



<https://watersmart.tamu.edu/edible-landscape/>

# Designing the Edible Landscape

Kirsten Conrad Extension Agent

Virginia Cooperative Extension

Arlington County Virginia

Lascaux <http://phys.org/news/>



Capability Brown 1716-1783

*The Tomb of Nebamun, Egypt, 1350 BC*



Versailles- Louis XIII 1630





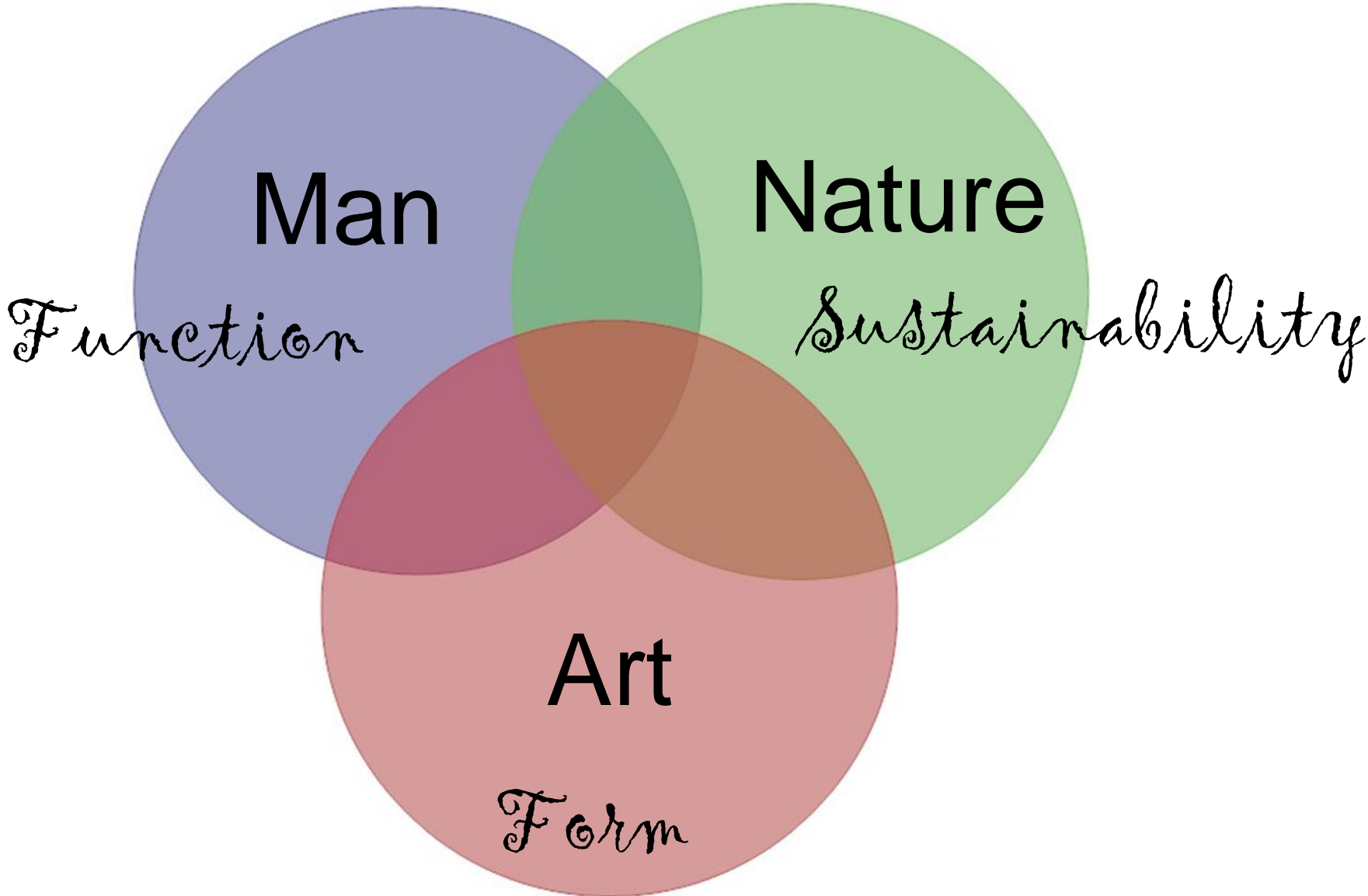
Blenheim Palace





Typical Northern Virginia home landscape?

# Landscape Design?



# Beyond “Sustainability”

**Permaculture is defined as consciously designed landscapes which mimic the patterns and relationships found in nature...**

David Holmgren Pathways to Sustainability 2004

**“Permaculture is about designing sustainable human settlements through ecology and design. It is a philosophy and an approach to land use which weaves together microclimates, annual and perennial plants, animals, soils, water management and human needs into intricately connected productive communities.”**

Bill Mollison and Reny Mia Slay from their book, “Introduction to Permaculture”

**Permaculture is revolution disguised as organic gardening”**

Graham Burnett Permaculture - A Beginners Guide



**Before**

Is this  
sustainability?

**After**





# Elements of Traditional Landscape Design

- Focal Points
- Mass Plantings
- Line
- Repetition
- Color
- Outdoor 'rooms'
  - Floors
  - Walls
  - Ceilings



**NATIVES!**

# Floors in the Garden Room



1. Ginger
2. Green and Gold
3. Wild Strawberry
4. Lyreleaf Sage and Sedges





Strawberry

**Lettuce  
Thyme  
Mint  
Pansies  
Violets?**



**Groundcovers**

# Ornamental or Edible borders?



# Borders, Groundcovers



<https://www.hgtv.com/outdoors/outdoor-remodel/designing-an-edible-landscape-pictures>

NATIVES!

# Walls in the Garden Room



From top left  
clockwise:  
Viburnum.  
nudum

Fothergilla

Chokeberry



Inkberry

Winterberry

# Walls in the Garden Room



Espaliered fruit trees

Free standing tall veges (corn, okra, etc)

Wider herbaceous- asparagus, fennel, Dill, cardoon

Trellised vines- tomatos, beans, squashes



# Ceilings in the Garden Room

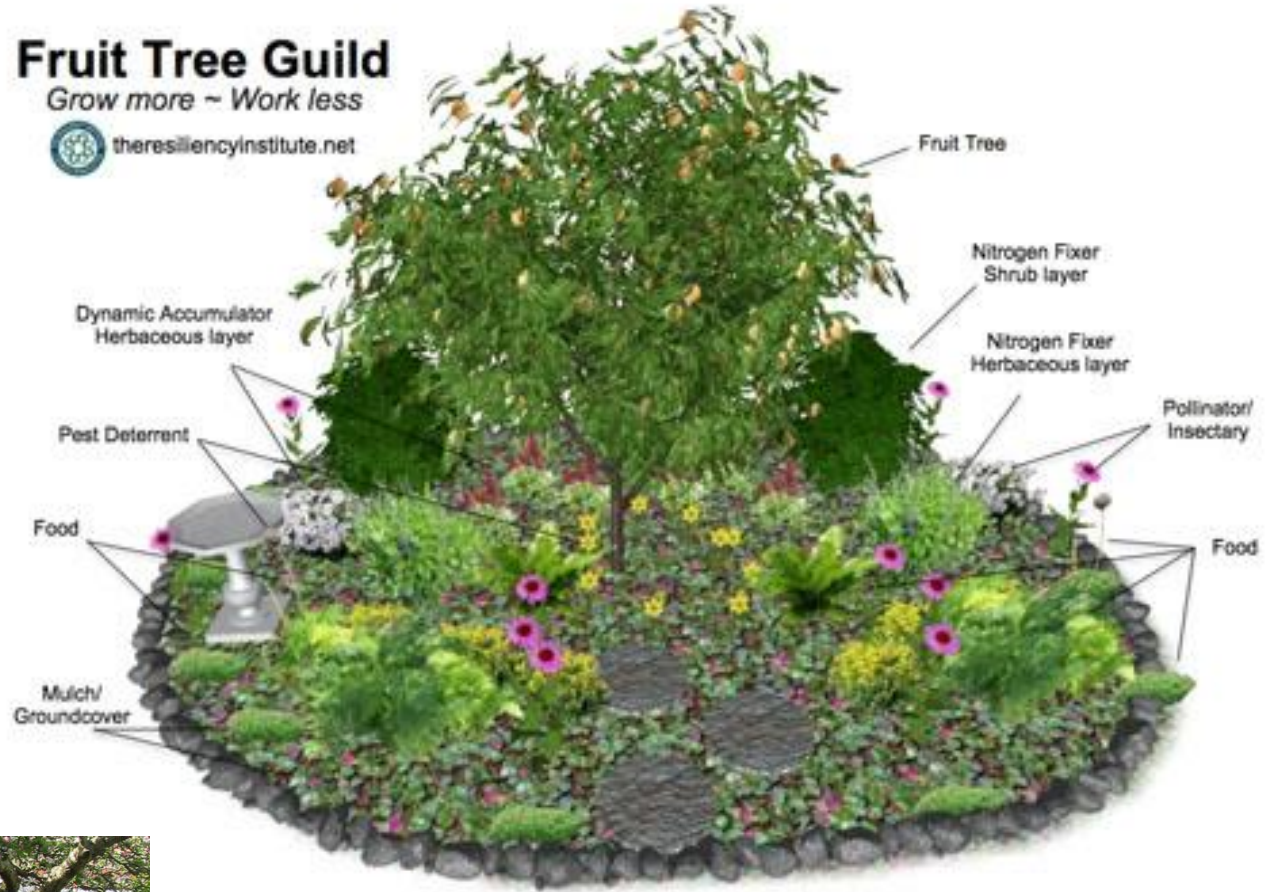


Pergolas/arches for vining plants (grapes, Malabar spinach, kiwi, beans), fruiting trees over greens!



# Ceilings in the Garden Room

**Fruit Tree Guild**  
Grow more ~ Work less  
 [theresiliencyinstitute.net](http://theresiliencyinstitute.net)



Diversity works  
Shade is okay for leafy greens and some root crops, beans, and forest edibles

# The 'bones' of a garden



AllAboutMyGarden.com





What are the bones of this garden?

**Where do I start?**

# Native

## Sustainable Landscape Design

Evergreen shrub, 4" X 4',  
mounded, coarse texture,  
winter interest

**Inkberry**

Deciduous shrub, 6' X 6',  
upright, medium texture,  
fall interest

**Sweetshrub**

**Pinxterbloom  
Azaleas**

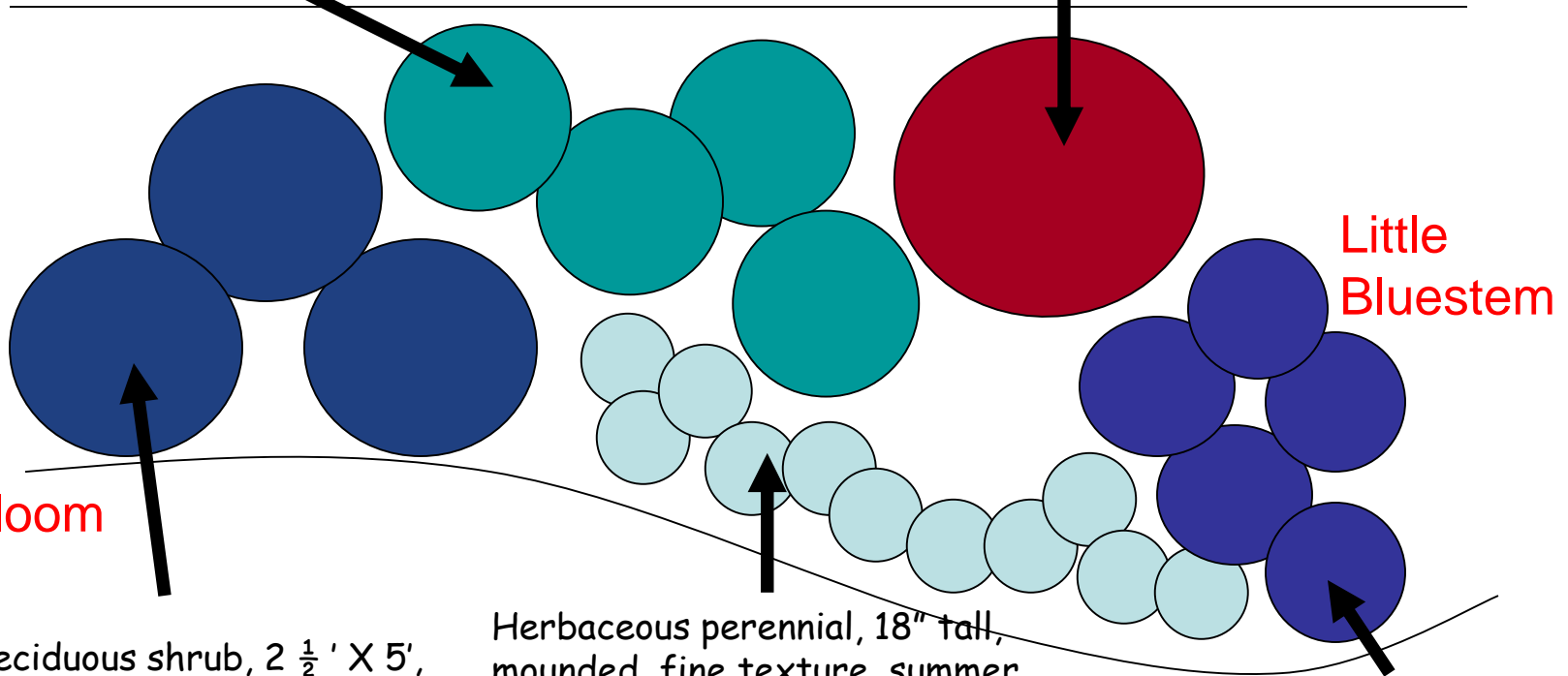
Deciduous shrub, 2 ½' X 5',  
creeping, medium texture,  
spring interest

Herbaceous perennial, 18" tall,  
mounded, fine texture, summer  
interest (red flowers)

**Cardinal Flower**

**Little  
Bluestem**

Ornamental grass, 30" tall,  
upright, medium texture,  
fall interest

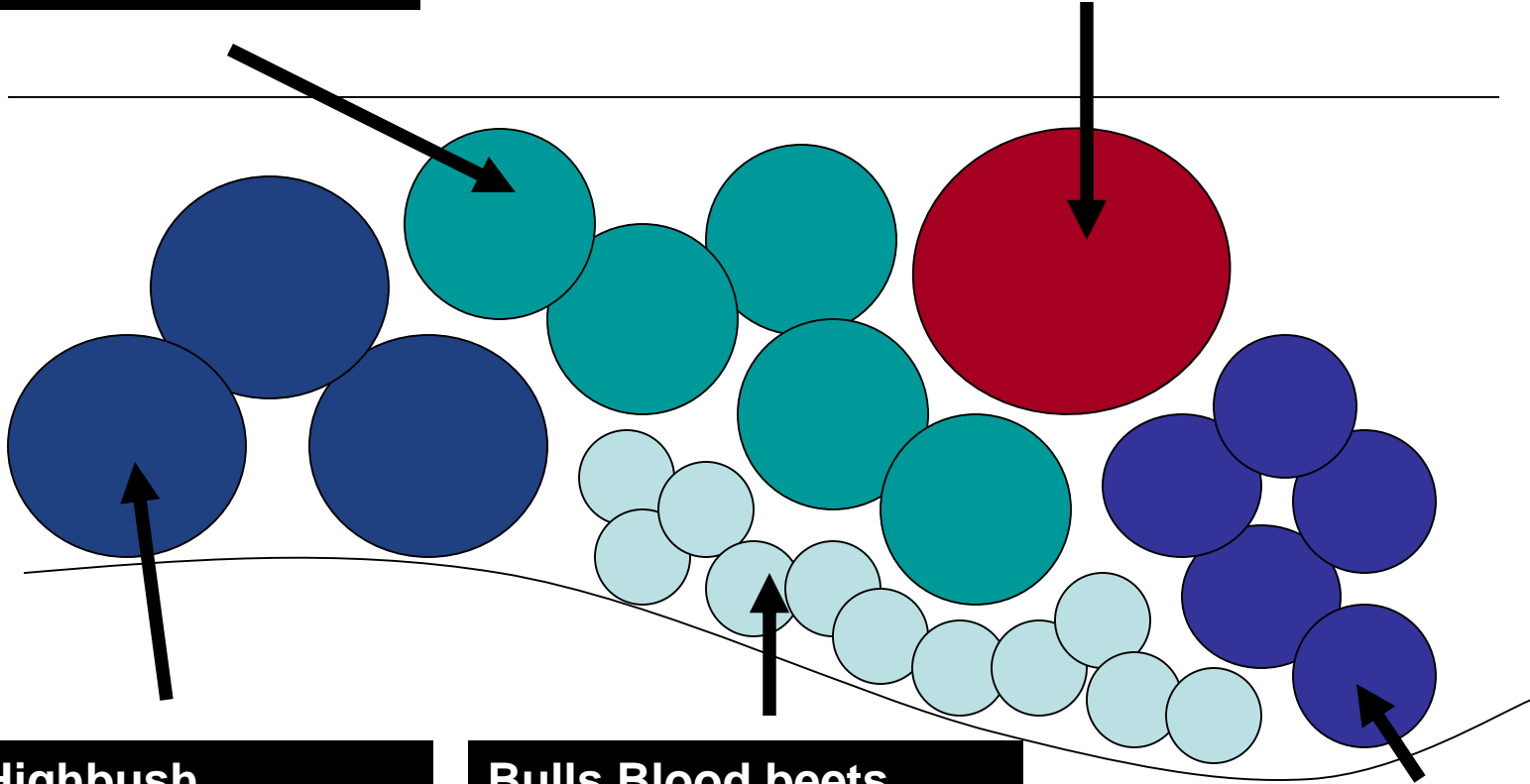


# Edible!

## Sustainable Landscape Design

Rosemary or  
Chokeberry

Pawpaw



Highbush  
Blueberries

Bulls Blood beets  
and curly parsley

Asparagus  
Or Fennel

# Consider Plant Combinations

- Ornamentals with edibles....
- Like with like
  - Moisture, Light, Drainage, pH
- Complimentary or Contrasting?
  - Texture, Color, Form
- For biological benefits
  - To repel or attract
  - To achieve symbiosis
  - For pollination





Boxwood, rhubarb, asparagus and poppies?





Lacinato Kale with fountain grass (rt) and Sambucus nigra, 'Aurea' (lft.)

# Artichokes and Riverbirch! ...



# Fill it out!



# Color!

**'Bull's Blood' Beets**

**'Ruby Red' Chard**



**Photo/Illustration: Michelle Gervais**

**Smoky Fennel**

# Recommended Vegetables for VA

- Beans, Peas      Low Walls?
- Beets      Floors?
- Broccoli      Groundcover?
- Cabbage
- Carrot      Edging?
- Cauliflower
- Radishes
- Swiss Chard      Focal Point?
- Eggplant      Color?
- Green Onion
- Leafy Greens such as Kale, Collards, Chard      Texture?
- Salad Greens: Leaf Lettuce, Mesclun, Radicchio Arugula      Mass plantings
- Onion      Shape?
- Pepper      Form?
- Pumpkin, Cucumber
- Okra
- Tomato      Walls?
- Spinach      Trellis?
- Summer squash
- Turnip      Edging?



As ornamentals???

## Cool Season

Cilantro -a

Dill -a

Parsley -b

## Warm Season

Basil -a

Lemongrass -a

Oregano -p

Sage -p

Chives -p

Rosemary -p

Thyme -p

Mints -p



Herb garden with raised beds.

*(Photo by Shawn Appling)*

A-annual

B- biennial

P- Perennial

# Herbs

# Edible Perennial shrubs

Chokeberry *Aronia arbutifolia*, *A. melanocarpa*

Beach Plum *Prunus maritima*

Blueberries *Vaccinium sp.*

Honeyberry *Lonicera carulea* – *Maybe!*

Red/Black Currant and Gooseberry *Ribes sp.*

Roses- *Rosa rugosa*.

Quince *Chaenomeles speciosa*

Goji Berry *Lycium barbarum*

Che *Cudrania tricuspidate*

Lacebark Pine *Pinus parvifolia*

Tea Camellia *Camellia sinensis*



# Chokeberry

## *Aronia sp.*



*A. arbutifolia* Red Chokeberry



*A. melanocarpa* Black Chokeberry





Beach Plum  
*Prunus maritima*

- Salt, drought tolerant
- Select cultivars
- Rose family
- Maine to Virginia







*Photo/Illustration: William Cullina*

# Highbush Blueberry

Lowbush *V. angustifolium*

Northern highbush *V. corymbosum*

Rabbit eye *V. ashei*

Southern highbush for 7a+

# Honeyberry *Lonicera caerulea*



Use two varieties- here Polar Night/Jewel  
Photo: [greenvaluenursery.com](http://greenvaluenursery.com) ‘  
White flowers on pink stems



'Ben Lomond' *Ribes nigrum*  
<http://www.berrycrops.net/>



White Imperial Cornell U.



*Ribes odoratum*  
**Buffalo currant**



# Currants

*Ribes sp*

Best with 2 cv  
Shallow rooted  
5.5-7.0 pH

# Gooseberries

*Ribes uva-crispa*

*R. hirtellum*



Gooseberry 'Jeanne'



# Flowering Quince

Photo/Illustration: Image Botanica



*Chaenomeles* sp. **Flowering quince**



# Evergreen Shrubs for the Edible Garden

- Prickly Pear *Opuntia tuna*
- Bay Laurel *Laurus nobilis*
- Loquat *Eriobotrya japonica*
- Tea Camellia *Camellia sinensis*
- Pineapple Guava *Feijoa selowiana*
- Strawberry Tree *Arbutus unedo*
- Lingonberry *Vaccinium vitis-idaea*
- Box Huckleberry *Gaylussacia brachycera*



# Small Trees for Edible Gardens

- Cherries
- Apricot
- Peach
- Fig
- Cornelian Cherry
- Serviceberry- *Amelanchier canadensis*
- Pawpaw-*Asimina triloba*
- Native Flowering Plum- *Prunus*
- Persimmon-
- Elderberry *Sambucus canadensis*



# Serviceberry *Amelanchier* sp.



Multi trunk to 18'  
*A. alnifolia*  
*A. Canadensis*  
“4 season” tree



# Pawpaw *Asimina triloba*



Small understory tree  
to 20' x 20'  
Protogynous, beetle/fly  
pollinated, self incompatible  
flowers- female parts first,  
male second!



# American Plum *Prunus americana*

High wildlife value  
Fresh/preserves  
Thorny; to 10' x 10'  
Thicket forming



American Plum

# Persimmon

## *Diospyros virginiana*



© 2002 Floridata.com

Meader – self fruitful

Dioecious, but-  
60 vs 90  
chromosomes



'Hao River' <http://www.justfruitsandexotics.com>



# Elderberry

## *Sambucus canadensis*



- Jams, jellies, pies, wines
- Shallow rooted; grow in hedges
- Terminal fruit clusters on laterals of 2 yr old wood.
- Canes 4-15', clumps



# Elderberry harvest at U.of Missouri





Brown Turkey Fig

**Landscape Interest**  
**Can be killed by cold**  
**Brown Turkey, Celeste,**  
**Chicago Hardy**  
**TEXTURE!**



# Medium Trees

Crab Apple *Malus sp.*

Alleghany Chinquapin *Castanea pumila*

Mulberries *Morus rubra* *Morus alba*

Filbert/Hazlenut *Corylus cornuta*, *C. americana*

Sweet/Sour Cherries *Prunus sp.*

European or Asian Pear *P. communis*, *P. pyrifolia*

Apricots, Manchurian Bush Apricot *Prunus sp.*

Trifoliolate Orange *Poncirus trifoliata*

Jujube *Zizyphus jujuba*

Medlar *Mespilus germanicus*

# Crabapples

*Malus sp.*

- *M. coronaria*
- *M. angustifolia*
- *M. ioensis*
- Small tree to 25 x 25
- Jellies, juices, high in Vit C and pectin





# Alleghany Chinkapin

## *Castanea pumila*

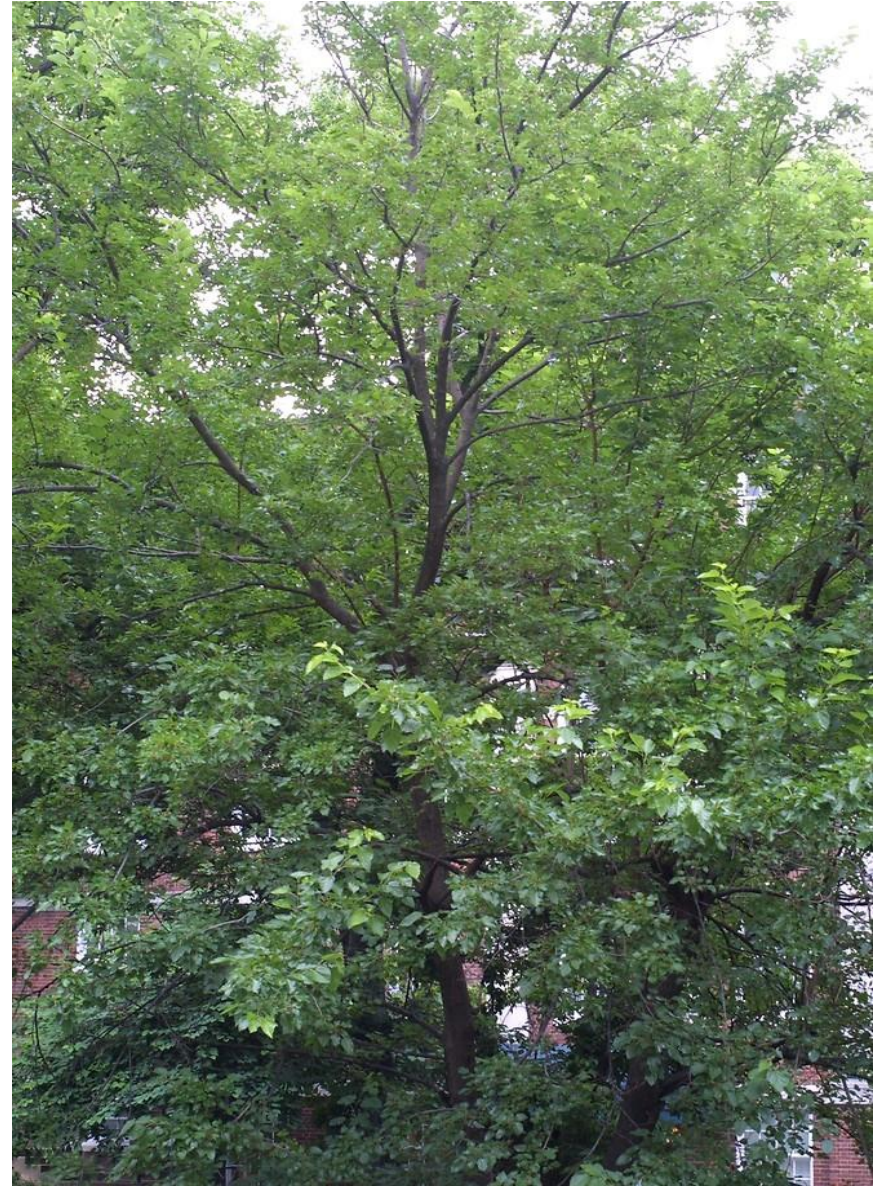


- 10-15' or single 20-50'
- 1 1/2" nut

[http://en.wikipedia.org/wiki/Castanea\\_pumila](http://en.wikipedia.org/wiki/Castanea_pumila)

# Red Mulberry *Morus rubra*

- 40 x 35'
- Rough leaf texture
- Dieocious-usually.



# Filbert *Corylus americana*

- Small multistemmed trees/shrubs to 4-8'
- Acidic well drained rich moist soils
- Monoecious- male and female/pollination can occur on same plant



# Vines and Brambles

- Passion Flower *Passiflora incarnata*
- Fox Grape *Vitis lambrusca*
- Blackberry *Rubus sp.*
- Red Raspberry *R. strigosa*
- Black Raspberry *R. occidentalis*
- Wineberry *R. phoenicolasius* \*
- Hardy Kiwi *Actinidia arguta*



# Passion Flower

*Passiflora  
incarnata*

6-8' x 3-6';  
Full sun to part shade, no pests,  
Flowers attract butterflies  
Edible fruit, tolerates drought.



# Fox Grape *Vitis labrusca*



Spotted Lanternfly Life Stages



©2008 Will Cook

# Blackberry *Rubus sp.*

- Biennial, 3-5' floracanes in thickets from stolons. Less thorny at higher elevations.



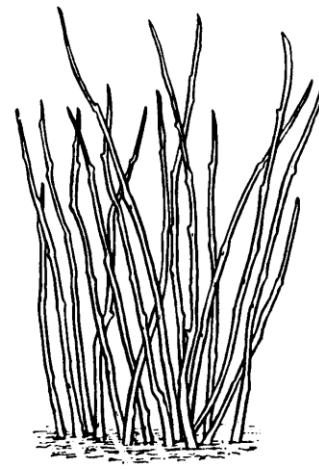
# Raspberry

*Rubus sp.*



*R. strigosus*  
**American  
red raspberry**

*R. occidentalis*  
**Native Black Raspberry**



*R. idaeus*- Red  
***R. leucodermis*- Black**







'Ken's Red'

'Issai' Stark Bros.

*Actinidia arguta*

Hardy Kiwi

100 lbs/plant

*A. kolomikta*

To -25 deg.

Dormant season

pruning

Regular watering

½ day sun

Dioecious

# Large Trees

- Walnut *Juglans nigra*
- Butternut *Juglans cinerea*
- Hickory *Carya ovata*, *Carya laciniosa*
- Pecan *Carya illinoensis*
- Beech *Fagus grandifolia*
- Sugar Maple *Acer saccharum*
- Oak *Quercus macrocarpa*, *Q. bicolor*



Pecan



Sugar Maple (top)  
American Beech



Photos by Victor von Salza



<http://treenuts.ca/butternutrescue.html>



Photos: <https://dendro.cnre.vt.edu/dendrology/>

# Site Selection: Light Gardening with Trees & Shrubs

## Shade Tolerant 'understory'

Persimmon

Ginseng

Raspberry

Gooseberry

Lemon thyme

Blackberries

Blueberry

Goldenseal

Chestnut

Violet

Serviceberry

Mushrooms

Currents

Tea camellia

Josta Berry

Kiwi

# Site Selection: Light

Low light needs vs High light needs

Tolerates 4-6 hrs

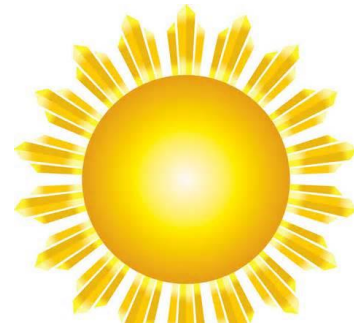
- Spinach
- Kale
- Peas
- Arugula
- Endive
- Radicchio
- Broccoli
- Kohlrabi
- Mustard

Thrives on 6-8 hrs

- Potatoes
- Beets
- Carrots
- Turnips
- Lettuce
- Chard
- Collards
- Beans
- Cabbage

Needs 8+ hours

- Tomatoes
- Pepper
- Eggplant
- Squash
- Corn
- Cucumbers
- Melons



# Grains/Grasses for Urban Gardens



Indian Corn  
and  
Sweet corn



sunflower



Amaranth



sorghum

# Edible Flowers



- **Calendula**
- **Anise hyssop**
- **Chamomile**
- **Borage**
- **Lavender**
- **Bachelor buttons**
- **Tulips**
- **Daylilies**
- **Bee balm**
- **Redbud**
- **Lilacs**
- **Elderberries**
- **Lemon/orange blossoms**
- **Broccoli**
- **Brussels sprouts**
- **Radish**
- **Arugula**
- **Cilantro**
- **Chives**
- **Onions**
- **Squash blossoms**
- **Violets**
- **Dandelions**
- **Nasturtiums**
- **Marigolds**
- **Roses**

# Herbaceous Perennial Crops

Lovage

Watercress

Egyptian Onions

Good King Henry

Ground nut

Jerusalem Sunchoke

Ramps

Ostrich Fern

Shiitake, Oyster, Reiki and others

Sorrel

Horseradish

Scarlet Runner Beans

Strawberries

Kiwi and Grapes

Asparagus

Rhubarb

Amaranth

Herbs

Kale\*\*

Garlic\*\*

Radicchio\*\*

Horseradish

Globe Artichokes

Goji and Gooseberries

\*\* Usually grown as annual

# Food for a Warmer Planet



## **Roots:**

Cassava\*

Taro

Yams

Sweet Potatos

Malanga (cocoyam)\*

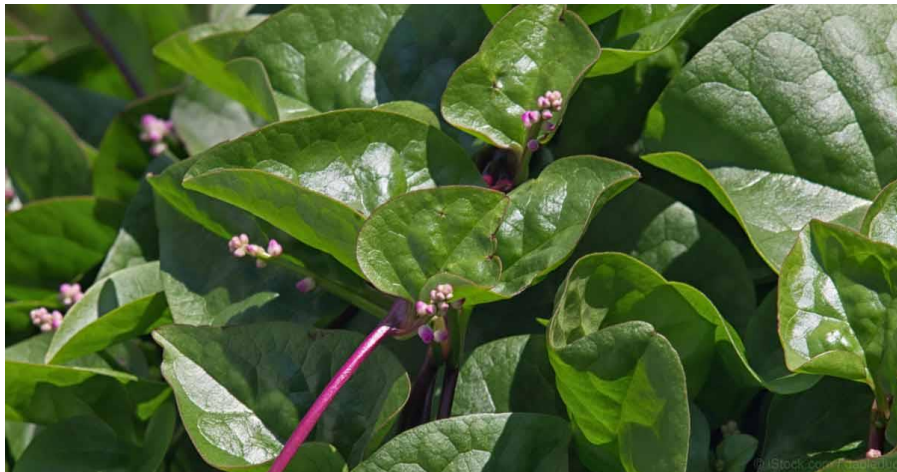
Yucca

**Garlics-** Softnecks,  
Asiatic, Turban\*,  
Creole Varieties

**Onions-** Short day  
varieties White  
Bermuda, Texas  
SuperSweet, Granex  
and Grano varieties



# Hot Climate Vegetables



## Greens

Mizuna\*

Tatsoi\*

Kang kong\*

Malabar Spinach\*

Bok choy

Ceylon Spinach

Sun King Broccoli

Dandelion

Baby greens- chard,  
kale

Turnip greens

Tokyo bekana

New Zealand/Okinawa/

Arugula

Jute mallow

**Herbs- MOST**

# Plant Breeding for climate change

- Developing plants with lower sensitivity to heat.
  - Cultivars with shorter reproductive cycle
  - Cultivars that flower at cooler times of the day or even at night



## Cucurbits

Armenian cucumber  
Bitter Melon \*  
Pumpkin  
Asian cucumber  
Summer/Zucchini  
Squash

## Beans/Peas

Southern cowpeas  
Pink Eye Purple Hull peas  
Chinese Red Noodle\*  
Whippoorwill beans\*  
White Acre peas



## **Solanaceae fruits**

Turkish Eggplant\*

Black nightshade

Tomatillos

Tomatoes

-Arkansas Traveler,

Brandywine, Equinox,

Heatwave II (cherry), Jasper

(cherry), Neptune, Ozark Pink

VF, San Marzano, Solar Fire,

Sun Leaper, Sungold (cherry),

Sunmaster, Tropic VPN

Peppers- most!

Okra

## **Grains**

Quinoa

Amaranth- grain/greens\*

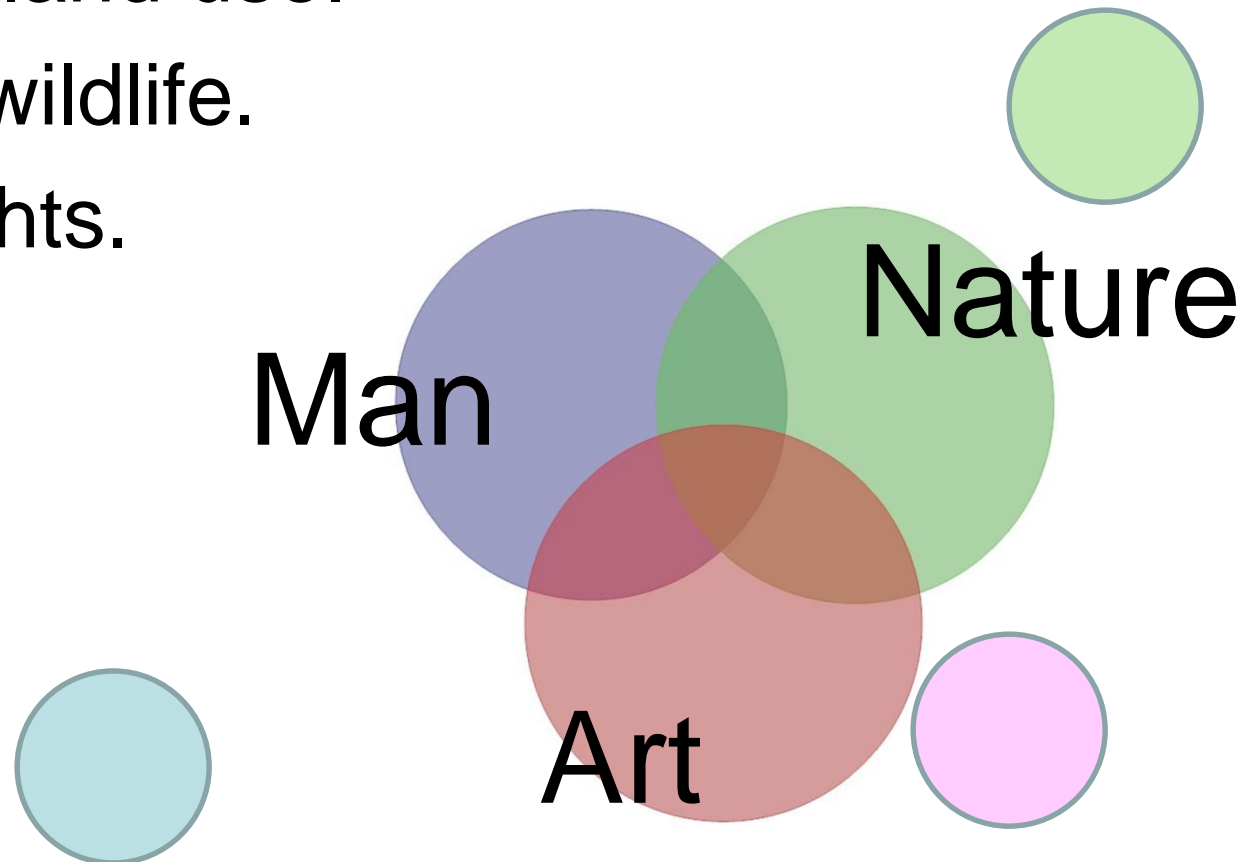
Corn

Orach Purple Passion\*



# Why do we do this?

- Food production.
- Sustainable land use.
- Support for wildlife.
- Bragging rights.
- Fun.



*Do it with a sense of humor*



*Gunnera tinctoria*

# Challenges

- Bare spots
- Disease
- Water needs
- Space
- Weed ordinances
- Winter aesthetics



# Provide the bones



Build structure with:

- Herbs: lavender, rosemary, sage, mint
- Shrubs: Yaupon, gooseberry, currant, blueberry
- Espalier: tree fruit, vines

# ...provide structure



- [The Edible Garden at the NYC Botanical Gardens](#)



# ...but think outside the box!



<https://www.hgtv.com/outdoors/outdoor-remodel/designing-an-edible-landscape-pictures>



Pollinator attraction  
Attraction of beneficials  
Companion/repelling qualities

# Vertical Space Saving

Outdoor- spaces.

San Diego herbs



Do it for the  
drama of it  
all.

Globe Artichoke  
and Heavy Metal Switch Grass





Hickory

Jujube

Hazlenut

Berries

Pear

Pawpaw

Serviceberry

Fig

Corn

Daylilly

cardoon

Beans

Blueberry

Rhubarb

Beets

Allium

Amaranth

Chard

Sunchokes

Lettuce

Comfrey

**Substitute food producing plants or integrate them into the traditional landscape**





**YOU CAN DO THIS.**



**Virginia Cooperative Extension**  
Virginia Tech • Virginia State University



[https://mgnv.org/  
demo-gardens/](https://mgnv.org/demo-gardens/)

VCE Horticulture Help Desk  
Weekdays: 9:00 am – 12:00 noon  
703 228 6414

[mgarlalex@gmail.com](mailto:mgarlalex@gmail.com)

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