

# Where Have All the Flowers Gone?

## **When to Prune Your Flowering Shrubs with Hydrangea spp. Emphasis**

Sharon P. Flynt  
Extension Agent for Horticulture  
Scott County  
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# WHAT IS GOING ON?

Failure to bloom can be caused by several factors



# Too young or disturbed

- ❖ must be physiologically mature
- ❖ non-blooming juvenile stage of growth may last weeks or years, dependent on plant type
- ❖ A transplanted plant may not bloom again until it is well established in the new location





## Nipped in the bud

- ❖ Flower buds can be less hardy than leaf buds = so low winter temperatures may kill the flower buds
- ❖ Early blooming plants are more likely to have their flower buds damaged by frost or freeze, but even late frosts or freezes have been known to happen!

# Too much of a good thing (or not enough)

- ❖ excessive nitrogen fertilization = vegetative growth over flower bud production
- ❖ get soil samples at your local Extension office
- ❖ not receiving necessary nutrient amounts ( $<N < P < K$ ) = non-blooming and other problems can occur



# Hello Sunshine .

- ❖ Most flowering trees and shrubs require at least 6 to 8 hours of direct sunlight in order to bloom properly
- ❖ In general, certain shrubs' bloom amount decreases as shade increases
- ❖ Even shade tolerant plants will bloom poorly in heavy shade





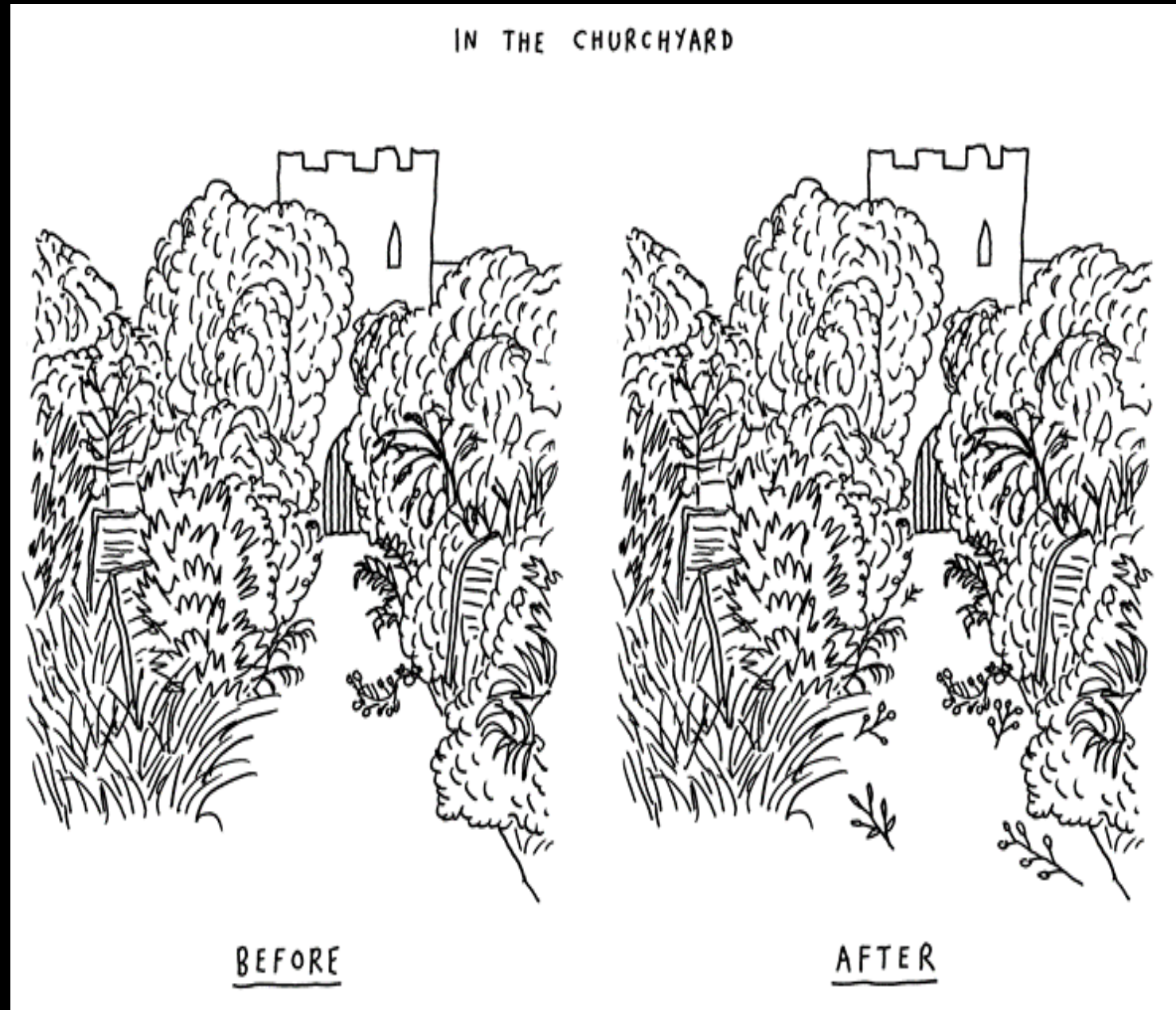
## Bad Timing

- ❖ If you pruned back your shrubs sometime in the past you may have cut off the bloom buds!
- ❖ How do you know? The correct time to prune your flowering shrubs depends on when they produce flower buds



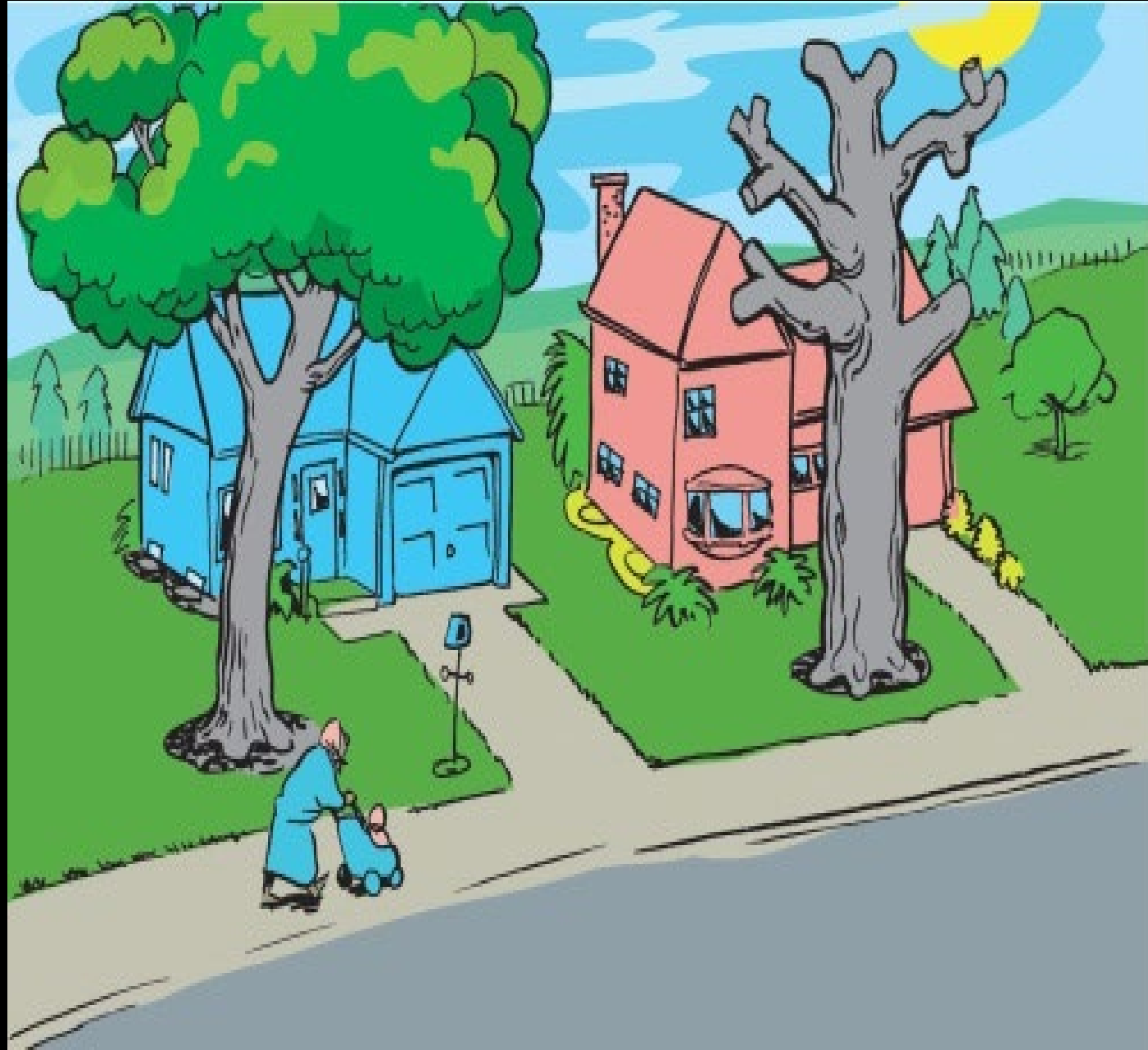
# Pruning

- Can strike fear in the hearts of gardeners





- Or you just can't stop yourself



IN  
FLOWERING  
SHRUBS,  
ITS ALL  
ABOUT THE  
BUD AND...



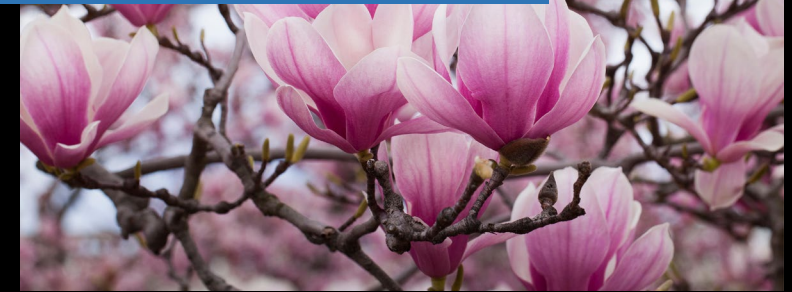
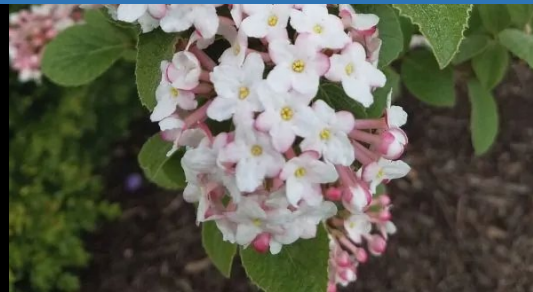
**... this bud's for you!**



# Spring blooming shrubs

- ❖ Spring blooming shrubs bloom on wood formed the previous summer (old wood)
  - process of producing next year's flower buds starts shortly after they finish blooming this year
  - pruning right after bloom allows the plant maximum time before winter to develop the wood/flower buds

Prune your spring bloomer as soon after it blooms in the spring, but before June 1st



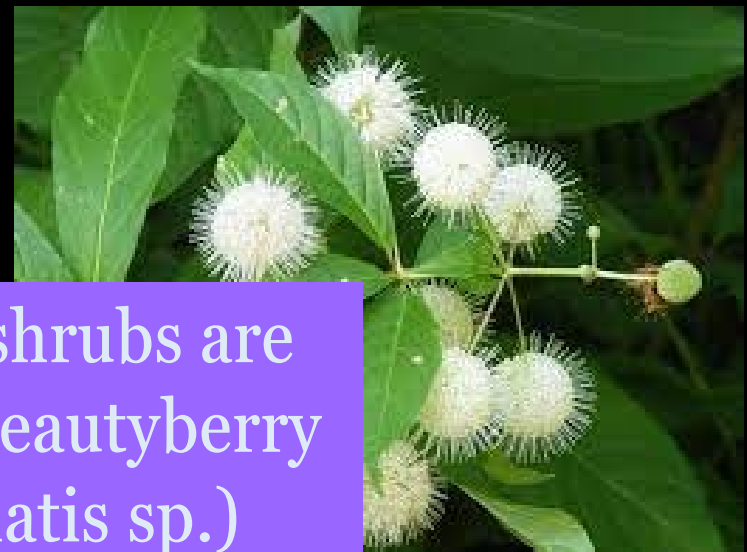
Shrubs that are considered spring blooming shrubs are rhododendrons, including azaleas (*Rhododendron* spp.), forsythia (*Forsythia* spp.), mock orange (*Philadelphus* spp.), magnolias (*Magnolia* sp.) ninebark (*Physocarpus opulifolius*), quince (*Chaenomeles* spp.), spring-flowering roses (*Rosa* spp.), spring-blooming spirea (*Spiraea prunifolia* and *S. x vanhouttei*), lilacs (*Syringa* spp.), and viburnums (*Viburnum* spp.).



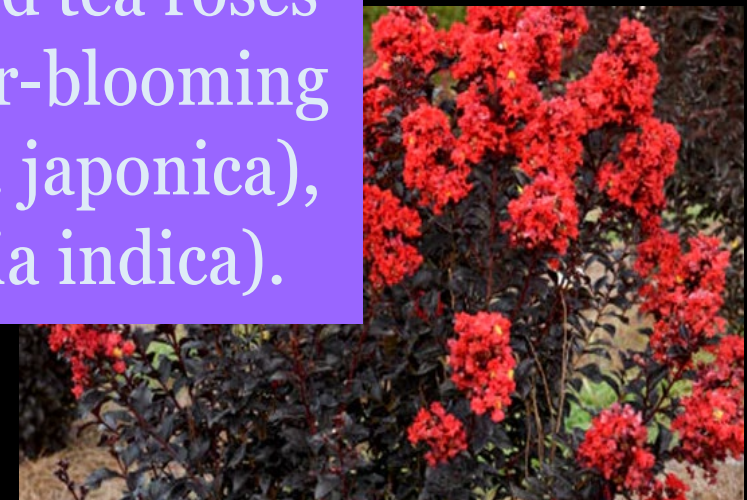
# Summer blooming shrubs

- ❖ bloom on new wood formed during the current spring or summer just before blooming
  - form flower buds on new wood once plant/stems begin to grow in spring
  - should be pruned in while the plant is dormant following last season's bloom, before new growth begins \*
- ❖ flower after June 1st, and later in summer and fall





Examples of summer flowering shrubs are butterfly bush (*Buddleia* spp.), beautyberry (*Callicarpa* spp.), clematis (*Clematis* sp.) summersweet (*Clethra* spp.), buttonbush (*Cephalanthus occidentalis*), smooth hydrangea (*Hydrangea arborescens*), peegee hydrangea (*Hydrangea paniculata*), oakleaf hydrangea (*Hydrangea quercifolia*), repeat-blooming roses and hybrid tea roses (*Rosa* spp. and hybrids), summer-blooming spirea (*Spiraea* x *bumalda* and *S. japonica*), and Crape Myrtle (*Lagerstroemia indica*).





Any blooming shrub - Hydrangea spp. included

cut out dead or diseased  
branches and dried  
blossoms as needed

- Remove selected  
stems entirely
- encourages new  
growth from base
- improves the  
health and habit



# FOCUS HYDRANGEA

## KNOW WHAT YOU GROW!

Most shrub-form hydrangeas sold in North America fall into one of five types:

- ❖ Bigleaf
- ❖ Oakleaf
- ❖ Mountain
- ❖ Panicle
- ❖ Smooth
- ❖ Some form flower buds on old wood, some on new wood, etc. etc.
- ❖ And now rebloomers . . .

# PRUNING



## Blooms on Old wood

- ❖ Prune only if needed
- ❖ If needed, prune immediately after flowering
- ❖ CAVEAT: because of the long lasting bloom of hydrangeas and because they can finish blooming so late in the season may not have enough time to regrow and form flower buds for next year
- ❖ IN THIS CASE: avoid pruning this type of hydrangea except to remove any completely dead branches in the spring once the plant starts to leaf out



BIGLEAF HYDRANGEA

*Hydrangea macrophylla*

BLOOMS ON  
old wood



Photo: University of Massachusetts

# *H. macrophylla*

- ❖ one of the most popular landscape shrubs
- ❖ French H., Hortensia, Lacecap H., Mophead H., Snowball
- ❖ Best in afternoon shade, tolerates sun if the soil kept consistently moist
- ❖ produces ball-shaped flower clusters ("Mopheads") or flat clusters of small flowers surrounded by a ring of more prominent flowers ("Lacecaps")
- ❖ Blue flowers develop with acidic soil (a pH of 5.0 to 5.5) and pink flowers from alkaline soil pH (6.0 to 6.5)
- ❖ tolerant of both clay and sandy soil
- ❖ has some salt tolerance.
- ❖ blooms during the late spring and summer on the previous year's growth ("old wood")
- ❖ generally pest and disease-free
- ❖ can suffer leaf spot, bacterial wilt and powdery mildew under stress
- ❖ Newer cultivars have been bred to bloom on both new and old wood meaning buds develop on both the current and past season's growth

- ❖ *Hydrangea macrophylla* are cold hardy to Zone 6 and need to be protected when grown in Zone 5
- ❖ Winter weather can damage hydrangea buds due to low temperatures, fluctuating temperatures, and late frost or freeze events.
- ❖ Cold spring temperatures or late freeze events can also result in delayed or damaged spring growth.
- ❖ Cooler summer temperatures can also reduce blooms or delay blooming.
- ❖ Drought can also affect flowering. If a drought is severe it can affect flowers in subsequent years after the drought.



Photo courtesy of Proven Winners - [www.provenwinners.com](http://www.provenwinners.com)

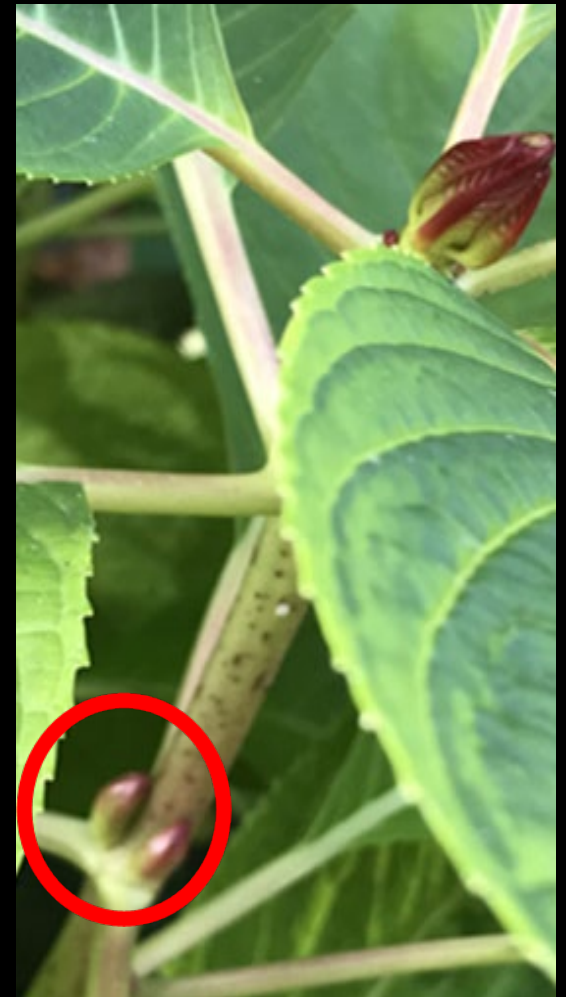
Let's Dance® Blue Jangles®



# *H. macrophylla*



set their flower buds for next summer in the leaf axils of the stems the year before they bloom. In the picture above taken in October, you can see the reddish buds in the axils up the stem.



Oakleaf Hydrangea  
*Hydrangea quercifolia*

Blooms on  
old wood



Photo: Nature Hills.com; Ruby Slippers,

- ❖ Can grow to 8 feet tall
- ❖ 4- to 12-inch oakleaf-shaped leaves; turn red or purple late fall.
- ❖ pyramidal white bloom cluster matures in the late spring and summer; blossoms take on pink or red tones in the fall and turn a tawny brown for winter
- ❖ medium moisture, well-drained organic soils ; summer mulch to retain soil moisture
- ❖ full sun to part shade –needs some sun to bloom
- ❖ should be given a sheltered location and winter protection
- ❖ can lose significant numbers of flower buds or die to the ground in harsh winters (temperatures below -10 degrees F
- ❖ some susceptibility to leaf blight and powdery mildew
- ❖ Aphids and spider mites are occasional visitors.
- ❖ Deer love to eat this plant.





- ❖ usually the first hydrangeas to bloom in early summer.
- ❖ Typically, oakleaf hydrangeas do not rebloom.
- ❖ Oakleaf hydrangeas set their flower buds on old wood

- ❖ you can see the large terminal bud at the top of the stem and several smaller buds in the leaf axils down the stem are already formed for next year



picture taken in October





# Mountain Hydrangea

## Hydrangea serrata

Blooms on  
old wood



Photo: Cathy Dewitt; CC BY 4.0 JC Raulston Arboretum; North Carolina University; Hydrangea Serrata 'Tuff Stuff'



Photo: Garden Crossings; <https://www.gardencrossings.com/>

# *H. serrata*

- ❖ previously listed with lacecap hydrangeas due to flattened flower heads
- ❖ Hardier and more compact than *H. macrophylla*
- ❖ Hardier, smaller, more compact plant with smaller leaves and flowers, then *H. macrophylla*
- ❖ flowers have clusters of small florets in the center with a few larger, showy florets toward the outside of each cluster
- ❖ some cultivars with mophead form
- ❖ Flower color varies from blue to pink relative to soil pH
- ❖ Prune in spring after blooming if needed
- ❖ can be grown in sun or partial shade; but prefers cool growing conditions and will grow best in light to open shade
- ❖ In warmer climates or microclimates, a location protected from hot sun will keep the foliage and flowers from prematurely fading or scorching
- ❖ flower more prolifically with consistent summer watering
- ❖ susceptible to powdery mildew
- ❖ some susceptibility to bud blight, bacterial wilt, and leaf spot and occasionally aphids



**H. serrata**

Flower buds in October

# REBLOOMING HYDRANGEAS

- ❖ produce flowers on both old and new wood
- ❖ if you prune you will sacrifice some flowers
- ❖ To avoid losing buds, Rebloomers should be pruned the same way as old wood bloomers, only need to prune out a few (if any) dead branches in the spring once the plant starts to leaf out
- ❖ Examples: reblooming varieties of bigleaf and mountain hydrangeas.

# PRUNING



## BLOOMS ON NEW WOOD

- ❖ prune as much as one-third off of your hydrangea that blooms on new wood. For example, if your hydrangea is six feet tall, it is safe to prune as much as two feet off the top and sides. We do not recommend pruning more drastically than 30% for two reasons:
  - ❖ Pruning it further removes too much of the sturdy framework that keeps the plant standing upright.
  - ❖ The plant needs to retain enough foliage to make an adequate amount of food to support the root system.
- ❖ When you prune, make your cut just above a set of large, healthy leaves
- ❖ If a branch is broken or dead
- ❖ remove completely
- ❖ If in doubt, don't prune!
- ❖ No hydrangea requires pruning to grow and bloom well.

# Panicle Hydrangea

## *Hydrangea paniculata*



Photo courtesy of Proven Winners. [ProvenWinners.com](http://ProvenWinners.com)

# *H. paniculata*

- ❖ Tough, cold-hardy, easy-care, long-lived
- ❖ large, conical, snowy flowers from midsummer to fall
- ❖ a multi-stemmed deciduous shrub but can grown as a small single-trunk tree
- ❖ air pollution tolerant plant; thrives in urban conditions
- ❖ more drought tolerant than other hydrangeas
- ❖ Blooms from July-September when few other landscape plants are blooming
- ❖ large ovate leaves turn an attractive yellow color in the fall
- ❖ Can be used a hedge or grouped in a woodland garden setting
- ❖ can be severely pruned in late winter or spring
- ❖ more tolerant of sun than other varieties but prefer morning sun and afternoon shade
- ❖ shallow-rooted and will benefit from a 2-3" layer of compost or mulch
- ❖ Aphids and mites occasionally visit but are rarely a problem
- ❖ Some susceptibility to leaf spot, rust, mildew, bud blight, and bacterial wilt
- ❖ susceptible to damage by deer
- ❖ has brittle stems that are easily wind damaged.



# *H. paniculata*

Blooms on new wood

- ❖ Panicle hydrangeas are often the latest to bloom each season beginning in midsummer to late summer depending on which variety you are growing.
- ❖ They bear white to pale green, cone-shaped flowers that take on pink and red tones in the cool fall weather.
- ❖ Their leaves and stems look similar to smooth hydrangeas, but most panicle hydrangeas grow quite a bit larger
- ❖ bloom on new wood, making cold tolerant
- ❖ picture above taken in October that the buds have not yet been formed.





Smooth Hydrangea  
*Hydrangea arborescens*

BLOOMS ON NEW WOOD



Photo: Jim Robbins, Annabelle flower form, CC BY-NC-ND 4.0

# *H. arborescens*

- ❖ Wild hydrangea
- ❖ native to moist or rocky wooded slopes, ravines, streambanks, and bluff bases
- ❖ very cold hardy but will also grow in warmer climates
- ❖ average, medium moisture, well-drained soils
- ❖ intolerant of drought , foliage stressed and declines in dry conditions
- ❖ part shade and will tolerate full sun only if grown with consistent moisture
- ❖ should be pruned back close to the ground in late winter to encourage vigorous growth
- ❖ flower color is not affected by the soil pH
- ❖ susceptible to bud blight, bacterial wilt, leaf spots, mold, rust, and powdery mildew
- ❖ Aphids, mites, scale, and nematodes may also be a problem



taken in October



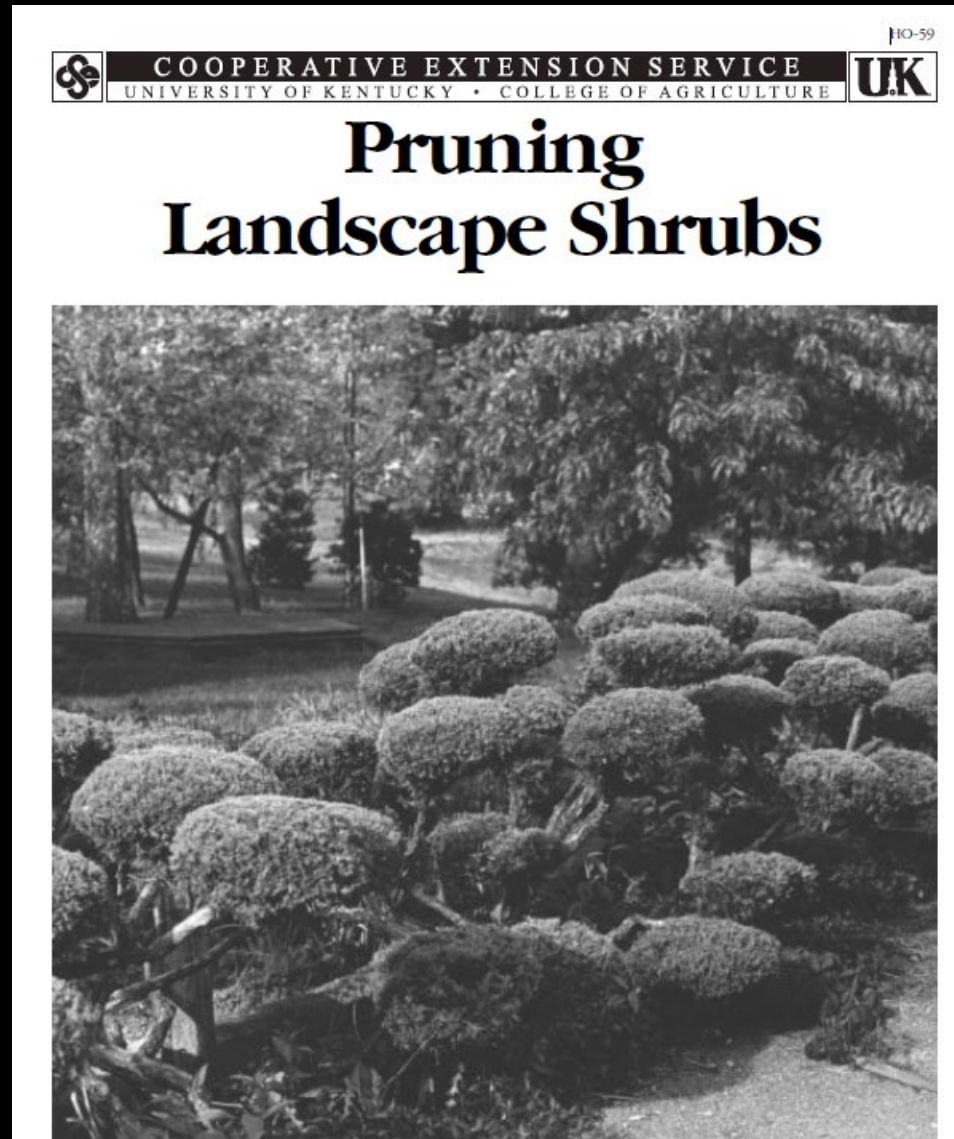
blooming on new wood, current season's growth., makes *Hydrangea arborescens* especially suitable for colder climates

- no chance of the bud being harmed over the winter months because buds don't exist
- But can suffer bud loss if have spring freezes after buds set
- ❖ no buds formed yet in the leaf axils
- ❖ form buds in spring.
- ❖ bloom soon afterwards in early summer
- ❖ Can rebloom, if growing season is long enough
- ❖ reblooming varieties will flower on new growth a second time that same season



# Pruning Techniques

[https://scott.ca.uky.edu/files/ho\\_59\\_uky\\_extension\\_pruning\\_landscape\\_shrubs.pdf](https://scott.ca.uky.edu/files/ho_59_uky_extension_pruning_landscape_shrubs.pdf)





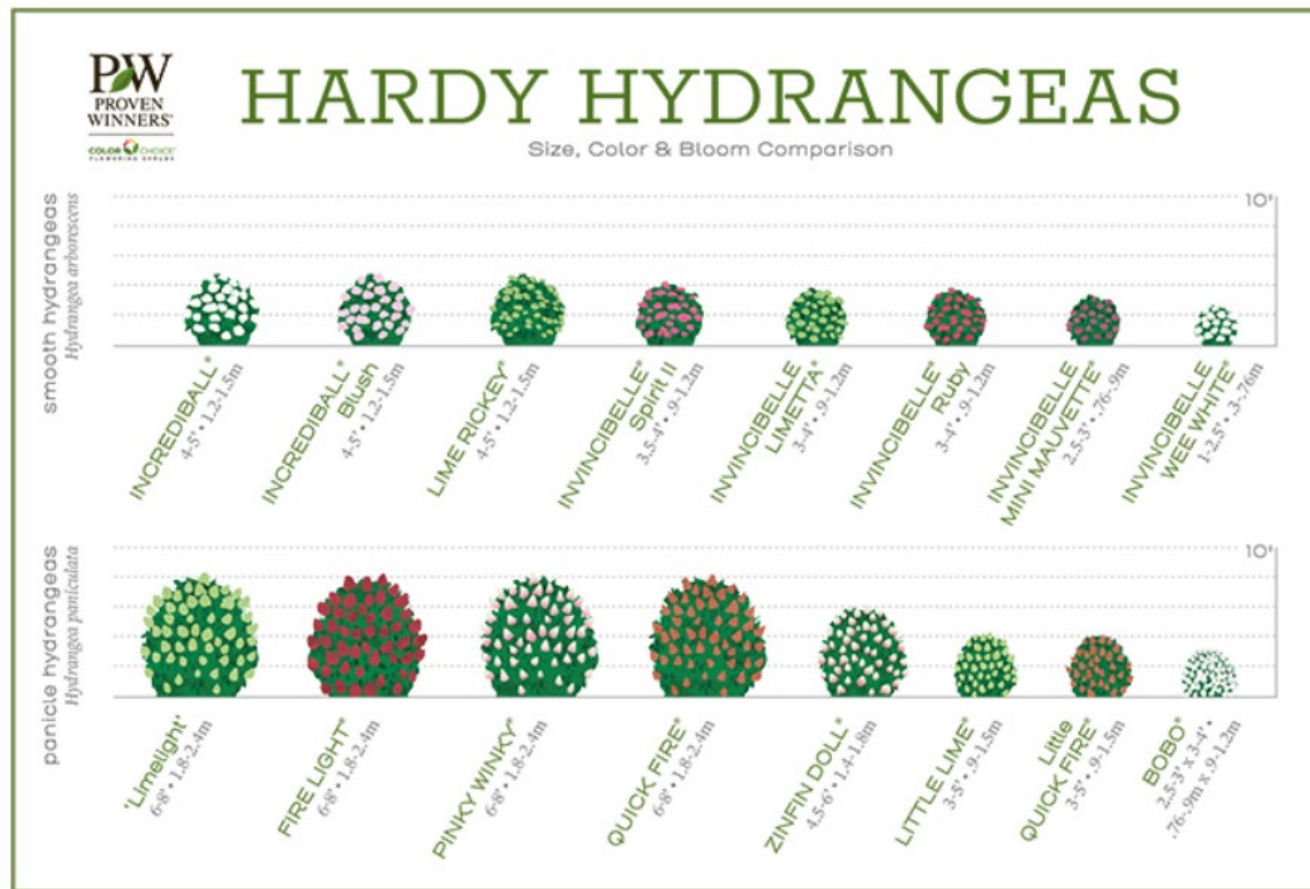
# Right plant, right place

## Don't Make This Mistake When Pruning Your Hydrangeas!

- ❖ Common misconception about hydrangeas is that you can prune them throughout the season to keep them shorter
- ❖ risk cutting off the flower buds
- ❖ Hydrangeas will grow right back to their original size, or even larger because the act of pruning stimulates new growth
- ❖ Instead, transplant your too-large, still-dormant hydrangea to a new spot in early spring and replace it with a variety that naturally stays shorter

<https://www.provenwinners.com/Hydrangea-Chart>

## Hydrangea Comparison Charts



# RESOURCES

- HO 59 – UKY Extension; Pruning Landscape Shrubs;  
[https://scott.ca.uky.edu/files/ho\\_59\\_uky\\_extension\\_pruning\\_landscape\\_shrubs.pdf](https://scott.ca.uky.edu/files/ho_59_uky_extension_pruning_landscape_shrubs.pdf)
- Purdue University <https://www.purdue.edu/hla/sites/yardandgarden/why-plants-fail-to-bloom-2/>
- University of Maryland Extension <https://extension.umd.edu/resource/trees-and-shrubs-failing-flower>
- University of Massachusetts Center for Agriculture, Food, and the Environment
- UMass Extension Landscape, Nursery and Urban Forestry Program; Why Hydrangea macrophylla don't flower  
<https://ag.umass.edu/landscape/fact-sheets/why-hydrangea-macrophylla-dont-flower>
- Gardenia.net – Gardenia: Creating Gardens <https://www.gardenia.net/plant-variety>
- North Carolina State University, Extension Plant Tool Box;  
<https://plants.ces.ncsu.edu/plants>
- University of Missouri – Extension  
<https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pub/pdf/agguides/hort/g06870.pdf>
- Proven Winners; <https://www.provenwinners.com/Hydrangea-Chart>

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 Cooperative  
Extension Service

Where Have All the Flowers  
Gone? Lyrics by Pete Seeger

Where have all the flowers  
gone, long time passing?

Where have all the flowers  
gone, long time ago?

Where have all the flowers  
gone?

Young girls have picked them  
everyone

Oh, when will they ever  
learn?

Oh, when will they ever  
learn?

Where have all the young  
girls gone, long time passing?

Where have all the young  
girls gone, long time ago?

Where have all the young  
girls gone?

Gone for husbands everyone

Oh, when will they ever  
learn?

Oh, when will they ever  
learn?

Where have all the husbands  
gone, long time passing?

Where have all the husbands  
gone, long time ago?

Where have all the husbands  
gone?

Gone for soldiers everyone

Oh, when will they ever  
learn?

Oh, when will they ever  
learn?

Where have all the soldiers  
gone, long time passing?

Where have all the soldiers  
gone, long time ago?

Where have all the soldiers  
gone?

Gone to graveyards,  
everyone

Oh, when will they ever  
learn?

Oh, when will they ever  
learn?

Where have all the  
graveyards gone, long time  
passing?

Where have all the  
graveyards gone, long time  
ago?

Where have all the  
graveyards gone?

Gone to flowers, everyone

Oh, when will they ever  
learn?

Oh, when will they ever  
learn?