Pruning Trees and Shrubs

By Sharon Treaster
Extension OCVN
Chadwick Arboretum
Pruning tools - Knowledge

- Plant Knowledge
  - What plant is it?
  - How does it grow?
  - How big will it get?
  - What is it’s function
    - In the landscape?
  
www.(search)
Pruning tools – Fingers- Hand

- Pinching to;
  - Control growth
  - Increase flower number.
  - Remove pests
  - Early sucker growth

Children, trunk rubbing
Pruning tools – Hand Shears

- Bypass blade
- \( \frac{1}{2} \) inch diameter limit.
- Sharp
- Clean
Pruning tools – Hedge Shears

- Soft growth
- Uniform size
- Special uses
- Sharp
- Clean
Pruning tools - Loppers

Bypass blade
- 1 ½ inch diameter limit.
- Imprecise
- Sharp
- Clean
Pruning tools – Pruning Saw

- Curved blade.
- Cuts in both direction.
- Removes wood.
- Sharp
- Clean
Reducing Pruning Requirements

- Proper plant selection
- Right plant in the right place
  - Mature size of plant
  - Natural form of plant
  - Excurrent growth (Most conifers when young)
  - Decurrent (maples, vase shaped & shrub forms)
Reducing Pruning Requirements

- Reality – Inherit Mature Plants

- Set up a pruning plan (process, not event)
- Prune early in the life of the plant
  - Or younger wood.
- Prune cyclically, resources determine cycle
Objective of pruning.

- Create and maintain strong structure.
  - Safety & disease issues.
- Guiding the plant’s shape.
  - Growth response.
  - Reshaping existing structure
- Promoting a healthy plant.
- Removing the smallest amount of plant tissue necessary.
Directing plant growth, pruning shrubs.

- Follow natural habit of growth.
- Remove dead, diseased, broken branches.
- Thin out rather than shearing back.
  - Thinning, pruning branch at the point of attachment to another branch.
- Prune back to a bud.
Shrubs

Natural form

Topiary, formal hedges
Desired ornamental effect.

- **Flowering & fruit displays = timing pruning.**

- Prune spring flowering plants after flowering
  - flower buds are on old wood.

- Prune summer flowering plants in spring.
  - Flower buds form on new wood.

- Flower - fruit trade off.
Desired Ornamental effect

Tatarian Dogwood
Selective pruning (to base)

Golden Leaf Willow
Rejuvenation

Winterberry
Selective to Bud
Directing plant growth; proper pruning cut.

Protecting new growth.

- A) Stub left.
- B) Too Steep, exposed wood
- C) Too close to bud.
- D) Acceptable

Dept of Agriculture, Fisheries & Aquaculture, Canada
Directing plant growth

- New growth will occur in the direction a bud is facing.
- In general, prune to buds facing outwards from the plant center.
Directing plant growth

- New growth will continue in the direction a branch is facing.
- Select branch tips facing outwards from the plant center.
- Maintain interior growth.
Plant Structure – Trees

- Main leader
- Small ornamental
- Shade Trees
- 40 foot suggestion
Plant structure – Branch arrangement

Vertical branch spacing results in stronger structure.

Between branches and branch location around trunk.
Angle of branch attachment

Wider angles between trunk and branches are stronger.

Promotes internal separation between trunk and branch
Subordinate relationship

- Branch diameters $\frac{1}{2}$ or less than the primary leader result in stronger structure of large shade trees.

- All branches on the first 10 of large shade trees are temporary.
Angle of branch attachment

Limited vertical spacing and narrow angle of attachment results in weak structure.
Weak structure – included bark

- Closed and open wounds from included bark.
Codominate stems with included bark

Limited branch defense zone in codominate stems of equal size.
Structure in young plants

Bat wing maple!

Variable plant structure can be corrected in a young plant with selective pruning over time.
Redirecting very young growth.

8 foot red maple

Dominate lateral branches

Dominate leader
Proper pruning cut – hand saw

Three step process.
1) Protect bark on trunk.
2) Remove weight (limb).
3) Remove branch just above branch collar.
4) Leave wound exposed
Reduction pruning cut

Restore dominance to leader

Reduction cuts shortens the length of a stem by pruning back to a smaller limb.

Removing younger growth.
Slows lateral growth

http://hort.ifas.ufl.edu/woody/powerpoints.shtml/
Redirected growth, reduction cut

Intent, slow the growth of lateral branches

Prevent sucker at pruning cut

Support the growth of the main leader.
Improving plant structure

A leader, wider angles between trunk and branches.

Notice dip in lateral branch.

Early pruning to control growth of leader and laterals.

Eventually remove excess limbs (first 10 feet on a shade tree) with **thinning cut**.
Proper pruning cut (Thinning)

Three step process.
1) Protect bark on trunk.
2) Remove weight (limb).
3) Remove branch just above branch collar.
4) Leave wound exposed

USDA Forest Service Image
Stub cut

- Significant stem tissue remaining.
- Stub decays
- Wound wood grows along stub.
Closing wound of a proper cut
Results of proper pruning cut.

- Wound tissue grows across wound area.

- Wound exposed for shortest time.

- Smaller wounds close quicker
Heading pruning cut

- Horizontal cut between internodes
- Hedging a shrub with many buds
  - Yew, privet, spirea, cotoneaster
- Coppice heading cuts on shrubs.
  Stems in 2008

An original ‘trunk’ in 2006
CODIT-
Compartmentalize Of Decay In Trees

Closing off wounds in three directions.

- Vertically (plugs up vascular system associated with wound) slowest response.
- Outer edge or circumference of most recent cells
- Diagonally (pie shaped segment) strongest response.
Compartmentalization of decay

- Species dependent.
- 3 to 4 dimensional.
- Vertical, radial, circular & time.
Compartimentalization of decay

- Chemical Barrier zone
  - Energy Demanding!

- Vertical – cone shape
- Radial-pie shape
- Through time
Summary

- Begin with proper plant selection.
- Deal with damage, disease and safety first.
- Follow natural habit of growth.
Summary continued,

- Practice proper pruning cuts with appropriate tools.

- Promote strong structure.

- Remove the smallest amount of plant tissue necessary, pruning plan not a pruning event.
References, more in handout


- [http://hort.ufl.edu/woody/](http://hort.ufl.edu/woody/)

- Manual of Woody Landscape Plants, Michael Dirr
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