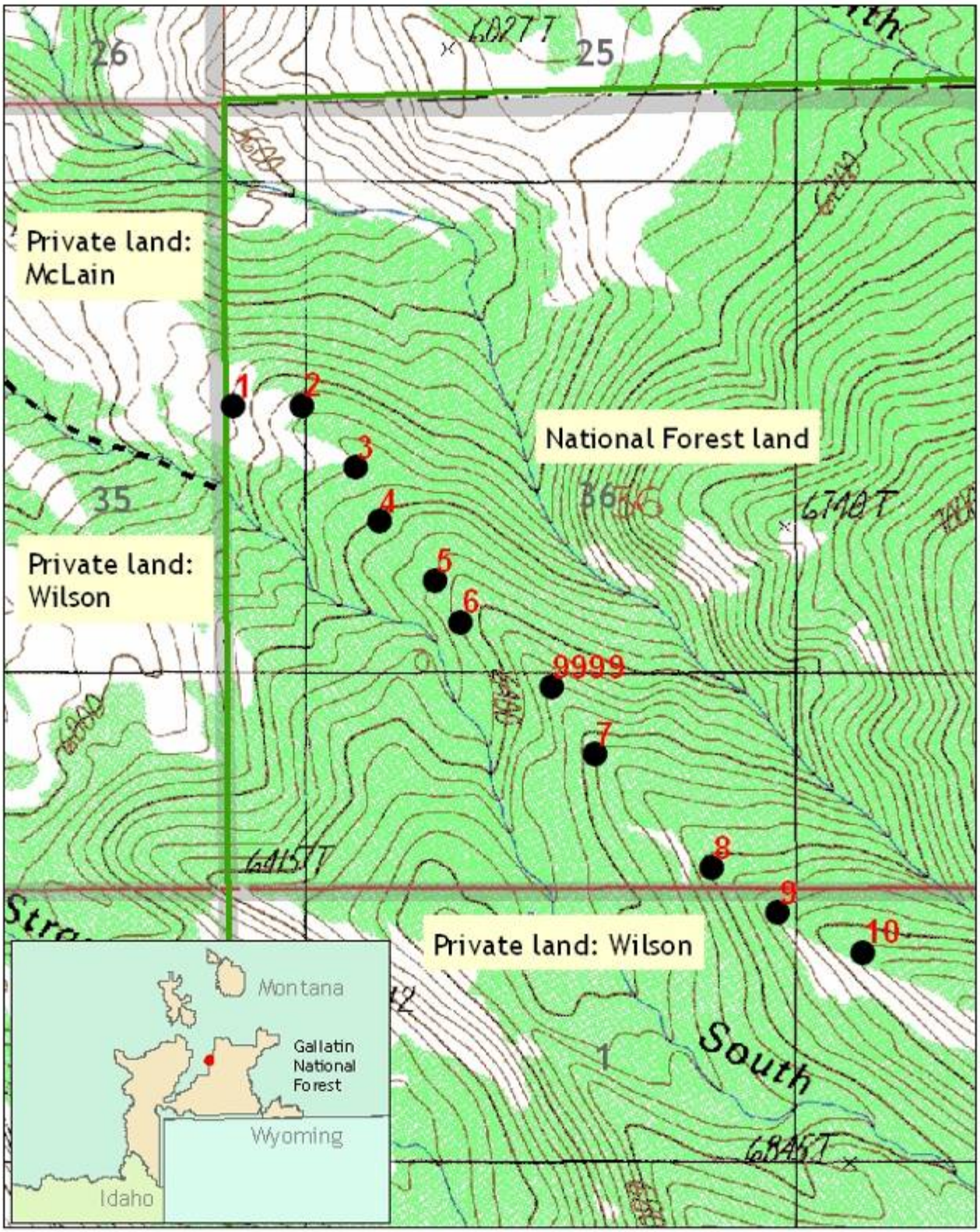
| Segment | Length (feet) | Description | Rehabilitation Cost | | |
|---|---|---|---|---|---|
| 1 – 2 | 502 | From fenceline in grassland to Douglas fir forest; slopes 0-15%; 2 inches of compaction; grass matted; on National Forest land | $1,807 | | |
| 2 - 3 | 564 + 1200 spur | 2 inches compaction; Appears like used this year; fresh stumps; spur trail in this area (est. 400 feet x 3 spurs); 80 feet of 4 inch ruts on 40% slope; on National Forest land | $5,954 + $346 steep = $6,300 | | |
| 3 - 4 | 398 | Ruts 4 inches deep and compacted; over 25% | $716 + $860 steep = $1,576 | | |

| | | | | | |
|---|---|---|---|---|---|
| | | slope for 50% of this distance; wide swath of trees cut; on National Forest land | | | |
| 4 - 5 | 539 + 900 spur | Spur trail in this area (est. 900 ft); 1 inch deep ruts on 15% slope; on National Forest land | $5,180 | | |
| 5 - 6 | 392 | 30% slope; ruts 2 inches deep; rocky; on National Forest land | $1,693 | | |
| 6 - 7 | 1,250 | Ruts 4 inches deep; steep (> 25% slope) ; on National Forest land | $5,400 steep | | |
| 7 - 8 | 1,109 | 15 – 20% slope; 60 % rock on trail; on National Forest land | $3,992 | | |
| 8 - 9 | 558 | Ruts 2 inches deep; 60% rock in trail; over 25% slope for 50% of this distance; chain saw and gas; **primarily on Wilson's land** | $1,004 + $1,205 steep = $2,209 | | |
| 9 - 10 | 653 | Ruts are 2 inches deep; rocky; slope 15%; **on** | $2,350 | | |

| | | | | | |
|---|---|---|---|---|---|
| | | **Wilson's land** | | | |
| 9999 | | Changes from lodgepole pine to Douglas fir below this point | | | |

Henry Shovic

# Gallatin National Forest:
# McDonald Creek Trail Investigation




This map was made to estimate extent and costs of restoring recently constructed trails built on National Forestand adjoining private lands. The green line is the National Forest boundary. Land lines are approximate. Black dots indicate locations on constructed trails. Map by Henry Shovic, Gallatin N. F.
July 19, 2006

0 250 500 1,000 Feet

1:12,000

N

Map Document: (I:\Yellstes\fstemp\so\resource\gallatin\McDonaldCreekInvestigation\McDonaldCreekSoilInvestigation.mxd)
7/28/2006 -- 9:16:53 AM