**Species Guide – Plant Status Updates Project**

This guide contains identification tips for a group of particularly mysterious Pennsylvania plants. We need to learn more about these species in order to assign the proper conservation status to them. Are they endangered, threatened, rare, or too common to list? In 2014, we are trying to survey as much habitat and find as many locations as possible for these species. The following guide includes descriptions, illustrations, and tips for identification, organized by Pennsylvania region.

**If you find an individual or population of one of the species on this list, please report it to PNHP!**

Plant Status Updates Project contact:

Jessica McPherson, PNHP Ecologist
jmcpherson@paconserve.org
412-586-2362

It is extremely helpful if you can collect some information about the population:

- Photographs and/or a specimen of the plant. Try to capture the identifying characteristics in the photos, and also take pictures of the overall habitat.
- Location data for where you found it. GPS points are great, but if you don’t have them, a detailed description is good too.
- Please fill out the form at the back of this packet to capture additional information about the size of the population and the habitat it was found in.
- Even you don’t have all of this information, please let us know what you’ve seen with a phone call or an email, and we can follow up.
- If you survey a lot of appropriate habitat looking for some of these species, and DON’T see them, that is also useful for us to know!
# List of Target Species

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Geography</th>
<th>SW</th>
<th>NW</th>
<th>SC</th>
<th>NC</th>
<th>SE</th>
<th>NE</th>
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<td>Carex ornostachya</td>
<td>Spike Sedge</td>
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<td>Short’s Sedge</td>
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<td>Short’s spreading chervil</td>
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<td>Dryopteris celsa</td>
<td>Log Fern</td>
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<tr>
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<td>White Trout-Lily</td>
<td>SW/SC</td>
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<td>Vasey’s Eupatorium</td>
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<td>Oxypolis rigidior</td>
<td>Stiff Cowbane</td>
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<td>Ranunculus ambigens</td>
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<td>Small Bristleberry</td>
<td>E/W/Scat</td>
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<td>Blue-Eyed-Grass</td>
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<td>Declined Trillium</td>
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<td>Viola appalachiens</td>
<td>Appalachian Blue Violet</td>
<td>SW/W</td>
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<td>Viola renifolia</td>
<td>Kidney-Leaved White Violet</td>
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<td>Woodwardia areolata</td>
<td>Netted Chain Fern</td>
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Southwest-Southcentral Region

Maps from Pennsylvania Flora Project [www.paflora.org](http://www.paflora.org)
Images from Britton and Brown, 1913, unless otherwise noted.

Carex shortiana (Short's sedge)

Habitat: wet fields, open floodplains & wetlands, sometimes limey.

Identifying characteristics: Cylindric spikes are tightly packed with perigynia that turn chocolate brown at maturity. Terminal spike is pistillate above, staminate below; lateral spikes are pistillate with a few staminate flowers at base. Perigynia very broadly compressed and transversely wrinkled.

Chaerophyllum procumbens var. shortii (Short's spreading chervil)

Habitat: rich woods

Identifying characteristics: If fruits are hairy, it is var. shortii. However, while var. procumbens never has hairy fruits, shortii infrequently has hairless fruits. Shortii fruits are 2-2.5 mm wide, while procumbens
fruits are 1.5-2 mm wide. The fruit is really two ovaries (looks like two grains next to each other), so late in the season they can split; the joined fruit should be measured. Variety *procumbens* has fruits constricted below the apex, while var. *shortii* does not.

**Erythronium albidum** (*White trout lily*)

**Habitat:** forested floodplains, occasionally rich forested slopes; high pH.

Identifying characteristics: The white trout lily can be distinguished from the yellow trout lily only by flowers. It blooms very slightly earlier, and the flowers often are observed not fully open. Two-leaved plants may flower, while single-leaf plants generally do not.

**Juncus biflorus** (*Grass-Leaved Rush*)

**Habitat:** high pH wetlands, limestone & diabase; sometimes in intact wetlands, sometimes somewhat disturbed.

**Identifying characteristics:** Plant is unusually large compared to many other *Juncus*, up to a meter tall. Leaves are flat and non-septate (‘grass-leaved’, indeed!). Glomerules 2-5 flowered. Inflorescence elongate (usually 8-20 cm). Looks like *Juncus marginatus*, but has 20-100 flower clusters, or glomerules, per inflorescence compared to 5-15 for *J. marginatus*. 
Morus rubra (*Red mulberry*)

**Habitat:** somewhat dry calcareous slopes; diabase; possibly also floodplains (reported from this habitat elsewhere in the range). Often found as a single sapling or small tree, although it can grow to be a substantial understory tree. This tree was once more common, and appears to have greatly declined across its range.

**Identifying characteristics:**

- The introduced exotic white mulberry (*Morus alba*) and the native red mulberry (*Morus rubra*) both often have red fruits. They are best distinguished by leaf characters and the overall form of the tree. They can also hybridize; white mulberry appears to be more vigorous.
- Red mulberry resembles basswood more than it does white mulberry. It often grows with few lobed leaves (except as a juvenile, in which lobed leaves are more common).
- Mulberries have milky sap; basswood does not.
- Branches form graceful monolayers, like pagoda dogwood or witch hazel.
- The leaves are dull and hairy; white mulberry has smaller, shiny leaves with little to no hair.
- The bark may have orange in the crevices, but it is not bright orange like *M. alba*. As it gets older, vertical plates develop.
- Twigs somewhat resemble basswood, but have many, raised, black bundle scars beneath the bud. Basswood has only 3, sunken, less prominent bundle scars.
**Oxydendrum arboreum** (Sourwood)

*Habitat:* disturbed sites, forests.

*Identifying characteristics:* Very easy to tell from abundant sprigs of tiny white bell-shaped flowers in early July. Also turns purple-red in fall. Leaves entire to finely serrulate. Acidic sour taste. Twigs at least partly reddish.

**Oxypolis rigidior** (Stiff Cowbane)

*Habitat:* wetlands & floodplains. Can be in shaded or open places, often a few scattered plants.

*Identifying characteristics:* Leaves pinnately compound; similar to *Sium suave*, but leaflets entire to few-toothed, with teeth mostly above the middle, whereas *Sium suave*’s leaflets are conspicuously serrate to the base; fruits conspicuously winged.
**Rubus setosus** (Small Bristleberry)

*Image: Peabody Herbarium, Yale University. Stem drawing: Flore laurentienne, figure 99, frère Alexandre.*

**Habitat:** damp thickets and swamps; thickets & roadsides. This plant is at the far southern edge of its range in Pennsylvania, and only known from the cooler portions of the state, the Allegheny Mountains and the Pocono / NE /NC mountain areas. It is recorded from some cool bog-like wetlands that are fairly intact; sometimes alders are mentioned; and also from disturbed sites such as wet fields or roadside ditches.

**Identifying characteristics:**

- Stem covered in soft bristles (like the exotic invasive wineberry, *Rubus phoenocolasius*, except stems and bristles green or brown, not maroon). Unlike the prickles and thorns seen on many *Rubus*, these bristles are thin, without a wide base, and not recurved. Flowering branches have bristles, but not so densely as main stem of canes.
- Canes are upright to arching, 1.5' to 5' in length. *Rubus hispidus* (swamp dewberry) also has densely bristled stems, but *R. hispidus* is always trailing, sometimes with short upright branches from canes running along the ground.
- Leaves are palmately compound; primocane leaves usually in 5's or in 3's with lower two split to give an appearance of 5 (*R. hispidus* very rarely has 5 leaves). Floricane leaves often in 3's.
- Leaflets are rhombic in shape, often longer and with more distinct large teeth than *R. hispidus*. *R. hispidus* leaflets more obovate and less pointed at end. Leaves also thinner and less dark green than *R. hispidus* (which is evergreen).
- Leaves do not have white on underside.
**Ranunculus ambigens** (Water-plaughtain spearwort)

**Habitat:** ponds, sluggish streams, swamps, muddy ditches.

**Identifying characteristics:**
- The leaves of this buttercup are simple and lance-shaped, not divided as with many other of our species.
- Stem leaves > 1 cm wide (narrower leaves may be *R.* flammula, also rare).
- Flowers are yellow, with 5 petals (*R.* pusillus, another lance-leaved species, has 1-3 petals).

**Trillium flexipes** (Declined trillium)

**Habitat:** rich forested slopes and floodplains; calcareous.

**Identifying characteristics:**
- *T.* flexipes may hybridize with *T.* erectum, so some individuals may have a mixture of characters from both species.
- White flower with firm-textured petals (*T.* grandiflorum or *T.* erectum less firm-textured; *T.* grandiflorum often turns pinkish with age, *T.* erectum is often maroon colored but can be white).
- Ovary is white to pinkish, not maroon colored (as in *T.* erectum) or greenish (*T.* grandiflorum has a greenish ovary that is smaller than that of *T.* flexipes).
- Ovary is strongly pyramidal to flask shaped and widely attached at the base. (In *T.* erectum, oval to spherical.)
- Stigmas short, stout, recurved. In T. grandiflorum, stigmas are slender, erect to spreading, and equal or exceed the ovary in length. T. erectum also has short, stout, recurved stigmas.
- On stamens, anthers are 4x as long as filaments (T. erectum will have anthers of equal length or slightly longer than the filaments; T. grandiflorum has long, slender, recurving anthers, while T. flexipes are much stouter).
- Odor: faint garden roses or none. T. erectum has a wet-dog smell.
- Flower peduncle at least 4 cm long; may be upright or nodding.
- T. cernuum (common in eastern PA) has slender, lavender-gray anthers.

**Viola appalachiensis** (Appalachian violet)

**Habitat:** moist to mesic, open to sparsely wooded areas; often in occasionally mowed places. It has been found in lawns and mowed "picnic pavilion" type of habitats, as well as woodlands, in Somerset County. If you think you have a field of Dog Violet, look closer for the above-ground stems.

**Identifying characteristics:**
- Stoloniferous; stolons on surface, with bracts at the stolon nodes (*V. blanda* has little wire-like stolons with no bracts at nodes).
- It is similar to Dog Violet *Viola rostrata* (*V. labradorica*) in light blue flower color, flower shape and stipules. Dog Violet grows in discrete clumps, whereas *Viola appalachiensis* grows in a mat, connected by above-ground stems. Dog violet will not root at nodes.
- Blue flowers.
- Leaves not very pointed at tips.
- Leaves have few hairs. *V. blanda* and *V. walteri* are covered in fine hairs; tilt leaf at an angle and look across it to see.
- Fruits are green, not purple or purple-spotted.
Northeastern – Northcentral Region

See *Rubus setosus* and *Ranunculus ambigens* in Southwestern section.

*Carex ormostachya* (Spike Sedge)

**Habitat:** forests; coolish. Slightly drier than most species in the laxiflorae group.

**Identifying characteristics:** smallish perigynia with slightly bent beaks; sparingly maroon pigmented at base (may need lens); edges of lower bract sheaths and culms smooth, not serrulate.

*C. blanda* has no pigment at base. *C. gracilesens* has red pigment, but will have a strongly bent beak and serrulate sheath margins.

*Sisyrinchium montanum* (Blue-Eyed-Grass)

**Habitat:** open woodlands, slightly disturbed sites. Possibly roadsides, clearings, or right-of-ways.

**Identifying characteristics:** spathes (flower inflorescences) sessile, spathe bracts strongly unequal, margins of outer bract fused for 2-5 mm at base; stem flattened and distinctly winged, 1.5-3mm or more wide.
**Viola renifolia** (Kidney-Leaved White Violet)

**Habitat:** dry cool woods, rock crevices, or hummocks in swamps, especially on limestone soils.

**Identifying characteristics:** Stemless; flowers white; leaves short and stout, not very pointed; leaf blades at least sparsely pubescent on both sides, underside distinctly paler than the upper; plant not stoloniferous, rhizomes vertical.
Southeastern Region

See Southwestern Region for descriptions of the following species:

- *Juncus biflorus* (Grass-Leaved Rush)
- *Morus rubra* (Red mulberry)
- *Ranunculus ambiguens* (Water-plaintain spearwort)
- *Trillium flexipes* (Declined trillium): In the southeastern portion of the state, this species is known from rich woods along the Susquehanna River.

*Ageratina aromatica* (small-leaved white snakeroot)

**Habitat:** dry woods and sandy, open areas. Mainly on serpentine soils but possibly elsewhere.

**Identifying characteristics:** Similar to white snakeroot (*Ageratina altissima*, formerly *Eupatorium rugosum*). The following distinguishing characters are from the *Ageratina* key in Flora of Virginia:

*Ageratina aromatica:* Leaves subcoriaceous in texture; crenate or crenate-serrate; leaves smaller. Blades 3-7 cm long, 2-5 cm wide. Petiole very short in relation to blade (1 : 5+). Dry habitats, usually on serpentine.

*Ageratina altissima:* leaves membranous in texture, serrate or coarsely dentate; leaves larger. Blades 6-18 cm long, 3-12 cm wide (larger leaves on a plant usually at least 8 cm wide). Petiole still shorter than blade, but closer to same length (1 : 1.4-5). Mesic habitats.
Asclepias verticillata (whorled milkweed)

Habitat: open grasslands, slopes, and barrens with dry, sandy soil; serpentine, calcareous, and diabase; shale barrens.

Identifying characteristics: extremely slender (2 mm or less wide), whorled leaves; leaves dark green and revolute (edges curled under). Milky sap. Difficult to see unless in flower or fruit, especially because it is of medium stature among grassland vegetation.

Dryopteris celsa (log fern)

Habitat: rotting logs and swampy hummocks, in acidic soils. Mainly coastal plain.

Identifying characteristics: among wood ferns, most closely resembles Dryopteris goldiana (Goldie’s wood fern); both species have ovate leaves broadest near the middle (differing from other Dryopteris species with triangular leaves broadest at the base), and are pinnate-pinnatifid.

- Goldie’s fern is found in rich, mesic sites forested sites, often calcareous or on diabase.
- Leaves of Dryopteris celsa taper gradually to the tip, while Dryopteris goldiana leaves taper abruptly to a point at the tip.
- Sori of Dryopteris celsa are located about midway between the midveins and the margins of pinnules; sori of Dryopteris goldiana are closer to the midvein, touching the midvein at maturity.
**Eupatorium godfreyanum** (Godfrey’s eupatorium)

![map of Pennsylvania](image)

Image from Eupatorieae website, which also contains identification tips, photos, and genetic research for all genera and species in the Eupatorieae group.
http://www.bio.utk.edu/schilling/Danielweb/eup/genusindex.html

**Habitat:** stream banks, wooded roadside banks and shaley slopes.

**Identifying characteristics:** *Eupatorium* is a genus of the sunflower family with clusters of small white flower heads, with 5-15 disc florets per head. Recent research has removed a number of our species from this genus and placed them in new genera, including perhaps the most familiar species, the white snakeroot (now *Ageratina altissima*, formerly *Eupatorium rugosum*). *Eupatorium godfreyanum* superficially resembles the white snakeroot, although it more closely resembles its parent species, *Eupatorium sessilifolium* and *Eupatorium rotundifolium*. *Eupatorium godfreyanum* is a species of hybrid origin and many of its characteristics are intermediate between the two parent species.

- *Eupatorium godfreyanum* has sessile leaves, while white snakeroot has petiolate leaves.
- *Eupatorium godfreyanum* is pubescent below the inflorescence, while *Eupatorium sessilifolium* is glabrous below the inflorescence. *Eupatorium sessilifolium* also has longer, narrower leaves. While both species can be found in dry woodland habitats, *Eupatorium sessilifolium* is commonly in higher pH settings (limestone or diabase enriched soils).
- *Eupatorium godfreyanum* has pinnately veined leaves that are lance-ovate or oblong-ovate, while *Eupatorium rotundifolium* has ovate leaves less than 5 cm long that have three main veins from the base.
- *Eupatorium serotinum* is an introduced species that can be found on roadsides and disturbed sites; it is somewhat similar to *Eupatorium godfreyanum*, but its leaves are petiolate.
*Leucothoe racemosa* (fetter-bush)


**Habitat:** moist, acidic woods; mainly on coastal plain.

**Identifying characteristics:** flowers white and bell-shaped, 5-9 mm long, in long one-sided racemes; fruit a dry, 5-celled capsule. Leaves deciduous, with sharply pointed teeth.

*Woodwardia areolata* (netted chain fern)

**Habitat:** moist woods, swamps, and open wetlands, in humus-rich, strongly acidic soils.

**Identifying characteristics:**
- Somewhat resembles *Onoclea sensibilis* (sensitive fern) in appearance of sterile fronds.
- Netted chain fern pinnae tend to be alternate on leaves, while sensitive fern pinnae tend to be opposite.
- Leaves of netted chain fern are once-pinnate with finely serrulate edges, while leaves of sensitive fern are once pinnate to pinnate-lobed, with smooth edges.
- Netted chain fern pinnae are acute or acuminate at ends, while sensitive fern pinnae are obtuse.
- Fertile fronds are very different; in netted chain fern, they are like slender-pinnae versions of sterile fronds, while sensitive fern fertile fronds are not leaf-like.
References


# PLANT SPECIES OF SPECIAL CONCERN REPORT

*(PLEASE INCLUDE A MAP – SEE MAPPING INSTRUCTIONS)*

<table>
<thead>
<tr>
<th><strong>SPECIES NAME:</strong></th>
<th><strong>SURVEYOR(S):</strong> <em>(Please include your address &amp; phone #)</em></th>
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<tbody>
<tr>
<td><strong>DATE OF VISIT:</strong></td>
<td><strong>TIME SPENT AT SITE:</strong></td>
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<td><strong>USGS QUADRANGLE:</strong></td>
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</table>
| **SITE NAME AND DIRECTIONS TO SITE:** | **GPS Coordinates:** Lat:__________ Long:__________  
Coordinate System/Projection: ____________________________|

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<tr>
<th><strong>OWNER INFORMATION:</strong></th>
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<tr>
<td><strong>Public Land:</strong> give tract name:</td>
<td><strong>Private Land:</strong> Please fill out landowner info below.  <strong>NOTE:</strong> We cannot accept data collected on private land if you didn’t have permission!</td>
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<tr>
<td>Landowner Name:</td>
<td>Address:</td>
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<tr>
<td>Phone Number:</td>
<td>City / State / Zipcode:</td>
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<tr>
<td>• Landowner aware of the species of special concern? <strong>YES</strong> <strong>NO</strong></td>
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<tr>
<td>• Landowner aware that data are submitted to PA Natural Diversity Inventory? <strong>YES</strong> <strong>NO</strong></td>
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<tr>
<td>• Landowners are welcome to call the PNHP office in Middletown at (717) 948-3962 or Pittsburgh at (412) 586-2314 for more information.</td>
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<tr>
<td>• <strong>IF A SPECIMEN WAS COLLECTED:</strong> Please ask for the landowner’s signature <strong>for permission to save the specimen in a museum:</strong></td>
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<td>Landowner Signature: ________________________________ Date: __________________</td>
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<tr>
<td>• <strong>WHERE IS THE SPECIMEN BEING HELD</strong></td>
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| **HABITAT DESCRIPTION:** | Give a general description of the site. You might include other plant/animal species at site, substrate/soils, topography, land use, weather, etc. If revisiting a site, indicate any obvious changes to the habitat. |

| **DISTURBANCES/THREATS:** | Include human and/or natural disturbances and threats to the species at this site. |

<table>
<thead>
<tr>
<th><strong>SPECIES DATA:</strong></th>
<th>Fill out as much of the following as you can - include anything else you feel is of importance.</th>
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<tbody>
<tr>
<td>• Give general description of what you saw <em>(i.e.: “a small population at the base of the slope”; “plants scattered throughout open mat of bog”)</em></td>
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</table>
**Species Data, continued:**

- Count or estimate the number of plants you observed & estimate the size of the area they occupy. If possible, provide counts or estimates for both stems and distinct individuals. (*i.e.: “about 200 stems in four clumps” or “a 100m square patch with 30-40 stems per square meter, impossible to distinguish individuals”*)

- Age and condition of individual(s) (*i.e.: healthy mature plants - 50% flowering and with immature fruit...*)

- If revisiting this site, compare the health and size of the population to previous visits.

- Confidence level on Identification: ID Positive | ID Somewhat Uncertain | ID Unknown

- Voucher specimen or photo taken? (*Please include if possible*)

- Additional information:

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Please send this form, along with a detailed map or GIS files to the appropriate office below:

**Western PA:**

- Information Manager
- PNHP-West
- Western PA Conservancy
- 800 Waterfront Dr.
- Pittsburgh, PA 15222
- (412) 586-2314

**Eastern PA:**

- Information Manager
- PNHP-East
- Western PA Conservancy
- PO Box 69703
- Harrisburg, PA 17106-9703
- (717) 772-9083
Mapping Locations of Species of Special Concern

- Maps made from USGS quadrangle maps are ideal, but a good topographical or gazetteer map will do.
- Draw with a thin red or other bright-colored pen so your lines are easy to see.
- Draw the location of the ‘found’ species as accurately as you possibly can. We encourage you to draw a precise polygon of the area the species occupies, rather than a vague circle or arrow pointed at the site. If you only find a few plants or one animal, a polygon would be impossible to draw at 1-24,000 map scale (our standard map scale), so a dot would suffice.
- Estimate the size of the area the species is occupying.

Do not include in your polygon the ‘suitable’ habitat surrounding the location of the species IF:
- You did not survey the surrounding area.
- You searched but did not find the species in the surrounding area.

To further complicate things, we do want potential / suitable habitat information if you can provide it. But it must not be confused with the area where you KNOW FOR CERTAIN the species is found.
- To indicate suitable habitat (but not yet known for certain to be occupied), draw a dotted line around the area and label it as ‘suitable’ or ‘potential’ habitat.

Examples:

1. Small dot indicates the exact location of a plant population of 10 plants. The dotted polygon represents additional potential habitat for the plant that should be surveyed in the future.
2. The solid-line polygons are two sections of a large meadow where butterflies were found nectaring. The dotted-line polygon shows the perimeter of the meadow. Your report might explain that the entire meadow appears suitable for the butterflies, though the butterflies were only seen in two areas of the meadow during this particular survey.
3. Solid line indicates plants were growing along a narrow strip of roadside.
4. Solid-line polygon around section of river shows where mussels were found throughout the riverbed.
Employee who received this field form:

Date form was received:

New EO or update to an existing one?
Survey Site (Site Name):

EO Rank:
EO Rank Comments:

Data Sensitivity: _____Yes _____No
Reason for Data Sensitivity:

Managed Areas Element is in (if any):
Management Comments (if any):

Are any Additional Surveys Needed?

Comments: