

RULES AND REGULATIONS

Title 17—CONSERVATION AND NATURAL RESOURCES

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

[17 PA. CODE CH. 45]

Conservation of Pennsylvania Native Wild Plants

The Department of Conservation and Natural Resources (Department) amends Chapter 45 (relating to conservation of Pennsylvania native wild plants) to read as set forth in Annex A.

A. *Effective Date*

This final-form rulemaking will go into effect upon final-form publication in the *Pennsylvania Bulletin*.

B. *Contact Persons*

The primary contact for questions regarding this final-form rulemaking is Rebecca H. Bowen, Chief, Ecological Services, Bureau of Forestry, Department of Conservation and Natural Resources, P.O. Box 8552, Harrisburg, PA 17105-8552, (717) 787-3444, rebbowen@pa.gov. The secondary contact for questions regarding this final-form rulemaking is Stephen Ekema-Agbaw, Assistant Counsel, Office of Chief Counsel, Department of Conservation and Natural Resources, P.O. Box 8767, Harrisburg, PA 17105, (717) 772-4171, sekema@pa.gov.

C. *Statutory Authority*

This final-form rulemaking is authorized under section 7 of the Wild Resource Conservation Act (WRCA) (32 P.S. § 5307) and sections 305(a)(9) and 313(g) of the Conservation and Natural Resources Act (CNRA) (71 P.S. §§ 1340.305(a)(9) and 1340.313(g)).

Section 7(a) of the WRCA provides that “the [former] Department of Environmental Resources shall. . .conduct investigations on wild plants in order to ascertain information relating to. . .other biological and ecological data to classify plants and to determine management measures necessary for their continued ability to sustain themselves successfully.” Under section 7(c) of the WRCA, “[o]n the basis of such determinations, the Environmental Quality Board shall issue regulations not later than 2 years from the effective date of” the WRCA. Under section 7(c) of the WRCA, “[t]he Environmental Quality Board may add or delete species as conditions change and may modify regulations to reflect the changing environment.”

Section 305(a)(9) of the CNRA transferred to the Department “the powers and duties vested in the Department of Environmental Resources by the. . .Wild Resource Conservation Act.” The former Department of Environmental Resources was the Department’s predecessor in this interest. Section 313(g) of the CNRA transferred to the Department “the powers and duties previously vested in the Environmental Quality Board by. . .[s]ections 7, 8 and 9” of the WRCA.

D. *Purpose and Background*

Purpose

This final-form rulemaking amends Chapter 45 by updating: 1) the classification lists of native wild plants; 2) the scientific and common names of certain native wild

plants; and 3) the reference source that the Department uses for the names of native wild plants.

Regarding updates to the classification lists of native wild plants, this final-form rulemaking amends the following classification lists: Pennsylvania Extirpated (§ 45.11); Pennsylvania Endangered (§ 45.12); Pennsylvania Threatened (§ 45.13); Pennsylvania Rare (§ 45.14); and Tentatively Undetermined (§ 45.21).

This final-form rulemaking amends the classification lists by: 1) adding plants that are currently unclassified to a classification list; 2) reclassifying plants already on a classification list to a new classification; and 3) removing plants from the classification lists altogether (declassifying them).

Process of classifying native wild plants in this Commonwealth

Native wild plant species are those plant species that existed in this Commonwealth prior to European settlement. There are approximately 2,800 native wild plant species that currently exist or formerly existed in this Commonwealth. The Department classifies approximately 1/5 of these species because they are a conservation concern; the other 4/5 are considered secure and thus not classified.

The Department begins the process of classifying native wild plants by collecting and analyzing data on native wild plant species in this Commonwealth. The Department uses the following data to make its classification decisions: numbers of populations known in this Commonwealth; number of individuals within populations; the plant’s range (amount of ground that it covers); threats such as pests, invasive species and habitat loss; decrease or increase in population numbers; and taxonomic information. The previous list is not exhaustive. The Department analyzes this data to determine the population, distribution, habitat needs, limiting factors, and other biological and ecological information about each plant species.

An important piece of data that the Department uses to make classification decisions are referred to as “State ranks.” In this Commonwealth, each plant species receives a State rank from the Pennsylvania Natural Heritage Program (PNHP). The PNHP assigns these ranks based on a methodology created by Nature Serve, an international network of natural heritage programs. The purpose of Nature Serve’s methodology is to bring consistency to the biodiversity conservation efforts of individuals and organizations throughout the Western Hemisphere. This methodology is used across North America, Central America and South America. By using this standard tool, the Department ensures its evaluation methods are, at a minimum, equivalent to that of other states and countries in the Western Hemisphere and that its classification decisions are based on sound science.

Throughout this process the Department also receives data, information and recommendations from the Pennsylvania Biological Survey’s Vascular Plant Technical Committee (Committee). The Committee is composed of professional botanists working throughout this Commonwealth in academic, consulting, governmental and conservation organizations. Each year, the Committee makes classification recommendations for native wild plants based on the research and expertise of its professional botanists.

The Department assimilates and reviews all data and recommendations it collects and receives, and determines the appropriate classifications for each native wild plant species under the definitions in Chapter 45.

Native wild plant classifications

Under section 7(a) of the WRCA, how plants are classified determines the “management measures necessary for their continued ability to sustain themselves successfully.” Native wild plant species that are at risk of extinction in this Commonwealth need greater protection than those less susceptible to this risk. Chapter 45 designates the level of risk facing native wild plant species in this Commonwealth by classifying them as follows:

Pennsylvania Extirpated (§ 45.11)—A classification of plant species believed to be extinct in this Commonwealth. If a plant species classified as Pennsylvania Extirpated is later found to exist in this Commonwealth it will automatically be considered classified as Pennsylvania Endangered.

Pennsylvania Endangered (§ 45.12)—A classification of plant species that are in danger of extinction throughout most or all of their natural range in this Commonwealth if critical habitat is not maintained or if the species is greatly exploited by man. This classification also includes populations of plant species that have been classified as Pennsylvania Extirpated but are subsequently found to exist in this Commonwealth.

Pennsylvania Threatened (§ 45.13)—A classification of plant species that may become endangered throughout most or all of their natural range in this Commonwealth if critical habitat is not maintained to prevent their further decline, or if the species is greatly exploited by man.

Pennsylvania Rare (§ 45.14)—A classification of plant species that are uncommon in this Commonwealth because they have low population numbers or are only found in restricted geographic areas.

Pennsylvania Vulnerable (§ 45.15)—A classification of plant species that are in danger of population decline in this Commonwealth because of their beauty, economic value, use as a cultivar or other factors which indicate that persons may seek to remove these species from their native habitats.

Special Concern Population (§ 45.20)—A classification of plant species that the Department has determined to be a unique occurrence deserving protection. Among the factors used to classify a plant species as a Special Concern Population are the existence of unusual geographic locations, unisexual populations or extraordinarily diverse plant populations.

Tentatively Undetermined (§ 45.21)—A classification of plant species that are in danger of population decline but do not meet the criteria for any other classification due to taxonomic uncertainties, limited historical records or insufficient data.

Updating species nomenclature

This final-form rulemaking updates the scientific and common names of certain native wild plant species to conform to the Department’s new taxonomic source material.

The current nomenclature used to identify species taxonomy in Chapter 45 comes from John T. Kartesz’s 1980 publication, *A Synonymized Checklist of the Vascular Flora of the United States, Canada and Greenland*,

Volume 2: The Biota of North America. The Department now uses *The Plants of Pennsylvania Second Edition* (2007) by Ann Fowler Rhoads and Timothy A. Block as a reference. This final-form rulemaking updates the reference to reflect the most up-to-date information on native wild plants in this Commonwealth. This necessitates an update to the scientific and common names in Chapter 45 to remain consistent with the new source material. Additionally, this rulemaking corrects minor grammatical errors and misspellings of species names.

Pennsylvania Natural Diversity Inventory

The amendments will be incorporated into the Pennsylvania Natural Diversity Inventory (PNDI).

The PNDI is a database that maintains the Department’s list of native wild plant classifications, as well as native rare wildlife classifications from the Game Commission, the Fish and Boat Commission and the United States Fish and Wildlife Service. The PNDI provides the most current, reliable and objective scientific information about ecological resources in this Commonwealth and it is used to help inform environmental decisions in the Commonwealth. Most notably, the Department of Environmental Protection (DEP) uses the PNDI to inform its environmental permitting decisions.

The overwhelming majority of users use the PNDI as part of the process of obtaining a DEP permit. The DEP requires permit applicants to screen their land use projects through the PNDI for potential impacts to threatened or endangered species to receive a DEP permit; threatened and endangered plant species are thereby protected by the DEP’s permitting process.

Although this final-form rulemaking will result in updates to the plant data in the PNDI, this final-form rulemaking will not affect the DEP’s permitting process. The process of obtaining a DEP permit is beyond the scope of this final-form rulemaking. Instead, the PNDI’s connection to this final-form rulemaking is limited to its use of the plant data that will result from the amendments. No person, business, small business or organization will be required to invest in additional administrative procedures as a direct result of this final-form rulemaking.

Finally, because this final-form rulemaking will remove more species from classifications than it adds, there may be fewer classified plant species for prospective DEP permit applicants to account for when applying to obtain DEP permits. Depending on the project type, location and classified plant species in question, prospective DEP permit applicants may see no change in the amount of mitigation required to address impacts to threatened and endangered species and fulfil permit requirements.

E. Response to Comments

The Department published notice of the proposed rulemaking at 47 Pa.B. 7210 (November 25, 2017), with a 30-day public comment period. The Department received 14 comments from the public, two of which were substantively identical. The Department did not receive any comments from the Independent Regulatory Review Commission (IRRC) or the Senate and House Environmental Resources and Energy Committees.

The public comments were overwhelmingly positive and praised the Department for updating Pennsylvania’s native wild plant classifications. Commenters were generally concerned with ensuring that this Commonwealth’s most vulnerable plants were properly identified for protection. Additionally, commenters commended the Depart-

ment for relying on the most current scientific data in classifying the plants in this final-form rulemaking.

The Department addressed the comments from the public in a comment and response document. To obtain a copy of this document contact Rebecca Bowen by the contact information provided in section B.

F. *Summary of this Final-Form Rulemaking and Changes from Proposed to Final-Form Rulemaking*

Subchapter A. General provisions

The definition of “unlisted” will be deleted from § 45.2 (relating to definitions) because it is not used in Chapter 45.

Amendments to § 45.3 (relating to classified plant taxonomy) update the taxonomic source material that the Department uses for the nomenclature of native wild plants from John T. Kartesz and Rosemarie Kartesz, *A Synonymized Checklist of the Vascular Flora of the United States, Canada and Greenland, Volume 2: The Biota of North America* (1980), to Ann Fowler Rhoads and Timothy A. Block, *The Plants of Pennsylvania An Illustrated Manual Second Edition* (2007), Philadelphia, Pennsylvania: University of Pennsylvania Press.

Subchapter B. Classified plants

There are 130 substantive amendments to Subchapter B (relating to classified plants), with 79 name changes and 51 classification changes. The substantive amendments include: 9 currently unclassified plant species to be newly classified; 11 currently classified plant species to be reclassified; 31 currently classified plant species to be unclassified; and 79 currently classified plant species with name changes.

For the purposes of this final-form rulemaking, a substantive name change is one that changes the meaning of the plant name (see the following “plant name changes” section). This final-form rulemaking makes minor grammatical corrections to plant names (that is, adding periods, deleting commas and fixing spelling errors) that do not change the meaning of the plant name and are therefore not substantive.

Changes from Proposed to Final-Form Rulemaking

The Department did not make any changes to the Annex from the proposed to this final-form rulemaking. The Department received overwhelming public support for this rulemaking during the public comment period.

Newly classified and reclassified plant species

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current</i>	<i>Final</i>	<i>Reason for Change</i>	<i>Habitat / Identification Window</i>
<i>Asclepias variegata</i> L.	White Milkweed	TU	PE	Population decrease; habitat decline	Dry woods; flowers late May—July
<i>Baptisia australis</i> (L.) R. Br.	Blue False Indigo	N	PT	Population decrease; unique/rare habitat	River cobble bars and banks; flowers May—June, identifiable most months by leaf and seed pod
<i>Coeloglossum viride</i> (L.) Hartm.	Long-Bracted Green Orchis	TU	PE	Population decrease; vulnerable to exploitation	Rich woods; flowers May—August
<i>Cypripedium parviflorum</i> Salisb. var. <i>makasin</i> (Source: <i>Flora of North America</i>)	Northern Small Yellow Lady’s-Slipper	N	PE	Taxon split into distinct subspecies; low numbers; unique/rare habitat; vulnerable to exploitation	Moist woods, bogs; flowers April—June
<i>Epilobium strictum</i> Muhl.	Downy Willow-Herb	PE	PR	Population increase; habitat decline; unique/rare habitat	Wet meadows, marshes, fens, thickets; flowers July—September
<i>Equisetum scirpoides</i> Michx. (Source: <i>Flora of North America</i>)	Dwarf Scouring-Rush	N	PE	Recent discovery in this Commonwealth; low numbers; unique/rare habitat	Wet woods and peaty openings; identifiable year-round
<i>Fraxinus profunda</i> (Bush) Bush	Pumpkin Ash	N	PE	Low numbers; unique/rare habitat; vulnerable to exotic pest	Wet bottomland forest, often in shallow water; identifiable year-round
<i>Goodyera tessellata</i> Lodd.	Checkered Rattlesnake-Plantain	TU	PE	Population decrease; habitat decline; vulnerable to exploitation	Moist coniferous and deciduous forest; flowers July—early September
<i>Lycopodiella margueritae</i> J. G. Bruce, W. H. Wagner & Beitel	Marguerite’s Clubmoss	N	PE	Low numbers; global rarity; unique/rare habitat; vulnerable to exploitation	Moist sandy wetlands and shores; sporulates August—October
<i>Lysimachia quadriflora</i> Sims	Four-Flowered Loosestrife	TU	PX	Population extirpated	Wet meadows, fens; flowers July—August

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current</i>	<i>Final</i>	<i>Reason for Change</i>	<i>Habitat / Identification Window</i>
<i>Malaxis bayardii</i> Fernald	Adder's-Mouth	PR	PE	Population decrease; global rarity; vulnerable to exploitation	Dry open upland forest, shale barrens; flowers July—September
<i>Platanthera aquilonis</i> Sheviak, Lindleyana (Source: <i>Flora of North America</i>)	Northern Green Orchid	N	PE	Taxon split into distinct species; low numbers; vulnerable to exploitation	Wet meadows, marshes, fens, stream banks, moist deciduous forest slopes; flowers June—August
<i>Platanthera huronensis</i> (Nutt.) Lindl.	Huron Green Orchid	N	PE	Taxon split into distinct species; low numbers; vulnerable to exploitation	Wet meadows, bogs, woods; flowers June—August
<i>Platanthera peramoena</i> (A. Gray) A. Gray	Purple Fringeless Orchid	TU	PT	Low numbers; unique/rare habitat; vulnerable to exploitation	Moist meadows, low wet woods, ditches; flowers July—August
<i>Potentilla anserina</i> L.	Silverweed	PT	PR	Unique/rare habitat; tolerant of disturbance	Moist sandy or gravelly shores, or ballast; flowers May—June, identifiable by leaf spring—fall
<i>Ratibida pinnata</i> (Vent.) Barnhart	Gray-Headed Prairie Coneflower	TU	PE	Population decrease	Dry fields, limestone uplands, open roadsides; flowers June—August
<i>Rubus cuneifolius</i> Pursh	Sand Blackberry	TU	PE	Population decrease; habitat decline; unique/rare habitat	Sandy dry open thickets and roadsides; flowers May—June, fruits in July, identifiable by leaf spring—fall
<i>Solidago uliginosa</i> Nutt.	Bog Goldenrod	N	PT	Population decrease; unique/rare habitat	Bogs, swamps, wet meadows, fens; flowers August—October
<i>Vitis rupestris</i> Scheele	Sand Grape	PX	PE	Recent rediscovery in this Commonwealth; low numbers; global rarity; unique/rare habitat	River cobble bars and banks; flowers in May, fruits August—November; identifiable by leaf spring—fall
<i>Zigadenus glaucus</i> (Nutt.) Nutt.	White Camas	N	PE	Recent discovery in this Commonwealth; low numbers; unique/rare habitat	Limestone ledges; flowers in August

Key: N—Currently Unclassified; PX—Pennsylvania Extirpated (§ 45.11); PE—Pennsylvania Endangered (§ 45.12); PT—Pennsylvania Threatened (§ 45.13); PR—Pennsylvania Rare (§ 45.14); PV—Pennsylvania Vulnerable (§ 45.15); TU—Tentatively Undetermined (§ 45.21)

Classified plant species being declassified

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current</i>	<i>Final</i>	<i>Reason for Change</i>	<i>Habitat / Identification</i>
<i>Alopecurus carolinianus</i> Walt.	Tufted Foxtail	PE	DC	Determined to be nonnative to this Commonwealth; determined to be invasive; high numbers	Swamps, ditches, moist meadows; flowers late May—June
<i>Aster firmus</i> Nees	Firm Aster	TU	DC	Tolerant of disturbance; high numbers	Wet meadows, swamps, fens; flowers August—October

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current</i>	<i>Final</i>	<i>Reason for Change</i>	<i>Habitat / Identification</i>
<i>Atriplex littoralis</i> L.	Seaside Orach	PX	DC	Recent rediscovery in this Commonwealth; determined to be nonnative to this Commonwealth	Coastal areas, beaches, salt-treated roadsides; flowers/fruits August—November
<i>Cynanchum laeve</i> (Michx.) Pers.	Smooth Swallow-Wort	PE	DC	Population increase; determined to be invasive; tolerant of disturbance	River banks, agricultural fields, roadsides; flowers July—August
<i>Elephantopus carolinianus</i> Raeusch.	Elephant's-Foot	PE	DC	Population increase; tolerant of disturbance	Open woodlands, woodland borders, serpentine barrens; flowers August—October
<i>Elodea canadensis</i> L. C. Rich.	Broad Waterweed (Male Plants)	TU	DC	High population numbers	Shallow water of rivers, creeks, lakes, ponds; flowers late June—early August
<i>Juncus gymnocarpus</i> Coville	Coville's Rush	PR	DC	Population increase; tolerant of disturbance	Swamps, seeps, springheads; flowers/fruits in summer
<i>Lemna obscura</i> (Austin) Daubs	Little Water Duckweed	PX	DC	Determined to be nonnative to this Commonwealth; tolerant of disturbance	Shallow water, often in disturbed areas; identifiable by leaf spring—fall
<i>Lycopodium selago</i> L.	Mountain Clubmoss	PX	DC	Misidentified; redetermination	Cool boreal cliffs, forests, meadows, shores; sporulates July—September
<i>Myriophyllum heterophyllum</i> (Michx.)	Broad-Leaved Water-Milfoil	PE	DC	Recent rediscovery in this Commonwealth; determined to be nonnative to this Commonwealth	Still water of ponds, lakes; flowers June—July
<i>Nelumbo lutea</i> (Willd.) Pers.	American Lotus	PE	DC	Determined to be nonnative to this Commonwealth; determined to be invasive	Ponds and other quiet water; flowers June—September
<i>Panicum bicknellii</i> Nash (Fernald, M. L., <i>Gray's Manual of Botany</i> , 1970, Eighth Edition)	Bicknell's Panic-Grass	TU	DC	Taxonomic uncertainties	Wet or moist sandy woods; flowers May—early July and late summer—early fall
<i>Panicum longiligulatum</i> Nash (Morris Arboretum, 1992, Pennsylvania Flora Database)	Long-Ligule Panic-Grass	TU	DC	Taxon lumped with another species	Dry woods, slopes, clearings; flowers May—early July and late summer—early fall
<i>Panicum recognitum</i> Fern. (Morris Arboretum, 1992, Pennsylvania Flora Database)	Fernald's Panic-Grass	TU	DC	Taxon lumped with another species	Moist sandy woods; flowers May—early July and late summer—early fall
<i>Paronychia fastigiata</i> (Raf.) Fern. var. <i>paleacea</i> Fern.	Chaffy Whitlow Wort	TU	DC	Taxon lumped with another species	Dry, rocky, sandy open woods and edges; flowers July—September

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current</i>	<i>Final</i>	<i>Reason for Change</i>	<i>Habitat / Identification</i>
<i>Platanthera hyperborea</i> (L.) Lindl.	Leafy Northern Green Orchid	PE	DC	Misidentified; redetermination	Wet tundra, stream banks; flowers July—August
<i>Polygonum robustius</i> (Small) Fern.	Robust Smartweed	PT	DC	Population increase; disturbance tolerant	Swamps, lake shores, streams; flowers July—October
<i>Potamogeton illinoensis</i> Morong	Illinois Pondweed	TU	DC	High numbers; disturbance tolerant	Rivers, streams, lakes, ponds; flowers/fruits summer—fall
<i>Prenanthes crepidinea</i> Michx.	Crepis Rattlesnake-Root	PE	DC	Population increase	Open and forested floodplains, banks; flowers August—November
<i>Pycnanthemum pycnanthemoides</i> (Leavenw.) Fern.	Southern Mountain-Mint	PE	DC	Misidentified; redetermination	Open habitat; flowers July—September
<i>Solidago purshii</i> Porter	Pursh's Goldenrod	TU	DC	Taxon lumped with another species	Bogs, swamps, sedge meadows, fens; flowers August—October
<i>Spirodela punctata</i> (Mey.) C. H. Thompson	Eastern Water-Flaxseed	TU	DC	Determined to be nonnative to this Commonwealth	Ponds, lakes, swamps, sluggish streams; identifiable by leaf spring—fall
<i>Tradescantia ohioensis</i> Raf.	Ohio Spiderwort	TU	DC	High numbers; disturbance tolerant	Alluvial woods, waste ground; flowers May—July
<i>Trautvetteria caroliniensis</i> (Walt.) Vail	Carolina Tassel-Rue	PR	DC	High numbers; disturbance tolerant	Wooded seepage slopes, stream banks, bogs; June—July
<i>Utricularia inflata</i> Walt.	Floating Bladderwort	PX	DC	Determined to be nonnative to this Commonwealth; determined to be invasive	Lakes, ponds, standing water; flowers May—October
<i>Utricularia minor</i> L.	Lesser Bladderwort	PT	DC	Population increase; disturbance tolerant; determined to be invasive	Lakes, ponds, swamps, standing water; flowers June—August
<i>Utricularia purpurea</i> Walt.	Purple Bladderwort	PR	DC	Population increase; disturbance tolerant	Lakes, ponds, standing water; flowers July—early September
<i>Veronica catenata</i> Pennell	Pennell's Speedwell	TU	DC	Taxonomic uncertainties	Wet fields, ditches, stream edges in shallow water; flowers May—September
<i>Viola nephrophylla</i> Greene	Northern Bog Violet	TU	DC	Misidentified; redetermination	Bogs, wet meadows, ditches, stream banks; flowers May—July
<i>Viola pedatifida</i> G. Don	Prairie Violet	PE	DC	Misidentified; redetermination	Open prairies, savannas; flowers April—June
<i>Zannichellia palustris</i> L.	Horned Pondweed	TU	DC	Population increase; disturbance tolerant	Streams, ponds, lakes, springs, tidal mudflats; flowers May—October

Key: DC—Declassified; N—Currently Unclassified; PX—Pennsylvania Extirpated (§ 45.11); PE—Pennsylvania Endangered (§ 45.12); PT—Pennsylvania Threatened (§ 45.13); PR—Pennsylvania Rare (§ 45.14); PV—Pennsylvania Vulnerable (§ 45.15); TU—Tentatively Undetermined (§ 45.21)

Plant name changes

Pennsylvania Extirpated (§ 45.11)

The names of 16 native wild plant species classified as Pennsylvania Extirpated will be amended as follows:

Carex aenea Fern. to *Carex foenea* Willd.

Erianthus giganteus (Walt.) Muhl. to *Saccharum giganteum* (Walter) Pers.

Eupatorium album L. to *Eupatorium album* L. var *album*

Gentianopsis procera (Holm) Ma. to *Gentianopsis virgata* (Raf.) Holub

Helianthus angustifolius L. to *Helianthus angustifolius* L.

Hypericum stans (Michx.) P. Adams & Robson to *Hypericum crux-andreae* (L.) Crantz

Koeleria cristata (L.) Pers. to *Koeleria macrantha* (Ledeb.) Schultes

Lycopodium sabinifolium Willd. to *Diphasiastrum sabinifolium* (Willd.) Holub.

Panicum leibergii (Vasey) Scribn. (Gleason, H. A. and A. Cronquist, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 1991, Second Edition) to *Dichantherium leibergii* (Vasey) Freckmann

Panicum spretum Schultes (Gleason, H. A. and A. Cronquist, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 1991, Second Edition) to *Dichantherium spretum* (Schult.) Freckmann

Phoradendron serotinum (Raf.) M. C. Johnston to *Phoradendron leucarpum* (Raf.) Reveal & M. C. Johnst.

Sagittaria stagnorum Small to *Sagittaria filiformis* J. G. Sm.

Scirpus heterochaetus Chase to *Schoenoplectus heterochaetus* Chase (Sojak)

Sisyrinchium arenicola E. P. Bickn. to *Sisyrinchium fuscatum* E. P. Bicknell

Sparganium minimum (Hartm.) Fries to *Sparganium natans* L.

Triglochin palustre L. to *Triglochin palustris* L.

Pennsylvania Endangered (§ 45.12)

The names of 28 native wild plant species classified as Pennsylvania Endangered will be amended as follows:

Alisma plantago-aquatica L. var. *americana* Schultes & Schultes to *Alisma triviale* Pursh

Aster borealis (Torr. & Gray) Prov. to *Symphyotrichum boreale* (Torr. & Gray) Á Löve & D. Löve

Aster nemoralis Ait. to *Oclemena nemoralis* (Aiton) E. Greene

Aster solidagineus Michx. to *Sericocarpus linifolius* (L.) Britton, Stearns & Poggenb.

Aster spectabilis Ait. to *Eurybia spectabilis* (Aiton) Nesom

Cerastium arvense (L.) var. *villosissimum* Pennell to *Cerastium velutinum* Raf. var. *villossissimum* (Pennell) J. K. Morton

Cymophyllus fraseri (Andr.) Mackenzie to *Cymophyllus fraserianus* (Ker Gawl.) Kartesz & Gandhi

Cypripedium parviflorum Salisb. to *Cypripedium parviflorum* Salisb. var. *parviflorum* (Source: *Flora of North America*)

Frasera caroliniensis Walt. to *Swertia caroliniensis* (Walter) Kuntze

Hemicarpha micrantha (Vahl) Britt. to *Lipocarpa micrantha* (Vahl) G. C. Tucker

Lycopodium alopecuroides L. to *Lycopodiella alopecuroides* (L.) Cranfill

Lycopodium porophilum Lloyd & Underwood to *Huperzia porophila* (F. E. Lloyd & Underw.) Holub

Megalodonta beekii (Torr. ex Spreng.) Greene to *Bidens beekii* (Torr. ex Spreng.) Greene

Myriophyllum exalbescens Fern. to *Myriophyllum sibiricum* Komarov

Onosmodium hispidissimum Mackenzie to *Onosmodium molle* Michx. var. *hispidissimum* (Mack.) Cronquist

Oryzopsis pungens (Torr. ex Spreng.) A. S. Hitchc. to *Piptatherum pungens* (Torr. ex Spreng.) Dorn

Panicum scoparium (Lam.) Gould (Morris Arboretum, 1992, Pennsylvania Flora Database) to *Dichantherium scoparium* (Lam.) Gould

Panicum xanthophysum (Gray) Freckmann (Morris Arboretum, 1992, Pennsylvania Flora Database) to *Dichantherium xanthophysum* (A. Gray) Freckmann

Polygonum careyi Olney to *Persicaria careyi* (Olney) Greene

Polygonum setaceum Baldw. ex Ell. var. *interjectum* Fern. to *Persicaria setacea* (Baldwin) Small

Sagittaria calycina Engelm. var. *spongiosa* Engelm. to *Sagittaria calycina* Engelm.

Scirpus acutus Muhl. ex Bigelow to *Schoenoplectus acutus* (Muhl. Ex Bigel.) Löve & Löve

Scirpus smithii Gray to *Schoenoplectus smithii* (A. Gray) Sojak

Scirpus torreyi Olney to *Schoenoplectus torreyi* (Olney) Palla

Scleria reticularis Michx. to *Scleria muhlenbergii* Steud.

Senecio antennariifolius Britt. to *Packera antennariifolia* (Britton) W. A. Weber Á Löve

Solidago spathula DC. spp. *randii* var. *racemosa* (Greene) Gleason to *Solidago simplex* Kunth ssp. *randii* (Porter) Ringius var. *racemosa* (Greene) Ringius

Tomanthera auriculata (Michx.) Raf. to *Agalinis auriculata* (Michx.) S. F. Blake

Pennsylvania Threatened (§ 45.13)

The names of nine native wild plant species classified as Pennsylvania Threatened will be amended as follows:

Aster depauperatus (Porter) Fern. to *Symphyotrichum depauperatum* (Fernald) Nesom

Aster novi-belgii L. to *Symphyotrichum novi-belgii* (L.) Nesom var. *novi-belgii*

Cimicifuga americana Michx. to *Actaea podocarpa* DC

Euthamia tenuifolia (Pursh) Greene to *Euthamia caroliniana* (L.) Greene ex Porter & Britton

Juncus alpinus Vill. to *Juncus alpinoarticulatus* Chaix in Vill. ssp. *nodulosus* (Wahlenb.) Hamet-Ahti.

Juncus balticus Willd. to *Juncus arcticus* Willd. var. *littoralis* (Engelm.) Boivin.

Lycopodium appressum (Chapman) Lloyd & Underwood to *Lycopodiella appressa* (Chapm.) Cranfill

Spiraea betulifolia Pallas ssp. *corymbosa* (Raf.) Taylor & MacBryde to *Spiraea betulifolia* Pallas var. *corymbosa* (Raf.) Maxim.

Talinum teretifolium Pursh to *Phemeranthus teretifolius* (Pursh) Raf.

Pennsylvania Rare (§ 45.14)

The names of four native wild plant species classified as Pennsylvania Rare will be amended as follows:

Panicum commonsianum Ashe var. *euchlamydeum* (Skinners) Pohl (Morris Arboretum, 1992, Pennsylvania Flora Database) to *Dichanthelium commonsianum* (Ashe) Freckmann var. *euchlamydeum* (Shinners) Pohl

Prunus pumila L. to *Prunus pumila* L. var. *pumila*

Scirpus fluviatilis (Torr.) Gray to *Schoenoplectus fluviatilis* (Torr.) Strong

Senecio anonymus Wood to *Packera anonyma* (A. W. Wood) W. A. Weber & Å Löve

Pennsylvania Vulnerable (§ 45.15)

The name of *Cypripedium pubescens* Willd. will be amended to *Cypripedium parviflorum* Salisb. var. *pubescens* (Willd.) Correll.

Tentatively Undetermined (§ 45.21)

The names of 21 native wild plant species classified as tentatively undetermined will be amended as follows:

Aristida curtissii (Gray) Nash to *Aristida dichotoma* Michx. var. *curtissii* A. Gray

Aster dumosus L. to *Symphotrichum dumosum* (L.) Nesom

Aster ericoides L. to *Symphotrichum ericoides* (L.) Nesom

Cassia marilandica L. to *Senna marilandica* (L.) Link

Hedyotis purpurea (L.) Torr. & Gray to *Houstonia purpurea* L. var. *purpurea*

Liatris scariosa (L.) Willd. var. *nieuwlandii* Lunell and *Liatris scariosa* (L.) Willd. var. *novae-angliae* Lunell combined *Liatris scariosa* (L.) Willd.

Malaxis brachypoda (Gray) Fern. to *Malaxis monophylla* (L.) Swartz var. *brachypoda* (A. Gray) F. Morris & E. A. Eames

Nuphar lutea (L.) Sibthorp & Sm. ssp. *pumilum* (Timm) E. O. Beal to *Nuphar microphylla* (Pers.) Fernald

Panicum annulum Ashe (Morris Arboretum, 1992, Pennsylvania Flora Database) to *Dichanthelium annulum* (Ashe) LeBlond

Panicum boreale Nash (Gleason, H. A. and A. Cronquist, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 1991, Second Edition) to *Dichanthelium boreale* (Nash) Freckmann

Panicum commonsianum Ashe var. *commonsianum* (Morris Arboretum, 1992, Pennsylvania Flora Database) to *Dichanthelium commonsianum* (Ashe) Freckmann

Panicum lucidum Ashe (Fernald, M. L., *Gray's Manual of Botany*, 1970, Eighth Edition) to *Dichanthelium lucidum* (Ashe) LeBlond

Panicum villosissimum Nash (Gleason, H. A. and A. Cronquist, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 1991, Second Edition) to *Dichanthelium villosissimum* (Nash) Freckmann

Panicum yadkinense Ashe (Gleason, H. A. and A. Cronquist, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 1991, Second Edition) to *Dichanthelium yadkinense* (Ashe) Mohlenbr.

Potamogeton filiformis Pers. to *Potamogeton filiformis* Pers. var. *borealis* (Raf.) St. John

Pycnanthemum pilosum Nutt. to *Pycnanthemum verticillatum* (Michx.) Pers. var. *pilosum* (Nutt.) Cooperr.

Ranunculus trichophyllus Chaix (Gleason, H. A. and A. Cronquist, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 1991, Second Edition) to *Ranunculus aquatilis* L. var. *diffusus* With.

Rhynchospora globularis (Chapman) Small to *Rhynchospora recognita* (Gale) Kral

Senecio plattensis Nutt. to *Packera plattensis* (Nutt.) W. A. Weber & Å Löve

Uvularia puberula Michx. to *Uvularia pudica* Michx. G. *Benefits, Costs and Compliance*

Benefits

This final-form rulemaking will benefit State, county and municipal conservation planning officials, conservation groups and other organizations concerned with the welfare of the environment because it more accurately represents the plants in this Commonwealth in need of the most protection. Additionally, this rulemaking benefits the citizens of this Commonwealth by protecting this Commonwealth's natural resources, which is a constitutional right. See Pa.Const. Art. I, § 27.

Keeping up-to-date classifications of native wild plants, ensures that the Department and other public and private conservation organizations are targeting the appropriate species in their conservation efforts. This will help maintain the biodiversity of ecological systems in this Commonwealth.

Compliance costs

This final-form rulemaking does not prescribe anything for a group or entity to comply with. This final-form rulemaking updates the Commonwealth's classified lists of native wild plants, updates the scientific and common names of certain native wild plant species, and updates the reference source of the nomenclature that the Department uses for native wild plant species taxonomy. There are no compliance costs associated with this final-form rulemaking.

Paperwork requirements

There will be no increase in the amount of required paperwork associated with this final-form rulemaking.

H. Sunset Review

The regulations will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.

I. Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on November 6, 2017, the Department submitted a copy of the proposed rulemaking and a copy of a Regulatory Analysis Form to IRRC and to the Chairpersons of the Senate and House Environmental

Resources and Energy Committees. A copy of this material is available to the public upon request.

Under section 5(c) of the Regulatory Review Act, the Department provided IRRC and the Senate and House Committees with copies of the comments the Department received during the public comment period, as well as other documents when requested. The Department considered all comments from IRRC and the public in preparing this final-form rulemaking.

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on October 17, 2018 the final-form rulemaking was deemed approved by the Senate and House Committees. IRRC did not comment on, make recommendations regarding, or object to any portion of the proposed rulemaking, and the Department did not make any changes to the proposed rulemaking. Thus, under section 5.1(e) of the Regulatory Review Act (71 P.S. § 745.5a(e)), IRRC met on October 18, 2018, and the final-form rulemaking was deemed approved under 5(g) of the Regulatory Review Act.

J. Findings

The Department finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) At least a 30-day public comment period was provided as required by law and all comments were considered.

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 47 Pa.B. 7210.

(4) This final-form rulemaking is necessary and appropriate for administration and enforcement of the authorizing acts identified in section C of this preamble.

K. Order

The Department, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 17 Pa. Code Ch. 45, are amended by amending §§ 45.2, 45.3, 45.11—45.15 and 45.21 to read as set forth in Annex A.

(b) The Department shall submit this final-form regulation to the Office of General Counsel and Office of Attorney General, as required by law, for approval as to form and legality.

(c) The Department shall submit this final-form regulation to the IRRC and the Senate and House Environmental Resources and Energy Committees as required by law.

(d) The Department shall certify this final-form regulation and deposit it with the Legislative Reference Bureau, as required by law.

(e) This final-form rulemaking shall take effect upon publication in the *Pennsylvania Bulletin*.

CINDY ADAMS DUNN,
Secretary

(*Editor's Note:* See 48 Pa.B. 7085 (November 3, 2018) for IRRC's approval order.)

Fiscal Note: Fiscal Note 7B-08 remains valid for the final adoption of the subject regulations.

Annex A

TITLE 17. CONSERVATION AND NATURAL RESOURCES

PART I. DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

Subpart D. RESOURCE CONSERVATION

CHAPTER 45. CONSERVATION OF PENNSYLVANIA NATIVE WILD PLANTS

Subchapter A. GENERAL PROVISIONS

§ 45.2. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

Tentatively Undetermined—A classification of plant species which are believed to be in danger of population decline, but which cannot presently be included within another classification due to taxonomic uncertainties, limited evidence within historical records or insufficient data.

Wild plants—Naturally occurring native flora, except those commonly considered an agricultural commodity, including green and nongreen species or subspecies, variety or a part, product, seed or progeny thereof.

§ 45.3. Classified plant taxonomy.

Nomenclature used to identify species taxonomy in Subchapter B (relating to classified plants) is according to Rhoads, A. F. and Block, T. A. (2007), *The Plants of Pennsylvania An Illustrated Manual Second Edition*, Philadelphia, Pennsylvania: University of Pennsylvania Press., unless a different taxonomic source is indicated immediately following the scientific name.

Subchapter B. CLASSIFIED PLANTS

§ 45.11. Pennsylvania Extirpated.

Plant species classified as Pennsylvania Extirpated are as follows:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Aeschynomene virginica</i> (L.) Britton, Stearns & Poggenb.	Sensitive Joint-Vetch
<i>Agalinis decemloba</i> (Greene) Pennell	Blue Ridge False Foxglove
<i>Agrostis altissima</i> (Walter) Tuck.	Tall Bentgrass
<i>Arctostaphylos uva-ursi</i> (L.) Spreng.	Bearberry Manzanita
<i>Asclepias rubra</i> L.	Red Milkweed
<i>Astragalus neglectus</i> (Torr. & A. Gray) Sheldon	Cooper's Milk-Vetch
<i>Berberis canadensis</i> P. Mill.	American Barberry

<i>Scientific Name</i>	<i>Common Name</i>
<i>Buchnera americana</i> L.	Bluehearts
<i>Carex adusta</i> Boott	Crowded Sedge
<i>Carex alopecoidea</i> Tuckerman	Foxtail Sedge
<i>Carex backii</i> Boott	Rocky Mountain Sedge
<i>Carex barrattii</i> Schwein. & Torr.	Barratt's Sedge
<i>Carex chordorrhiza</i> L.f.	Creeping Sedge
<i>Carex foenea</i> Willd.	Fernald's Hay Sedge
<i>Carex hyalinolepis</i> Steud.	Shoreline Sedge
<i>Carex nigra</i> (L.) Reichard	Black Sedge
<i>Carex sartwellii</i> Dewey	Sartwell's Sedge
<i>Chamaecyparis thyoides</i> (L.) Britton, Stearns & Poggenb.	Atlantic White-Cedar
<i>Commelina erecta</i> L.	Slender Dayflower
<i>Commelina virginica</i> L.	Virginia Dayflower
<i>Coreopsis rosea</i> Nutt.	Pink Tickseed
<i>Crassula aquatica</i> (L.) Schönland	Water-Pigmyweed
<i>Crotonopsis elliptica</i> Willd.	Elliptical Rushfoil
<i>Cynoglossum boreale</i> Fernald	Northern Hound's Tongue
<i>Cyperus polystachyos</i> Rottb.	Many-Spiked Flatsedge
<i>Cypripedium candidum</i> Muhl. ex Willd.	Small White Lady's-Slipper
<i>Desmodium sessilifolium</i> (Torr.) Torr. and A. Gray	Sessile-Leaved Tick Trefoil
<i>Dichanthelium leibergii</i> (Vasey) Freckmann	Leiberg's Panic Grass
<i>Dichanthelium spretum</i> (Schult.) Freckmann	Eaton's Witchgrass
<i>Diphasiastrum sabinifolium</i> (Willd.) Holub.	Fir Clubmoss
<i>Distichlis spicata</i> (L.) Greene	Sea-Shore Salt-Grass
<i>Draba reptans</i> (Lam.) Fernald	Carolina Whitlow-Grass
<i>Echinacea laevigata</i> (C. L. Boynton & Beadle) S. F. Blake	Smooth Purple Coneflower
<i>Elatine americana</i> (Pursh) Arn.	Long-Stem Waterwort
<i>Eleocharis tricostata</i> Torr.	Three-Ribbed Spike-Rush
<i>Eleocharis tuberculosa</i> (Michx.) Roem. & Schult.	Long-Tuberclcd Spike-Rush
<i>Elodea schweinitzii</i> (Planch) Casp.	Schweinitz's Waterweed
<i>Eriocaulon decangulare</i> L.	Ten-Angle Pipewort
<i>Eriocaulon parkeri</i> B. L. Rob.	Parker's Pipewort
<i>Eryngium aquaticum</i> L.	Marsh Eryngo
<i>Eupatorium album</i> L. var <i>album</i>	White Thoroughwort
<i>Eupatorium leucolepis</i> (DC) Torr. & A. Gray	White-Bracted Thoroughwort
<i>Euphorbia obtusata</i> Pursh	Blunt-Leaved Spurge
<i>Fimbristylis puberula</i> (Michx.) Vahl	Hairy Fimbry
<i>Galactia regularis</i> (L.) Britton, Stearns & Poggenb.	Eastern Milk-Pea
<i>Galactia volubilis</i> (L.) Britton	Downy Milk-Pea
<i>Gentiana catesbaei</i> Walter	Elliott's Gentian
<i>Gentianopsis virgata</i> (Raf.) Holub	Narrow-Leaved Fringed Gentian
<i>Helianthus angustifolius</i> L.	Swamp Sunflower
<i>Hordeum pusillum</i> Nutt. Á Löve	Little-Barley
<i>Hottonia inflata</i> Elliott	American Featherfoil
<i>Hydrocotyle umbellata</i> L.	Many-Flowered Pennywort
<i>Hypericum adpressum</i> Raf. ex Barton	Creeping St. John's-Wort
<i>Hypericum crux-andreae</i> (L.) Crantz	St. Peter's-Wort
<i>Hypericum denticulatum</i> Walter	Coppery St. John's-Wort

<i>Scientific Name</i>	<i>Common Name</i>
<i>Hypericum gymnanthum</i> Engelm. & A. Gray	Clasping-Leaved St. John's-Wort
<i>Ilex glabra</i> (L.) A. Gray	Inkberry
<i>Itea virginica</i> L.	Virginia-Willow
<i>Juncus greenii</i> Oakes & Tuck.	Greene's Rush
<i>Koeleria macrantha</i> (Ledeb.) Schultes	Junegrass
<i>Leiophyllum buxifolium</i> (Berg.) Elliott	Sand-Myrtle
<i>Lespedeza stuevei</i> Nutt.	Tall Bush-Clover
<i>Limosella australis</i> R. Br.	Awl-Shaped Mudwort
<i>Lobelia nuttallii</i> Roem. & Schult.	Nuttall's Lobelia
<i>Ludwigia sphaerocarpa</i> Elliott	Spherical-Fruited Seedbox
<i>Lysimachia quadriflora</i> Sims	Four-Flowered Loosestrife
<i>Matelea carolinensis</i> (Jacq.) Woods.	Carolina Milkvine
<i>Micranthemum micranthemoides</i> (Nutt.) Wettst.	Nuttall's Mud-Flower
<i>Muhlenbergia capillaris</i> (Lam.) Trin.	Short Muhly
<i>Myrica heterophylla</i> Raf.	Evergreen Bayberry
<i>Onosmodium virginianum</i> (L.) A. DC.	Virginia False Gromwell
<i>Ophioglossum vulgatum</i> L. var. <i>pyncostichum</i> Fernald	Adders Tongue
<i>Phoradendron leucarpum</i> (Raf.) Reveal & M. C. Johnst.	Christmas Mistletoe
<i>Phyllanthus caroliniensis</i> Walt.	Carolina Leaf-Flower
<i>Platanthera cristata</i> (Michx.) Lindl.	Crested Yellow Orchid
<i>Platanthera leucophaea</i> (Nutt.) Lindl.	Prairie White-Fringed Orchid
<i>Polygala lutea</i> L.	Yellow Milkwort
<i>Populus heterophylla</i> L.	Swamp Cottonwood
<i>Potamogeton alpinus</i> Balbis	Northern Pondweed
<i>Potamogeton praelongus</i> Wulfen	White-Stem Pondweed
<i>Prenanthes racemosa</i> Michx.	Glaucous Rattlesnake-Root
<i>Proserpinaca pectinata</i> Lam.	Comb-Leaved Mermaid-Weed
<i>Ranunculus hederaceus</i> L.	Long-Stalked Crowfoot
<i>Rhododendron calendulaceum</i> (Michx.) Torr.	Flame Azalea
<i>Rhynchospora fusca</i> (L.) Aiton f.	Brown Beak-Rush
<i>Rhynchospora gracilentia</i> A. Gray	Beak-Rush
<i>Ruellia caroliniensis</i> (Walter ex J. F. Gmel.) Steud.	Carolina Petunia
<i>Sabatia campanulata</i> (L.) Torr.	Slender Marsh-Pink
<i>Sabatia stellaris</i> Pursh	Sea Pink
<i>Saccharum giganteum</i> (Walter) Pers.	Sugarcane-Plumegrass
<i>Sagittaria filiformis</i> J. G. Sm.	Water Arrow-Head
<i>Schoenoplectus heterochaetus</i> Chase (Sojak)	Slender Bulrush
<i>Scutellaria serrata</i> Andr.	Showy Skullcap
<i>Sisyrinchium fuscatum</i> E. P. Bicknell	Sand Blue-Eyed Grass
<i>Smilax pseudochina</i> L.	Long-Stalked Greenbrier
<i>Sparganium natans</i> L.	Small Bur-Reed
<i>Spiraea virginiana</i> Britton	Virginia Spiraea
<i>Spiranthes magnicamporum</i> Sheviak	Ladies'-Tresses
<i>Trifolium reflexum</i> L.	Buffalo Clover
<i>Triglochin palustris</i> L.	Marsh Arrowgrass
<i>Utricularia fibrosa</i> Walt.	Fibrous Bladderwort
<i>Utricularia resupinata</i> B. D. Greene ex Bigelow	Northeastern Bladderwort

§ 45.12. Pennsylvania Endangered.

Plant species classified as Pennsylvania Endangered are as follows:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Aconitum reclinatum</i> A. Gray	White Monkshood
<i>Acorus americanus</i> (Raf.) Raf.	Sweet Flag
<i>Agalinis auriculata</i> (Michx.) S. F. Blake	Eared False Foxglove
<i>Agalinis paupercula</i> (A. Gray) Britton	Small-Flowered False Foxglove
<i>Alisma triviale</i> Pursh	Broad-Leaved Water-Plantain
<i>Alnus viridis</i> (Vill.) DC	Mountain Alder
<i>Amelanchier bartramiana</i> (Tausch) M. Roem.	Oblong-Fruited Serviceberry
<i>Ammania coccinea</i> Rottb.	Scarlet Ammannia
<i>Anemone cylindrica</i> A. Gray	Long-Headed Anemone
<i>Arabis missouriensis</i> Greene	Missouri Rockcress
<i>Arethusa bulbosa</i> L.	Dragon's-Mouth
<i>Arnica acaulis</i> (Walter) Britton, Stearns & Poggenb.	Leopard's-Bane
<i>Artemisia campestris</i> L. ssp. <i>caudata</i> (Michx.) Hall & Clements.	Beach Wormwood
<i>Asclepias variegata</i> L.	White Milkweed
<i>Asplenium resiliens</i> Kunze	Black-Stemmed Spleenwort
<i>Bidens beckii</i> (Torr. ex Spreng.) Greene	Beck's Water-Marigold
<i>Boltonia asteroides</i> (L.) L'Hér.	Aster-Like Boltonia
<i>Cardamine pratensis</i> L. var. <i>palustris</i> Wimm. & Grab. (Gleason, H. A. and A. Cronquist, <i>Manual of Vascular Plants of Northeastern United States and Adjacent Canada</i> , 1991, Second Edition)	Cuckooflower
<i>Carex atherodes</i> Spreng.	Awned Sedge
<i>Carex aurea</i> Nutt.	Golden-Fruited Sedge
<i>Carex bebbii</i> (Bailey) Fern.	Bebb's Sedge
<i>Carex bicknellii</i> Britton	Bicknell's Sedge
<i>Carex bullata</i> Willd.	Bull Sedge
<i>Carex careyana</i> Dewey	Carey's Sedge
<i>Carex collinsii</i> Nutt.	Collin's Sedge
<i>Carex crinita</i> Lam. var. <i>brevicrinis</i> Fernald	Short-Hair Sedge
<i>Carex eburnea</i> Boott	Ebony Sedge
<i>Carex formosa</i> Dewey	Handsome Sedge
<i>Carex garberi</i> Fernald	Elk Sedge
<i>Carex geyeri</i> Boott	Geyer's Sedge
<i>Carex gravida</i> Bailey	Heavy Sedge
<i>Carex mitchelliana</i> M. A. Curtis	Mitchell's Sedge
<i>Carex pauciflora</i> Lightf.	Few-Flowered Sedge
<i>Carex polymorpha</i> Muhl.	Variable Sedge
<i>Carex pseudocyperus</i> L.	Cyperus-Like Sedge
<i>Carex retrorsa</i> Schwein.	Backward Sedge
<i>Carex typhina</i> Michx.	Cat-Tail Sedge
<i>Carex viridula</i> Michx.	Green Sedge
<i>Cerastium velutinum</i> Raf. var. <i>villosissimum</i> (Pennell) J. K. Morton	Octoraro Creek Chickweed
<i>Chasmanthium laxum</i> (L.) H. O. Yates	Slender Wild-Oats
<i>Chenopodium foggii</i> Wahl	Fogg's Goosefoot
<i>Chrysogonum virginianum</i> L.	Green-and-Gold
<i>Cirsium horridulum</i> Michx.	Horrible Thistle
<i>Cladium mariscoides</i> (Muhl.) Torr.	Twig-Rush
<i>Clematis viorna</i> L.	Leather-Flower

<i>Scientific Name</i>	<i>Common Name</i>
<i>Clethra acuminata</i> Michx.	Mountain Pepperbush
<i>Clitoria mariana</i> L.	Butterfly Pea
<i>Coeloglossum viride</i> (L.) Hartm.	Long-Bracted Green Orchis
<i>Conioselinum chinense</i> (L.) Britton, Stearns & Poggenb.	Hemlock-Parsley
<i>Cryptogramma stelleri</i> (Gmel.) Prantl	Slender Rockbrake
<i>Cymophyllus fraserianus</i> (Ker Gawl.) Kartesz & Gandhi	Fraser's Sedge
<i>Cyperus acuminatus</i> Torr. & Hook.	Short-Pointed Flatsedge
<i>Cyperus diandrus</i> Torr.	Umbrella Sedge
<i>Cyperus houghtonii</i> Torr.	Houghton's Flatsedge
<i>Cyperus refractus</i> Engelm.	Reflexed Flatsedge
<i>Cyperus retrorsus</i> Chapman	Retrorse Flatsedge
<i>Cypripedium parviflorum</i> Salisb. var. <i>makasin</i> (Source: <i>Flora of North America</i>)	Northern Small Yellow Lady's-Slipper
<i>Cypripedium parviflorum</i> Salisb. var. <i>parviflorum</i> (Source: <i>Flora of North America</i>)	Southern Small Yellow Lady's-Slipper
<i>Delphinium exaltatum</i> Aiton	Tall Larkspur
<i>Desmodium humifusum</i> (Muhl.) Beck	Trailing Tick-Trefoil
<i>Diarrhena obovata</i> (Gleason) Bradenburg	Obovate Beakgrain
<i>Dicentra eximia</i> (Ker Gwal.) Torr.	Wild Bleeding-Heart
<i>Dichanthelium scoparium</i> (Lam.) Gould	Velvety Panic Grass
<i>Dichanthelium xanthophysum</i> (A. Gray) Freckmann	Slender Panic Grass
<i>Dodecatheon meadia</i> L.	Shooting-Star
<i>Dryopteris campyloptera</i> (Kunze) Clarkson	Mountain Wood Fern
<i>Echinochloa walteri</i> (Pursh) A. Heller	Walter's Barnyard-Grass
<i>Eleocharis caribaea</i> (Rottb.) S. F. Blake	Capitate Spike-Rush
<i>Eleocharis compressa</i> Sull.	Flat-Stemmed Spike-Rush
<i>Eleocharis elliptica</i> Kunth	Slender Spike-Rush
<i>Eleocharis obtusa</i> (Willd.) Schult. var. <i>peasei</i> Svenson	Wright's Spike-Rush
<i>Eleocharis parvula</i> (Roem. & Schult.) Link ex Buffon & Fingerh.	Dwarf Spike-Rush
<i>Eleocharis pauciflora</i> (Lightf.) Link var. <i>fernaldii</i> Swenson	Few-Flowered Spike-Rush
<i>Eleocharis quadrangulata</i> (Michx.) Roem. & Schult.	Four-Angled Spike-Rush
<i>Eleocharis rostellata</i> (Torr.) Torr.	Beaked Spike-Rush
<i>Eleocharis tenuis</i> (Willd.) Schult. var. <i>verrucosa</i> (Svenson) Svenson	Slender Spike-Rush
<i>Equisetum scirpoides</i> Michx. (Source: <i>Flora of North America</i>)	Dwarf Scouring-Rush
<i>Equisetum variegatum</i> Schleich.	Variegated Scouring-Rush
<i>Eriophorum gracile</i> Koch ex Roth	Slender Cotton-Grass
<i>Eriophorum tenellum</i> Nutt.	Rough Cotton-Grass
<i>Euphorbia ipecacuanhae</i> L.	Wild Ipecac
<i>Euphorbia purpurea</i> (Raf.) Fernald	Glade Spurge
<i>Eurybia spectabilis</i> (Aiton) Nesom	Showy Aster
<i>Festuca paradoxa</i> Desv.	Cluster Fescue
<i>Fraxinus profunda</i> (Bush) Bush	Pumpkin Ash
<i>Galium labradoricum</i> Wiegand	Bog Bedstraw
<i>Gaylussacia dumosa</i> (Andr.) Torr. & A. Gray	Dwarf Huckleberry
<i>Geranium bicknellii</i> Britton	Cranesbill
<i>Glyceria borealis</i> (Nash) Batch.	Small Floating Mannagrass
<i>Glyceria obtusa</i> (Muhl.) Trin.	Blunt Manna-Grass
<i>Goodyera tessellata</i> Lodd.	Checkered Rattlesnake-Plantain

<i>Scientific Name</i>	<i>Common Name</i>
<i>Gymnopogon ambiguus</i> (Michx.) Britton, Stearns & Poggenb.	Broad-Leaved Beardgrass
<i>Helianthemum bicknellii</i> Fernald	Bicknell's Hoary Rockrose
<i>Heteranthera multiflora</i> (Griseb.) Horn.	Multi-Flowered Mud-Plantain
<i>Hieracium traillii</i> Greene	Maryland Hawkweed
<i>Hierochloe odorata</i> (L.) Beauv.	Vanilla Sweet-Grass
<i>Huperzia porophila</i> (F. E. Lloyd & Underw.) Holub	Sandstone-Loving Firmoss
<i>Hydrophyllum macrophyllum</i> Nutt.	Large-Leaved Water-Leaf
<i>Iodanthus pinnatifidus</i> (Michx.) Steud.	Purple-Rocket
<i>Iris cristata</i> Sol. ex Aiton	Dwarf Crested Iris
<i>Iris prismatica</i> Pursh	Slender Blue Flag
<i>Iris verna</i> L.	Dwarf Iris
<i>Isotria medeoloides</i> (Pursh) Raf.	Small-Whorled Pogonia
<i>Juncus brachycarpus</i> Engelm.	Short-Fruited Rush
<i>Juncus dichotomus</i> Elliott	Forked Rush
<i>Juncus longii</i> Fern.	Long's Rush
<i>Juncus militaris</i> Bigelow	Bayonet Rush
<i>Juncus scirpoides</i> Lam.	Scirpus-Like Rush
<i>Lespedeza angustifolia</i> (Pursh) Elliott	Narrow-Leaved Bush-Clover
<i>Ligusticum canadense</i> (L.) Britton	Nondo Lovage
<i>Linum intercursum</i> E. P. Bicknell	Sandplain Wild Flax
<i>Linum sulcatum</i> Riddell	Grooved Yellow Flax
<i>Lipocarpa micrantha</i> (Vahl) G. C. Tucker	Common Hemicarpha
<i>Listera australis</i> Lindl.	Southern Twayblade
<i>Listera cordata</i> (L.) R. Br.	Heartleaf Twayblade
<i>Listera smallii</i> Wiegand	Kidney-Leaved Twayblade
<i>Lithospermum caroliniense</i> (J. F. Gmel.) MacMill.	Hispid Gromwell
<i>Lithospermum latifolium</i> Michx.	American Gromwell
<i>Lobelia kalmii</i> L.	Brook Lobelia
<i>Lobelia puberula</i> Michx.	Downy Lobelia
<i>Lonicera oblongifolia</i> (Goldie) Hook.	Swamp Fly-Honeysuckle
<i>Lonicera villosa</i> (Michx.) Roem. & Schult.	Mountain Fly-Honeysuckle
<i>Ludwigia decurrens</i> Walter	Upright Primrose-Willow
<i>Ludwigia polycarpa</i> Short & Peter	False Loosestrife Seedbox
<i>Lycopodiella alopecuroides</i> (L.) Cranfill	Foxtail Bog Clubmoss
<i>Lycopodiella margueritae</i> J. G. Bruce, W. H. Wagner & Beitel	Marguerite's Clubmoss
<i>Lycopus rubellus</i> Moench.	Taper-Leaved Bugle-Weed
<i>Lyonia mariana</i> (L.) D. Don	Staggerbush
<i>Malaxis bayardii</i> Fernald	Adder's-Mouth
<i>Marshallia grandiflora</i> Beadle & F. E. Boynton	Large-Flowered Marshallia
<i>Matelea obliqua</i> (Jacq.) Woodson	Oblique Milkvine
<i>Mitella nuda</i> L.	Naked Bishop's-Cap
<i>Monarda punctata</i> L.	Spotted Bee-Balm
<i>Montia chamissoi</i> (Ledeb. ex Spreng.) Greene	Chamisso's Miner's-Lettuce
<i>Muhlenbergia uniflora</i> (Muhl.) Fern.	Fall Dropseed Muhly
<i>Myriophyllum farwellii</i> Morong	Farwell's Water-Milfoil
<i>Myriophyllum sibiricum</i> Komarov	Northern Water-Milfoil
<i>Myriophyllum verticillatum</i> L.	Whorled Water-Milfoil
<i>Najas marina</i> L.	Holly-Leaved Naiad

<i>Scientific Name</i>	<i>Common Name</i>
<i>Oclemena nemoralis</i> (Aiton) E. Greene	Leafy Bog Aster
<i>Onosmodium molle</i> Michx. var. <i>hispidissimum</i> (Mack.) Cronquist	False Gromwell
<i>Ophioglossum engelmannii</i> Prantl	Limestone Adder's-Tongue
<i>Packera antennariifolia</i> (Britton) W. A. Weber & Löve	Cat's-Paw Ragwort
<i>Panicum amarum</i> Elliott var. <i>amarulum</i> (A. Hitchc. & Chase) P. G. Palmer	Beachgrass
<i>Parnassia glauca</i> Raf.	Grass-of-Parnassus
<i>Passiflora lutea</i> L.	Passion-Flower
<i>Paxistima canbyi</i> A. Gray	Canby's Mountain-Lover
<i>Persicaria careyi</i> (Olney) Greene	Carey's Smartweed
<i>Persicaria setacea</i> (Baldwin) Small	Swamp Smartweed
<i>Phlox ovata</i> L.	Mountain Phlox
<i>Phlox subulata</i> L. ssp. <i>brittonii</i> (Small) Wherry	Moss Pink
<i>Piptatherum pungens</i> (Torr. ex Spreng.) Dorn	Slender Mountain Ricegrass
<i>Platanthera aquilonis</i> Sheviak, Lindleyana (Source: <i>Flora of North America</i>)	Northern Green Orchid
<i>Platanthera dilatata</i> (Pursh) Lindl. ex Beck	Tall White Bog-Orchid
<i>Platanthera huronensis</i> (Nutt.) Lindl.	Huron Green Orchid
<i>Poa autumnalis</i> Muhl. ex Elliott	Autumn Bluegrass
<i>Polemonium van-bruntiae</i> Britton	Jacob's-Ladder
<i>Polygala cruciata</i> L.	Cross-Leaved Milkwort
<i>Polygala curtissii</i> A. Gray	Curtis' Milkwort
<i>Polygala incarnata</i> L.	Pink Milkwort
<i>Polystichum braunii</i> (Spenn.) Fee	Braun's Holly Fern
<i>Populus balsamifera</i> L.	Balsam Poplar
<i>Potamogeton friesii</i> Rupr.	Fries' Pondweed
<i>Potamogeton gramineus</i> L.	Grassy Pondweed
<i>Potamogeton hillii</i> Morong	Hill's Pondweed
<i>Potamogeton obtusifolius</i> Mert. & Koch	Blunt-Leaved Pondweed
<i>Potamogeton pulcher</i> Tuck.	Spotted Pondweed
<i>Potamogeton strictifolius</i> A. Benn.	Narrow-Leaved Pondweed
<i>Potamogeton tennesseensis</i> Fernald	Tennessee Pondweed
<i>Potamogeton vaseyi</i> J. W. Robbins	Vasey's Pondweed
<i>Potentilla fruticosa</i> L.	Shrubby Cinquefoil
<i>Potentilla paradoxa</i> Nutt.	Bushy Cinquefoil
<i>Potentilla tridentata</i> Aiton	Three-Toothed Cinquefoil
<i>Prunus maritima</i> Marshall	Beach Plum
<i>Prunus nigra</i> Ait.	Canada Plum
<i>Ptilimnium capillaceum</i> (Michx.) Raf.	Mock Bishop-Weed
<i>Pycnanthemum torrei</i> Benth.	Torrey's Mountain-Mint
<i>Quercus falcata</i> Michx.	Southern Red Oak
<i>Quercus phellos</i> L.	Willow Oak
<i>Quercus shumardii</i> Buckley	Shumard Oak
<i>Ranunculus fascicularis</i> Muhl. ex J. M. Bigelow	Tufted Buttercup
<i>Ratibida pinnata</i> (Vent.) Barnhart	Gray-Headed Prairie Coneflower
<i>Rhamnus lanceolata</i> Pursh	Lanceolate Buckthorn
<i>Rhexia mariana</i> L.	Maryland Meadow-Beauty
<i>Rhododendron atlanticum</i> (Ashe) Rehder	Dwarf Azalea
<i>Rhynchospora capillacea</i> Torr.	Capillary Beak-Rush
<i>Ribes missouriense</i> Nutt. ex Torr. & A. Gray	Missouri Gooseberry

<i>Scientific Name</i>	<i>Common Name</i>
<i>Rubus cuneifolius</i> Pursh	Sand Blackberry
<i>Ruellia humilis</i> Nutt.	Fringed-Leaved Petunia
<i>Sagittaria calycina</i> Engelm.	Long-Lobed Arrowhead
<i>Scheuchzeria palustris</i> L.	Pod-Grass
<i>Schoenoplectus acutus</i> (Muhl. ex Bigel.) Löve & Löve	Hard-Stemmed Bulrush
<i>Schoenoplectus smithii</i> (A. Gray) Sojak	Smith's Bulrush
<i>Schoenoplectus torreyi</i> (Olney) Palla	Torrey's Bulrush
<i>Scirpus ancistrochaetus</i> Schuyler	Northeastern Bulrush
<i>Scleria minor</i> (Britton) Stone	Small Nut-Rush
<i>Scleria muhlenbergii</i> Steud.	Reticulated Nut-Rush
<i>Scleria verticillata</i> Muhl. ex Willd.	Whorled Nut-Rush
<i>Sedum rosea</i> (L.) Scop.	Roseroot Stonecrop
<i>Sericocarpus linifolius</i> (L.) Britton, Stearns & Poggenb.	Narrow-Leaved White-Topped Aster
<i>Shepherdia canadensis</i> (L.) Nutt.	Canada Buffalo-Berry
<i>Sida hermaphrodita</i> (L.) Rusby	Virginia Mallow
<i>Sisyrinchium atlanticum</i> E. P. Bicknell	Eastern Blue-Eyed-Grass
<i>Solidago arguta</i> Aiton var. <i>harrisii</i> (E. S. Steele) Cronquist	Harris' Goldenrod
<i>Solidago curtissii</i> Torr. & A. Gray	Curtis' Goldenrod
<i>Solidago erecta</i> Banks ex Pursh	Slender Goldenrod
<i>Solidago simplex</i> Kunth ssp. <i>randii</i> (Porter) Ringius var. <i>racemosa</i> (Greene) Ringius	Sticky Goldenrod
<i>Sorbus decora</i> (Sarg.) Schneid.	Showy Mountain-Ash
<i>Sparganium androcladum</i> (Engelm.) Morong	Branching Bur-Reed
<i>Spiranthes casei</i> Catling & Cruise	Case's Ladies'-Tresses
<i>Spiranthes ovalis</i> Lindl.	October Ladies'-Tresses
<i>Spiranthes romanzoffiana</i> Cham.	Hooded Ladies'-Tresses
<i>Spiranthes vernalis</i> Engelm. & A. Gray	Spring Ladies'-Tresses
<i>Sporobolus clandestinus</i> (Biehler) A. Hitchc.	Rough Dropseed
<i>Sporobolus cryptandrus</i> (Torr.) A. Gray	Sand Dropseed
<i>Sporobolus heterolepis</i> (A. Gray) A. Gray	Prairie Dropseed
<i>Stachys nuttallii</i> Shuttlew. ex Benth.	Nuttall's Hedge-Nettle
<i>Swertia caroliniensis</i> (Walter) Kuntze	American Columbo
<i>Symphotrichum boreale</i> (Torr. & Gray) Á Löve & D. Löve	Northern Bog Aster
<i>Taenidia montana</i> (Mack.) Cronquist	Mountain Pimpernel
<i>Thalictrum coriaceum</i> (Britt.) Small	Thick-Leaved Meadow-Rue
<i>Trichostema setaceum</i> Houtt.	Narrow-Leaved Blue-Curls
<i>Trifolium virginicum</i> Small	Kate's-Mountain Clover
<i>Triphora trianthophora</i> (Swartz) Rydb.	Nodding Pogonia
<i>Triplasis purpurea</i> Chapman] (Walter) Chapm.	Purple Sandgrass
<i>Trollius laxus</i> Salisb.	Spreading Globe-Flower
<i>Veronia glauca</i> (L.) Willd.	Tawny Ironweed
<i>Viburnum nudum</i> L.	Possum Haw Viburnum
<i>Viola brittoniana</i> Pollard	Coast Violet
<i>Vitis novae-angliae</i> Fernald	New England Grape
<i>Vitis rupestris</i> Scheele	Sand Grape
<i>Zigadenus glaucus</i> (Nutt.) Nutt.	White Camas

§ 45.13. Pennsylvania Threatened.

Plant species classified as Pennsylvania Threatened are as follows:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Aconitum uncinatum</i> L.	Blue Monkshood
<i>Actaea podocarpa</i> DC	American Bugbane
<i>Ammophila breviligulata</i> Fernald	American Beachgrass
<i>Arceuthobium pusillum</i> Peck	Dwarf Mistletoe
<i>Aristida purpurascens</i> Poir.	Arrow-Feather Three-Awned Grass
<i>Asplenium bradleyi</i> D. C. Eaton	Bradley's Spleenwort
<i>Baptisia australis</i> (L.) R. Br.	Blue False Indigo
<i>Bidens bidentoides</i> (Nutt.) Britt.	Swamp Beggar-Ticks
<i>Bouteloua curtipendula</i> (Michx.) Torr.	Tall Gramma
<i>Camassia scilloides</i> (Raf.) Cory	Wild Hyacinth
<i>Carex alata</i> Torr.	Broad-Winged Sedge
<i>Carex aquatilis</i> Wahlenb.	Water Sedge
<i>Carex cryptolepis</i> Mack.	Northeastern Sedge
<i>Carex diandra</i> Schrank	Lesser Panicked Sedge
<i>Carex flava</i> L.	Yellow Sedge
<i>Carex oligosperma</i> Michx.	Few-Seeded Sedge
<i>Carex paupercula</i> Michx.	Bog Sedge
<i>Carex prairea</i> Dewey	Prairie Sedge
<i>Carex schweinitzii</i> Schwein.	Schweinitz's Sedge
<i>Carex sterilis</i> Willd.	Atlantic Sedge
<i>Carex tetanica</i> Schkuhr	Wood's Sedge
<i>Carex wiegandii</i> Mack.	Wiegand's Sedge
<i>Chamaesyce polygonifolia</i> (L.) Small	Seaside Spurge
<i>Chrysopsis mariana</i> (L.) Elliott	Maryland Golden-Aster
<i>Cypripedium reginae</i> Walter	Showy Lady's-Slipper
<i>Digitaria cognatum</i> (Schultes) Pilger	Fall Witch-Grass
<i>Dodecatheon amethystinum</i> (Fassett) Fassett	Jeweled Shooting-Star
<i>Eleocharis intermedia</i> (Muhl.) Schult.	Matted Spike-Rush
<i>Eleocharis robbinsii</i> Oakes	Robbins' Spike-Rush
<i>Ellisia nyctelea</i> L.	Ellisia
<i>Eriogonum bulbosum</i> (Michx.) Nutt.	Harbinger-of-Spring
<i>Eriophorum viridicarinatum</i> (Engelm.) Fernald	Thin-Leaved Cottongrass
<i>Euthamia caroliniana</i> (L.) Greene ex Porter & Britton	Grass-Leaved Goldenrod
<i>Fimbristylis annua</i> (All.) Roem. & Schult.	Annual Fimbry
<i>Gaylussacia brachycera</i> (Michx.) A. Gray	Box Huckleberry
<i>Hypericum densiflorum</i> Pursh	Bushy St. John's-Wort
<i>Hypericum majus</i> (A. Gray) Britton	Canadian St. John's-Wort
<i>Ilex opaca</i> Aiton	American Holly
<i>Juncus alpinoarticulatus</i> Chaix in Vill. ssp. <i>nodulosus</i> (Wahlenb.) Hämet-Ahti.	Richardson's Rush
<i>Juncus arcticus</i> Willd. var. <i>littoralis</i> (Engelm.) Boivin.	Baltic Rush
<i>Juncus brachycephalus</i> (Engelm.) L. Buch.	Small-Headed Rush
<i>Juncus torreyi</i> Coville	Torrey's Rush
<i>Lathyrus japonicus</i> Willd.	Beach Pea
<i>Lathyrus ochroleucus</i> Hook.	Wild Pea
<i>Linnaea borealis</i> L.	Twinflower

<i>Scientific Name</i>	<i>Common Name</i>
<i>Lobelia dortmanna</i> L.	Water Lobelia
<i>Lycopodiella appressa</i> (Chapm.) Cranfill	Appressed Bog Clubmoss
<i>Magnolia tripetala</i> (L.) L.	Umbrella Magnolia
<i>Magnolia virginiana</i> L.	Sweetbay Magnolia
<i>Melica nitens</i> Nutt.	Three-Flowered Melic Grass
<i>Minuartia glabra</i> (Michx.) Mattf.	Appalachian Sandwort
<i>Myrica gale</i> L.	Sweet-gale
<i>Myriophyllum tenellum</i> Bigelow	Slender Water-Milfoil
<i>Najas gracillima</i> (A. Braun) Magnus	Bushy Naiad
<i>Nymphoides cordata</i> (Elliott) Fernald	Floating-Heart
<i>Oenothera argillicola</i> Mack.	Shale-Barren Evening-Primrose
<i>Panicum tuckermanii</i> Fernald	Tuckerman's Panic-Grass
<i>Phemeranthus teretifolius</i> (Pursh) Raf.	Round-Leaved Fameflower
<i>Platanthera peramoena</i> (A. Gray) A. Gray	Purple Fringeless Orchid
<i>Poa paludigena</i> Fernald & Wiegand	Bog Bluegrass
<i>Potamogeton confervoides</i> Reichenb.	Tuckerman's Pondweed
<i>Potamogeton richardsonii</i> (Benn.) Rydb.	Red-Head Pondweed
<i>Ptelea trifoliata</i> L.	Hoptree
<i>Ranunculus longirostris</i> Godron	Eastern White Water-Crowfoot
<i>Ribes triste</i> Pallas	Wild Red Currant
<i>Ruellia strepens</i> L.	Limestone Petunia
<i>Salix candida</i> Flugge ex Willd.	Hoary Willow
<i>Salix serissima</i> (Bailey) Fernald	Autumn Willow
<i>Scirpus pedicellatus</i> Fernald	Stalked Bulrush
<i>Scleria pauciflora</i> Muhl. ex Willd.	Few-Flowered Nutrush
<i>Solidago uliginosa</i> Nutt.	Bog Goldenrod
<i>Spiraea betulifolia</i> Pallas var. <i>corymbosa</i> (Raf.) Maxim.	Dwarf Spiraea
<i>Streptopus amplexifolius</i> (L.) DC	Twisted-Stalk
<i>Symphyotrichum depauperatum</i> (Fernald) Nesom	Serpentine Aster
<i>Symphyotrichum novi-belgii</i> (L.) Nesom var. <i>novi-belgii</i>	New York Aster
<i>Utricularia intermedia</i> Hayne	Flat-Leaved Bladderwort
<i>Viola appalachensis</i> L. K. Henry	Appalachian Blue Violet
<i>Vittaria appalachiana</i> Farrar & Mickel	Appalachian Grass-Fern

§ 45.14. Pennsylvania Rare.

Plant species classified as Pennsylvania Rare are as follows:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Amaranthus cannabinus</i> (L.) Sauer	Water-Hemp Ragweed
<i>Andromeda polifolia</i> L.	Bog-Rosemary
<i>Aplectrum hyemale</i> (Muhl. ex Willd.) Nutt.	Puttyroot
<i>Baccharis halimifolia</i> L.	Eastern Baccharis
<i>Cakile edentula</i> (Bigelow) Hook.	American Sea-Rocket
<i>Carex disperma</i> Dewey	Soft-Leaved Sedge
<i>Carex lasiocarpa</i> Ehrh.	Many-Fruited Sedge
<i>Collinsia verna</i> Nutt.	Spring Blue-Eyed Mary
<i>Cyperus engelmannii</i> Steud.	Engelmann's Flatsedge
<i>Cyperus schweinitzii</i> Torr.	Schweinitz's Flatsedge
<i>Dichanthelium commonsianum</i> (Ashe) Freckmann var. <i>euchlamydeum</i> (Shinners) Pohl	Cloaked Panic Grass

<i>Scientific Name</i>	<i>Common Name</i>
<i>Eleocharis olivacea</i> Torr.	Capitate Spike-Rush
<i>Epilobium strictum</i> Muhl.	Downy Willow-Herb
<i>Gaultheria hispidula</i> (L.) Muhl. ex Bigelow	Creeping Snowberry
<i>Juncus filiformis</i> L.	Thread Rush
<i>Ledum groenlandicum</i> Oeder	Common Labrador-Tea
<i>Lupinus perennis</i> L.	Blue Lupine
<i>Lygodium palmatum</i> (Bernh.) Sw.	Hartford Fern
<i>Menziesia pilosa</i> (Michx.) Juss.	Minniebush
<i>Opuntia humifusa</i> (Raf.) Raf.	Eastern Prickly-Pear Cactus
<i>Orontium aquaticum</i> L.	Golden Club
<i>Packera anonyma</i> (A. W. Wood) W. A. Weber & Á Löve	Appalachian Groundsel
<i>Potamogeton robbinsii</i> Oakes	Flat-Leaved Pondweed
<i>Potamogeton zosteriformis</i> Fernald	Flat-Stemmed Pondweed
<i>Potentilla anserina</i> L.	Silverweed
<i>Prunus pumila</i> L. var. <i>pumila</i>	Sand Cherry
<i>Pyrolaria pubera</i> Michx.	Buffalo-Nut
<i>Ranunculus micranthus</i> (Gray) Nutt. ex Torr. & Gray	Small-Flowered Crowfoot
<i>Rotala ramosior</i> (L.) Koehne	Toothcup
<i>Sagittaria subulata</i> (L.) L. Buch.	Subulate Arrowhead
<i>Schizachyrium scoparium</i> (Michx.) Nash var. <i>littorale</i> (Nash) Gould	Seaside Bluestem
<i>Schoenoplectus fluviatilis</i> (Torr.) Strong	River Bulrush
<i>Sedum telephioides</i> Michx.	Allegheny Stonecrop
<i>Solidago roanensis</i> Porter	Tennessee Golden-Rod
<i>Tipularia discolor</i> (Pursh) Nutt.	Crane-fly Orchid
<i>Trillium nivale</i> Riddell	Snow Trillium
<i>Wolffiella gladiata</i> (Hegelm.) Hegelm.	Bog-mat
<i>Xyris montana</i> Ries.	Yellow Eyed Grass
<i>Zizania aquatica</i> L.	Indian Wild Rice

§ 45.15. **Pennsylvania Vulnerable.**

Plant species classified as Pennsylvania Vulnerable are as follows:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Cypripedium parviflorum</i> Salisb. var. <i>pubescens</i> (Willd.) Correll	Large Yellow Lady's-Slipper
<i>Hydrastis canadensis</i> L.	Goldenseal
<i>Panax quinquefolius</i> L.	Ginseng

§ 45.21. **Tentatively Undetermined.**

Plant species classified as Tentatively Undetermined are as follows:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Adiantum pedatum</i> L. ssp. <i>caulderi</i> Cody	Northern Maidenhair Fern
<i>Agalinis obtusifolia</i> Raf.	False-Foxglove
<i>Aletris farinosa</i> L.	Colic-Root
<i>Ambrosia psilostachya</i> DC.	Naked-Spiked Ambrosia
<i>Amelanchier humilis</i> Wiegand	Low Serviceberry
<i>Amelanchier obovalis</i> (Michx.) Ashe	Coastal Juneberry
<i>Amelanchier sanguinea</i> (Pursh) DC.	Roundleaf Juneberry
<i>Andropogon glomeratus</i> (Walter) Britton, Stearns & Poggenb.	Bushy Bluestem
<i>Antennaria solitaria</i> Rydb.	Single-Headed Pussy-Toes
<i>Arabis hirsuta</i> (L.) Scop.	Western Hairy Rock-Cress
<i>Aristida dichotoma</i> Michx. var. <i>curtissii</i> A. Gray	Poverty Grass

<i>Scientific Name</i>	<i>Common Name</i>
<i>Aristida longespica</i> Poir. var. <i>geniculata</i> (Raf.) Fernald	Long-Spike Three-Awned Grass
<i>Aristolochia macrophylla</i> Lam.	Pipevine
<i>Carex buxbaumii</i> Wahlenb.	Brown Sedge
<i>Carex crawfordii</i> Fernald	Crawford's Sedge
<i>Carex haydenii</i> Dewey	Cloud Sedge
<i>Carex limosa</i> L.	Mud Sedge
<i>Carex longii</i> Mack.	Long's Sedge
<i>Carex lupuliformis</i> Sartwell	False Hop Sedge
<i>Carex meadii</i> Dewey	Mead's Sedge
<i>Carex mesochorea</i> Mack.	Midland Sedge
<i>Castilleja coccinea</i> (L.) Spreng.	Scarlet Indian Paintbrush
<i>Chasmanthium latifolium</i> (Michx.) H. O. Yates	Wild-Oats
<i>Chenopodium capitatum</i> (L.) Asch.	Strawberry Goosefoot
<i>Corallorrhiza wisteriana</i> Conrad	Spring Coral-Root
<i>Crataegus brainerdii</i> Sarg.	Brainerd's Hawthorne
<i>Crataegus mollis</i> (Torr. & A. Gray) Scheele	Downy Hawthorne
<i>Cuscuta cephalanthi</i> Engelm.	Buttonbush Dodder
<i>Cuscuta corylii</i> Engelm.	Hazel Dodder
<i>Cuscuta polygonorum</i> Engelm.	Smartweed Dodder
<i>Cyperus odoratus</i> L.	Rusty Flatsedge
<i>Cyperus tenuifolius</i> (Steud.) Dandy	Thin-Leaved Flatsedge
<i>Cystopteris laurentiana</i> (Weath.) Blasdell	Laurentian Bladder-Fern
<i>Desmodium glabellum</i> (Michx.) Kuntze	Tall Tick-Trefoil
<i>Desmodium nuttallii</i> (Schindl.) Schub.	Nuttall's Tick-Trefoil
<i>Dichanthelium annulum</i> (Ashe) LeBlond	Annulus Panic Grass
<i>Dichanthelium boreale</i> (Nash) Freckmann	Northern Panic Grass
<i>Dichanthelium commonsianum</i> (Ashe) Freckmann	Cloaked Panic Grass
<i>Dichanthelium lucidum</i> (Ashe) LeBlond	Shining Panic Grass
<i>Dichanthelium villosissimum</i> (Nash) Freckmann	Long-Haired Panic Grass
<i>Dichanthelium yadkinense</i> (Ashe) Mohlenbr.	Yadkin River Panic Grass
<i>Dracocephalum parviflorum</i> Nutt.	American Dragonhead
<i>Elatine minima</i> (Nutt.) Fisch. & C. A. Mey	Small Waterwort
<i>Elymus virginicus</i> L. var. <i>submuticus</i> Hook.	Wild Rye
<i>Epilobium palustre</i> L.	Marsh Willow-Herb
<i>Eupatorium rotundifolium</i> L.	Round-Leaved Thoroughwort
<i>Filipendula rubra</i> (Hill) B. L. Rob.	Queen-of-the-Prairie
<i>Gentiana alba</i> Muhl. ex Nutt.	Yellow Gentian
<i>Gentiana saponaria</i> L.	Soapwort Gentian
<i>Gentiana villosa</i> L.	Striped Gentian
<i>Glyceria acutiflora</i> Torr.	Sharp-Flowered Manna-Grass
<i>Gratiola aurea</i> Muhl. ex Pursh	Golden Hedge-Hyssop
<i>Gymnocarpium appalachianum</i> K. M. Pryer & Haufler	Appalachian Oak Fern
<i>Houstonia purpurea</i> L. var. <i>purpurea</i>	Purple Bluets
<i>Hypericum drummondii</i> (Grev. & Hook) Torr. & A. Gray	Nits-and-Lice
<i>Juncus biflorus</i> Elliott	Grass-Leaved Rush
<i>Lathyrus palustris</i> L.	Vetchling
<i>Lemna turionifera</i> Landolt	Winter Duckweed
<i>Leucothoe racemosa</i> (L.) A. Gray	Swamp Dog-Hobble

Scientific Name	Common Name
<i>Liatris scariosa</i> (L.) Willd.	Northern Blazing-Star
<i>Lonicera hirsuta</i> Eaton	Hairy Honeysuckle
<i>Luzula bulbosa</i> (A. W. Wood) Rybd.	Wood-Rush
<i>Lythrum alatum</i> Pursh	Winged Loosestrife
<i>Malaxis monophyllos</i> (L.) Swartz var. <i>brachypoda</i> (A. Gray) F. Morris & E. A. Eames	White Adder's-Mouth
<i>Meehania cordata</i> (Nutt.) Britton	Heart-Leafed Meehania
<i>Muhlenbergia cuspidata</i> (Torr.) Rydb.	Sharp-Pointed Muhly
<i>Nuphar microphylla</i> (Pers.) Fernald	Small Yellow Pond-Lily
<i>Oenothera pilosella</i> Raf.	Evening-Primrose
<i>Oxydendrum arboreum</i> (L.) DC.	Sourwood
<i>Oxypolis rigidior</i> (L.) Raf.	Stiff Cowbane
<i>Packera plattensis</i> (Nutt.) W. A. Weber & Á Löve	Prairie Ragwort
<i>Panicum flexile</i> (Gatt.) Scribn.	Wiry Witchgrass
<i>Panicum longifolium</i> Torr.	Long-Leaved Panic Grass
<i>Paronychia fastigiata</i> (Raf.) Fernald var. <i>nuttallii</i> (Small) Fernald	Whitlow Wort
<i>Parthenium intergrifolium</i> L.	American Fever-Few
<i>Paspalum floridanum</i> (Michx.) var. <i>glabratum</i> Engelm. ex Vasey	Florida Beadgrass
<i>Paspalum laeve</i> (Michx.) var. <i>pilosum</i> Scribn.	Field Beadgrass
<i>Paspalum setaceum</i> Michx.	Slender Beadgrass
<i>Phlox pilosa</i> L.	Downy Phlox
<i>Phyla lanceolata</i> (Michx.) Greene	Lance Fog-Fruit
<i>Physalis virginiana</i> Mill.	Virginia Ground-Cherry
<i>Platanthera ciliaris</i> (L.) Lindl.	Yellow Fringed Orchid
<i>Platanthera hookeri</i> (Torr. ex Gray) Lindl.	Hooker's Orchid
<i>Pluchea odorata</i> (L.) Cass.	Shrubby Camphor-Weed
<i>Poa languida</i> A. Hitchc.	Drooping Bluegrass
<i>Podostemum ceratophyllum</i> Michx.	Riverweed
<i>Polygala polygama</i> Walter	Racemed Milkwort
<i>Polygonella articulata</i> (L.) Meisn.	Eastern Jointweed
<i>Polygonum amphibium</i> L. var. <i>stipulaceum</i> (Coleman) Fern.	Stipuled Water-Smartweed
<i>Polygonum ramosissimum</i> Michx.	Bushy Knotweed
<i>Potamogeton filiformis</i> Pers. var. <i>borealis</i> (Raf.) St. John	Slender Pondweed
<i>Potamogeton oakesianus</i> J. W. Robbins	Oakes' Pondweed
<i>Potamogeton perfoliatus</i> L.	Clasping-Stemmed Pondweed
<i>Pycnanthemum verticillatum</i> (Michx.) Pers. var. <i>pilosum</i> (Nutt.) Cooperr.	Hairy Mountain-Mint
<i>Ranunculus aquatilis</i> L. var. <i>diffusus</i> With.	White Water-Crowfoot
<i>Ranunculus flammula</i> L.	Lesser Spearwort
<i>Rhamnus alnifolia</i> L' Hér	Alder-Leaved Buckthorn
<i>Rhynchospora recognita</i> (Gale) Kral	Small Globe Beak-Rush
<i>Ribes lacustre</i> (Pers.) Poir.	Swamp Currant
<i>Rorippa palustris</i> (L.) Besser var. <i>palustris</i> (Gleason, H. A. and A Cronquist, <i>Manual of Vascular Plants of Northeastern United States and Adjacent Canada</i> , 1991, Second Edition)	Yellow Cress
<i>Rosa virginiana</i> P. Mill.	Virginia Rose
<i>Rubus setosus</i> Bigelow	Small Bristleberry
<i>Rumex hastatulus</i> Baldwin ex Elliott	Heart Sorrell
<i>Salix petiolaris</i> Sm.	Meadow Willow
<i>Salvia reflexa</i> Hornem.	Lance-Leaved Sage

<i>Scientific Name</i>	<i>Common Name</i>
<i>Samolus parviflorus</i> Raf.	Pineland Pimpernel
<i>Saxifraga micranthidifolia</i> (Haw.) Steud.	Lettuce Saxifrage
<i>Scleria triglomerata</i> Michx.	Whip Nut-Rush
<i>Scutellaria saxatilis</i> Riddell	Rock Skullcap
<i>Senna marilandica</i> (L.) Link	Wild Senna
<i>Sisyrinchium albidum</i> Raf.	Blue-Eyed-Grass
<i>Solidago rigida</i> L.	Hard-Leaved Goldenrod
<i>Spiranthes tuberosa</i> Raf.	Slender Ladies'-Tresses
<i>Stachys hyssopifolia</i> Michx.	Hyssop Hedge-Nettle
<i>Stylosanthes biflora</i> (L.) Britton, Stearns & Poggenb.	Pencil-Flower
<i>Symphotrichum dumosum</i> (L.) Nesom	Bushy Aster
<i>Symphotrichum ericoides</i> (L.) Nesom	White Heath Aster
<i>Taxus canadensis</i> Marsh.	American Yew
<i>Trillium flexipes</i> Raf.	Declined Trillium
<i>Triosteum angustifolium</i> L.	Horse Gentian
<i>Tripsacum dactyloides</i> (L.) L.	Eastern Gammagrass
<i>Uvularia pudica</i> Michx.	Mountain Bellwort
<i>Viburnum trilobum</i> Marshall	Highbush-Cranberry
<i>Viola renifolia</i> A. Gray	Kidney-Leaved Violet
<i>Viola tripartita</i> Elliott	Three-parted Violet
<i>Vitis cinerea</i> (Englem. in A. Gray) Englem. ex Millardet var. <i>baileyana</i> (Munson) Comeaux	Poosum-Grape
<i>Wolffia borealis</i> (Engelm.) Landolt	Dotted Dotted Watermeal

[Pa.B. Doc. No. 18-1970. Filed for public inspection December 21, 2018, 9:00 a.m.]

Title 28—HEALTH AND SAFETY

DEPARTMENT OF HEALTH [28 PA. CODE CH. 1211]

Medical Marijuana; Research Contracts; Amended Temporary Regulations

The Department of Health (Department) is publishing amended temporary regulations in Chapter 1211 (relating to clinical registrants and academic clinical research centers—temporary regulations) to read as set forth in Annex A. These amended temporary regulations are published under the Medical Marijuana Act (act) (35 P.S. §§ 10231.101—10231.2110). Section 2004 of the act (35 P.S. § 10231.2004) specifically allows the Department to promulgate temporary regulations relating solely to sections 2000—2004 of the act (35 P.S. §§ 10231.2000—10231.2004), regarding academic clinical research centers and clinical registrants, that are not subject to sections 201—205 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201—1205), known as the Commonwealth Documents Law, the Regulatory Review Act (71 P.S. §§ 745.1—745.14) and sections 204(b) and 301(10) of the Commonwealth Attorneys Act (71 P.S. §§ 732-204(b) and 732-301(10)).

Chapter 1211 pertains to clinical registrants and academic clinical research centers in this Commonwealth who wish to participate in the Medical Marijuana Program. The particular section being added allows for academic clinical research centers to enter into letters of agreement with more than one potential clinical regis-

trant for the purpose of applying for approval as a clinical registrant. By including language in the temporary regulation specifically allowing for more than one letter of intent, the Department hopes to broaden the field of applicants, therefore ultimately being able to approve the highest quality clinical registrants and assuring that the most robust research will occur. Section 1211.27a will expire on December 22, 2020.

Interested persons are invited to submit written comments, suggestions or objections regarding these amended temporary regulations to John J. Collins, Office of Medical Marijuana, Department of Health, Room 628, Health and Welfare Building, 625 Forster Street, Harrisburg, PA 17120, (717) 547-3047, RA-DHMedMarijuana@pa.gov. Persons with a disability who wish to submit comments, suggestions or objections regarding these amended temporary regulations or who require an alternative format of these amended temporary regulations (for example, large print, audiotape or Braille) may do so by using the previous contact information. For speech and/or hearing impaired persons, call the Pennsylvania AT&T Relay Service at (800) 654-5984 (TDD users) or (800) 654-5988 (voice users).

RACHEL L. LEVINE, MD,
Secretary

(Editor's Note: Title 28 of the Pennsylvania Code is amended by adding a temporary regulation in § 1211.27a and amending the temporary regulation in § 1211.21 to read as set forth in Annex A.)

Fiscal Note: 10-218. No fiscal impact; (8) recommends adoption.

Annex A

TITLE 28. HEALTH AND SAFETY

PART IX. MEDICAL MARIJUANA

CHAPTER 1211. CLINICAL REGISTRANTS AND ACADEMIC CLINICAL RESEARCH CENTERS—TEMPORARY REGULATIONS

§ 1211.21. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

Research contract—A written agreement between an approved clinical registrant and a certified ACRC that contains the responsibilities and duties of each party with respect to the research program or research study that the approved clinical registrant and the certified ACRC intend to conduct under this chapter and under which the certified ACRC will provide medical advice to the approved clinical registrant regarding, among other areas, patient health and safety, medical applications, and dispensing and management of controlled substances. This term shall include a letter of intent to enter into an agreement for purposes of a clinical registrant application.

* * * * *

§ 1211.27a. Research contracts.

(a) An applicant for approval as a clinical registrant shall provide, with its application, either an executed agreement or a letter of intent to enter into an agreement, with a certified ACRC, the effective date of which shall be on or after the effective date of the ACRC certification.

(b) A clinical registrant applicant may submit more than one application, with separate applications identifying distinct certified ACRCs.

(c) A certified ACRC may enter into a letter of intent with more than one clinical registrant applicant but may only execute a research contract with one approved clinical registrant.

(d) If more than one applicant for approval as a clinical registrant submits an application that includes a letter of intent with the same certified ACRC, the Department shall follow the following process in approving the applications:

(1) Determine initially that the CR application meets the following qualifications:

- (i) Is complete;
- (ii) Complies with the Act and the Department’s temporary regulations, and
- (iii) Meets the following minimum scoring requirements in each of the following application sections:

<i>Grower Processor Application</i>	<i>Max Points/Section</i>	<i>Minimum Acceptable Score</i>
8—Operational Timetable	75	31
9—Employee Qualifications, Description of Duties and Training	25	11
10—Security and Surveillance	50	21

<i>Grower Processor Application</i>	<i>Max Points/Section</i>	<i>Minimum Acceptable Score</i>
11—Transportation of Medical Marijuana	25	11
12—Storage of Medical Marijuana	25	11
13—Packaging and Labeling of Medical Marijuana	25	11
14—Inventory Management	25	11
15—Management and Disposal of Medical Marijuana Waste	25	11
16—Diversion Prevention	50	21
17—Growing Practice	100	41
18—Nutrient and Additive Practices	100	41
19—Processing and Extraction	100	41
20—Sanitation and Safety	25	11
22—Recordkeeping	25	11
24—Business History and Capacity to Operate	75	31
Attachment D: Site and Facility Plan	50	21

<i>Dispensary Application</i>	<i>Max Points/Section</i>	<i>Minimum Acceptable Score</i>
8—Operational Timetable	100	41
9—Employee Qualifications, Description of Duties and Training	50	21
10—Security and Surveillance	100	41
11—Transportation of Medical Marijuana	50	21
12—Storage of Medical Marijuana	75	31
14—Inventory Management	75	31
15—Diversion Prevention	100	41
16—Sanitation and Safety	50	21
17—Recordkeeping	75	31
19—Business History and Capacity to Operate	75	31
Attachment D: Site and Facility Plan	50	21

(2) The Department shall approve clinical registrant applicants that meet the standards of paragraph (1) in the following order:

- (i) A clinical registrant applicant that holds a grower/processor permit and a dispensary permit, both of which are in good standing, and both medical marijuana organizations have been deemed operational by the Department. In applying this preference, the Department will look at the clinical registrant’s primary dispensary location only.

(ii) A clinical registrant applicant that holds a grower/processor permit only that is in good standing and the applicant's medical marijuana organization has been deemed operational by the Department.

(iii) A clinical registrant applicant that holds a dispensary permit only that is in good standing and the applicant's primary dispensary location has been deemed operational by the Department.

(iv) A clinical registrant applicant that holds a grower/processor permit only, that is in good standing, but has not been deemed operational by the Department.

(v) A clinical registrant applicant that holds a dispensary permit only, that is in good standing, but has not had its primary location deemed operational by the Department.

(vi) A clinical registrant applicant that is applying for both a grower/processor permit and dispensary permit under this chapter. Awarding of approval to these clinical registrant applications shall be prioritized by ranking the sum of the grower/processor permit and dispensary permit application scores highest to lowest.

[Pa.B. Doc. No. 18-1971. Filed for public inspection December 21, 2018, 9:00 a.m.]
