**Bartonia paniculata (Michx.) Muhl.**

Current Status TU

Proposed Status PT

Proposed by: Ann Rhoads and Tim Block, Morris Arboretum of the University of Pennsylvania

Habitat: *Bartonia paniculata* is an herbaceous annual that does not appear until late summer. A member of the Gentianaceae, it is a small, inconspicuous plant with scale-like leaves and small greenish-white flowers. It grows in bogs, swamps, wet woods, and moist, open barrens-type habitat.

Estimated number of extant occurrences (45) 50 – 70 (60)

Estimated number of extant individuals (2,100) 2,250 – 2,500 Genets

Factors that increase conservation concern: Many of the known extant populations are very small.

Factors that decrease conservation concern: Bartonia paniculata is a plant of wetland habitats. The plants are small and inconspicuous, they do not appear until late in the growing season, and they closely resemble *B. virginica* which is more common.
Bidens laevis (L.) Britton, Stearns & Poggenb.

Current Status: TU

Proposed Status: PE

Proposed by: Daisy Daeschler, Ann Rhoads, and Tim Block, The Morris Arboretum

Estimated number of extant occurrences: (20) 25 – 50 (30)

Estimated number of extant individuals: (5,000) 6,000 – 7,000 (6,000)

Factors that increase conservation concern:

- Erosion due to passing ships or flood scouring.
- Outliers are more likely to occur as a result of conditions beyond the land owner's control, such as dam removal or riprak.
- Boating causes erosion, development destroys habitat. Much of the Delaware River bank has been bulkheaded which destroys which destroys...

Factors that decrease conservation concern:

- Obligate wetland plant, however, bulkheading and other stream bank modification destroys habitat.
- Some of remaining intertidal sites are severely degraded and support only a few plants growing in riprap.
- Maintenance of dams appears to be important to maintaining habitat. Impoundments reduce the wood scouring effect that could otherwise wash seeds out of the area.

Bidens laevis appears to be limited to sites that are on diabase geology, fresh water inter-tidal marsh, or limestone influenced glacial till. This suggests dependence on elevated magnesium levels in the substrate that limits the available habitat.

Bidens laevis appears to have declined of disappeared at many of its historical sites, and intertidal sites, with few exceptions, are resiliant B. cernua.

Annual species, dependent on water level and seed availability.

Widespread tidal plant, however, bulkheading and other stream bank modification destroys habitat.

Resembles Bidens cernua.
Cuscuta campestris

**Yunck.**

**Current Status**: TU

**Proposed Status**: PE

**Proposed by**: Daisy Daeschler, Ann Rhoads, and Tim Block, Morris Arboretum of the University of Pennsylvania

**Habitat**: Cuscuta campestris is a parasitic flowering plant that grows on other herbaceous species including Lythrum salicaria, Artemisia vulgaris, Persicaria hydropiperoides, Persicaria pensylvanica, Persicaria punctata, Schoenoplectus pungens, Amaranthus cannabinus, Boehmeria cylindrica, Urtica dioica, Humulus japonicus, Acalypha rhomboidea, Conyza canadensis, Bidens spp., Ambrosia artemisiifolia, Helianthus annuus, Helianthus tuberosus, and Lycopus sp. It typically grows in open shoreline situations or other open habitats that are moist to seasonally wet.

**Estimated number of extant occurrences**: (30) 35 – 60 (50)

**Estimated number of extant individuals**: (30) 50 – 100 (50)

**Factors that increase conservation concern**: Habitat is mostly wetlands or riparian areas. Cuscuta campestris parasitizes a wide variety of native and non-native herbaceous plants. Populations tend to be very small, often a single colony about 1 meter square. It is impossible to determine how many genets a colony represents. Although several sites along the Delaware River are small public parks, mowing or “weed control” along edges could eliminate public areas could reduce habitat. Habitat very susceptible to degradation due to non-native, invasive species. A trend toward tidiness i.e. excessive mowing in parks or other open areas could eliminate habitat.

**Factors that decrease conservation concern**: Habitat is mostly wetlands or riparian areas. Cuscuta campestris parasitizes a wide variety of native and non-native herbaceous plants. Cuscutas are difficult to identify to species and may have been under collected in the past for that reason; however, C. gronovii has been widely collected in PA (see Rhoads and Klein 1993). Cuscuta campestris is the most widespread dodder in the world; it is the only example of a parasitic weed of North America that has spread to the Old World (Duke, S. 1994. Reviews of Weeds, Vol. 6. Weed Science Society of America, Champaign, Ill.).

**Protection of wetlands and riparian areas should provide stability.**
Cuscuta cephalanthii Engelm.

**Current Status:** TU

**Proposed Status:** PE

**Proposed by:** Ann Rhoads and Tim Block, Morris Arboretum of the University of Pennsylvania

**Habitat:** Cuscuta cephalanthii is an annual vine that parasitizes other flowering plants. Host plants include: Cephalanthus occidentalis, Salix spp., Impatiens capensis, Symphyotrichum spp., Solidago spp., Vernonia noveboracensis, and Justicia americana. It grows in riparian areas or wet meadows.

Factors that increase conservation concern

- Many sites are along the banks of rivers and streams. Cuscutas are generally considered difficult to determine to species and may be under-collected. Similar to the more common C. gronovii and often in small isolated colonies.

Factors that decrease conservation concern

- Estimated number of extant individuals: (4) 4 – 8 (5) Ramets
- Estimated number of extant occurrences: (4) 8 – 16 (5)

All occurrences that we are familiar with are small and thus presumably vulnerable to stochastic events. Riparian habitats are vulnerable to invasion by non-native, invasive species and excessive scouring by frequent floods.

Estimated number of extant individuals: (4) 4 – 8 (5)

Estimated number of extant occurrences: (4) 8 – 16 (5)
Cuscuta compacta is similar to the more common C. gronovii; it tends to occur in small, scattered populations. Many of the sites are along river banks.

Factors that decrease conservation concern

Cuscuta occurrences are small 1-3 square meters; therefore, they can be assumed to be vulnerable to stochastic events. Habitat must include appropriate host species. Severe flood scouring could be a problem. Our experience is that many

Factors that increase conservation concern

Estimated number of extant individuals: (20) 25 – 35 (25) Genets
Estimated number of extant occurrences: (10) 12 – 25 (15)

Habitat: Cuscuta compacta is an herbaceous, annual vine that is parasitic on other flowering plants. Host plants include:

Eutrochium sp., Sassafras albidum, Cephalanthus occidentalis, Fraxinus spp., Cornus spp., Vitis spp., Toxicodendron radicans. Habitat includes moist thickets, fens, and the banks of rivers and streams.

Proposed by: Ann Rhoads and Tim Block, Morris Arboretum of the University of Pennsylvania
Proposed Status: PE
Current Status: TU

Cuscuta compacta Juss. Ex. Choisy
Cuscuta corylii Engelm.

Current Status
TU

Proposed Status
PX

Proposed by: Ann Rhoads and Tim Block, Morris Arboretum of the University of Pennsylvania

Habitat: Cuscuta corylii is an annual vine that is parasitic on other flowering plants. Historic collection sites are on rocky hills, dry wooded slopes, and a utility right-of-way. Host plants include Symphyotrichum spp., Solidago spp., and other herbs and shrubs.

Factors that increase conservation concern
There are no known extant occurrences; the most recent collection was made in 1956.

Factors that decrease conservation concern

Estimated number of extant individuals: (0) 0 – 5 (5) Ramets

Estimated number of extant occurrences: (0) 0 – 5

Cuscuta corylii remains very rare. It has not been collected in PA since 1956. However, Cuscutas have been collected both historically and recently and Cuscuta are hard to determine to species. Some collectors may avoid Cuscuta because they

Cuscuta corylii is an annual vine that is parasitic on other flowering plants. Historic collection sites are rocky hills, dry wooded slopes, and a utility right-of-way. Host plants include Symphyotrichum spp., Solidago spp., and other herbs and shrubs.

Factors that increase conservation concern
There are no known extant occurrences; the most recent collection was made in 1956.

Factors that decrease conservation concern

Estimated number of extant individuals: (0) 0 – 5 (5) Ramets

Estimated number of extant occurrences: (0) 0 – 5

Cuscuta corylii Engelm.
Cuscuta pentagona Engelm.

**Current Status:** TU

**Proposed Status:** PE

**Proposed by:** Ann Rhoads, Tim Block, Morris Arboretum of the University of Pennsylvania

**Habitat:**
Cuscuta pentagona is an annual vine that is a parasite of other flowering plants, common hosts include *Trifolium spp.*, *Artemisia vulgaris*, *Ambrosia artemisiifolia*, *Symphyotrichum spp.*, *Impatiens capensis* and others. It occurs in open fields, waste ground, and riparian areas. It is considered to have a variety of potential host plants. It needs open areas with appropriate host plants. Cuscutas are challenging to identify to species and occurrences are often small (<1 sq meter).

**Factors that increase conservation concern:**

- Cuscutas are hard to identify to species and occurrences are often small (<1 sq meter).
- Cuscuta are hard to identify to species and occurrences are often small (<1 sq meter).
- Has a variety of potential host plants. It needs open areas with appropriate host plants. Cuscuta are challenging to identify to species and occurrences are often small (<1 sq meter).
- Cuscuta is described by Cronquist as occurring throughout the US, and nearly cosmopolitan. It is considered to be a troublesome weed in some areas because it colonizes crops such as clover and alfalfa. The seeds become contaminants in crop seeds and are dispersed in that way.

**Factors that decrease conservation concern:**

- Overly zealous mowing.
- Excessive mowing or “tidiness” in parks along rivers and streams could eliminate host plants. Populations are small and some are vulnerable to park management actions such as mowing.
- Cuscuta occurs in open fields, waste ground, and riparian areas. Excessive mowing or “tidiness” in parks along rivers and streams could eliminate host plants. Populations are small and some are vulnerable to park management actions such as mowing.

**Estimated number of extant individuals:**

- 20 (30–50 Genets)

**Estimated number of extant occurrences:**

- 20 (30–50 Genets)

**Open space protection.**

Even if we lumped Cuscuta pentagona and C. campestris the number of known extant occurrences (C. pentagona 1 and C. campestris 20) and small population sizes in Pennsylvania would suggest that PE is an appropriate status.

**Habitat:**
Cuscuta pentagona is described by Cronquist as occurring throughout the US, and nearly cosmopolitan. It is considered to be a troublesome weed in some areas because it colonizes crops such as clover and alfalfa. The seeds become contaminants in crop seeds and are dispersed in that way.
Cuscuta polygonorum Engelm.

Current Status: TU

Proposed Status: PE

Proposed by: Ann Rhoads and Tim Block, Morris Arboretum of the University of Pennsylvania

Habitat: Cuscuta polygonorum is a plant of herbaceous wetlands. Appropriate host plants must be present. Increased scouring by flood waters may remove seeds from the environment. Increased scouring and severity of flood-scouring of riparian areas could cause further declines.

Factors that increase conservation concern

- Cuscuta polygonorum is a difficult to determine to species. C. gronovii is much more common than all of our other species.

Factors that decrease conservation concern

- The Cuscutas can be difficult to determine to species.
- Habitats: Cuscuta polygonorum is an annual vine that is parasitic on other flowering plants. Host species include
  - Persicaria arifolia, Persicaria punctata, Persicaria pensylvanica,
  - Echinochloa crus-galli and other Poaceae,
  - Justicia americana, Bidens spp. and Salix spp.
  - Cuscutas can be difficult to determine to species; C. gronovii

Protection of riparian areas and wetlands should help to preserve habitat.

Colonies are small and do not necessarily appear in the same places from year to year.

Estimated number of extant occurrences (20): 15 - 20 (30)

Estimated number of extant individuals (500): 1500 - 2500 (1,000) Genels
Cyperus polystachyos

Current Status  PX
Proposed Status  PE??
Proposed by: John Kunsman, PNHP
Habitat: damp early successional
Estimated number of extant occurrences (0 – 5)
Estimated number of extant individuals ( – ) Genets
Factors that increase conservation concern:
Additional factors not logically included on other worksheets  By the rules, this would be PE, but…
Factors that decrease conservation concern: This species has a mostly southern, coastal plain-ish distribution and is at the edge of its range in PA. It frequents open, damp, early-successional areas and does well in certain types of disturbed habitats. It was apparently known in PA only from a 1935 collection in Philadelphia County. In 2008, plants were found in the John Heinz NWR in Delaware County, along the shoreline of a human-created shallow ponded area frequented by a flock of Canada geese that have turned the shoreline into a pavement of poop. Given this habitat, and the general adaptability of the species, I will hold my nose both literally (because of the poop) and metaphorically when it becomes a PE.
Eleocharis tuberculosa

Current Status

Proposed Status

Proposed by: Jim Bissell, Cleveland Museum of Natural History

Habitat: Estimated number of extant occurrences ( ) - ( )

Additional factors not logically included on other worksheets

Factors that increase conservation concern

Estimated number of extant individuals ( ) - ( )

Only other collection from PA was from Frazier's Bog, where numerous surveys have failed to relocate the species.
Hypericum sphaerocarpum

**Current Status**

Watch

**Proposed Status**

PX or PE

**Proposed by:** Steve Grund, PNHP/WPC

**Habitat:** Rocky woods, barrens, and shores (Fernald)

**Estimated number of extant occurrences:** (0) 0 – 2 (10)

**Estimated number of extant individuals:** (0) 0 – 40 (200) Genets

Most recently in 1921.

Additional factors not logically included on other worksheets: Collected from a single site over a period of five years.
Myriophyllum heterophyllum

Current Status: PE

Proposed Status: N

Proposed by: Steve Grund, WPC/PHNP

Habitat: Lakes and slow-moving streams.

Factors that decrease conservation concern

- Enjoys fragmentation and cultural eutrophication.
- Range is rapidly expanding. Invades lakes and reservoirs.

Estimated number of extant individuals: (150,000) 400,000 – 800,000 (2,000,000)

Estimated number of extant occurrences: (15) 25 – 50 (100) Ramets
Najas marina L.

Current Status
PE

Proposed Status
N (Introduced)

Proposed by: Steve Grund, WPC/PNHP

Habitat: Calcareous waters

Factors that increase conservation concern

- Considered not native in Michigan. Not known in Pennsylvania before it was discovered in an abandoned quarry in 1992
- Known in NY from the Lake Ontario region; in OH from the western Lake Erie region.
- "Appears to be somewhat aggressive" in Michigan (Voss 1972, Michigan Flora). This species is native in the New World as well as in Europe (Haynes, FNA Block 2001). This ap...
Parthenium integrifolium

Current Status

PX

Proposed Status

PE

Proposed by: Joe Isaac

Factors that increase conservation concern

Estimated number of extant occurrences (1)

Estimated number of extant individuals (0) – (0) Genets

Habitat

Additional factors not logically included on other worksheets

Only one extant, Joe rediscovered it.
Quercus michauxii

Current Status

N

Proposed Status

PE

Proposed by: John Kunsman, PNHP

Habitat: swamps, bottomlands, streambanks

Estimated number of extant individuals (10)–(50) Genera

Estimated number of extant occurrences (0)–(5)

Factors that increase conservation concern

This species has been reported from PA (southern Bucks County) by some literature sources (Atlas of US Trees, The Plants of PA, NatureServe, PNHP, USDA Plants, etc.). A voucher specimen for the nature preserve in southern Bucks County. This population is believed to be native, since it is occupying habitat typical of other coastal plain species. For the species, is located where the literature sources showed the species to be, and because the nature preserve has a habitat that is typical of the species. In 2008, a population consisting of a dozen or two individuals was found in a wetland. The plants of PA, NatureServe, PNHP, USDA Plants, etc. This species has been reported from PA (southern Bucks County) by some literature sources.
**Rhynchospora globularis**

**Current Status**
UXH

**Proposed Status (click for definitions)**
N

**Proposed by:** Steve Grund
PNHP/WPC

**Habitat**

Estimated number of extant occurrences () – ()

Estimated number of extant individuals () – () Genets

**Factors that increase conservation concern**

Additional factors not logically included on other worksheets

**Factors that decrease conservation concern**

Not known from PA, all specimens at CM and PH have been redetermined to R. recognita
Solidago uliginosa

Current Status

TU

Proposed Status

PT

Proposed by: Steve Grund, PNHP/WPC

Habitat: Wetlands, including but not limited to bogs and fens.

Factors that increase conservation concern

This species has a sporadic distribution in this and surrounding states.

Factors that decrease conservation concern

Estimated number of extant individuals (400) 500 – 1000 (3000) Ramets

Estimated number of extant occurrences (17) 19 – 22 (40)

Habitat: Wetlands, including but not limited to bogs and fens.

Proposed by: Steve Grund, PNHP/WPC

Proposed Status: PT

Current Status: TU

Solidago uliginosa
Symphyotrichum dumosum covered the entire area where S. dumosum was previously known to exist. From this example, Microstegium vimineum covered the entire area where S. dumosum was previously known to exist. A large population of S. dumosum, when surveyed in September and again in October of 2006, no S. dumosum was found. A large population of S. dumosum, when surveyed in September and again in October of 2006, no S. dumosum was found.

Factors that increase conservation concern

Yes. The occurrences in Erie, PA are quite far from any other PA, NY, and OH occurrences.

In several places where the plant was previously known to exist, there are now invasive species monocultures. Also, fires which were common in the habitat are now suppressed. Much habitat has been lost due to human construction of buildings, parking lots, etc.

Estimated number of extant individuals (1500) 2000 – 3000 (3000) Ramets

Estimated number of extant occurrences (4) 4 – 7 (8)

Proposed by: Sara Helm, Ann Rhoads, and Tim Block, Morris Arboretum/Academy of Natural Sciences

Proposed Status Pe

Current Status Tu

Symphyotrichum dumosum (L.) G.L.Nesom
and several others, it can be concluded that the viability of *S. dumosum* in several of the places where it currently occurs may be questionable.

Factors that decrease conservation concern may be questionable.

One site is managed to preserve the species diversity and unique ecology there, allowing *S.* dumosum to thrive in its preferred habitat.

Historically, the areas where the plant grew were thin soils with high heavy metals and low nutrients, rocky substrates with high pH; both conditions undesirable for farming. Recently, however, people have built homes and buildings on this type of land. The anthropogenic disturbance that this plant tolerates is controlled burning.

The white form of *Symphyotrichum dumosum* looks like several other *Symphyotrichum* species, especially *S.* lateriflorum. Since natural fires are suppressed, the species can benefit from controlled burning of its habitat.

The species may be distinguishable when it is flowering (usually in October and November until the first frost). For this reason, *S.* dumosum is only identifiable when it is flowering. The fact that it resembles other *Symphyotrichum* species, especially *S.* lateriflorum, and the fact that it is a thin, similar species, botanists may not see it as a most surveying occurs during the spring and summer to early fall.
Trillium cernuum

L.

Current Status: TU

Proposed Status: PT

Proposed by: Ann Rhoads and Tim Block, Morris Arboretum of the University of Pennsylvania

Habitat: Trillium cernuum is a perennial forest floor herb. It occurs in most "rich" woods, often along a forested wetland margin.

Factors that decrease conservation concern: Rocky edaphic or glacial soils, diabase or gneiss, woods and margins of forested wetlands generally do not lend themselves to incompatible uses other than timber harvest. Trilliums are generally easy to recognize whether in flower or fruit, but vegetable plants may senesce early and thus not be found in late season surveys.

Factors that increase conservation concern: Trillium cernuum is very susceptible to over-browsing by deer. Many populations are small, <20 plants. Perennial glade or woodland such as Lonicera japonica, Alliaria petiolata, and Persicaria perfoliata. None of these sites, regardless of invasive, non-native plants, such as Lonicera japonica, Alliaria petiolata, and Persicaria perfoliata. None of these sites, regardless of invasive, non-native plants such as Lonicera japonica, Alliaria petiolata, and Persicaria perfoliata. None of these sites, regardless of invasive, non-native plants such as Lonicera japonica, Alliaria petiolata, and Persicaria perfoliata.

Estimated number of extant individuals:

- 4,500 – 6,000 (5,000) Ramets

Estimated number of extant occurrences:

- 31 – 40 (60)

Veterinary bills, which places Pennsylvania near the southern limit of range of the species. Wisconsin, which places T. cernuum extends from Nova Scotia and New Brunswick south to Maryland and west to Iowa and Wisconsin, which places T. cernuum extends from Nova Scotia and New Brunswick south to Maryland and west to Iowa and Wisconsin, which places T. cernuum extends from Nova Scotia and New Brunswick south to Maryland and west to Iowa and Wisconsin, which places T. cernuum extends from Nova Scotia and New Brunswick south to Maryland and west to Iowa and Wisconsin, which places T. cernuum extends from Nova Scotia and New Brunswick south to Maryland and west to Iowa.

Trillium cernuum and T. cernuum var. macranthum have been recognized, both have been recorded in PA. T. cernuum var. macranthum has been recognized, both have been recorded in PA. T. cernuum var. macranthum has been recognized, both have been recorded in PA. T. cernuum var. macranthum has been recognized, both have been recorded in PA.

Chase in Flora of North America Vol. 26, does not accept the varietal distinction. The range of Trillium cernuum extends from Nova Scotia and New Brunswick south to Maryland and west to Iowa and Wisconsin.

Trillium cernuum is a perennial forest floor herb. It occurs in most "rich" woods, often along a forested wetland margin. It seems to occur most often on diabase, limestone, or gneiss. Geology, historically its distribution in PA was primarily in the Michigan and Wisconsin, which places T. cernuum extends from Nova Scotia and New Brunswick south to Maryland and west to Iowa and Wisconsin. T. cernuum var. macranthum has been recognized, both have been recorded in PA.

Trillium cernuum is a perennial forest floor herb. It occurs in most "rich" woods, often along a forested wetland margin. It seems to occur most often on diabase, limestone, or gneiss. Geology, historically its distribution in PA was primarily in the Michigan and Wisconsin, which places T. cernuum extends from Nova Scotia and New Brunswick south to Maryland and west to Iowa and Wisconsin. T. cernuum var. macranthum has been recognized, both have been recorded in PA.
Veratrum virginicum (L.) Aiton (synonym: Melanthium virginicum L.)

Current Status  TU

Proposed Status  PE

Proposed by: Ann Rhoads and Tim Block, Morris Arboretum of the University of Pennsylvania

Habitat: Veratrum virginicum is a perennial herbaceous species that grows in fens, forest seeps, marshy meadows, wet successional areas, and bogs, with sphagnum mosses and Osmunda cinnamomea as common associates. It flowers in early to mid July. Pennsylvania is at the northern limit of range for this species, it occurs south to northern Florida and west to Iowa, Missouri, Arkansas, and Louisiana.

Estimated number of extant occurrences: (12) 20 – 50 (30)

Estimated number of extant individuals: (270) 270 – 500 (350) Ramets

Factors that increase conservation concern: Susceptible to over browsing by deer and changes due to succession. All populations are small, the largest is ~100 plants, and many are less than 10.

Factors that decrease conservation concern: Non-flowering plants senesce early in the summer (by mid July) and may be missed in surveys done later in the season.

This species is SH, S1, S2, or S3 in all adjoining states.