

Storm damage assessment along Low Gap Trail and the Appalachian Trail – 19 June 2013

Doug Miller (UNC Asheville) and Greg Cutrell (Duke University)

Within the Great Smoky Mountain National Park we parked at the campground in Cosby and hiked along the Low Gap Trail, reaching the Appalachian Trail to check on the condition of our rain gauges at Cosby Knob (35.73°N, 83.18167°W), west of where Low Gap Trail intersects the Appalachian Trail (AT), and at Sunup Knob (35.745°N, 83.17°W), east of where Low Gap Trail intersects the AT. Our gauges were upright and there were no obvious signs that the strong winds had impacted the park at the locations of our gauges.

However, we noted significant tree damage primarily along Low Gap Trail and other obvious tree damage along the AT, between the intersection of Low Gap Trail and the AT (35.73739°N, 83.18124°W) and Sunup Knob. In the storm_damage_pics folder you'll find pictures documenting the zones where we observed two zones of widespread damage, obvious tree damage for a swath wider than 40 feet. Pictures labeled "LGT6190001.JPG" and "LGT6190002.JPG" were found near the entrance of Low Gap Trail at the Cosby campground. The remaining pictures ("LGT6190003.JPG" – "LGT6190009.JPG") are for the zone found near the top of the Low Gap Trail and its intersection with the AT.

[1] Zone of widespread damage near the entrance of Low Gap Trail,

35.74883°N, 83.2032°W to 35.7484°N, 83.201067°W +/- 22 feet

[2] Zone of widespread damage near the Low Gap Trail – AT intersection

35.73791°N, 83.181869°W to 35.73739°N, 83.18124°W +/- 19 feet; damage in this zone (and corresponding pictures) were almost exclusively located in a depression in the topography (looking toward the southwest from Low Gap Trail) that suggested the winds had been channeled and/or accelerated up the ravine toward Low Gap. All of the fallen trees pointed upslope, toward the ridgeline (or the AT).

Other tree damage zones were "tagged" with swaths less than 40 feet and their locations are provided below (no pictures were taken at these locations),

[1.1] mid-lower Low Gap Trail A

35.74335°N, 83.192567°W +/- 25 feet

[1.2] mid-lower Low Gap Trail B

35.744217°N, 83.190783°W +/- 18 feet

[1.3] mid-upper Low Gap Trail

35.742267°N, 83.183433°W to 35.741467°N, 83.183267°W +/- 20 feet

[2.1] along the AT, northeast of the Low Gap Trail/ AT intersection, A

35.74015°N, 83.1810167°W +/- 19 feet

[2.2] along the AT, northeast of the Low Gap Trail/ AT intersection, B

35.741983°N, 83.17955°W +/- 19 feet

Note that all of these tree damage zones were located where obvious tree damage could be seen from the appropriate trail. At all locations, there was a tree trunk or a limb on the ground along the trail. We had to observe signs of fresh damage on multiple trees before we would record the lat/lon of a tree damage zone. Note the “+/-“ values are the position error estimates provided by our Garmin GPS locator, a function of the number of GPS satellites providing a strong geo-location signal.

The storm damage picture (zipped) folder can be found at

http://blizzard.atms.unca.edu/dmiller/storm_damage_pics.zip

Respectfully submitted,

A handwritten signature in black ink that reads "Douglas K. Miller". The signature is written in a cursive style with a large initial 'D'.

Douglas K. Miller
Professor and Chair
Atmospheric Sciences Department
UNC Asheville