



GREEN SPRING GARDENS
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HARDY BULBS FOR - THE WASHINGTON, D.C. AREA -

Bulbs are valued for their exquisite beauty and tough nature. Bulbs have underground storage organs that store energy for rapid growth when environmental conditions are favorable. These organs include true bulbs (such as tulips, daffodils, and lilies), as well as corms, tubers, tuberous roots, rhizomes, and enlarged hypocotyls. Most spring blooming and fall blooming bulbs are dormant much of the summer. In contrast, most summer blooming bulbs have foliage throughout the growing season.

The following is a list of hardy bulbs that perform well in the Washington, D.C. area. Recommended cultivars are noted after the scientific name. Few bulbs on this information sheet are native: **species that are native to Virginia are marked with an asterisk (*)**. The bloom months at Green Spring are given and depend upon the year – plants bloom sooner in warm winters. Most hardy bulbs like full sun (6 hours or more of sun daily) and tolerate dry sites. Bulbs suitable for light shade or part shade, especially if they get full sun until trees leaf out, are noted in the comments column. **General information about the planting and care of hardy bulbs is at the bottom of this document.**

Winter and Spring Blooming Bulbs

Scientific Name	Common Name	Comments
<i>Allium cristophii</i> <i>A. hollandicum</i> 'Purple Sensation' Note: <i>A. moly</i> 'Jeannine' is small & subtle but long lived (May & June)	Ornamental Onion (Late April & May bloom)	'Gladiator', 'Lucy Ball', <i>A. gigantea</i> , & <i>A. schubertii</i> are harder to grow (they often are shorter lived & need excellent drainage) The blooms of <i>A. sphaerocephalon</i> (Drumstick Onion) tend to decline within a few years (June bloom) & the foliage looks similar to wild garlic, an invasive Pest resistant
<i>Bletilla striata</i> & cultivars	Chinese Ground Orchid (April – June bloom)	Moist, rich sites in light to part shade; usually have foliage the entire growing season Deer feed on foliage

<p><i>Camassia cusickii</i></p> <p><i>C. leichtlinii</i> ('Blue Danube' & 'Semiplena')</p> <p>Note: VA native <i>C. scilloides</i>* (Atlantic Camas) is harder to grow & seldom commercially available (rare in Virginia).</p>	<p>Camas</p> <p>(late March – May bloom)</p>	<p>Tolerate light shade; prefer moist soils & tolerate heavier soils than most bulbs – tolerant of periodically wet sites</p> <p>Pest resistant</p>
<p><i>Chionodoxa forbesii</i> or <i>Scilla forbesii</i> (botanists don't agree on name but sold as <i>Chionodoxa</i>)</p> <p><i>C. luciliae</i> or <i>S. luciliae</i></p> <p><i>C.</i> or <i>S.</i> 'Pink Giant' (commonly sold as <i>C. forbesii</i> 'Pink Giant' but possibly a hybrid)</p> <p><i>C. sardensis</i> or <i>S. sardensis</i></p>	<p>Glory of the Snow</p> <p>(March & April bloom)</p>	<p>Tolerate light shade & dry soil</p> <p>Pest resistant</p>
<p><i>Crocus</i>: the longest lived species in our area are:</p> <p><i>C. flavus</i> ('Golden Yellow') – earliest bloomer</p> <p><i>C. tommasinianus</i> & cultivars (seeds around so more likely to survive if many animals are around that like to eat them)</p> <p><i>C. vernus</i> & cultivars</p>	<p>Crocus</p> <p>(February – Early April bloom)</p>	<p>Tolerate light shade & dry soil</p> <p>Loved by rabbits, squirrels, voles, & deer so can be difficult to grow well in some locations</p>
<p><i>Hyacinthus orientalis</i> cultivars</p>	<p>Hyacinth</p> <p>(late February – April bloom)</p>	<p>Fragrant; flowers can get smaller in the second season of bloom or in the years that follow</p> <p>Pest resistant</p>
<p><i>Ipheion uniflorum</i> ('Jessie' & 'Rolf Fiedler')</p>	<p>Star Flower</p> <p>(March & April bloom)</p>	<p>Tolerates light shade</p> <p>Pest resistant</p>
<p><i>Iris bucharica</i></p> <p><i>I.</i> Reticulata Group cultivars such as 'Edward', 'Harmony', & 'J.S. Dijt' (<i>I. reticulata</i>, <i>I. histrioides</i>, & other species are the parents). 'George' is a sterile hybrid.</p>	<p>Bulbous Iris</p> <p>(most bloom February - April, but <i>I.</i> 'Katherine Hodgkins' (<i>I. winogradowii</i> x <i>I. histrioides</i>) can bloom in late January – performs well with excellent drainage)</p>	<p><i>I. bucharica</i> tolerates light shade & all listed selections tolerate dry sites (need good drainage)</p> <p><i>I. bucharica</i> & sterile hybrids like 'George' are the most reliable bloomers over time</p> <p>Pest resistant</p>
<p><i>Muscari armeniacum</i> ('Christmas Pearl' & the light blue 'Valerie Finnis') – the most reliable species</p>	<p>Grape Hyacinth</p> <p>(late February – April bloom)</p>	<p>Tolerate light shade</p> <p>Pest resistant</p>

<p><i>Narcissus</i>: - Favorite divisions of - regular-sized daffodils with some - good performers in the Washington, - D.C. area listed: Division 1 – the earliest blooming daffodil is 'Rijnveld's Early Sensation'; this division needs excellent drainage. 'Las Vegas' is most persistent in sites with good drainage & little irrigation in summer Division 2 – many great performers including 'Accent', 'Fellows Favorite', 'Ice Follies', 'Misty Glen', 'Saint Keeverne', & 'White Plume' Division 3 – 'Angel', 'Dreamlight' (fragrant), & 'Jamestown' Division 5 – 'Thalia' (often fragrant on a warm day) & 'Stint' Division 6 – 'Ara', 'February Gold' (one of the earliest to bloom), 'Rapture', & 'Surfside' Division 7 – 'Golden Echo', 'Hillstar', 'Intrigue', 'O' Bodkin', 'Pipit', & 'Silver Smiles' (fragrant) Division 9 – 'Actaea' is the standard Division 11b (papillon – cup is split so looks different) – 'Papillon Blanc' Division 13 (species & reputedly wild forms) – they tend to require better growing conditions than cultivars (they need full sun, good drainage, & adequate moisture in the spring to perform well). <i>N. pseudonarcissus</i> is the easiest to grow.</p> <p>Miniatures (not an official division of the American Daffodil Society. - Brent and Becky's Bulbs calls it - Division 14 – a Virginia mail order - nursery). Smaller blooms than the - larger cultivars in their original - division, as well as shorter in height - (about 6 inches). Some good - performers in the Washington, D.C. - area: - 'Baby Moon' (fragrant), - 'Golden Bells', 'Hawera', 'Jumblie', - 'Little Gem', 'Minnow' (fragrant; - favorite Division 8 cultivar), - 'Segovia', 'Sun Disc' (fragrant), - 'Tête-à-Tête', & 'Topolino' -</p>	<p>Daffodil - (bloom late January – May) -</p>	<p>Most daffodils need full sun or they will not bloom well after the first - year. - Pest resistant - Some cultivars bloom well in light - shade – 'Bulley', 'Hillstar', - 'Ice Follies', 'Sorbet', & - 'Virginia Sunrise' have performed - well at Green Spring in light shade. - Brent & Becky's Bulbs (a mail - order nursery in Virginia) says - Division 6 or cyclamineus - daffodils tend to be more tolerant - of some shade & moisture as a - group. - Division 13 (species & reputedly wild forms) and its miniature - forms are generally harder to grow. For example, - <i>N. bulbocodium</i> (hoop petticoat daffodil) is in the Rock Garden at Green Spring & survives by reseeding lightly. Its hybrid 'Golden Bells' looks similar but is a tougher, more reliable plant. Some cultivars in various - divisions die off in our area over time even with good growing - conditions: - 'Avalon' (fusarium wilt), 'Audubon', - 'Canaliculatus', 'Ice Wings', - 'Jack Snipe', 'Mount Hood', & - 'Tracey' are some examples. -</p>
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<i>Nectaroscordum siculum</i> (<i>Allium bulgaricum</i>)	Sicilian Honey Garlic (April –May bloom)	Much showier than culinary garlic – flowers aren't similar Pest resistant
<i>Puschkinia scilloides</i> (var. <i>libanotica</i>)	Striped Squill (March – May bloom)	Tolerates light shade & dry soil Pest resistant
<i>Scilla bifolia</i> 'Rosea' (pink-flowered; easier to grow than the blue-flowered species type but can increase excessively over time in some locations) <i>S. mischtschenkoana</i> (‘Tubergeniana’) (the species can start blooming in late January) <i>S. siberica</i> (‘Spring Beauty’)	Scilla (late January – April bloom)	Tolerate light shade & dry soil Pest resistant
<i>Tulipa</i> – various divisions Species tulips- wild, natural flowers mostly found in countries from Crete & Turkey to central Asia (including Afghanistan) for species listed here. Flowers smaller than hybrids. Longer-lived ones here in well-drained to very well drained sites include: <i>T. clusiana</i> , <i>T. clusiana</i> var. <i>chrysantha</i> , ‘Cynthia’, & ‘Tubergen’s Gem’ ‘Lady Jane’ ‘Little Beauty’ (likes slopes & excellent drainage) <i>T. saxatilis</i> ‘Lilac Wonder’	Tulip (March – May bloom) Of the large-flowered tulips, Darwin hybrids are reported to be the longest lived. In my home garden with full sun and where I seldom irrigate, Darwin hybrid tulips & tulips in several divisions have survived for several years & perform beautifully (no deer, rabbits, or voles).	Prefer well-drained soils that are dry in the summer (little or no irrigation). Species tulips are great in rock gardens due to their small size & the amended, elevated soil (improved drainage). Many tulips are short-lived in our climate – they prefer long, cool, moist spring weather & dry summers to perform best. Loved by rabbits, squirrels, voles, & deer. Can cover with plastic bird netting or with metal mesh to protect, but animals often eat plants after they are uncovered (birds & snakes can get caught in plastic netting). Can use pea gravel as a mulch in rock gardens to keep animals away from the bulbs.

HARDY BULBS WITH UNUSUAL PLANTING REQUIREMENTS

Scientific Name	Common Name	Comments
<i>Anemone blanda</i> (‘Blue Shades’ & others) Connoisseur plant - usually not dense & can die out over time if too dry or shady	Windflower (late February – April bloom)	Tolerates light shade. Best to plant bulbs when not dried out - have soaked them in water before planting with some success (best when planted by early fall) Pest resistant

<p><i>Eranthis hyemalis</i></p>	<p>Winter Aconite (January – March bloom)</p>	<p>Tolerates light to part shade & dry soil</p> <p>Few often come up because best to plant when bulbs not dried out - have soaked them in water before planting with some success. Reseeds so eventually get nice sized clumps (excessive numbers in some locations).</p> <p>Pest resistant</p>
<p><i>Galanthus nivalis</i> (‘Flore Pleno’ has less vigor; Europeans have many cultivars)</p> <p>Note: <i>G. elwesii</i> (larger flowers – sometimes harder to grow than the above)</p>	<p>Snowdrop (heaviest bloom January – March, but <i>G. nivalis</i> starts in November in some locations. Both species are sometimes in bloom at Green Spring by mid-December.)</p>	<p>Tolerate light to part shade & dry soil</p> <p>Best to divide & move when foliage is still actively growing - lower success rate when buy as dried bulbs. Best when planted by early fall.</p> <p>Pest resistant</p>

SUMMER BLOOMING BULBS – MOST BLOOM INTO THE FALL (FOLIAGE THE ENTIRE GROWING SEASON, - WITH THE EXCEPTION OF LYCORIS) -

Scientific Name	Common Name	Comments
<p><i>Amarcrinum</i> ‘Fred Howard’ (<i>A. x memoria-corsii</i>)</p>	<p>Amarcrinum (blooms July – October)</p>	<p>Large bulb with large flowers so needs space; tolerates light shade.</p> <p>Best to mulch deeply in late November (until late March) for winter protection the first couple of years (hardier when larger & established)</p> <p>Pest resistant</p>

<p><i>Crinum x powellii</i> (pink flowers; white-flowered forms as well)</p> <p>C. 'Mrs. James Hendry' (fragrant; the above species is one of the parents of this cultivar)</p>	<p>Crinum</p> <p>(have seen bloom May – November, but heaviest in June – August)</p>	<p>Large bulb with large flowers; needs adequate space.</p> <p>Tolerates heavy, moist soil but best survival if not wet in the winter. Does not bloom well in dry soil.</p> <p>Best to mulch deeply in late November (until late March) for winter protection the first couple of years (hardier when larger & established)</p> <p>Pest resistant</p>
<p><i>Crocsmia</i> 'Lucifer' (the best performer over time)</p>	<p>Lucifer Crocsmia</p> <p>(blooms June –July)</p>	<p>Prefers moist sites; many other cultivars bloom poorly here over time.</p> <p>Spider mites & thrips can be pests - seldom a serious problem in moist sites.</p>
<p><i>Eucomis comosa</i> 'Sparkling Burgundy' (other purple-foliaged cultivars are available as well)</p> <p>Green-foliaged hybrids also available</p>	<p>Pineapple Lily</p> <p>(July - August bloom)</p>	<p>Tolerate dry soil although like moist soils best. An oddity.</p> <p>Can mulch deeply in late November (until late March/ early April) for winter protection – most of Green Spring's unmulched plants have survived many winters.</p> <p>Pest resistant</p>
<p><i>Lilium</i> species, hybrids, & cultivars - some of the best performers in the Washington, D.C. area are: Asiatic Hybrids – many good cultivars (my favorite is 'Tiger Babies'). Among the earliest to bloom & mostly unscented. <i>L. davidii</i> is one of the parents – (nice plant with orange flowers & less floppy than <i>L. henryi</i>).</p>	<p>Lily</p> <p>(May - August bloom)</p>	<p>See North American Lily Society for lily classification . http://www.lilies.org/culture/types-of-lilies/. Lilies loved by deer, rabbits, & voles (cage in gardens with deer & rabbits).</p> <p>Some tolerate dry soil, although most prefer moist soil.</p>

<p><i>Zephyranthes drummondii</i> (<i>Cooperia pedunculata</i>)</p> <p>All are connoisseur plants - for rock gardens & spaces where there is less competition from other plants.</p>	<p>Rain Lily, Prairie Lily</p> <p>(April – October bloom, depending upon the year & moisture)</p>	<p>Blooms after periods of adequate moisture.</p> <p>Note: <i>Z. atamasco</i>* (Atamasco Lily) is probably the species blooming in May in the Rock Garden – it doesn't like crowding. It also performs well in the rain garden in the Entrance Garden.</p>
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Fall Blooming Bulbs

Scientific Name	Common Name	Comments
<p><i>Colchicum</i>: have had the most success with the single-flowered 'Giant', 'Lilac Wonder', <i>C. autumnale</i>, <i>C. bornmuelleri</i>, & <i>C. byzantinum</i></p> <p><i>C. 'Waterlily'</i> (double-flowered; some plants shorter lived than the above but some still survive)</p>	<p>Colchicum</p> <p>(August – October bloom)</p>	<p>Tolerate light shade. Ship by early fall – best to plant before they bloom (can plant when blooming but lower survival rate – expect some plants not to survive transplanting).</p> <p>Poisonous - not bothered by animals like <i>Crocus</i> (similar flowers but larger)</p>
<p><i>Crocus speciosus</i></p> <p>Note: <i>C. sativus</i> (Saffron Crocus) has been short-lived at Green Spring</p>	<p>Fall-blooming Crocus</p> <p>(September – November bloom)</p>	<p>Tolerates light shade & dry soil</p> <p>Loved by rabbits, squirrels, voles, & deer</p>
<p><i>Cyclamen hederifolium</i></p> <p>Note: <i>C. coum</i> did not perform well</p>	<p>Cyclamen</p> <p>(June – December bloom: heaviest in late summer & fall)</p>	<p>Tolerates light to part shade</p> <p>Generally not bothered by pests</p>
<p><i>Sternbergia lutea</i></p> <p>Naturalized in one county in VA – no reseeding at Green Spring</p>	<p>Sternbergia</p> <p>(September –October bloom)</p>	<p>Tolerates light shade & dry soil</p> <p>Best to ship right after they are dug in June & plant as soon as they arrive (Green Spring has also successfully planted in early fall)</p> <p>Pest resistant</p>

Not Recommended Due To Invasive Potential (Non-Natives That Spread Excessively and/ or Reseed Abundantly (both spring bloomers):

Hyacinthoides hispanica (Wood Hyacinth) - naturalized in Virginia.

Leucojum aestivum (often sold as 'Gravetye Giant' or 'Gravetye') – Giant Snowflake (also called Summer Snowflake but spring bloomer) – naturalized in several Virginia counties & in Maryland

Non-Native Invasive Species Available in the Nursery Trade With Heavy Reseeding (do not purchase & remove whenever possible):

Arum italicum & cultivars such as 'Pictum' (Italian Arum) - naturalized in NC & excessively reseeding at Green Spring – showing potential to be a serious invasive in Virginia (hard to eliminate)

Corydalis – at Green Spring & in some local private gardens a spring ephemeral plant with purple flowers is invasive (*C. solida* can have purple flowers) – aggressive spreader in moist & constantly moist areas in gardens & natural areas (best not to grow any forms with pink or purple flowers)

Muscari botryoides - naturalized in Virginia & many other states
Ornithogalum umbellatum (Star of Bethlehem; another species is less common) – commonly found in local gardens – planted long ago or naturalized (hard to eliminate)

Planting and Care of Bulbs

Buying and Planting Hardy Bulbs:

- ❖ **Who to Buy From and When to Plant** – when buying from a mail order nursery, good nurseries will ship when bulbs need to be planted. Online orders can be placed several months before planting to get the best choice. Buy from nurseries that do not sell wild-collected plants. -
- ❖ The general guideline is to plant 3 times the height of the bulb deep (measure from the top of the bulb) and at least three times their width apart. In reality don't worry about the depth – most bulbs do fine when they're planted with a trowel or shovel with adequate soil above them.
- ❖ The pointy end should be facing up and the rooting side (basal plate side) should be at the bottom of the hole. If you are uncertain about what is the top vs. the bottom, plant the bulbs on their sides.
- ❖ Plant bulbs in groups for the best visual impact, with shorter bulbs going in front of taller plants (the height of plants at the time of bloom).
- ❖ Do not fertilize bulbs after planting. Never place fertilizer in the planting hole – it will burn them.
- ❖ Most bulbs are planted in the fall (late October - late November is best for most species), although some can be planted in the spring, summer, or fall (such as lilies). Tulips sometimes rot in warm, wet years when planted in mid October, so waiting to plant until at least late October is best. It is best to finish planting most bulbs by early December, but some bulbs can be planted as late as early January in some years.
- ❖ There are some exceptions to planting in mid to late fall – *Colchicum* is best planted by early fall before it blooms. Most summer blooming bulbs are grown like herbaceous perennials due to their persistent foliage - they can be planted in spring, summer, or fall. Other exceptions are noted below.
- ❖ Most bulbs that go dormant in the summer prefer moist, well-drained soil in the spring and/ or fall and prefer drier sites in the summer. Most of these bulbs are well-suited to areas where irrigation in the summer is minimal. In contrast, most summer blooming bulbs prefer moist soil throughout the growing season.
- ❖ Good drainage is essential for most bulbs. *Camassia* are a rare exception – they tolerate periodic flooding. Water bulbs after planting to initiate root growth if it is not raining at least ½ inch per week.

Growing Bulbs Over Time:

Let Foliage Die Naturally - Cut back only a little foliage if bulbs are flopping on other plants to avoid reducing the vigor of bulbs. Bulbs continue to produce food after they are done blooming, until the foliage goes dormant (turns yellow, then brown). Miniature bulbs have less dying foliage to look at, so use them if you do not the look of spent foliage in May, June, and/ or early July.

Fertilization is Seldom Needed - The best reason to fertilize is if a plant is showing signs of a nutrient deficiency. Nutrient deficiencies of bulbs at Green Spring are rare – they have occurred in very wet years. The extensive use of leaf mulch (shredded leaves) at Green Spring makes soil fertile and provides a wide range of nutrients. **Bulbs most commonly decline from too much shade, poorly adapted forms, crowding, sites that are too dry, or cutting back foliage too soon in early summer.**

Symptoms of the most common nutrient deficiencies are described in **Garden Installation And Maintenance For The Eco-Friendly Gardener** (available on the Green Spring website and at the Horticulture Center). If fertilization is needed, organic granular fertilizers with low nutrient levels are

best for the environment. Lightly scatter granular fertilizer on top of the soil (best before a gentle rain or before watering during dry periods).

Divide Bulbs If They Get Crowded After Several Years - This is an issue with some bulbs, such as many daffodils. It is best to dig them up after they go dormant in the summer through the fall before they start actively growing. Gently separate bulbs from each other, then replant at a wider spacing and in new areas. One exception is snowdrops (*Galanthus*) – they are easy to divide once they are done blooming and still actively growing, then water thoroughly after replanting.

Scientific Names Of Plants - Current Names Are From: -

Encyclopedia of Life (<http://eol.org/>) – institutional partners include Harvard University, the Missouri Botanical Garden, the Smithsonian Institution, and The Field Museum. -

Tropicos from the Missouri Botanical Garden (<http://tropicos.org/>)

USDA PLANTS Database (<http://plants.usda.gov/>) - this database focuses on plants native to the U.S. and to U.S. Territories and Protectorates, as well as naturalized non-natives and invasives. It is also used to determine distribution within Virginia by county.

If a second scientific name is given, it is usually an old name that is still seen in some references or used by some nurseries. However, sometimes the above databases do not agree on names.

Other References:

Flora of Virginia. Alan Weakley, J. Christopher Ludwig, and John Townsend. 2012. BRIT Press. Botanical - Research Institute of Texas. -

The **Kemper Center for Home Gardening Plantfinder** at the Missouri Botanical Garden is an excellent - reference for plant names, gardening information, and photographs - (<http://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>). - It features plants in their Kemper Center display gardens and is an excellent website about ornamental plants. -

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