

**2019 Therrien/ Lanata Eversource Right-of-Way Investigation
New London Turnpike, Glastonbury, CT
Photos by REMA Ecological Services, LLC**



Photo 1: Study area, southwestern ROW segment, on Therrien property; low shrub-meadow cover type on hillside, facing southeasterly.



Photo 2: Steep hillside in study area, facing northwesterly, on Lanata property; mix of high shrub and low shrub cover types; huckleberry at center is dark red-brown. 10-7-19.

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Photo 3: House wren in a tall arrowwood shrub in the shrubland cover type on hillside. Nine were observed in the Southwestern ROW segment on 8-10-20.



Photo 4: Juvenile Baltimore orioles in a tall mountain laurel, on southward migration. 11 were seen in the S.E. ROW segment on 8-10-20 - the most abundant bird species.

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Photo 5: Mosaic of low shrub, meadow & high shrub cover types in Plot 1 in the southwestern ROW segment, on Lanata property, facing northwesterly. 10-7-19.



Photo 6: Round-fruited rosette panic grass (*Dicanthelium sphaerocarpon*) is common in the meadow area, providing seeds for birds in wildlife in early summer and fall. Its semi-prostrate foliage provides leafy forage, litter, and good erosion control. A variety, *D. isopyllum*, is a CT Species of Special Concern, but presumed extirpated. Determination to variety must take place in early summer, using morphology of vernal fruiting culms. Bristly dewberry (*Rubus hispidus*) at right, is widespread on this site. The *Dicanthelium* genus is currently experiencing major revision, with many name changes.

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Photo 7: Study area, southwestern ROW segment; low shrub-meadow cover type on hillside, facing easterly. Note topped red cedar and blooming rough boneset 9-10-19.



Photo 8: Mid slope shrub thicket, with elderberry, grape, and winged sumac, facing easterly, on Therrien property; low shrub-meadow cover type; 10-7-19.

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Photo 9: Abundant fruits of red cedar are an important winter food for birds. 5-17-19.



Photo 10: Both winged sumac and staghorn sumac are heavy producers of fruit in mid fall. 5-17-19.



Photo 11: Rough boneset, *Eupatorium pilosum*, with a fly pollinator; inter-mixed with low shrubs on the lower hillside of SW ROW segment. All three bonesets on the site are much used by pollinators. 9/9/19.



Photo 12: Purple milkwort, *Polygala sanguinea*, occurs in Plot 1 and sporadically elsewhere in moist, sunlit portions of the hillside.

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Photo 13: Dense grasses & fine-bladed, rhizomatous Penn sedge dominate the east side of Plot, 3 with very few deciduous tree seedlings.



Photo 14: Shrub-dominated section of Plot 3, the control hilltop plot, to the east of bedrock sill, that defines western boundary of plot. 8-10-19.



Photos 13, 15, and 16 were taken on 11/12/19.

Small red cedar seedlings were recorded in Plot 3, with 5% cover, and also 6% cover of pasture juniper. Cat briar, huckleberry, winged sumac, buckthorn, blackberry, and several birch seedlings were also present.



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Photo 17: Study area, southwestern ROW segment, low shrub-meadow cover type on hillside, facing southeasterly. Note red cedar and blooming rough boneset 9-10-19.



Photo 18: Large hillside areas of low ericaceous shrubs (huckleberry & blueberry); oak saplings are on the perimeter, but not within the patches. Facing northeasterly. 10-7-19.

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Photo 19: Study area, SW ROW segment, upper hillside, with patches of oak saplings and seedlings. 11-8-19.



Photo 20: Oak seedlings and saplings are the larval host plants for hundreds of species of moths and butterflies, a very important food source for nesting songbirds.

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Photo 21: Diverse roadside herb stratum on lower hillside (Plot 1) with whorled loosestrife, violet bush clover & an uncommon tick trefoil, *Desmodium ciliare* (8-16-19).



Photo 22: Dry roadside on upper slope with low-growing vascular plants include gray goldenrod, sweet fern, upland boneset, bracken fern, and little blue stem. 9-10-19.

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Photo 23: Replacement of wooden poles with steel poles resulted in $\frac{3}{4}$ acre of dense mugwort, *Artemisia vulgaris*, on Work Pad # 1



Photo 24: Part of Pad # 3 received fertile topsoil & sprouted mugwort & other tall weeds, like toxic Jimson weed. Rest is bare & poorly permeable.



Photo 25: On Pad # 1 thick impervious stone process fill was covered with 2-4" of fertile, garden-type topsoil that contained mugwort seeds. It was seeded with clover & grasses, soon overtopped by mugwort.



Photo 26: ~ 200 sf of the poisonous Jimson weed were cut down from Pad #3 and a part of Pad #4, before seeds were ripe, & bagged by Mr. Therrien. However, seed from mugwort on Pad #1 washed down the hill.

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Photo 27: Most of the native shrub & grassland cover has been lost, & over 2 acres of dense fill was added for service roadways & work pads.



Photo 28: A double ring infiltrometer confirmed on 11-11-19 that the substrate on Work Pad #3 is much less pervious than natural hilltop soil.



Photo 29: Observations during a minor rain event on 11-12-19, showed that runoff begins early in the event, & dislodges nutrient-laded fine soils, washing them northerly down the hill. This will alter naturally infertile soils.



Photo 30: Runoff has already caused substantial erosion on the steep southwestern hill below the new pads on the hilltop. It was worsened by cutting multiple red cedars that had been anchoring the hillside soil.

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Photo 31: Southerly view. Much natural vegetation remains around Work Pad # 4. Timber matting was used over a small area, instead of placing impervious fill. 11-8-19.



Photo 32: Northwestern view of Pad #4. Heavy equipment clearly operated from this side. Permeability was good, averaging 0.56 minutes for each 1" drop in water level.