

August 14, 2007

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Observations of Duke Power's Right-of-Way Power Line Clearing through the Oconaluftee Area of Great Smoky Mountains National Park

On Tuesday, July 31, 2007, I, Brad Dodson, along with Joey Henry, Fisheries Technician's Assistant, and Danny Cleves, an SCA volunteer, were given the assignment of following one of Duke Power's power line rights-of-way through Great Smoky Mountains National Park while observing and documenting the effects of an herbicide application used to clear that right-of-way. Duke Power was instructed and approved to maintain the right-of-way through the park using only basal application herbicides that sustain dense, herbaceous and shrubby vegetation, along with other Integrated Pest Management (IPM) methods. Most observed portions of the right-of-way appear to have been heavily treated with a foliar spray herbicide application that 'burned' a swath of vegetation below the lines. This is of special concern because of the presence of exotic plants encroaching into the disturbed area and numerous stream, river, and wetland crossings. Of the two herbicides used by Duke Power, Accord and Arsenal, only Accord is approved for aquatic use. The line in question enters the park on Tow String Road, at the park boundary bordering the Tow String Community, and continues, roughly paralleling the Oconaluftee River, to its terminus in the Collins Creek campground. Of the approximately six miles of right-of-way of this particular line through the park, we roughly covered 75% of it, or about 4.5-5.0 miles, with vehicle access and time constraints being the limiting factors. Aquatic life was documented by wading approximately 15m to either side of the power lines at stream crossings and randomly overturning rocks to check for signs of life. This document serves as a detailed account of my observations.

The entry point for the power line is on Tow String Road heading towards Tow String horse stables. The lines enter the park below the Tow String Community sign (no white and green Park Service boundary signs were observed) and cross the road over a stream. This first site is recorded on the GPS unit as 031. Corresponding photos for this site are labeled 107-0763, 107-0764, 107-0765 (herbicide burn), and 107-0766 (~50m below 107-0765).

- Native jewelweed re-vegetating the area, exotic honeysuckle invading
- Spiders and flying insects observed on rocks and over water
- No aquatic organisms were observed in the water



107-0763



107-0764



107-765



107-0766

The lines emerge from the woods into the Tow String barn and horse pasture. This site is recorded on the GPS unit as 032, with corresponding photo 107-0767.

From the barn, the power lines follow a short right-of-way to parallel the Oconaluftee River and Tow String service road, through the horse camp to the Tow String trailhead. This site is recorded on the GPS unit as 033, with corresponding photo 107-0768 (herbicide burn).



107-0767



107-0768

The lines cross the trailhead gate and parallel to the right of the service road (trail) through a large maintained, mowed field. The lines then cross the road into a right-of-way. This site is recorded on the GPS unit as 034, with corresponding photo 107-0769.

- Invasive honeysuckle
- Right-of-way appears heavily sprayed and dead, not much native re-vegetation
- No stream crossings

The right-of-way continues towards the Smokemont water and sewer treatment plant and Smokemont riding stables. Just before the lines reach the sewer plant, they cross a small tributary to the Oconaluftee River, marked directly under the power lines on the GPS unit as site 035, with corresponding photo 107-0770.

- Thick vegetation, not burned and dead, no exotics observed
- No signs of aquatic life observed



107-769



107-0770

At Smokemont stables, the lines go behind a house trailer and over a small wetland area. This site is marked on the GPS unit as 036, with corresponding photos 107-0771 and 107-0772.

- Thick vegetation- native jewelweed, etc.
- Wetland rocks very mossy, stoneflies observed



107-0771



107-0772

The lines leave the stables into a sprayed right-of-way through the woods to Smokemont Road at Smokemont Baptist Church. This site is recorded on the GPS unit as site 037, with corresponding photo 107-0773 (dead, burned vegetation).

The lines then follow a horse trail and Smokemont Road to the Smokemont campground at the Bradley Fork trailhead. This site is marked on the GPS unit as 038. Corresponding photo 107-0774 looks up a burned right-of-way to a utility building to the left of the Bradley Fork trail, ~1/8 mile up. Corresponding photo 107-0775 looks the opposite direction, down the burned right-of-way toward the confluence of Bradley Fork and the Oconaluftee River. The lines do not cross the stream here.

The power lines do cross Bradley Fork ~300m further downstream towards the confluence, still within Smokemont campground. This site is recorded on the GPS unit as 039, with corresponding photo 107-0776.

- Grasses on stream banks, no honeysuckle or many other exotics observed
- Observed water striders, caddis fly larvae, and crawfish
- Large stream, no fish or salamanders observed- I would recommend spot backpack electro shocking about 50m to either side of the power lines, with emphasis on the downstream side, for further evidence



107-0773



107-0774



107-775



107-0776

The lines continue through Smokemont campground, on the opposite side of Bradley Fork, where they are intersected and joined by another set of lines crossing the stream near the confluence with the Oconaluftee River, near the bridge at the Smokemont Loop trailhead. This site is marked on the GPS unit as 040, with corresponding photo 107-0777.

- Lespedeza, grasses, other potential exotics present, though not heavily invading
- A minnow fish was observed

The lines continue past the bridge, to the right of the Smokemont Loop trail, through a sprayed and burned right-of-way field. The lines cross the trail/service road, and where the Smokemont Loop trail cuts up the ridge to the right, a 4WD service road follows the right-of-way path. The vegetation here is thick re-veg, but shows evidence of past herbicide burning. This site is marked on the GPS unit as 041. Corresponding photo 107-0778 looks up the right-of-way towards Collins Creek while 107-0779 looks down towards Smokemont Loop trailhead. Photo 107-0780 also corresponds with this site.



107-0777



107-0778



107-0779



107-0780

The lines continue to follow the right-of-way with the 4WD road to where the road becomes impassable at a fallen sycamore, thick vegetation, and rough terrain, ~ 0.75 miles from its crossing of Highway 441. This section was not observed and may contain more potential stream and wetland crossings. At this site, the right-of-way area is thick with vegetation and passes through (is a) wetland habitat, directly under and around the lines, with several bogs occurring ~50m upslope from the lines and ~10m upslope from the right-of-way path. This site is marked on the GPS unit as 042 with corresponding photos 107-0781 (wetland under the lines), 107-0782 (thick vegetation with lines overhead), 107-0783 (Joey surveying wetland habitat for signs of life), and 107-0784 (bog).

- Honeysuckle, multiflora rose observed, along with wetland natives such as reeds (sp?), locust, etc.
- No aquatic life seen in flowing water near or under lines
- 1 small life form (helgramite?) observed in bog



107-0781



107-0782



107-0783



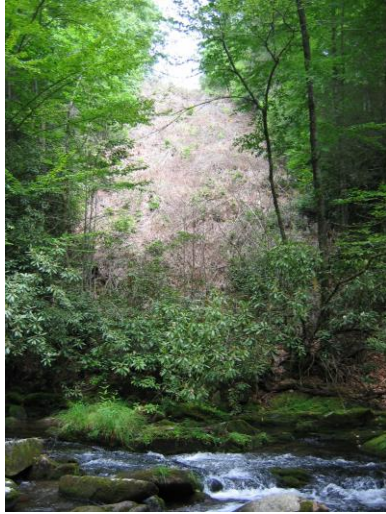
107-0784

The lines continue from this point down the right-of-way approximately 0.75 miles where they cross Highway 441 at a paved pull off on the right (heading towards Sugarlands from Oconaluftee VC- we backtracked to this point). At this junction, the lines head down a steep ridge, cross the Oconaluftee River and Highway 441, and continue up another steep ridge on the opposite side of the road towards Collins Creek picnic area. The steep right-of-way heading up the ridges on either side of the road and river is of special concern because it appears to be severely burned by herbicide, and the runoff would head downhill towards the river. This point is marked on the GPS unit as 043, with corresponding photos 107-0785 (looking across river, up the right-of-way towards Smokemont), 107-0786 (looking across road, up the right-of-way towards Collins Creek), and 107-0787 (river with power lines looking up ridge towards Smokemont).

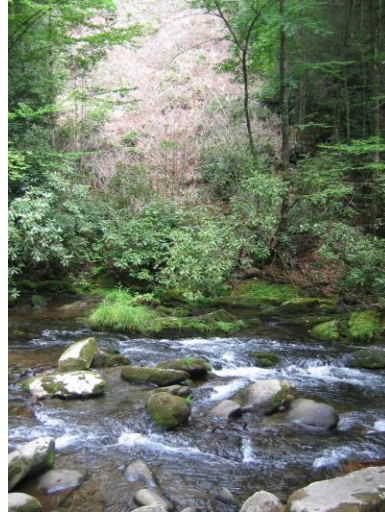
- Clover and grasses observed, nothing invasive, site is disturbed (roadside pull off) and receives heavy visitor traffic
- Large stream- no aquatic life observed either under rocks or in stream approximately 15m to either side of the lines at the crossing
- Because of the potential for heavy herbicide runoff at this site and the lack of aquatic life, I would recommend spot backpack electro shocking ~50m to either side of the lines at the river crossing, with emphasis on the downstream side for further evidence



107-0786



107-0785



107-0787

The lines continue across the road, up the steep but short ridge, and down the other side to Collins Creek picnic area. This right-of-way section is approximately 0.25 miles long and was not observed, though the whole length can be viewed from either end and appears to be severely burned by herbicide with no stream crossings. The other end of this ridge can be viewed from the lower Collins Creek picnic area (where the lines enter the picnic area) and is marked on the GPS unit as 044, with corresponding photos 107-0788 (looking back towards Highway 441) and 107-0789 (looking towards the upper Collins Creek picnic area).

- Some jewelweed and rhododendron re-vegetating the right-of-way, though the area is still mostly dead and burned



107-0788



107-0789

The lines continue from here to their terminus in the upper Collins Creek picnic area at a picnic shelter. The lines do not cross Collins Creek. This point is marked on the GPS unit as 045.