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Abstract

Plant status designations of the Pennsylvania Natural Heritage Program include a category of Tentatively Undetermined (TU) for plants believed to be in danger of population decline but which cannot presently be included within another classification due to insufficient data. Plants classified as TU do not receive protection under the Pennsylvania Wild Plant Conservation Act, nor do they trigger environmental review. Using a combination of field surveys and herbarium research we gathered data to support proposed status changes for five species currently listed as TU to Pennsylvania Endangered (PE), Pennsylvania Threatened (PT), or Pennsylvania extirpated (PX). In addition, we evaluated current and historical records for ten additional TU species for which information remains ambiguous and no clear status recommendations can be made at this time. These recommendations were reviewed by the Rare Plant Forum and the Vascular Plants Technical Committee on April 24, 2010. Recommended changes will be incorporated in the revised regulations now under development by DCNR Bureau of Forestry.

Disciplines

Botany

Comments

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**Field Survey and Status Clarification of PNHP
Tentatively Undetermined Plant Species II**



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August 23, 2010

Cover photo: *Omalotheca sylvatica* (L.) Schultz-Bipontinus [syn: *Gnaphalium sylvaticum* L.]
specimen at the Academy of Natural Sciences of Philadelphia

Abstract

Plant status designations of the Pennsylvania Natural Heritage Program include a category of Tentatively Undetermined (TU) for plants believed to be in danger of population decline but which cannot presently be included within another classification due to insufficient data. Plants classified as TU do not receive protection under the Pennsylvania Wild Plant Conservation Act, nor do they trigger environmental review. Using a combination of field surveys and herbarium research we gathered data to support proposed status changes for five species currently listed as TU to Pennsylvania Endangered (PE), Pennsylvania Threatened (PT), or Pennsylvania extirpated (PX). In addition, we evaluated current and historical records for ten additional TU species for which information remains ambiguous and no clear status recommendations can be made at this time. These recommendations were reviewed by the Rare Plant Forum and the Vascular Plants Technical Committee on April 24, 2010. Recommended changes will be incorporated in the revised regulations now under development by DCNR Bureau of Forestry.

Project Objectives

1. Collect data on the occurrence of Tentatively Undetermined (TU) plant species from herbarium records and other historical sources.
2. Conduct field surveys of historical sites and other sites determined to have probable habitat to determine current status of selected TU plants.
3. Clarify the conservation status of TU plants and recommend a new, more accurate status.

Justification

Plant status designations of the Pennsylvania Natural Heritage Program include a category of Tentatively Undetermined (TU) for plants believed to be in danger of population decline but which cannot presently be included within another classification due to insufficient data. Plants classified as TU do not receive protection under the Pennsylvania Wild Plant Conservation Program (DCNR 1988), nor do they trigger environmental review.

Over the years, a lack of funding and therefore, time commitment on the part of qualified botanists, has resulted in numerous plants being stuck in the TU category. The collection and evaluation of substantial evidence regarding the current status of TU species is critical to achieving appropriate levels of protection for plants of conservation concern in Pennsylvania.

Methods and Materials

Information about extant and historic plant occurrences was compiled from the Pennsylvania Flora Database, Pennsylvania Natural Heritage Database, Herbarium of the Academy of Natural Sciences of Philadelphia, and the Herbarium of the Carnegie Museum in Pittsburgh. Habitat requirements and phenological data were obtained from historical records and analyzed using GIS mapping. Field sites indicated by historical collections were visited; in addition sites where additional habitat was likely to exist were also surveyed. Herbarium specimens were collected to document all element occurrences; specimens were deposited in the herbarium of the Morris Arboretum (MOAR). In addition, field reports on all occurrences were submitted to the Pennsylvania Natural Heritage Program.

Information was compiled and evaluated for 49 additional TU plants and discussed with botanists from the Western Pennsylvania Conservancy/ Pennsylvania Natural Heritage Program and the Bureau of Forestry at a meeting held at the Middletown PNHP office on March 4, 2009.

Products Delivered

Status change recommendations for five plant species were proposed at the Rare Plant Forum of the Vascular Plants Technical Committee of the Pennsylvania Biological Survey held on April 24, 2010 (Table 1).

Table 1. Recommended status changes for selected TU species

| | current | proposed |
|---|---------|----------|
| <i>Cystopteris tennesseensis</i> | TU | PE |
| <i>Dichanthelium yadkinense</i> | TU | PE |
| <i>Juniperus communis</i> var. <i>depressa</i> | TU | PT |
| <i>Omalotheca sylvatica</i> | TU | PX |
| <i>Veronica catenata</i> | TU | DL |

Recommendations for *Cystopteris tennesseensis*, *Dichanthelium yadkinense*, and *Veronica catenata* were approved by the Vascular Plants Technical Committee as proposed. *Juniperus communis* var. *depressa* was approved at PE, and the proposal for *Omalotheca sylvatica* was rejected. Therefore, *Omalotheca sylvatica* remains TU pending field work and/or rediscovery.

Ten additional species were investigated for possible status changes (Table 2). Data on these species remains elusive and/or ambiguous. Therefore, no status changes were proposed for these.

Table 2. Additional species investigated in this study

| |
|---------------------------------|
| <i>Coeloglossum viride</i> |
| <i>Conoclinium coelestinum</i> |
| <i>Elymus trachycaulus</i> |
| <i>Eupatorium rotundifolium</i> |
| <i>Lactuca hirsuta</i> |
| <i>Rosa blanda</i> |
| <i>Rosa virginiana</i> |
| <i>Stellaria borealis</i> |
| <i>Symphotrichum praealtum</i> |
| <i>Viola selkirkii</i> |

Field forms documenting all occurrences of PNHP-listed plants on which we gathered field data in 2010 will be submitted to the Pennsylvania Natural Heritage Program office at Middletown, PA.

Results and Conclusions

Implementation of four status changes as a result of this project will add to the scientific accuracy of plant status classifications in the Pennsylvania Natural Heritage Program by reassigning these species to a status that reflects their current conservation status. In addition these plants will be protected through the Wild Plant Conservation Act and environmental review procedures.

In addition, *Oldenlandia uniflora*, a plant previously unrecorded from Pennsylvania, was discovered at Delhaas Woods in Bucks County this year. This plant is listed as S1 in NY, KY, and MO; S2 in NC; S3 in NJ and MD; and, S4 in DE and VA. This species was recommended for PE status in PA and approved by the Vascular Plants Technical Committee.

Our 2010 field studies also resulted in discovery of additional extant populations of *Eupatorium album*, a plant previously believed to be extirpated in Pennsylvania and now listed as PE.

At this time, after three years of projects funded by the WRCP, we feel we can make no additional recommended changes to the TU list without further extensive field, herbarium, historic, and taxonomic investigations. Such studies, although challenging, could be undertaken with future funding.

Literature Cited

Department of Conservation and Natural Resources. 1988. Pennsylvania Code Title 17. Environmental Resources, Chapter 45. Conservation of Pennsylvania Native Wild Plants. Commonwealth of Pennsylvania, Harrisburg, PA.