Mayor
Kenneth C. Wine

Town Council
Craig Green
Rebecca Jones
Robin Linn
Catherine Salter
Chris Shumaker
Thomas Soska

Zoning Administrator
Martha M. Semmes, FAICP

Treasurer
Sherri Jackson

Town Recorder
Christy Ashby

MEMORANDUM

TO: Planning Commission
FROM: Martha Mason Semmes, FAICP, Zoning Administrator
DATE: September 19, 2026
RE: **Planning Commission Regular Meeting – September 23, 2026**

The agenda and materials for the Commission's September 23th regular are enclosed. The Commission will review draft minutes for the June and July meetings and discuss draft amendments to Zoning Ordinance Article 9, Landscaping, Screening and Open Space.

Draft Minutes. Please note that the enclosed minutes for the June 22nd meeting include notes that it was determined after the meeting that the Commission did not have a quorum. I've included the minutes with these notes, since I believe it is important that the meeting be recorded anyway. The July public hearing and special meeting did have a quorum.

Draft Landscaping, Screening and Open Space Amendments. I've included draft amendments to this section of the Zoning Ordinance that seek to simplify, but not undermine the regulations. I've also referenced a proposed approved plant list from NoVa Native Plants and one for prohibited invasive plants from the Virginia Department of Conservation and Recreation, which are widely regarded plant lists for our area.

If you will not be able to make the meeting, please let me and Chairman Gorman know. You can email me at zoning@hamiltonva.gov and Chairman Gorman at dgorman@hamiltonva.gov .

Thank you!

AGENDA

TOWN OF HAMILTON PLANNING COMMISSION
REGULAR MEETING

Wednesday, September 23, 2026 - 7:00 pm

I. CALL TO ORDER – Chairman Gorman

II. ROLL CALL & DETERMINATION OF A QUORUM

III. PLEDGE OF ALLEGIANCE

IV. PUBLIC COMMENT

Members of the public are invited to speak regarding planning-related items that are not the subject of a public hearing. The name and address of each speaker shall be provided and a speaking limit of three (3) minutes shall apply.

V. NEW BUSINESS

1. Approval of Minutes – July 22, 2026 meeting.

VI. OLD BUSINESS

1. Zoning Ordinance Review – Article 9. Landscaping, Screening & Open Space Regulations.

The Commission will review draft revisions to Article 9, Landscaping, Screening & Open Space Regulations, including Fencing.

VII. ZONING ADMINISTRATOR REPORT – Oral report

VIII. ADJOURNMENT

NEXT REGULAR MEETING: November 18, 2026 7:00 PM

If you need an accommodation due to a disability, limited English proficiency or any other special need to allow for participation in public meetings, please contact the Town of Hamilton at 540-338-2811 or email info@hamiltonva.gov so arrangements for reasonable accommodations can be made.

Si necesita una adaptación debido a una discapacidad, dominio limitado del inglés o cualquier otra necesidad especial para permitir la participación en reuniones públicas, comuníquese con la Ciudad de Hamilton al 540-338-2811 o envíe un correo electrónico a info@hamiltonva.gov para que se puedan hacer arreglos para adaptaciones razonables. Puede ser hecho.

53 East Colonial Highway P.O. Box 130 Hamilton, VA 20159-0130
Phone: (540) 338-2811 Fax: (540) 338-9263 Web: www.hamiltonva.gov
Email: hamiltonva@hamiltonva.gov

MINUTES
HAMILTON PLANNING COMMISSION
PUBLIC HEARING AND SPECIAL MEETING
JUNE 24, 2026
7:00 PM

PLANNING COMMISSION:

PRESENT: Dan Gorman, Chairman
Jamil Moen, Commissioner
Bryan Munson, Commissioner ~ virtual
Chris Shumaker, Town Council Representative

ABSENT: Robert McCann, Vice-Chairman
Les Carlson, Commissioner

STAFF: Martha Mason Semmes, Zoning Administrator

CALL TO ORDER THE PUBLIC HEARING:

Chairman Gorman called to order the Public Hearing of the Hamilton Town Planning Commission at 7:04 PM. The Pledge of Allegiance was recited. Chairman Gorman performed roll call, and a quorum was established with four members present. NOTE: It was later determined that the virtual participation of Commissioner Munson was not an allowable count to the quorum.

PUBLIC HEARING: NOTE: It was later determined that a legal quorum was not present and therefore the public hearing and subsequent vote on the zoning ordinance amendments were rescheduled for July 22, 2026.

A public hearing was heldw on proposed amendments to the sign ordinance regarding freestanding pole signs on commercials lots without public street frontage. There being no comments from the public, Chairman Gorman called for a motion to close the Public Hearing. Commissioner Moen moved that the Public Hearing be closed. The motion was approved 4-0-2, and the hearing was closed.

Motion: Commissioner Moen
Second: Commissioner Shumaker
Approved 4-0-2

SPECIAL MEETING

Chairman Gorman convened the special Planning Commission meeting at 7:06 PM.

OLD BUSINESS:

1. Sign Ordinance Amendments regarding Freestanding Signs ~ Consideration of the Planning Commission Recommendation to Town Council.

Ms. Semmes summarized the background information on these amendments in her staff report. She stated that she added two sign definitions to the proposed Ordinance amendments as suggested by the Town Attorney. There was also a statement added as requested by the Commission at its last meeting that illuminated signs would be turned off by 10 PM. The Public Hearing was advertised, as required, on June 12, 2026, and June 19, 2026, in *Loudoun Now*.

Commissioner Munson made the following motion:

I move that the Planning Commission recommend approval of the proposed sign ordinance amendments regarding freestanding signs as amended and included in the agenda for June 24, 2026.

The motion was seconded by Commissioner Shumaker and was approved.

Motion: Commissioner Munson
Second: Commissioner Shumaker
Carried: 4-0-2

McCann: Absent
Carlson: Absent
Moen: Yes
Gorman: Yes
Munson: Yes
Shumaker: Yes

ZONING ADMINISTRATOR REPORT:

Ms. Semmes stated she had been in the fire house recently and they are beginning to clean things up. They are working with engineers on their site plan. They had some questions about the Town of Hamilton standards. They also talked about making the house a coffee shop downstairs and office space upstairs. Ms. Semmes stated that she has been going through the old file's downstairs with the Intern, Elaina.

Next Regular Meeting: July 22, 2026.

Commissioner Moen made a motion to adjourn the meeting at 7:13 PM.

Motion: Commissioner Moen
Second: Town Council Representative Shumaker

_____
Dan Gorman, Chairman

_____
Christy Ashby, Town Clerk/Recorder

MINUTES
TOWN OF HAMILTON
PLANNING COMMISSION PUBLIC HEARING AND REGULAR MEETING
JULY 22, 2026
7:00 PM

PLANNING COMMISSION:

PRESENT: Dan Gorman, Chairman
Robert McCann, Vice-Chairman
Jamil Moen, Commissioner
Les Carlson, Commissioner
Chris Shumaker, Council Representative

ABSENT: Bryan Munson, Commissioner

STAFF: Martha Mason Semmes, Zoning Administrator

CALL TO ORDER THE REGULAR MEETING:

Chairman Gorman called to order the Regular Meeting of the Hamilton Town Planning Commission at 7:00 PM. The Pledge of Allegiance was recited.

ROLL CALL & ESTABLISH QUORUM:

Chairman Gorman performed roll call and a quorum was established with five members present. Commissioner Munson was absent.

PUBLIC HEARING:

Chairman Gorman opened the public hearing on the sign ordinance amendments. There was no one present or online to speak. Chairman Gorman closed the public hearing on a motion from Vice Chairman McCann, second by Commissioner Carlson.

Motion: Vice-Chairman McCann
Second: Commissioner Carlson
Carried: 5-0-1

REGULAR MEETING:

1. PUBLIC COMMENT

   None

2. OLD BUSINESS

Sign Ordinance Amendments regarding Freestanding Signs –
Consideration of Planning Commission Recommendation to Council.

Following some discussion, Vice-Chairman McCann made the following motion:
I move that the Planning Commission recommend approval of the proposed sign ordinance amendments regarding freestanding signs as amended and included in the agenda from May 24, 2026.

Motion: Vice-Chairman McCann
Second: Commissioner Moen
Carried: 5-0-1

Gorman:	Yes
McCann:	Yes
Moen:	Yes
Shoemaker:	Yes
Carlson:	Yes
Munson:	Absent

ZONING ADMINSTRATOR REPORT:

Ms. Semmes stated that she met with the new owners of the fire station and house next door. They are working on a demolition permit for some walls inside the building. Once that is done, they have plans for interior renovations. There will also be a site plan that will come to the Planning Commission for review. The site plan is required because it is a commercial building. The summer intern, Elaina, has been working on the basement files. The Town received $1.5 million to begin the preliminary design for the street design.

ADJOURNMENT: Vice-Chairman McCann made a motion to adjourn the meeting, there was a second by Commissioner Shumaker, and with the Commission in agreement, the meeting was adjourned at 7:17PM.

_____
Dan Gorman, Chairman

_____
Christy Ashby, Town Clerk/Recorder

ARTICLE 9. LANDSCAPING, SCREENING AND OPEN SPACE REGULATIONS

Section 1. General Regulations.

1.1. Purpose and Intent. The purpose of this Article is to regulate the planting and preservation of landscape materials; to promote the general health, safety and welfare of our citizens; to facilitate the creation of an attractive environment; to protect property values and to further the design and economic development objectives of the Hamilton Comprehensive Plan. To these ends, these regulations are intended to promote the planting and preservation of landscape materials which:

1. Provide screening and buffering between incompatible land uses.
2. Provide parking lot landscaping to reduce the harmful effects of heat, noise and glare associated with motor vehicle use.
3. Provide shade and enhance the appearance of areas.
4. Provide for the creation of safe, attractively landscaped areas adjacent to public streets by using landscape materials that separate vehicular and pedestrian areas.
5. Provide for the protection of ground and surface water quality and air quality through the mitigating effects of trees and vegetated areas.
6. Provide for useful and attractive open space areas.

1.2. Applicability. The provisions of this Article shall apply to all site plans, subdivision applications and all zoning permit applications within the corporate limits approved after the effective date of this Ordinance including those which include the reconstruction and enlargement of existing structures. This Article does apply to the enlargement of any parking lot, but does not apply to the resurfacing of any existing lot. This Article shall apply to construction associated with a parking lot with greater than five spaces and the construction, extension or widening of any public or private street.

1.3. Landscape Plan Required. A landscape plan meeting the requirements of this Article is required for all subdivisions and site plan applications.

1.4. Review Procedures. The Zoning Administrator shall be responsible for the review of all landscape plans. The Zoning Administrator shall forward an evaluation of any required landscape plan to the Planning Commission or Town Council, as appropriate, before final approval of any subdivision and/or site plan application.

1.5. Contents of Landscape Plan. A certified Engineer, Land Surveyor, Landscape Architect, Landscape Contractor, or other individual with professional experience in landscape architecture shall prepare every landscape plan required by this Article. All landscape plans shall contain the following information:

1. *Scale.* Plans shall be drawn to a scale of not less than 50 feet to the inch on sheets not exceeding 24 by 36 inches.
2. *Contents.* All plans shall illustrate with sufficient detail the location of all proposed construction including driveways, parking areas, curbs, sidewalks, utility lines, structures and landscape areas. Landscape areas shall indicate dimensions, and all proposed trees and plants shall be illustrated.
3. *Schedule.* All plans shall be accompanied by a schedule of plants proposed, including the number proposed, their height, caliper or gallon size, as well as their common and botanical names.

4. *Open Space.* All plans shall include a table calculating the amount of open space and number of plants and trees required by the Zoning Ordinance and the amount of open space and number of plants and trees provided.

5. *Existing Vegetation*. Any existing vegetation proposed to be saved shall be identified by name, quantity and size. Methods of protecting the vegetation shall be illustrated or explained.

Section 2. Street Tree Planting.

2.1. Applicability. Street tree planting is required any time a public street is constructed, extended or widened. This requirement shall apply to all zoning districts. Where parking lots abut public street rights-of-way, the requirements of Section 3.2 of this Article shall apply.

2.2. Street Tree Standards.

1. *Species.* Tree species shall conform to those identified as street trees on the plant list of Section 5.3 of this Article. Substitutions may be made with the permission of the Zoning Administrator. All street tree plantings must be approved by the Zoning Administrator. In reviewing plans for street tree plantings the Zoning Administrator shall consider:

   a. The size, type and condition of existing street trees;

   b. The adopted design study, landscape plan, or design theme for the street;

   c. The majority of street trees planted shall be medium or large scale canopy trees to provide shade and visual relief; and

   d. Flowering ornamental trees should be planted in groups.

2. *Number.* One tree for every forty (40) feet of street frontage.

3. *Location.* In commercial zoning districts all street trees shall be located in the required landscape area adjacent to the street. In residential zoning districts street trees shall be located generally within 20 feet of the right-of-way. Nothing in this Section shall be construed as to require that tree plantings be planted at even intervals, but they must meet the minimum requirements of this article.

Section 3. Parking Lot Landscaping.

3.1. Applicability. All parking areas described below, unless explicitly exempted, must be landscaped as described in this Article. For the purposes of this Article, parking lots are defined as any area used for the display or parking of any and all types of vehicles, boats or heavy construction equipment, whether these vehicles are or are not for sale or lease. This definition includes, but is not limited to, parking lots and display areas for automobile dealerships and service stations. The area of the parking lot shall be calculated to include all paved areas used for ingress/egress.

3.2. Perimeter Parking Lot Landscaping.

1. Definition. Perimeter parking lot landscaping shall include all landscape areas outside the perimeter of the parking area of the lot including any landscape area required adjacent to a public street.

2. Applicability. The requirements of this Section shall apply to the construction or enlargement of any parking lot with five or more parking spaces. No perimeter parking lot landscaping shall be required if a Screen-2 or Screen-3 as described in Section 4.4 is required.

3. Parking Lots Adjacent to Public Streets.

a. Landscape Area. A continuous landscape area 10 feet in width, not including the sidewalk, shall be located between the parking lot and the property line. If road improvements are necessary across the frontage of the property, a continuous landscape strip with an average width of 10 feet may be provided to meet the requirements of this Section. If a parking lot is built adjacent to an existing parking lot that has landscape area, narrower than ten feet in width, the width of the existing landscape area may be continued provided that it is at least four feet wide.

b. Number of Trees. One tree for each 40 feet of frontage shall be planted in the landscape strip. Nothing in this Section shall be construed as to require that tree plantings be planted at even intervals, but they must meet the minimum requirements of this article.

c. Screening Adjacent to Public Street. All parking lots adjacent to the public street must be screened along at least one-half of the street frontage. Screening shall be accomplished through the planting of shrubs, hedges or the creation of berms. No plant material or berm shall obstruct the sight distance of motorists entering or leaving the site.

d. Species. All trees planted to meet the requirements of this Section shall be street trees as identified in Section 5.3 (plant list).

4. Other Parking Lots.

a. Landscape Area. A continuous landscape area, at least five (5) feet in width, shall be located between the property line and the parking lot.

b. Number of Trees and Shrubs. One tree and three shrubs for every 50 feet of frontage shall be planted in the landscape area. Nothing in this Section shall be construed as to require that tree plantings be planted at even intervals, but they must meet the minimum requirements of this article.

c. Species. All trees planted to meet the requirements of this Section shall be canopy trees as identified in Section 5.3 (plant list).

3.3. Interior Parking Lot Landscaping.

1. Definition. Interior parking lot landscaping is any landscape area over 50 square feet in area within the perimeter of a parking area and greater than five feet from any principal structure.

2. Applicability. These requirements shall apply to the construction or enlargement of any parking lot with ten or more parking spaces. Such landscaping shall be in addition to perimeter parking lot landscaping, street tree planting and screening.

3. Interior Parking Lot Landscaping Standards.

a. Minimum Landscape Area. Five percent (5%) of the gross area of a paved parking lot. The gross area of the parking lot shall include all paved areas within the lot including areas for ingress/egress.

b. Minimum Landscape Area. No landscape area shall be less than 35 square feet. Each landscape area shall have at least one canopy tree.

c. Number of Trees. One tree for every ten (10) parking spaces.

d. Number of Shrubs. Three (3) shrubs for every ten (10) parking spaces.

e. Species. At least three-fourths of the trees planted to meet the requirements of this Section must be canopy shade trees as identified in Section 5.3 (plant list).

3.4. Modification of Parking Lot Landscaping Requirements.

1. Properties with Existing Structures Built Prior to Adoption of Article.

a. Landscape Area Adjacent to a Public Street. The Zoning Administrator may waive or reduce the requirement for a landscape area as described in Section 3.2.3a for properties with structures built prior to adoption of this Article. This requirement may be waived or reduced when the Zoning Administrator finds that the required 10-foot area would serve no useful purpose, would result in a hardship to the property owner and that a suitable screening alternative has been provided where necessary. Alternative screening such as architectural walls may be permitted when approved by the Zoning Administrator.

b. Perimeter Parking Lot Landscaping. The Zoning Administrator may waive or reduce the requirement for perimeter parking lot landscaping as described in Section 3.2. This requirement may be waived or reduced when suitable screening alternative has been provided that is acceptable to the Zoning Administrator.

c. Relation of Perimeter and Interior Parking Lot Landscaping. The Zoning Administrator may modify the numerical requirements for the amount of landscape space and amount of plant materials as required in Sections 3.2 and 3.3. If additional landscape area or plant materials are provided that exceed the requirements of the interior or perimeter parking lot landscaping, the Zoning Administrator may apply this to the alternative perimeter or interior landscaping requirements.

Section 4. Screening and Buffer-Yard Requirements.

4.1. Applicability. The requirements of this Section shall apply to all new construction and all reconstruction or enlargement of existing structures constituting more than 50% of the floor area of the existing structure(s). Alternative screening methods and reduced buffer yards may be permitted for enlargement of existing structures constituting more than 50% of the floor area of the existing structure when approved by the Zoning Administrator.

4.2. Land Use Categories. For the purpose of this Article, existing and proposed land uses are divided into the four major land-use categories: residential, institutional, commercial and industrial. Each category is subdivided to reflect the intensity of the proposed use. For instance, the residential category is divided into single-family detached, single-family attached and multifamily residential. In those instances where a proposed or existing use is not listed below, the Zoning Administrator shall decide which land use category is applicable. If the adjacent property is vacant, the property shall be assumed to be the land use recommended in the Land Use Element of the Town Plan.

1. Residential.
    a. Ra Single-family detached and semi-detached.
    b. Rb Single-family attached (townhouses).
    c. Rc Multifamily residential.
2. Institutional.
    a. Ia Low Intensity (daytime only) uses including libraries, post offices and churches.
    b. Ib Medium intensity, including Schools, community center, assisted living facility or nursing homes.
    c. Ic High intensity, including including fire and rescue stations and utility facilities.
3. Commercial.
    a. Ca Offices and general retail uses under 5,000 square feet of gross leasable area.
    b. Cb Offices and General retail uses over 5,000 square feet of gross leasable area.

c. Cc Hotels and motels, fast-food restaurants, convenience grocery stores, vehicle sales and service.

4.3 Buffer-Yards.

1. *Definition.* Buffer-yards are land areas provided to buffer adjoining land uses and shall be used for the planting of landscape materials. Buffer-yards shall not be used for the storage of materials, buildings, parking or loading areas for motor vehicles or equipment or signs. Driveway and entrances connecting adjacent parking lots or developments may interrupt the required buffer-yard.

2. *Relation to Setbacks.* Buffer-yards may be provided in the area required for setbacks by the zoning district regulations, except in residential zoning districts. Buffer-yards in residential zoning districts may be provided in any of the following ways: in common open space, in common use easements located outside of the required lot area, or by providing additional yard space in addition to the required minimum yard requirements listed in the residential zoning district regulations.

3. *Buffer-Yards Exceeding Setbacks.* In any instance when the buffer-yard required by this Article exceeds the setback required by the zoning district regulations, the buffer-yard required by this Article must be provided.

4. *Credit for Existing Buffer*. Any existing buffer-yard proposed to be saved by a subdivision or development plan application, which complies with the intention of this Section, shall be deemed to meet these buffer-yard requirements.

4.4. Screening.

1. *Definition.* This Article establishes three different screens as identified in the matrix in Section 4.5. (Screen 1-an open screen, Screen 2-a semi-opaque screen and Screen 3-an opaque screen). Four separate types of plants are required: large or medium scale canopy shade trees, ornamental trees, evergreen trees and shrubs.

2. *Plant Varieties.* Plantings must be identified as suitable buffer plants in Section 5.3 of this Article. The Zoning Administrator may approve alternative varieties.

3. *Number of Plants*. Plant materials are required per square foot of buffer area. For example, if the matrix requires a 25-foot buffer along a 100-foot property boundary, a resulting 2,500 square feet of buffer space is required. Screen 1, Alternative A requires five large or medium scale canopy trees, and twenty-five shrubs. Screen 1, Alternative B requires two or three large or medium scale canopy trees, five ornamental trees and twenty-five shrubs.

4. *Alternative Screens and Modifications.* Alternative planting programs achieving the objectives of the required screens are permitted to allow flexibility in landscape design. The Zoning Administrator may approve any of the alternative screens provided below or a combination of the alternatives if the applicant can demonstrate that the objective of the screen has been met. The Zoning Administrator may reduce or eliminate the requirements for evergreen trees or shrubs if a landscape plan proposes the use of hedges, shrubs, walls, or berms that achieve the objective of the required screen.

a. Screen 1. An open screen between relatively similar land uses. Open screening shall provide an attractive separation between the land uses. Screen 1 shall consist of one of the three alternative planting programs (A, B, or C) described below or as otherwise approved as described in subsection 1 above:

Screen 1 (S-1)*TYPE OF PLANT*	A	B	C
Canopy Trees	1/500	1/1,000	1/500
Ornamental Trees	0	1/500	0
Evergreen Trees	0	0	1/350

Shrubs	1/100	1/100	1/200

Note: All figures are for per square foot of required buffer-yard. Tables express number of plants required per square foot of buffer-yard.

b. Screen 2. A semi-opaque screen between land uses which are dissimilar in character. Semi-opaque screening should partially block views from the adjoining land uses and create a separation between the adjoining land uses. Screen 2 shall consist of one of the three alternative planting programs (A, B or C)

Screen 2 (S-2) *TYPE OF PLANT*	A	B	C
Canopy Trees	1/500	1/1,000	1/500
Ornamental Trees	0	1/500	0
Evergreen Trees	1/500	1/500	1/175
Shrubs	1/100	1/100	1/200

Screen 3 (S-3) *TYPE OF PLANT*	A	B	C
Canopy Trees	1/500	1/1,000	1/500
Ornamental Trees	1/500	1/250	1/500
Evergreen Trees	1/500	1/500	1/175
Shrubs	1/100	1/100	1/200

4.5 Screening and Buffer-Yard Matrix. The screening and buffer-yard matrix describes the requirements for screening and buffer-yards between adjoining land uses. This matrix cross-references Sections 4.2 (Land use categories), 4.3 (Buffer-Yards), and 4.4 & 5 (Screening).

	Ra	Rb	Rc	Ia	Ib	Ic	Ca	Cb	Cc	INa	Inb
Ra	* *	* *	25' S3	25' S2	25' S2	25' S3	25' S3	25' S3	25' S3	25' S3	25' S3
Rb	* *	* *	25' S1	25' S2	25' S2	25' S3	25' S3	25' S3	25' S3	25' S3	25' S3
Rc	25' S3	25' S3	25' S2	25' S2	25' S2	25' S3	25' S3	25' S3	25' S3	25' S3	25' S3
Ia	25' S2	25' S2	25' S2	* *	10' S1	15' S2	* *	10' S2	25' S2	25' S2	25' S3
Ib	25' S2	25' S2	25' S2	10' S1	* *	10' S1	10' S2	15' S2	15' S2	25' S2	25' S3
Ic	25' S3	25' S3	25' S3	15' S2	10' S1	* *	10' S2	10' S2	15' S2	25' S2	25' S3
Ca	20' S2	20' S2	20' S2	* *	10' S2	15' S2	* *	10' S2	10' S2	15' S1	15' S2
Cb	25' S3	25' S3	25' S3	15' S2	15' S2	10' S2	10' S2	10' S2	10' S2	15' S1	15' S2
Cc	25' S3	25' S3	25' S3	25' S2	15' S2	15' S2	10' S2	10' S2	10' S2	15' S1	25' S2

INa	25' S3	25' S3	25' S3	25' S2	25' S2	25' S2	15' S2	15' S2	15' S2	10' S1	15' S1
INb	25' S3	25' S3	25' S3	25' S3	25' S3	25' S3	15' S2	15' S2	15' S2	15' S1	15' S1

4.6. Screening of Outdoor Storage and Loading Areas. All outdoor storage and loading areas created after the adoption of this Ordinance shall be screened from all public streets and adjacent residential properties. An opaque screen at least eight feet in height comprised of plants, trees, fencing, walls or other opaque materials must be provided.

4.7. Modifications of Screening and Buffer-Yard Requirements.

1. *Buffer-Yard Exceeding 15% of Area.* No buffer-yard shall be required which comprises more than 15% of the subject property. In any case which the required buffer-yard would exceed 15% of the buffer-yard, such yard shall be reduced to 15% of the gross area of the site.

2. *Construction of Walls.* Screening and buffer-yard requirements shall be reduced by one-half where the developer constructs a six-foot high brick or architectural block wall.

3. *Temporary Uses.* Screening and buffer-yard requirements may be reduced or eliminated by the Zoning Administrator for temporary uses of property.

4. *Combined Development Plan.* The Zoning Administrator may modify or reduce the requirements for screening and buffer-yards when the adjoining land uses are developed under a combined development plan.

Section 5. Standards.

5.1. Minimum Specifications for Plant Materials.

1. *Condition.* All plants required by this Article shall be well branched and well formed, sound, vigorous, healthy and free from disease, sunscald, windburn, abrasion and harmful insect or insect eggs and shall have healthy, normal and unbroken root systems. All plants shall comply with the American Association of Nurserymen's Standards and conform to the representative species.

2. *Size.* All plant material installed to meet the requirements of this Ordinance shall comply with the minimum size requirements below at the time of planting:

a. Street Trees. Height: 15 feet; Caliper: Two and one half inches.

b. Canopy Trees. Height: 12 feet; Caliper: Two and one half inches.

c. Ornamental Trees. Height: 6 feet.

d. Evergreen Trees. Height: 8 feet; Full-branching.

e. Shrubs. Height: Two feet.

f. Hedges. Planted and maintained to form a continuous, solid visual screen at least two feet in height within one year after planting.

5.2. Planting Procedures. All trees and shrubs shall be installed in a sound manner following accepted professional planting procedures. At a minimum, all trees planted shall have root balls adequate to enclose the entire root system, all trees shall be mulched and staked, and all plants shall be watered at time of installation.

5.3. Plant List. Plant material in the Native Plants of Northern Virginia list (www.plantnovanatives.org) may be used to satisfy the requirements of this Article. Invasive species as defined by the Virginia Department of Conservation and Recreation are prohibited (See Invasive Plants Species List). Plants must conform to the varieties and functions identified in the approved plant list unless alternative varieties are approved by the Zoning Administrator.

5.4. Preservation of Vegetation and Tree Cover. Existing tree cover within any proposed subdivision or site development plan shall be retained to the greatest extent possible and taken fully into account in the design of the improvements and grading of the property. The Zoning Administrator must approve the removal of any tree that has a diameter of six inches or more measured at a point three feet above the ground. The Zoning Administrator shall approve such removal only when the development or subdivision of the site may not proceed otherwise.

5.5. Credit for Existing Vegetation.

1. *Hedgerows.* Healthy hedgerows preserved at property boundaries may meet the requirements of screening as required by Section 3 of this Article.

2. *Trees.* Existing trees preserved on site may be used to satisfy the requirements for parking lot landscaping and street plantings required by Sections 2 and 3 of this Article. Any existing trees used to meet the requirements of this Ordinance must be at least four-inch caliper, in healthy condition and be protected from construction activity. Such protection procedures shall be illustrated on the landscape plan.

3. *Exceptional Trees.* Trees of exceptional size, canopy, historic value or age preserved may be credited as four trees for the purposes of this Article if approved by the Zoning Administrator.

5.6. Monitoring and Enforcement.

1. *Responsibility.* The enforcement of the provisions of this Article shall be the responsibility of the Zoning Administrator or designee.

2. *Occupancy Permits.* No occupancy permit shall be issued until the plants and other screening materials required by this Article have been installed to the satisfaction of the Zoning Administrator.

3. *Bonds.* If the weather prohibits the installation of the required plant materials at the time of occupancy as determined by the Zoning Administrator, the applicant may, at his option, post a cash bond for the installation of the required plants. The bond shall be supported by an estimate by a landscape contractor of the cost of installing such landscaping, and a letter expressing the intent of the contractor to install the required plants. If the required landscaping is not installed within six months, the bond shall be forfeited to the Town and the required landscaping shall be installed by the developer or property owner by a deadline established by the Zoning Administrator depending on proper planting times for the landscaping materials.

5.7. Maintenance Requirements.

1. *Responsibility.* The owner or his agent shall be responsible for the maintenance, repair and replacement of all landscape materials, walls and fences required by this Article.

2. *Condition.* All landscape materials shall be kept in healthy condition, free of all disease and infestation and maintained to the required minimum height or higher. All fences and screens shall be maintained in a safe and attractive condition.

3. *Repair and Replacement.* The owner or agent, upon written notice from the Zoning Administrator, shall repair or replace any landscape materials, screens or fencing not meeting the requirements of subsection 2 above within 30 days.

5.8. Sight Distance. No tree, shrub, hedge or vegetation, whether or not required by this Article, shall be planted or maintained in any way that interferes with the sight distance of any persons operating any moving vehicle.

Section 6. Open Space Regulations.

6.1. Purpose. These regulations require the establishment and maintenance of improved open space to provide adequate light, air and space to residents or occupants of all subdivisions and developments of two acres or more. These regulations require the establishment of a nonprofit organization to be responsible for the maintenance of common improvements in all developments and subdivisions required to have improved open space. The regulations below separately address open space in residential and nonresidential developments.

6.2. Minimum Open Space Required. Open space shall be provided in an amount required by the Subdivision Ordinance and the district regulations of this Ordinance.

6.3. Non-Residential Properties. Open space areas in nonresidential zoning districts shall be appropriately landscaped and shall not include streets, drives, easements, off-street parking and loading areas, and areas so located or of such size or shape to have no substantial aesthetic or recreational value. Buffer-yards, areas of parking lot landscaping and yard setbacks may be applied toward the requirements of this section.

1. Maintenance Requirements.

   a. Responsibility. The owner or his agent shall be responsible for the maintenance of all open space areas in a clean, safe and attractive condition.

   b. Condition. All open space areas shall be kept in a clean, attractive and safe condition. All open space areas shall be kept open to the residents or occupants this open space is intended to serve.

   c. Repair. The owner or agent, upon written notice from the Zoning Administrator, shall repair any defective condition of the open space areas that render these spaces unusable or unsafe, within 30 days. If the deficiencies set forth by the Zoning Administrator have not been rectified within the 30-day period or any extension thereof, the Town, in order to preserve property values in the area and to prevent the open space from becoming a public nuisance, may repair the open space to a clean, safe and attractive condition in accordance with the approved landscape plan. The owner shall be responsible for reimbursing the Town for any costs associated with this repair.

6.4. Open Space for Residential Properties.

1. *Applicability*. These regulations shall apply to all land in common open space, not in lots, in residential developments; all improvements provided for common use and benefit whether or not required by this Ordinance; and all lands to be dedicated or conveyed for public use.

2. *General Requirements.*

   a. Organization. A nonprofit organization or other legal entity under the laws of Virginia must be established to provide for the ownership, care and maintenance of all open space areas and improvements.

   b. Covenants. All such organizations described in subsection a. above shall be created by covenants and restrictions recorded among the land records of Loudoun County prior to the approval of the record plat. All such covenants shall include provisions for the maintenance of common open space.

3. *Maintenance Requirements.*

    a. Responsibility. The organization described in subsection 2a. above shall be responsible for the maintenance of all open space areas and improvements in a clean, attractive and safe condition.

    b. Condition. All open space areas shall be appropriately landscaped and shall be kept in a clean, attractive and safe condition. All open space areas shall be kept open to the residents that this open space is intended to serve.

    c. Repair. The owner or agent, upon written notice from the Zoning Administrator, shall repair any defective condition of the open space areas that render these spaces unusable or unsafe, within 30 days. If the deficiencies set forth by the Zoning Administrator have not been rectified within the 30-day period or any extension thereof, the Town, in order to preserve property values in the area and to prevent the open space from becoming a public nuisance, may repair the open space to a clean, attractive and safe condition in accordance with the approved landscape plan. The owner shall be responsible for reimbursing the Town for any costs associated with this repair.

6.5. Submission Requirements. Prior to the dedication, conveyance or approval of the record plat of those lands described in Section 6.4, the following documents shall be submitted to and approved by the Town.

1. *Articles of Incorporation.* The Articles of Incorporation, By-laws or other organizational documentation for the nonprofit organization.

2. *Covenants.* The covenants or restrictions related to the use of common property including the system and amounts of assessments.

3. *Fiscal Program.* A fiscal program for a ten-year period to provide for the maintenance and care of all lands, streets, facilities and uses under the purview of the nonprofit organization.

4. *Right of Entry.* A document or public access easement granting the right of entry upon such common property to the Town police officers, fire and rescue squad personnel while in pursuit of their duties; and, in the case of private streets and common driveways, permitting the enforcement of cleared emergency vehicle access.

5. *Deed of Conveyance.* A copy of the Deed of Conveyance and a Title Certificate or, if approved by the Town, a commitment for a policy of title insurance issued by an insurance company authorized to do business in Virginia, assuring unencumbered title for all lands proposed to be conveyed to the Town, other appropriate governmental agency, or other organization, including the nonprofit organization.

Section 7. Fences.

7.1. Purpose. The purpose of these provisions is to establish regulations controlling the use and type of fences, hedges, or walls. This is for the conservation and protection of property, the assurance of safety and security, the enhancement of privacy, and the improvement of the visual environment. This includes the provision of a neat and orderly appearance consistent with the neighborhood and community character.

7.3. Regulation on Use.

1. *Regulations—general.* Except as otherwise specifically permitted herein, no fence or wall shall exceed six feet in height. Supporting members for wall and fences shall be located so as to not be visible from the adjoining property unless the fence is designed such that the supporting members are identical in appearance on both sides of the fence or wall. All portions of the property shall remain accessible from outside the fence area by means of a gate or other opening.

    a. The fence, wall, or hedge shall not be permitted to encroach upon public rights-of-way or easements or no build or conservation zones. The fence, wall, or hedge shall not be located so as

to adversely affect the vision of drivers on the public streets or from driveways intersecting public streets.

b. The height of a fence shall be measured from the established grade line to the highest point of the fence including posts and finials. The height of the fence may not be artificially increased by the use of mounding unless otherwise required by the zoning district regulations.

2. *PermittedFences, Walls, and Hedges. Fences, walls, and hedges may be located within required setbacks subject to the following limitations:*

a. Front Setback. Fences, walls, and hedges not exceeding 42 inches in height may be erected in the front setback of any lot. For residential uses, landscaping and decorative wooden, iron, or masonry fences that exceed 42 inches in height may be located within a required front setback provided such fences and landscaping do not obstruct visibility at street or driveway intersections.

b. Side and Rear Yard. Fences in residential districts shall be limited to a maximum height of seven feet when located in a side or rear setback; except when abutting a nonresidential or mixed use district or use, in which case such fences may be eight feet in height. Fences in nonresidential or mixed use districts, when located in side or rear setbacks shall be limited to eight feet in height.

c. Prohibited Walls and Fences; Residential Districts. No barbed wire, electrical elements, or other hazardous materials shall be maintained as a fence or part of a fence or wall in a residential district.

3. .*Other fencing.* The Zoning Administrator or designee may permit other fences similar in character and design to one or more of the permitted fences herein, upon application.

7.4. Permit and Inspection. Any fences that may be permitted shall require the issuance of a zoning permit by the Zoning Administrator or designee after the same has been approved.

1. Upon permit application, each property owner shall provide the following:

An overall plot plan including the shape and dimensions of the lot together with the location, material, height and location of all proposed and existing fences, potential visibility conflicts and the drainage flow across the lot. Section and elevation views of the proposed fence detailing its construction and method of fixture to the ground should also be submitted, as determined by the Administrator.

Upon obtaining a building permit and constructing the fence, the property owner shall ascertain that the fence thus constructed does not deviate from the plans as approved by the Zoning Administrator or designee issuing permits and does not encroach upon another lot or parcel of land. The town shall furnish such inspection, as is deemed necessary, to determine that the fence is constructed in accordance with plans submitted for permit, provided however, that such determination by the municipality shall not be construed to mean the town has verified the fence is not encroaching upon another lot, nor shall it relieve the property owner of the duty imposed upon him/her herein.

7.5. Maintenance. Permitted fences, walls, shrubbery, hedges or structures shall be maintained in good condition, be structurally sound and completely finished at all times. Any grounds between such fences, walls, shrubbery, hedge or structures and property lines shall be well maintained at all times by the appropriate property owner. Supporting members for walls and fences shall be located so as to not be visible from the adjoining property unless the fence is designed such that the supporting members are identical in appearance on both sides of the fence or wall.

7.6. Compliance Required; Conflicting Provisions.

1. Fences shall be designed, erected, altered, reconstructed, moved, anchored, positioned and maintained, in whole or in part, strictly in accordance with the provisions of this subchapter and building code provisions applicable to fences.

Native Plants for Northern Virginia















About this Guide

Plant NOVA Natives
Naturally Beautiful!

www.plantnovanatives.org

Featured in the logo: Coral Honeysuckle (*Lonicera semipervens*) is a host and nectar plant for the Snowberry Clearwing (*Hemaris diffinis*) moth.

This guide showcases the attractive variety of plants native to Northern Virginia. Native plant species have evolved within specific regions and been dispersed throughout their range without known human involvement. These plants form the primary structure of the living landscape and provide food and shelter for native animal species.

Although this guide is not comprehensive, the Northern Virginia native plants featured here were selected because they are attractive, relatively easy to find, easy to maintain, and offer many benefits to wildlife and the environment.

This guide is published by the Plant NOVA Natives Campaign. The goal of the campaign is to promote the use of these plants in the urban and suburban landscapes of Northern Virginia for their many social, cultural, and economic benefits, and to increase the availability of Northern Virginia native plants in retail nurseries throughout the region. The following partners provided invaluable assistance in developing this guide (see campaign website for a list of all campaign partners):

Audubon Society of Northern Virginia
Loudoun Wildlife Conservancy
Nature By Design
Northern Virginia Regional Commission (lead organization)
Northern Virginia Soil and Water Conservation District
Potowmack Chapter, Virginia Native Plant Society
Prince William Conservation Alliance
Prince William Wildflower Society Chapter, Virginia Native Plant Society
Virginia Coastal Zone Management Program
Virginia Cooperative Extension & Virginia Master Gardeners & Virginia Master Naturalists
Virginia Department of Forestry



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Design by Virginia Witmer, Virginia Coastal Zone Management Program.

VIRGINIA NATIVE PLANT SOCIETY

Edition Four, April 2022

The Plant NOVA Natives campaign is part of a Virginia coast-wide regional native plant marketing effort initiatived by the Virginia Coastal Zone Management Program. The guide was originally published through grants from the U.S. Department of Commerce, NOAA, to the Virginia Coastal Zone Management Program at the Department of Environmental Quality under the Coastal Zone Management Act. Printing of this fourth edition was funded through sales of the guide, coordinated by the Potowmack Chapter of the Virginia Native Plant Society. This publication cannot be reproduced or reprinted without permission from the Plant NOVA Natives Campaign.



This fourth edition of the Native Plants for Northern Virginia guide presents a larger palette of plants than did earlier editions, in keeping with growing availability of native plants in the nursery trade and from specialist growers.

A selection of many beautiful, resilient, and beneficial plants native to our region is illustrated in the first section of this guide, detailing each plant's characteristics and requirements, and noting some of the wildlife they support. A more comprehensive index of locally native plant species may be found starting on page 52 to guide your choices.

Plants have generally been included only if currently documented in at least two of our four counties by the Digital Atlas of the Virginia Flora. Hence the guide may not include plants commonly sold in the trade as "native."

Please note that the comprehensive index includes as "perennials" some plants that are actually reseeding annuals. Some perennials are short-lived and also depend upon reseeding.

You will want to get to know the species you select for your setting by doing more research, and our resource section directs you to some reliable sources of information.

You will also want to understand something about the soil in which you are planting. Soils in Northern Virginia are quite variable due to the region's diverse geology. Topsoils are often removed during development leaving behind clay-rich subsoils. Before adding anything to your soil other than a top dressing of organic mulch, you should have your soil tested. Contact your county's Cooperative Extension Office or your Soil and Water Conservation District.

Visit www.plantnovanatives.org/ for additional native landscaping guidance and much more.

Thank you for planting Northern Virginia natives!

Photo left: Snowberry Clearwing, *Hemaris diffinis*, catepillar on Coral Honeysuckle. Adult moth shown in inset photo. Coral Honeysuckle, *Lonicera semipervans*, is a host and nectar plant for the Snowberry Clearwing. The Snowberry Clearwing moth and Coral Honeysuckle are both featured in the Plant NOVA Natives campaign logo. *Photos by Deana Crumbling and Laura Beaty*

*Photo right: T*he Hummingbird Clearwing moth, *Hemaris thysbe*, pictured nectaring on Wild Bergamot, *Monarda fistulosa,* is also native to Northern Virginia. *Photo by Gerco Hoogeweg*



***Cover Photos (center)*: *Lonicera sempervirens* – Coral Honeysuckle, Dot Field/Virginia Department of Conservation and Recreation, Natural Heritage; *(inset images top to bottom) Kalmia latifolia* – Mountain Laurel, Margaret Chatham/Virginia Native Plant Society; *Fragaria virginiana* – Wild Strawberry, Sue Dingwell/Virginia Native Plant Society; *Euonymus americanus* – Strawberry-bush, Laura Beaty/VNPS; *Claytonia virginica* – Spring Beauty, Judy Gallagher; *Mertensia virginica* – Virginia Bluebell, Laura Beaty/ Virginia Native Plant Society.**

Why Northern Virginia Natives Are the Best Choice

Loss of native vegetation and fragmentation of the natural landscape in Northern Virginia have had a significant impact on the ecological integrity of the region. As a result, wildlife habitat, water quality, air quality, and the historical natural character of the landscape have suffered.

Property owners and land managers can make a profound difference in the ecological sustainability of our region by choosing to plant species that are native to Northern Virginia rather than species that are not native to this area.

Whether you are a residential gardener, professional landscaper, or a grounds manager there are many Northern Virginia native plants from which to choose!

Most of the plants featured in this guide are nursery propagated and can be found for sale at some local retail establishments. With increasing demand for natives as more and more gardeners discover their benefits, retailers are offering an ever-widening selection.

Northern Virginia native plants are beautiful. They have appealing foliage, flowers, and berries that can make your landscape unique, attractive, and welcoming, not only for people, but also for local wildlife.

Northern Virginia native plants are easy to maintain and save time and money. Naturally adapted to our local soils and climate, the native plants in this guide require less fertilizer, water, and pesticides, and help reduce the load of chemicals introduced into our environment.

Northern Virginia native plants support wildlife. Birds and butterflies depend on native plants for food, shelter, and reproduction. Your garden can provide habitat and become a sanctuary for these animals. If your neighbors also plant natives, your community will help create the green corridors, or natural pathways, and the food that birds, butterflies, and other wildlife need to sustain themselves as they move across the landscape.

Northern Virginia native plants are beautiful, resilient, and attract the pollinators so critical to our local ecosystems!

Learn more about the Plant NOVA Natives Campaign:

www.plantnovanatives.org



Dot Field

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Key to Terms & Symbols

Light requirement:

Full sun: 6 or more hours sun

Part shade: 2 to 6 hours sun

Full shade: 2 hours or less sun

G *Groundcover:* covers bare soil and serves as living mulch

Soil moisture:

Dry: no signs of moisture

Moist: looks & feels damp

Wet: saturated

Northern Virginia ranges from USDA Plant Hardiness Zones 6b to 8b. All plants in this guide are suitable for this range of climatic conditions.

Wildlife supported by plant:

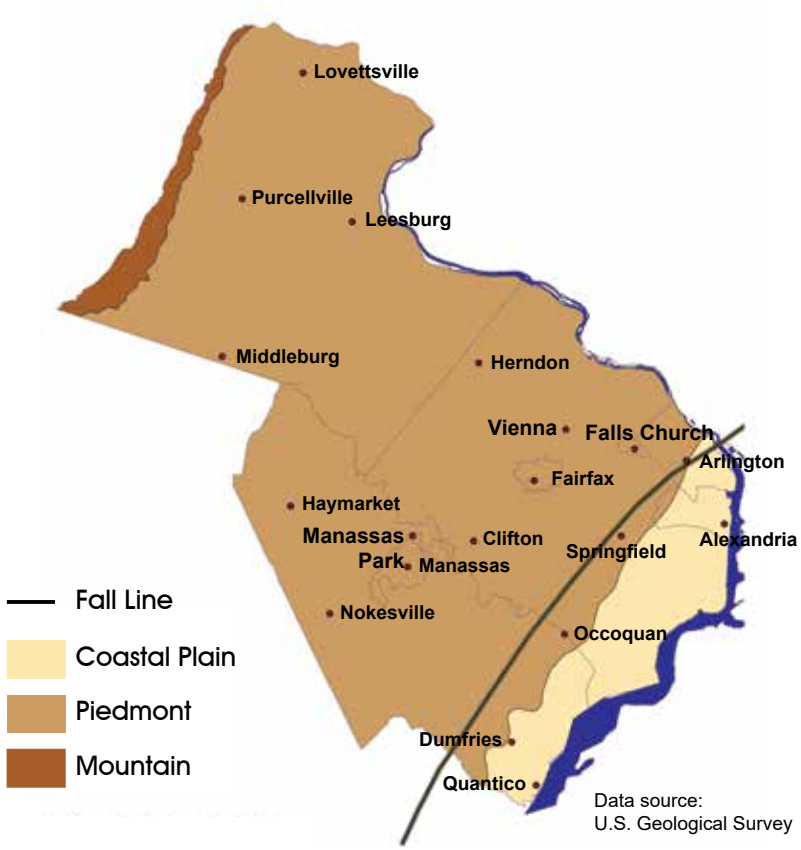
Food source for birds, including hummingbirds (berries, nectar or insects resident on plant)

Nectar and pollen source for pollinators - butterflies, moths, bees or other insects

Larval host for butterflies or moths (larva are newly hatched forms of insects before they undergo metamorphosis)

Note: Light and moisture requirements, and habitat values, provided for the species highlighted in this guide are based on partner research and experience with the plants.

Northern Virginia Physiographic Regions & Natural Communities



The Northern Virginia Region

Elevations in Northern Virginia vary from nearly sea level along the Potomac River to almost 2,000 feet in the Blue Ridge Mountains of western Loudoun County. The abrupt change in elevation from the rolling hills of the Piedmont to the flat Coastal Plain is marked by falls or rapids in streams and rivers. This geographic feature is called the Fall Line.

Plant Distributions

Native plant species evolved within specific regions and dispersed throughout their ranges without known human involvement. Over time they have adapted to the unique soils, climate, ecological relationships and interactions with other plants and animals in their region. They are distributed across the landscape based on a number of conditions – temperature, rainfall, soil fertility, soil moisture, drainage, and amount of light, among others.

Although terms like physiologic region or hardiness zone can describe general conditions across a large area, the local conditions in your yard will determine what will best grow there.

Natural Plant Communities

Two common natural plant communities of the NOVA region are Basic Mesic Forests and Acidic Oak-Hickory Forests. These may provide a blueprint for selecting plants likely to do well in your yard depending on your soil and moisture conditions.

Basic Mesic Forest



Adiantum pedatum, Laura Beaty/VNPS; Fagus grandifolia, Gary Fleming/DCRNH; Tiarella cordifolia, Gary Fleming/DCRNH; Asarum canadense, Judy Gallagher

These communities grow in moderately moist, fertile soils. Dominant trees include Tulip-tree (*Liriodendron tulipifera*), and American Beech (*Fagus grandifolia*), with Spicebush (*Lindera benzoin*) in the shrub layer. Forbs include Common Jack-in-the-pulpit (*Arisaema triphyllum*), Spring Beauty (*Claytonia virginica*), White Wood Aster (*Eurybia divaricata*), Common Wild Ginger (*Asarum canadense*), Heart-leaved Foamflower (*Tiarella cordifolia*) and Northern Maidenhair Fern (*Adiantum pedatum*).

Acidic Oak-Hickory Forest



Quercus alba, Jim McGlone; Coreopsis verticillata; Penstemon digitalis, Laura Beaty; Parathelypteris noveboracensis, Helen Hamilton

Soil conditions in these communities are less fertile and drier. Dominant trees include White Oak (*Quercus alba*), Southern Red Oak (*Quercus falcata*). The understory includes Flowering Dogwood (*Cornus florida*), American Holly (*Ilex opaca*), Pawpaw (*Asimina triloba*), Mountain Laurel (*Kalmia latifolia*) and Maple-leaved Viburnum (*Viburnum acerifolium*). Forbs such as Whorled Coreopsis (*Coreopsis verticillata*), Partridge-berry (*Mitchella repens*), Solomon's-seal (*Polygonatum biflorum*), New York Fern (*Parathelypteris noveboracensis*), Rosy Sedge (*Carex rosea*) and Poverty Oatgrass (*Danthonia spicata*) are often found here.

How to Get Started in Using Northern Virginia Natives



Acidic Oak- Hickory Forest by Gary Fleming/DCR Natural Heritage Program

Taking Inspiration from Nature

Prior to settlement by Europeans, Northern Virginia was dominated by forests and occasional, more open meadows, all with a rich array of plant communities adapted to diverse geological, moisture, and soil conditions. As visible in our state and regional natural areas, parks, and forests, these natural plant communities consist of layers of vegetation that sustain soil health, offer food and shelter to wildlife, moderate temperatures, and provide tranquility to visitors.

- The **tree canopy** is the foundational component of native forest communities with majestic trees soaring up to 100 feet. Oak and hickory species are often dominant.
- **Understory trees and shrubs** fill in under these trees and can include smaller trees such as Eastern Redbud (*Cercis canadensis*), Flowering Dogwood (*Cornus florida*), and Downy Serviceberry (*Amelanchier arborea*), and shrubs such as Maple-leaved Viburnum (*Viburnum acerifolium*) and Wild Azalea (*Rhododendron periclymenoides*).
- **Ground layers of forbs, ferns, and grasses** provide dense coverage to protect the soil in multiple layers, and vary considerably depending on local conditions. Grasses and forbs also make up the dense communities of meadows and open woodlands.

Taking your inspiration from nature, you can recreate a bit of these diverse communities within your own yard, layering trees (canopy trees if you have room), shrubs, and mixes of forbs (perennials), ferns, and grasses. Or you can create a native plant meadow with a mix of forbs and grasses. Selections of plants with similar soil, moisture, and light requirements will reproduce the self-sustaining benefits found in nature for a beautiful, easy-to-care-for landscape.

Tips for Getting Started

Incorporating natives into your garden can be achieved gradually as you work to maintain and improve your yard for yourself and local wildlife. Here are some ideas:

- Plant lots of woodies - canopy trees if possible, understory trees, and a lively shrub layer. These provide structure to your landscape and habitat for wildlife. Different birds nest at different heights.
- Fill in around these trees and shrubs with native perennials and grasses as a living mulch for the ground layer.
- Such commonly used ornamentals as Asiatic azaleas, hollies, and cherry trees have native counterparts; consider using them instead.
- Mass plants. Plant densely to attract birds and butterflies, and to reduce runoff along any streams near your property.
- Install a swale or a rain garden to slow stormwater runoff and allow the water to be absorbed by your ground.
- In a hot sunny location, create a mini meadow dominated by native grasses, adding accent and color with flowering perennials.
- If located near a park or natural area, consider how to connect your property and expand that natural area.
- Let nature work for you, take advantage of common plants such as the Common Violet that are already on your property.
- Find sellers of native plants on www.plantnovanatives.org.

Mobile App Northern Virginia Native Plant Search

A mobile-adapted plant search function can be found on the Plant Northern Virginia Natives campaign website for those times when you are shopping for plants and don't have this guide with you.

You can search by plant name, by wildlife value, by sun, moisture, and soil requirements. Deer resistance information is included when available, as well as gardening tips, pH, and physiographic region of origin.

www.plantnovanatives.org

Perennials (Forbs)

Aquilegia canadensis • Wild or Eastern Red Columbine



- 1–3 ft.
- Nodding, red and yellow bell-like flower with upward spurred petals in April–May, occasionally June
- Sun to part shade
- Sandy, well-drained soils, medium loam, sandy loam rocky outcrops
- Naturally found in dry rocky woodlands to moist, well-drained forests

Short-lived plant, but readily self-sows. Backward-pointed tubes, or spurs, of the flower contain nectar that attracts long-tongued insects and hummingbirds especially adapted for reaching the sweet secretion.

Stunning flower. Attracts hummingbirds, bees, butterflies, and hawk moths. Larval host to Columbine Duskywing.

Arisaema triphyllum • Common Jack-in-the-pulpit



- 1–3 ft.
- Large, cylindrical, green hooded flower, some with brown stripes inside in April; fruit a cluster of bright red berries in late summer; only large (female) plants set fruit; smaller (male or non-blooming) plants may disappear in dry summers
- Part shade to full shade
- Moist to wet soils
- Naturally found in humus-rich woods, bottomland forests

Grows most vigorously in moist, shady, seasonally wet locations. Plants shift sex depending on water resources available. This species may act like a spring ephemeral.

Excellent woods-garden plant. Very easy to cultivate in variety of conditions.

Aruncus dioicus • Goatsbeard (Eastern Goat's-beard)



- 3–6 ft.
- Large, feathery clusters of small, white flowers in May–June
- Part sun to shade—subject to sun scald when not moist enough
- Moist to wet soils; tolerates seasonal flooding
- Naturally found in rich woods, ravines, wooded roadsides, clearings

Needs space; good for large-scale displays massed in a drift down a slope. Aruncus*, from the Greek* aryngos *(goat's beard), refers to the showy, finger-like flower clusters, which form feathery masses of all male or all female flowers. Male plants have showier flowers.*

Attracts butterflies. Larval host to Dusky Azure (*Celastrina nigra*) butterfly.

Asarum canadense • Common Wild Ginger



- 4–8 in.
- Reddish to greenish brown flower at ground level beneath leaves in April–
- May
- Part shade to full shade
- Moist, rich soils
- Naturally found in woodlands

Can create a dense ground cover on the woodland floor. Seed dispersed by ants.

Larval host of the Pipevine Swallowtail (*Battus philenor)* butterfly.

Asclepias incarnata • Swamp Milkweed



- 2–5 ft.
- Pink, purple flowers in May–August
- Full sun to part shade
- Moist to wet, rich soils
- Naturally found in wet freshwater areas such as meadow, field, riparian area, swamp, marsh

Good plant for wetland gardens. The genus was named in honor of Aesculapius, Greek god of medicine, because some species have long been used to treat a variety of ailments.

Swamp Milkweed's showy flower clusters attract butterflies and hummingbirds. It is an important food source for the Monarch caterpillar (*Danaus plexippus*).

Asclepias tuberosa • Butterfly Weed



- 1–2 ft.
- Yellow-orange to bright orange in May–September
- Full sun to part sun
- Moist or dry, well-drained sandy soils
- Naturally found in dry/rocky open woods, glades, fields and roadsides

Easily grown from seed, but may take 2-3 years to produce flowers. Mature plants may freely self-seed in the landscape if seed pods are not removed prior to splitting open. Does not transplant well due to its deep taproot and is probably best left undisturbed once established. Although it is sometimes called Orange Milkweed, this species has no milky sap.

As its common name suggests, Butterfly Weed attracts butterflies, and is a larval host and nectar source for the Monarch Butterfly (*Danaus plexippus*). Tolerates drought.

Baptisia australis • Blue Wild Indigo



- Up to 5 ft.
- Blue-purple and pea-like in April–May
- Full sun to part shade
- Moist, usually sandy acidic soil
- Naturally found in dry to moist open woods, streambanks, floodplains

Like other members of the pea family, microorganisms that inhabit nodules on the plant's root system produce nitrogen compounds necessary for the plant's survival.

Special value to bumble bees and other native bees.

Baptisia tinctoria • Yellow Wild Indigo



- 1–3 ft.
- Yellow pea-like; May–July
- Full sun
- Dry, loam, sandy, acidic soils
- Naturally found in dry open woods and clearings

The genus name, from the Greek baptizein *(to dye), refers to the fact that some species are used as an inferior substitute for true indigo dye.*

A larval host for the rare Frosted Elfin (*Callophrys irus*) and Wild Indigo Duskywing (*Erynnis baptisiae*) butterflies.

Chelone glabra • White Turtlehead



- 2–4 ft.
- White, pink in August–October
- Full sun to full shade
- Light, rich, wet to moist soils
- Naturally found in brushy marshes, stream banks, wet ditches, low meadows, woodlands

The distinctive shape of this flower is reflected in the genus name, derived from the Greek chelone *(tortoise). The related* Chelone obliqua *(often sold as* C. lyonii*) has pink inflorescences.*

Nectar source for butterflies and humminbirds.

Chrysogonum virginianum • Green and Gold



- 6 in.–1 ft.
- Part shade
- Yellow, daisy-like blooms, spring into summer
- Moderately moist, well-drained to drier soils
- Naturally found in upland forests and woodlands

A low growing, low maintenance member of the aster family, this plant makes a beautiful ground cover. Good choice for naturalized areas and woodland gardens. Clumps can be separated. Spreads by stolons and runners.

Beautiful semi-evergreen groundcover for shady areas. Flowers for a long time. Lovely planted along the edge of a woodland path.

Claytonia virginica • Spring Beauty, Virginia Spring Beauty



- 4–8 in.
- Pink or whitish flowers, striped with dark pink, in loose clusters in March–May
- Part to full shade
- Rich, moist soils; prefers high humus
- Naturally found in rich woods, thickets

Plant disappears from above ground shortly after the seed capsules have ripened, but does not leave a large gap in the garden. It grows from an underground tuber like a small potato; this has a sweet, chestnut-like flavor. Native Americans and colonists used them for food.

This most attractive spring perennial is spectacular in large patches. Seeds dispersed by ants.

Coreopsis verticillata • Whorled or Threadleaf Coreopsis



- 6 in.–3.5 ft.
- Yellow in May–August
- Full sun to part sun
- Dry, well-drained primarily acidic soils
- Naturally found in dry, open woods

This very popular garden plant since the 19th century has delicate, dark-green leaves divided into thread-like segments and showy, long-blooming flower heads with yellow centers. Provide a sunny, well-drained site and you'll be rewarded with hardy, long-lived, long-blooming plants that are also drought-tolerant. This plant spreads by rhizomes.

Attracts butterflies. Birds eat seeds. Drought tolerant.

Dicentra eximia • Wild Bleeding Heart



- 1–2 ft.
- Deep pink, drooping heart-shaped flowers in April–June, some flowers through the summer
- Part shade to full shade
- Rich, moist soils
- Naturally found in rocky woods and cliffs, rich woods

Naturalizes by reseeding when happy. Dislikes wet soils in winter and dry soils in summer.

Attracts birds and bees.

Eurybia divaricata • White Wood Aster



- 6 in.–3.5 ft.
- August–October
- Full or dappled shade
- Moist, loam, sandy, acidic soils; good drainage essential
- Naturally found in moist to dry woods

The delicate, airy clouds of white wood aster are a must-have for every fall garden. This lovely aster is among the first to bloom in late summer. Small, white, daisy-like flowers with yellow centers that fade to red are borne atop dark green to black stems. A vigorous grower it is a favorite for attracting wildlife.

Attracts butterflies. Lovely in masses.

Eutrochium fistulosum • Hollow Joe-pye-weed



- 2–8 ft.
- Tiny, pale pinkish-lavender florets in July–September
- Full sun to part shade
- Moist to wet well-drained, humus-rich, sandy & clay soils
- Naturally found in alluvial woods and meadows, bogs, marshes, stream banks

Joe Pye weed has outstanding ornamental attributes. It is a substantial plant that needs space, but when planted in groups or massed can provide spectacular flowering and architectural height.

Attracts birds and numerous pollinators. Special value to native bees.

Fragaria virginiana • Wild Strawberry



- Up to 1 foot
- Loose cluster of small, white, five-petaled flowers followed by tasty, wild strawberries in April–June
- Full sun to part shade
- Dry soils
- Naturally found in woodlands, clearings, meadows

Cultivated strawberries are hybrids developed from this native species and the South American one. Not to be confused with the non-native False Strawberry, which has yellow flowers. Attracts predatory or parasitoid insects that prey upon pest insects.

Attracts butterflies, larval host to Gray Hairstreak. Special value to native bees.

Geranium maculatum ● Wild Geranium, Spotted Geranium



- 8–28 in.
- Lavender flowers are in loose clusters of 2–5 in April–June
- Full sun to part shade
- Moderate, highly acidic to calcium-rich soils
- Naturally found in upland and floodplain forests

Unlike most other spring bloomers, Wild Geranium retains its attractive foliage all season long. Genus name comes from the Greek word geranos meaning crane in reference to the fruit that purportedly resembles the head and beak of a crane. Needs moisture if sited in full sun.

Attracts birds. Special value to bumble bees and other native bees.

Helenium autumnale ● Common or Autumn Sneezeweed



- 1.5–5 ft.
- Yellow daisy-like flowers with fan-shaped rays in July–November
- Sun
- Moist, clay soils
- Native to open meadows, bogs, along streams and ponds; wet meadows

Sneezeweed does not cause sneezing. The common name is based upon the former use of its dried leaves in making snuff, inhaled to cause sneezing that would supposedly rid the body of evil spirits. The leaves, flowers, seeds are poisonous to humans, and toxic if eaten in large quantities.

A beautiful attraction to your landscape with many elongate leaves and numerous flower heads which attract butterflies and bees.

Helianthus angustifolius ● Narrow-leaved Sunflower



- 3–6 ft.
- Yellow in September–October
- Full sun to part shade
- Moist to wet soils
- Naturally found in bogs, ditches, clearings

Narrowest-leaved sunflower.

Attracts birds and native bees.

Heuchera americana ● American Alumroot



- Leaves up to 6 in.; flowering stems 1–2 ft. Leafless, hairy, sticky flower stalk rises
- 18–36 in. and surrounds its upper third with loosely grouped, minute, greenish, cup-shaped flowers in April–June
- Part shade to full shade
- Dry to moist soils
- Naturally found in rocky woodlands and outcrops of various geologic formations; tolerant of a range of rock types and chemistries

This species has interesting foliage. It is a good rock garden plant and a good groundcover in shady gardens. It also grows well in pots. Deer resistant.

Attracts small bees.

Hibiscus moscheutos • Swamp or Eastern Rose-mallow


Dot Field/DCR Natural Heritage Program

- 3–6 ft.
- Creamy-white flowers in July–September
- Full sun to part shade
- Wet or moist soils
- Naturally found in swampy forests, meadows, freshwater marsh edges

Clumps of hibiscus start to grow late in the season and flower over a long period in late summer.

Strikingly showy species. Nectar source for hummingbirds.

Iris cristata • Dwarf Crested Iris


Gary Fleming/DCR Natural Heritage Progra

- 4–16 in.
- Blue-violet or, less often, white flower in April–May
- Part shade to full shade
- Dry to moist, rocky, acidic and basic soils
- Naturally found in woodlands, sometimes in mountain hollows and ravines

Colonizes by rhizomes. You can separate plants as desired.

Lovely woodland cover that attracts bees and hummingbirds.

GENUS: *LIATRIS*

A genus in the Aster family that belies the notion that straight native plants can't compete with cultivars or non-natives for showiness or beauty. All of these plants produce a large spike of lilac flowers that are a stunning garden accent or can be cut and grouped as a centerpiece. Not only are they beautiful, but they are important nectar plants for hummingbirds and butterflies, and are especially good for native bees.

Though generally thought of as a midwestern prairie plant, the species below are native to Northern Virginia.

Liatris pilosa	Grass-leaf Blazing Star, Grass-leaf Gayfeather
Liatris scariosa	Large Blazing Star, Eastern Blazing Star
Liatris spicata	Dense Blazing Star, Gayfeather, Blazing Star
Liatris squarrosa	Scaly Blazing Star, Plains Blazing Star


Sue Dingwell/VNPS

Perennials (Forbs)

Lilium superbum • Turk's-cap Lily


Gary Fleming/DCR Nattural Heritage Program

- 4–8 ft.
- Red, orange, yellow in July–September
- Full sun
- Moist, loam, sand, acidic soils; good drainage essential
- Naturally found in meadows, swamps, wood's edge

The recurved sepals and petals, which presumably resemble a type of cap worn by early Turks, and the showy extruded stamens are distinctive features. Indians used the bulbs for soup.

Largest and most spectacular of the native lilies of our region; up to 40 flowers have been recorded on a single plant.

Lobelia cardinalis • Cardinal Flower


Alli Baird

- 1–4 ft.
- Red in July–October
- Full sun to full shade
- Moist to wet, humus-rich, sandy & clay soils
- Naturally found in low areas, woodlands edge, stream banks, roadsides, meadows

Short-lived perennial that self sows. The common name of this flower alludes to the bright red robes worn by Roman Catholic cardinals.

Valued for its ornamental blooms and color. Attracts birds. Depends on hummingbirds, which feed on the nectar, for pollination.

Lobelia siphilitica • Great Blue Lobelia


Laura Beaty/VNPS

- 1.5 - 4 ft.
- Lavender-blue, tubular flowers crowded together on the upper stem from July–October
- Full sun to part shade
- Moist to wet clay, loam or sandy soils
- Naturally found in moist woodlands, meadows, swamps

This blue counterpart of the Cardinal Flower (Lobelia cardinalis) *is a most desirable plant for woodland gardens, especially as it blooms bright blue in late summer. This species is not drought tolerant. Attracts predatory or parasitoid insects that prey upon pest insects.*

Attracts birds and hummingbirds. Special value to bumble bees and other native bees.

Maianthemum racemosum • False Solomon's-seal


Fritz Flohr Reynolds

- 1–3 ft.
- Tiny white flowers at tip of stem (a 1–4 inch plume or panicles) March–June, followed by bright red berries
- Part shade to full shade
- Well-drained, medium to moist, slightly acidic soil
- Naturally found in deciduous woods, shaded banks and ditches

A typical woodland plant in much of NOVA and beautiful choice for home landscaping in lightly shaded settings. It spreads by rhizomes but not aggressively enough to ever be invasive. Multiple arching stems, 1–3 feet long, grow from a single parent plant, making it a good option for a taller ground cover.

Birds are attracted to the berries, which last through late summer and into the fall.

Mertensia virginica ● Virginia Bluebell, Virginia Cowslip



- 8–28 in.
- Lavender-blue, bell-shaped in March–May
- Well-drained moist soils
- Part shade to full shade
- Naturally found in floodplains, slope forests

This species is ephemeral, which means that its foliage dies back in summer. Interplant with other perennials. Reseeds freely. When it grows in masses, this species makes a spectacular show.

Pollinated by long-tongued bees, but supports many other early pollinators.

Mitchella repens ● Partridge-berry



- 1–4 in., creeping
- Pinkish-white, tiny trumpet in May–July; red berry in July–December
- Part shade to full shade
- Dry or moist, humus-rich, sandy or loamy, acidic soils
- Naturally found in woods; stream banks; sandy slopes

All parts of this evergreen plant are dainty. Native American women drank tea made from the leaves as an aid in childbirth.

Berries are consumed by a variety of birds and mammals. Use as groundcover under acid-loving shrubs.

Monarda didyma ● Scarlet Beebalm, Oswego Tea



- 2–4 ft.
- Scarlet-red, tube-shaped, tightly clustered flowers in July–September
- Full sun to part shade
- Moist to periodically wet, acid soils
- Naturally found in creek banks, meadows, floodplains, woods

Linnaeus named the genus Monarda *in honor of a 16th century Spanish physician and botanist, Nicolas Bautista Monardes (1493-1588). Monardes never traveled to the Americas but was able to study medicinal plants of the New World brought back by Spanish explorers.*

Attracts hummingbirds, butterflies. Special value to bumble bees and other native bees.

Oenothera fruticosa ● Narrow-leaf Sundrops, Southern Sundrops



- 1–3 ft.
- Golden-yellow in May–September
- Full sun
- Moist, well-drained soils
- Naturally found in woods, roadsides, meadows

This plant spreads rapidly under favorable conditions, but does not usually become aggressive.

Attracts birds and hummingbirds.

Opuntia humifusa • Eastern Prickly-pear



- 1-2.5 ft., evergreen with 1–3 levels of flattened pads, each up to 10 ins. long, 7 ins. across, and 1.5 in. thick
- One or more yellow buds form on top of a pad and each produces a single satiny-yellow flower about 3–4 in. across followed by a pear-like fruit in late spring to mid-summer
- Full sun
- Dry, sandy soil
- Naturally found in rock outcrops

Although each flower only lasts a single day, a colony may bloom for a month in late spring to mid-summer. Start new plants from pads for faster results than seeding.

Attracts pollinating bees. A striking plant with beautiful, showy flowers.

Packera aurea • Golden Ragwort, Heartleaf Ragwort



- 1–3 ft.
- Golden-yellow, daisy-like in March–May
- Full sun to full shade
- Dry or moist, loam, sandy, rich acidic soils
- Naturally found in floodplain forests

Fragrant, evergreen groundcover, energetic spreader. Toxic to humans—do not consume.

Attracts butterflies and bees.

GENUS: *PHLOX*

Two of the Phlox species native to Northern Virginia – Moss Phlox and Garden Phlox - are very familiar to gardeners. Both have been in cultivation for three centuries and are staples of every garden center, where cultivars are sold in a variety of colors. Woodland Phlox is gaining in popularity because its leaves make an excellent evergreen groundcover. Any garden planted with just these three species would have nearly continuous blooms from early April to early fall. Meadow Phlox (*Phlox maculata*) is similar to Garden Phlox but less commonly found for sale.



Phlox divaricata • Wild Blue or Woodland Phlox

- .25 ft. evergreen groundcover for sun (Flower stems .75-1 ft.)
- Fragrant, lavender, pink or blue flowers in April-May
- Filtered sunlight to light shade
- Rich, sandy or rocky, well-drained soils



Phlox paniculata • Garden, Summer or Fall Phlox

- 2-4 ft
- White, pink or lavender flowers from late May to October
- Some cultivars more susceptible to downy mildew than other
- Popular with hummingbirds and butterflies



Phlox subulata • Moss Phlox, Moss Pink

- .25-.5 ft
- White, pink or blue flowers in April
- Often used to cover banks
- Groundcover for full sun

GENUS: *PYCNANTHEMUM* - Mountain Mints

Pycnanthemum incanum ●
Hoary Mountain-mint


Gary Fleming, DCR Natural Heritage Program

Pycnanthemum muticum ●
Clustered Mountain-mint


Gary Fleming, DCR Natural Heritage Program

Pycnanthemum tenuifolium ●
Narrow-leaf Mountain-mint


Margaret Chatham/VNPS

Mountain mints in bloom are covered with a spectacular variety of butterflies, bees, wasps, and moths. The genus name, *Pycnanthemum*, means densely flowered. Like other members of the mint family, these species have clusters of flowers that bloom progressively over a long period of time. They spread generously by rhizomes making this plant a wonderful mass of blooms in summer. *Pycnanthemum* has a minty aroma when the leaves are crushed. These plants have no serious insect or disease problems. They are an adaptable, hardy, and interesting plant in the border, meadow, herb garden, or naturalized areas such as areas near streams. They are also an alternative to invasive, non-native Oxeye Daisy (*Leucanthemum vulgare*) which is an aggressively spreading plant that decreases native plant diversity where it takes hold.

HEIGHT: *P. incanum*, 3–6 ft.; *P. muticum,* 2–3 ft.; *P. tenuifolium,* 2–3 ft.

FLOWERS: July–September

LIGHT: sun to part shade (blooms best in full sun)

SOILS: *P. incanum,* average dry to moist, well-drained soils; *P. muticum,* fertile, moist, well-drained soils; *P. tenuifolium*, average, dry to moist, well-drained soil

Genus name comes from Greek pyknos meaning dense and anthos meaning flower for its densely packed flowers. Mountain mints are attractive, easy to grow, and they are deer resistant!

Penstemon hirsutus ● Hairy Beard-tongue


Gary Fleming, DCR Natural Heritage Program

- 1–2 ft.
- Showy purple tubular flowers in May–June
- Full sun to light shade
- Medium, loamy soils
- Naturally found in wood margins, fields and other open, disturbed habitats

Relatively long bloom period on a well-behaved plant with handsome shiny leaves. Reseeds. Tolerates deer and drought.

Attracts hummingbirds. Special value to bumble bees and other native bees.

Podophyllum peltatum ● Mayapple


Margaret Chatham/VNPS

- 8 in.–1.5 ft.
- Solitary, nodding, white to rose-colored flower; 6–9 waxy white petals in March–May; followed by large, fleshy, lemon-shaped berry
- Part shade to full shade
- Moist to dry, humus-rich soils
- Naturally found in deciduous woods, shaded banks and various moist disturbed habitats

Spreads by roots. This species is ephemeral, which means that its foliage dies back in summer. All parts contain toxins, some of which have medicinal applications.

Cross-pollinated by bees. New colonies started by box turtles, which consume the yellow fruit and thereby spread the seed.

GENUS: *RUDBECKIA*



Shown: *Rudbeckia fulgida,* Orange Coneflower. The seedheads of *Rubeckia* spe*cies* are a favorite food source for goldfinches and chickadees.

Rudbeckia species, including Black-eyed Susan, Brown-eyed Susan, Green-headed Coneflower, and Orange Coneflower, are easy to grow and low maintenance plants that are tolerant of most soils. They occur in fields, meadows, and roadsides. Some are shorter lived, but all re-seed and establish clumps.

- 1.5–4 ft.
- Yellow rays around a dry, woody "cone" in July–September
- Full sun to part shade
- Moist to dry, clay, loam, sandy soils

Ruellia caroliniensis • Carolina or Common Wild-petunia



Attracts a range of bees and swallowtail butterflies.

- 0.5–3 ft.
- Light purple flowers, May–August
- Full sun to full shade
- Moist soils
- Naturally found in roadsides, thickets, open woodlands

It is moderately tolerant of salt and likes a higher pH. Makes a good plant for the area between sidewalks and streets. It is late to break dormancy in spring, and its seeds disperse explosively when ripe, so it may pop up in unexpected places mid-summer.

Scutellaria integrifolia • Hyssop Scullcap



Self-sows and spreads easily through seeds.

- 1–2 ft.
- Bluish-lavender showy 2-lipped flowers (arched upper lip and flaring lower lip) in May–July; flowers grow in clusters with separate flowers attached by short stalks at equal distances along a central stem
- Sun
- Wet to moist soils
- Naturally grows in moist to dry forests, floodplain forests and alluvial swamps, seepage swamps, depression swamps and ponds, wet flatwoods, wet meadows, and other low, disturbed habitats

The many different Skullcaps are recognized by the tiny projection, or hump, on the top of the calyx surrounding the base of the flower.

Sedum ternatum • Wild Stonecrop, Woodland Stonecrop



Bees, wasps, and flies visit flowers.

- 2–8 in.
- White with five, pointed petals in April–June
- Part shade
- Well-drained, base-rich soils
- Naturally found in upland forests, shaded ledges and rock outcrops

Rock-loving, prostrate, spreading ground cover. Cuttings readily root and may be taken from sterile shoots at any time during the growing season. Easy to propagate.

Solidago



A genus of 90 to 110 species commonly known as goldenrod. **Goldenrods** are mostly yellow late-summer and fall-blooming flowers with a variety of shapes. They provide late season food for bees and butterflies and may attract predatory or parasitoid insects that target pest insects. Goldenrod, with its brilliant fall flowers, is often mistakenly believed to cause hayfever; the real offender is ragweed, which blooms at the same time with inconspicuous flowers and wind-blown pollen.

Goldenrods average one to four feet in height, but some species can reach eight feet. They grow in a broad range of light and moisture conditions on a variety of soils. The following species will add splashes of yellow and gold to home gardens and other cultivated landscapes.

Species that grow in a range of part shade/part sun:

Solidago caesia	Blue-stemmed or Weath Goldenrod
Solidago flexicaulis	Zig-zag Goldenrod
Solidago nemoralis	Gray, Dwarf, Old Field Goldenrod
Solidago odora	Sweet Goldenrod

Species that prefer full sun:

Euthamia graminifolia	Flat-top Goldenrod
Solidago altissima	Tall Goldenrod, Late Goldenrod
Solidago juncea	Early Goldenrod
Solidago rugosa	Rough-stemmed or Wrinkle-leaf Goldenrod

Symphyotrichum



A genus of about 90 species of herbaceous annual and perennial plants in the composite family (*Asteraceae*) that were formerly treated within the genus *Aster*. The majority are native to North America. They attract a high number of native bees, bumblebees, and honeybees, as well as butterflies and skippers. Smooth Blue Aster is a larval host for the Pearl Crescent (*Phyciodes tharos*) butterfly.

Symphyotrichum cordifolium	Heart-leaved Aster, Blue Wood Aster
Symphyotrichum laeve (Aster laevis)	Smooth Blue Aster, Smooth Aster
Symphyotrichum lateriflorum	Calico Aster
Symphyotrichum novae-angliae	New England Aster
Symphyotrichum novi-belgii	New York Aster

Shown: *Symphyotrichum novae-angliae,* New England Aster.

Viola



A genus of over 500 species worldwide, with 30 species native to our region and commonly known as violets. Violets are small plants that come in a variety of flower colors, leaf shapes and forms. They provide nectar for bees and are host plants for several fritillary butterflies. Ants spread their seeds.

Two common and vigorous species (***V. sororia*** and ***V. bicolor***) may be used in low maintenance settings such as meadows and naturalized lawns. The easy-care, attractive species listed here can be used as fillers among taller plants and will add color to spring and early summer gardens.

Viola cucullata	Marsh Blue Violet --- flowers April–June, moist conditions, marsh, riverbank
Viola labradorica	Dog Violet (*V. conspersa*) --- flowers late Mar–May
Viola pedata	Bird's-foot Violet --- flowers March–June, deeply cut leaves, dry forests and clearings
Viola pubescens	Yellow Violet --- yellow flowers March–May, well drained rich soils
Viola sagittata	Arrow-leaved Violet --- flowers April, narrow shaped leaved
Viola striata	Striped Violet, Cream Violet --- vigorous habit, blooms later and longer than most

Sisyrinchium angustifolium • Narrow-leaved Blue-eyed-grass



- 8–20 in.
- Delicate, blue or deep blue-violet flowers with yellow centers in April–June
- Full sun to part shade
- Moist to dry, poor to average soils
- Naturally found in upland forests, meadows, fields, woods

Member of the Iris family. Deciduous. Avoid heavy mulch. Reseeds and can form thick stands over time.

Songbirds eat the seed. Drought tolerant.

Tiarella cordifolia • Foamflower



- 6–12 in.
- Tiny, white flowers with very long stamens appear in airy racemes in April–June; leaves turn a nice reddish bronze in fall
- Part shade to full shade
- Organically rich, moisture-retentive soils
- Naturally found in cool, moist, deciduous woods; stream banks

Foamflower is a sturdy groundcover. It spreads by underground rhizomes or by expanding clumps, depending on the cultivar. Genus name comes from the Greek "tiara" meaning a small crown in reference to the form of the fruit.

Handsome, often variegated, foliage and extended spring bloom make this a winner for the shady border

Vernonia noveboracensis • New York Ironweed



- 3–6 ft.
- Red-purple flowers in July–September
- Full sun to part shade
- Found in moist soils in the wild, but will flourish in regular or dry soil; tolerates clay and neutral to acidic conditions
- Naturally found in floodplain forests, riverbanks, meadows, roadsides

As a tall, narrow deer-resistant plant, it is suited for the back of the border or tight spaces.

Flowers attract butterflies and seed heads attract birds. Special value to native bees.

Zizia aurea • Golden-alexanders



- 1–2 ft.
- Flat-topped clusters of tiny, yellow flowers in April–May
- Full sun to full shade
- Moist to wet soils
- Naturally found in floodplain forests, marshes, clearings

This evergreen groundcover supports predatory or parasitoid insects that prey upon pest insects.

Attracts butterflies. Larval host to Black Swallowtail (*Papilio polyxenes*). Special value to native bees.

Danthonia spicata ● Poverty Oatgrass


Helen Hamilton/John Clayton Chapter, VNPS

- 4–24 in.
- May–July
- Sun, part shade, shade
- Sand, rocky shallow, compacted, poor soil, well-drained, acid-moderate soils
- Native to rocky, shallow, or compacted moist to dry soils in open forests, woodlands, barrens, outcrops, clearings, old fields, pastures, roadsides

Poverty Oatgrass' tufts of curly leaves provide winter interest. It is being evaluated as an alternative turf, and is valuable for stabilization of disturbed soil. It is named for French botanist Etienne Danthoine.

Native Oatgrasses host various native caterpillars, including the Indian Skipper butterflies (*Hesperia sassacus*).

Elymus hystrix ● Bottlebrush Grass


Gary Fleming/DCR Natural Heritage Program

- 2 – 4 ft.
- May – August
- Sun to part sun or light shade
- Moist to dry; tolerates heavy clay and alkaline soils
- Naturally found in mesic to (primarily) dry forests, woodlands and barrens

Does well in a woodland garden with other species that grow in filtered light. Together, the groups of spikelets resemble a bottlebrush, hence the common name. The species name, from the Greek hystrix (hedgehog), aptly describes the bristly spikelets. This grass is sometimes known as Hystrix patula.

Attracts butterflies. Larval host to Northern Pearly-eye (*Enodia anthedon*) butterfly.

Eragrostis spectabilis ● Purple Love Grass


Phillip Merritt/John Clayton Chapter, VNPS

- 8–18 in.
- Purplish red panicles appear in August–October
- Full sun
- Dry to moist sandy soils
- Naturally found in woodlands, fields

Drought tolerant and can grow in harsh conditions. Best in masses, where it creates a lovely purple haze in seed.

Larval host to Zabulon Skipper (*Poanes zabulon*). Seed consumed by birds and other wildlife.

Juncus effusus ● Common Rush, Soft Rush


Phillip Merritt/John Clayton Chapter, VNPS

- 8–18 in.
- Clusters of very small, greenish-brown, scaly flowers in July–September
- Full sun to full shade
- Dry to wet sandy soils
- Naturally found in swamps and damp open ground

Juncus provides the same design effect as other ornamental grasses, but with a lot more substance and definition because the blades are tubular rather than flat. Their blue green foliage makes a striking contrast combined with bright flowering plants. Juncus can survive intermittent dry spells and also thrives in constantly wet areas where most plants would fail.

Birds find shelter among the stems.

Grasses, Sedges and Rushes

Muhlenbergia capillaris ● Hair-awn Muhly, Long-awn Hairgrass



- 2 – 3 ft.
- August – October
- Sun to part sun
- Average to dry soil; needs very good drainage, especially in winter
- Naturally found in dry rocky, open woodlands, clearings, outcrops, roadsides

The spikelets of this grass are purple. In fall the plant takes on a stunning feathery, deep pink to lavender hue. Germinates well and grows easily. Collect seed in November when they start to lose the pink color. Use a comb so as to not damage the appearance of plants.

Hair-awn Muhly functions well in meadow gardens and as a general garden plant.

Panicum virgatum ● Switchgrass



- 3–6 ft.
- Red-purple seed head in August–October
- Sun
- Dry to moist, sandy, clay or loam soils; poor drainage is OK
- Naturally found in open areas and along streambanks

Switchgrass is a clump-forming, warm-season grass with bright green leaves up and down the stem, turning bright yellow in fall. Grows in large clumps, with many persistent, curly leaves. It is pollinated by wind. It has become of major interest as a source of biofuels and to revegetate surfaces such as mined land.

Attracts birds and butterflies. Host plant for the Delaware Skipper (*Anatrytone logan*) and the Dotted Skipper (*Hespera attalus*). Can also provide garden accent.

Schizachyrium scoparium ● Little Bluestem



- 1.5–4 ft. very dense mounds
- White seedhead in August–October
- Full sun to light shade
- Dry, well-drained, sandy, clay, or loam soils
- Naturally found in woodland edges, hillsides, slopes, open areas

Wonderful planted en masse. This grass provides a changing visual dynamic that ranges from blue-green stems in late summer to radiant mahogany-red, white-tufted seed heads in fall. A reddish-tan color persists during winter.

In winter the seeds, fuzzy white at maturity, are of particular value to small birds.

Sorghastrum nutans ● Indian Grass



- 1.5–8.5 ft.
- Leaves turn brilliant mauve, red, and purple in September–November and provide attractive early fall color
- Full sun
- Dry to moist; tolerates range of soil chemistries
- Naturally found in prairies, slopes, borders of woods

Birds eat seeds through the winter.

GENUS: *CAREX* - Sedges

A wider range of native carex species is becoming available in the nursery trade. Once established, they make handsome, sturdy and easy-care groundcovers, offering wildlife value for both sunny and shady locations. Sedges, like grasses, offer contrasts in texture to ferns and other perennials in mixed borders. They range from fine to wide-leaved, and serve as good alternatives to non-native liriopes. Like liriope, most benefit from a trim in late winter. Many sedges host larvae for skipper butterflies and other specialist pollinators.

- ***Carex blanda*, Eastern Woodland Sedge**: is a slow-growing, cold-tolerant sedge that thrives in acidic soils; its flowers are inconspicuous.
- ***Carex crinita*, Long-fringed Sedge**: has interesting differentiated male and female flowers that droop decoratively. In addition to attracting birds, it is happy in any light conditions and in transitionally damp soils.
- ***Carex glaucodea* (flaccosperma), Blue Wood Sedge**: is adaptable to a wide range of soils and light conditions and is a lovely accent or edging plant.
- ***Carex laxiculmis*, Creeping Sedge**: features low maintenance, a low growth habit, deer resistance and a tolerance for wet soils (it needs more moisture than glaucodea). Despite its common name, it is politely slow to colonize an area, which it does through underground rhizomes.
- ***Carex pensylvanica*, Pennsylvania Sedge**: makes a lovely groundcover and is sometimes used as a lawn substitute.
- ***Carex plantaginea*, Plantain-leaved Sedge**, also referred to as "Seersucker Sedge," may be uncommon in our area but is among our most ornamental sedges, with puckered lime-green leaves that are semi-evergreen
- ***Carex platyphylla*, Broad-leaved Sedge**: has a wider distribution throughout Virginia in a range of soils and conditions.
- ***Carex rosea*, Rosy Sedge**: is another adaptable, delicately fine-leaved clumping sedge, primarily suited to shady settings.

Carex blanda • **Eastern Woodland Sedge**


Gary Fleming, DCR Natural Heritage Program

Carex crinita • **Long-fringed Sedge**


Jan Newton/John Clayton Chapter VNPS

Carex glaucodea • **Blue Wood Sedge**


Gary Fleming, DCR Natural Heritage Program

Carex laxiculmis • **Creeping Sedge**


Gary Fleming, DCR Natural Heritage Program

Carex pensylvanica • **Pennsylvania Sedge**


DCR Natural Heritage Program

Carex plantaginea • **Plantain-leaved Sedge**


Margaret Chatham/VNPS

Carex platyphylla • **Broad-leaved Sedge**


Gary Fleming, DCR Natural Heritage Program

Carex rosea • **Rosy Sedge**


Joanne Hutton

Adiantum pedatum ● Northern Maidenhair Fern



- 8–20 in.
- Burgundy red fiddleheads appear in early spring; reproduces by spores; June–August
- Part shade to full shade
- Moist/well-drained soil; nutrient-rich soils; not drought tolerant
- Naturally found in mountains

This fern is quite easy to grow if it is provided with the right conditions. It likes north-facing slopes. Some sources suggest adding calcium. Forms colonies by means of creeping rhizomes.

Provides shelter for toads and lizards.

Matteuccia struthiopteris ● Ostrich Fern



- 1–3 ft.
- July–October; reproduces by spores
- Part shade to full shade
- Moist soils
- Naturally found in rich alluvial forests, swamps, bottomland woods & thickets

Deciduous. Beaded fertile plumes persist through winter. Spreads through underground runners, so give it room.

Information on faunal associations with most ferns is limited.

GENUS: *DRYOPTERIS* - Wood Ferns

Dryopteris cristata ● Crested Wood Fern



Dryopteris intermedia ● Evergreen Wood Fern



Dryopteris marginalis ● Marginal Wood Fern



Dryopteris is a fern genus of 225 species from around the world that give us the majority of our great garden ferns. Like most garden ferns, *Dryopteris* plants prefer light shade in a woodland garden and rich, evenly moist soil.

Crested Wood Fern, 1.5-2.5 ft., is nearly evergreen. It has narrow, upright fronds with horizontal pinnae like ladder steps. Sterile fronds remain evergreen. This fern is typically found in moist or wet conditions including wetlands and marshes. They originate from an underground rhizome.

Evergreen Wood Fern is a good choice for deep shade. Easily grown in average, medium moisture, well-drained soils in part shade to full shade. Prefers moist loams rich in organic matter. Best with consistent moisture. Soils should not be allowed to dry out. Site in locations protected from strong winds to prevent damage to the fronds. Tolerates dryish slopes.

Marginal Wood Fern is a perennial evergreen fern with lacy 1-3 foot foliage that can be found in moist woodlands and other shaded areas. During snowy winters, it can be seen protruding from the snow. It is not aggressive and does not colonize large areas. Toads and lizards use this plant as cover in wooded areas.

Onoclea sensibilis • Sensitive Fern



- 1–2 ft.
- Produces spores in pod-like structures
- Stems are greenish-yellow to red
- Full shade to part sun
- Moist, well-drained, loose soils; needs consistent moisture but will spread freely by rhizomes in moist, loose soils
- Naturally found in woodlands

Best used as a groundcover in the shaded or woodland garden. Named the sensitive fern because the fronds turn yellow and die down with the first frost. But don't worry, the rhizomes will produce new leaves in the spring.

Deer and rabbit resistant. Attracts birds. Shelters salamanders and frogs.

Osmundastrum cinnamomeum • Cinnamon Fern



- 3–4 ft.
- Thick, spore-bearing spikes that turn from green to chocolate brown appear April–June
- Full sun to full shade
- Muddy, sandy, clay or loam, acidic soils
- Naturally found in boggy areas, shaded ledges

Deciduous. Bristly root crown, called osmunda fiber, is used as a potting medium for orchids.

Dramatic landscape accent. The fuzz that covers the young fiddleheads is a favorite nesting material for birds.

Osmunda spectabilis • Royal Fern



- 2–5 ft.; forms a symmetric clump 18 in. wide
- Grows slowly from rhizome stem
- Part shade, shade
- Wet, sandy, clay or loam, acidic soils, tolerates year-round, standing but not moving, shallow water
- Naturally found in freshwater wetlands, bogs, fens, floodplain forests and along streambanks

One of the most widespread of all living species; it is found on every continent except Australia.

Hosts six species of native caterpillars, including the Osmunda Borer moth.

Polystichum acrostichoides • Christmas Fern



- Fronds 1–3 ft., taller when fertile; reproduces by spores
- Part shade to full shade
- Moist, well-drained, humus-rich, acidic soils; does not tolerate standing water
- Naturally found in rocky woods, stream banks, swamps, thickets

An evergreen, Christmas Fern got its name because it stays green right through the holiday season.

Good evergreen border or adaptable accent plant.

Bignonia capreolata ● Cross-vine



- Perennial (semi-evergreen)
- Up to 60 ft.
- Red and yellow flowers; May
- Full sun, part shade (best flowers in sun)
- Moist, well-drained, acidic or calcareous, sandy or clay soils (cold tolerant, tolerates brief flooding)

Showy ornamental with glossy leaves and showy, two-tone, trumpet flowers. An early nectar source for butterflies and hummingbirds.

Crossvine, a semi-evergreen perennial, has claws at the end of its tendrils allowing Crossvine to cling to stone, brick, pergolas, and fences without support. In fall the green leaves become purple until spring.

Clematis virginiana ● Virgin's Bower



- 12–15 ft.
- Clusters of creamy white flowers turning into showy sprays of silky seeds that glisten with backlighting in July–September
- Full sun to full shade
- Moist to dry, rich soils
- Naturally found in woods, thickets, stream banks

Attracts hummingbirds and butterflies. Most plant parts are toxic to humans.

Lacking tendrils, this deciduous vine supports itself by means of twisted stems, or petioles, that wrap around other plants. These fast-growing stems can grow 20 feet in one year. They may be pruned at any time during the growing season.

GENUS: *PASSIFLORA* - Passionflowers

Passiflora incarnata ● Purple Passionflower, Maypop



- 12–36 ft.
- Large lavender flowers; June–September
- Sun (best) to part shade
- Moist, rich clay and sandy non-saline soils
- Native to roadsides, fields, forest borders

Flowers attract native bees and the plant hosts 5 species of caterpillars including Gulf Fritillary (*Agraulis vanillae*) and Variegated Fritillary (*Euptoieta claudia*).

The fruit of Maypop is a large greenish-yellow berry with edible pulp. The name Maypop comes from the hollow, yellow fruits that pop loudly when crushed. Maypop spreads easily by root suckers that can be contained by removing suckers or mowing.

Passiflora lutea ● Yellow Passionflower



- Herbaceous vine; 6–15 ft.
- Delicate yellow-green flowers; May–
- September
- Part shade
- Moist to wet soil
- Native to low rocky moist woods and thickets

Many species of butterfly larvae use this plant as a food source. Also attractive to many species of pollinators. Birds eat fruit.

This perennial climbing vine can grow in excess of 15 feet in length. Deer resistance is one of the major benefits of this vine.

Landscaping with Vines



Incorporating native vines into your landscape may be easier than you think. They can be trained over snags of dead trees, walls, pergolas, arches, fences or porch railings. Vines need to climb above ground level to flower and fruit, and use various means to attach themselves to supporting structures. Some, like Virgin's Bower (*Clematis virginiana*), use twisted stems or petioles to attach themselves, while others like Purple Passionflower (*Passiflora incarnata*) use tendrils. All of our native vines are deciduous.

Vines that twine (including Coral Honeysuckle, *Lonicera sempervirens*) may be trained into living curtains or screens with structural support. Allowing vines to create a tangle around a vertical support such as a snag creates attractive habitat for birds to use as shelter. If allowed to scramble over the ground, vines can also serve as groundcover. Virginia Creeper (*Parthenocissus quinquefolia*), and to a lesser extent, Purple Passionflower work well as ground cover. Virginia Creeper is also a good choice for hiding unsightly walls. This woody, deciduous vine spreads quickly and is limited in height only by the structure it climbs. It is particularly attractive in early fall when its leaves turn red and purple. It can also create a climbing surface for other vines that can't grip a wall.

Before adding any native vine, make sure you take into account the length and spread of the vine when it reaches its mature size and plant it where it will have enough room to grow. For example, Purple Passionflower can grow up to 36 feet in length and tends to spread exuberantly. Yellow Passionflower (*Passiflora lutea*), on the other hand, reaches a maximum length of 15 feet and is much better behaved.

If you don't have an area large enough to accommodate a vine's mature size, you can constrain it by planting it in a large planter pot and giving it somewhere to climb. Vines can also be pruned regularly to control their growth, but that may require more maintenance than you wish to provide.

Lonicera sempervirens • Trumpet or Coral Honeysuckle



- 3–20 ft.
- Tubular flowers from spring to fall, with heaviest bloom in April-June, followed by bright-red berries
- Full sun (best) to part shade
- Adaptable to many soil conditions; tolerates poor drainage for short periods
- Naturally found in a wide range of natural habitats

Official wildflower of Fairfax County. This beautiful semi-evergreen vine is great for arbors. The species name refers to its evergreen habit. Deer resistant.

Frequently visited by hummingbirds and butterflies. Fruits attract Purple Finch, Goldfinch, Hermit Thrush, and American Robin.

Parthenocissus quinquefolia • Virginia Creeper



- 3–40 ft.; structure it climbs is the limiting factor to its height
- Yellowish-green flowers in May–June, followed by berries that turn from red to mauve to black
- Sun to part shade
- Adaptable to acidic or basic soil
- Naturally found in forested to open habitats, streams, riverbanks

Virginia Creeper has brilliant fall color. It tolerates pollution and can be pruned to control its growth. A vigorous grower it adheres to walls, arbors etc. via adhesive discs and may even be used as a ground cover for erosion control.

Berries eaten by songbirds, but are toxic to humans. Foliage provides cover for birds. Hosts 32 species of native caterpillars, including Virginia Creeper Moth.

Shrubs

Amorpha fruticosa • False Indigo Bush



- 6–13 ft.
- Brilliant purple flowers on 3–6 inch spikes in April–June
- Full sun to part shade
- Tolerates wet soils
- Naturally found in stream banks, bogs, pond areas

Deciduous. Contains some indigo pigment that can be used to make blue dye.

Larval host and nectar source for many butterflies and native bees. Can form dense thickets and provide cover for wildlife. Deer resistant.

Aronia arbutifolia • Red Chokeberry



- 6 –15 ft.
- Many clusters of small, white flowers in early May followed by bright red fruits that persist into December
- Tolerates dry to wet
- Full sun
- Naturally found in wet and dry thickets

One of the best shrubs for brilliant fall color—intense, shiny, raspberry to crimson, with purplish highlights. Can also have some orange mixed in, especially in shady sites

Nectar source for pollinators. Fruits persist through much of the winter, and are occasionally eaten by songbirds.

A. melanocarpa*, Black Chokeberry, is slightly smaller and produces black fruits.*

Cephalanthus occidentalis • Buttonbush, Button Willow



- 6–12 ft. spreading, multibranched shrub or sometimes small tree
- Balls of long-lasting white or pale-pink flowers resembling pincushions in June–September, and button-like balls of fruit; rounded masses of nutlets that persist through the winter
- Full sun to part shade
- Wet, sandy and clay soils; poor drainage or standing water ok
- Naturally found in shorelines, swamps

Ducks and other water-birds and shorebirds consume the seeds, and its nectar attracts bees and butterflies.

Cornus amomum • Silky Dogwood



- 6–12 ft., deciduous shrub
- Yellowish white flowers in May–June Blue berry-like drupes in August
- Sun to part shade; tolerates close to full shade
- Average, moist to wet, well-drained soils
- Naturally found in moist lowland areas, swamp borders, floodplains, shrub wetlands, and along streams and ponds

Shrub bark of Silky Dogwood was used by Native Americans for tobacco.

Birds are attracted to the fruit. Supports specialist bees

Corylus americana ● American Hazelnut



- 10–16 ft.
- Brown male catkins appear in fall and fertilize tiny red female flowers in spring that become nuts with unusual cases
- Sun to part shade
- Average, moist, well-drained; tolerant of clay
- Naturally found in moist thickets, woodlands and wood margins, valleys, uplands and prairies

Better nut production with more sun.

Squirrels and birds eat nuts.

Euonymus americanus ● Strawberry-bush, Hearts-a-bustin'



- 6–10 ft. narrow, deciduous green-stemmed shrub, which often spreads into mounded clumps
- Small white flowers in July–August develop into colorful, decorative seed pods
- Full sun to full shade
- Moist to dry acidic soils
- Naturally found in forests and thickets

Leaves turn dull yellow to orange in fall. Its dry fruiting capsules remain long after flowering and help identify this plant in winter. Deer love it.

Versatile, carefree shrub that is remarkably free of any disease, insect, or physiological problems.

Hamamelis virginiana ● Witch Hazel



- 10–15 (sometimes up to 30) ft. multi-trunked shrub with large, crooked, spreading branches forming an irregular, open crown
- Yellow, fragrant flowers with straplike, crumpled petals appear in the fall, persisting for some time after leaf drop in September–December; lettuce-green, deciduous leaves maintain a rich consistency into fall when they turn brilliant gold
- Full sun to full shade
- Moist, sandy, clay, acidic, calcareous soils
- Naturally found in moist woods, thickets, bottomlands

The source of the astringent extract.

Birds eat the fruits (small brown capsules). The species has brilliant fall color and flowering.

Hydrangea arborescens ● *Wild Hydrangea*



- 3–10 ft., mound-shaped, slender-branched, deciduous shrub
- Small, white flowers bloom in May– June in 4-inch spires that droop with the arching branches; flowers open from base to tip so that the plant appears to bloom for a long time; leaves turn red to purple in fall and persist well into the winter
- Full sun, part shade; blooms best, and has better fall color, if it receives full sun at least part of the day
- Moist, sandy, loam, clay, acid soils
- Naturally found in wooded stream banks

Wild hydrangea suckers freely, creeping over large areas. Fast-growing and short-lived, it can be cut to the ground every winter.

Larval host of the Hydrangea sphinx moth (*Darapsa versicolor*). Can grow in areas of poor drainage, and is very effective in massed plantings.

Hypericum prolificum • Shrubby St. Johnswort



- 1–8 ft., compact, deciduous, rounded shrub; dark green, lance-shaped leaves are 2–3" long; cone-shaped seed capsules split in autumn to release black seeds
- 5-petaled, bright yellow flowers (to 1" diameter) with numerous, yellow stamens in June–August
- Full sun to part shade
- Tolerates wide variety of soils (clay, dry rocky, or sandy); prefers medium water but flood tolerant
- Naturally found in dry, open forests, rocky woodlands, barrens, clearings, riverside prairies, outcrops, rich floodplain forests, fens

Plants of the genus Hypericum *were apparently gathered and burned to ward off evil spirits on the eve of St. John's Day.*

Bark of older stems exfoliates to reveal attractive, pale orange inner bark in the winter.

Ilex verticillata • Winterberry



- 3–10 ft., globular, upright, medium-sized deciduous shrub, male and female separate
- Inconspicuous flowers in April–July; dense clusters of bright-red berries that remain throughout winter
- Full sun to full shade
- Moist, acidic soils
- Naturally found in swamps, bogs, thickets, low woods, along ponds and streams

Leaves are not shaped with sharp teeth like other hollies and are not evergreen. Berries are quite showy and will persist throughout the winter and often into early spring, providing considerable impact and interest to the winter landscape.

Birds are readily attracted to them. Winterberry tolerates poor drainage and is quite winter hardy.

Itea virginica • Virginia Sweetspire



- 3–8 ft., mound-shaped, slender-branched, deciduous shrub
- Small, white flowers bloom in May– June in 4-inch spires that droop with the arching branches; flowers open from base to tip so that the plant appears to bloom for a long time; leaves turn red to purple in fall and persist well into the winter
- Full sun, part shade; blooms best, and has better fall color, if it receives full sun at least part of the day
- Moist, sandy, loam, clay, acid soils
- Naturally found in wooded stream banks, bogs

Very effective in massed plantings and also good as a container plant.

Flowers and fall foliage make this an attractive ornamental. Can grow in areas of poor drainage.

Kalmia latifolia • Mountain Laurel



- 5–15 ft., broadleaf thicket-forming evergreen shrub, sometimes a small tree with short, crooked trunk; stout, spreading branches
- Bell-shaped, white to pink flowers with deep rose spots in large flat-topped clusters in May–June; glossy leaves change from light green to dark green to purple throughout year
- Part shade
- Cool, moist, rocky or sandy, acidic soils
- Naturally found in woods, slopes

Mountain Laurel is one of the most beautiful native flowering shrubs. It needs afternoon shade, good drainage, and the right setting to thrive. Poisonous plant parts.

The stamens of the flowers have an odd, springlike mechanism which spreads pollen when tripped by a bee.

Lindera benzoin ● Northern Spicebush, Spicebush


Ken Lawless

- 6–16 ft., single- or few-stemmed, fast-growing, deciduous shrub
- Dense clusters of tiny, pale yellow flowers bloom in March–April ; glossy red fruit in September–October
- Full sun to full shade
- Moist, sandy, well-drained soils (better form, more berries with sun)

Fruit and foliage are aromatic. Leaves turn a golden—yellow in fall. This species has separate male and female plants; both are needed for berry production. Deer resistant.

A larval host for the Eastern Tiger Swallowtail (*Papilio glaucus*) and Spicebush Swallowtail (*Papilio troilus*) butterflies. The fruits are a special favorite of wood thrushes.

Morella cerifera ● Wax Myrtle, Southern Bayberry


Irvine Wilson/DCR Natural Heritage Program

- 6–15 ft., multi-trunked, semi-green shrub; can reach 20 ft. in height
- Green flowers in March–April; pale blue berries occur on female plants in winter
- Sun to part sun/shade
- Moist to wet, sandy, slightly acidic soils (fast-growing; drought- and flood-tolerant once established)
- Naturally found in forest, marshes, fresh to slightly brackish stream banks, and swamps

Wax Myrtle leaves are aromatic, with an appealing, piquant fragrance when crushed. If you want berries you must have male plants close enough to the berry-producing female plants for pollination to occur.

Fallen leaves are larval host of the Red-Banded Hairstreak butterfly (*Calycopis cecrops*). Popular ornamental used for screens and hedges.

GENUS: *RHUS* - Sumacs

***Rhus copallinum* ● Winged or Shining Sumac**


Jan Newton,/John Clayton Chapter, VNPS

***Rhus glabra* ● Smooth Sumac**


Gary Fleming/DCR Natural Heritage Program

***Rhus typhina* ● Staghorn Sumac**


Gary Fleming/DCR Natural Heritage Program

Plants in the genus Rhus offer distinctly textured leaves, which provide interest and brilliant autumn color. The inconspicuous flowers occur in large panicles and are followed by spherical fruits which persist through winter, providing food for wildlife. You need both male and female plants for fruit to set. Use in meadows, dry sites, woodland transitions; along water or roads; on hillsides. They are fast growing, generally pest and disease-free, and drought-tolerant.

Beneficial to honey and native bees. Provides food for song birds, gamebirds and mammals.

HEIGHT: *R. copallinum*, 3–35 ft.; *R. glabra*, 2–20 ft. with 2–25 ft. spread; *R. typhina,* 35–50 ft.

FLOWERS: *R. copallinum* in July–August; *R. glabra* and *R. typhina* yellow/greenish in June–July; red berries

LIGHT: *R. copallinum*, sun to part shade*; R. glabra* and *R. typhina,* full sun (for best fall color)

SOILS: Dry to moist; *R. glabra* is very drought resistant

Winged or Shining Sumac is a very ornamental sumac. Because of its large, spreading habit, it is not suited to small areas.

Smooth Sumac colonies can be rejuvenated every few years by cutting them to the ground in mid-winter.

Staghorn Sumac spreads with its roots and will form a large group/cluster.

Shrubs

Physocarpus opulifolius • Ninebark



- 5–10 ft., deciduous shrub with recurved branches. Bark is brown to orangish, peeling into thin strips or broader sheets on larger trunks
- Clusters of small white flowers May–June
- Full sun to full shade
- Moist to wet, mineral-rich (including calcium) soils
- Naturally found in rocky open woodlands, cliffs, outcrops, rocky river shores, stream banks

The ability to grow quickly in harsh conditions makes this shrub especially suitable for erosion control on banks. Disease resistant and drought tolerant.

Value to songbirds, waterfowl, small mammals, and beneficial insects.
Special value to native bees and honey bees.

Rosa carolina • Carolina Rose, Pasture Rose



- 1–6.5 ft., freely suckering shrub
- Pink flowers from thorny stems—fragrant, 2 inch wide, 5-petaled—occur singly or in small clusters in May–June; fruit, a hip, turns from dark green to bright red as it ripens
- Full sun to part shade
- Dry to wet, acidic soils; drought tolerant
- Naturally found in sandy, open woods; thickets, roadsides, disturbed areas

Hips develop lovely red color. Although one of the most shade-tolerant roses, this species grows best in open sunny locations.

Attracts birds. Special value to bumble-bees and other native bees: a plant that native bees nest beneath, within, or harvest parts from to construct their nests.

Rhododendron periclymenoides • Wild Azalea, Pinxter Azalea



- 6–10 ft., shrub with picturesque, horizontal branching
- Funnel-shaped, pink or white flowers with protruding stamens occur in large fragrant clusters, appearing before or with the leaves in April–May
- Part shade
- Well drained, acidic soils
- Naturally found in woods, bogs, riparian

This species is relatively tolerant of dry sites, and needs good drainage. The old species name, nudiflorum*, Latin for "naked-flowered," refers to the fact that the flowers often appear before its leaves are fully expanded.*

Especially showy flowers. Nectar source for butterflies and hummingbirds.

Rubus odoratus • Flowering Raspberry



- 3–6 ft., spreading by suckers
- Rose-like, fragrant 2-inch pink-purple flowers June–August with fruits July–October; large Maple-shaped leaves turn pale yellow in fall
- Full Sun to Shade
- Tolerates moist to dry
- Thornless
- Naturally found in moist, shady places; woods edges

Produces edible, but dry, berries on a single shrub; will fruit more abundantly with other shrubs present. Deer resistant.

Special value to native bees, high wildlife value to songbirds, game birds, and large and small mammals.

Salix sericea ● Silky Willow


Jim McGlone

- Large shrub to small tree up to 20 ft.
- Small white/yellow flowers in March
- Full sun to part shade
- Wet to moist soils
- Naturally found in roadside ditches, moist woodland edges, open wet meadows

*Black willow (*Salix nigra*) is a related tree that is also beneficial to bees and caterpillars.*

Willows are very important early bee plants. Several species of native bees specialize on willow species, and it also supports generalist bees and many caterpillars.

Sambucus canadensis ● Common Elderberry


Jan Newton /John Clayton Chapter, VNPS

- 6–12 ft., loose and graceful, deciduous shrub with both woody and herbaceous branches
- White flowers in May–July in broad, flat, clusters up to 10 in. or more in diameter; berrylike fruit is dark purple when ripe in July–September
- Part shade
- Tolerates a wide variety of wet to dry soils but prefers rich, moist, low acid soil
- Native to bogs, ditches, fields

Prune heavily in winter to maintain thick form. Individual plants are very short-lived, however root masses produce new shoots. The genus name comes from Greek sambuce*, an ancient musical instrument.*

Birds are attracted to the purple-black fruit and spread the seeds. Provides a nesting structure for bees. Provides effective erosion control on moist sites.

GENUS: *VIBURNUM*

Native *Viburnums* have appealing foliage and growth habits, offering lovely— sometimes even fragrant—flowers, and boasting beautiful purplish-pink leaves and blue fruits in late summer and fall.

These shrubs are powerhouses for wildlife. They're a host plant for the larvae of the Spring Azure butterfly (*Celastrina ladon*); their flowers support numerous native bee species, and the berries feed several songbirds including Eastern Bluebird, Northern Flicker, Gray Catbird and American Robin.

HEIGHT: *V. acerifolium* 4–6 ft. (or taller); *V. dentatum 6–10 ft.; V. prunifolium to 30 ft.; V. nudum* 12–20 ft.

FLOWERS: All have white flowers. April: *V. prunifolium;* April–May: *V. dentatum*; May–June: *V. acerfolium;* June–July; *V. nudum*. *V. nudum* has aromatic flowers.

LIGHT: Full sun to part shade; for best flowers and fruit, *Viburnums* need at least half-day of sunlight

SOILS: Ranges from dry to moist, well-drained for *V. prunifolium* and *V. dentatum*; and wet, muchky acidic soils for *V. nudum. V. dentatum* is the most soil adaptable and *V. acerifolium* does best in drier soils.

Viburnums are very durable and overall are flood, pest and disease tolerant. Viburnums are not self-fruitful, so they need a nearby unrelated plant for cross-pollination and good berry production.

Be aware that there are many non-native and sometimes invasive viburnums sold in garden centers.

Viburnum dentatum ● Arrow-wood


Jan Newton,/John Clayton Chapter, VNPS

Viburnum nudum ● Possumhaw


Lucile Kossodo/John Clayton Chapter, VNPS

Viburnum prunifolium ● Black Haw


Jan Newton,/John Clayton Chapter, VNPS

Amelanchier canadensis • Canada Serviceberry, Juneberry



- 15–30 ft., with multiple, upright stems forming a dense shrub with a narrow crown and many small-diameter branches or, if properly pruned, a small tree
- White flowers in March–May followed by red to purple fruit in June–August; brilliant fall color display ranging from yellow and orange to red
- Full sun to part shade
- Moist, well-drained acidic soils
- Naturally found in wood borders, moist, upland woods

Good fall color commends serviceberry for multiseason interest and smaller gardens.

At least 40 bird species (e.g., Cardinals, Cedar Waxwing, and Towhees) eat the fruit of *Amelanchier* species.

Asimina triloba • Pawpaw, Common Pawpaw



- 10–40 ft. tree forms colonies
- Purple, six-petaled flowers in April–May before leaf emergence; dark-green or yellow fruit follows (our largest native fruit); yellow fall foliage
- Full sun to full shade
- Rich, moist, slightly acid soils
- Naturally found in ditches, ravines, depressions, flood plains, bottomland

A good understory tree. Requires two unrelated trees to produce fruit. The name Common Pawpaw is from the Arawakan name of Papaya, an unrelated tropical American fruit.

A larval host for Zebra Swallowtail Butterfly (*Eurytides marcellus*) and Pawpaw Sphinx Moth (*Dolba hyloeus*). Aromatic tree with no serious disease or insect problems.

Betula nigra • River Birch



- 50-80 ft. gracefully branched tree, with iregular, spreading crown; produces a cone-like fruit; satiny silver bark peels to reveal a cinnamon brown trunk beneath; fall foliage is yellow
- Full sun to part shade
- Sandy or clay, moist, acidic soils; well suited to periodically wet areas
- Naturally found in flood plains, bottomland, ditches, ravines, depressions, swamps, stream and river banks to mid-slope

This is the southernmost New World birch and the only birch that occurs at low altitudes in the southeastern US.

Fast growing and long-lived. Its ability to thrive on moist sites makes it useful for erosion control.

Carpinus caroliniana • American Hornbeam, Ironwood



- 30–50 ft. with irregular, spreading crown; graceful, drooping branches and slender pale gray trunk, smooth and sinewy with twisting, muscle-like bulges. Leaves turn yellow in the fall
- Fruit, appearing March–April; hangs from a papery bract
- Part shade to full shade
- Moist, well-drained soils
- Naturally found in upland and floodplain forests, alluvial swamps, stream banks

The term "hornbeam" means "tough tree," referring to the tree's very hard wood.

Larval host to Eastern Tiger Swallowtail (*Papilio glaucus*), Striped Hairstreak (*Satyrium liparops*), and Red-spotted Purple (*Limenitis arthemis*). Birds and mammals feed on fruit.

Carya tomentosa (alba) • Mockernut Hickory



- 60–100 ft.; dark bark is rough, thin with shallow furrows, narrow ridges forming a net-like pattern; fragrant leaves turn bright, golden-yellow; small, rounded nuts in a large, thick shell (after about 25 years old)
- Yellowish-green bloom in April–May
- Sun to part-shade
- Best grown in humusy, rich, moist, well-drained soils
- Naturally found on hillsides and ridges in somewhat dry soils.

Mockernut Hickory needs a large space to grow. Tomentosa *means densely covered with soft hairs, describes the undersurfaces of leaflets.* Carya glabra *(Pignut Hickory) is very similar, but nuts have thinner husks.*

Attracts birds, and provides colorful fall appeal. It is a great tall shade tree for large properties and parks.

Cercis canadensis • Eastern Redbud



- 15–35 ft. tree with one to several trunks and a wide, umbrella-like crown; smooth, heartshaped, deciduous foliage is golden yellow in autumn
- Deep pink flowers in April–May in tight clusters along the stems and branches before new leaves appear, create a showy spring display
- Part shade to full shade
- Loose, moist, sandy fertile and well-drained soils; tolerates clay soil
- Naturally found in shaded woods, streams, river banks, woodland edges, open woodlands

A fast growing, attractive understory tree.

Attracts native bees, and tolerates deer browsing.

Cornus florida • Flowering Dogwood



- 15–20 ft., single or multiple trunk with a 15–30 ft. spreading crown
- Long lasting, white or pink flowers in April–May before leaves come out; followed by brilliant red fruit
- Part-sun to shade
- Rich, well-drained, acid soil
- Naturally found in upland forests, borders, clearings, old fields, and well-drained floodplains

More resistant to dogwood anthracnose fungus (Discula destructiva) if provided with good air circulation. Native Americans used the roots and the bark to make a red dye.

Larval host to 115 native caterpillar species, including Spring Azure (*Celastrina ladon*) and Summer Azure (*Celastrina neglecta*).

Ilex opaca • American Holly, Christmas Holly



- 25 - 60 ft. evergreen has stout, stiff branches that form a pyramidal shape and bear dark-green, leathery, spine-tipped leaves
- Bright red berries occur on female plants
- Full sun to full shade
- Moist, well-drained, sandy, acidic soils
- Naturally found primarily as an understory woodland tree

A popular Christmas decoration, the wood also is especially suited for carvings and inlays in cabinetwork, and can be dyed. Shorter, multitrunked form may grow in lower-light situations.

In late winter, many kinds of songbirds eat the bitter berries of this slow-growing but long-lived tree.

Trees

Juniperus virginiana • Eastern Redcedar



- 30–40 ft. (can reach 90 ft.) evergreen, aromatic tree with trunk often angled and buttressed at base; pyramidal when young, mature form is quite variable; fragrant, scale-like foliage can be coarse or fine cut, and varies in color from gray to blue to dark green; soft, silvery bark covers the single trunk
- Pale blue fruits occur on female plants
- Full sun to part shade
- All soils (adaptable)
- Naturally found in any open spaces

This tree was prized by the colonists for building furniture, rail fences, and log cabins.

Berry-like fruits consumed by wildlife, including the Cedar Waxwing. Resistant to extremes of drought, heat, and cold.

Liquidambar styraciflua • Sweetgum



- Up to 90 foot tree with upright form and short branches in forest but develops high round crown in the open. Leaves have distinctive five point star shape and turn red to deep purple in the fall
- Wind pollinated with small green flowers in early spring
- Sun to part shade
- Wet to moist soils
- Naturally found in coastal plain and piedmont riparian forests

The genus name Liquidambar refers to a resin produced by the tree that was used for perfume and medicine.

Prickly seed balls contain small seeds that are a favorite of finches and other small birds.

Magnolia virginiana • Sweetbay Magnolia



- 12–30 ft. (occasionally growing to 50 ft.) semi-evergreen tree with pale gray bark and multiple, slender, upright trunks bearing horizontal branches; aromatic, spicy foliage
- Solitary, velvety-white, fragrant flowers bloom sporadically May-June followed by dark red aggregate fruits exposing bright-red seeds
- Part shade
- Moist, rich, sandy, loamy, acidic soils
- Naturally found in open woodlands, swamps

Introduced into European gardens as early as 1688. Called "Beavertree" by colonists who caught beavers in traps baited with the fleshy roots.

Attractive, aromatic, showy ornamental. Seeds are a good source of food for birds in fall.

Nyssa sylvatica • Blackgum, Black Tupelo



- 60–100 ft. variable-shaped, deciduous tree with horizontally spreading branches; smooth, waxy, dark-green summer foliage changes to fluorescent yellow, orange, scarlet and purple in fall
- Berry-like fruit are small and blue
- Full sun to full shade
- Adaptable to various, even gravelly, soils
- Naturally found in a wide range of habitats

This species is one of the first plants to color in fall. It tolerates drier sites and also poor drainage.

Handsome ornamental and shade tree. Juicy fruit is consumed by many birds and mammals.

Pinus echinata • Shortleaf Pine



- 50–100 ft. large tree; short spreading branches form a pyramid that loosens with age to form a broad, open crown; bright green, 5 inch needles grow in clusters of 2-3; trunks of larger trees have broad, flat, reddish-brown plates
- Yellow cones in March–April
- Sun to part shade
- Moist, well-drained to dry soils
- Naturally found in forests, old fields, rocky woodlands

The most widely distributed of the southern yellow pines. Native in 21 southeastern states.

Provides cover and nesting sites and seeds for small mammals and birds. Attracts butterflies; larval host to Elfin Butterfly (*Microtia elva*).

Platanus occidentalis • American Sycamore



- 75–100 ft. tree
- Yellow-green flower in April–June
- Full sun to part shade
- Moist, sandy loams or silty clay soils
- Naturally found along river bottoms and lake shores

This massive tree has large attractive leaves and interesting fruit clusters that remain on the tree into winter. The long, stout trunk has beautiful exfoliating bark. The remarkable white, green and cream bark flakes off in patches and exposes the inner bark, making this a beautiful tree throughout the year.

Attracts birds and is resistant to deer.

GENUS: Prunus (Cherries and Plums)

Prunus angustifolia • Chickasaw Plum



Prunus serotina • Black Cherry



Prunus angustifolia and *Prunus serotina* have fragrant white flowers and colorful fruit relished by birds and other wildlife. *Prunus angustifolia*'s yellow fruit ripens to red in August or September. The fruit was cultivated by the Chickasaw Tribes and other indigenous peoples before the arrival of Europeans. In full sun, it will be more dense and full and will colonize more thickly. *Prunus serotina* is the largest, most important native cherry, known for its beauty. It is easy to grow. When crushed, its leaves and bark have a cherry-like odor. It is a larval host to many moths and butterflies, including the Eastern Tiger Swallowtail (*Papilio glaucus*).

Sassafras albidum • Sassafras



- 20–40 ft. tree with horizontal branching in cloud-like tiers; mahogany-brown bark deeply ridged and furrowed; leaves are bright-green, and mitten-shaped, oval, or three-lobed
- Bunches of yellow-green flower balls in April–May scattered profusely over female tree, more sparsely on male, followed by dark-blue fruits on scarlet stalks on female in late summer
- Sun to part shade
- Moist, well-drained, rich, sandy, acidic soils
- Naturally found in dry to moist forests, woodlands

Although Sassafras grows most quickly in fertile soil, it is an appropriate tree to introduce into disturbed sites.

Flowers attract native bees and fruit attracts songbirds. Hosts 36 species of caterpillars, including Spicebush Swallowtail (*Papilio Troilus*) and Promethea Silkmoth (*Callosamia promethean*).

Trees - The Mighty Oaks

Oaks are a valuable group in the eastern forest.

They host the largest number of caterpillars of any genus and their acorns are important food for many birds, mammals and insects. Their thick leaves break down slowly and provide important leaf litter for overwintering insects.

They are NOT a climax species and require disturbances like fires, floods and high winds to successfully reach maturity in the forest. Young trees are shade tolerant, but slow growing. But, if they receive sun through a canopy gap they will grow rapidly to take advantage of it. In your yard, this means they should be planted where they can get at least a half of a day of sun.

While there are 15 oaks found in NOVA, the following 7 are most common in nurseries.

Quercus alba • White Oak


James McGlone/VDOF

One of the most important species of Oaks. Acorns are a food source for many animals, and the tree supports hundreds of species of caterpillars.

- 75–100 ft. with widespreading branches and a wide rounded crown, the trunk irregularly divided into spreading, often horizontal, stout branches; round-lobed leaves turn burgundy in fall, and dried leaves remain into winter
- Brown catkins appear just before or with the appearance of new leaves from March–April; acorns up to 3/4 inch long, sometimes to 1 1/4 in., with a shallow cup; acorns produced annually
- Full sun to part shade
- Moist to dry soils
- Naturally found in woodlands and old fields

Very rot resistant. Good yard tree with few disease or pest problems.

Quercus coccinea • *Scarlet Oak*


Phillip Merritt/John Clayton Chapter, VNPS

- 80–115 ft., with a rounded, open crown of glossy foliage; spreads 40–50 ft.
- Yellow-green catkins in March–May; reddish-brown, biennial acorns in September–October; brilliant scarlet autumn color
- Sun
- Adaptable, poor, rocky, acidic soil
- Naturally found in dry to occasionally moist upland forests and woodlands; most characteristic of dry, acidic, nutrient-poor soils

Scarlet Oak grows rapidly and makes a handsome shade and street tree. Acorns provide food for birds such as bluejays, and redheaded woodpeckers.

Quercus falcata • Southern Red Oak, Spanish Oak


Phillip Merritt/John Clayton Chapter, VNPS

- 60–80 ft., straight-trunked and, in time, develops long, spreading branches, giving the top an even, well–formed appearance; spreads 40–50 ft.; smooth gray bark becomes dark and furrowed, eventually black
- Yellow catkins appear in April–May; papery leaves turn reddish-brown in fall
- Part shade
- Variable, dry, sandy, loamy or clay acid-based soils

Southern Red Oak grows relatively quickly and it is long-lived. It is often called Spanish Oak, possibly because it commonly occurs in areas of the early Spanish colonies, yet it is unlike any oaks native to Spain.

Quercus marilandica ● Blackjack Oak


Gary Fleming/DCR Natural Heritage Program

- 30–50 ft. small to medium-sized oak, with short, nearly black trunk that divides into many dense, contorted limbs, bark dark, furrowed; spreads 20–40 ft.; bristle-lobed leaves that are shiny on top & rusty-yellow hairy beneath
- White, red, green inconspicuous catkins in March–May; red-brown autumn color
- Sun; does not tolerate shade
- Acidic, dry to moist, well-drained soils; grows in poor soils
- Naturally found in dry upland forests, woodlands, areas with alternating wet and droughty clays, deep sands

Native Americans used Blackjack Oak bark in medicine.

Quercus phellos ● Willow Oak


Phillip Merritt/John Clayton Chapter, VNPS

- 60–80 ft., straight-trunked; spreads to 25–50 ft.; cone-shaped crown which becomes round at maturity; long, fine-textured, narrow leaves resemble the foliage of willows and turn yellow or russet in fall
- Acorns in August–November
- Part shade
- Variable, dry, sandy, loamy or clay acid-based soils
- Naturally found in forests, swamps and ponds, moist upland forests, old fields

Willow Oak is one of the best urban trees, grows quickly and is easily transplanted when young. Popular shade tree and handsome in fall.

Quercus palustris ● Pin Oak


Gary Fleming, DCR Natural Heritage Program

Pin oak acorns are an important food for wildlife including white-tailed deer, squirrels, wild turkeys, woodpeckers, blue jays, and waterfowl. Acorns are an especially important food source for wood ducks and mallards during fall migration.

- 70–90 ft. large, deciduous tree with a broad, pyramidal crown
- Low crown with downward growing lower branches creates clearance problem when planted near roads and sidewalks
- Leaves turn a deep red in the fall
- Full sun
- Moist to wet, acidic loamy soils.Tolerates poorly drained soils and some flooding
- Naturally found in floodplain forests, alluvial swamps, depression swamps and ponds, mesic upland forests

Pin oak is one of the most popular commercial oaks of eastern North America. It has been widely planted as a street and landscape tree.

Quercus rubra ● Northern Red Oak


Gary Fleming, DCR Natural Heritage Program

- 75–100 ft., can reach up to 120 ft. with rounded crown with large branches; very strong, hard, coarse-grained wood with light reddish-brown heartwood and thin, light-colored sapwood
- Yellow-green slender catkins; ¾–1 inch acorn
- Sun, part shade
- Well-drained, loamy sands
- Naturally found in deep, well-drained, loamy soils and fertile coves, reaches best growth on north and east slopes

Northern Red Oak is shade and pollution tolerant species desired for its fall color and symmetrical shape. Its acorns are a wildlife food source.

Tree Planting & Care

Good Tree Planting and Maintenance

Good tree planting and maintenance starts with selecting the right species for your site.

It is important that the selected species is appropriate for the climate and for the sun and moisture conditions, but there also needs to be room for the species. This means considering both what is above ground and below ground, soil volume is important. The root area should be about 1/3 less than the mature canopy's extent. Trees can share space; plant them together and they will support one another.

Once you have selected a species, it is important to buy a good quality tree to plant. Research consistently points to using smaller stock when planting for the best results. Trees of 1.5 inch caliper or less (the diameter at six inches above the soil) establish faster, grow better and need less after-planting care than larger trees.

Besides looking for smaller trees, look for good roots. The root flare, where the tree stops being trunk and becomes roots, should be at or very near the top of the root ball. If it is too deep, the root system will already be irrevocably compromised. Pull the tree from the container and look at the roots. They should be brown and no more than 1/8 inch thick.

Trees and Fertilizers

Never add fertilizer unless you have a soil test that indicates it is needed.

Trees monitor their environments and internal chemical balances to determine how and where to expend energy. For newly planted trees, three critical elements are carbon (C), nitrogen (N), and phosphorous (P).

The C/N ratio: Tree C, in the form of sugars, comes from photosynthesis and is a measure of canopy size; N comes from the soil and is a measure of root system size. When C/N is low, the tree perceives the canopy to be small relative to the roots and directs energy to canopy growth and vice versa. Adding N to soil of newly planted trees can lower C/N and cause the tree to grow canopy when it needs to grow roots.

High soil P interferes with iron uptake and chlorophyll creation resulting in chlorosis and lower energy production. High soil P also reduces mycorrhizae formation, reducing the availability of water and nutrients to the tree when it is most needed.

DO NOT fertilize newly planted trees and shrubs.

- Before planting, slice off the outer 1.5 inches of the sides and bottom of the root ball. (https://hort.ifas.ufl.edu/woody/circle-removing.shtml)
- Dig a hole 3 times wider than and the same depth as the root ball.
- Score the sides of the hole to roughen it up, and deepen the outer edge of the bottom to make a central pedestal.
- Set the tree upright on the pedestal and refill the hole with the UNAMENDED soil from the hole.
- Water well.
- NOTHING goes in the hole but the tree, water, and the soil removed. Again, DO NOT fertilize newly planted trees and shrubs.
- Mulch with 4 inches of green wood chips or 2 inches of wood (not bark) mulch. Prune ONLY dead and broken branches.
- Use 1 gallon of water per inch caliper to water every day for 4 weeks then every other day until established – usually 1 year per inch caliper. See www.treesaregood.org for more information on tree care and planting.



Who's Missing? Species Not Included In Guide

A few Northern Virginia native trees that may be for sale are not highlighted in the guide, for a variety of reasons:

- Red Maple (*Acer rubrum*) is overplanted and already makes up almost 10% of our tree canopy.
- Sugar Maple (*Acer saccharum*) and American Linden (*Tilia americana*) This is the southern end of their range, and they will be adversely affected by climate change.
- Black Walnut (*Juglans nigra*) A fine shade tree, but some people don't want the large nuts overhead or underfoot
- White Pine (*Pinus strobus*) Although it is a very handsome tree and commonly planted in our area, it is only native in the mountains. It can be blown over by wind (so don't plant it near a house).
- Loblolly Pine (*Pinus taeda*) is an excellent pine, native just south of here, but not to Northern Virginia.
- Black Locust (*Robinia pseudoacacia*) is a great pollinator tree with scented flowers and is known for producing very good honey. But it also spreads freely and can be a challenge in the landscape.
- Unfortunately, pests and diseases make the following trees challenging:
  Ash trees (*Fraxinus* species)
  Eastern Hemlock (*Tsuga canadensis*)
  American chestnut (*Castanea dentata*)
  American Elm (*Ulmus americana*)

  BUT

  If you have room for a tree that might later die, DO plant these threatened species! It is only by planting lots of them that we may eventually find some that are resistant to these pests and diseases.

plant NOVA TREES

Plant NOVA Trees is a project of the Plant NOVA Natives partnership to encourage native tree planting and mature tree preservation throughout Northern Virginia.

Native trees:

- Shade and cool our communities
- Increase home values
- Sequester carbon
- Support birds, butterflies and other wildlife
- Reduce air conditioning costs
- Capture stormwater
- Protect our water supply and the Chesapeake Bay

The spaces most in need of trees are on private property, including residential lawns, community common lands, faith community landscapes and business properties. We need residents and business owners to help increase Northern Virginia's tree canopy!

Plant NOVA Trees offers resources to make tree planting easy: a tree choice hotline, planting and care instructions, where to find trees and discounts, how to manage smothering invasive vines, volunteer opportunities, and much more.

Visit www.plantnovatrees.org.

*Do something special for future generations - Plant NOVA **Native** Trees!*





Tree tag (above) and decal (below).

Planting to Attract Pollinators & Birds

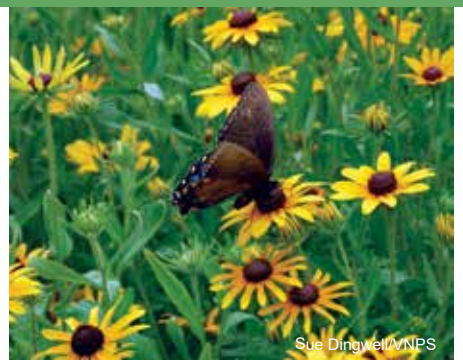
Help Bring Life to Your Garden

Native plants attract a variety of birds, butterflies, and other wildlife by providing diverse habitats and food sources. Native plants feed the insects that are the base of the food web, and they are especially important as food for young songbirds. Native plants also feed pollinators. We may not notice the hummingbirds, bats, bees, beetles, butterflies, and flies that carry pollen from one plant to another as they collect nectar, yet without them, wildlife would have fewer nutritious berries and seeds. We would also miss many fruits, vegetables, and nuts on our tables. By planting a diverse palette of native plants, we invite not only the plant-eating insects, but also their predators as well as pollinators, seed dispersers, and recyclers, which work together to make a garden function like a system. *Because our native plants and animals have evolved together, they support each other, and we enjoy the beauty and fruits of their labor.*

With a simple, but profound, observation that nothing was eating the Multiflora Rose he was clearing from his property, Dr. Douglas Tallamy launched a line of research that has become a cornerstone of the native plant movement. He has shown that not all plants are of equal value to wildlife and that native wildlife prefers native plants. For example, native oaks support 532 species of native caterpillars, while the non-native Butterfly Bush supports only one. Caterpillars are important because they are the primary food source for nestlings of 96 percent of all bird species. This insight led to a call embodied in the title of his book *Bringing Nature Home* to share our suburban landscape with wildlife by planting native plants.

While this entreaty to share our space may seem novel to some, it is actually an expression of Aldo Leopold's Land Ethic. In his essay of that name, Leopold asserts that "a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it." Given Tallamy's findings, it is clear that using native plants in your landscape is one aspect of the land ethic. But notice that Leopold promotes humans to membership in the land, which means that *part of the wildlife you are landscaping for is you*.

The use of native plants in landscaping should not and does not preclude designing a landscape that meets your needs. Landscaping for wildlife should be a mix of human and natural design concepts. The overall plan should satisfy your needs—a place for the kids and dog to play and a quiet place to sit and enjoy your yard. But, the execution of the plan should be informed by nature's design concepts: using plants in layers; avoiding straight lines; and smoothing forest into field into wetland. *Above all: use a diverse array of native plants.*


Sue Dingwell/VNPS


Deana Crumbling


Sheila Ferguson


Sue Dingwell/VNPS

One important aspect of landscaping for wildlife is a change in the status of turf grass. It is not that turf no longer has a place in your landscape, but it should no longer be considered the default landscape. Each square foot of turf should be examined and subjected to the question "Why?" Sometimes turf is the right cover, but that should be decided only after consideration of native plant alternatives like Pennsylvania Sedge, moss, or other materials such as mulch or stepping stones.

Remember, when landscaping for wildlife, use a wide array of native plants and don't forget that you are part of the wildlife using the landscape!

Native Trees for Bees, Butterflies and Moths

While many of our bees are generalists that can use pollen and nectar from many different species of native plants, about one quarter of the some 770 species of bees native to the East Coast specialize on a single or a few species of native plants, and 112 of those specialist species live in Virginia. This specialization benefits both the plants and the bees by increasing pollination efficiency and rates, and providing more digestible pollen. Unfortunately, this specialization makes both the bees and the plants they rely on more susceptible to decline and loss.

You can help by diversifying your plant selection and seeking out the sometimes hard to find species. For example, *Monarda fistulosa* (Wild Bergamot) is commonly found for sale and touted as a great bee plant, which it is. But one of the specialist bees only uses *Monarda punctata* (Spotted Bee Balm) and ignores *Monarda fistulosa*.

Teasing out these specialized relationships can be difficult, but here are a few tips. Many of the specialist bees are active very early or very late in the growing season, so include spring ephemerals and fall asters and goldenrods. The *Aster* family, particularly those with a central flower disc or cone surrounded by "petals," support the most specialist bees. Bees also specialize on odd flower shapes, like the bell shaped flowers of blueberries and huckleberries.

Speaking of blueberries and huckleberries, don't forget woody plants when planting for bees. *Salix* (Willow) and *Acer* (Maple) are important March blooming trees that provide nectar and pollen to early season bees. While *Salix* supports 14 specialist bees, *Acer* is overplanted, so plant *Salix*. The table lists Trees for Bees, but also includes shrubs. And don't be fooled by the bees on non-native azaleas, they are almost all non-native bees.

For more information visit *Pollen Specialist Bees of the Eastern United States*, Jarrod Fowler & Sam Droege.

TREES FOR BUTTERFLIES AND MOTHS

Common Name	Genus Name	# of Butterfly and Moth Species Supported by the Genus
Oak	Quercus	534
Black cherry	*Prunus*	456
Willow	*Salix*	455
Birch	*Betula*	413
Crabapple	*Malus*	311
Maple	*Acer*	285
Blueberry	*Vaccineum* *	250
Elm	*Ulmus*	213
Pine	*Pinus*	203
Hickory	*Carya*	200
Hawthorn	*Crataegus*	159
Alder	*Alnus*	156
Basswood	*Tilia*	150
Walnut	*Juglans*	130
Beech	*Fagus*	126
Chestnut	*Castanea*	125

* *Vaccineum is a shrub Gensus, but included due to the numbers of species it suports.*



Butterflies and moths rely largely on trees as host plants for their caterpillars.

There are many tree species in these Genera (groups) that are native to the Northern Virginia. We highlight some of the species in this guide. Learn more about which moths and butterflies are attracted to these species at *https://www.nwf.org/NativePlantFinder/*. This tool is being provided in collaboration Dr. Doug Tallamy, renowned Entomologist and author - *www.bringingnaturehome.net*



TREES AND SHRUBS FOR BEES

Salicaceae [1]
Salix nigra
Salix sericea [3]
Salix caroliniana [3]

Ericaceae [1]
Eubotrys racemosa
Vaccinium stamineum [1,3]
Vaccinium fuscatum [1,3]
Vaccinium pallidum [1,3]
Gaylussacia baccata [1]
Gaylussacia frondosa [1, 3]

Rhododendron [1]
Lyonia ligustrina var. ligustrina [1, 3]

Cornaceae [2]
Cornus florida



Cornus alternifolia
Cornus amomum [1]
Cornus racemosum [1]

Fabaceae or Leguminosae
Cercis canadensis [1]
Gleditsia triacanthos [3]

Rosaceae
Prunus serotina
Prunus americana
Malus coronaria [3]
Malus angustifolia
Amelanchier arborea
Amelanchier laevis

Other
Aralia spinosa
Castanea dentata [1, 3]
Castanea pumila [1]
Hypericum prolificum
Ilex verticillata
Ilex opaca
Itea virginica
Liriodendron tulipifera
Nyssa silvatica
Rhus species
Staphylea trifolia
Tilia americana

1 These families, genera or species support specialist bees.
2 Large bract dogwoods support generalist bees, but there are bees that specialize on small bract dogwoods.
3 These plants are not commonly available in nurseries. They are included because other species are frequently available.

Bloom Time: Year Round Beauty and Interest

Common Name	Scientific Name	Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.		Nov.		Dec.	
Red Maple	*Acer rubrum*																						
Bloodroot	*Sanguinaria canadensis*																						
Spring Beauty	*Claytonia virginica*																						
Golden Ragwort	*Packera aurea*																						
Serviceberry	*Amelanchier canadensis*																						
Redbud	*Cercis canadensis*																						
Coral Honeysuckle	*Lonicera sempervirens*																						
Spicebush	*Lindera benzoin*																						
Jacob's Ladder	*Polemonium reptans*																						
Columbine	*Aquilegia canadensis*																						
Pinxter Azalea	*Rhododendron periclymenoides*																						
False Indigo	*Baptisia australis*																						
Fringe Tree	*Chionanthus virginicus*																						
Sweetbay Magnolia	*Magnolia virginiana*																						
Wild Bleeding Heart	*Dicentra eximia*																						
Golden Alexander	*Zizia aurea*																						
Mapleleaf Viburnum	*Viburnum acerifolium*																						
Tulip Tree	*Liriodendron tulipfera*																						
Purple Passionflower	*Passiflora incarnata*																						
Virginia Sweetspire	*Itea virginica*																						
Wild Hydrangea	*Hydrangea arborescens*																						
Elderberry	*Sambucus nigra*																						
Butterflyweed	*Asclepias tuberosa*																						
Wild Bergamot	*Monarda fistulosa*																						
Ox-eye Sunflower	*Heliopsis helianthoides*																						
Swamp Milkweed	*Asclepias incarnata*																						
Culver's Root	*Veronicastrum virginicum*																						
Orange Coneflower	*Rudbeckia fulgida*																						
New York Ironweed	*Vernonia noveboracensis*																						
Buttonbush	*Cephalanthus occidentals*																						
Boneset	*Eupatorium perfoliatum*																						
Blue Lobelia	*Lobelia siphilitica*																						
Hollow Joe-pye-weed	*Eutrochium fistulosum*																						
Early Goldenrod	*Solidago juncea*																						
Wingstem	*Verbesina alternifolia*																						
Obedient Plant	*Physostegia virginiana*																						
New England Aster	*Symphyotrichum novae-angliae*																						
Bluestem Goldenrod	*Solidago caesia*																						
Witchhazel	*Hamamelis virginiana*																						

Perennial **Shrub** **Tree** **Vine**

Where Can I Visit to See Demo Native Gardens?


Margaret Fisher



Margaret Fisher


Margaret Fisher

Visiting a demonstration garden is a good way to get inspiration and guidance on how to incorporate new plants into your landscape. There are many different types of demonstration gardens in our area. You will find gardens focused on pollinators, rainwater, urban settings, and more.

For a map of public gardens with native plants in Northern Virginia as well as the rest of the East Coast, visit the Plant NoVA Natives website at **www.plantnovanatives.org/visit-native-gardens.**

Groundcovers: G

There are many native plants that work well as substitutes for the invasive groundcovers. In nature, a mixture of plants of various heights completely covers the ground.

Native options include perennials, grasses, and ferns that can form dense cover, hold organic matter in place, and prevent erosion. Many attractive plants such as *Tiarella cordifolia*, *Packera aurea*, *Fragaria virginiana*, *Chrysogonum virginianum*, *Phlox subulata*, and *Carex platyphylla* make good groundcovers.

Plants which function in this way are indicated by the Groundcover G icon.

For more information, please visit: https://www.plantnovanatives.org/groundcovers

Kids and Native Plants

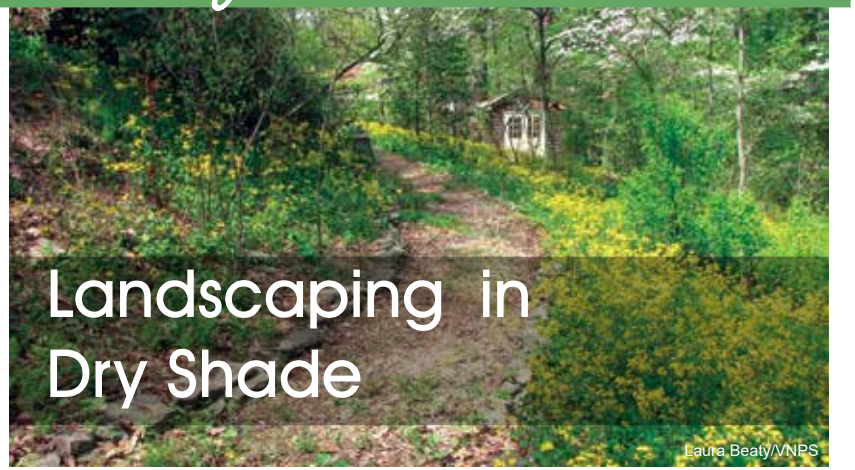

Belle View Elementary School, Alexandria


Donnie Biggs, Fairfax Co. Public Schools


Centreville Elementary School

Many public and private schools are building wildlife habitats on school grounds to offer students a rich, hands-on experience with native Virginia plants and animals. Fairfax County Public Schools, for example, have over 80 schools with wildlife habitat, and the number is growing each year. These outdoor classrooms give students the opportunity to engage in authentic, problem-based learning efforts. Students work together to help plan, construct, and maintain the wildlife habitat, and see that their everyday actions can make a difference in the health of the environment.

Schools can be an agent of change by demonstrating sustainable landscaping techniques on their properties and educating their students and surrounding communities about the importance of providing wildlife habitat.



Finding plants that will thrive in dry shade can be challenging. Spring ephemerals (plants that flower and set seed before the tree canopy fills in and then go dormant) are good choices. The lists below contain many attractive species that can be grown in dry, shady areas.

Perennials (Forbs)

Antennaria plantaginifolia • Plantain-leaved Pussytoes
Chrysogonum virginianum • Green and Gold
Conoclinium coelestinum • Mistflower, Ageratum
Dicentra eximia • Bleeding Heart
Erigeron pulchellus • Robin's Plantain
Eurybia divaricata • White Wood Aster
Goodyera pubescens • Downy Rattlesnake-plantain
Helianthus divaricatus • Woodland Sunflower
Heuchera americana • American Alumroot
Mitchella repens • Partridgeberry
Packera aurea • Golden or Heartleaf Ragwort
Polygonatum biflorum • Solomon's Seal
Pycnanthemum incanum • Hoary Mountain Mint
Ruellia caroliniensis • Carolina Wild-petunia
Tiarella cordifolia • Heart-leaved foamflower

Ferns

Dryopteris carthusiana • Spinulose Woodfern
Dryopteris marginalis • Marginal Woodfern
Polystichum acrostichoides • Christmas Fern

Vines

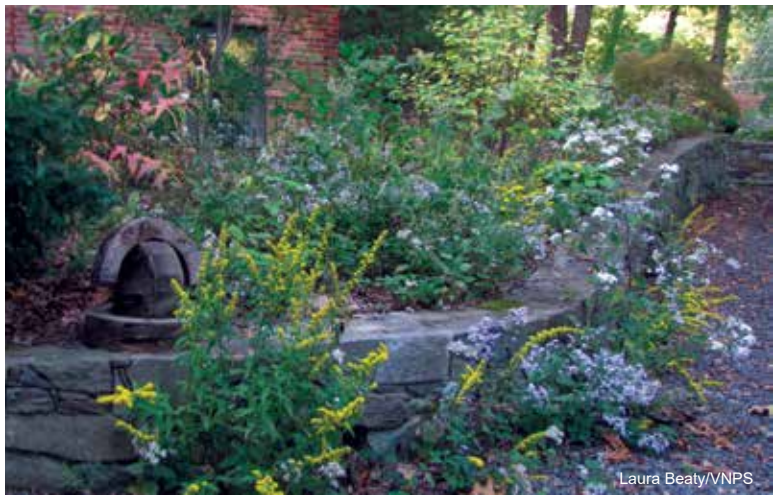
Clematis virginiana • Virgin's Bower
Parthenocissus quinquefolia • Virginia Creeper

Shrubs

Cornus racemosa • Gray Dogwood
Ceanothus americanus • New Jersey Tea, Redroot
Gaultheria procumbens • Wintergreen, Teaberry
Hamamelis virginiana • Witch Hazel
Hydrangea arborescens • Wild Hydrangea
Hypericum prolificum • Shrubby St. John's Wort
Lindera benzoin • Spicebush
Staphylea trifolia • Bladdernut
Vaccinium pallidum • Early Lowbush Blueberry
Viburnum acerifolium • Maple-leaved Viburnum

Trees

Amelanchier arborea • Downy Serviceberry
Carpinus caroliniana • American Hornbeam
Cercis canadensis • Eastern Redbud
Chionanthus virginicus • Fringe Tree
Ilex Opaca • American Holly



Heart-leaf Aster and Blue-stem Goldenrod and White Wood Aster.

Landscaping in Street Side Places



Whether you have curb and gutters or a roadside ditch, street side environments experience dry, harsh conditions and are exposed to pollutants, salt, and compacted soil. Soil pH can be affected through leaching from concrete curbs and sidewalks. Ditches can alternate between wet and dry. Trees should be planted on the yard side of sidewalks or ditches and shrubs should provide clearance for pedestrians and vehicles.

Perennials (Forbs)

Antennaria plantaginifolia • Plantain-leaved Pussytoes
Asclepias tuberosa • Butterfly Weed
Monarda fistulosa • Wild Beramot
Oenothera fruticosa • Narrowleaf Evening Primrose
Phlox subulata • Moss Phlox
Pycnanthemum incanum, P. muticum • Mountain Mints
Ruellia caroliniensis • Carolina Wild-petunia
Solidago species • Goldenrods

Grasses/Ferns

Panicum virgatum • Switchgrass
Schizachyrium scoparium • Little Bluestem
Thelypteris palustris • Marsh Fern

Shrubs

Aronia arbutifolia (Photinia pyrifolia) • Red Chokeberry
Aronia melanocarpa (Photinia melanocarpa) • Black Chokeberry
Gaylussacia baccata • Black Huckleberry
Rhus aromatica • Fragrant sumac
Rosa carolina • Carolina Rose
Viburnum dentatum • Arrowwood

In the Ditch - Plants That Take Wet & Dry

Asclepias incarnata • *Swamp Milkweed*
Eupatorium perfoliatum • Boneset
Eutrochium fistulosum • Hollow Joe-pye-weed
Hibiscus moscheutos • Rose-mallow
Lobelia cardinalis • Cardinal Flower
Verbesina alternifolia • Wingstem
Vernonia noveboracensis • New York Ironweed
Itea virginica • Virginia Sweetspire
Sambucus canadensis • Common Elderberry



Smooth Sumac, *Rhus Glabra* in rear and Hoary Mountain-mint, *Pycnanthemum incanum* in foreground.



Sue Dingwell/VNPS

Landscaping in Small Places

Native plant gardens can also be grown in small spaces such as a townhouse yard or apartment balcony. As with any other situation, small-space gardening requires that you acknowledge the amount of space you and the plant need. In considering the space for the plant, don't forget the roots. On apartment balconies a diverse mix of potted forbs, vines, grasses, and ferns can provide pollinator habitat. Mixing spring, summer, and fall-blooming plants in a planter or group of planters can provide beauty and color throughout the growing season.

Perennials (Forbs)

Aquilegia canadensis • Wild Columbine
Actaea racemosa (Cimicifuga racemosa) • Black Cohosh
Asarum canadense • Wild Ginger
Asclepias tuberosa • Butterfly Weed
Chrysogonum virginicum • Green and Gold

Perennials (Forbs)

Coreopsis verticillata • Threadleaf Tickseed
Dicentra eximia • Wild Bleeding Heart
Eurybia (Aster) divaricata • White Wood Aster
Geranium maculatum • Wild Geranium
Heuchera americana • American Alumroot
Lobelia cardinalis • Cardinal Flower
Lobelia siphilitica • Great Blue Lobelia
Maianthemum racemosum • Solomon's Plume
Penstemon digitalis • Beardtongue Penstemon
Phlox divaricata • Wild Blue Phlox
Phlox stolonifera • Creeping Phlox
Polygonatum biflorum • Solomon's Seal
Pycnanthemum tenuifolium • Narrow-leaved Mountain Mint
Salvia lyrata • Lyre-leaf Sage
Sedum ternatum • Wild Stonecrop
Sisyrinchium angustifolium • Blue-eyed Grass
Tiarella cordifolia • Foamflower


James McGlone/VDOF

Blooming native plants, such as Golden-alexanders and Wild Columbine, add color and bring pollinators to a balcony.

Grasses, Sedges, and Rushes

Elymus hystrix • Bottlebrush Grass
Carex pennsylvanica • Pennsylvania Sedge
Carex stricta • Tussock or Upright Sedge
Schizachyrium scoparuim • Little Bluestem

Ferns

Adiantum pedatum • Maidenhair Fern
Asplenium platyneuron • Ebony Spleenwort
Athyrium asplenoides • Southern Lady Fern
Dryopteris marginalis • Wood Fern
Polystichum acrostichoides • Christmas Fern

Vines

Lonicera sempervirens • Coral Honeysuckle
Passiflora lutea • Yellow Passionflower
Parthenocissus quinquefolia • Virginia Creeper


Sue Dingwell.VNPS

Itea virginica, *Sweetspire, makes a great container plant.*



Not all plants will survive in wet and saturated soils. When soils are saturated they are oxygen poor, which affects both the microbial community and soil chemistry, as well as depriving plants of oxygen needed to process energy. The plants that grow in wet areas in the wild are adapted to these conditions and should grow well in your wet site. The following list of plants are species that will tolerate periodically wet or saturated soils.

Perennials (Forbs)

Arisaema triphyllum • Jack-in-the-pulpit
Asclepias incarnata • Swamp Milkweed
Caltha palustris • Marsh Marigold
Chelone glabra • White Turtlehead
Eupatorium perfoliatum • Common Boneset
Helianthus angustifolius • Narrow-leaved Sunflower
Hibiscus moscheutos • Swamp Rose-mallow
Lobelia cardinalis • Cardinal Flower
Monarda didyma • Scarlet Beebalm, Oswego Tea
Packera aurea • Golden Ragwort
Phlox maculata • Meadow phlox
Rudbeckia laciniata • Cut-leaf Coneflower
Symphyotrichum (Aster) novae-angliae, novi-belgii • New England and New York Aster
Thalictrum pubescens • Common Tall Meadow Rue
Verbena hastata • Common or Swamp Verbena

Perennials (Forbs)

Vernonia noveboracensis • New York Ironweed
Veronicastrum virginicum • Culver's-root

Grasses, Sedges, and Rushes

Carex rosea • Rosy Sedge
Carex stricta • Tussock or Upright Sedge
Dichanthelium clandestinum • Deer-tongue Grass
Juncus effusus • Common Rush
Panicum virgatum • Switchgrass

Ferns

Dryopteris carthusiana, intermedia • Spinulose and Intermediate Wood Fern
Onoclea sensibilis • Sensitive Fern
Osmundastrum cinnamomeum • Cinnamon Fern
Osmunda spectabilis • Royal Fern
Pteridium aquilinum • Bracken Fern
Thelypteris palustris • Marsh Fern

Shrubs

Alnus serrulata • Smooth or Hazel Alder
Aronia melanocarpa • Black Chokeberry
Cephalanthus occidentalis • Buttonbush
Cornus amomum • Silky Dogwood
Ilex verticillata • Winterberry Holly
Itea virginica • Virginia Sweetspire
Morella (Myrica) species • Southern and Northern Wax Myrtle or Bayberry
Physocarpus opulifolius • Ninebark
Sambucus canadensis • Common Elderberry
Rhododendron periclymenoides & viscosum • Wild Azalea and Swamp Azalea
Rosa palustris • Swamp Rose
Viburnum dentatum, nudum & prunifolium • Arrowwood, Possum-haw, and Blackhaw Viburnums

Trees

Betula nigra • River Birch
Carpinus caroliniana • American Hornbeam
Liquidambar styraciflua • Sweetgum
Magnolia virginiana • Sweetbay Magnolia
Salix nigra • Black Willow

Invasives of Particular Concern in Northern Virginia

Invasive, non-native plants do not provide the same ecosystem services as natives and have a harmful effect on our environment, not only in the suburban community but also in our forests, parks, and other natural areas.

Please do not plant these non-native, invasive species and consider removing them from the landscape. Volunteers and natural resource management staff spend many hours and resources to mitigate the spread and the consequences of these and other invasive species. Although there are many non-native plant species that invade our natural areas, the plants listed below are particularly problematic because they are still available in the trade and are sold and planted throughout the region. Consider planting one of the natives listed here as an alternative to these plants.

Our public areas are particularly prone to infestations of invasives. You can help! Volunteer with invasive removal programs. Donate money for professional management. Join the Tree Rescuers program. Learn more at p*lantnovatrees.org*.

Invasive of Concern:	*Acer platanoides* • Norway Maple
NOVA Native Alternatives:	*Acer rubrum* • Red Maple *Quercus* species • Oaks
Invasive of Concern:	*Akebia quinata* • Chocolate Vine or Five-leaf Akebia
NOVA Native Alternatives:	*Bignonia capreolata* • Crossvine *Lonicera sempervirens* • Coral Honeysuckle *Parthenocissus quinquefolia* • Virginia Creeper *Vitis* species
Invasive of Concern:	*Ampelopsis brevipedunculata* • Porcelain-Berry
NOVA Native Alternatives:	See alternatives listed above for *Akebia*
Invasive of Concern:	*Berberis thunbergii* • Japanese Barberry
NOVA Native Alternatives:	*Ilex verticillata* • Winterberry Holly *Itea virginica* • Virginia Sweetspire *Viburnum acerifolium* • Maple-leaved Viburnum
Invasive of Concern:	*Euonymous alatus* • Burning Bush
NOVA Native Alternatives:	*Itea virginica* • Virginia Sweetspire *Vaccinium* species • Blueberries *Viburnum* species
Invasive of Concern:	*Euonymus fortunei* • Wintercreeper
NOVA Native Alternatives:	see English Ivy
Invasive of Concern:	*Hedera helix* • English Ivy
NOVA Native Alternatives:	*Asarum canadense* • Wild Ginger Creeping Phloxes Ferns *Parthenocissus quinquefolia* • Virginia Creeper *Packera aurea* • Golden Ragwort
Invasive of Concern:	*Humulus japonicus* • Japanese Hops Vine
NOVA Native Alternatives:	See alternatives listed for *Akebia*
Invasive of Concern:	*Liriope muscari* • Liriope
NOVA Native Alternatives:	*Carex blanda* • Eastern Woodland Sedge *Carex glaucodea* • Blue Wood Sedge *Carex platyphylla* • Broad-leaved Sedge *Carex rosea* • Rosy Sedge *Elymus hystrix* • Bottlebrush Grass
Invasive of Concern:	*Lonicera japonica* • Japanese (Hall's) Honeysuckle
NOVA Native Alternatives:	*Bignonia capreolata* • Crossvine *Lonicera sempervirens* • Trumpet Honeysuckle
Invasive of Concern:	*Miscanthus sinensis* • Miscanthus
NOVA Native Alternatives:	*Schizachyrium scoparium* • Little Bluestem
Invasive of Concern:	*Phyllostachys aurea* • Golden Bamboo
NOVA Native Alternatives:	*Juniperus virginiana* • Eastern Redcedar
Invasive of Concern:	*Pyrus calleryana* • Bradford Pear
NOVA Native Alternatives:	*Amelanchier* species • Serviceberries *Cercis canadensis* • Redbud *Cornus florida* • Dogwood *Crataegus* species • hawthorns
Invasive of Concern:	*Wisteria floribunda* and *Wisteria sinensis*
NOVA Native Alternatives:	*Lonicera sempervirens* • Trumpet Honeysuckle

Save NOVA Trees from Invasive Vines!



Asian Wisteria (shown above) and English Ivy (not pictured) will outcompete almost any herbaceous species and create large monoculture mats in the yard and forest. These invasive vines are aggressive climbers that can reach the canopy, causing tree strangulation and the death of trees. Invasive insects are able to hide from predators under the leaves of ivy, and dampness encourages mosquitos to breed. Avoid all species of Hedera *(Ivy) including* Hedera helix *varieties and* Hedera hibernic*a - Atlantic Ivy.*

Learn More About Invasive Plants

For more information about invasives of concern in Northern Virginia and native alternatives, and how to manage invasives on your property, visit:

Plant NOVA Natives:
www.plantnovanatives.org/invasive-plant-management

Department of Conservation and Recreation, Division of Natural Heritage:
www.dcr.virginia.gov/natural_heritage/invspfactsheets.shtml

USDA National Invasive Species Information Center:
www.invasivespeciesinfo.gov/plants/main.shtml

Center for Invasive Species and Ecosystem Health:
www.invasive.org/species/weeds.cfm

***Mistaken Identity–Invasive Plants and Their Native Look-Alikes* (pub):**
ftp://ftp-fc.sc.egov.usda.gov/DE/publications/Mistaken_Identity_Final.pdf

As many as three million trees may be in danger of being killed by invasive non-native vines in Northern Virginia. This is not even counting the ones that are displaced by invasive non-native trees such as Tree-of-Heaven, Callery Pear, Autumn Olive, Mimosa, Princess Tree and Norway Maple.

Native vines very rarely harm trees and are essential to the ecosystem. It is important to preserve our Virginia Creeper, Grape, Coral Honeysuckle, Greenbrier and other native vines that provide berries for migrating birds and host the caterpillars of moths and butterflies. Poison Ivy is another native that may be unpopular in yards but is an important food source for birds.

Birds eat the berries of non-native vines, and that is a significant problem. Not only do the birds spread the seeds to other areas, the nutritional content of these berries is, in most cases, inappropriate for our native birds.

Invasive vines kill trees by strangling, smothering, or weighing them down. English Ivy and Wintercreeper also hold moisture against the trunk and damage the bark. You can save the trees temporarily by cutting the vines at the base and letting them die back above. For permanent relief, the roots will need to be removed or the cut stump treated with herbicide. Before cutting anything, make sure it is not a native vine!

Vines that stick to the trunk, weigh down trees and rot the bark:
English Ivy
Wintercreeper

Vines that twist around and strangle trees as well as smother:
Chinese and Japanese Wisteria
Japanese Honeysuckle
Oriental Bittersweet

Vines that smother
Kudzu
Five-leaved Akebia
Porcelain Berry
Sweet Autumn Clematis

Annual vines that smother (must be pulled up before going to seed):
Japanese Hop
Mile-a-Minute

Climbing shrubs that smother
Multiflora Rose
Thorny Elaeagnus

Deer Resistant Plants

Is Your Property Frequented by Deer?

It sounds odd to most people, but suburban landscapes can support more deer than wilderness areas. That is because deer are browsers that prefer edge habitat and rely on broadleaved plants, twigs, buds and nuts. Suburban yards produce a tremendous amount of edge habitat and desirable forage. With no predators and high fertility rates, the result is deer browse far above what our backyard plants—and the remaining plants in our natural areas—can sustain.

Until we can work to reduce deer numbers to the point where their browse will not be excessive, the best bet is to employ a mix of strategies to reduce deer impacts in your yard so that you can play host to native plants and the other wildlife they support.

To discourage browsing, you can first select plants that deer find less palatable, which include spiny, hairy, and aromatic plants. Less preferred forest plants include ericaceous shrubs (Mountain Laurel, Rhododendrons, Blueberries), American Holly, Pawpaw, spring ephemeral wildflowers (Bluebells, Spring Beauties), White Wood Aster, Jumpseed (*Persicaria virginiana*) and Christmas and other ferns.

Sun-loving plants include, among others, native grasses (Virginia Wild Rye, Purpletop, Indian Grass, Purple Lovegrass), eutrochiums and eupatoriums (Joe-Pye Weed, Common Boneset, Purple Mistflower), tickseed sunflowers (*Bidens* species) and False Sunflower (*Heliopsis helianthoides*) and Prickly-pear Cactus. For the most part, deer also avoid eating asters and goldenrods, plants in the mint family (Hoary Mountain Mint, *Pycnanthemum muticum*, and Narrow-leaf Mountain Mint, *P. tenuifolium*) and blackberries.

Newly planted trees and shrubs may require enclosures to prevent browse on tender young shoots, or the planting of larger specimen trees. Fencing around your yard may be ineffective if it is less than eight feet. Repellents are another approach. Many people try variations of human hair, sweaty t-shirts, dog or coyote urine, home recipes usually made of peppers, or commercial sprays to minimize deer browse. Commercial sprays (based on putrescent egg solids), if reapplied regularly (usually after rain), are effective.

Remember that it is usually most effective to combine multiple deterrents with a diverse plant palette to increase success.

For more information about how to deter deer on your property, visit the Plant NOVA Natives website at **www.plantnovanatives.org/deer-and-native-plants**













1 - Ostrich Fern, *Matteuccia struthiopteris*
2 - Eastern Prickly-pear, *Opuntia humifusa*
3 - Dwarf Crested Iris, *Iris cristata*
4 - Pawpaw, *Asimina triloba*
5 - Clustered Mountain-mint, *Pycnanthemum muticum*
6 - Scarlet Beebalm, *Monarda didyma*, and Hollow Joe-pye-weed, *Eutrochium fistulosum*

Inspiration

Bringing Nature Home: How You Can Sustain Wildlife with Native Plants, Douglas W. Tallamy, 2009 – The book that galvanized the native plant movement.

Nature's Best Hope, Douglas W. Tallamy, 2020 – Practical applications of the ideas in his first book.

Native Plants in Their Natural Environment

Flora of Virginia Project – www.floraofvirginia.org/

- **Flora of Virginia Mobile App** – contains everything from the print Flora of Virginia, with photos, more illustrations, range maps, updates and easy-to-use Graphic Key
- **Digital Atlas of the Virginia Flora** – Find in which counties plant species appear. www.vaplantatlas.org/

Virginia Native Plant Society – www.vnps.org

Native Plants for Conservation, Restoration and Landscaping – Virginia's many plant communities – www.dcr.virginia.gov/natural_heritage/nativeplants.shtml

USDA Plants Database – find range of species across United States – http://plants.usda.gov

Ferns and Mosses of Virginia's Coastal Plain, Helen Hamilton, 2016

Finding Wildflowers in the Washington-Baltimore Area, Cristol Fleming, Marion Lobstein and Barbara Tufty, 1995

Flora of Virginia, Alan S. Weakley, J. Christopher Ludwig and John E. Townsend, 2012 - At 1572 pages, the definitive work on Virginia plants.

Teaming with Microbes: The Organic Gardener's Guide to the Soil Food Web, Jeff Lowenfels and Wayne Lewis, 2010

Wildflowers and Grasses of Virginia's Coastal Plain, Helen Hamilton and Gustavus Hall, 2013

WINGS: Essays on Invertebrate Conservation, Xerces Society – Read online or subscribe. www.xerces.org/wings-magazine

Using Native Plants in Our Landscapes

PLANT SEARCH SITES:
search by planting conditions and other features

- **Plant NOVA Natives** – www.plantnovanatives.org/plant-finder-app
- **Northern Virginia Wildlife Gardening Database** - www.novawildlifegarden.net
- **Chesapeake Bay Native Plant Center** – www.nativeplantcenter.net - See also the link to the pdf for the booklet **Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed**
- **Lady Bird Johnson Wildflower Center** – www.wildflower.org
- **Plants for Birds** (National Audubon Society) – www.audubon.org/native-plants

Audubon-at-Home – You may request a free site visit for wildlife habitat – www.audubonva.org/audubon-at-home

Habitat Gardening for Wildlife, Virginia Department of Wildlife Resources – https://dwr.virginia.gov/wp-content/uploads/habitat-gardening.pdf

Master Gardeners of Northern Virginia "Tried and True Plants" – www.mgnv.org/plants

Plant Virginia Natives Initiative – Learn more about Virginia's regional native plant marketing campaigns, and download a FREE native plant guide to where you live and garden – www.PlantVirginiaNatives.org

Essential Native Trees and Shrubs, Tony Dove and Ginger Woolridge, 2018

Garden Revolution, Larry Weaner and Thomas Christopher, 2016

The Living Landscape: Designing for Beauty and Biodiversity in the Home Garden, Rick Darke and Doug Tallamy, 2014

The Pollinator Victory Garden, Kim Eierman, 2020

William Cullina's books:
Growing and Propagating Wildflowers, 2000
Native Ferns, Mosses, and Grasses, 2020
Native Trees, Shrubs, & Vines, 2019

Planning to hire a landscaper?

The Chesapeake Bay Landscape Professional (CBLP) Certification is a new, voluntary credential system for professionals who design, install, and maintain sustainable landscapes. Find out more about this new certification program, and view a business directory of certified professionals at *https://cblpro.org/*.

Index of Northern Virginia Native Plants

Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Perennials (Forbs)						
Achillea millefolium	Common Yarrow	1–3 ft				
Actaea racemosa	Common Black Cohosh, Bugbane	4–6 ft				
Ageratina altissima	White Snakeroot	1–5 ft				
Antennaria plantaginifolia	Plantain-leaved Pussytoes	0.5–1 ft				
Aquilegia canadensis	**Wild or Eastern Red Columbine**	1–3 ft				6
Aralia racemosa	Spikenard, American Spikenard	1.5–6.5 ft				
Arisaema triphyllum	**Common Jack-in-the-pulpit**	1–3 ft				6
Aruncus dioicus	**Goatsbeard (Eastern Goat's-beard)**	3–8 ft				6
Asarum canadense	**Common Wild Ginger**	4–8 in				6
Asclepias incarnata	**Swamp Milkweed**	4–6 ft				7
Asclepias tuberosa	**Butterfly Weed**	1–3 ft				7
Baptisia australis	**Blue Wild Indigo**	up to 5 ft				7
Baptisia tinctoria	**Yellow Wild-indigo**	1–3 ft				7
Caltha palustris	Marsh Marigold, Cowslip	1–2 ft				
Caulophyllum thalictroides	Blue Cohosh, Common Blue Cohosh	1–2.5 ft				
Chamaecrista fasciculata	Common Partridge Pea	0.5–3 ft				
Chelone glabra	**White Turtlehead**	2–4 ft				8
Chrysogonum virginianum	**Green and Gold**	2–6 in				8
Chrysopsis mariana	Maryland Golden-aster	0.5–2.5 ft				
Claytonia virginica	**Virginia Spring Beauty**	4–12 in				8
Clitoria mariana	Butterfly Pea, Maryland Butterfly Pea	6 ft				
Conoclinium coelestinum	Mistflower, Ageratum	1–3.5 ft				
Coreopsis verticillata	**Whorled or Threadleaf Coreopsis**	0.5–3.5 ft				8
Dicentra cucullaria	Dutchman's Breeches	0.5–1 ft				
Dicentra eximia	**Wild Bleeding Heart**	1–6 ft				9
Erigeron pulchellus	Robin's Plantain	0.5–1.5 ft				
Eupatorium hyssopifolium	Hyssop-leaved Thoroughwort	1–4.5 ft				

Perennials (Forbs)

Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Eupatorium perfoliatum	Boneset, Common Boneset	1–5 ft				
Eurybia divaricata	**White Wood Aster**	6 in–3.5 ft				9
Euthamia graminifolia	Flat-top Goldenrod	3–6 ft				17
Eutrochium fistulosum	**Hollow Joe-pye-weed**	2–8 ft				9
Fragaria virginiana	**Wild Strawberry**	up to 1 ft				9
Gentiana clausa	Bottle or Closed Gentian	1–3.5 ft				
Geranium maculatum	**Wild or Spotted Geranium**	0.5–2.5 ft				10
Helenium autumnale	Common Sneezeweed	1.5–6 ft				10
Helianthus angustifolius	**Narrow-leaved Sunflower**	3–6 ft				10
Helianthus divaricatus	Woodland or Spreading Sunflower	1.5–6.5 ft				
Helianthus tuberosus	Jerusalem Artichoke	3–6 ft				
Heliopsis helianthoides	Oxeye, Smooth Oxeye, Oxeye Sunflower	1–5 ft				
Hepatica nobilis v. obtusa	Round-lobed Hepatica	0.5–2 ft				
Heuchera americana	**American Alumroot**	1–5 ft				10
Hibiscus moscheutos	**Swamp or Eastern Rose-mallow**	3–8 ft				11
Houstonia caerulea	Common Bluets, Azure Bluets, Quaker Ladies	0.5–1 ft				
Impatiens capensis	Orange or Spotted Jewelweed	1.5–5 ft				
Iris cristata	**Dwarf Crested Iris**	0.5–1.5 ft				11
Iris virginica	Virginia or Southern Blueflag	1–2 ft				
Jeffersonia diphylla	Twinleaf	0.5–1 ft				
Liatris pilosa v. pilosa	**Grass-leaf Blazing Star or Gayfeather**	1-3.5 ft				11
Liatris scariosa	**Large Blazing Star, Eastern Blazing Star**	1-3.5 ft				11
Liatris spicata	**Dense Blazing Star, Gayfeather, Blazing Star**	3-6 ft				11
Liatris squarrosa	**Scaly Blazing Star, Plains Blazing Star**	1-3 ft				11
Lilium canadense	Canada Lily	1.5–6.5 ft				
Lilium superbum	**Turk's-cap Lily**	4–8 ft				12
Lobelia cardinalis	**Cardinal Flower**	1–6 ft				12

Index of Northern Virginia Native Plants

Perennials (Forbs)

Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Lobelia siphilitica	**Great Blue Lobelia**	1–5 ft				12
Maianthemum canadense	Canada Mayflower, False Lily-of-the-valley	0.5 ft				
Maianthemum racemosum	**Eastern Solomon's-plume, False Solomon's-seal**	1–4.5 ft				12
Mertensia virginica	**Virginia Bluebell, Virginia Cowslip**	0.5–2.5 ft				13
Mimulus ringens	Square-stemmed or Allegheny Monkeyflower	1–3 ft				
Mitchella repens	**Partridge-berry**	1–4 in				13
Monarda didyma	**Scarlet Beebalm, Oswego Tea**	2–4 ft				13
Monarda fistulosa	Wild Bergamot	1.5–5 ft				
Monarda punctata	Spotted Beebalm					
Oenothera fruticosa	**Narrow-leaf Evening Primrose or Sundrops**	1–3 ft				13
Opuntia humifusa	**Eastern Prickly-pear**	1–2.5 ft				14
Osmorhiza claytonii	Sweet Cicely	1–3 ft				
Oxalis violacea	Violet Wood-sorrel	0.5 ft				
Packera aurea	**Golden or Heartleaf Ragwort**	1–4 ft				14
Peltandra virginica	Arrow Arum, Tuckahoe	2–3 ft				
Penstemon hirsutus	**Hairy Beard-tongue**	1–2 ft				15
Phlox divaricata	**Wild Blue or Woodland Phlox**	0.5–2 in				14
Phlox maculata	Meadow Phlox, Wild Sweet William	1–3 ft				
Phlox paniculata	**Fall or Garden Phlox**	1.5–6.5 ft				14
Phlox subulata	**Moss Phlox, Moss Pink**	0.5 ft				14
Physostegia virginiana	Northern or Fall Obedient-plant	1.5–5 ft				
Podophyllum peltatum	**Mayapple**	0.5–1.5 ft				15
Polemonium reptans	Spreading Jacob's Ladder, Greek Valerian	0.5–1.5 ft				
Polygonatum biflorum	Solomon's seal	0.5–6.5 ft				
Pycnanthemum incanum	**Hoary Mountain-mint**	3 ft				15
Pycnanthemum muticum	**Clustered Mountain-mint**	2–3 ft				15

Perennials (Forbs)

Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Pycnanthemum tenuifolium	**Narrow-leaf or Slender Mountain-mint**	1–4 ft				15
Rhexia virginica	Virginia Meadow Beauty, Deergrass	1–3.5 ft				
Rudbeckia fulgida	**Orange Coneflower**	1.5–4 ft				16
Rudbeckia hirta	Blackeyed Susan	2–3 ft				16
Rudbeckia laciniata	Cut-leaf, Common or Green-headed Coneflower	1.5–10 ft				16
Rubeckia triloba	Three-lobed Coneflower, Brown-eyed Susan	2–5 ft				16
Ruellia caroliniensis	**Carolina or Common Wild-petunia**	0.5–3 ft				16
Salvia lyrata	Lyre-leaf Sage	1–2 ft				
Sanguinaria canadensis	Bloodroot	0.5 ft				
Saururus cernuus	Lizard's-tail, Water-dragon	1.5–4.5 ft				
Scutellaria integrifolia	**Rough or Hyssop Skullcap, Helmet Flower**	1–2 ft				16
Sedum ternatum	**Wild or Woodland Stonecrop**	2–8 in				16
Senna marilandica	Maryland or Southern Wild Senna	3–6.5 ft				
Silene caroliniana	Wild or Northern Wild Pink	1.5–8 in				
Sisyrinchium angustifolium	**Narrow-leaved Blue-eyed-grass**	8–20 in				18
Solidago altissima	Tall Goldenrod, Late Goldenrod	3.5–6.5 ft				17
Solidago caesia	Blue-stemmed or Wreath Goldenrod	1–3.5 ft				17
Solidago flexicaulis	Zig-zag Goldenrod	0.5–3 ft				17
Solidago juncea	**Early Goldenrod**	3–6 ft				17
Solidago nemoralis	Gray, Dwarf, Old Field Goldenrod	0.5–3 ft				17
Solidago odora	Sweet Goldenrod	2–4 ft				17
Solidago rugosa	Rough-stemmed or Wrinkle-leaf Goldenrod	1–6.5 ft				17
Spiranthes cernua	Nodding Ladies' Tresses	0.5–2 ft				
Stellaria pubera	Star, Giant or Great Chickweed, Common Starwort	0.5–1.5 ft				
Symphyotrichum cordifolium	Heart-leaved aster, Blue Wood Aster	3–6 ft				17
Symphyotrichum laeve	Smooth Blue Aster, Smooth Aster	3–6 ft				17

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Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Perennials (Forbs)						
Symphyotrichum lateriflorum	Calico Aster	2–3 ft				17
Symphyotrichum novae-angliae	**New England Aster**	3–6 ft				17
Symphyotrichum novi-belgii	New York Aster	1–4.5 ft				17
Thalictrum dioicum	Early Meadow Rue	1–2.5 ft				
Thalictrum pubescens	Common Tall Meadow Rue, King of the Meadow	1.5–9 ft				
Thalictrum thalictroides	Rue Anemone (Windflower)	0.5–1 ft				
Tiarella cordifolia	**Heart-leaved Foamflower, False Miterwort**	0.5–1 ft				18
Tradescantia virginiana	Virginia Spiderwort	1–3 ft				
Uvularia perfoliata	Perfoliate or Mealy Bellwort	0.5–2 ft				
Verbena hastata	Blue, Common or Swamp Verbena	1.5–5 ft				
Verbesina alternifolia	Wingstem, Yellow Ironweed	3.5–8 ft				
Vernonia noveboracensis	**New York Ironweed**	3–6 ft				18
Veronicastrum virginicum	Culver's-root	3–6.5 ft				
Viola bicolor	Field Pansy, Wild Pansy	0.5 ft				17
Viola cucullata	Marsh Blue Violet	0.5 ft				17
Viola labradorica	Dog Violet	0.5–1 ft				17
Viola pedata	Bird's-foot Violet	0.5–1 ft				17
Viola pubescens	Yellow Violet	0.5–1 ft				17
Viola sagittata	Arrow-leaved Violet	0.5–1 ft				17
Viola sororia	**Common Blue Violet, Confererate Violet**	0.5–1 ft				18
Viola striata	Striped Violet, Cream Violet	0.5–1 ft				
Zizia aurea	**Golden-alexanders**	1–2 ft				18

Grasses, Sedges, and Rushes

Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Andropogon virginicus	Broomsedge, Broomstraw, Sedge Grass	1–3 ft				
Carex blanda	**Eastern Woodland Sedge**	0.5–1 ft				21
Carex crinita	**Long-fringed Sedge**	0.5–1 ft				21
Carex glaucodea	**Blue Wood Sedge**	0.5–1 ft				21
Carex laxiculmis	**Creeping Sedge**	0.5–1 ft				21
Carex pensylvanica	Pennsylvania Sedge	0.5–1 ft				21
Carex plantaginea	**Seersucker or Plaintain-leaved Sedge**	0.5–1 ft				21
Carex platyphylla	**Broadleaf Sedge**	0.5–1 ft				21
Carex rosea	**Rosy Sedge**	0.5–1 ft				
Carex stricta	Tussock Sedge, Upright Sedge	1–3.5 ft				
Danthonia spicata	**Poverty Oat Grass**					19
Dichanthelium clandestinum	Deer-tongue Grass	2–5 ft				
Elymus hystrix	**Bottlebrush Grass**	2–4 ft				19
Elymus virginicus	Virginia Wild Rye	1–5.5 ft				
Eragrostis spectabilis	**Purple Love Grass**	0.5–1.5 ft				19
Juncus effusus	**Common Rush, Soft Rush**	1–4 ft				19
Muhlenbergia capillaris	**Muhly Grass**	1–3.8 ft				20
Panicum virgatum	**Switchgrass**	3–5 ft				20
Saccharum giganteum	Giant Plumegrass, Sugarcane Plumegrass	3.5–10 ft				
Schizachyrium scoparium	**Little Bluestem**	1.5–4 ft				20
Scirpus cyperinus	Woolgrass Bulrush	4–5 ft				
Sorghastrum nutans	**Indian Grass**	1.5–8.5 ft				20
Tridens flavus	Purpletop, Tall Redtop	2–6.5 ft				
Zizania aquatica	Southern Wild Rice	6–10 ft				

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Ferns

Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Adiantum pedatum	**Northern Maidenhair Fern**	0.5–2 ft				22
Asplenium platyneuron	Ebony Spleenwort	0.5–1.5 ft				
Athyrium asplenioides	Southern Lady Fern	1–3 ft				
Dryopteris carthusiana	Spinulose Wood Fern	1–2.5 ft				
Dryopteris cristata	**Crested Wood Fern**	1--2 ft				22
Dryopteris intermedia	**Evergreen or Intermediate Wood Fern**	1–3 ft				22
Dryopteris marginalis	**Marginal Wood Fern, Evergreen Shield Fern**	1–3 ft				22
Matteuccia struthiopteris	**Ostrich Fern**	1–3 ft				22
Onoclea sensibilis	**Sensitive Fern, Bead Fern**	1–3.5 ft				23
Osmunda claytoniana	Interrupted Fern	1–4 ft				
Osmunda spectabilis	**Royal Fern**	1.5–6 ft				23
Osmundastrum cinnamomeum	**Cinnamon Fern**	3–4 ft				23
Parathelypteris noveaboracensis	New York Fern	1.5–3 ft				
Polystichum acrostichoides	**Christmas Fern**	1–3 ft				23
Pteridium aquilinum	Bracken Fern	1.5–4 ft				
Thelypteris palustris	Marsh Fern	2–3 ft				

Vines

Bignonia capreolata	**Cross-vine**	up to 60 ft				24
Clematis virginiana	**Virgin's Bower**	12–15 ft				24
Lonicera sempervirens	**Trumpet or Coral Honeysuckle**	3–20 ft				25
Parthenocissus quinquefolia	**Virginia Creeper**	3–40 ft				25
Passiflora incarnata	**Purple Passionflower, Maypop**	12–36 ft				24
Passiflora lutea	**Yellow Passionflower**	6–15 ft				24

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Shrubs

Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Alnus serrulata	Smooth or Hazel Alder	12–20 ft				
Amorpha fruticosa	**False Indigo**	6–13 ft				23
Aralia spinosa	Devil's Walking-stick, Hercules Club	20–30 ft				
Aronia arbutifolia	**Red Chokeberry**	6–15 ft				23
Aronia melanocarpa	Black Chokeberry	3–6 ft				
Baccharis halimifolia	High Tide Bush, Groundsel Tree, Mullet Bush	6–12 ft				
Castanea pumila	Allegheny Chinquapin	10–20 ft				
Ceanothus americanus	New Jersey Tea, Redroot	3 ft				
Cephalanthus occidentalis	**Buttonbush**	6–12 ft				23
Corylus americana	American Hazelnut	10–16 ft				
Cornus amomum	Silky Dogwood	6–12 ft				
Crataegus crus-galli	Cockspur Hawthorn	20–35 ft				
Eubotrys racemosa	Fetterbush, Swamp Doghobble	4–6 ft				
Euonymus americanus	**Strawberry-bush, Heart's-a-bustin'**	6–10 ft				
Gaylussacia baccata	Black Huckleberry	1.5–3 ft				
Hamamelis virginiana	**Witch Hazel**	10–15 ft				27
Hydrangea arborescens	**Wild Hydrangea, Smooth Hydrangea**	3–10 ft				27
Hypericum prolificum	**Shrubby St. John's Wort**	1–8 ft				28
Ilex decidua	Deciduous Holly, Possum-haw	12–36 ft				
Ilex verticillata	**Winterberry**	3–10 ft				28
Itea virginica	**Virginia Sweetspire**	3–8 ft				28
Kalmia latifolia	**Mountain Laurel**	5–15 ft				28
Lindera benzoin	**Spicebush**	6–16 ft				29
Morella cerifera	**Wax Myrtle, Southern Bayberry**	6–15 ft				29
Physocarpus opulifolius	**Ninebark**	3–10 ft				30
Rhododendron maximum	Great Rhododendron	15–20 ft				
Rhododendron periclymenoides	**Wild Azalea, Pinxter Azalea**	6–12 ft				30
Rhododendron viscosum	Swamp Azalea	6.5–10 ft				
Rhus aromatica	Fragrant sumac	2–6 ft				

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Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Rhus copallinum	**Winged, Shining or Flameleaf Sumac**	3–35 ft				29
Rhus glabra	**Smooth Sumac**	2–20 ft				29
Rhus typhina	**Staghorn Sumac**	35–50 ft				29
Rosa carolina	**Carolina Rose, Pasture Rose**	1–6.5 ft				30
Rosa palustris	Swamp Rose	3–8 ft				
Rubus odoratus	**Flowering Raspberry**	3–6 ft				30
Salix sericea	**Silky Willow**	to 20 ft				31
Sambucus canadensis	**Common Elderberry**	6–12 ft				31
Staphylea trifolia	Bladdernut	3–15 ft				26
Vaccinium corymbosum	Highbush or Northern Highbush Blueberry	6–12 ft				
Vaccinium pallidum	Early Lowbush or Blue Ridge Blueberry	1.5–2 ft				
Viburnum acerifolium	Maple-leaved Viburnum, Dockmackie	4–6 ft				
Viburnum dentatum	**Arrowwood, Southern Arrowwood Viburnum**	10–15 ft				31
Viburnum nudum	**Possum-haw Viburnum, Southern Wild Raisin**	6.5–20 ft				31
Viburnum prunifolium	**Blackhaw Viburnum, Nannyberry**	12–24 ft				31

Trees

Acer rubrum	Red Maple	40–100 ft				
Amelanchier arborea	Downy Serviceberry, Juneberry, Shadbush	15–25 ft				32
Amelanchier canadensis	**Canada Serviceberry, Juneberry**	15–30 ft				32
Asimina triloba	**Pawpaw, Common Pawpaw**	10–40 ft				32
Betula nigra	**River Birch**	30–80 ft				32
Carpinus caroliniana	**American Hornbeam, Ironwood**	35–50 ft				32
Carya cordiformis	Bitternut Hickory	60–100 ft				
Carya glabra	Pignut Hickory	60–100 ft				
Carya tomentosa	**Mockernut Hickory**	60–100 ft				33
Celtis occidentalis	Common Hackberry	40–100 ft				
Cercis canadensis	**Eastern Redbud**	20–35 ft				33
Chionanthus virginicus	Fringe Tree, Old Man's Beard	10–35 ft				
Cornus florida	**Flowering Dogwood**	20–50 ft				33
Diospyros virginiana	Common or American Persimmon	15-100 ft				

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Latin Name	Common Name	Height	Sun	Moisture	Wildlife	Page
Fagus grandifolia	American Beech	50–100 ft				
Ilex opaca	**American Holly**	25–60 ft				33
Juniperus virginiana	**Eastern Redcedar**	30–40 ft				34
Liquidambar styraciflua	**Sweetgum**	up to 90 ft				34
Liriodendron tulipifera	Tulip-tree, Tulip-poplar, Yellow Poplar	70–100 ft				
Magnolia virginiana	**Sweetbay Magnolia, Swamp Magnolia**	12–30 ft				34
Malus angustifolia	Southern Crabapple	12–36 ft				
Nyssa sylvatica	**Sour Gum, Black Gum, Tupelo**	60–100 ft				34
Pinus echinata	**Shortleaf Pine**	50–100 ft				35
Pinus rigida	Pitch Pine	50–75 ft				
Pinus virginiana	Virginia Pine, Scrub Pine	50–80 ft				
Plantanus occidentalis	**American Sycamore**	75–100 ft				35
Prunus americana	American Wild Plum	15–100 ft				
Prunus angustifolia	**Chickasaw Plum**	12–36 ft				35
Prunus serotina	**Black Cherry**	75–100 ft				35
Quercus alba	**White Oak**	40–100 ft				36
Quercus bicolor	Swamp White Oak	60–100 ft				
Quercus coccinea	**Scarlet Oak**	40–75 ft				36
Quercus falcata	**Southern Red Oak, Spanish Oak**	70–80 ft				36
Quercus marilandica	**Blackjack Oak**	35–50 ft				37
Quercus michauxii	Swamp Chestnut Oak, Basket Oak	50–80 ft				
Quercus montana	Chestnut Oak, Rock Chestnut Oak	40–80 ft				
Quercus muehlenbergii	Chinquapin, Chinkapin or Yellow Oak	35–50 ft				
Quercus palustris	**Pin Oak**	50–80 ft				37
Quercus phellos	**Willow Oak**	80–100 ft				37
Quercus rubra	**Northern Red Oak**	90 ft				37
Quercus shumardii	Shumard Oak	50–90 ft				
Quercus stellata	Post Oak	40–50 ft				
Quercus velutina	Black Oak	75–100 ft				
Salix nigra	Black Willow	35–50 ft				
Sassafras albidum	**Sassafras**	35–50 ft				35

Landscape Design Sketches

Landscape Design Sketches

NOVA Native Plant Notes

Plant Virginia Natives Initiative

The Plant NOVA Natives campaign is part of the Plant Virginia Natives Initiative, a collaborative network of partners engaged in statewide and regional strategies to increase the knowledge, use, and availability of native plants. The Virginia Coastal Zone Management (CZM) Program, a network of state agencies and coastal localities, introduced, coordinates, and has funded the initiative since 2009. Over 150 partners across the Commonwealth also contibute significant support and resources to the initiative.

The Plant Virginia Natives Initiative advances the shared goals of these partners, which are outlined in an **Action Plan** (downloadable from PlantVirginiaNatves.org):

Goal 1: Continue to encourage and increase collaboration and coordination among partners engaged in native plant education, communication, and marketing.

Goal 2: Enhance knowledge of the value of native plants.

Goal 3: Increase Virginia-grown native stock, and consumer access to native plants.

Goal 4: Increase demand and use of plants native to Virginia by:

- Landscape and land use professions (including engineers, landscape architects, and anyone involved in land development
- Homeowners
- Landscaping and demonstration restoration projects on public land (state, federal) and also private (landowners/non-profits)

There are now nine regional native plant marketing campaigns in Virginia—throughout the coastal zone, across the Piedmont, and into the mountains—including the Plant NOVA Natives campaign.

Regional native plant marketing campaigns help meet the goals of the initiative by:

1. Increasing the knowledge and use of plants native to the region, according to the Flora of Virginia.
2. Helping landowners learn more about their property and the benefits of a native plant landscape and conservation landscaping, and how by planting natives they can impact the ecological diversity and sustainability of natural landscapes beyond their property, neighborhood, and community.
3. Engaging with local garden centers in the region to promote the native plants they currently carry and to increase the supply and variety of the native plants they carry.
4. Engaging with local jurisdictions on policies that could be strengthened in favor of native plant landscaping.

The regional native plant marketing model leverages partner resources, creates consistent messaging and provides a rallying point for partners. Together, Plant Virginia Natives partners are helping grow public demand for native plants. In 2008, while conducting public research prior to launching the first regional campaign on Virginia's Eastern Shore, the Virginia CZM Program heard natives still described as scraggly and weedy. Over a decade later, with campaigns spreading state-wide—and with your help—that perception is fading away garden by garden.

Plant NOVA Natives
Naturally Beautiful!

Plant NNK Natives
Go Native – Grow Native

Plant Central Rapp Natives
BEAUTIFUL
BENEFICIAL
SUSTAINABLE

Plant HR Natives

Plant RVA Natives
A CAPITAL IDEA!

Plant ES Natives
They're Shore Beautiful!

PLANT SWVA NATIVES
awareness • appreciation • application

plant northern PIEDMONT NATIVES

Plant Southern Piedmont Natives

www.PlantVirginiaNatives.org



Plant NOVA Natives

Naturally Beautiful!

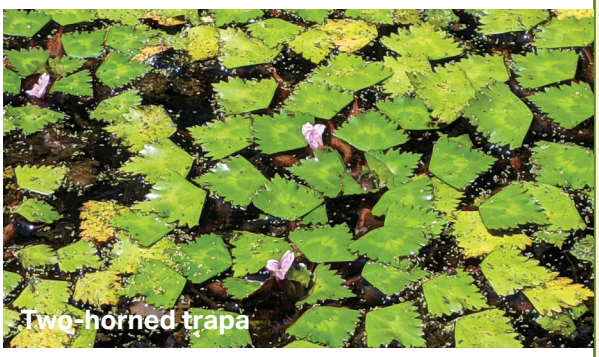
www.plantnovanatives.org

4th Edition, April 2022

VIRGINIA INVASIVE PLANT SPECIES LIST

EFFECTIVE DATE: SEPTEMBER 2024

The list is for educational purposes only and has no regulatory authority. Per Virginia Code §10.1-104.6:2, the Virginia Invasive Plant Species List is periodically reviewed and updated. List updates require adherence to a specific invasives species risk assessment protocol developed by DCR. DCR routinely conducts data analysis and assessments for existing species and reviews potential list additions.



Two-horned trapa

The Virginia Invasive Plant Species List comprises species that are established — or may become established — in Virginia, cause economic and ecological harm, and present ongoing management issues.

To be included on the list, there must be demonstrable evidence that a species poses a threat to Virginia's forests, native grasslands, wetlands or waterways. Under the DCR Invasive Species Assessment Protocol, approved by the Virginia Invasive Species Working Group, January 2024, species were ranked as exhibiting **high**, **medium** or **low** levels of invasiveness based on their threat to natural communities and native species.

Invasiveness rank is higher for species that:

- Alter ecosystem processes, such as succession, hydrology or fire regime.
- Are capable of invading undisturbed natural communities.
- Cause substantial impacts on rare or vulnerable species or natural communities or high-quality examples of more common communities.
- Are found widely distributed and generally abundant where present.
- Disperse readily to new areas.
- Are difficult to control.

Scientific Name	Common Name	Virginia Invasiveness Rank	REGION		
			Mountain	Piedmont	Coastal
Ailanthus altissima	**tree-of-heaven**	High	•	•	•
**Aldrovanda vesiculosa*	**waterwheel**	High			•
Alliaria petiolata	**garlic mustard**	High	•	•	•
Alternanthera philoxeroides	**alligator-weed**	High			•
Ampelopsis glandulosa	**porcelain-berry**	High		•	•
**Arum italicum*	**Italian arum**	High	•	•	•
Carex kobomugi	**Japanese sand sedge**	High			•
Celastrus orbiculatus	**Oriental bittersweet**	High	•	•	•
Centaurea stoebe ssp. micranthos	**spotted knapweed**	High	•	•	•
Cirsium arvense	**Canada thistle**	High	•	•	•
Citrus trifoliata	**trifoliate orange**	High	•	•	•
Dioscorea polystachya	**cinnamon vine**	High	•	•	•
Elaeagnus umbellata	**autumn olive**	High	•	•	•
Euonymus alatus	**winged euonymus**	High	•	•	
Ficaria verna	**lesser celandine**	High		•	•
Hydrilla verticillata	**hydrilla**	High	•	•	•
**Imperata cylindrica*	**cogon grass**	High			•
Iris pseudacorus	**yellow flag**	High	•	•	•
Lespedeza cuneata	**sericea lespedeza**	High	•	•	•
Ligustrum sinense	**Chinese privet**	High	•	•	•
Lonicera japonica	**Japanese honeysuckle**	High	•	•	•
Lonicera maackii	**amur honeysuckle**	High	•	•	•
Lonicera morrowii	**Morrow's honeysuckle**	High	•	•	
**Ludwigia hexapetala*	**large-flowered primrose-willow**	High	•	•	•
Ludwigia peploides var. glabrescens	**floating primrose-willow**	High	•	•	•
Lythrum salicaria	**purple loosestrife**	High	•	•	•
Microstegium vimineum	**Japanese stiltgrass**	High	•	•	•
Murdannia keisak	**marsh dewflower**	High	•	•	•
Myriophyllum aquaticum	**parrot feather**	High	•	•	•
Myriophyllum spicatum	**Eurasian water-milfoil**	High	•	•	•
Oplismenus undulatifolius	**wavyleaf grass**	High	•	•	
**Oshuna crassipes*	**water hyacinth**	High			•
Persicaria perfoliata	**mile-a-minute**	High	•	•	•
Phragmites australis ssp. australis	**common reed**	High	•	•	•
Pueraria montana var. lobata	**kudzu**	High	•	•	•
Reynoutria japonica	**Japanese knotweed**	High	•	•	•
Rosa multiflora	**multiflora rose**	High	•	•	•
Rubus phoenicolasius	**wineberry**	High	•	•	•
Sorghum halepense	**Johnson grass**	High	•	•	•
**Trapa bispinosa var. iinumai*	**two-horned trapa**	High	•	•	•
Triadica sebifera	**Chinese tallow-tree**	High		•	•
**Tripidium ravennae*	**ravenna grass**	High	•	•	•
Urtica dioica	**European stinging nettle**	High	•	•	•
Vitex rotundifolia	**beach vitex**	High			•
Acer platanoides	**Norway maple**	Medium	•	•	•
Acetosa acetosella	**sheep sorrel**	Medium	•	•	•
Agrostis capillaris	**colonial bent-grass**	Medium	•	•	•
Akebia quinata	**five-leaf akebia**	Medium		•	•
Albizia julibrissin	**mimosa**	Medium	•	•	•
Arthraxon hispidus var. hispidus	**joint head grass**	Medium	•	•	•
Berberis thunbergii	**Japanese barberry**	Medium	•	•	•
**Cenchrus purpurascens*	**fountain grass**	Medium	•	•	•
Cirsium vulgare	**bull thistle**	Medium	•	•	•

* Early detection species



Incised fumewort



Wavyleaf Grass

EARLY DETECTION SPECIES The list includes a subcategory of invasive plants that are considered early detection species. These are species not yet established or, if established, are not yet widespread in Virginia but known to be highly invasive in habitats similar to those found here. If discovered in Virginia, these species need to be quickly mapped, photographed and reported to DCR. The management goal for early detection species is eradication, as preventing the establishment and spread of newly arrived species will save valuable natural and economic resources.

INFORMATION For more information, or to report early detection species, contact DCR Stewardship Biologist Kevin Heffernan at kevin.heffernan@dcr.virginia.gov.

PHOTO CREDITS

Two-horned trapa, Kevin Heffernan, DCR.

Incised fumewort, Gary P. Fleming, DCR.

Wavyleaf grass, Kerrie L. Kyde, Maryland Department of Natural Resources, Bugwood.org.

Scientific Name	Common Name	Virginia Invasiveness Rank	REGION		
			Mountain	Piedmont	Coastal
Clematis terniflora	**sweet autumn clematis**	Medium	•	•	•
**Corydalis incisa*	**incised fumewort**	Medium	•	•	•
Dipsacus fullonum	**wild teasel**	Medium	•	•	•
Egeria densa	**Brazilian waterweed**	Medium	•	•	•
Euonymus fortunei	**winter creeper**	Medium	•	•	•
Glechoma hederacea	**gill-over-the-ground**	Medium	•	•	•
Hedera helix	**English ivy**	Medium		•	•
**Heracleum mantegazzianum*	**giant hogweed**	Medium	•	•	
Holcus lanatus	**common velvet grass**	Medium	•	•	•
Humulus japonicus	**Japanese hops**	Medium	•	•	•
**Ipomoea aquatica*	**water spinach**	Medium	•	•	•
Ligustrum obtusifolium var. obtusifolium	**border privet**	Medium	•	•	•
Lonicera tatarica	**tartarian honeysuckle**	Medium	•	•	
Lysimachia nummularia	**moneywort**	Medium	•	•	•
**Mahonia bealei*	**leatherleaf mahonia**	Medium	•	•	•
Miscanthus sinensis	**Chinese silvergrass**	Medium	•	•	•
Najas minor	**brittle naiad**	Medium	•	•	•
Paulownia tomentosa	**royal paulowina**	Medium	•	•	•
Persicaria longiseta	**long-bristled smartweed**	Medium	•	•	•
Phyllostachys aurea	**golden bamboo**	Medium	•	•	•
Poa compressa	**flat-stemmed bluegrass**	Medium	•	•	•
Poa trivialis ssp. trivialis	**rough bluegrass**	Medium	•	•	•
Potamogeton crispus	**curled pondweed**	Medium	•	•	•
Pyrus calleryana	**callery pear**	Medium	•	•	•
Rhodotypos scandens	**jetbead**	Medium	•	•	•
**Salvinia molesta*	**giant salvinia**	Medium	•	•	•
**Solanum viarum*	**tropical soda apple**	Medium		•	•
Spiraea japonica	**Japanese spiraea**	Medium	•	•	
Stellaria media	**common chickweed**	Medium	•	•	•
Veronica hederifolia	**ivy-leaved speedwell**	Medium	•	•	•
Viburnum dilatatum	**linden arrow-wood**	Medium		•	
Wisteria sinensis	**Chinese wisteria**	Medium	•	•	•
**Buddleja davidii*	**orange-eye butterfly-bush**	Low	•	•	•
Commelina communis	**Asiatic dayflower**	Low	•	•	•
Elaeagnus pungens	**thorny olive**	Low	•	•	•
Lespedeza bicolor	**shrubby bushclover**	Low	•	•	•
Lonicera fragrantissima	**winter honeysuckle**	Low	•	•	•
Melia azedarach	**chinaberry**	Low		•	•
Morus alba	**white mulberry**	Low	•	•	•
Nandina domestica	**nandina**	Low	•	•	•
Perilla frutescens	**beefsteak plant**	Low	•	•	•
Phleum pratense	**timothy**	Low	•	•	•
Populus alba	**silver poplar**	Low	•	•	•
Rumex crispus ssp. crispus	**curly dock**	Low	•	•	•
Securigera varia	**crown-vetch**	Low	•	•	•
Trapa natans	**European water chestnut**	Low			•
Ulmus pumila	**Siberian elm**	Low	•	•	
Vinca major	**greater periwinkle**	Low	•	•	•
Vinca minor	**periwinkle**	Low	•	•	•
Wisteria floribunda	**Japanese wisteria**	Low		•	•

* Early detection species