

Native Azaleas of the Southern Blue Ridge



aborescens
vaseyi
calendulaceum
cumberlandense
prinophyllum
periclymenoides
viscosum

Within the southern Appalachian region, there are 7 species of azalea which occur above 1000 ft. elevation. This is half of the 14 azalea species that are native across the entire Southeastern United States.

The other azaleas mostly occur in the Coastal Plain or Piedmont regions.

Wholesale agreement on azalea taxonomy is not obvious in the literature. Botanists and horticulturists have published varying interpretations of azalea species and the Latin names used have changed several times over the years. Some species have been treated as distinct and as varieties of other species; some have been suggested as being of hybrid origin and many color variations have been given both varietal, cultivar or hybrid names. There are many natural selections, cultivars, and hybrids of native azaleas sold in the nursery trade, derived from wild and cultivated sources.

Azaleas are members of the genus *Rhododendron*, which also includes the evergreen types of plants we normally think of when the name *rhododendron* is heard. The subgenus *Eurhododendron*, therefore, includes the evergreen forms. The subgenus *Pentanthera* includes the deciduous azaleas. Some botanical writers have suggested that azaleas should be put in their own separate genus - *Azalea*, but flower anatomy does not seem to qualify this distinction from other *rhododendrons*. In botanical classification, flower anatomy is considered more important in assigning relationships than traits like evergreen or deciduous leaves.

Often our native azaleas are called wild honeysuckles, but they are not related to the true honeysuckles ... those are in a different family of plants. Azaleas are members of the family

Ericaceae, or Heath family, which is a large family of many genera. Nearly all of these ericads are acid-loving plants, having a dislike for soils with neutral or high pH. Very few members of this family will be seen growing in limy soils or over limestone rock. Because Blue Ridge mountain soils are acidic or very acidic, we have a conspicuously heavy concentration of ericads in our forests.

Cultivation of azaleas, like other *rhododendrons*, requires an acid soil and good drainage. The roots are normally shallow, fine, and occur in the upper soil horizon where organic material and humus is most prevalent. The ideal range of soil pH is 4.5 to 5.5 and soil texture should be a loam, or at least of a loose consistency, so that water

drainage and aeration is available to all of the root system. Mulch is important to prevent exposure and drying of the fine roots that grow in the upper 2 inches of soil. Although maintaining even moisture is important in establishing azaleas, care should be taken not to flood mulched root zones and cause soggy soil, outwashed mulch, or settling of the plants into a too-deeply prepared planting hole.

Cutting azalea stems back severely in transplanting has been done as a matter of practice by many horticulturists. This has been particularly noted when moving wild plants where a large proportion of the root system has been lost. In preparation of moving a plant from the wild, cutting back the stems (and root pruning, as well) can be done a year ahead, if time is available. Previously cultivated plants need not be so pruned, as it should be the case that their root systems are more intact in transplanting.

The mountain species of azaleas



Vasey Azalea, or Pinkshell Azalea (*Rhododendron vaseyi*)

The Vasey azalea is endemic to western NC (found in the wild nowhere else), occurring mostly at elevations over 3000 ft. The highest concentrations known are in the high mountain peaks and slopes of Jackson and Transylvania Counties. Perhaps the finest examples of size and abundance are on Mt. Toxaway and the Southern Highlands Reserve.

Flowers open before any sign of its foliage appears, in the early spring. This usually means about late April to mid-May in its high elevation habitat. The flowers are normally pale rose-pink, but can range from nearly white to deep rose-pink.

Unlike the other azaleas in our area, the flowers lack an elongated tube, being more suggestive of the bell-shaped flowers of the evergreen rhododendrons. There may also be 5 or 7 stamens per flower, instead of the constant 5 per flower in other azaleas. The flowers are not noticeably fragrant. Old specimens of Vasey azalea tend to have distinctly scaly bark on the main stems, and this scaliness is also evident on the branchlets of mature plants (most other azaleas have smooth branchlets). The flower buds of Vasey azalea are broadly egg-shaped to nearly round, with bud scales about as broad as they are long. Twigs and leaves are hairless. Capsules bear a few glandular hairs, mature from October to November.

Flame Azalea (*Rhododendron calendulaceum*)



This is a widespread and fairly common azalea of the Blue Ridge, growing at all elevations but rarely forming large colonies. It may reach 25 ft. in height, but is normally a shrub between 5 and 15 ft. It is often associated with oak forests, in moist to fairly dry soils.

Flowers open from early May to late June, depending on elevation. Flower color ranges from yellow to red, though orange is most typical. Flowers are not fragrant, but are larger than in other native azaleas, some reaching 2 inches diameter. The clusters of flowers (trusses) may be 3 to 5 inches across. Normally, the flowers open when the new leaves are about 1/2 to 2/3 grown. This azalea is known to be a tetraploid, with twice as many chromosomes as normal for other species. The trait of having extra chromosomes, called polyploidy, may induce extra vigorous growth or abnormally large flowers, leaves, or fruit, in plants.

The twigs of Flame azalea bear coarse hairs, and the elliptic flower buds have greenish scales with dark, glandular margins. The fruit capsules have non-glandular hairs covering their surface.

Cumberland Azalea (*Rhododendron cumberlandense*)



This azalea is rare in the Blue Ridge of NC, known better in the Cumberland Plateau of southeastern KY, eastern TN, and northeastern AL. It was actually first discovered in northern GA, and it is near this portion of the range that the NC populations are known. It grows on a few mountain peaks and forested slopes of the western portions of Nantahala National Forest and the Smoky Mountains.

There is often confusion between this azalea and the Flame azalea, because the flower color is so similar. Both may share the same habitats in NC and GA. Cumberland Azalea is usual-

ly more shrubby, rarely more than 10 ft. tall, rather twiggy and prone to be stoloniferous (spreading through production of many stems). It is known to hybridize with the late-flowering *Rhododendron arborescens*, and is a member of the hybrid swarms of azaleas known from a few mountain peaks such as Gregory Bald. Another name applied to this azalea is *Rhododendron bakeri*. Some botanists suggest that Cumberland azalea is itself of hybrid origin.

Flowers of Cumberland azalea are normally orange to red, but a bit smaller than in Flame azalea, and with a thinner floral tube. The flowers open 2 to 3 weeks later than Flame azaleas in the same area, sometimes even as late as August or September. The sepals at the base of each flower are under 2mm long and not glandular, whereas Flame Azalea sepals tend to be 2-4mm and glandular-hairy. The leaves of Cumberland azalea are fully grown by the time of flowering. Twigs are slightly hairy, and flower buds have greenish to light brown scales. Otherwise, twig and fruits are similar to Flame azalea.

Roseshell Azalea, or Election-pink Azalea (*Rhododendron prinophyllum*)



Widespread from New England to OH and OK, this azalea follows the high elevations of the Southern Appalachians only as far south as Ashe Co, NC. It occurs in upland woods, along streams, and in boggy sites. It is most

similar to *Rhododendron periclymenoides* and can hybridize with that azalea and others flowering in the same vicinity. Roseshell azalea is usually a shrub 3 to 6 ft. tall, and is not very stoloniferous. Another name applied to this azalea is *Rhododendron roseum*.

Flowers of Roseshell azalea are light rose-pink, with glandular tubes. They open as the leaves are first appearing, in early spring. They are fragrant, with distinctly pointed petals. Leaves are softly and finely hairy beneath. The flower bud scale margins are brownish, ciliate, but not glandular. Twigs are slightly hairy.

Pinxterbloom Azalea (*Rhododendron periclymenoides*)



This is a widespread azalea in the eastern US, and occurs in the southern Appalachians mostly at elevations below 2500 ft. It can be found in dry woods or along streams. The highly fragrant flowers and its adaptability to site have placed

it as a favorite among our native azaleas. Many hybrid azaleas have been developed using this species in parentage, such as in the popular Ghent Hybrid selections. Pinxterbloom azalea is sometimes stoloniferous, and forms a large shrub from 6 to 10 ft. Another name applied is *Rhododendron nudiflorum*.

Flowers may vary in color from white to pink to violet-red, though pink is typical. The odor is sweet, the tubes non-glandular. Flowering occurs as leaves appear, in early spring. The winter twigs are slightly hairy to hairless, the flower bud scales light brown, ciliate on the margin but not glandular. Fruit capsules have non-glandular hairs.

Sweet Azalea (*Rhododendron arborescens*)



Ranging from NY to central AL along the Appalachian mountains, and into the Piedmont of VA to GA, this is one of our taller species of native azalea, often reaching heights of 8-15 feet. It prefers moist sites, and can often be found along streams or seepages, but it also occurs on slopes and peaks of elevations over 3000 ft.

Flowers are white, sweetly fragrant, but sometimes not abundantly produced. Flowering occurs after leaves have grown, usually late May to August, depending on elevation. The red style of each flower is quite noticeable, as it projects far beyond the white petals. Usually a yellow blotch is seen in the throat of the flowers. The yellow-brown winter twigs are hairless. Flower buds have greenish scales with darker margins, and no visible hairs except marginal cilia seen with a lens. The fruit capsule has a few glandular hairs.

Swamp Azalea (*Rhododendron viscosum*)



This is also known as the Clammy azalea, on account of its sticky flowers. It is one of the most widespread azaleas of the eastern US. It ascends the Blue Ridge to high elevations, as well as occupies lowland places of the Piedmont and Coastal

Plain. It can be a stoloniferous shrub only 1 to 3 ft. in height, or attain heights of 8 to 15 ft. The typical habitat is usually swampy thickets, streamsides, or sunny shrub balds of mountain peaks. Similar to the Sweet azalea, and often confused with it. Sometimes the Swamp azalea may be inconspicuous in flower, because flowers are rather small, the tube thin, and the trusses composed of only a few blooms hidden within the expanded leaves. There are forms, however, with more showy blooms.

Flowers are white, sweetly fragrant, with a greenish style, the latter not as colorful as in Sweet Azalea. The tubes of the flowers of Swamp azalea are made sticky to the touch by all the glandular hairs that are present. Flowering occurs after the leaves are nearly grown, usually from May to July, depending on elevation. Winter twigs have scattered, coarse, glandular hairs. The flower buds are similar to those of Sweet azalea, but with some marginal glands. The fruit capsules are covered by short, glandular hairs.

Gregory Bald Azaleas - a natural hybrid swarm



Native azaleas can be hybridized easily by controlled pollination. Plant breeders and gardeners alike have been doing this extensively, to produce many unusual colors and named selections.

Hybridization also may occur naturally in the wild, whenever two or more azaleas are in bloom at the same time, at close proximity. In some places where compatible species have been naturally hybridizing for many years, what is referred to as a "hybrid swarm" occurs. In these populations, there is a great mixing of genes and resulting flower colors, among a large number of individual plants. Most of the plants in a hybrid swarm bloom at nearly the same time, since they originate from parents which bloomed in unison, therefore the showiness becomes a popular natural spectacle.

One famous hybrid swarm is atop Gregory Bald, in the Great Smoky Mountains National Park. This high-elevation grassy/shrub bald is visited heavily in mid-June each year by plant enthusiasts, just to see the azaleas bloom. Flower colors include white, yellow, peach, pink, rose, orange, red, and many shades between. Parental species include the sweet, clammy, Cumberland, and perhaps flame azalea (the latter has been suggested as not being compatible with the other species, and may not be involved in the hybrid pool).

Gregory Bald azaleas have been grown by several nursery operators, home gardeners, and botanical gardens for many years, but a permit from the National Park Service is required for any type of legal seed collection. No consistency of flower color can be expected of Gregory Bald azaleas, if seed-grown, because of the complex genetic mixing. Specific individuals can be propagated by cuttings, however, to select for specific flower colors.

A quick guide to Azalea bloom time and color

Pink Group ... early, blooms before leaves form

- Rhododendron periclymenoides (nudiflorum) - Pinxterbloom Azalea
- Rhododendron vaseyi - Pinkshell Azalea
- Rhododendron prinophyllum - Roseshell Azalea

Yellow / Orange / Red Group ... late, blooms after leaves

- Rhododendron calendulaceum - Flame Azalea
- Rhododendron cumberlandense (bakeri) - Cumberland Azalea

White Group ... blooms after leaves form, not as showy

- Rhododendron arborescens - Sweet Azalea, Honeysuckle, fragrant
- Rhododendron viscosum - Swamp Azalea, fragrant

Gregory Bald Hybrid Swarm Azaleas ... June, July - all colors