

STIHL® pruning Guide

With this handy pocket reference
you'll learn the when, why and how
of productive pruning.

SHARP
ADVICE FOR
THE PRUNING
OF TREES AND
SHRUBS

By
Master Gardener
Joe Sherinski

STIHL®

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Introduction

Watching a professional prune a tree or shrub can cause confusion in a layperson. It makes many ask:

- “Why did he make that cut in that spot?”
- “Why did he switch the pruners from his right to left hand?”
- “When does he choose a pruning saw instead of loppers?”
- “How does he make these decisions so quickly?”

Pruning need not be mysterious. Armed with a little knowledge and the right tools and equipment, you can prune virtually any tree or shrub yourself—with great confidence and speed that comes with practice. The basic knowledge you'll need for most of your pruning jobs is right here in this book. The tools and equipment you'll need are at your local Stihl dealer!



Reasons for Pruning

- To direct growth making a plant look more dense or more open
- To decrease the amount of shade to bed plantings and lawns and the overall weight on the trunk and branches
- To rejuvenate old or neglected shrubs by stimulating the growth of vigorous new shoots
- To keep a plant's size in check
- To increase airflow and sunlight to the innermost parts of a tree
- To remove dead or diseased wood so the integrity of the entire plant is preserved while improving its total aesthetics
- To reduce a plant's transpiration rate. This is valuable in areas of the country that periodically experience drought and high winds
- To aid transplants in surviving due to the loss of some of their root systems
- To increase fruit and flowering quality as well as quantity
- To improve home security
- To screen or frame a view and improve the looks of your home
- To keep our part of the urban forest healthy

Stihl Precision Series™ Hand Tools

Professionals count on tools by Stihl. Any professional landscaper will tell you that it's essential that their tools perform efficiently – and non-professionals should demand that same level of quality. Stihl not only manufactures chainsaws, trimmers, brushcutters, blowers, and hedge trimmers but also offers a full line of rugged hand tools from handsaws, pruners and shears to loppers and pole pruners. Stihl products are known for high quality.

Stihl Precision Series™ Hand Tools are computer designed so the cutting teeth and blades work efficiently to make easy work of any pruning task. Stihl is world renowned for its network of servicing dealers who carry replacement blades and parts to ensure that your tools are up to professional standards. Stihl's hand tools are highly specialized so that there is a tool to perform the job. And finally, there is an incredible amount of attention to detail placed into every feature. In short, Stihl Precision Series™ Hand Tools are exactly what you'd expect from a name like Stihl – rugged dependability and quality.



Stihl Precision Loppers

The blades of Stihl Precision Loppers are made from high strength alloy steel and feature an ultra sharp cutting edge. The blades can be re-sharpened easily or replaced. They also feature aircraft aluminum grade handles that are up to 30% lighter than other brands.

I use these for a wide variety of jobs—from removing canes from a rose bush to taking small limbs off of a damaged tree. They're easy to handle, comfortable to use, and have the leverage I need to cut through up to 2 inches of wood.

PL 10 Precision Lopper

Specially designed for small branches and vines. 1" cutting capacity. 24" aircraft aluminum handles.



PL 30 Precision Lopper

2" cutting capacity.
28" aircraft aluminum handles.



PL 40 Precision Lopper

2" cutting capacity.
32" aircraft aluminum handles.



Stihl Precision Hedge Shears

Specially designed for the skilled craftsperson to sculpt shrubs and highly decorative plantings.

I use these for heading back evergreen hedges like boxwood and privet into tidy, compact shapes. A quality pair of shears is a requisite—and Stihl's attention to design is outstanding. I even like the sound they make when you work with them—it's a sound of crisp, clean precision—it's one of my favorite sounds.

PH 80 Precision Hedge Shear

Hard chrome plated, corrosion resistant, replaceable blades. Aluminum diecast pipe handles. 29.5" overall length.



Stihl has a variety of power tools like pole saws for high limbs, hedge trimmers with articulating heads, and a full line of chain saws for every size job. They also carry a full line of protective apparel like helmets, protective eyewear, muffs, gloves, and chaps that should be worn whenever you're operating a piece of Stihl power equipment or using a Stihl Precision Series™ Hand Tool. Talk to your Stihl dealer about becoming equipped like a professional.

Stihl Precision Pruning Saws

These precision tools use high quality steel and high-tech cutting tooth designs to quickly and quietly prune and cut.

I'm especially fond of using these saws for rejuvenation pruning of shrubs—like getting into tight places to prune old, tough growth from a wisteria, for example. These saws are indispensable out in the field—I always carry one that's right for the job.

PS 10 Precision Pocket Saw

5³/₄" folding blade with blade lock.



PS 30 Precision Pocket Saw

6¹/₂" curved quick release folding blade. Soft grip for comfort.



PS 40 Precision Pruning Saw

7" fixed blade with lightweight handle. Tough plastic sheath with thumb lock and belt loop.



PS 60 Precision Pruning Saw

9¹/₂" fixed blade with nickel plated finish and lightweight handle. Tough plastic sheath with thumb lock and removable belt loop. The chemical nickel finished blade is excellent for cold weather pruning.



PS 70 Precision Arboriculture Saw

The "do it all" tool with a 13" curved chemical nickel finished blade and hardwood handle.



Stihl Precision Pruners

Optimally blended and hardened high carbon tool steel makes Stihl Precision Pruners durable and sharp. The non-slip grips are ergonomically shaped to minimize fatigue.

These are another of my indispensable favorites—find one that fits comfortably in your palm and you'll be surprised at how much easier a day of pruning can be. These were designed for pruning smaller branches, young growth, and of course, for snipping roses and other flowers for that perfect table arrangement.

PP10 Precision Pruner

The value choice with lightweight die-cast body and sap clearance groove. Replaceable blade.



PP 30 Precision Pruner

Designed specifically for smaller hands.



PP 40 Precision Pruner

Designed for larger hands. Increased leverage for more efficient pruning of larger stems.



PP 70 Precision Pruner

STIHL's top-of-the-line hand pruner for larger twigs and stems. Quick release blade lock and replaceable blades.



STIHL Extended Length Pole Pruners

STIHL has a line of pruners powered by a 1.2 hp 2-cycle engine and capable of reaching branches up to 15' from ground level.

These pole pruners are great for trimming and pruning branches and hard to reach places. They come in handy when cutting damaged branches after storms throughout every season.

HT 70 Pole Pruner

5.6' shaft will reach branches up to 10' above the ground. EASYSTART® system with ElastoStart™ handle. Anti-vibration system. 12" bar and chain.



HT 73 Pole Pruner

Available in California only. Adjusts from 7.5' to 11.5' to reach branches up to 15' above the ground. Meets Carb II requirements. Dual stage air filter. 12" bar and chain.



HT 75 STIHL Pro Series Pole Pruner™

Adjusts from 7.5' to 11.5' to reach branches up to 15' above the ground. Side access chain tensioner. 12" bar and chain.



Stihl Precision Series™ Pole Pruners

Lightweight and easy to use for quick pruning tasks in high places.

When you're faced with a job in a high place a good pole pruner can spare the use of a cumbersome and dangerous ladder. And extension pruners can save you from the bending to reach low places or stretching to reach all of the parts of a very deep hedge. For the professional or the home landscaper — these tools fill out your repertoire so very little is beyond your reach.



PP 900 Pole Pruner Set

12' reach (18' reach with optional mid-pole accessory) with a pruning capacity of 1 1/4". Uses optional replacement saw blade.



PS 780 Telescoping Pole Saw

Adjustable pole length reaches up to 15'. No flex when fully extended. Includes Precision Saw Blade with advanced saw tooth design. Bark cutter and hook help keep blade in the cut.



PP 100 Extended Reach Precision Pruner

Ideal for selective pruning of very high or wide shrubs and small trees. 7' reach with a 180 degree revolving arm that provides a precise cutting angle.

A Brief Course in Tree Anatomy

Roots anchor the plant and provide the vital functions of absorbing water and nutrients. Most of a tree's roots are spread out near the surface of the soil (within the top 18 inches) and very broadly (twice as far as the outermost branches—or the drip line).

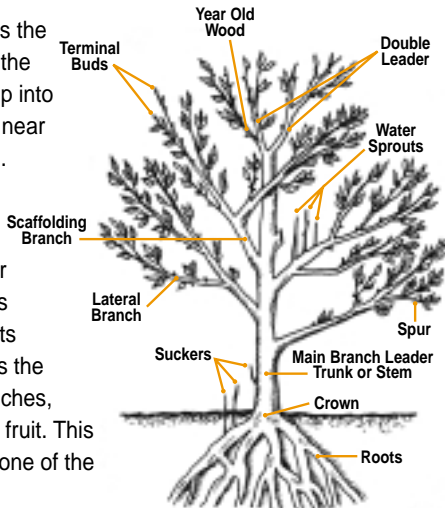
The **crown** is the point where the roots develop into shoots at or near ground level.

The stem or trunk

carries water and nutrients from the roots and supports the leaves, branches, flowers, and fruit. This is the backbone of the tree.

Branches are named relative to their position on the trunk.

The **branch collar** is the point where the branch meets the trunk. The branch collar is actually a part of the trunk, not a part of the branch.



The **leader** is the central branch that is a natural extension of the trunk.

The **scaffolding branches**, or **scaffolds**, are the side branches that extend from the trunk.

Lateral branches, or **laterals**, are those that emanate from the scaffolding branches.

Hangers are lateral branches on fruit trees that typically hang from the tree in response to bearing the load of a previous season's fruit. A hanger is also a term used to denote a broken limb in a tree that is precariously hanging, creating a safety concern for all those underneath.

Spurs are the short branches or twigs that hold the buds, flowers, and fruits.

Suckers are those annoying stems that grow up around the tree's crown, the point where the roots join the trunk. They deprive trees of water and nutrients and should be removed. They seldom bear fruit and block light, reduce airflow, and can catch gusts of wind and cause damage to the trunk of a tree.

Water sprouts are vertical shoots that sprout from adventitious buds in stems above recently pruned branches of a tree. This reaction to a heavy pruning should be cut off, as well.

A Closer Look at Buds: Terminal, Lateral, and Flower

Terminal buds are those at the very end of shoots. Their purpose is to produce outward extending branches.

Lateral buds complement terminal buds and grow on the side shoots to form lateral branches.

Flower buds tend to be more blunt and fat than leaf buds and assume either a terminal or lateral position.

All lateral buds can't flush forth with growth at the same time. Limited resources, physical strength, and maturity limit that ability. Therefore, many buds are in different stages of life on plants.

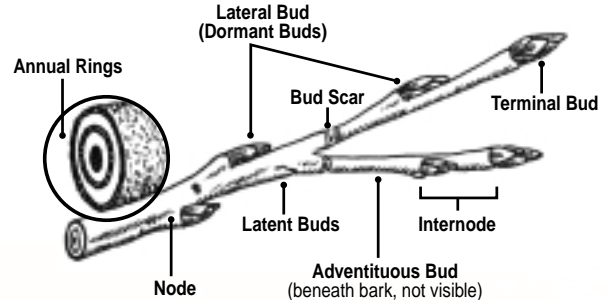
Dormant buds are ones that wait a season until they become a new branch or flower. If they wait for several seasons they are termed as latent buds.

Adventitious buds are emergency buds that lay in reserve. Adventitious buds are not apparent during the inspection of a tree because they reside beneath the surface of the bark.

Nodes are the places where buds meet branches or stems.

Internodes are the spaces in between nodes along the length of a branch.

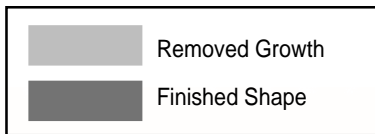
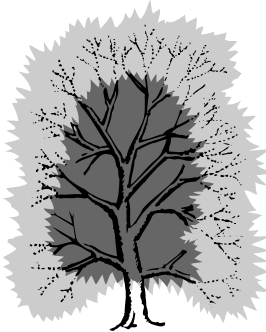
Bud Scar Rings are dark rings several inches apart along the internodes on branches that are over 2 or 3 years old. These indicate how far a tree has grown each season.



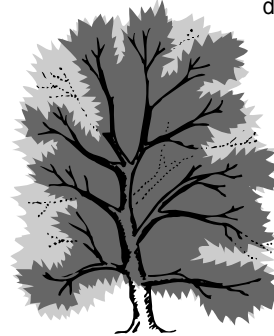
Heading Back and Thinning Out Trees and Shrubs

There are basically two types of pruning: **heading back** and **thinning out**.

HEADING BACK is a uniform trimming of the shape of a plant to make it sturdier and bushier. Heading back is simply cutting around the entire shape of a plant. Generally, this is the shortening of a limb, twig, or branch. Typically it is done to shrubs and hedges more often than trees to create a tidier, more formal look. Heading back makes a tree or shrub shorter and/or narrower. Take shearing a boxwood into a tight hedge, for example. In a sense, mowing your lawn is a form of heading back.



THINNING OUT is the selective cutting away of individual branches to create open spaces within the plant, remove dead limbs or branches, produce symmetry, and train a plant to look more natural. It also aids in better fruit production mentioned earlier. A good example would be trimming a young crab apple tree to have a more graceful appearance instead of a garbled mess of foliage and limbs. Thinning out does not reduce height or width.



Typically, nursery people combine both techniques, heading back and thinning out, in any particular pruning job whether it be a tree or shrub.

Judicious pruning in the early years of a tree's life can lead to a healthy, robust, and strong tree. A well-pruned tree will look good from the street and it will have less risk of becoming split, diseased, spindly or cumbersome.



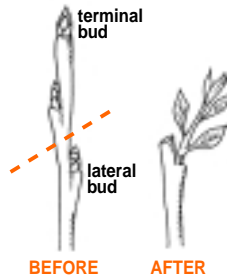
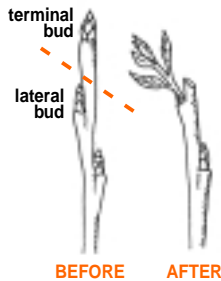
Where to Cut

Every cut made to a tree or shrub must have a purpose. An exact working knowledge of how that plant will respond after the cut is made is critical as well.

For example, a plant can only devote so much energy to growth. Therefore, if you cut off a terminal bud and leave a lateral bud, the lateral bud will inherit the terminal bud's energy, and functionally, become the new terminal bud.

Cut an inch or slightly less just above an outward facing bud so the new growth won't extend toward the center of the trunk and other branches. The goal is for the plant to grow away from the trunk and leader to achieve symmetry.

When heading back a branch, cut it just above a side branch that is 1/3 the diameter of the branch that is being removed. Avoid pruning cuts in the middle of an internode. Such stubs usually die back to the next side branch and prevent the normal sealing of pruning cuts.



When to Prune

The best time to prune a particular plant is dependent on a number of factors—the most important of which is when it blooms. Plants that bloom in early spring such as lilac, forsythia, azalea, dogwood and crab apple “set” or form their flower buds on twigs that grew the previous summer. Fall and winter pruning removes the flower buds. These spring-flowering plants should be pruned in the spring or early summer, after their blooms are spent.

Other plants bloom on the current season's growth. Crape myrtle, potentilla, buddleia, clematis, and roses all may be pruned in the fall or early winter without affecting the next season's floral display.

Some shade trees “bleed” or lose too much sap if they're pruned while dormant. Maples, birches, magnolias, sweet gums, and many nut trees fall into this category. They are best pruned in summer after their leaves have fully expanded.

Late winter is a good time to prune most shade trees. Trees typically seal their wounds during the coming growing season. Plus, it's easier to see what you're doing.

Removal of dead or damaged wood should always be done immediately regardless of the season.

Avoid pruning in late summer. Pruning usually stimulates new growth that is soft, succulent and easily damaged by an early frost.

When to Prune Common Trees, Shrubs & Vines

Azaleas	Late Spring
Ash	Winter
Barberry	Winter
Birch	Summer
Boxwood	Spring
Buddleia	Spring
Cedar	Summer
Chamaecyparis	Spring
Crab Apple	Summer
Crape Myrtle	Spring
Dogwood	Winter
Elm	Summer
Fir	Anytime
Forsythia	Late Spring
Ginkgo	Early Spring
Grape	Winter
Hawthorn	Spring
Hickory	Late Summer
Holly	Anytime
Hydrangea	Spring
Magnolia	Spring
Maple	Late Summer
Mimosa	Early Spring
Mulberry	Winter
Pear	Winter
Pecan	Late Summer
Pine	Summer
Oak	Winter
Spruce	Summer
Sugar Maple	Late Summer
Viburnum	Summer
Walnut	Summer
Willow	Winter
Wisteria	Late Spring
Yew	Summer

When to Prune Flowering Shrubs

As a general rule, prune spring blooming shrubs like azaleas, forsythias, and rhododendrons after they flower in the spring. That summer's new growth after pruning will provide the buds for the following spring's bloom. Summer and fall blooming shrubs should be pruned in the winter or very early spring. Summer lilac and many rose varieties fall into this category of plants that bloom on current season's wood. By knowing on what type of growth they bloom, you'll know when to prune.

Prune 'Outside the Box' with Hedges

Hedges are aggressively headed back by shearing multiple times in a season to produce a compact, well-defined, tight shape. The proper time to prune shrubs like boxwood is in the early spring through to about the middle of the summer. The growth should be well established by the beginning of the fall and the onset of winter.

Hedge shrubs usually have small leaves that meld together to form one dense shape. A problem in many hedges occurs when the growth near the base of the hedge is sparse, browning, or outright dead after several seasons. The key to avoiding that problem is by training the hedge early with aggressive pruning and resisting the temptation to trim the hedge into a box. The desired shape is a trapezoid – wider at the bottom than at the top.

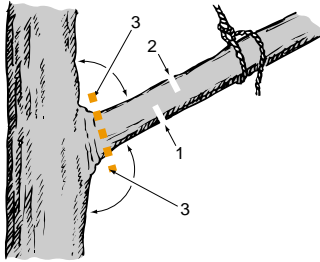
When the hedge is first planted prune off about 1/3 of the tops and the sides. Throughout the growing season prune off approximately 1/2 of the new growth every 6 to 8 weeks until the late summer. Shape the hedge so it is narrower at the top and wider at the bottom so sunlight can reach all areas of the plant. This trapezoidal instead of cubic shape is absolutely necessary in creating a hedge that is dense with foliage that doesn't have holes in the bottom growth.

I make it a rule to finish shearing my hedges by July 4th. I like to give the new growth plenty of time to mature before the first frost of fall.



The Three Cut Method

A common mistake that many people make when cutting down a long, heavy limb is trying to cut the limb with one downward cut as close to the trunk as possible. What happens more times than not is that the branch falls to the ground before the cut is completed and the bark underneath the limb is torn away from the tree. Any time the bark from a tree is torn it can lead to an entry point for pests and disease. Remember that a weak or injured plant, just like a weak or injured animal, is always more susceptible to illness.



Weighty limbs have to be dealt with in a manner that ensures as little harm to the tree as possible. Before removing a large limb cut away all of the lateral branches from the scaffold for two reasons. One, as the limb falls it keeps a wide swath of branches from breaking branches beneath it, and two, and more importantly, it keeps you or people around the tree out of harm's way, as well.

Once the branches are removed, then a cut is made upward from underneath the limb (#1). Don't go through too far, or the saw will be pinched in place by the weight of the limb. Usually the depth of the cut is about halfway. Particularly long, heavy, and flexible branches may need to be supported with a piece of rope to a sturdy branch above them.

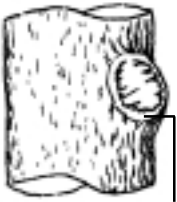
After that cut is made, simply move outward on the branch about an inch or so and saw downward (#2) until it breaks away at that point. What's left is a nub that can be easily sawed as close as possible to the collar (#3) — the point where there is a swelling of growth between the branch and the trunk. If the wound is smooth, it will react favorably by forming callus, which is akin to a scab on a child's scraped knee. This will 'seal' the wound from disease, fungi, and pests. Avoid damage to the collar—it is a part of the trunk and is very important in the sealing process.

This is one of the misconceptions about a tree. A tree does not heal like a person. Trees seal a wound by multiple layers of tissue that fold over a wound—very slowly in comparison.

“Sealing” vs. “Healing”

Plants and people differ in their response to tissue damage. People and animals “heal”—that is we grow new cells to replace damaged ones. Plants do not “heal”

SLOW CALLUSING



Callus Ring

but rather “seal” their wounds. New tissue called callus forms that gradually covers a wound. Improper pruning cuts can delay or prevent the “sealing” process that in turn can allow wood decaying organisms to enter and weaken the plant.

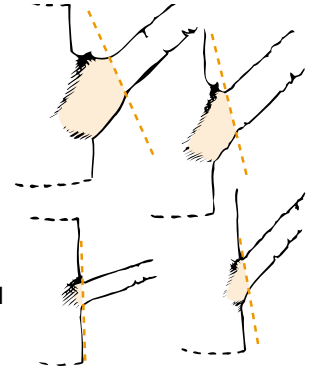
Pruning sealers for painting or spraying on fresh cuts are employed to provide a synthetic seal. Sharp tools leave smooth wounds that will naturally seal with callus. This is a strong encouragement to keep your STIHL hand tools in sharp cutting order. Dull tools or, worse yet, the wrong tools, can leave cuts that are ragged and rough. This is always injurious to the plant. **First and foremost, do no harm to your trees and shrubs and keep your cuts smooth and clean like a professional.**



Avoid Flush Cuts

There is a tendency to want to cut a branch flush with the trunk, presumably so that in 5 or 10 years the wound and the fact that a branch was once there won't be noticeable. Trees don't heal like humans with scabs. Remember, they seal. Tissues build up around a wound from the outside as they curl over and slowly seal. If a flush cut is made, a much greater surface area will be exposed thus necessitating a much longer time to seal.

Furthermore, the collar is part of the trunk, not a part of the limb. **Your goal is to remove the limb without damaging the trunk. Position a smooth cut at the very end of the branch collar.**

If one cuts two different trees right down the middle and compares flush and collar cuts the differences in growth responses are striking.



 Branch Collar
 Indicates Appropriate Cut

If the branch collar is damaged the tree is much more likely to suffer infection. Any time a tree responds to illness from pruning it's a detrimental consequence. A slow sealing, smaller callus ring indicates that the tree is properly coping with potential infection.

The Tree Defines the Course of Action

Trees take on many different shapes that define the course of action when pruning. After an inspection of a plant — its tendencies and habits will mandate the style of pruning.



Columnar



Open Head Irregular



Weeping



Broad Cone



Globe



Fastigate



Vase



Horizontal Spreading

Columnar: Sweet Gum, Pyramidal Arborvitae

Open Head Irregular: Hackberry, White Oak

Weeping: Weeping Mulberry, Weeping Willow

Broad Cone: Pin Oak, Beech

Globe: Ash, Sugar Maple

Fastigate: Italian Cypress, Lombardy Poplar

Vase: American Elm, Crape Myrtle

Horizontal Spreading: Crab Apple, Dogwood

When to Seek the Services of a Professional

A professional arborist should prune a really large tree. A trained arborist knows how to prune trees to keep them healthy, the safest ways to accomplish those larger tasks, and has resources both in tools and expertise that the regular individual doesn't possess. Look for this symbol on the business card or advertisement of a tree service company. It's the symbol of the International Society of Arboriculture Certified Arborist Program. It signifies that the individual has a base of knowledge in the art and science of tree care through at least three years experience. They've also passed a comprehensive examination developed by some of the nation's leading experts on tree care. Certified arborists must also continue their education to maintain their certification. Therefore, they should be up-to-date on the latest techniques in arboriculture. Find this seal and you're probably looking in the right place for an arborist who can handle your large-scale job.



About Joe Sherinski

Master Gardener Joe Sherinski is the host of GardenPower, a nationally syndicated television news vignette and radio show. Sherinski is also featured within Michael Holigan's "Your New House" on Discovery Channel. He holds a degree in horticulture from Colorado State University, is actively involved in the Master Gardener program in the state in which he lives, and gives gardening presentations to home show audiences across the country. For more information about GardenPower with Joe Sherinski, to sign up for Joe's monthly electronic newsletter and to read gardening tips, visit www.gardenpower.com.

