

Late Nineteenth & Early Twentieth Century Logging in the Jemez Valley: Log Chutes in Area 3

Thomas W. Swetnam
Laboratory of Tree-Ring Research, University of Arizona



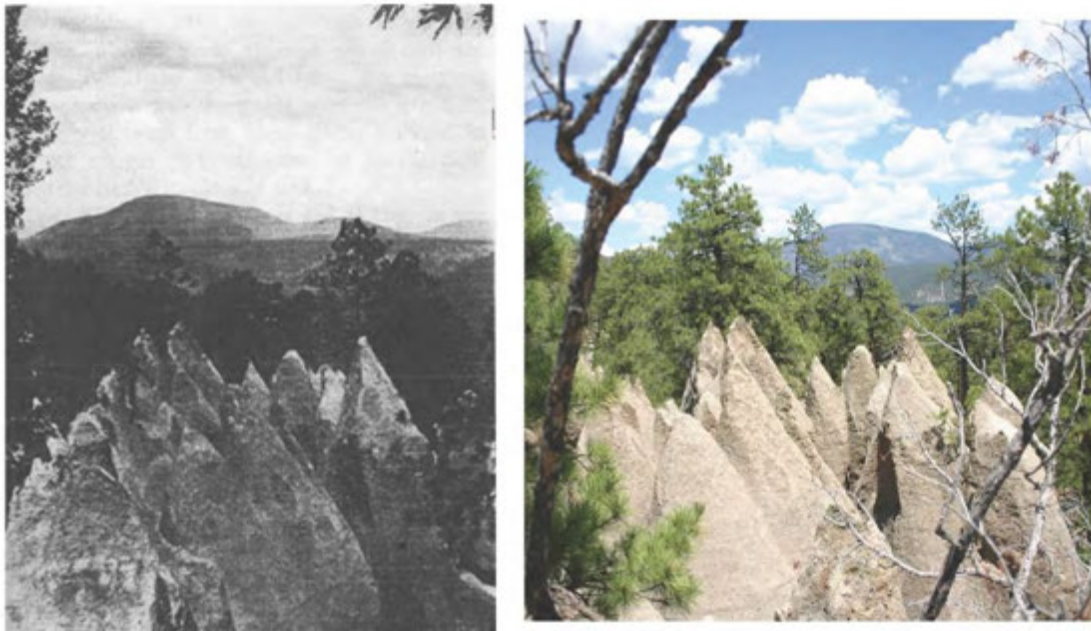
Jemez Mountains Tree-Ring Lab, Jemez Springs, NM
August 7, 2017

“He makes other things, too; he makes axes and uses them. “Weapon, shapely, naked, wan, from earth’s midmost bowels drawn,” as Walt Whitman said. And this broad bench here, where seven and twenty years ago I remember vistas of noble pine, has heard the ringing strokes of the wan weapon since then. The tall pines have gone, the stumps alone are left. No log wagon could be brought up here to draw them down, but the loggers went to the edge of the bench overlooking the valley, and there they built with stakes and trenails a two-thousand-foot-chute of hewn trunks down which their logs slid thundering to the floor below.” Richard Baxter Townshend, in *The Last Memories of a Tenderfoot*, Letters from Jemez Hot Springs, June 1903.

R.B. Townshend was a young British rancher and trader in Colorado and New Mexico in the late 1870s. He lived in Jemez Pueblo and Jemez Hot Springs, and he knew many of the early Anglo-American settlers and Spanish American villagers in this area. His book “Tenderfoot in New Mexico” is a nearly forgotten classic of frontier stories about Territorial New Mexico. After returning to England, where he became a Classics scholar at Oxford University, he compiled this book from magazine articles he wrote about his adventures in the wild West. In 1903, while in his 50s, he returned on a nostalgia trip to the Southwest. He brought along a small Kodak box camera that he used to document his travels to his old haunts, including the Jemez Valley. Numerous photos from that trip reside in the Pitt Rivers Museum at Oxford, and several of them are published in a book that was compiled from his letters and articles and published by his wife after his death in 1923 (“Last Memories of a Tenderfoot”).

One of the lengthy letters from Townshend to his wife in June of 1903 describes his visit to the Jemez Valley in considerable detail. One of the day trips he took during that visit was a hike up onto Virgin Mesa, just north of Jemez Hot Springs (now called Jemez Springs). From his description, it is clear that he ascended to the mesa somewhere north of Soda Dam, and on his descent, he came down through what we call “Area 3” today (Cool Pines and Quinn Haven subdivisions). He laments the cutting of the tall pine trees he had seen there nearly three decades earlier, and he describes hiking down along one of the log chutes to a spring that the loggers used. A favorite subject of his photography during this hike was the tent rocks below Virgin Mesa, and just above the bench on Area 3. We found the exact location of one of those photographs and re-photographed the same scene, 111 years later (Figure 1).

FIGURE 1. Repeat photos of tent rocks above Area 3. The left photo was taken in 1903 and is published in R.B. Townshend's "Last Memories of a Tenderfoot". The right photo was taken in 2014, and is shifted a few meters upslope because ingrowth of trees obscured the original view point.



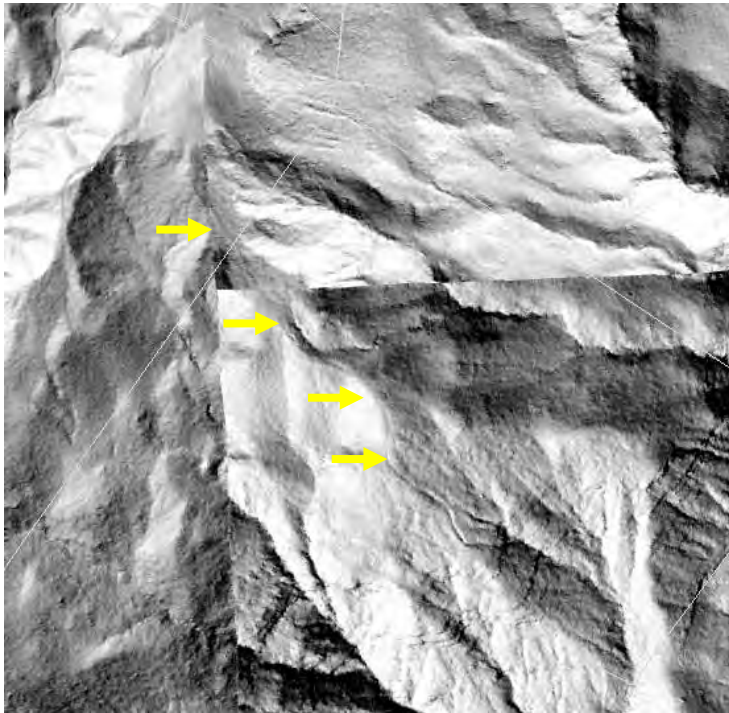
Log Chutes

The remains of two log chutes can still be found descending from the broadest bench in Area 3 to the valley floor. The chutes are only slightly visible as cleared paths in places on Google Earth imagery (Figure 2), but are more evident on LiDAR imagery (Figure 3), and on the ground.

FIGURE 2. Google Earth view of the south (left) and north (right) log chutes below the bench on Area 3.

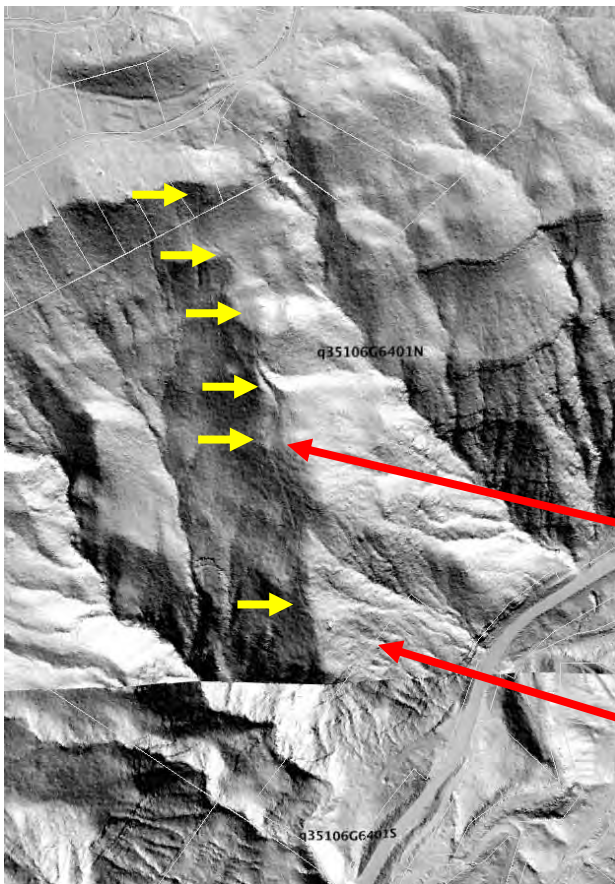


FIGURE 3. LiDAR surface layers showing the paths of the south and north log chutes below Area 3.



South Log Chute.

This chute appears faintly on both the LiDAR surface layer and on the ground. The arrows point to the probable location. The lower end of the chute is not visible, and it may be that logs were tumbled down the lower slopes rather than in a chute.



North Log Chute.

The uppermost arrow points to the beginning of the log chute at the edge of the bench. Samples from LGC 1 and LGC2 came from the edge of the bench, and may not be part of the log chute. All other samples (LGC3-LGC7) came from the area between the second and third arrow, on the slope just below the top of the bench.

This is the approximate location of the stone cribbing beneath the pathway of the chute, rounding a corner.

This is the steep set of limestone ledges, where it appears logs were tumbled down to the bottom. Broken and bent over junipers here.

The northernmost chute is the most obvious, with remains of the logs and cross ties used on the chute still present near the top of this chute (Figure 3). The northernmost chute is a well-defined path on the ground, until a nearly vertical set of small limestone ledges near the bottom. It appears that logs may have been allowed to tumble down this last section to the bottom, because there are broken off stumps and still-living but broken and bent over junipers on this steep slope that were obviously impacted by falling logs and debris. The landing for this chute may have been approximately in the location of the large parking lot adjacent to highway 4 with the Area 2 mailboxes.

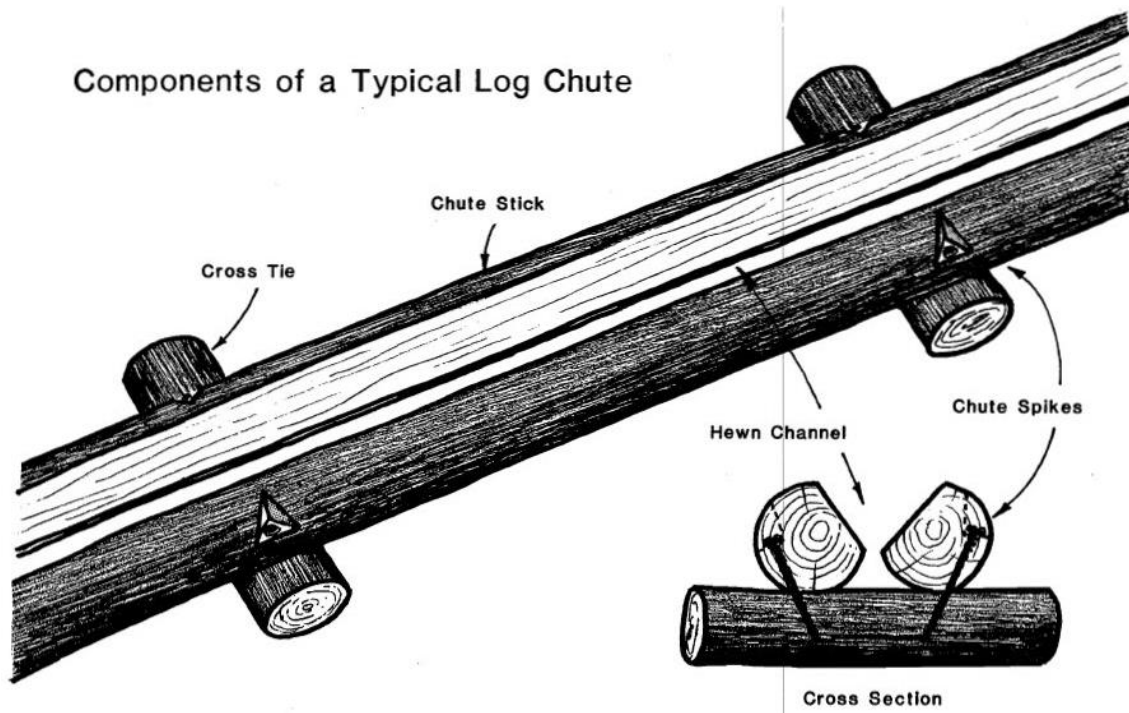
The southernmost log chute descends at the far southwestern end of the large bench in Area 3. This chute is evident in the LiDAR image, but wooden remains have not been found yet. Also, it is not clear where this log chute ended on the valley floor; it becomes obscure on the LiDAR imagery before the bottom (Figure 3).

The log chutes may have been like the one pictured below from a turn of the century logging operation of the Dye Timber Company, on a slope near the old mining town of Bland, NM in the Jemez Mountains (Figure 4). Construction and operation of log chutes was a specialty of some loggers in the late nineteenth and early twentieth century, requiring considerable knowledge and skill to construct and operate. The basic design included “chute sticks” (hewn logs) and cross ties (Figure 5), with systems for braking the logs, going around corners and flipping logs off the chute at the bottom (Sims 1983). As one can imagine, these operations could be highly dangerous if people were in the wrong place and time!

FIGURE 4. Log chute in Mediodia Canyon, Dye Timber Company circa 1910.



FIGURE 5. Log chute illustration from Sims (1983).



Tree-Ring Dating of North Log Chute

Remnants of logs used in the northernmost chute in Area 3 are visible on the edge of the bench and slope immediately below the edge and further down the slope on National Forest lands (Figure 6). Cross section samples were taken from seven of these logs. Most of the logs appear to have been the chute sticks, i.e., the long side rails of the chute, rather than cross ties (e.g., Figure 7).

FIGURE 6. Several old logs with axe cut marks were located on the edge of the bench immediately above the log chute. Sample LGC1 is shown below, before and after the cross section sample was taken.



FIGURE 7. Upper left: A chute stick and two cross ties. Upper right: Sample LGC4 of a chute stick. Lower left: The rock cribbing below the chute path about half-way down the chute. Lower right: an entrenched portion of the chute path.



The samples were mounted on plywood, re-sectioned and sanded with belt sanders to 320 or 400 grit so that all rings could be observed microscopically and tree-ring dated. The ring-widths of individual samples were crossdated using a master tree-ring chronology derived from multiple locations and dozens of other tree-ring samples from the Jemez Mountains. Tree-ring dating was generally difficult on these samples due to multiple missing rings and false rings. Only a few of the samples have outermost tree rings that are likely “cutting dates”, i.e., last formed rings beneath the bark when the trees were cut.

Sample ID	Outermost Date*	Innermost Date	Comments
LGC1	1880 v+	1699 near pith	Very slow growth after 1842 and ring counted only after that; missing rings
LGC2	1818 vv	1747 not pith	heartwood only present; far from outside

LGC3	Not dated		Too decayed on outside; too few rings inside
LGC4	1847 vv	1697 pith	heartwood only present; far from outside
LGC5	1795 vv	1679 pith	heartwood only present; far from outside
LGC6	1882 Lv+	1721 pith	Missing rings on outside; ring count after 1851
LGC7A	1883 v+	1671 pith	Section from lower on stem; ring count after 1851
LGC7B	1884 Lv+	1683 near pith	Section from lower on stem; ring count after 1851

*L = A characteristic surface patination and smoothness, which develops on beams stripped of bark, is present.

v = A subjective judgment that, although there is no direct evidence of the true outside on the specimen, the date is within a very few years of being a cutting date.

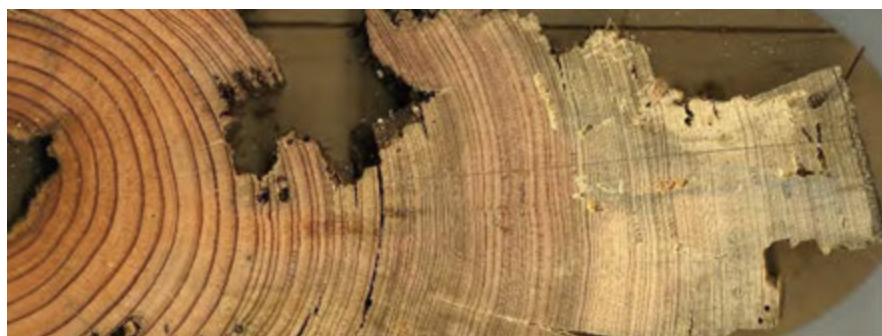
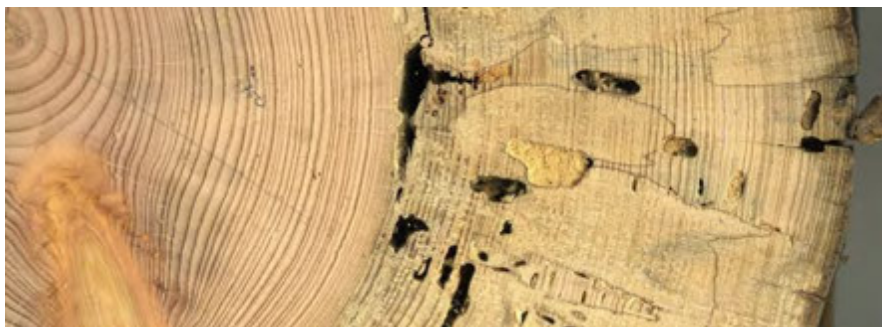
vv = There is no way of estimating exactly how far the last ring is from the true outside.

+ = One or more rings may be missing near the end of the ring series whose presence or absence cannot be determined because the specimen does not extend far enough to provide an adequate check.

Three of the samples (LGC2, LGC4, LGC5) were missing all or almost all sapwood rings and contained mainly heartwood rings, indicating some decades of the last formed rings had decayed away. Outermost rings on these specimens, therefore, are likely decades earlier than the death/cutting dates of these trees. One specimen (LGC3) could not be crossdated at all because the outermost rings (sapwood) were too decayed, and there were too few innermost rings (heartwood) to identify crossdating.

The other four samples taken from three logs/trees (LGC1, LGC6, LGC7) have outermost dates in the early 1880s. Due to narrow and missing rings after 1842 and 1851 it was not possible to date the outermost rings of these samples to an exact year. It is likely that the cutting dates on these specimens were between 1882 and 1885 (Figure 8).

FIGURE 8. Top: Sample LGC6 with outermost ring date of 1882 Lv+. Bottom: Sample LGC7B with outermost ring date of 1884 Lv+.



Early Twentieth Century Logging in Area 3

It appears that most or all the logging that took place in Area 3 in the early 1880s occurred on the largest bench area, in and around Ponderosa Drive and Spruce Loop road. Other parts of Area 3 were probably logged in the 1940s or early 1950s, after the road was built to the bench with bulldozers, which became much more available after World War II. Evidence that logging did not take place on the upper bench and the lower and smaller bench of Area 3 on the northeastern end (Quinn Haven) includes aerial photographs from 1935 and 1954, and tree-ring dates from old stumps showing mid to late-1940s cutting (Figure 9).

Summary

Ponderosa pine forests on the benches below Virgin Mesa within the Jemez Valley were logged in the early 1880s, and again in the mid to late 1940s. The earlier logging took place before a road could be built up the steep slopes to these relatively inaccessible forests, so the loggers built at least two (and maybe more) “chutes” that were used to slide the logs by gravity to the valley floor.

It must have been quite a spectacle to watch and hear logs rumbling down the 2,000-foot-long chutes and crashing down at the bottom!

Sawmills were present at multiple locations in San Diego Canyon. We don’t know, at this time, which mills were used for sawing logs from Area 3, but it could have been a mill that was near Battleship Rock (in the Camp Shaver area), or possibly a mill near the current “Sawmill Canyon”, which is just up the valley about 1 mile from where the chutes deposited the logs. It is likely that some of the lumber from this early operation exists today in walls and roofs of old buildings in the Jemez Valley.

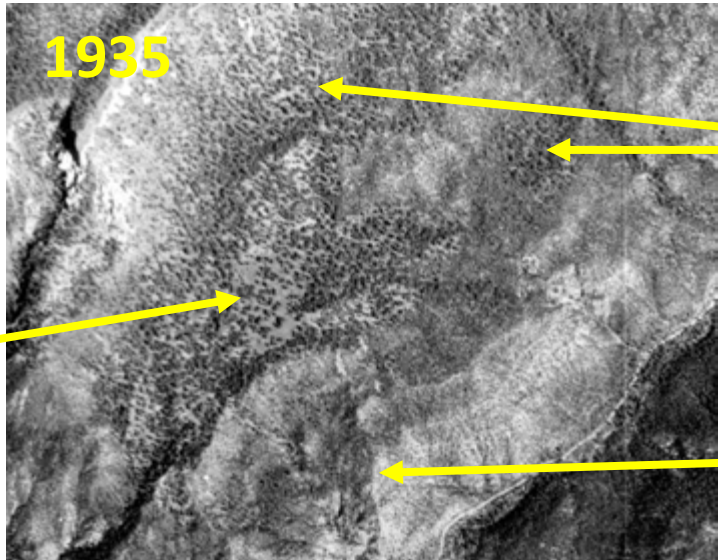
The later logging took place after bull dozers became available and the road (Ponderosa Drive) was built up the steep slope at the northeastern end of Area 3. From the aerial photo evidence and tree-ring dating of stumps from the upper bench and the northeastern bench, it is evident that this later logging was in the mid to late 1940s.

Future historical, archaeological and tree-ring investigations may identify and document other obscure and little-known human history in the Jemez Valley.

“And so, as the sun sloped toward the west, I climbed down parallel to the old chute by the loggers’ path, and drank at a little spring beside the trail where they once drank, and where the wild deer now come to quench their thirst, for the fresh deer tracks were everywhere around the spring. I am glad these deer came back, and have not given up the game in despair because men once invaded their haunts and scared them away with guns and noise of axes and falling timber and roaring chutes. Not always do the wild things get the chance to return, but when they do, let us be glad and welcome them, and perhaps Pan and the nymphs may come back to us some day.” Richard Baxter Townshend, in *The Last Memories of a Tenderfoot*, Letters from Jemez Hot Springs, June 1903.

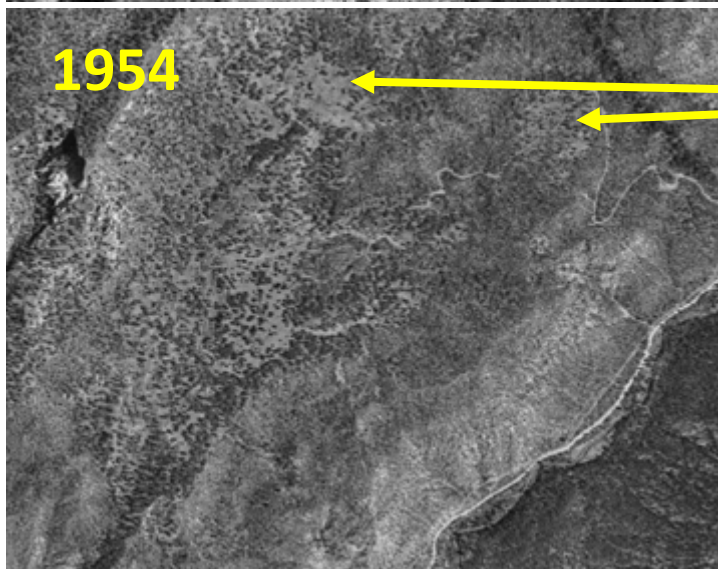
FIGURE 9. 1935, 1954 and 2014 aerial views of Area 3. Note that roads are absent in 1935 and old growth forest is intact on the lower, northeastern bench, and the upper bench. The roads are in place in 1954, and the lower northeastern and upper benches have been logged. By 2014 thickets of ponderosa pine trees have established in most logged areas and houses have been built.

The large bench was logged in the early 1880s. This was "high grade" logging, leaving smaller, bent, forked, and less desirable trees. By 1935 some regeneration has occurred.

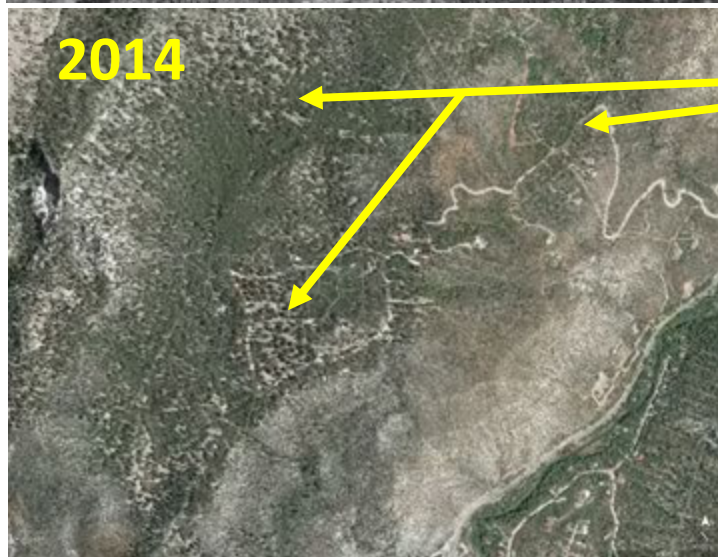


Old growth, unlogged forests on upper and northeastern benches.

Trace of northern log chute still visible.



Forests on upper and northeastern benches have been logged.



Dense stands of small diameter trees have established throughout logged areas.

References

Townshend, R.B. 1923. *The Tenderfoot in New Mexico*. John Lane The Bodley Head Limited, London. 257 pages. [reprinted facsimile version, Sunstone Press, Santa Fe, NM, 2013]

Townshend, R.B. 1926. *The Last Memories of a Tenderfoot*. John Lane The Bodley Head Limited, London. 270 pages. [reprinted facsimile version Kessinger Legacy Reprints]

Sims, Cort. 1983. *Cultural Resources: The Log Chutes of Idaho*. USDA Forest Service, Northern Region, Report No. 8., 97 pages.