

Targeted Rare Plant Survey

South Ripley Solar Project

Town of Ripley
Chautauqua County, New York

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May 2021

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1.0 INTRODUCTION

On behalf of ConnectGen LLC (ConnectGen), Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) conducted a targeted rare plant survey for the South Ripley Solar Project. The Project is proposed to have a generating capacity of up to 270 megawatts (MW) with a 20 MW battery storage component. In addition to the solar panel arrays and battery storage, the Project is anticipated to include access roads and fencing; inverters co-located with medium-voltage transformers; a substation; a point of interconnection connecting to the existing substation or a new switchyard; a potential operations and maintenance building; and temporary construction laydown areas. The Project is located on private land within an approximately 4,500-acre Facility Area in the Town of Ripley, Chautauqua County, New York (see Figure 1). The rare plant survey was conducted within an approximately 2,540-acre Study Area that encompasses the area where the Facility would be sited (see Figure 2).

The survey investigated the potential occurrence of one state-listed endangered plant species known to occur in the vicinity of the Facility Area, tall ironweed (*Vernonia gigantea*). This species was targeted for surveys based upon correspondence received from the New York Natural Heritage Program (NYNHP), attached hereto as Appendix A. Specifically, correspondence from the NYNHP dated May 21, 2020 identified records of this species, which has a heritage conservation status of critically imperiled in New York State, in the vicinity of the Facility Area, noting that tall ironweed is “listed as endangered and so is a vulnerable natural resource of conservation concern.” This report documents the methods and results of the targeted rare plant survey conducted for the proposed Project.

2.0 TALL IRONWEED DESCRIPTION AND ECOLOGY

Tall ironweed is a tall perennial in the aster family that commonly reaches heights of 3-7 feet. Stems are green or purplish, stout, and hairy. The leaves are alternately arranged and up to 10 inches long and 2½ inches across, with a shape ranging from lanceolate to ovate or lanceolate-oblong. Leaf margins are serrated (i.e., toothed). The upper surfaces of the leaves are hairless and dark green in color, while the lower surfaces are typically pubescent. The inflorescences are showy composites, with 15-30 brightly colored purplish-magenta disk flowers. The floral bracts are ovate with blunt or short-pointed tips. As the flowers senesce, each disk floret is replaced by a small grayish brown achene topped with a small tuft of tawny hairs. Plants are self-incompatible, and seeds are wind-dispersed (Strother, 2006; Gleason & Cronquist, 1991; Illinois Wildflowers, 2020).

As described above, tall ironweed occurs over a large range, spanning 12 degrees of latitude, and is subject to a wide range of environmental conditions. Reciprocal transplant experiments have demonstrated that the substantial ecotypic variations in the form of morphological and phenological differences along a north-south transect are due to actual

genetic divergences. These distinct genetic adaptations to specific environmental conditions may enable tall ironweed's broad geographic distribution (Urbatsch, 1973).

In New York State, tall ironweed typically occurs in seasonally wet successional old fields (Weldy et al., 2020). Elsewhere across its range, where it is more common, tall ironweed is reported from a wider range of habitats, including wet pastures, floodplains, open woodlands, roadsides, swamps, prairies, and thickets (Strother, 2006; Gleason & Cronquist, 1991; Illinois Wildflowers, 2020). NYNHP has records of this species **BEGIN CONFIDENTIAL**

INFORMATION < [REDACTED] >

END CONFIDENTIAL INFORMATION (see Appendix A). Tall ironweed has a state conservation rank of S1 and is state-listed as endangered, which typically indicates that a species is known from five or fewer sites or from four or fewer topographic quadrangles in New York State (Young, 2020).

Tall ironweed has been recognized by pollination ecologists for attracting large numbers of native bees. The nectar of the flowers attracts butterflies, skippers, bee flies, and various bees (primarily long-tongued bees). Some bees also collect pollen for their larvae. The caterpillars of various moths feed on tall ironweed, particularly the pith of their stems and their roots. These species include ironweed borer moth (*Papaipema cerussata*), ironweed clearwing moth (*Carmenta bassiformis*), ironweed root moth (*Polygrammodes flavidalis*), and red groundling moth (*Perigea xanthioides*). Other insects feed on the flowers of tall ironweed, including four-spotted tree cricket (*Oecanthus quadripunctatus*) and short-winged meadow katydid (*Conocephalus brevipennis*). Mammalian herbivores tend to shun Ironweed species as a food source, because the foliage is bitter. As a result, these plants can become more abundant in pastures over time (Illinois Wildflowers, 2020).

3.0 METHODOLOGY

A Survey Area was established based on the habitat requirements for tall ironweed and the location where this plant species has been recorded near the Facility Area, as provided in the NYNHP correspondence. The Survey Area, as illustrated in Figure 2, includes various successional old field and thicket habitats throughout the Facility Area. Areas within the Facility Area that do not provide potential habitat for tall ironweed (e.g., cultivated agricultural fields, mature forests) were not included in the Survey Area and were not evaluated during the rare plant survey. Recently cut hayfields were excluded from the Survey Area because the vegetation in these fields was typically cut very short, preventing identification of many plant species, including tall ironweed.

Since this rare plant survey specifically targeted tall ironweed, the appropriate survey period (i.e., the time of year when the species is easiest to identify) dictated the timing of the survey. For tall ironweed, the NYNHP recommended survey window includes a flowering period from August 1 to September 15, and a fruiting period from September 15 to October

15 (Young, 2020). Because the flowers are showy and brightly colored, EDR elected to perform the survey during the flowering period. EDR Botanist Sara Stebbins conducted the targeted rare plant survey at the Facility Area on August 17-20, August 31, and September 1, 2020. The surveys were conducted on foot, using meandering routes to thoroughly cover all areas of potentially suitable habitat.

A list of plant species observed within the Facility Area during the course of this survey is included as Appendix B. However, it is important to note that this targeted rare plant survey focused specifically on the endangered species identified through correspondence with the NYNHP and does not constitute a comprehensive floristic survey that would identify all plants within the Facility Area. Although some forested and agricultural areas were traversed to access remote areas of suitable habitat, large portions of the Facility Area that do not provide potential habitat for the target species were not surveyed. Furthermore, not all plants can be identified in August and early September. A complete inventory of all plant species growing within the Facility Area would require additional visits throughout the growing season and assessment of all habitat types. This survey was specifically designed to determine the presence or absence of the target species, tall ironweed.

4.0 RESULTS

Tall ironweed was positively identified BEGIN CONFIDENTIAL INFORMATION < [REDACTED] > END CONFIDENTIAL INFORMATION (see Figure 3). The locations and numbers of plants were recorded using an EOS Positioning Systems Arrow 100 GPS unit with reported sub-meter accuracy. Each stem within a clump or proximal group of clumps were classified by phenological phase (i.e., flowering, in bud, in seed, or vegetative) and counted. These numbers are summarized in Table 1 below. The GPS points, illustrated as green circles on Figure 3, do not attempt to represent each individual plant, although in some cases a point was collected for a single stem if no other tall ironweed plants were located nearby. Rather, the tall ironweed plants located in close proximity were grouped together, with GPS points collected as necessary to assist with the counting effort and demarcate the extent of the population. The shapefiles derived from the GPS data and illustrated in Figure 3 are provided under separate cover.

Table 1. Tall Ironweed Plant Counts by Parcel and Phenology
BEGIN CONFIDENTIAL INFORMATION <

Parcel ID	Habitat	Number of Tall Ironweed Plants					Sheet Number Figure 3
		Flowering	In Bud	In Seed	Vegetative	Total	
[REDACTED]	field	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	field	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	aspen grove	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	field	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	field	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

> END CONFIDENTIAL INFORMATION

Four of the parcels contain BEGIN CONFIDENTIAL INFORMATION < [REDACTED] > END CONFIDENTIAL INFORMATION tall ironweed plants. In contrast, the remaining parcel contains BEGIN CONFIDENTIAL INFORMATION < [REDACTED] > END CONFIDENTIAL INFORMATION. Except for the population BEGIN CONFIDENTIAL INFORMATION < [REDACTED] > END CONFIDENTIAL INFORMATION growing in a small grove of quaking aspen (*Populus tremuloides*), all of the tall ironweed plants were observed growing in open hayfields that appear to be either actively hayed, but uncut at the time of the survey, or recently fallowed.

Vegetation in the fields where tall ironweed was observed consists of a mix of upland and wetland species common in agricultural landscapes. The most frequent associated species include orchard grass (*Dactylis glomerata*), goldenrods

(*Euthamia graminifolia*, *Solidago rugosa*, *S. altissima*), sensitive fern (*Onoclea sensibilis*), wild madder (*Galium album*), bird's-foot trefoil (*Lotus corniculatus*), soft rush (*Juncus effusus*), swamp milkweed (*Asclepias incarnata*), calico aster (*Symphyotrichum lateriflorum*), crooked stem aster (*Symphyotrichum prenanthoides*), green bulrush (*Scirpus atrovirens*), tall agrimony (*Agromonia gryposepala*), wool grass (*Scirpus cyperinus*), Queen Anne's lace (*Daucus carota*), timothy (*Phleum pratense*), common boneset (*Eupatorium perfoliatum*), red clover (*Trifolium pratense*), fox sedge (*Carex vulpinoidea*), canary reed grass (*Phalaris arundinacea*), and golden ragwort (*Packera aurea*).

Photographs were taken of tall ironweed plants and their habitats, as well as images that document diagnostic features identifying the plants as tall ironweed. Representative photographs are included in Appendix C.

5.0 CONCLUSIONS

The state-listed endangered species tall ironweed was identified **BEGIN CONFIDENTIAL INFORMATION** < [REDACTED] > **END CONFIDENTIAL INFORMATION**. These populations are mapped in Figure 3, and representative photographs are included in Appendix C. In May 2020 correspondence, the NYNHP indicated that tall ironweed has a heritage conservation status of "critically imperiled in New York State", noting that tall ironweed is "listed as endangered and so is a vulnerable natural resource of conservation concern." Accordingly, all appropriate measures should be taken to minimize or avoid impacts to this species to the extent practicable during the design, construction, and operation of the South Ripley Solar Project.

6.0 REFERENCES

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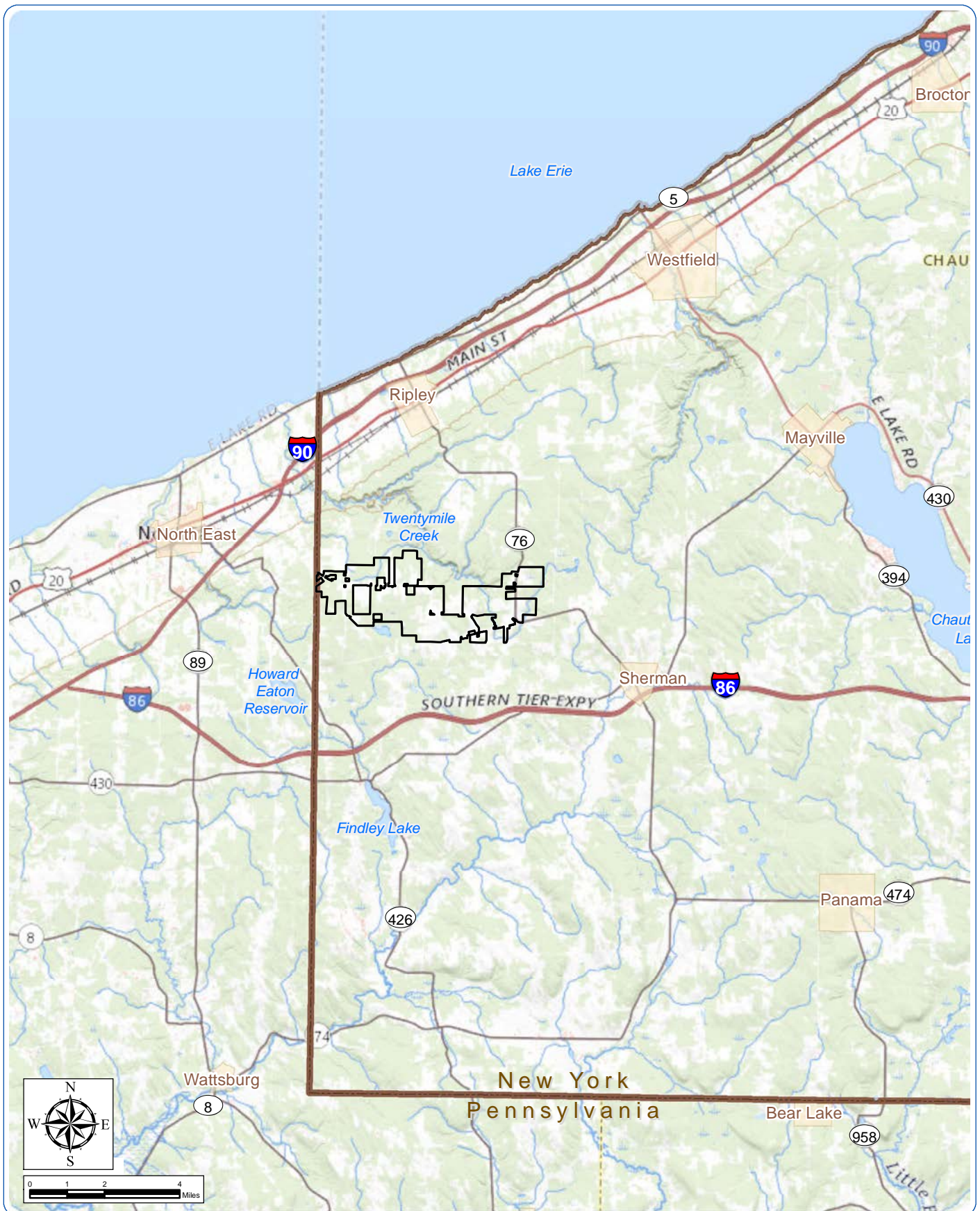
Strother, J.L. 2006. *Vernonia*. In: Flora of North America Editorial Committee, eds. 1993+. *Flora of North America North of Mexico*. 21+ vols. New York and Oxford. Vol. 19, pp. 206-213.

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FIGURES





South Ripley Solar Project

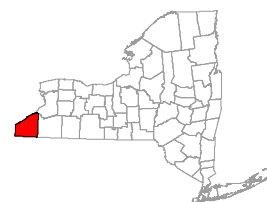
Town of Ripley, Chautauqua County, New York

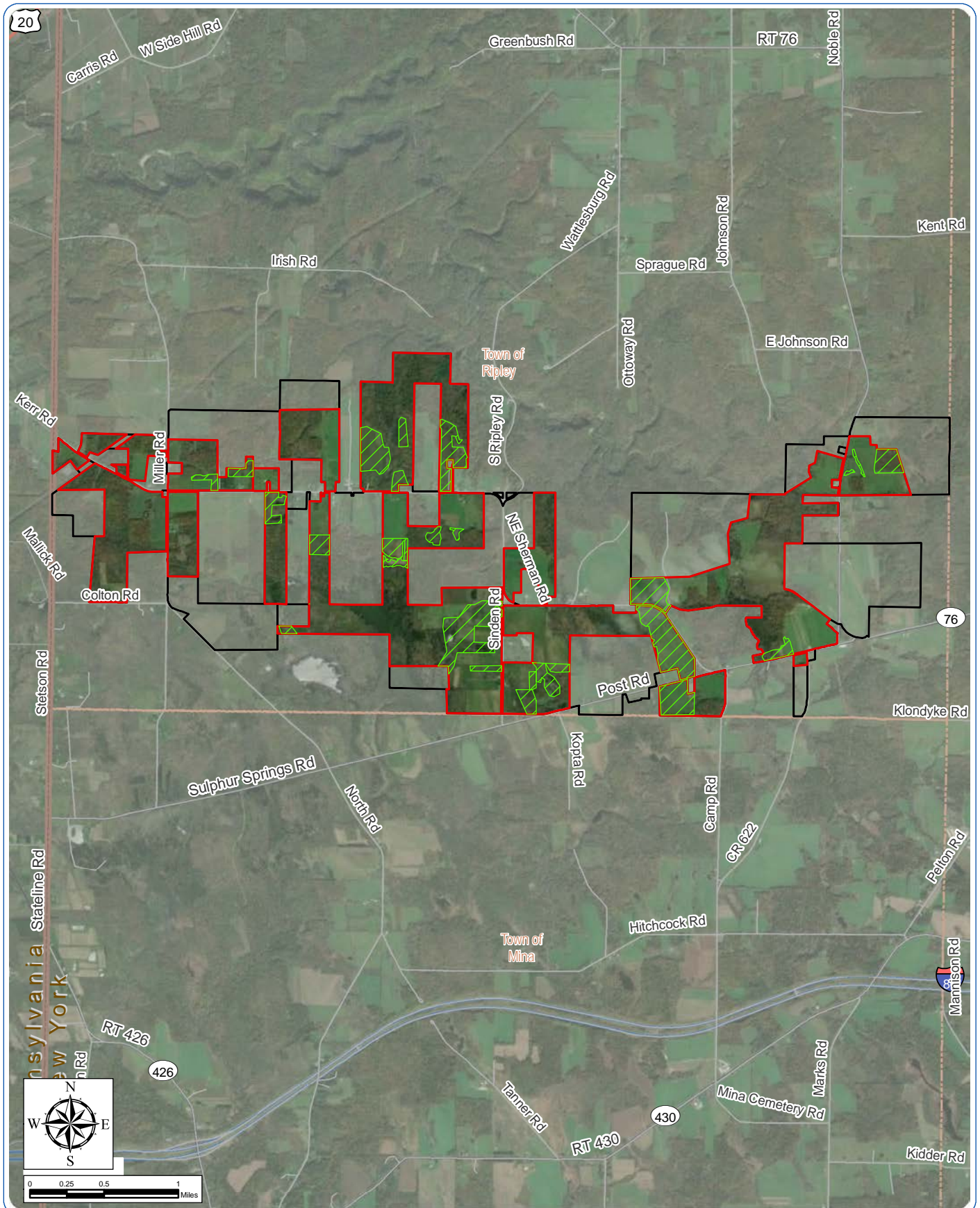
Rare Plant Survey Report

Figure 1: Project Location Map

Notes: 1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on September 10, 2020. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

-  Facility Area
-  State Boundary





South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Rare Plant Survey Report

Figure 2: Survey Area

Notes: 1. Basemap: ESRI ArcGIS Online "World Imagery" map service. 2. This map was generated in ArcMap on November 6, 2020. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Survey Area
- Study Area
- Facility Area
- Town Boundary



South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Rare Plant Survey Report

Figure 3: Tall Ironweed Locations

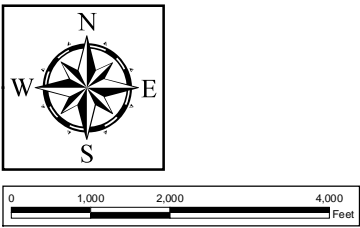
- Tall Ironweed (CONFIDENTIAL)
- Facility Area
- Town Boundary
- State Boundary

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service. 2. This map was generated in ArcMap on September 10, 2020. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



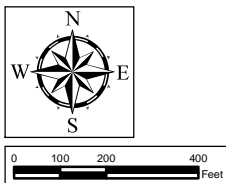
CONFIDENTIALITY NOTICE:

Figure 3 contains confidential data and may be legally protected from disclosure. Do not include this map in public documents or make it available in response to FOIL requests.



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South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Rare Plant Survey Report

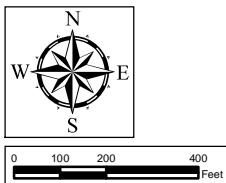
Figure 3: Tall Ironweed Locations - Sheet 1 of 5

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service.
2. This map was generated in ArcMap on July 23, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



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South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Rare Plant Survey Report

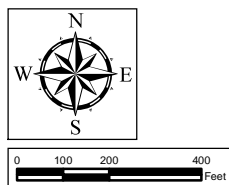
Figure 3: Tall Ironweed Locations - Sheet 2 of 5

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service.
2. This map was generated in ArcMap on July 23, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



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South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Rare Plant Survey Report

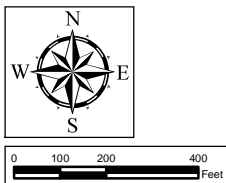
Figure 3: Tall Ironweed Locations - Sheet 3 of 5

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service.
2. This map was generated in ArcMap on July 23, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



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South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Rare Plant Survey Report

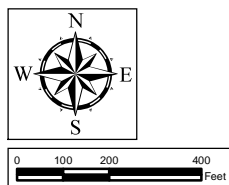
Figure 3: Tall Ironweed Locations - Sheet 4 of 5

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service.
2. This map was generated in ArcMap on July 23, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



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South Ripley Solar Project

Town of Ripley, Chautauqua County, New York

Rare Plant Survey Report

Figure 3: Tall Ironweed Locations - Sheet 5 of 5

Notes: 1. Basemap: NYSDOP "2016" orthoimagery map service.
2. This map was generated in ArcMap on July 23, 2021. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.



APPENDIX A

Agency Correspondence

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

May 21, 2020

William Whipps
EDR
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

Re: South Ripley Solar Project (EDR Project No. 19020)
County: Chautauqua Town/City: Ripley

Dear Mr. Whipps:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 9 Office, Division of Environmental Permits, at dep.r9@dec.ny.gov.

Sincerely,



Heidi Krahling
Environmental Review Specialist
New York Natural Heritage Program



The following state-listed animal has been documented in the vicinity of the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 9 Office at dep.r9@dec.ny.gov, (716) 851-7165.

The following species has been documented within 0.75 mile of the project site.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING
Birds			
Bald Eagle <i>Breeding</i>	<i>Haliaeetus leucocephalus</i>	Threatened	12663

This report only includes records from the NY Natural Heritage database.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.

New York Natural Heritage Program

Report on Rare Animals, Rare Plants, and
Significant Natural Communities

The following rare plants and significant natural communities have been documented at or in the vicinity of the project site.

We recommend that potential impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

The following natural communities are considered significant from a statewide perspective by the NY Natural Heritage Program. Each community is either an example of a community type that is rare in the state, or a high-quality example of a more common community type. By meeting specific, documented criteria, the NY Natural Heritage Program considers these community occurrences to have high ecological and conservation value.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATUS
-------------	-----------------	------------------	------------------------------

Wetland/Aquatic Communities**Confined River**High Quality Occurrence of
Uncommon Community Type

Documented within the project boundary. Twentymile Creek. This is a moderately large occurrence in very good condition and with very good species diversity. The stream is in a moderate-sized landscape of working forests.

10196

Upland/Terrestrial Communities**Hemlock-Northern Hardwood Forest**

High Quality Occurrence

Documented within the project boundary. This is a moderate-sized occurrence in a mature state with small patches of putative old growth and excellent plant species diversity. The community is in an excellent moderate-sized and intact forested landscape.

6512

The following plant is listed as Endangered and so is a vulnerable natural resource of conservation concern.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATUS
-------------	-----------------	------------------	------------------------------

Vascular Plants**Tall Ironweed***Vernonia gigantea*

Endangered

Critically Imperiled in NYS

Documented within 0.4 mile south of the project site. [REDACTED] Moist pastureland and successional old field. The area was probably a rich hemlock-hardwood forest before human and beaver activities.

1882

This report only includes records from the NY Natural Heritage database. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at www.natureserve.org/explorer, and from USDA's Plants Database at <http://plants.usda.gov/index.html> (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to www.dec.ny.gov/animals/97703.html for Ecological Communities of New York State.

APPENDIX B
Plant Species List

PLANT SPECIES LIST

Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Acoraceae	<i>Acorus</i>	<i>americanus</i>	sweet flag	S5
	Adoxaceae	<i>Sambucus</i>	<i>nigra</i>	common elderberry	S5
	Adoxaceae	<i>Viburnum</i>	<i>acerifolium</i>	mapleleaf viburnum	S5
	Adoxaceae	<i>Viburnum</i>	<i>dentatum</i>	smooth arrowwood	S5
	Adoxaceae	<i>Viburnum</i>	<i>lantanoides</i>	hobblebush	S5
	Adoxaceae	<i>Viburnum</i>	<i>opulus</i>	highbush cranberry	S4
	Alismataceae	<i>Alisma</i>	<i>subcordatum</i>	water-plantain	S5
	Alismataceae	<i>Sagittaria</i>	<i>latifolia</i>	common arrowhead	S5
	Amaranthaceae	<i>Chenopodium</i>	<i>album</i>	lambs-quarters	SNA
	Amaryllidaceae	<i>Allium</i>	<i>tricoccum</i>	wild leeks	S5
	Anacardiaceae	<i>Rhus</i>	<i>typhina</i>	staghorn sumac	S5
	Anacardiaceae	<i>Toxicodendron</i>	<i>radicans</i>	poison ivy	S5
1	Apiaceae	<i>Anthriscus</i>	<i>sylvestris</i>	wild chervil	SNA
	Apiaceae	<i>Daucus</i>	<i>carota</i>	Queen Anne's lace	SNA
	Apiaceae	<i>Pastinaca</i>	<i>sativa</i>	wild parsnip	SNA
	Apiaceae	<i>Sium</i>	<i>suave</i>	hemlock water-parnsip	S5
	Apocynaceae	<i>Apocynum</i>	<i>androsaemifolium</i>	spreading dogbane	S5
	Apocynaceae	<i>Apocynum</i>	<i>cannabinum</i>	Indian hemp	S5
	Apocynaceae	<i>Asclepias</i>	<i>incarnata</i>	swamp milkweed	S5
	Apocynaceae	<i>Asclepias</i>	<i>syriaca</i>	common milkweed	S5
	Aquifoliaceae	<i>Ilex</i>	<i>verticillata</i>	common winterberry	S5
	Araceae	<i>Arisaema</i>	<i>triphyllum</i>	common jack-in-the-pulpit	S5
	Araceae	<i>Lemna</i>	<i>minor</i>	lesser duckweed	S5
	Araceae	<i>Symplocarpus</i>	<i>foetidus</i>	skunk cabbage	S5
	Araliaceae	<i>Aralia</i>	<i>nudicaulis</i>	sarsaparilla	S5
	Asparagaceae	<i>Maianthemum</i>	<i>canadense</i>	Canada mayflower	S5
	Asphodelaceae	<i>Hemerocallis</i>	<i>fulva</i>	day lily	SNA
	Asteraceae	<i>Achillea</i>	<i>millefolium</i>	common yarrow	SNR
	Asteraceae	<i>Ambrosia</i>	<i>artemesiifolia</i>	ragweed	S5
	Asteraceae	<i>Ambrosia</i>	<i>trifida</i>	giant ragweed	S4
	Asteraceae	<i>Arctium</i>	<i>minus</i>	common burdock	SNA
1	Asteraceae	<i>Artemisia</i>	<i>vulgaris</i>	mugwort	SNA
	Asteraceae	<i>Bidens</i>	<i>cernua</i>	nodding beggar-tick	S5
	Asteraceae	<i>Centaurea</i>	<i>jacea</i>	brown knapweed	SNA
	Asteraceae	<i>Cichorium</i>	<i>intybus</i>	chicory	SNA
1	Asteraceae	<i>Cirsium</i>	<i>arvense</i>	creeping thistle	SNA
	Asteraceae	<i>Cirsium</i>	<i>vulgare</i>	bull thistle	SNA
	Asteraceae	<i>Doellingeria</i>	<i>umbellata</i>	flat-topped aster	S5

PLANT SPECIES LIST

Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Asteraceae	<i>Erechtites</i>	<i>hieraciifolius</i>	common pilewort	S5
	Asteraceae	<i>Erigeron</i>	<i>annuus</i>	annual daisy fleabane	S5
	Asteraceae	<i>Erigeron</i>	<i>canadensis</i>	horseweed	S5
	Asteraceae	<i>Erigeron</i>	<i>philadelphicus</i>	Philadelphia fleabane	S5
	Asteraceae	<i>Erigeron</i>	<i>strigosus</i>	small daisy fleabane	S5
	Asteraceae	<i>Eupatorium</i>	<i>perfoliatum</i>	common boneset	S5
	Asteraceae	<i>Eurybia</i>	<i>divaricata</i>	white wood aster	S5
	Asteraceae	<i>Eurybia</i>	<i>macrophylla</i>	bigleaf aster	S5
	Asteraceae	<i>Euthamia</i>	<i>graminifolia</i>	flat-topped goldenrod	S5
	Asteraceae	<i>Eutrochium</i>	<i>maculatum</i>	joe-pye weed	S5
	Asteraceae	<i>Gnaphalium</i>	<i>uliginosum</i>	low cudweed	SNA
	Asteraceae	<i>Hypochaeris</i>	<i>radicata</i>	cat's-ear	SNA
	Asteraceae	<i>Inula</i>	<i>helenium</i>	elecampane	SNA
	Asteraceae	<i>Lactuca</i>	<i>canadenis</i>	Canada lettuce	S5
	Asteraceae	<i>Lapsana</i>	<i>communis</i>	nipplewort	SNA
	Asteraceae	<i>Leucanthemum</i>	<i>vulgare</i>	ox-eye daisy	SNA
	Asteraceae	<i>Packera</i>	<i>aurea</i>	golden ragwort	S5
	Asteraceae	<i>Pilosella</i>	<i>aurantiaca</i>	orange hawkweed	SNA
	Asteraceae	<i>Pilosella</i>	<i>caespitosa</i>	meadow hawkweed	SNA
	Asteraceae	<i>Rudbeckia</i>	<i>hirta</i>	black-eyed Susan	SNA
	Asteraceae	<i>Rudbeckia</i>	<i>laciniata</i>	cut-leaved coneflower	S5
	Asteraceae	<i>Solidago</i>	<i>altissima</i>	tall goldenrod	S5
	Asteraceae	<i>Solidago</i>	<i>canadensis</i>	Canada goldenrod	S5
	Asteraceae	<i>Solidago</i>	<i>gigantea</i>	swamp goldenrod	S5
	Asteraceae	<i>Solidago</i>	<i>junceae</i>	early goldenrod	S5
	Asteraceae	<i>Solidago</i>	<i>rugosa</i>	rough-stemmed goldenrod	S5
	Asteraceae	<i>Sonchus</i>	<i>arvensis</i>	field sowthistle	SNA
	Asteraceae	<i>Sonchus</i>	<i>asper</i>	spiny sowthistle	SNA
	Asteraceae	<i>Symphyotrichum</i>	<i>lanceolatum</i>	lance-leaved aster	S5
	Asteraceae	<i>Symphyotrichum</i>	<i>lateriflorum</i>	calico aster	S5
	Asteraceae	<i>Symphyotrichum</i>	<i>novae-angliae</i>	New England aster	S5
	Asteraceae	<i>Symphyotrichum</i>	<i>prenanthoides</i>	crooked stem aster	S5
	Asteraceae	<i>Symphyotrichum</i>	<i>puniceum</i>	purplestem aster	S5
	Asteraceae	<i>Taraxacum</i>	<i>officinale</i>	dandelion	SNA
	Asteraceae	<i>Tragopogon</i>	<i>pratensis</i>	goat's-beard	SNA
	Asteraceae	<i>Tussilago</i>	<i>farfara</i>	coltsfoot	SNA
3	Asteraceae	<i>Vernonia</i>	<i>gigantea</i>	tall ironweed	S1
	Athyriaceae	<i>Athyrium</i>	<i>angustum</i>	northern lady fern	S5

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Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Balsaminaceae	<i>Impatiens</i>	<i>capensis</i>	spotted jewelweed	S5
1	Berberidaceae	<i>Berberis</i>	<i>thunbergii</i>	Japanese barberry	SNA
	Berberidaceae	<i>Caulophyllum</i>	<i>thalictroides</i>	blue cohosh	S5
	Berberidaceae	<i>Podophyllum</i>	<i>peltatum</i>	mayapple	S5
	Betulaceae	<i>Alnus</i>	<i>incana</i>	speckled alder	S5
	Betulaceae	<i>Betula</i>	<i>alleghaniensis</i>	yellow birch	S5
	Betulaceae	<i>Betula</i>	<i>lenta</i>	sweet birch	S5
	Betulaceae	<i>Betula</i>	<i>populifolia</i>	gray birch	S5
	Betulaceae	<i>Carpinus</i>	<i>caroliniana</i>	musclewood	S5
	Betulaceae	<i>Ostrya</i>	<i>virginiana</i>	eastern hophornbeam	S5
	Boraginaceae	<i>Myosotis</i>	<i>scorpioides</i>	forget-me-not	SNA
1	Brassicaceae	<i>Alliaria</i>	<i>petiolata</i>	garlic mustard	SNA
	Brassicaceae	<i>Barbarea</i>	<i>vulgaris</i>	yellow rocket	SNA
	Brassicaceae	<i>Brassica</i>	<i>rapa</i>	field mustard	SNA
	Brassicaceae	<i>Cardamine</i>	<i>pennsylvanica</i>	Pennsylvania bitter cress	S5
	Brassicaceae	<i>Nasturtium</i>	<i>officinale</i>	water-cress	SNA
	Brassicaceae	<i>Raphanus</i>	<i>raphanistrum</i>	wild radish	SNA
	Brassicaceae	<i>Rorippa</i>	<i>palustris</i>	common yellow-cress	S4
	Campanulaceae	<i>Lobelia</i>	<i>cardinalis</i>	cardinal flower	S4S5
	Campanulaceae	<i>Lobelia</i>	<i>inflata</i>	Indian-tobacco	S5
1	Caprifoliaceae	<i>Lonicera</i>	<i>morrowii</i>	Morrow's honeysuckle	SNA
	Caryophyllaceae	<i>Cerastium</i>	<i>fontanum</i>	mouse-ear chickweed	SNA
	Caryophyllaceae	<i>Myosoton</i>	<i>aquaticum</i>	giant chickweed	SNA
	Caryophyllaceae	<i>Silene</i>	<i>vulgaris</i>	bladder campion	SNA
	Caryophyllaceae	<i>Stellaria</i>	<i>graminea</i>	lesser stitchwort	SNA
	Caryophyllaceae	<i>Stellaria</i>	<i>pubera</i>	star chickwed	SNA
	Convolvulaceae	<i>Calystegia</i>	<i>sepium</i>	hedge false bindweed	SNR
	Convolvulaceae	<i>Cuscuta</i>	<i>gronovii</i>	common dodder	S5
	Cornaceae	<i>Cornus</i>	<i>amomum</i>	silky dogwood	S5
	Cornaceae	<i>Cornus</i>	<i>racemosa</i>	gray dogwood	S5
	Crassulaceae	<i>Penthorum</i>	<i>sedoides</i>	ditch stonecrop	S5
	Cyperaceae	<i>Carex</i>	<i>crinita</i>	fringed sedge	S5
	Cyperaceae	<i>Carex</i>	<i>intumescens</i>	bladder sedge	S5
	Cyperaceae	<i>Carex</i>	<i>lupulina</i>	hop sedge	S5
	Cyperaceae	<i>Carex</i>	<i>lurida</i>	sallow sedge	S5
	Cyperaceae	<i>Carex</i>	<i>scoparia</i>	broom sedge	S5
	Cyperaceae	<i>Carex</i>	<i>stricta</i>	tussock sedge	S5
	Cyperaceae	<i>Carex</i>	<i>vulpinoidea</i>	fox sedge	S5

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Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Cyperaceae	<i>Cyperus</i>	<i>esculentus</i>	yellow nut sedge	SNR
	Cyperaceae	<i>Dulichium</i>	<i>arundinaceum</i>	three-way sedge	S5
	Cyperaceae	<i>Eleocharis</i>	spp.	spike rushes	SNR
	Cyperaceae	<i>Schoenoplectus</i>	<i>tabernaemontani</i>	soft-stemmed bulrush	S5
	Cyperaceae	<i>Scirpus</i>	<i>atrovirens</i>	green bulrush	S5
	Cyperaceae	<i>Scirpus</i>	<i>cyperinus</i>	woolgrass	S5
	Dennstaedtiaceae	<i>Dennstaedtia</i>	<i>punctilobula</i>	hay-scented fern	S5
	Dennstaedtiaceae	<i>Pteridium</i>	<i>aquilinum</i>	bracken fern	S5
	Dryopteridaceae	<i>Dryopteris</i>	<i>carthusiana</i>	spinulose woodfern	S5
	Dryopteridaceae	<i>Dryopteris</i>	<i>intermedia</i>	evergreen woodfern	S5
	Dryopteridaceae	<i>Polystichum</i>	<i>acrostichoides</i>	Christmas fern	S5
1	Elaeagnaceae	<i>Elaeagnus</i>	<i>umbellata</i>	autumn olive	SNA
	Equisetaceae	<i>Equisetum</i>	<i>arvense</i>	field horsetail	S5
	Equisetaceae	<i>Equisetum</i>	<i>hyemale</i>	scouring rush	S5
	Equisetaceae	<i>Equisetum</i>	<i>sylvaticum</i>	woodland horsetail	S5
	Ericaceae	<i>Gaultheria</i>	<i>procumbens</i>	wintergreen	S5
	Ericaceae	<i>Hypopitys</i>	<i>monotropa</i>	yellow pinesap	S4
	Ericaceae	<i>Monotropa</i>	<i>uniflora</i>	ghost pipes	S5
	Ericaceae	<i>Pyrola</i>	<i>elliptica</i>	shinleaf	S5
	Ericaceae	<i>Vaccinium</i>	<i>corymbosum</i>	highbush blueberry	S5
	Ericaceae	<i>Vaccinium</i>	<i>myrtilloides</i>	velvetleaf blueberry	S5
	Ericaceae	<i>Vaccinium</i>	<i>pallidum</i>	hillside blueberry	S5
	Euphorbiaceae	<i>Acalypha</i>	<i>rhomboidea</i>	common copperleaf	S5
	Fabaceae	<i>Amphicarpaea</i>	<i>bracteata</i>	hog peanut	S5
	Fabaceae	<i>Lotus</i>	<i>corniculatus</i>	bird's foot trefoil	SNA
	Fabaceae	<i>Medicago</i>	<i>lupulina</i>	black medick	SNA
	Fabaceae	<i>Medicago</i>	<i>sativa</i>	alfafa	SNA
	Fabaceae	<i>Melilotus</i>	<i>albus</i>	white sweet clover	SNA
2	Fabaceae	<i>Robinia</i>	<i>pseudoacacia</i>	black locust	SNA
	Fabaceae	<i>Securigera</i>	<i>varia</i>	crown-vetch	SNA
	Fabaceae	<i>Trifolium</i>	<i>aureum</i>	hop-clover	SNA
	Fabaceae	<i>Trifolium</i>	<i>hybridum</i>	alsike clover	SNA
	Fabaceae	<i>Trifolium</i>	<i>pratense</i>	red clover	SNA
	Fabaceae	<i>Trifolium</i>	<i>repens</i>	white clover	SNA
	Fabaceae	<i>Vicia</i>	<i>cracca</i>	cow vetch	SNA
	Fagaceae	<i>Fagus</i>	<i>grandifolia</i>	American beech	S5
	Fagaceae	<i>Quercus</i>	<i>rubra</i>	red oak	S5
	Geraniaceae	<i>Geranium</i>	<i>robertianum</i>	herb-robert	S5

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Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Hamamelidaceae	<i>Hamamelis</i>	<i>virginiana</i>	witch hazel	S5
	Hypericaceae	<i>Hypericum</i>	<i>canadense</i>	Canada St.John's-wort	S5
	Hypericaceae	<i>Hypericum</i>	<i>fraseri</i>	Fraser's marsh St.John's-wort	S5
	Hypericaceae	<i>Hypericum</i>	<i>mutilum</i>	dwarf St. John's-wort	S5
	Hypericaceae	<i>Hypericum</i>	<i>perforatum</i>	common St.John's-wort	SNA
	Hypericaceae	<i>Hypericum</i>	<i>punctatum</i>	spotted St.John's-wort	S5
	Juglandaceae	<i>Juglans</i>	<i>nigra</i>	black walnut	S5
	Juncaceae	<i>Juncus</i>	<i>effusus</i>	soft rush	S5
	Juncaceae	<i>Juncus</i>	<i>tenuis</i>	path rush	S5
	Lamiaceae	<i>Clinopodium</i>	<i>vulgare</i>	field basil	SNR
	Lamiaceae	<i>Collinsonia</i>	<i>canadensis</i>	horse-balm	S5
	Lamiaceae	<i>Galeopsis</i>	<i>tetrahit</i>	hemp nettle	SNA
	Lamiaceae	<i>Lycopus</i>	<i>americanus</i>	American bugleweed	S5
	Lamiaceae	<i>Lycopus</i>	<i>uniflorus</i>	northern bugleweed	S5
	Lamiaceae	<i>Mentha</i>	<i>arvensis</i>	wild mint	SNA
	Lamiaceae	<i>Mentha</i>	<i>x. piperita</i>	peppermint	SNA
	Lamiaceae	<i>Prunella</i>	<i>vulgaris</i>	self-heal	SNA
	Lamiaceae	<i>Scutellaria</i>	<i>lateriflora</i>	mad-dog skullcap	S5
	Lamiaceae	<i>Stachys</i>	<i>palustris</i>	marsh hedge-nettle	SNA
	Lauraceae	<i>Lindera</i>	<i>benzoin</i>	spicebush	S5
	Liliaceae	<i>Clintonia</i>	<i>borealis</i>	blue bead lily	S5
	Liliaceae	<i>Medeola</i>	<i>virginiana</i>	Indian cucumber root	S5
	Liliaceae	<i>Streptopus</i>	<i>lanceolatus</i>	rosy twisted stalk	S5
	Lycopodiaceae	<i>Dendrolycopodium</i>	<i>hickeyi</i>	Pennsylvania tree clubmoss	S5
	Lycopodiaceae	<i>Huperzia</i>	<i>lucidula</i>	shining clubmoss	S5
	Lycopodiaceae	<i>Lycopodium</i>	<i>clavatum</i>	running clubmoss	S5
1	Lythraceae	<i>Lythrum</i>	<i>salicaria</i>	purple loosestrife	SNA
	Magnoliaceae	<i>Magnolia</i>	<i>acuminata</i>	cucumber tree	S5
	Malvaceae	<i>Malva</i>	<i>moschata</i>	musk mallow	SNA
	Malvaceae	<i>Tilia</i>	<i>americana</i>	American basswood	S5
	Melanthiaceae	<i>Trillium</i>	<i>erectum</i>	wake robin	S5
	Melanthiaceae	<i>Trillium</i>	<i>undulatum</i>	painted trillium	S5
	Oleaceae	<i>Fraxinus</i>	<i>americana</i>	white ash	S5
	Oleaceae	<i>Fraxinus</i>	<i>pennsylvanica</i>	green ash	S5
1	Oleaceae	<i>Ligustrum</i>	<i>obtusifolium</i>	border privet	SNA
	Onagraceae	<i>Circaea</i>	<i>alpina</i>	small enchanter's nightshade	S5
	Onagraceae	<i>Circaea</i>	<i>canadensis</i>	enchanter's nightshade	S5
	Onagraceae	<i>Epilobium</i>	<i>coloratum</i>	eastern willowherb	S5

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Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Onagraceae	<i>Epilobium</i>	<i>hirsutum</i>	great hairy willowherb	SNA
	Onagraceae	<i>Epilobium</i>	<i>strictum</i>	downy willowherb	S5
	Onagraceae	<i>Ludwigia</i>	<i>palustris</i>	water purslane	S5
	Onagraceae	<i>Oenothera</i>	<i>biennis</i>	evening primrose	S5
	Onagraceae	<i>Oenothera</i>	<i>perennis</i>	sundrops	S5
	Onocleaceae	<i>Onoclea</i>	<i>sensibilis</i>	sensitive fern	S5
	Orchidaceae	<i>Epipactis</i>	<i>helleborine</i>	weed orchid	SNA
	Orobanchaceae	<i>Epifagus</i>	<i>virginiana</i>	beechdrops	S5
	Osmundaceae	<i>Osmunda</i>	<i>claytonia</i>	interrupted fern	S5
	Osmundaceae	<i>Osmundastrum</i>	<i>cinnamomeum</i>	cinnamon fern	S5
	Oxalidaceae	<i>Oxalis</i>	<i>montana</i>	white wood sorrel	S5
	Oxalidaceae	<i>Oxalis</i>	<i>stricta</i>	common yellow wood sorrel	S5
	Phrymaceae	<i>Mimulus</i>	<i>ringens</i>	monkey flower	S5
	Phytolaccaceae	<i>Phytolacca</i>	<i>americana</i>	common pokeweed	S5
	Pinaceae	<i>Picea</i>	<i>abies</i>	Norway spruce	SNA
	Pinaceae	<i>Picea</i>	<i>pungens</i>	blue spruce	SNA
	Pinaceae	<i>Pinus</i>	<i>resinosa</i>	red pine	S5
	Pinaceae	<i>Pinus</i>	<i>strobus</i>	white pine	S5
	Pinaceae	<i>Pinus</i>	<i>sylvestris</i>	Scotch pine	SNA
	Pinaceae	<i>Tsuga</i>	<i>canadensis</i>	eastern hemlock	S5
	Plantaginaceae	<i>Chelone</i>	<i>glabra</i>	white turtlehead	S5
	Plantaginaceae	<i>Plantago</i>	<i>lanceolata</i>	English plantain	SNA
	Plantaginaceae	<i>Plantago</i>	<i>major</i>	common plantain	SNA
	Plantaginaceae	<i>Plantago</i>	<i>rugelii</i>	blackseed plantain	S5
	Plantaginaceae	<i>Veronica</i>	<i>anagallis-aquatica</i>	water speedwell	SNA
	Plantaginaceae	<i>Veronica</i>	<i>officinalis</i>	common speedwell	SNA
	Poaceae	<i>Agrostis</i>	<i>gigantea</i>	redtop	SNA
	Poaceae	<i>Anthoxanthum</i>	<i>odoratum</i>	sweet vernal grass	SNA
	Poaceae	<i>Bromus</i>	<i>inermis</i>	smooth brome	SNA
	Poaceae	<i>Calamagrostis</i>	<i>canadensis</i>	bluejoint	S5
	Poaceae	<i>Dactylis</i>	<i>glomerata</i>	orchard grass	SNA
	Poaceae	<i>Danthonia</i>	<i>spicata</i>	poverty oatgrass	S5
	Poaceae	<i>Dichanthelium</i>	<i>clandestinum</i>	deer-tongue grass	S5
	Poaceae	<i>Dichanthelium</i>	<i>lanuginosum</i>	wooly rosette grass	S5
	Poaceae	<i>Echinochloa</i>	<i>crus-galli</i>	Eurasian barnyard grass	SNA
	Poaceae	<i>Elymus</i>	<i>hystrix</i>	bottlebrush grass	S5
	Poaceae	<i>Glyceria</i>	<i>canadensis</i>	Canada manna grass	S5
	Poaceae	<i>Glyceria</i>	<i>melicaria</i>	slender manna grass	S5

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Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Poaceae	<i>Glyceria</i>	<i>striata</i>	fowl manna grass	S5
	Poaceae	<i>Holcus</i>	<i>lanatus</i>	velvet grass	SNA
	Poaceae	<i>Leersia</i>	<i>oryzoides</i>	rice cutgrass	S5
	Poaceae	<i>Oryzopsis</i>	<i>asperifolia</i>	spreading ricegrass	S5
	Poaceae	<i>Phalaris</i>	<i>arundinacea</i>	reed canary grass	SNR
	Poaceae	<i>Phleum</i>	<i>pratense</i>	timothy	SNA
1	Poaceae	<i>Phragmites</i>	<i>australis</i>	common reed	SNA
	Poaceae	<i>Poa</i>	<i>pratensis</i>	Kentucky bluegrass	SNA
	Poaceae	<i>Schizachne</i>	<i>purpurascens</i>	false melic grass	S5
	Poaceae	<i>Schizachyrium</i>	<i>scoparium</i>	little bluestem	S5
	Polygalaceae	<i>Polygala</i>	<i>sanguinea</i>	blood milkwort	S5
	Polygonaceae	<i>Persicaria</i>	<i>arifolia</i>	halberd-leaved tearthumb	S5
	Polygonaceae	<i>Persicaria</i>	<i>lapathifolia</i>	dock-leaved smartweed	SNR
	Polygonaceae	<i>Persicaria</i>	<i>maculosa</i>	spotted lady's-thumb	SNA
	Polygonaceae	<i>Persicaria</i>	<i>sagittata</i>	arrow-leaf tearthumb	S5
	Polygonaceae	<i>Persicaria</i>	<i>virginiana</i>	jumpseed	S5
	Polygonaceae	<i>Polygonum</i>	<i>aviculare</i>	doorweed	SNA
	Polygonaceae	<i>Rumex</i>	<i>acetosella</i>	sheep sorrel	SNA
	Polygonaceae	<i>Rumex</i>	<i>crispus</i>	curly dock	SNA
	Polygonaceae	<i>Rumex</i>	<i>obtusifolius</i>	bitter dock	SNA
	Primulaceae	<i>Lysimachia</i>	<i>borealis</i>	starflower	S5
	Primulaceae	<i>Lysimachia</i>	<i>ciliata</i>	fringed loosestrife	S5
	Primulaceae	<i>Lysimachia</i>	<i>nummularia</i>	creeping Jennie	SNA
	Ranunculaceae	<i>Clematis</i>	<i>virginiana</i>	virgin's bower	S5
	Ranunculaceae	<i>Coptis</i>	<i>trifolia</i>	goldthread	S5
	Ranunculaceae	<i>Hepatica</i>	<i>acutiloba</i>	sharp-lobed hepatica	S5
	Ranunculaceae	<i>Ranunculus</i>	<i>acris</i>	tall buttercup	SNA
	Ranunculaceae	<i>Ranunculus</i>	<i>caricetorum</i>	bristly buttercup	S5
	Ranunculaceae	<i>Ranunculus</i>	<i>repens</i>	creeping buttercup	SNA
	Ranunculaceae	<i>Thalictrum</i>	<i>pubescens</i>	tall meadow-rue	S5
	Rosaceae	<i>Agrimonia</i>	<i>gryposepala</i>	common agrimony	S5
	Rosaceae	<i>Amelanchier</i>	spp.	serviceberries	SNR
	Rosaceae	<i>Crataegus</i>	<i>monogyna</i>	one-seeded hawthorn	SNA
	Rosaceae	<i>Crataegus</i>	spp.	other hawthorns	SNR
	Rosaceae	<i>Fragaria</i>	<i>virginiana</i>	common wild strawberry	S5
	Rosaceae	<i>Geum</i>	<i>canadense</i>	white avens	S5
	Rosaceae	<i>Geum</i>	<i>rivale</i>	purple avens	S5
	Rosaceae	<i>Malus</i>	<i>domestica</i>	apple	SNA

PLANT SPECIES LIST

Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Rosaceae	<i>Potentilla</i>	<i>indica</i>	mock strawberry	SNA
	Rosaceae	<i>Potentilla</i>	<i>norvegica</i>	ternate-leaved cinquefoil	SNA
	Rosaceae	<i>Potentilla</i>	<i>recta</i>	sulphur cinquefoil	SNA
	Rosaceae	<i>Potentilla</i>	<i>simplex</i>	old field cinquefoil	S5
	Rosaceae	<i>Prunus</i>	<i>pensylvanica</i>	pin cherry	S5
	Rosaceae	<i>Prunus</i>	<i>serotina</i>	black cherry	S5
	Rosaceae	<i>Prunus</i>	<i>virginiana</i>	choke cherry	S5
	Rosaceae	<i>Pyrus</i>	<i>communis</i>	common pear	SNA
1	Rosaceae	<i>Rosa</i>	<i>multiflora</i>	multiflora rose	SNA
	Rosaceae	<i>Rosa</i>	<i>palustris</i>	swamp rose	S5
	Rosaceae	<i>Rubus</i>	<i>alleghaniensis</i>	common blackberry	S5
	Rosaceae	<i>Rubus</i>	<i>flagellaris</i>	northern dewberry	S5
	Rosaceae	<i>Rubus</i>	<i>hispidus</i>	bristly dewberry	S5
	Rosaceae	<i>Rubus</i>	<i>idaeus</i>	red raspberry	S5
	Rosaceae	<i>Rubus</i>	<i>laciniatus</i>	cut-leaved blackberry	SNA
	Rosaceae	<i>Rubus</i>	<i>occidentalis</i>	black raspberry	S5
	Rosaceae	<i>Rubus</i>	<i>pubescens</i>	dwarf raspberry	S5
	Rosaceae	<i>Sorbus</i>	<i>aucuparia</i>	European mountain-ash	SNA
	Rosaceae	<i>Spiraea</i>	<i>alba</i>	meadowsweet	S5
	Rosaceae	<i>Spiraea</i>	<i>tomentosa</i>	steeplebush	S5
	Rubiaceae	<i>Galium</i>	<i>album</i>	wild madder	SNA
	Rubiaceae	<i>Galium</i>	<i>asprellum</i>	rough bedstraw	S5
	Rubiaceae	<i>Galium</i>	<i>trifidum</i>	small bedstraw	S5
	Rubiaceae	<i>Mitchella</i>	<i>repens</i>	partridgeberry	S5
	Salicaceae	<i>Populus</i>	<i>deltoides</i>	eastern cottonwood	S5
	Salicaceae	<i>Populus</i>	<i>grandidentata</i>	bigtooth aspen	S5
	Salicaceae	<i>Populus</i>	<i>tremuloides</i>	quaking aspen	S5
	Salicaceae	<i>Salix</i>	spp.	willows	SNR
	Sapindaceae	<i>Acer</i>	<i>rubrum</i>	common red maple	S5
	Sapindaceae	<i>Acer</i>	<i>saccharinum</i>	silver maple	S5
	Sapindaceae	<i>Acer</i>	<i>saccharum</i>	sugar maple	S5
	Saxifragaceae	<i>Chrysosplenium</i>	<i>americanum</i>	golden saxifrage	S4
	Saxifragaceae	<i>Micranthes</i>	<i>pensylvanica</i>	swamp saxifrage	S4S5
	Saxifragaceae	<i>Tiarella</i>	<i>cordifolia</i>	foamflower	S5
	Scrophulariaceae	<i>Verbascum</i>	<i>thapsus</i>	common mullein	SNA
	Smilacaceae	<i>Smilax</i>	<i>hispida</i>	bristly greenbrier	S5
	Solanaceae	<i>Solanum</i>	<i>carolinense</i>	horsenettle	S5
	Solanaceae	<i>Solanum</i>	<i>dulcamara</i>	deadly nightshade	SNA

PLANT SPECIES LIST

Observed On-Site During EDR Surveys, 2020

Notes	Family	Genus	species	common name	Conservation Rank
	Thelypteridaceae	<i>Thelypteris</i>	<i>noveboracensis</i>	New York fern	S5
	Thelypteridaceae	<i>Thelypteris</i>	<i>palustris</i>	marsh fern	S5
	Typhaceae	<i>Sparganium</i>	<i>americanum</i>	American bur-reed	S5
	Typhaceae	<i>Typha</i>	<i>angustifolia</i>	narrowleaf cattail	S5
	Typhaceae	<i>Typha</i>	<i>latifolia</i>	broadleaf cattail	S5
	Ulmaceae	<i>Ulmus</i>	<i>americana</i>	American elm	S5
	Urticaceae	<i>Boehmeria</i>	<i>cylindrica</i>	false nettle	S5
	Urticaceae	<i>Laportea</i>	<i>canadensis</i>	wood nettle	S5
	Urticaceae	<i>Pilea</i>	<i>pumila</i>	clearweed	S5
	Verbenaceae	<i>Verbena</i>	<i>hastata</i>	blue vervain	S5
	Verbenaceae	<i>Verbena</i>	<i>urticifolia</i>	white vervain	S5
	Violaceae	<i>Viola</i>	<i>labradorica</i>	American dog violet	SNR
	Violaceae	<i>Viola</i>	<i>rotundifolia</i>	roundleaf violet	S5
	Violaceae	<i>Viola</i>	<i>sororia</i>	common violet	S5
	Vitaceae	<i>Parthenocissus</i>	<i>quinquefolia</i>	Virginia creeper	S5
	Vitaceae	<i>Vitis</i>	<i>aestivalis</i>	summer grape	S5
	Vitaceae	<i>Vitis</i>	<i>riparia</i>	riverbank grape	S5

Nomenclature follows the New York Flora Atlas (Weldy et al., 2020).

Notes:

1. This species is listed as a prohibited invasive species in New York State (NYSDEC, 2014).
2. This species is listed as a regulated invasive species in New York State (NYSDEC, 2014).
3. This species is listed as endangered by New York State. Endangered plants are typically species with either five or fewer extant sites or fewer than 1,000 individuals; or species that are restricted to fewer than four USGS 7½ minute series quad maps; or species that are listed as endangered by the United State Department of Interior (Young, 2019).

State Conservation Ranks:

- S1 Critically imperiled in New York State because of extreme rarity (5 or fewer sites or very few remaining individuals) or extremely vulnerable to extirpation from New York State due to biological or human factors.
- S2 Imperiled in New York State because of rarity (6 - 20 sites or few remaining individuals) or highly vulnerable to extirpation from New York State due to biological or human factors.
- S3 Vulnerable in New York State. At moderate risk of extinction or elimination due to very restricted range, very few populations (usually 21 - 35 extant sites), steep declines, or other factors.
- S4 Apparently secure in New York State. Common in many areas of the state but possibly rare in other areas.
- S5 Demonstrably secure in New York State. Common; widespread and abundant.
- SNA Species for which a rank is not applicable. These plants are not native in New York State and are not of conservation concern.
- SNR Not yet ranked.

Sources:

New York State Department of Environmental Conservation (NYSDEC). 2014. 6 NYCRR Part 575, Prohibited and Regulated Invasive Species. September 10, 2014.

Weldy, T., D. Werier, and A. Nelson. 2020. New York Flora Atlas. [S. M. Landry and K. N. Campbell (original application development), USF Water Institute. University of South Florida]. New York Flora Association, Albany, New York. Available at: <http://newyork.plantatlas.usf.edu/> (Accessed September 2020; last updated September 9, 2020).

Young, S.M. 2019. New York Rare Plant Status Lists. New York Natural Heritage Program, State University of New York College of environmental Science and Forestry. Albany, NY. March 2019. 108 pp.

APPENDIX C
Photo Documentation

<p style="color: red; text-align: center;">Redacted to protect confidentiality of tall ironweed location.</p>	<p>Photo 1.</p> <p>Tall ironweed plants. Parcel ID [REDACTED].</p> <p>Mapped on Figure 3, Sheet [REDACTED].</p>
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	<p>Photo 2.</p> <p>Bracts of tall ironweed flowers magnified with 10x hand lens. Parcel ID [REDACTED].</p> <p>Mapped on Figure 3, Sheet [REDACTED].</p>
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Photo 3.

Stem and leaves of
tall ironweed plant.
Parcel ID
[REDACTED]

Mapped on
Figure 3, Sheet [REDACTED]



Photo 4.

Tall ironweed plant
growing in aspen
grove. Parcel ID
[REDACTED]

Mapped on
Figure 3, Sheet [REDACTED]



<p style="color: red; text-align: center;">Redacted to protect confidentiality of tall ironweed location.</p>	<p>Photo 5.</p> <p>Tall ironweed plants growing <div style="background-color: black; width: 100px; height: 20px; margin: 5px 0;"></div> Parcel ID <div style="background-color: black; width: 100px; height: 20px; margin: 5px 0;"></div></p> <p>Mapped on Figure 3, Sheet <div style="background-color: black; width: 20px; height: 15px; display: inline-block;"></div></p>
<p style="color: red; text-align: center;">Redacted to protect confidentiality of tall ironweed location.</p>	<p>Photo 6.</p> <p>Tall ironweed plants. Parcel ID <div style="background-color: black; width: 100px; height: 20px; margin: 5px 0;"></div></p> <p>Mapped on Figure 3, Sheet <div style="background-color: black; width: 20px; height: 15px; display: inline-block;"></div></p>
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 60%;"> <p>South Ripley Solar Project Chautauqua County, New York</p> <p>Rare Plant Survey Report Attachment C: Photo Documentation September 2020</p> </div> <div style="width: 35%; text-align: right;">   </div> </div>	



Photo 7.

Tall ironweed
plants. Parcel ID
[REDACTED]

Mapped on
Figure 3, Sheet [REDACTED]

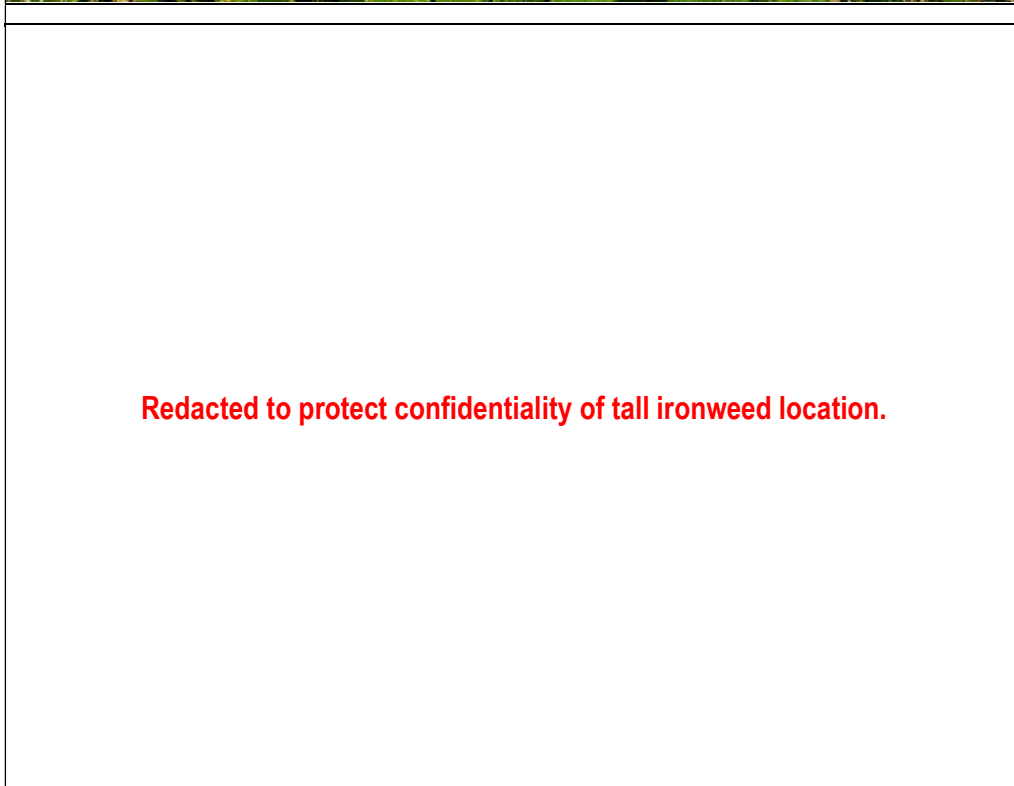


Photo 8.

Tall ironweed
plants. Parcel ID
[REDACTED]

Mapped on
Figure 3, Sheet [REDACTED]

Redacted to protect confidentiality of tall ironweed location.



<p style="color: red; text-align: center;">Redacted to protect confidentiality of tall ironweed location.</p>	<p>Photo 9.</p> <p>Tall ironweed plants. Parcel ID [REDACTED].</p> <p>Mapped on Figure 3, Sheet [REDACTED].</p>
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<p style="color: red; text-align: center;">Redacted to protect confidentiality of tall ironweed location.</p>	<p>Photo 10.</p> <p>A tall ironweed plant [REDACTED].</p> <p>[REDACTED]</p> <p>Parcel ID [REDACTED].</p> <p>Mapped on Figure 3, Sheet [REDACTED].</p>
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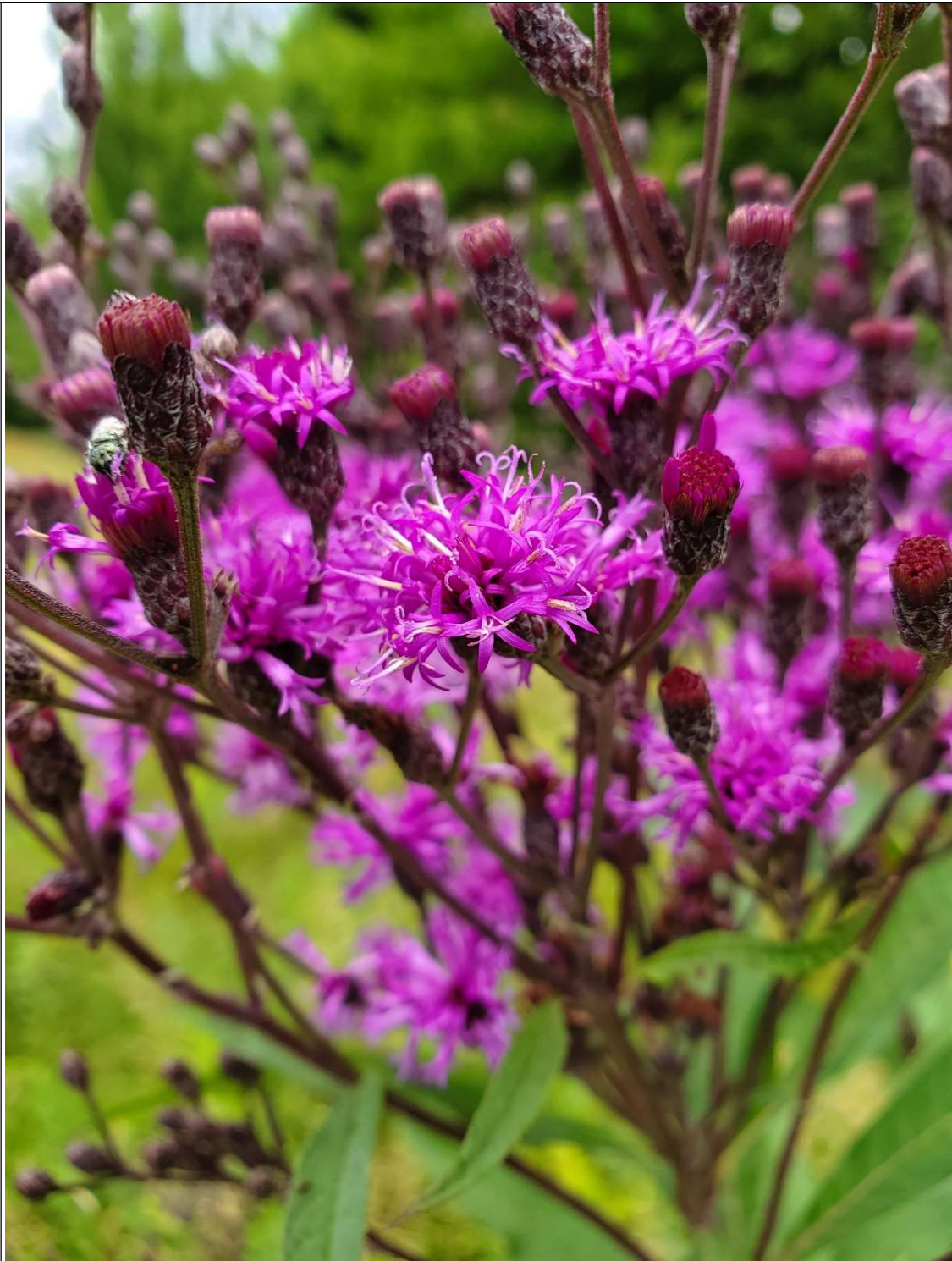


Photo 11.

Tall ironweed flowers. Parcel ID [REDACTED]. Mapped on Figure 3, Sheet [REDACTED].

South Ripley Solar Project

Chautauqua County, New York

Rare Plant Survey Report

Attachment C: Photo Documentation

September 2020

