

Summary of Wild Parsnip Control
2014-2023
Oyster River Forest
Durham, NH

Report by Ellen Snyder, Ibis Wildlife Consulting

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2014

Ibis Wildlife Consulting discovered a large stand of invasive wild parsnip on July 30, 2014 on the Oyster River Forest while conducting fieldwork for a management plan for the Town of Durham's Oyster River Forest. Since this was an early detection of a species not known to occur in this region and due to its potentially caustic nature (the plant sap can cause severe burns in presence of sunlight), we initiated a rapid response to control the plant with the support of the Town of Durham and the Natural Resources Conservation Service (NRCS). A rapid response was also needed since the plant was discovered late in the growing season, when some of the plants were beginning to produce seed.

Ellen Snyder worked with consultant/specialist Mike Bald (Got Weeds?) from Vermont to hand pull all visible second year plants on approximately 2.3 acres in the northeast corner of the east field of the Oyster River Forest. Together they hand pulled 3,741 2nd year wild parsnip plants; this plant is a biennial, producing flowers and seeds in year two. A smaller second population of about 40 plants was discovered and also pulled, in the southeast area of the west field (see map).

A manual treatment approach (rather than herbicide) was deemed the best control option, given cost, density and distribution of the parsnip among many native field plants, proximity to the Oyster River, Mike Bald's expertise with hand-pulling parsnip, and the ability to respond quickly in the face of an impending seed rain. This population of wild parsnip has likely existed on the property for several years undetected. It will require several more years of similar control work to exhaust the soil seed bank.

The parsnip was piled onsite in existing "hot spots" with all seed heads directed in toward the center of the pile. Three hotspot piles were created. One pile included use of pallets under the pile to allow for air-drying of the plant material. Of the remaining two piles, one was covered with an 8' x 10' green tarp to prevent high winds and animal traffic from dispersing any potentially viable seed. The viability of seed on pulled plants was and remains an unknown. Wild parsnip phenology covers a wide timeframe; from late June into September some plants are already mature while others are just beginning to flower. One additional densely infested area was solarized with clear 4-mil plastic; solarization is an experimental technique that seeks to destroy seeds in the soil, effectively accomplishing five years of work in sixty days. The solarizing pad covered an area of approximately 10 by 25 feet.

The site presented some difficult working conditions including the maturity of the plants (many plants 6-7' tall and some seed heads were drying out, requiring careful pulling and piling to avoid spreading seed), density and distribution of the population, some plants growing among thorny multiflora rose or blackberries, and presence of ground-nesting bees and wasps.

2015

Based on Mike Bald's experience it was assumed that the same number of plants, or more, would be present in 2015. However, there were fewer plants, but more scattered so the effort required to pull all second year plants was higher. We were able to pull in July, before the plants had started to go to seed. We hand-pulled 3,032 2nd year wild parsnip plants on 2.5 to 3 acres, July 14 and 28, 2105. Tara Johnson, an experienced invasives controller volunteered her time and joined us on July 28th. Ellen conducted a follow-up reconnaissance on August 24, 2015 and found 5 more plants, which were pulled. Parsnips in flower were pulled and piled on same sites as plants pulled in 2014. Plants that had gone to seed were clipped and seed heads collected in trash bags and removed off-site for disposal.

2016

Although there were more wild parsnips pulled this year compared to 2015, the pulling was quicker. This was due, in part, to the site being easier to access and better ability to see the mature flower heads above other herbaceous growth. This was a result of work done by other contractors that used tractors to uproot and shred large invasive shrubs followed by field mowing and planting of native shrubs.

Due to scheduling issues, Mike Bald, worked at the site on July 12 and 13, 2016, while Ellen Snyder followed on July 20 and 25 and August 8, 2016. Most of the plants were pulled in July. Due to the drought, a potato fork was needed to loosen the taproot before pulling. The August 8th visit was a reconnaissance to pull any newly formed second year plants. Twenty-nine plants were pulled on that day.

Most of the pulled plants were piled on the existing piles from the previous two years. Almost none of the plants pulled had gone to seed yet, but the plants continued to mature to seed even after lying in a pile for several weeks in the hot sun.

2017

The Natural Resources Conservation Service (NRCS) paid for the consultant's time for the first three years of parsnip control at the Oyster River Forest (2014-2016). This funding was part of the restoration funding that accompanies a WRP project. In 2017, funding was not available from NRCS. The Town of Durham hired Ellen Snyder (Ibis Wildlife Consulting) in a part-time position as Durham's Land Stewardship Coordinator, beginning in February 2017. This enabled Ellen to continue the wild parsnip control, with the assistance of experienced, trained volunteers. Ellen hosted a parsnip workshop at the ORF on July 19th. Five volunteers attended and helped pull the 219 plants in the West Field Patch. Volunteers then assisted Ellen with two follow-up work days on July 27th and August 1st.

In addition to the large, main patch, there are four other smaller patches. In 2017, Ellen started to record number of plants per patch. The other patches include:

- East Field: Blackberry Patch: plants pulled around and in the large stand of blackberries near where the Oyster River Trail enters the woods.
- East Field: Mowed road to clearcut
- East Field: Near Tributary
- West Field

Table 1 summarizes the wild parsnip control efforts on the Oyster River Forest for the past four years (2014-2017). The number of second year plants remains high; 2017 was the second highest number of parsnips pulled. The original large patch at the north end of the East Field (largely north of the foot path) still contains the highest concentration of wild parsnip, covers the most area, and requires the most effort. The seed bed is likely still high in this location, although the abundance of first year plants seems much lower this year.

The ease of pulling wild parsnip plants depends largely on soil conditions and amount of recent rainfall. If the ground is soft, with due to soils or rainfall, or both, then pulling is much easier. This year, we used a new tool, called a Parsnip Predator, from Prairie Moon Nursery in Minnesota. This is a modified shovel that is very effective at prying tough stems out of the ground.

In 2017, all plants pulled in the main patch and the blackberry patch were piled in the existing three piles begun in 2014. As the season progressed, the plants were beginning to form viable seed heads. Plants pulled and piled showed evidence of further seed maturation a week later, even under a hot sun. For the other three patches, we laid a thick black plastic bag on the ground, the piled all pulled plants on the bag to prevent seed drop in the soil.

Deer trails are evident throughout the parsnip stands, indicating that deer are likely transmitting the seeds. Viable seeds could easier catch in their hooves or hair and be dropped as the move though the field.

Map 1 shows the location of the parsnip populations and the locations of the parsnip piles. Photos document some of the efforts in 2017.

2018

Additional plants were pulled that were growing randomly between the trib, field road to clearcut, and blackberry patch.

2019

All stems pulled were also cut and piled to prevent flowers from maturing to seed. Main patch was nicely contained...far fewer plants this year. New patches located south of the blackberries and south along tributary in east field. Individual and clumps of plants seem likely to be result of seeds carried on deer fur. Many deer beds and trails at parsnip sites. Many plants in the main site were

small and shorter. This is a pattern that Mike Bald has noticed in Vermont. Almost as if the plants get smarter.

2020

The plants dug up in June were left on site to dry out as there were no flowers yet. In the west field, only one plant was found. In the east field, at the main site north of the trail, 2 plants were dug. No plants were found in the blackberry patch site. The tributary patch remains the most robust, with 31 plants dug.

The 60-patch is looking very good in terms of invasive plants. There are scattered multiflora rose, buckthorn, honeysuckle, autumn olive, and bittersweet that will need to be treated in 2021. Native shrubs are expanding in density, including dogwoods, arrowwood, hazelnut. Chokeberry, raspberry, blackberry, elderberry, grape, spiraea, as well as aspen and cherry.

Birds are abundant: INBU, COYE, SOSP, PRWA, AMGO, SCTA, CSWA, BWWA, HOWR, MODO, RBGR, BAOR, NOFL, BHCO, CEWA, EWPE, BLJA, FISP, BLUE-WINGED WA, OROR, EABL, YEWA, EAKI, NOCA, TRSW.

In July all the plants were dug, the flower/seed heads cut off and bagged. The black plastic bag was left at the main pile to bake in the sun. Most the plants were 3-4 feet tall and were beginning to form seeds, although they did not look viable yet. The following number of parsnips were dug/pulled:

West Field = 0

East Field = 23 (13 trib/9 main/1 blackberry)

Birds were active in the tributary/riparian habitat including an acadian flycatcher that was confirmed by Kurk Dorsey.

2021

On June 24, 2021, Ellen Snyder showed Tom Brightman (Durham LSC) the location of the wild parsnip in the west and east fields. Over the course of one hour, only 21 plants were found and all were pulled or dug:

West Field = 0

East Field = 21 (3 trib/3 blackberry/15 main)

The plants in the main patch were starting to bloom and all were growing in the northernmost "hot spot."

Ellen and Tom returned on July 15, 2021, spending two hours. No wild parsnip plants were found in the west field. One first year plant was dug in the riparian/trib area. In the main site, one first year plant was dug from the southerly hot spot. A few first year plants were observed in the northernmost hot spot. No plants were seen in the blackberry patch or south of that area.

An Acadian flycatcher was singing in the tributary thicket. A family of kestrels was in the trees along the Oyster River.

2023	0	14	1	2	17	June 28,	Ellen Snyder, Sara Callaghan, Dan Ehram, Maddy Smith, Jason Reyes: 1 hour (5 person hours)

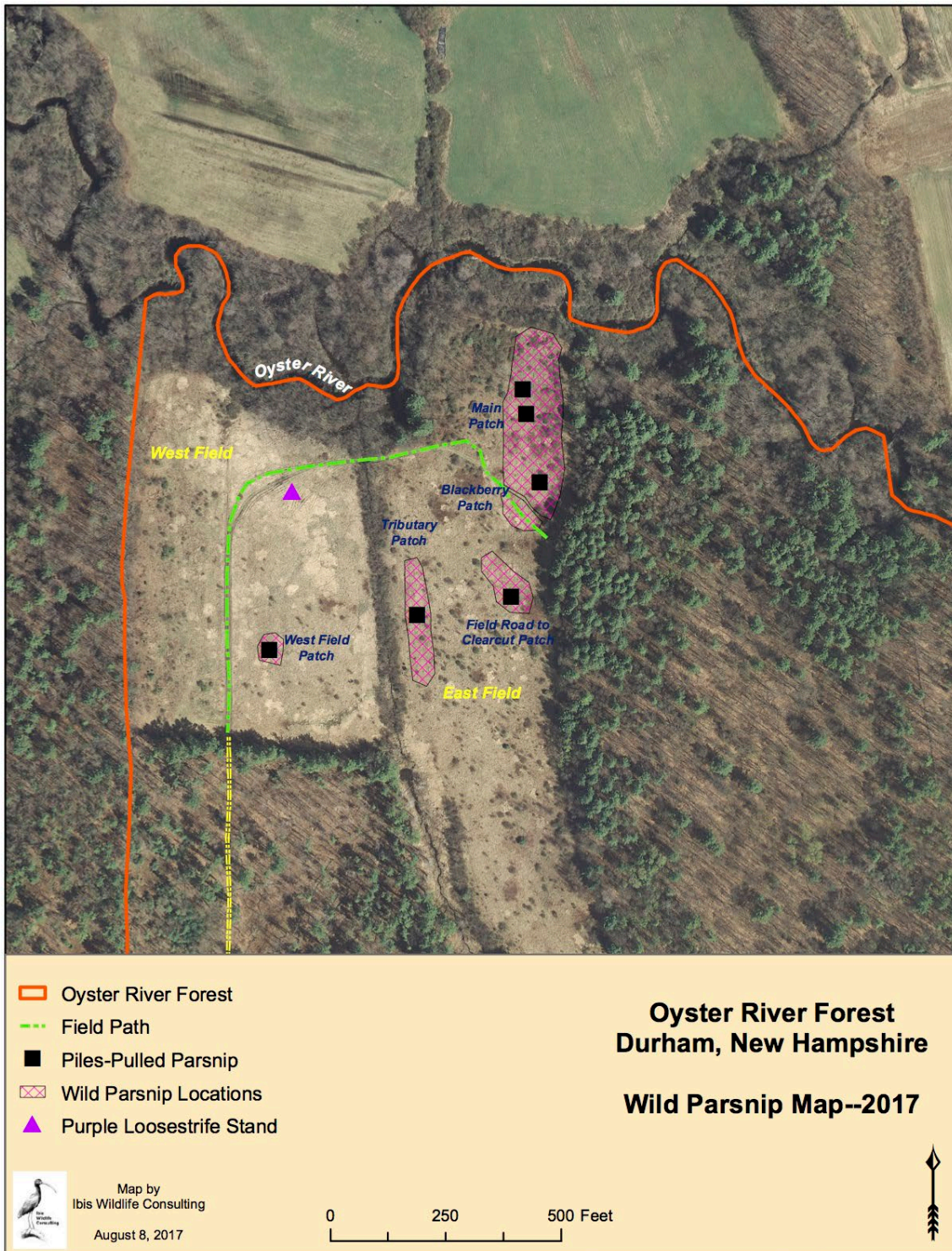
Recommendations

- A sustained effort is needed – several more years – to contain the parsnip. According to the NY Invasive Species Information website, wild parsnip seeds are viable in the soil for four years, so ensuring that no plants go to seed is an effective mechanical control effort.
- Continue to pull second year parsnip plants beginning in June or early July 2024. Conduct reconnaissance in August and September 2024 to check for any late flowering plants.
- Continue to pile the pulled parsnip on site. Use the same piles as in previous years – the “hot spots.” If seed heads are forming, cut off tops, bag, and leave onsite
- Given the site conditions – blistering caused by parsnip sap, presence of poison ivy, wasps, hot sun, multiflora rose, tripping hazards, and other potential issues, this work should continue to be led and supervised by an experienced resource professional. Trained and experienced volunteers can assist.

For more information see these references:

- [Pesky Parsnip is Here](#)
- [Persistence and Patience Needed to Control Pesky Parsnip](#)
- [New York Invasive Species Information: Wild Parsnip](#)

Map 1



Parsnip Photos

