

PROPOSED RULEMAKING

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), under the authority of section 5307(c) of the Wild Resource Conservation Act (WRCA) (32 P.S. § 5307(c)) 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)), proposes to amend Chapter 45 (relating to conservation of Pennsylvania native wild plants) as set forth in Annex A.

Purpose

The purpose of this proposed rulemaking is to amend Chapter 45 by updating Pennsylvania native wild plant species classification lists, including certain scientific names, common names and reference sources. (32 P.S. § 5307(c) and 71 P.S. §§ 1340.305(a)(9) and 1340.313(g)).

Discussion

The WRCA (32 P.S. §§ 5301—5314), *inter alia*, established a procedure for protection of wild flora/plants in this Commonwealth, including imposing powers and duties on the Department of Environmental Resources to investigate, classify and provide for the conservation of Pennsylvania wild plant populations.

The CNRA (71 P.S. §§ 1340.101—1340.1103), which, *inter alia*, created the Department (71 P.S. § 1340.301) and renamed the Department of Environmental Resources as the Department of Environmental Protection (DEP) (71 P.S. § 1340.501), provided that the Department shall exercise the powers and duties conferred upon the Department of Environmental Resources by the WRCA (71 P.S. § 1340.305(a)(9)), including issuing and modifying regulations (71 P.S. § 1340.313(g)).

The Department proposes to amend the conservation of Pennsylvania native wild plants regulations to update the following Pennsylvania native wild plant species classification lists, including updating certain scientific names, common names and reference sources: Pennsylvania Extirpated (§ 45.11), Pennsylvania Endangered (§ 45.12), Pennsylvania Threatened (§ 45.13), Pennsylvania Rare (§ 45.14) and Tentatively Undetermined (§ 45.21). The updates to the Pennsylvania native wild plant species classification lists include the following: (1) adding plant species to a classification list that are currently unclassified, (2) reclassifying plant species already on a classification list to a new classification and (3) removing plant species from the classification lists altogether (declassifying them).

This proposed rulemaking includes a total of 82 substantive changes to the conservation of Pennsylvania native wild plant regulation species classification lists as follows: (1) 24 currently unclassified native wild plant species will be newly classified, (2) 28 currently classified native wild plant species will be reclassified, including 3

species whose scientific names are changing/being updated (technically these are shown as the “old” name being unclassified and the “new” name being classified) and (3) 30 currently classified native wild plant species will be unclassified.

The proposed amendments to the Pennsylvania native wild plant species classification lists include updates to the scientific names for three native wild plant species and the common name for one native wild plant species. As botanical taxonomists make new discoveries about species, the Department’s standard reference, Ann Fowler Rhoads and Timothy A. Block, *The Plants of Pennsylvania: An Illustrated Manual Second Edition* (2007), Philadelphia, Pennsylvania: University of Pennsylvania Press (*The Plants of Pennsylvania*), may not include the most up-to-date nomenclature. In this proposed rulemaking, when the proposed new name is not found in the standard reference, the alternate source is provided in parentheses.

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 of these species 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 (within the United States and within this Commonwealth); threats such as pests, invasive species and habitat loss; decrease or increase in population numbers; and taxonomic information. (Note, this 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.

To make classification decisions, the Department uses data referred to as “State ranks.” In this Commonwealth, each plant species receives a State rank from the Pennsylvania Natural Heritage Program (Program). The Program assigns these ranks based on a methodology created by NatureServe, an international network of natural heritage programs. The purpose of NatureServe’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 those 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. This review process occurs continuously, as botanists are continually learning more about native wild plant species populations and threats. The Department will continue to update its classification lists as needed to reflect changes to native wild plant conservation needs.

Native wild plant classifications

How plants are classified determines the “management measures necessary for their continued ability to sustain themselves successfully.” (32 P.S. § 5307(a)). Native wild plant species that are at risk of extinction in this Commonwealth need greater protection than those less susceptible to that risk. Chapter 45 designates the level of risk facing Pennsylvania’s native wild plant species 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 proposed rulemaking updates the scientific and common names of certain native wild plant species to conform to the Department’s taxonomic source material. The Department’s reference source for the nomenclature used to identify species taxonomy in Chapter 45 is *The Plants of Pennsylvania*. When the species name is not found there, the reference source will be provided in parentheses. Additionally, this proposed rulemaking will correct minor grammatical errors and misspellings of species names.

Pennsylvania Natural Diversity Inventory

The proposed amendments will be incorporated into the Pennsylvania Natural Diversity Inventory (PNDI). 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. 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 this Commonwealth. Most notably, DEP uses PNDI to inform its environmental permitting decisions.

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

Although this proposed rulemaking will result in updates to the plant data in PNDI, it will not affect DEP’s permitting process. The process of obtaining a DEP permit is beyond the scope of this proposed rulemaking; instead, PNDI’s connection to this proposed rulemaking is limited to its use of the plant data that will result from the amendments made by this proposed rulemaking. Person, businesses, small businesses or organizations will not be required to invest in any additional administrative procedures as a direct result of this proposed rulemaking.

Finally, because this proposed 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 for a DEP permit. 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 in fulfilling permit requirements.

Summary of this Proposed Rulemaking

Section 45.11 is proposed to be amended to update the Pennsylvania Extirpated native wild plant species classification list, including scientific and common names, as follows.

The following Pennsylvania native wild plant species are proposed to be added to the Pennsylvania Extirpated native wild plant species classification list:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Acalypha deamii</i> (Weath.) Ahles	Two-Seeded Copperleaf
<i>Cuscuta coryli</i> Engelm.	Hazel Dodder
<i>Cyperus retrorsus</i> Chapm.	Retorse Flatsedge
<i>Gymnopogon ambiguus</i> (Michx.) Britton, Stearns & Poggenb.	Broad-Leaved Beardgrass
<i>Utricularia subulata</i> L.	Slender Bladderwort

The following Pennsylvania native wild plant species are proposed to be deleted from the Pennsylvania Extirpated native wild plant species classification list:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Carex alopecoidea</i> Tuckerman	Foxtail Sedge
<i>Distichlis spicata</i> (L.) Greene	Sea-Shore Salt-Grass
<i>Hypericum gymnanthum</i> Engelm. & A. Gray	Clasping-Leaved St. John's-Wort
<i>Matelea carolinensis</i> (Jacq.) Woods.	Carolina Milkvine
<i>Myrica heterophylla</i> Raf.	Evergreen Bayberry

Section 45.12 is proposed to be amended to update the Pennsylvania Endangered native wild plant species classification list, including scientific and common names, as follows.

The following Pennsylvania native wild plant species are proposed to be added to the Pennsylvania Endangered native wild plant species classification list:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Aletris farinosa</i> L.	Colic-Root
<i>Arnoglossum reniforme</i> (Hook.) H. E. Robins.	Great Indian Plantain
<i>Asplenium bradleyi</i> D. C. Eaton	Bradley's Spleenwort
<i>Astragalus canadensis</i> L.	Canadian Milk-Vetch
<i>Bidens bidentoides</i> (Nutt.) Britton	Swamp Beggar-Ticks
<i>Camassia scilloides</i> (Raf.) Cory	Wild Hyacinth
<i>Carex lupuliformis</i> Sartwell	False Hop Sedge
<i>Carex roanensis</i> F. J. Herm (Source: Flora of Southeastern United States, Weakley 2020)	Roan Mountain Sedge
<i>Carex schweinitzii</i> Schwein.	Schweinitz's Sedge
<i>Carex sterilis</i> Willd.	Sterile Sedge
<i>Corallorhiza wisteriana</i> Conrad	Spring Coral-Root
<i>Cypripedium reginae</i> Walter	Show Lady's-Slipper

<i>Scientific Name</i>	<i>Common Name</i>
<i>Fraxinus quadrangulata</i> Michx. (Source: Flora of Southeastern United States, Weakley 2020)	Blue Ash
<i>Gaylussacia brachycera</i> (Michx.) A. Gray	Box Huckleberry
<i>Gratiola aurea</i> Muhl. ex Pursh	Golden Hedge-Hyssop
<i>Hierochloe hirta</i> (Schrank) Borbás (Source: Flora of Southeastern United States, Weakley 2020)	Common Northern Sweet Grass
<i>Hypericum gymnanthum</i> Engelm. & A. Gray	Clasping-Leaved St. John's-Wort
<i>Lysimachia hybrida</i> Michx.	Lance-Leaved Loosestrife
<i>Lythrum alatum</i> Pursh	Winged Loosestrife
<i>Marshallia pulchra</i> W. M. Knapp, D. B. Poind. & Weakley (Source: Flora of Southeastern United States, Weakley 2020)	Beautiful Barbara's Buttons
<i>Salix candida</i> Flügge ex Willd.	Hoary Willow
<i>Spiraea corymbosa</i> Rafinesque (Source: Flora of Southeastern United States, Weakley 2020)	Dwarf Spiraea
<i>Trifolium stoloniferum</i> Eaton (Source: Flora of the Southeastern United States, Weakley 2020)	Running Buffalo Clover
<i>Viola glaberrima</i> (Ging.) House (Source: Flora of Southeastern United States, Weakley 2020)	Wedge-leaved violet

The following Pennsylvania native wild plant species are proposed to be deleted from the Pennsylvania Endangered native wild plant species classification list:

<i>Scientific Name</i>	<i>Common Name</i>
<i>Carex collinsii</i> Nutt.	Collins' Sedge
<i>Carex gravida</i> Bailey	Heavy Sedge
<i>Cyperus acuminatus</i> Torr. & Hook.	Short-Pointed Flatsedge
<i>Cyperus retrorsus</i> Chapm.	Retorse Flatsedge
<i>Desmodium humifusum</i> (Muhl.) Beck	Trailing Tick-Trefoil
<i>Diarrhena obovata</i> (Gleason) Brandenburg	Obovate Beakgrain
<i>Glyceria borealis</i> (Nash) Batch.	Small-Floating Mannagrass
<i>Gymnopogon ambiguus</i> (Michx.) Britton, Stearns & Poggenb.	Broad-Leaved Beardgrass
<i>Juncus longii</i> Fern.	Long's Rush
<i>Marshallia grandiflora</i> Beadle & F. E. Boynton	Large-flowered Marshallia
<i>Passiflora lutea</i> L.	Passion-Flower

Scientific Name	Common Name
<i>Thalictrum coriaceum</i> (Britton) Small	Thick-Leaved Meadow-Rue
<i>Vitis novae-angliae</i> Fernald	New England Grape

Section 45.13 is proposed to be amended to update the Pennsylvania Threatened native wild plants classification list, including scientific and common names, as follows.

The following Pennsylvania native wild plant species are proposed to be added to the Pennsylvania Threatened native wild plant species classification list:

Scientific Name	Common Name
<i>Ageratina aromatica</i> (L.) Spach	Small White-Snakeroot
<i>Arabis patens</i> Sull.	Spreading Rockcress
<i>Asclepias verticillata</i> L.	Whorled milkweed
<i>Bromus kalmii</i> A. Gray	Kalm's Brome
<i>Carex collinsii</i> Nutt.	Collins' Sedge
<i>Carex longii</i> Mack.	Long's Sedge
<i>Castilleja coccinea</i> (L.) Spreng.	Eastern Paintbrush
<i>Galium latifolium</i> Michx.	Purple Bedstraw
<i>Passiflora lutea</i> L.	Passion-Flower
<i>Platanthera ciliaris</i> (L.) Lindl.	Yellow Fringed-Orchid
<i>Ranunculus ambigens</i> S. Watson	Water-Plantain Spearwort
<i>Solidago roanensis</i> Porter	Mountain Goldenrod
<i>Stellaria borealis</i> Bigelow	Northern Stitchwort
<i>Thalictrum coriaceum</i> (Britton) Small	Thick-Leaved Meadow-Rue

The following Pennsylvania native wild plant species are proposed to be deleted from the Pennsylvania Threatened native wild plant species classification list:

Scientific Name	Common Name
<i>Actaea podocarpa</i> DC	American Bugbane
<i>Asplenium bradleyi</i> D. C. Eaton	Bradley's Spleenwort
<i>Bidens bidentoides</i> (Nutt.) Britt.	Swamp Beggar-Ticks
<i>Camassia scilloides</i> (Raf.) Cory	Wild Hyacinth
<i>Carex paupercula</i> Michx.	Bog Sedge
<i>Carex schweinitzii</i> Schwein.	Schweinitz's Sedge
<i>Carex sterilis</i> Willd.	Atlantic Sedge
<i>Cypripedium reginae</i> Walter	Showy Lady's-Slipper
<i>Digitaria cognatum</i> (Schultes) Pilger	Fall Witch-Grass
<i>Gaylussacia brachycera</i> (Michx.) A. Gray	Box Huckleberry
<i>Salix candida</i> Flügge ex Willd.	Hoary Willow

Scientific Name	Common Name
<i>Spiraea betulifolia</i> Pallas var. <i>corymbosa</i> (Raf.) Maxim.	Dwarf Spiraea

Section 45.14 is proposed to be amended to update the Pennsylvania Rare native wild plant species classification list, including scientific and common names, as follows.

The following Pennsylvania native wild plant species are proposed to be added to the Pennsylvania Rare native wild plant species classification list:

Scientific Name	Common Name
<i>Actaea podocarpa</i> DC	Mountain Bugbane
<i>Andropogon gyrans</i> Ashe	Elliott's Beardgrass
<i>Asplenium pinnatifidum</i> Nutt.	Lobed Spleenwort
<i>Bartonia paniculata</i> ssp. <i>paniculata</i> (Michx.) Muhl.	Screw-Stem
<i>Carex buxbaumii</i> Wahlenb.	Brown Sedge
<i>Carex paupercula</i> Michx.	Bog Sedge
<i>Erythronium albidum</i> Nutt.	White Trout-Lily
<i>Juncus biflorus</i> Elliott	Grass-Leaved Rush
<i>Lorinseria areolata</i> (Linnaeus) C. Presl. (Source: Flora of the Southeastern United States, Weakley 2020)	Netted Chain Fern

The following Pennsylvania native wild plant species are proposed to be deleted from the Pennsylvania Rare native wild plant species classification list:

Scientific Name	Common Name
<i>Aplectrum hyemale</i> (Muhl. ex Willd.) Nutt.	Puttyroot
<i>Baccharis halimifolia</i> L.	Eastern Baccharis
<i>Collinsia verna</i> Nutt.	Spring Blue-Eyed Mary
<i>Eleocharis olivacea</i> Torr.	Capitate Spike-Rush
<i>Solidago roanensis</i> Porter	Tennessee Golden-Rod
<i>Tipularia discolor</i> (Pursh) Nutt.	Cranefly Orchid

Section 45.21 is proposed to be amended to update the Pennsylvania Tentatively Undetermined native wild plant species classification list, including scientific and common names, as follows.

The following Pennsylvania native wild plant species are proposed to be deleted from the Pennsylvania Tentatively Undetermined native wild plant species classification list:

Scientific Name	Common Name
<i>Adiantum pedatum</i> L. ssp. <i>caulderi</i> Cody	Northern Maidenhair Fern

<i>Scientific Name</i>	<i>Common Name</i>
<i>Aletris farinosa</i> L.	Colic-Root
<i>Ambrosia psilostachya</i> DC.	Naked-Spiked Ambrosia
<i>Carex buxbaumii</i> Wahlenb.	Brown Sedge
<i>Carex longii</i> Mack.	Long's Sedge
<i>Carex lupuliformis</i> Sartwell	False Hop Sedge
<i>Carex mesochorea</i> Mack.	Midland Sedge
<i>Castilleja coccinea</i> (L.) Spreng.	Scarlet Indian Paintbrush
<i>Corallorrhiza wisteriana</i> Conrad	Spring Coral-Root
<i>Cuscuta corylii</i> Engelm.	Hazel Dodder
<i>Cyperus odoratus</i> L.	Rusty Flatsedge
<i>Elatine minima</i> (Nutt.) Fisch. & C. A. Mey	Small Waterwort
<i>Elymus virginicus</i> L. var. <i>submuticus</i> Hook.	Wild Rye
<i>Gratiola aurea</i> Muhl. ex Pursh	Golden Hedge-Hyssop
<i>Juncus biflorus</i> Elliott	Grass-Leaved Rush
<i>Lythrum alatum</i> Pursh	Winged Loosestrife

<i>Scientific Name</i>	<i>Common Name</i>
<i>Oxydendrum arboreum</i> (L.) DC.	Sourwood
<i>Platanthera ciliaris</i> (L.) Lindl.	Yellow Fringed Orchid
<i>Rorippa palustris</i> (L.) Besser var. <i>palustris</i> (Gleason, H. A. and Cronquist, A., <i>Manual of Vascular Plants of Northeastern United States and Adjacent Canada</i> , 1991, Second Edition)	Yellow Cress
<i>Salix petiolaris</i> Sm.	Meadow Willow
<i>Salvia reflexa</i> Hornem.	Lance-Leaved Sage
<i>Viola tripartita</i> Elliott	Three-parted Violet

Summaries of the changes to the lists of classified plants, including very brief descriptions and reasons for the changes, follow. Additional detailed information on reasons for the changes can be found in the Department's Native Wild Plant Species Accounts (2022) on the Department's Rare, Threatened and Endangered Plants web site (click on "2022 Plant Species Accounts" or copy and paste the following URL: <http://elibrary.dcnr.pa.gov/GetDocument?docId=3709763&DocName=Native%20Wild%20Plant%20Species%20Accounts%202021.pdf>).

Newly Classified Plant Species

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat/ Identification</i>	<i>Reason for Change</i>
<i>Acalypha deamii</i> (Weath.) Ahles	Two-Seeded Copperleaf	N	PX	moist woods or riparian woods; flowers and fruits late summer—fall	only one population was known and not observed since 1900s (0 populations)
<i>Ageratina aromatica</i> (L.) Spach	Small-Leaved White-Snakeroot	N	PT	dry wood, poor soils, sandy open areas, serpentine soils; blooms August—October	population decline, specialized habitat (7 populations)
<i>Andropogon gyrans</i> Ashe	Elliott's Beardgrass	N	PR	dry or moist fields, open woods; blooms September—October	limited, geographic distribution, threats to existing populations (32 populations)
<i>Arabis patens</i> Sull.	Spreading Rockcress	N	PT	moist, rocky woods; flowers April—July	globally vulnerable, population declines, sensitive habitat (10 populations)
<i>Arnoglossum reniforme</i> (Hook.) H. E. Robins.	Great Indian Plantain	N	PE	wet woods and floodplains, seepage woodlands; flowers June—September	population decline, extreme rarity (1 population)
<i>Asclepias verticillata</i> L.	Whorled Milkweed	N	PT	dry rocky, sandy soils or barrens; flowers July—August	population declines, sensitive and limited habitat (10 populations)

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat / Identification</i>	<i>Reason for Change</i>
<i>Asplenium pinnatifidum</i> Nutt.	Lobed Spleenwort	N	PR	crevices of dry, lightly shaded cliffs of non-calcareous rocks	population declines, habitat fragmentation (27 populations)
<i>Astragalus canadensis</i> L.	Canadian Milk-vetch	N	PE	limestone soils and open rocky or shale-rich areas and barrens; flowers late June—early August	population declines, invasive species; limestone habitats tend to be at risk (7 populations)
<i>Bartonia paniculata</i> ssp. <i>paniculata</i> (Michx.) Muhl.	Screw-Stem	N	PR	bogs and edges of peaty wetlands; flowers August—October	small number of individuals in populations, limited to boggy open wetlands; but tolerates some disturbed habitat (63 populations)
<i>Bromus kalmii</i> A. Gray	Kalm's Brome	N	PT	rocky wooded slopes and dry to moist, woods; flowers June—July	population decline; succession, invasive plants and habitat loss (12 populations)
<i>Carex roanensis</i> F. J. Herm (Source: Flora of the Southeastern United States, Weakley 2020)	Roan Mountain Sedge	N	PE	rich, moist woods, often dominated by beech trees; fruits in early summer	globally-rare species, very few and small populations, recently found in Pennsylvania (4 populations)
<i>Erythronium albidum</i> Nutt.	White Trout-Lily	N	PR	rich wooded slopes and floodplains on calcareous soil; flowers late April	population declines, small population sizes, geographically limited; threatened by invasive plants and habitat loss (48 populations)
<i>Fraxinus quadrangulata</i> Michx. (Source: Flora of the Southeastern United States, Weakley 2020)	Blue Ash	N	PE	moist to dry calcareous woodlands and forests	extreme rarity; threatened by forest pest emerald ash borer (1 population)
<i>Galium latifolium</i> Michx.	Purple Bedstraw	N	PT	woods, rocky slopes and roadsides; flowers June—July	populations have few individuals making it more vulnerable to disturbance (23 populations)
<i>Hierochloe hirta</i> (Schränk) Borbás (Source: Flora of the Southeastern United States, Weakley 2020)	Common Northern Sweet Grass	N	PE	fens, wet meadows, pastures and marsh edges; flowers April—August	extreme rarity, habitat threatened by invasive species, and fen and wetland impacts (4 populations)
<i>Lorinseria areolata</i> (Linnaeus) C. Presl. (Source: Flora of the Southeastern United States, Weakley 2020)	Netted Chain Fern	N	PR	moist or wet woods and acidic bogs	found in low numbers in Pennsylvania, in a restricted geographic distribution, limited by habitat (37 populations)
<i>Lysimachia hybrida</i> Michx.	Lance-Leaved Loosestrife	N	PE	swamps, wet meadows, fens and pond margins; flowers June—August	small populations, habitat loss and impacts to temporary ponds (5 populations)

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat / Identification</i>	<i>Reason for Change</i>
<i>Marshallia pulchra</i> W. M. Knapp, D. B. Poind. & Weakley (Source: Flora of the Southeastern United States, Weakley 2020)	Beautiful Barbara's Buttons	N	PE	high-energy river scour habitat; flowers mid-June—mid-July	all populations of <i>Marshallia grandiflora</i> were redetermined to be <i>Marshallia pulchra</i> , extremely limited habitat (16 populations)
<i>Ranunculus ambigens</i> S. Watson	Water-Plantain Spearwort	N	PT	low wet ground, swamps, and muddy ditches; flowers May through August	population declines, small populations; threatened by deer pressure, changes in hydrology and invasive plants (10 populations)
<i>Spiraea corymbosa</i> Rafinesque (Source: Flora of the Southeastern United States, Weakley 2020)	Dwarf Spiraea	N	PE	rocky, wooded slopes; flowers June	population decline due to loss of habitat; name change from <i>Spiraea betulifolia</i> Pallas var. <i>corymbosa</i> (Raf.) Maxim. to <i>Spiraea corymbosa</i> Raf. (4 populations)
<i>Stellaria borealis</i> Bigelow	Northern Stitchwort	N	PT	slopes with springs, sphagnous swamps and stream banks; flowers May—August	population decline due to habitat loss, contracting habitat range (20 populations)
<i>Trifolium stoloniferum</i> Eaton (Source: Flora of the Southeastern United States, Weakley 2020)	Running Buffalo Clover	N	PE	Dry upland woodlands and prairies in Pennsylvania southwest; flowers	Federally-listed species recently discovered in Pennsylvania, very few populations and globally rare plant (5 populations)
<i>Utricularia subulata</i> L.	Slender Bladderwort	N	PX	open wet, mucky or sandy soil; flowers June—August	known only from one herbarium specimen from 1900s, but surveys have not relocated it (0 populations)
<i>Viola glaberrima</i> (Gingins) H. House (Source: Flora of the Southeastern United States, Weakley 2020)	Wedge-Leaved Violet	N	PE	rich, moist forests on lower slopes and bottomlands; flowers late April—May	extremely rare; populations of <i>Viola glaberrima</i> were previously attributed to <i>Viola tripartita</i> (2 populations)

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

Currently Classified Plants Being Reclassified

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat / Identification</i>	<i>Reason for Change</i>
<i>Actaea podocarpa</i> DC	Mountain Bugbane	PT	PR	rich, wet woody slopes and coves; flowers in August	more populations than previously thought, but still uncommon and geographically limited (50 populations)

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat / Identification</i>	<i>Reason for Change</i>
<i>Aletris farinosa</i> L.	Colic-Root	TU	PE	moist clearings in southeastern PA; flowers May—July	multiple threats to habitat, population decline, very few sites remaining with small population sizes (3 populations)
<i>Asplenium bradleyi</i> D. C. Eaton	Bradley's Spleenwort	PT	PE	crevices of dry, shaded acidic rock outcrops	population declines, habitat loss or degradation (6 populations)
<i>Bidens bidentoides</i> (Nutt.) Britton	Swamp Beggar-Ticks	PT	PE	muddy tidal areas; flowers September—October	globally uncommon, limited to special habitat, population decline (9 populations)
<i>Camassia scilloides</i> (Raf.) Cory	Wild Hyacinth	PT	PE	moist woods; flowers April—May	extremely rare, habitat subject to conversion and invasive species (4 populations)
<i>Carex buxbaumii</i> Wahlenb.	Brown Sedge	TU	PR	calcareous wet areas including grasslands, meadows, swales, and wet woods; fruits in summer	relatively few populations and found in a restricted geographic range, habitat fragmentation (22 populations)
<i>Carex collinsii</i> Nutt.	Collins' Sedge	PE	PT	acidic swamps and boggy woods; fruits in summer	more populations than previously thought, but still limited by habitat availability (18 populations)
<i>Carex longii</i> Mack.	Long's Sedge	TU	PT	wet, sandy soils in swamps, thickets and meadows; fruits in summer	population declines, invasion, herbivory, habitat loss (15 populations)
<i>Carex lupuliformis</i> Sartwell	False Hop Sedge	TU	PE	vernal pools and other wet areas on calcareous substrates; fruits in summer	population declines, invasive plants, succession, impact to wetlands (11 populations)
<i>Carex paupercula</i> Michx.	Bog Sedge	PT	PR	sphagnum bogs and boggy woods; fruits in summer	more populations than previously thought but still restricted by geographic range (45 populations)
<i>Carex schweinitzii</i> Schwein.	Schweinitz's Sedge	PT	PE	calcareous marshes and stream banks; fruits in summer	globally-uncommon species, very few populations, range constricted, specialized habitat (6 populations)
<i>Carex sterilis</i> Willd.	Sterile Sedge	PT	PE	calcareous swamps and fens; fruits in summer	steep population decline, small population sizes. Changing common name from Atlantic Sedge to Sterile Sedge (8 populations)

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat / Identification</i>	<i>Reason for Change</i>
<i>Castilleja coccinea</i> (L.) Spreng.	Eastern Paintbrush	TU	PT	parasitic on the roots of other plants; moist meadows, on limestone and diabase; flowers April—June	population declines, limited by limestone or diabase soils (15 populations)
<i>Corallorhiza wisteriana</i> Conrad	Spring Coral-Root	TU	PE	rocky, wooded slopes on limestone and diabase; flowers April—June	population decline, small population sizes, orchid species vulnerable to collection (5 populations)
<i>Cuscuta coryli</i> Engelm.	Hazel Dodder	TU	PX	dry rocky woods, clearings and hillsides where it is parasitic on various shrubs and herbs; flowers June—Sept. fruits July—October	last observed in 1950s, field surveys failed to relocate. Also correcting minor spelling mistake (changing to “ <i>coryli</i> ”) (0 populations)
<i>Cyperus retrorsus</i> Chapm.	Retrorse Flatsedge	PE	PX	dry, open, sandy areas and ballast; flowers and fruits mid-summer to early fall	not observed in 50 years after surveys; habitat destroyed (0 populations)
<i>Cypripedium reginae</i> Walter	Show Lady’s-Slipper	PT	PE	fens and swamps; flowers May—June	population decline; threatened by impacts to wetland habitat, deer herbivory and poaching (7 populations)
<i>Gaylussacia brachycera</i> (Michx.) A. Gray	Box Huckleberry	PT	PE	well-drained open woods; flowers May, fruits August	globally-rare, slow growing and low germination rates, extreme rarity (3 populations)
<i>Gratiola aurea</i> Muhl. ex Pursh	Golden Hedge-Hyssop	TU	PE	moist or wet soils along streams or ponds; flowers July—August	population declines, extreme rarity (3 populations)
<i>Gymnopogon ambiguus</i> (Michx.) Britton, Stearns & Poggenb.	Broad-Leaved Beardgrass	PE	PX	serpentine barrens; flowers July—early October	one historic location was known, now destroyed, not observed elsewhere (0 populations)
<i>Hypericum gymnanthum</i> Engelm. & A. Gray	Clasping-Leaved St. John’s-Wort	PX	PE	muddy, wet areas; flowers July—September	globally uncommon species; thought to be extirpated but rediscovered (1 population)
<i>Juncus biflorus</i> Elliott	Grass-Leaved Rush	TU	PR	moist, open woods, boggy fields, gravel pits and ditches; flowers and fruits in summer	uncommon, with geographic limitations; populations have small numbers of individuals that are more vulnerable to disturbance (39 populations)

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat/ Identification</i>	<i>Reason for Change</i>
<i>Lythrum alatum</i> Pursh	Winged Loosestrife	TU	PE	swamps, wet meadows, marshy shores, and ditches; flowers early July—September	severe population declines, wetland habitat is threatened by degradation and invasive plants, extremely rare (1 population)
<i>Passiflora lutea</i> L.	Passion-Flower	PE	PT	moist stream bank thickets; flowers July	more populations recently observed, still uncommon Statewide and small populations (20 populations)
<i>Platanthera ciliaris</i> (L.) Lindl.	Yellow Fringed-Orchid	TU	PT	bogs, moist meadows and woods; flowers July—August	population declines, small variable populations; requires wetland soil but can tolerate some disturbance (32 populations)
<i>Salix candida</i> Flügge ex Willd.	Hoary Willow	PT	PE	wet meadows and fens on calcareous soils	extreme rarity; limited by habitat, population decline (2 populations)
<i>Solidago roanensis</i> Porter	Mountain Goldenrod	PR	PT	rocky banks, roadsides, woods and edges; flowers August—September	population decline, range constricted (10 populations)
<i>Thalictrum coriaceum</i> (Britton) Small	Thick-Leaved Meadow-Rue	PE	PT	rich, rocky woods, thickets and moist alluvium; blooms late May—June	more populations discovered, but still uncommon, limited by habitat availability (21 populations)

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

Classified Plant Species Being Declassified

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat/ Identification</i>	<i>Reason for Change</i>
<i>Adiantum pedatum</i> L. ssp. <i>caulderi</i> Cody	Northern Maidenhair Fern	TU	DC	rich, deciduous woodland; incorrectly thought to inhabit serpentine barrens	not found in Pennsylvania (0 populations)
<i>Ambrosia psilostachya</i> DC.	Naked-Spiked Ambrosia	TU	DC	sandy shores or meadows; blooms August—October	not native to Pennsylvania
<i>Aplectrum hyemale</i> (Muhl. ex Willd.) Nutt.	Puttyroot	PR	DC	moist, rich, wooded slopes and bottomlands; blooms May—August	more common than previously thought, may not be limited by habitat (at least 64 populations)
<i>Baccharis halimifolia</i> L.	Eastern Baccharis	PR	DC	native open sandy areas, marshes and beaches but adventive along roadsides where de-icing salt is used; flowers August—October	expanding habitat, utilizes roadsides influenced by de-icing salts, highly mobile species (abundant)

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat / Identification</i>	<i>Reason for Change</i>
<i>Carex alopecoidea</i> Tuckerman	Foxtail Sedge	PX	DC	wet soils and meadows, streambanks and openings in streamside woods, particularly on calcareous soils; fruits in July	not found in Pennsylvania (0 populations)
<i>Carex gravida</i> Bailey	Heavy Sedge	PE	DC	prairies and other open areas usually on calcareous soils; fruits in summer	not found in Pennsylvania (0 populations)
<i>Carex mesochorea</i> Mack.	Midland Sedge	TU	DC	dry, open woods, fields, and roadsides; fruits in summer	more populations of this species have been found; common and not a conservation concern (abundant)
<i>Collinsia verna</i> Nutt.	Spring Blue-Eyed Mary	PR	DC	woods and scrubby areas near streams; flowers late April—May	more populations than thought, large numbers of individuals in populations; secure and not a conservation concern (at least 50 populations)
<i>Cyperus acuminatus</i> Torr. & Hook.	Short-Pointed Flatsedge	PE	DC	wet, sandy, disturbed ground; flowers and fruits mid-summer to early fall	not native to Pennsylvania
<i>Cyperus odoratus</i> L.	Rusty Flatsedge	TU	DC	moist meadows, wet sandy or gravelly flats, and riverbanks; flowers and fruits mid-summer to early fall	grows in disturbed habitat, expanding its range; more common than previously thought and not a conservation concern (abundant)
<i>Desmodium humifusum</i> (Muhl.) Beck	Trailing Tick-Trefoil	PE	DC	dry sandy woods; flowers August—September	hybrid of two common species, not a conservation concern
<i>Diarrhena obovata</i> (Gleason) Brandenburg	Obovate Beakgrain	PE	DC	rich woods	more common than previously thought with large populations, expanding range, not limited by habitat (abundant)
<i>Digitaria cognatum</i> (Schultes) Pilger	Fall Witch-Grass	PT	DC	sandy, moist soils; flowers July—early October	able to use disturbed areas, not limited by habitat, not in decline (abundant)
<i>Distichlis spicata</i> (L.) Greene	Sea-Shore Salt-Grass	PX	DC	waste grounds and ballast; flowers August—October	not native to Pennsylvania
<i>Elatine minima</i> (Nutt.) Fisch. & C.A. Mey	Small Waterwort	TU	DC	shoresides of ponds, lakes and impoundments; flowers July—August	more frequent and widespread than had previously been thought; not limited by habitat (abundant)

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat/ Identification</i>	<i>Reason for Change</i>
<i>Eleocharis olivacea</i> Torr.	Capitate Spike-Rush	PR	DC	bogs and wetlands with sandy-peaty soil; flower/fruits mid to late summer	more widespread and frequent than previously thought (at least 40 populations)
<i>Elymus virginicus</i> L. var. <i>submuticus</i> Hook.	Wild Rye	TU	DC	moist soils of open forests, thickets, grasslands, ditches, and disturbed ground; flowers June—August	not native to Pennsylvania
<i>Glyceria borealis</i> (Nash) Batch.	Small-Floating Mannagrass	PE	DC	shallow lakes and streams; flowers in July	more common than previously thought, not limited by habitat quality (at least 19 populations)
<i>Juncus longii</i> Fern.	Long's Rush	PE	DC	habitat attributed to this species was early successional seepages with exposed soils, but not found in Pennsylvania	not found in Pennsylvania; specimens of this species found to be another species (0 populations)
<i>Marshallia grandiflora</i> Beadle & F.E. Boynton	Large-Flowered Marshallia	PE	DC	habitat uncertain but possibly borders of swamps; flowers June—August in North Carolina	not found in Pennsylvania; all populations of <i>Marshallia grandiflora</i> were redetermined to be <i>Marshallia pulchra</i> (0 populations)
<i>Matelea carolinensis</i> (Jacq.) Woods.	Carolina Milkvine	PX	DC	habitat previously attributed to this species was moist woods, thickets, river banks, ditches and fence rows; flowers June and July.	not native and does not occur in Pennsylvania (0 populations)
<i>Myrica heterophylla</i> Raf.	Evergreen Bayberry	PX	DC	habitat previously attributed to this species was swamps and moist, low ground on the coastal plain; flowers April or May	does not occur in Pennsylvania (0 populations)
<i>Oxydendrum arboreum</i> (L.) DC	Sourwood	TU	DC	dry woods and along slopes; blooms in August	more common than previously thought, able to utilize disturbed habitat, expanding range (at least 31 populations)
<i>Rorippa palustris</i> (L.) Besser var. <i>palustris</i> (Gleason, H. A. and A Cronquist, Manual of Vascular Plants of Northeastern United States and Adjacent Canada, 1991, Second Edition)	Yellow Cress	TU	DC	wet shores and low open ground; flowers May—September	common and not in need of conservation (abundant)
<i>Salix petiolaris</i> Sm.	Meadow Willow	TU	DC	meadows and swales; flowers just before leaves emerge	more common than previously thought (at least 32 populations)

<i>Scientific Name</i>	<i>Common Name</i>	<i>Current Status</i>	<i>Proposed Status</i>	<i>Habitat/ Identification</i>	<i>Reason for Change</i>
<i>Salvia reflexa</i> Hornem.	Lance-Leaved Sage	TU	DC	stream banks, old fields, roadsides, cinders, and quarry waste; flowers June—September	not native to Pennsylvania
<i>Spiraea betulifolia</i> Pallas var. <i>corymbosa</i> (Raf.) Maxim.	Dwarf Spiraea	PT	DC	rocky, wooded slopes; flowers June	name changed to <i>Spiraea corymbosa</i> Rafinesque
<i>Tipularia discolor</i> (Pursh) Nutt.	Cranefly Orchid	PR	DC	deciduous forests and stream banks in Pennsylvania southeast; flowers July—August	more common than previously thought (at least 83 populations)
<i>Viola tripartita</i> Elliot	Three-Parted Violet	TU	DC	moist slopes and bottomland especially over calcareous substrate in southern Pennsylvania; flowers late March—May	not found in Pennsylvania, populations previously attributed to this species are <i>Viola glaberrima</i> (0 populations)
<i>Vitis novae-angliae</i> Fernald	New England Grape	PE	DC	in moist mountain woods, ravines, and roadside thickets; flowers May; fruits August through November	found to be a sterile hybrid of two common species, and is a hybrid without conservation value (abundant)

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

Plant Species Name Changes/Updates

The names of the following native wild plant species are proposed to be changed/updated:

Spiraea betulifolia Pallas var. *corymbosa* (Raf.) Maxim. is proposed to be deleted from Pennsylvania Threatened (§ 45.13) classification and *Spiraea corymbosa* Rafinesque (Source: Flora of Southeastern United States, Weakley 2020) is proposed to be added to Pennsylvania Endangered (§ 45.12) classification. *Spiraea corymbosa* is the accepted taxonomy for this species and the appropriate classification is Pennsylvania Endangered.

Marshallia grandiflora Beadle & F. E. Boynton is proposed to be deleted from Pennsylvania Endangered (§ 45.12) classification and *Marshallia pulchra* W. M. Knapp, D. B. Poind. & Weakley (Source: Flora of Southeastern United States, Weakley 2020) is proposed to be added to Pennsylvania Endangered (§ 45.12) classification. The correct name for this species is *Marshallia pulchra* and the correct classification is Pennsylvania Endangered.

Viola tripartita Elliot is proposed to be deleted from Tentatively Undetermined (§ 45.21) classification and *Viola glaberrima* (Ging.) House (Source: Flora of Southeastern United States, Weakley 2020) is proposed to be added to Pennsylvania Endangered (§ 45.12) classification. The correct name for these plants is *Viola glaberrima* and the correct classification is Pennsylvania Endangered.

The common name of *Carex sterilis* Willd. is proposed to be changed from Atlantic Sedge to Sterile Sedge. Both

names are accepted common names. However, the Department prefers Sterile Sedge, as it is a more descriptive name.

Fiscal Impact

Commonwealth. This proposed rulemaking will not have a fiscal impact on this Commonwealth.

Political subdivisions. This proposed rulemaking will not have a fiscal impact on political subdivisions.

Public. This proposed rulemaking will not have a fiscal impact on the public.

Benefits, Costs and Compliance

Benefits. This proposed rulemaking will benefit State, county and municipal conservation planning officials, environmental regulatory agencies, landowners, conservation districts, conservation groups and other organizations concerned with the welfare of the environment, because it more accurately represents the native wild plants in this Commonwealth in need of the most protection. This proposed rulemaking also 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 a healthy biodiversity of ecological systems in this Commonwealth.

Costs and compliance. This proposed rulemaking will not impose additional compliance costs.

Paperwork requirements. There are no additional paperwork requirements associated with this proposed rulemaking.

Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on August 17, 2022, the Department submitted a copy of this proposed rulemaking and a copy of a Regulatory Analysis Form to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the House and Senate Environmental Resources and Energy Committees. A copy of this material is available to the public upon request.

Under section 5(g) of the of the Regulatory Review Act, IRRC may convey comments, recommendations or objections to the proposed rulemaking within 30 days of the close of the public comment period. The comments, recommendations or objections must specify the regulatory review criteria in section 5.2 of the Regulatory Review Act (71 P.S. § 745.5b) which have not been met. The Regulatory Review Act specifies detailed procedures for review prior to final publication of the rulemaking by the Department, the General Assembly and the Governor.

Effective Date

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

Public Comments

Interested persons are invited to submit comments regarding this proposed rulemaking in writing to Rebecca H. Bowen, Chief, Conservation Science and Ecological Resources Division, Bureau of Forestry, Department of Conservation and Natural Resources, P.O. Box 8552, Harrisburg, PA 17105-8552, (717) 787-3444, rebbowen@pa.gov or contact RA-Ch45WildPlants@pa.gov. Comments must be received by the Department 30 days from the date this proposed rulemaking is published in the *Pennsylvania Bulletin*.

Contact Person

For an explanation of this proposed rulemaking, contact Rebecca H. Bowen, Chief, Conservation Science and Ecological Resources Division, Bureau of Forestry, Department of Conservation and Natural Resources, P.O. Box 8552, Harrisburg, PA 17105-8552, (717) 787-3444, rebbowen@pa.gov or contact RA-Ch45WildPlants@pa.gov.

CINDY ADAMS DUNN,
Secretary

Fiscal Note: 7B-10. No fiscal impact; (8) recommends adoption.

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 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>Acalypha deamii</i> (Weath.) Ahles	Two-Seeded Copperleaf

<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>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>Cuscuta coryli</i> Engelm.	Hazel Dodder
<i>Cynoglossum boreale</i> Fernald	Northern Hound's Tongue
<i>Cyperus polystachyos</i> Rottb.	Many-Spiked Flatsedge
<i>Cyperus retrorsus</i> Chapm.	Retrorse 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]

Scientific Name	Common Name
<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-Tuberled 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>Gymnopogon ambiguus</i> (Michx.) Britton, Stearns & Poggenb.	Broad-Leaved Beardgrass
<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>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 greenei</i> Oakes & Tuck.	Greene's Rush
<i>Koeleria macrantha</i> (Ledeb.) Schultes	Junegrass

Scientific Name	Common Name
<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>pycnostichum</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

Scientific Name	Common Name
<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
<u>Utricularia subulata</u> L.	<u>Slender Bladderwort</u>

§ 45.12. Pennsylvania Endangered.

Plant species classified as Pennsylvania Endangered are as follows:

Scientific Name	Common Name
<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
<u>Aletris farinosa</u> L.	<u>Colic-Root</u>
<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
<u>Arglossum reniforme</u> (Hook.) H. E. Robins.	<u>Great Indian Plantain</u>

Scientific Name	Common Name
<i>Artemisia campestris</i> L. ssp. <i>caudata</i> (Michx.) Hall & Clements.	Beach Wormwood
<i>Asclepias variegata</i> L.	White Milkweed
<u>Asplenium bradleyi</u> D. C. Eaton	<u>Bradley's Spleenwort</u>
<i>Asplenium resiliens</i> Kunze	Black-Stemmed Spleenwort
<u>Astragalus canadensis</u> L.	<u>Canadian Milk-vetch</u>
<i>Bidens beckii</i> (Torr. ex Spreng.) Greene	Beck's Water-Marigold
<u>Bidens bidentoides</u> (Nutt.) Britton	<u>Swamp Beggar-Ticks</u>
<i>Boltonia asteroides</i> (L.) L'Hér.	Aster-Like Boltonia
<u>Camassia scilloides</u> (Raf.) Cory	<u>Wild Hyacinth</u>
<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
[<u>Carex collinsii</u> Nutt.]	<u>Collins' Sedge</u>]
<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
[<u>Carex gravida</u> Bailey]	<u>Heavy Sedge</u>]
<u>Carex lupuliformis</u> Sartwell	<u>False Hop Sedge</u>
<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
<u>Carex roanensis</u> F. J. Herm (Source: <u>Flora of Southeastern United States, Weakley 2020</u>)	<u>Roan Mountain Sedge</u>
<u>Carex schweinitzii</u> Schwein.	<u>Schweinitz's Sedge</u>

<i>Scientific Name</i>	<i>Common Name</i>
<i>Carex sterilis</i> Willd.	Sterile Sedge
<i>Carex typhina</i> Michx.	Cat-Tail Sedge
<i>Carex viridula</i> Michx.	Green Sedge
<i>Cerastium velutinum</i> Raf. var. <i>villossissimum</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>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>Corallorhiza wisteriana</i> Conrad	Spring Coral-Root
<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> Chapm.	Retrorse Flatsedge]
<i>Cypripedium parviflorum</i> Salisb. var. <i>makasin</i> (Source: Flora of North America)	Northern Small Yellow Lady's-Slipper
<i>Cypripedium parviflorum</i> Salisb. var. <i>parviflorum</i> (Source: Flora of North America)	Southern Small Yellow Lady's-Slipper
<i>Cypripedium reginae</i> Walter	Show Lady's-Slipper
<i>Delphinium exaltatum</i> Aiton	Tall Larkspur
[<i>Desmodium</i> <i>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>Scientific Name</i>	<i>Common Name</i>
<i>Dichanthelium scoparium</i> (Lam.) Gould	Velvety Panic Grass
<i>Dichanthelium</i> <i>xanthophyllum</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: Flora of North America)	Dwarf Scouring-Rush
<i>Equisetum variegatum</i> Schleich.	Variiegated 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>Fraxinus</i> <i>quadrangulata</i> Michx. (Source: Flora of Southeastern United States, Weakley 2020)	Blue Ash
<i>Galium labradoricum</i> Wiegand	Bog Bedstraw
<i>Gaylussacia brachycera</i> (Michx.) A. Gray	Box Huckleberry
<i>Gaylussacia dumosa</i> (Andr.) Torr. & A. Gray	Dwarf Huckleberry

Scientific Name	Common Name
<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>Gymnopogon ambiguus</i> (Michx.) Britton, Stearns & Poggenb.]	Broad-Leaved Beardgrass]
<i>Gratiola aurea</i> Muhl. ex Pursh	Golden Hedge-Hyssop
<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 hirta</i> (Schrank) Borbás (Source: Flora of Southeastern United States, Weakley 2020)	Common Northern Sweet Grass
<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>Hypericum gymnanthum</i> Engelm. & A. Gray	Clasping-Leaved St. John's-Wort
<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>Lipocarpha micrantha</i> (Vahl) G. C. Tucker	Common Hemicarpha
<i>Listera australis</i> Lindl.	Southern Twayblade

Scientific Name	Common Name
<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>Lysimachia hybrida</i> Michx.	Lance-Leaved Loosestrife
<i>Lythrum alatum</i> Pursh	Winged Loosestrife
<i>Malaxis bayardii</i> Fernald	Adder's-Mouth
[<i>Marshallia grandiflora</i> Beadle & F. E. Boynton]	Large-flowered Marshallia]
<i>Marshallia pulchra</i> W. M. Knapp, D. B. Poind. & Weakley (Source: Flora of Southeastern United States, Weakley 2020)	Beautiful Barbara's Buttons
<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>Oclemena nemoralis</i> (Aiton) E. Greene	Leafy Bog Aster
<i>Onosmodium molle</i> Michx. var. <i>hispidissimum</i> (Mack.) Cronquist	False Gromwell

Scientific Name	Common Name
<i>Ophioglossum engelmannii</i> Prantl	Limestone Adder's-Tongue
<i>Packera antennariifolia</i> (Britton) W. A. Weber Á & 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: Flora of North America)	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

Scientific Name	Common Name
<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>Rubus cuneifolius</i> Pursh	Sand Blackberry
<i>Ruellia humilis</i> Nutt.	Fringed-Leaved Petunia
<i>Sagittaria calycina</i> Engelm.	Long-Lobed Arrowhead
<i>Salix candida</i> Flügge ex Willd.	Hoary Willow
<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>Scientific Name</i>	<i>Common Name</i>
<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
<u><i>Spiraea corymbosa</i> Rafinesque (Source: Flora of Southeastern United States, Weakley 2020)</u>	<u>Dwarf Spiraea</u>
<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>Symphyotrichum boreale</i> (Torr. & Gray) A Löve & D. Löve	Northern Bog Aster
<i>Taenidia montana</i> (Mack.) Cronquist	Mountain Pimpernel
<u>[<i>Thalictrum coriaceum</i> (Britton) Small</u>	<u>Thick-Leaved Meadow-Rue]</u>
<i>Trichostema setaceum</i> Houtt.	Narrow-Leaved Blue-Curls
<u><i>Trifolium stoloniferum</i> Eaton (Source: Flora of the Southeastern United States, Weakley 2020)</u>	<u>Running Buffalo Clover</u>
<i>Trifolium virginicum</i> Small	Kate's-Mountain Clover
<i>Triphora trianthophora</i> (Swartz) Rydb.	Nodding Pogonia
<i>Triplasis purpurea</i> (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>Scientific Name</i>	<i>Common Name</i>
<u>[<i>Vitis novae-angliae</i> Fernald</u>	<u>New England Grape]</u>
<u><i>Viola glaberrima</i> (Ging.) House (Source: Flora of Southeastern United States, Weakley 2020)</u>	<u>Wedge-leaved violet</u>
<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
<u>[<i>Actaea podocarpa</i> DC</u>	<u>American Bugbane]</u>
<u><i>Ageratina aromatica</i> (L.) Spach</u>	<u>Small White-Snakeroot</u>
<i>Ammophila breviligulata</i> Fernald	American Beachgrass
<u><i>Arabis patens</i> Sull.</u>	<u>Spreading Rockcress</u>
<i>Arceuthobium pusillum</i> Peck	Dwarf Mistletoe
<i>Aristida purpurascens</i> Poir.	Arrow-Feather Three-Awned Grass
<u>[<i>Asplenium bradleyi</i> D. C. Eaton</u>	<u>Bradley's Spleenwort]</u>
<u><i>Asclepias verticillata</i> L.</u>	<u>Whorled milkweed</u>
<i>Baptisia australis</i> (L.) R. Br.	Blue False Indigo
<u>[<i>Bidens bidentoides</i> (Nutt.) Britt.</u>	<u>Swamp Beggar-Ticks]</u>
<i>Bouteloua curtipendula</i> (Michx.) Torr.	Tall Gramma
<u>[<i>Camassia scilloides</i> (Raf.) Cory</u>	<u>Wild Hyacinth]</u>
<u><i>Bromus kalmii</i> A. Gray</u>	<u>Kalm's Brome</u>
<i>Carex alata</i> Torr.	Broad-Winged Sedge
<i>Carex aquatilis</i> Wahlenb.	Water Sedge
<u><i>Carex collinsii</i> Nutt.</u>	<u>Collins' Sedge</u>
<i>Carex cryptolepis</i> Mack.	Northeastern Sedge
<i>Carex diandra</i> Schrank	Lesser Panicked Sedge
<i>Carex flava</i> L.	Yellow Sedge
<u><i>Carex longii</i> Mack.</u>	<u>Long's Sedge</u>
<i>Carex oligosperma</i> Michx.	Few-Seeded Sedge
<u>[<i>Carex paupercula</i> Michx.</u>	<u>Bog Sedge]</u>
<i>Carex prairea</i> Dewey	Prairie Sedge
<u>[<i>Carex schweinitzii</i> Schwein.</u>	<u>Schweinitz's Sedge</u>
<u><i>Carex sterilis</i> Willd.</u>	<u>Atlantic Sedge]</u>
<i>Carex tetanica</i> Schkuhr	Wood's Sedge

<i>Scientific Name</i>	<i>Common Name</i>
<i>Carex wiegandii</i> Mack.	Wiegand's Sedge
<u>Castilleja coccinea</u> (L.) Spreng.	Eastern Paintbrush
<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>Erigenia bulbosa</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 Fimbr
[<i>Gaylussacia brachycera</i> (Michx.) A. Gray	Box Huckleberry]
<i>Galium latifolium</i> Michx.	Purple Bedstraw
<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>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>Scientific Name</i>	<i>Common Name</i>
<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>Passiflora lutea</i> L.	Passion-Flower
<i>Phemeranthus teretifolius</i> (Pursh) Raf.	Round-Leaved Fameflower
<i>Platanthera ciliaris</i> (L.) Lindl.	Yellow Fringed Orchid
<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 ambigens</i> S. Watson	Water-Plantain Spearwort
<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> Flügge 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 roanensis</i> Porter	Mountain Goldenrod
<i>Solidago uliginosa</i> Nutt.	Bog Goldenrod
[<i>Spiraea betulifolia</i> Pallas var. <i>corymbosa</i> (Raf.) Maxim.	Dwarf Spiraea]
<i>Stellaria borealis</i> Bigelow	Northern Stitchwort
<i>Streptopus amplexifolius</i> (L.) DC	Twisted-Stalk
<i>Symphotrichum depauperatum</i> (Fernald) Nesom	Serpentine Aster

Scientific Name	Common Name
<i>Symphyotrichum novi-belgii</i> (L.) Nesom var. <i>novi-belgii</i>	New York Aster
<u>Thalictrum coriaceum</u> (Britton) Small	Thick-Leaved Meadow-Rue
<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:

Scientific Name	Common Name
<u>Actaea podocarpa</u> DC	Mountain Bugbane
<i>Amaranthus cannabinus</i> (L.) Sauer	Water-Hemp Ragweed
<i>Andromeda polifolia</i> L.	Bog-Rosemary
[<u>Aplectrum hyemale</u> (Muhl. ex Willd.) Nutt.	Puttyroot
<u>Baccharis halimifolia</u> L.	Eastern Baccharis]
<u>Andropogon gyrans</u> Ashe	Elliott's Beardgrass
<u>Asplenium pinnatifidum</u> Nutt.	Lobed Spleenwort
<u>Bartonia paniculata</u> ssp. <u>paniculata</u> (Michx.) Muhl.	Screw-Stem
<i>Cakile edentula</i> (Bigelow) Hook.	American Sea-Rocket
<u>Carex buxbaumii</u> Wahlenb.	Brown Sedge
<i>Carex disperma</i> Dewey	Soft-Leaved Sedge
<i>Carex lasiocarpa</i> Ehrh.	Many-Fruited Sedge
[<u>Collinsia verna</u> Nutt.	Spring Blue-Eyed Mary]
<u>Carex paupercula</u> Michx.	Bog Sedge
<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
[<u>Eleocharis olivacea</u> Torr.	Capitate Spike-Rush]
<i>Epilobium strictum</i> Muhl.	Downy Willow-Herb
<u>Erythronium albidum</u> Nutt.	White Trout-Lily
<i>Gaultheria hispidula</i> (L.) Muhl. ex Bigelow	Creeping Snowberry
<u>Juncus biflorus</u> Elliott	Grass-Leaved Rush
<i>Juncus filiformis</i> L.	Thread Rush

Scientific Name	Common Name
<i>Ledum groenlandicum</i> Oeder	Common Labrador-Tea
<u>Lorinseria areolata</u> (Linnaeus) C. Presl. (Source: Flora of the Southeastern United States, Weakley 2020)	Netted Chain Fern
<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>Pyrularia 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
[<u>Solidago roanensis</u> Porter	Tennessee Golden-Rod
<u>Tipularia discolor</u> (Pursh) Nutt.	Cranefly 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

§ 45.21. Tentatively Undetermined.

Plant species classified as Tentatively Undetermined are as follows:

Scientific Name	Common Name
[<u>Adiantum pedatum</u> L. ssp. <u>caulderi</u> Cody	Northern Maidenhair Fern]

Scientific Name	Common Name
<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>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</i> wisteriana 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

Scientific Name	Common Name
<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>Dichantherium annulum</i> (Ashe) LeBlond	Annulus Panic Grass
<i>Dichantherium boreale</i> (Nash) Freckmann	Northern Panic Grass
<i>Dichantherium</i> <i>commonsianum</i> (Ashe) Freckmann	Cloaked Panic Grass
<i>Dichantherium lucidum</i> (Ashe) LeBlond	Shining Panic Grass
<i>Dichantherium</i> <i>villosissimum</i> (Nash) Freckmann	Long-Haired Panic Grass
<i>Dichantherium yadkinense</i> (Ashe) Mohlenbr.	Yadkin River Panic Grass
<i>Dracocephalum</i> <i>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</i> <i>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
<i>Liatrix scariosa</i> (L.) Willd.	Northern Blazing-Star
<i>Lonicera hirsuta</i> Eaton	Hairy Honeysuckle

Scientific Name	Common Name
<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 & A 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

Scientific Name	Common Name
<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, 1991, Second Edition</i>)]	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>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>Scientific Name</i>	<i>Common Name</i>
<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	Possum-Grape
<i>Wolffia borealis</i> (Engelm.) Landolt	Dotted Watermeal

[Pa.B. Doc. No. 22-1291. Filed for public inspection August 26, 2022, 9:00 a.m.]

ENVIRONMENTAL QUALITY BOARD

[25 PA. CODE CH. 218]

Radiological Health Fees

The Environmental Quality Board (Board) proposes to amend Chapter 218 (relating to fees) to update the regulations to read as set forth in Annex A. The proposed amendments to Chapter 218 increase the annual fees for radiation-producing machine and service provider (vendor) registrations, accelerator licenses, and radioactive material licenses, and increases the hourly rate professional fee associated with certain full cost recovery licenses.

This proposed rulemaking was adopted by the Board at its meeting on June 14, 2022.

A. Effective Date

This proposed rulemaking will be effective 30 days after publication of the final-form rulemaking in the *Pennsylvania Bulletin*.

B. Contact Persons

For further information, contact John Chippo, Chief, Division of Radiation Control, P.O. Box 8469, Rachel Carson State Office Building, Harrisburg, PA 17105-8469, (717) 783-9730; or Richard Marcil, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 783-8504. Persons with a disability may use the Pennsylvania Hamilton Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This proposed rulemaking is available on the Department of Environmental Protection's (Department) web site at www.dep.pa.gov (select "Public Participation," then "Environmental Quality Board" and then navigate to the Board meeting of June 14, 2022).

C. Statutory Authority

The proposed amendments to Chapter 218 are authorized under sections 301, 302 and 401 of the Radiation Protection Act (RPA) (35 P.S. §§ 7110.301, 7110.302 and 7110.401) and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

D. Background and Purpose

The Department's Radiation Protection Program (RPP) was established to carry out the comprehensive program of radiation protection in this Commonwealth as required by the RPA (35 P.S. §§ 7110.101—7110.703). Section 401 of the RPA and section 8 of the Radon Certification Act (63 P.S. § 2008) require that fees be established to cover the Department's RPP costs. Section 302(b) of the RPA

(35 P.S. § 7110.302(b)) requires the Board to review the radiation protection fee structure every 3 years.

On February 15, 2022, the Department presented its Three-Year Regulatory Fee and Program Cost Analysis Report (Report) in accordance with § 218.11(l) (relating to registration, renewal of registration and license fees) and Chapter 240, Appendix A (relating to radon certification fee schedule) to the Board. The Report covered the period of 2018—2021 and analyzed costs for three RPP areas, including Accelerator, Radiation-Producing Machines, and Vendors/Service Providers; Radioactive Materials and Decommissioning; and Radon.

Accelerator, radiation-producing machines, and vendors/service providers analysis

Through a staff of 71 located in the Department's central and regional offices, the RPP's Radiation Control Division administers the radiation-producing machine registration and inspection program, the Mammography Quality Standards Act program, the particle accelerator licensing and inspection program and the vendor/service provider registration program.

The Radiation Control Division is responsible for the registration and inspection of over 11,000 facilities possessing about 33,000 X-ray units. These facilities include hospitals, clinics, and medical and dental offices. Users of radiation-producing machines are required to register with the Radiation Control Division, indicate the number and type of units possessed and designate an individual responsible for radiation safety. Users pay registration fees based on the type of facility and the number of X-ray units they have. The fee amounts are listed in § 218.11(a).

The Federal Mammography Quality Standards Act (MQSA) (42 U.S.C.A. § 263b) was signed into law on October 27, 1992. The MQSA ensures that women and men receive high-quality mammography services for early breast cancer detection through the establishment of a Federal certification and inspection program. The Statute authorizes the United States Food and Drug Administration (USFDA) to obtain state and local assistance in enforcing the MQSA requirements, including annual inspections of all certified mammography facilities. The Department, under a \$588,000 reimbursement contract with the USFDA, conducts inspections of each of this Commonwealth's more than 300 facilities which perform mammographic X-ray procedures. This contract is modified most years due to the changing number of facilities. The average amount is \$575,000.

The Department requires licensing of all particle accelerators within this Commonwealth for industrial use, research or medical purposes. A person who intends to purchase, construct or acquire an accelerator shall notify the Department of this intent by filing the appropriate application for a specific license within 30 days after the initial order is issued to obtain any or all parts of the accelerator. Annual fees for licensed particle accelerators are listed in § 218.11(d). About 150 facilities have approximately 250 licensed accelerators within this Commonwealth.

The Department also administers a registration program for vendors/service providers who sell, lease, install or service, or both, radiation-producing machines. Department regulations require that each vendor/service provider doing business within this Commonwealth must be registered prior to providing these services. To register, each vendor/service provider must complete a registration

application and return that application with the associated fee to Bureau of Radiation Protection. The registration is renewable for 12-month periods following submission of the applicable fee as listed in § 218.11(k).

In analyzing the annual costs and revenue associated with the Accelerator, Radiation-Producing Machines, and Vendors/Service Providers RPP fee category, the Department found that despite substantial increases in personnel and program costs, the Chapter 218 fees, which support the registration of radiation-producing machines and vendors/service providers and the licensing of accelerators, have not been revised since 2009. As a result, the Radiation Protection Fund is decreasing annually in operating reserves, and the fund balance will be negative in Fiscal Year (FY) 2023-2024. Without a fee increase, the Department will be required to curtail spending for needed equipment, infrastructure upgrades, and training and hiring of qualified personnel.

Radioactive materials and decommissioning analysis

The RPP's Radiation Control Division is also responsible for the regulation, licensing and inspection of radioactive material user operations and, along with the Decommissioning Section of the Decommissioning and Surveillance Division, is responsible for termination of radioactive material licenses (such as for by-product, source and special nuclear material).

Users of all by-product, source and special nuclear material are required to obtain a license from the Department prior to obtaining those radioactive materials. This material is used in hospitals, colleges and industries for medical, research and industrial purposes. The Department issues specific, general and reciprocity licenses for the use of radioactive material in this Commonwealth. The objective of the licensing program is to ensure radioactive material is used safely, disposed of properly and facilities are free from contamination when licensed operations are terminated. Annual license fees for radioactive material are listed in Chapter 218, Appendix A (relating to fees for radioactive material licenses).

The Decommissioning Section performs technical reviews of decontamination and decommissioning (D&D) activities for radioactive materials licensees and non-licensed radiologically contaminated sites in accordance with appropriate Commonwealth regulations. Typical reviews include site characterization plans, health and safety plans, decommissioning plans, survey reports, and the evaluation of decommissioning funding plans and financial assurance mechanisms. The Decommissioning Section also performs onsite reviews and inspections of D&D activities for occupational, public and environmental radiation protection concerns. These activities include performing confirmatory surveys and sampling to ensure the cleanup levels established for the site have been met. The Decommissioning Section would also perform independent oversight and sampling at decommissioning nuclear power plant sites (for example, Three Mile Island Unit 2). This work is performed at full cost recovery.

Fee collections for radioactive material licensing have been trending down since the National economic recession of 2008. Universities and industries that use radioactive material have been consolidating or finding other operational methods that do not require a license. Many licensees have opted to be licensed under a small business fee category at a lower cost, which is specified in Chapter 218, Appendix A. During this same time, actual RPP personnel costs (salaries and benefits) have increased approximately 14% since the last fee increase for this fee area took effect in 2018.

The Department's fiscal analysis showed that with existing reserve funds and current fees, the fund balance will be negative in FY 2024-2025 for the Radioactive Materials and Decommissioning area.

Radon analysis

This Commonwealth has some of the highest indoor air radon levels in the country, and perhaps the world. According to the National Academy of Sciences and the United States Environmental Protection Agency (EPA), radon is the second leading cause of lung cancer. The Department's Radon Program is one of the most robust in the Nation and provides a variety of regulatory and public service activities. These activities include, but are not limited to, implementing the EPA State Indoor Radon Grant (SIRG); certifying radon laboratories/mitigators/and testers; performing inspections of mitigation installations, mitigation offices, testing and laboratory facilities; assisting homeowners and mitigators with difficult to remediate buildings; providing free confirmatory testing to homeowners who have installed active mitigation systems and to homes with radon levels greater than 100 pCi/L; and providing a wide variety of public information services to increase awareness of the radon issue and encouraging testing and mitigation.

The Department receives funding for its Radon Program through a certification fee on radon laboratories, mitigators and testers. Additionally, grant funding from the EPA SIRG provides a small percentage of revenue to offset administrative costs. SIRG funds have been about \$429,000 annually in recent years, which is utilized mainly for staff training, public services announcements, equipment and supplies, home shows and some support of salaries and benefits.

The Department's fiscal analysis indicated that there is currently sufficient revenue to maintain the Radon Program until FY 2027-2028.

Summary of RPP funding needs

Based on the findings of the Report, the Board proposes this rulemaking to address the discrepancy between anticipated fees and needed revenue for the Accelerator, Radiation-Producing Machines, and Vendors/Service Providers program area and the Radioactive Materials and Decommissioning program area.

In March 2008, then-Governor Edward Rendell signed an agreement with the Chairperson of the United States Nuclear Regulatory Commission (NRC) for the Commonwealth to become an Agreement State. This allows the Department to oversee and regulate licensure of radioactive materials for entities in this Commonwealth. These duties are funded through the Chapter 218 fees. As part of the agreement, the Commonwealth committed to implementing a radiation protection program comparable to the NRC's program and ensured that Department regulations would be compatible with NRC regulations.

The proposed amendments to the Chapter 218 fees for radiation-producing machines, vendors and accelerators are necessary to ensure adequate funding is available for the Commonwealth to carry out its duties under the RPA. The proposed amendments to the Chapter 218 fees for radioactive material licenses are necessary to assure adequate funding is available for the Commonwealth to carry out its duties under the Agreement State program. If the Commonwealth were forced to cede its authority to regulate radioactive materials back to the NRC, the regulated community would experience higher costs per NRC's fee regulations.

To ensure there is adequate funding for these program areas and for the Commonwealth to maintain its status as an NRC Agreement State, the Board proposes to increase the fees associated with the Accelerator, Radiation-Producing Machines, and Vendors/Service Providers program area by 30% to provide sufficient revenue through FY 2027-2028 and to increase fees associated with the Radioactive Materials and Decommissioning program area by 10% to ensure sufficient funding through FY 2027-2028.

Outreach

The proposed amendments to the Chapter 218 fees for radiation-producing machines, vendors, and accelerators and for radioactive materials and decommissioning were reviewed with the Department's Radiation Protection Advisory Committee (RPAC). RPAC represents various stakeholders, including radiation-producing machine registrants, radioactive materials licensees and radon service providers, as well as the general public. The Department discussed the need for fee revisions and presented the draft proposed amendments to Chapter 218 with RPAC on March 3, 2022. At the March 3, 2022, meeting, RPAC endorsed moving forward with this proposed rulemaking.

E. Summary of Regulatory Requirements

§ 218.11. Registration, renewal of registration and license fees

In subsection (a), the annual administrative fees and annual fees per X-ray tube or radiation generating device for radiation-producing machines are proposed to be increased by approximately 30% to provide adequate funding to support the oversight of X-ray machines in hospitals, dental offices, veterinary clinics and other facilities. Additionally, the Board proposes to move "Chiropractors" out of the "Other" fee category and have them instead pay the same annual administrative fees and annual fees per X-ray tube or radiation generating device as "Dentists, podiatrists, veterinarians." This change is proposed as chiropractors' equipment is more in-line with the equipment used by dentists, podiatrists and veterinarians.

In subsection (d)(1), the fee amounts for accelerators, below 50 MeV, other than for ion implantation are proposed to be increased by 30% from \$2,100 to \$2,730 for the first accelerator at a facility and from \$700 to \$910 for each additional unit at the facility.

In subsection (d)(2), the fee amounts for accelerators used for ion implantation are proposed to be increased by 30% from \$700 to \$910 and from \$70 to \$90 for each additional unit at the same facility.

In subsection (d)(3), the fee amounts associated with accelerators 50 MeV and above are proposed to be increased by 30%. This includes the hourly rate considered for staff time to review license applications and to conduct inspections being increased from \$150 per hour to \$195 per hour; the minimum annual fee being increased from \$2,100 to \$2,730 for the first accelerator at a facility; and the fee for each additional unit being increased from \$700 to \$910.

In subsection (i), the annual fee amounts for electronic brachytherapy devices are proposed to be increased by 30% from \$1,000 to \$1,300 for the first unit at a facility and from \$100 to \$130 for each additional unit at the facility.

In subsection (k), the annual registration fee for radiation-producing machine service providers is proposed to be increased by 30% from \$140 to \$180.

Chapter 218, Appendix A. Fees for radioactive material licenses

The Board is proposing to increase the 39 different fee categories for radioactive material licenses by 10% based on the findings of the Report to ensure adequate funding is available for the Commonwealth to carry out its duties under the Agreement State program.

Additionally, the professional hourly rate fee, identified by the asterisk in this proposed rulemaking, is proposed to be increased from \$225 per hour to \$275 per hour, which is below the NRC's current FY 2021 hourly rate of \$288 per hour. This hourly rate is applicable to fee categories 4A (Waste Storage, Processing or Disposal), 5B (Well Logging Field Flood Tracer Studies) and 14 (Decontamination, Decommissioning, Reclamation or Site Restoration).

F. Benefits, Costs and Compliance

Benefits

The proposed Chapter 218 fee increases for radioactive material licenses are necessary to ensure that adequate funding is available for the Commonwealth to carry out its duties under the Agreement State program and the RPA. If the Commonwealth were forced to cede its authority to regulate radioactive materials back to the NRC, the regulated community would be subject to higher NRC fees. Radioactive material controls under the Agreement State program guard against the potential for unnecessary public radiation exposure from the use of radioactive material benefitting the health of all residents in this Commonwealth.

The proposed Chapter 218 fees for registration of X-ray facilities, licensing of accelerators and registration of vendors have not been increased since 2009, although costs have steadily increased. If fees for radiation-producing machines are not increased, oversight of radiation safety-related activities may be diminished, and the replacement of obsolete survey equipment may be delayed reducing the assurance that regulated activities are being conducted safely.

For these reasons, the Department will benefit from this proposed rulemaking by having the needed additional revenue to cover the costs of the programs mandated by the RPA, and the general public will benefit from this proposed rulemaking by the continued safety with the use of radioactive materials, the safety of radiation-producing machines and additional quality assurance that will be provided.

Compliance costs

The cost of compliance with the proposed fee amendments for the Accelerator, Radiation-Producing Machines, and Vendors/Service Providers program area are proposed to increase by 30% to provide sufficient revenue through FY 2027-2028. The cost of compliance with the proposed fee amendments for the Radioactive Materials and Decommissioning program area are proposed to increase by 10% to ensure sufficient funding through FY 2027-2028. Considering increases in inflation since the last time these fee categories were increased (2009 for the Accelerator, Radiation-Producing Machines, and Vendors/Service Providers program area and 2018 for the Radioactive Materials and Decommissioning program area), the cost of compliance is being increased in line with inflation rates.

Compliance assistance plan

The Department will notify the regulated community to expect higher fees by informing RPAC, issuing an Information Notice to relevant licensees and publishing notification in the *Pennsylvania Bulletin*.

Paperwork requirements

This proposed rulemaking does not require additional recordkeeping or reporting requirements as a result of the fee increases in Chapter 218.

G. Pollution Prevention

The Pollution Prevention Act of 1990 (42 U.S.C.A. §§ 13101–13109) established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance.

This proposed rulemaking is designed to support the safe and effective use of licensed radioactive materials and radiation-producing machines to protect the health and safety of residents in this Commonwealth. Failure to increase fees may have a direct effect on the Department's ability to implement radiological pollution prevention.

H. Sunset Review

These 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 August 10, 2022, the Department submitted a copy of this proposed rulemaking and a copy of the Regulatory Analysis Form to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the House and Senate Environmental Resources and Energy Committees. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey comments, recommendations or objections to this proposed rulemaking within 30 days of the close of the public comment period. The comments, recommendations or objections must specify the regulatory review criteria in section 5.2 of the Regulatory Review Act (71 P.S. § 745.5(b)) which have not been met. The Regulatory Review Act specifies detailed procedures for review, prior to final publication of the rulemaking, by the Department, the General Assembly and the Governor of comments, recommendations or objections raised.

J. Public Comments

Interested persons are invited to submit written comments, suggestions, support or objections regarding this proposed rulemaking to the Board. Comments, suggestions, support or objections must be received by the Board by September 26, 2022.

Comments may be submitted to the Board online, by e-mail, by mail or express mail as follows:

Comments may be submitted to the Board online by accessing the Board's online comment system at <http://www.ahs.dep.pa.gov/eComment>.

Comments may be submitted to the Board by e-mail at RegComments@pa.gov. A subject heading of this proposed rulemaking and a return name and address must be included in each transmission.

If an acknowledgement of comments submitted online or by e-mail is not received by the sender within 2 working days, the comments should be retransmitted to the Board to ensure receipt. Comments submitted by facsimile will not be accepted.

Written comments should be mailed to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477. Express mail should be sent to the Environmental Quality Board, Rachel Carson State Office Building, 16th Floor, 400 Market Street, Harrisburg, PA 17101-2301.

RAMEZ ZIADEH, P.E.,
Acting Chairperson

Fiscal Note: 7-574. No fiscal impact; (8) recommends adoption.

Annex A

**TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL
PROTECTION**

**Subpart D. ENVIRONMENTAL HEALTH AND
SAFETY**

ARTICLE V. RADIOLOGICAL HEALTH

CHAPTER 218. FEES

PAYMENT OF FEES

§ 218.11. Registration, renewal of registration and license fees.

(a) Annual registration fees for radiation-producing machines are the sum of an annual administrative fee and an annual fee for each X-ray tube or radiation generating device and shall be paid as follows:

<i>Type Facility</i>	<i>Annual Administrative Fee</i>	<i>Annual Fee per X-ray Tube or Radiation Generating Device</i>
[Dentists,] Chiropractors, dentists, podiatrists, veterinarians	[\$100] \$130	[\$50] \$65
Hospitals	[\$725] \$940	[\$50] \$65
Other Facilities	[\$350] \$455	[\$50] \$65

* * * * *

(d) Particle accelerators are licensed under Chapter 228 (relating to radiation safety requirements for particle accelerators). Annual fees are as follows:

(1) Accelerators, below 50 MeV, other than for ion implantation—[**\$2,100**] **\$2,730** for the first accelerator at the facility plus [**\$700**] **\$910** for each additional unit at that facility.

(2) Accelerators used for ion implantation—[**\$700**] **\$910** plus [**\$70**] **\$90** for each additional unit at the same facility.

(3) Accelerators 50 MeV and above—full cost of staff time to review license applications and conduct inspections as needed. (Hourly rate is [\$150] **\$195** per hour). For the purpose of anticipating costs and compliance with subsections (e) and (f), a minimum annual fee of [**\$2,100**] **\$2,730** for the first accelerator at the facility plus [**\$700**] **\$910** for each additional unit is established. Additional invoices will be issued by the Department at regular intervals at least quarterly when net costs are incurred above the minimum annual fee.

* * * * *

(i) Electronic brachytherapy devices are licensed under Chapter 221 (relating to X-rays in the healing arts). The annual fee is [**\$1,000**] **\$1,300** for the first unit (controller) at the facility plus [**\$100**] **\$130** for each additional unit at that facility.

(j) Emerging technology devices require Department safety review and approval prior to use. The registrant shall pay a fee equal to the full cost of Department staff time, as specified in Appendix A, for the review and approval process.

(k) A radiation-producing machine service provider shall pay an annual registration fee of [**\$140**] **\$180**.

(l) The Department will review the adequacy of the fees established in this section at least once every 3 years and provide a written report to the EQB. The report must identify any disparity between the amount of program income generated by the fees and the costs to administer these programs, and must contain recommendations to increase fees to eliminate the disparity, including recommendations for regulatory amendments to increase program fees.

APPENDIX A

Fees for Radioactive Material Licenses

<i>Fee Category</i> ^{5,6}	<i>Description</i>	<i>Annual Fee (\$)</i> ^{1,2,3,4,7}
1C	Special Nuclear Material Sealed Source Gauges (X-Ray Fluorescence)	[3,150] 3,465
1D	Special Nuclear Material—Other	[8,700] 9,570
2A(2)(c)	Source Material—Metal Extraction	[45,100] 49,610
2A5	Removal of Radioactive Contaminants from Drinking Water	[16,800] 18,480
2B	Source Material as Shielding	[1,125] 1,240
2C	Source Material—Other (not 11e2)	[20,100] 22,110
3A	Manufacturing & Distribution Commercial Broad Scope—10 CFR 30, 33	[43,650] 48,015
3B	Manufacturing, Refurbishing & Distribution Commercial Specific License—10 CFR 30	[12,450] 13,695
3C	Manufacturing & Distribution Pharmaceuticals—10 CFR 32.72—32.74	[17,850] 19,635
3D	Pharmaceuticals—Distribution Only—10 CFR 32.7x	[10,200] 11,220
3E	Irradiator—Shielded Source	[6,300] 6,930
3F	Irradiator—Unshielded < 10kCi	[11,700] 12,870
3G	Irradiator—Unshielded >= 10kCi	[46,800] 51,480
3I	Distribution As Exempt—No Review of Device	[16,050] 17,655
3J	Distribution—SSD Devices to Part 31 GLs	[3,750] 4,125
3K	Distribution—No Review-Exempt Sealed Source	[2,850] 3,135
3L	Research & Development Broad Scope	[22,650] 24,915
3M	Research & Development	[8,400] 9,240
3N	Services other than Leak Testing, Waste Disposal or Calibration	[12,750] 14,025
3O	Radiography	[21,150] 23,265
3P	Other Byproduct Material	[4,050] 4,455
3Q	Generally licensed devices under § 217.143 (relating to certain measuring, gauging or controlling devices)	[480] 530
3R1	Greater than the General License Limits in 10 CFR 31.12(a)(3), (4) or (5) but not more than ten times those Limits	[3,150] 3,465
3R2	Greater than ten times the General License Limits in 10 CFR 31.12(a)(3), (4) or (5)	[4,050] 4,455
3S	Manufacturing & Distribution Pharmaceuticals—Accelerator Produced Only	[17,700] 19,470
4A	Waste Storage, Processing or Disposal	Full Cost *
4B	Waste Packaging or Repackaging	[18,000] 19,800

<i>Fee Category^{5,6}</i>	<i>Description</i>	<i>Annual Fee (\$)^{1,2,3,4,7}</i>
4C	Waste Receipt of Prepackaged for Disposal	[13,800] <u>15,180</u>
5A	Well Logging & Non Field Flood Tracers	[6,600] <u>7,260</u>
5B	Well Logging Field Flood Tracer Studies	Full Cost *
6A	Nuclear Laundry	[43,200] <u>47,520</u>
7A	Human Use—Teletherapy	[20,550] <u>22,605</u>
7B	Human Use—Broad Scope (except Teletherapy)	[36,250] <u>39,875</u>
7C	Human Use (except Teletherapy)	[7,350] <u>8,085</u>
8A	Specifically licensed sources used in static eliminators, nonexempt smoke detectors, fixed gauges, dew pointers, calibration sources, civil defense uses or in temporary (2 years or less) storage	[3,150] <u>3,465</u>
14	Decontamination, Decommissioning, Reclamation or Site Restoration	Full Cost *
16	Reciprocity (180 days/year)	[2,250] <u>2,475</u>
SB1 ⁵	Small Business—Category 1	[3,450] <u>3,795</u>
SB2 ⁶	Small Business—Category 2	[750] <u>825</u>

¹ A license may include as many as four noncontiguous sites at the base fee. Sites that are within 5 miles of the main radiation safety office where the license records are kept will be considered contiguous. An additional fee of 25% of the base fee will be added for each noncontiguous site above four.

² All fees will be effective upon publication of the final rules in the *Pennsylvania Bulletin*. Existing NARM licenses will be changed to the corresponding category of byproduct material license in Appendix A upon publication of the final rule.

³ Annual fees for categories of NRC licenses that are not included in this table will be calculated as follows: PA Fee = (NRC Annual Fee + 0.10 NRC Application or Renewal fee).

⁴ Annual fees charged to holders of transferred NRC licenses with multiple sites will not exceed the fees charged by the NRC for the same licenses that are in effect in the year of transfer, provided the number of noncontiguous sites does not increase.

⁵ Small Businesses Not Engaged in Manufacturing, and Small Not-For-Profit Organizations with Gross Annual Receipts of more than \$350,000 and less than \$5 million; Manufacturing Entities that have an average of 35–500 employees with Gross Annual Receipts of more than \$350,000 and less than \$5 million; Small Government Jurisdictions (including publicly supported, nonmedical educational institutions) with a population between 20,000 and 50,000; and nonmedical Educational Institutions that are not state or publicly supported and have 35–500 employees.

⁶ Small Businesses Not Engaged in Manufacturing, and Small Not-For-Profit Organizations with Gross Annual Receipts of less than \$350,000; Manufacturing Entities that have an average of less than 35 employees and less than \$350,000 in Gross Annual Receipts; Small Government Jurisdictions (including publicly supported nonmedical educational institutions) with a population less than 20,000; and nonmedical Educational Institutions that are not state or publicly supported and have less than 35 employees.

⁷ Full cost recovery licensees and licensees required to provide financial assurance for decommissioning are not eligible for reduced fees under category SB1 or SB2.

* Full cost recovery consists of a professional fee, to cover the activities and support of Department personnel, and any other additional incidental charges incurred, such as related contracted services or laboratory costs. The professional fee component (Hourly Rate) is [\$225] \$275 per hour. Other costs are recovered at 100% of actual cost. Invoices shall be issued by the Department at regular intervals but at least quarterly when net costs are incurred.

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