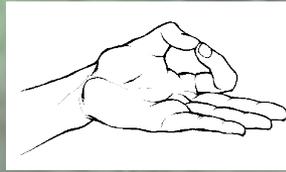


UF/IFAS Extension

The Journey to Sustainability Begins with Education





**Contemplative Food Gardening:
“BACK TO THE FUTURE”
(CONTEMPLATIVE DESIGN &
CONTAINER GARDENING)**

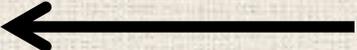
Robert Kluson

**Ag/NR Extension Agent III
UF/IFAS Sarasota County Extension**

OUTLINE

- **Overview & Goals of Contemplative Food Gardening Presentation Series**
- **Short Review of Contemplative Food Gardens**
- **Contemplative Gardening Design Approach**
- **Container Gardening**
 - **History**
 - **Crops**
 - **Container growing factors**

Contemplative Food Gardening Series Titles

- Introduction
 - Feed Your Head (Edible Landscaping & Design)
 - Growing Food When People & Place Matter
(FL Climate, Crops and Soils)
 - Ancient Traditions (Companion Planting and
Biodynamic Agriculture)
 - Sacred Community (Attracting Beneficials)
 - Soil Food (Compost & Earthworms)
 - Back to the Future (Contemplative Design &
Container Gardening)
- 

Goals for Talks on Contemplative Food Gardening

- Food for your freshest nutrition
- Food for thought
- Food for community benefits
- **Food for your soul**



Approach of Talks on Contemplative Food Gardening

- Integrate the concepts of contemplative gardens and edible landscaping, using organic food gardening practices
- Provide background information on the science and principles from agroecology for successful organic food gardening
- Offer an opportunity to participate in the setup of a contemplative food garden at Warm Mineral Springs Spa
- Provide additional educational resources

Review: What is Edible Landscaping?



The thoughtful arrangement of edible plants in the landscape into a unified, functional biological whole to maximize their aesthetic appeal and food production.

Treating Edibles as Ornamentals

Review:

What Is Organic Food Gardening?

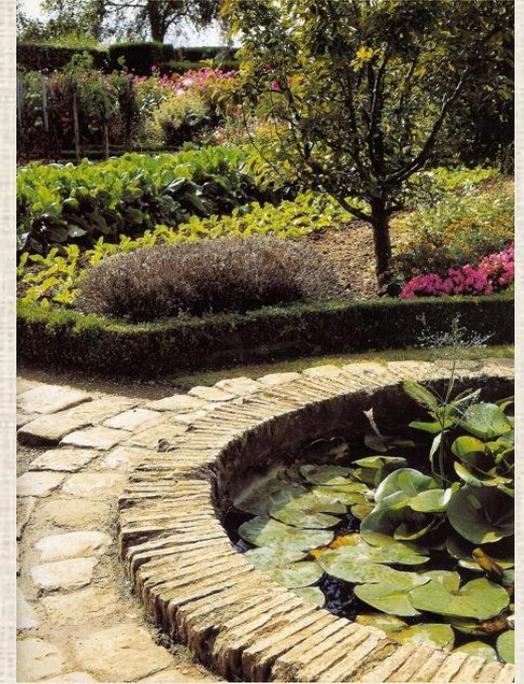
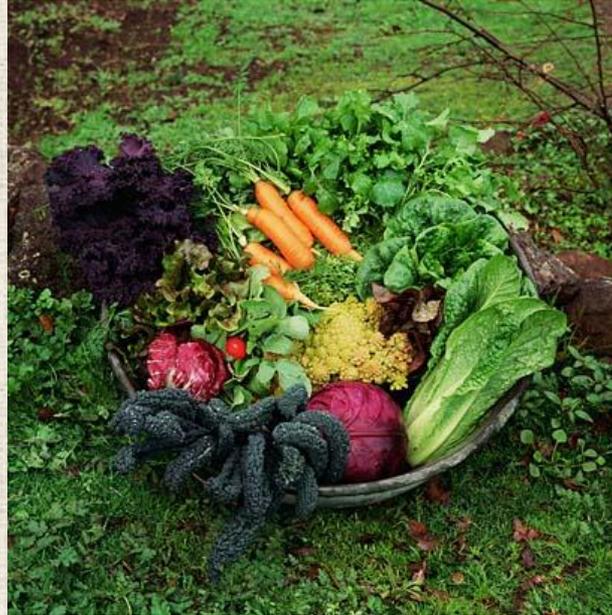


Review:Organic Food Gardening

- It's a science and art
- Incorporates the entire landscape design and environment, e.g., to improve and maximize the garden soil's structure, life & health
- Maximizes the production and health of developing food plants without using synthetic commercial fertilizers, pesticides, or fungicides

David Knauft, Horticulture Department, Univ. of GA

www.caes.uga.edu/extension/clarke/anr/documents/Organicgardening.pdf



Review: Contemplative Food Gardening

Gardening outside the rows...creatively for personal inspiration and growth, as well as physical nourishment and growth

Ecological Communities

- **Science of Agroecology**
- the application of ecological concepts & principles to the design & management of sustainable food production
- **provides a framework based on the scientific study of the ecology of natural systems.**

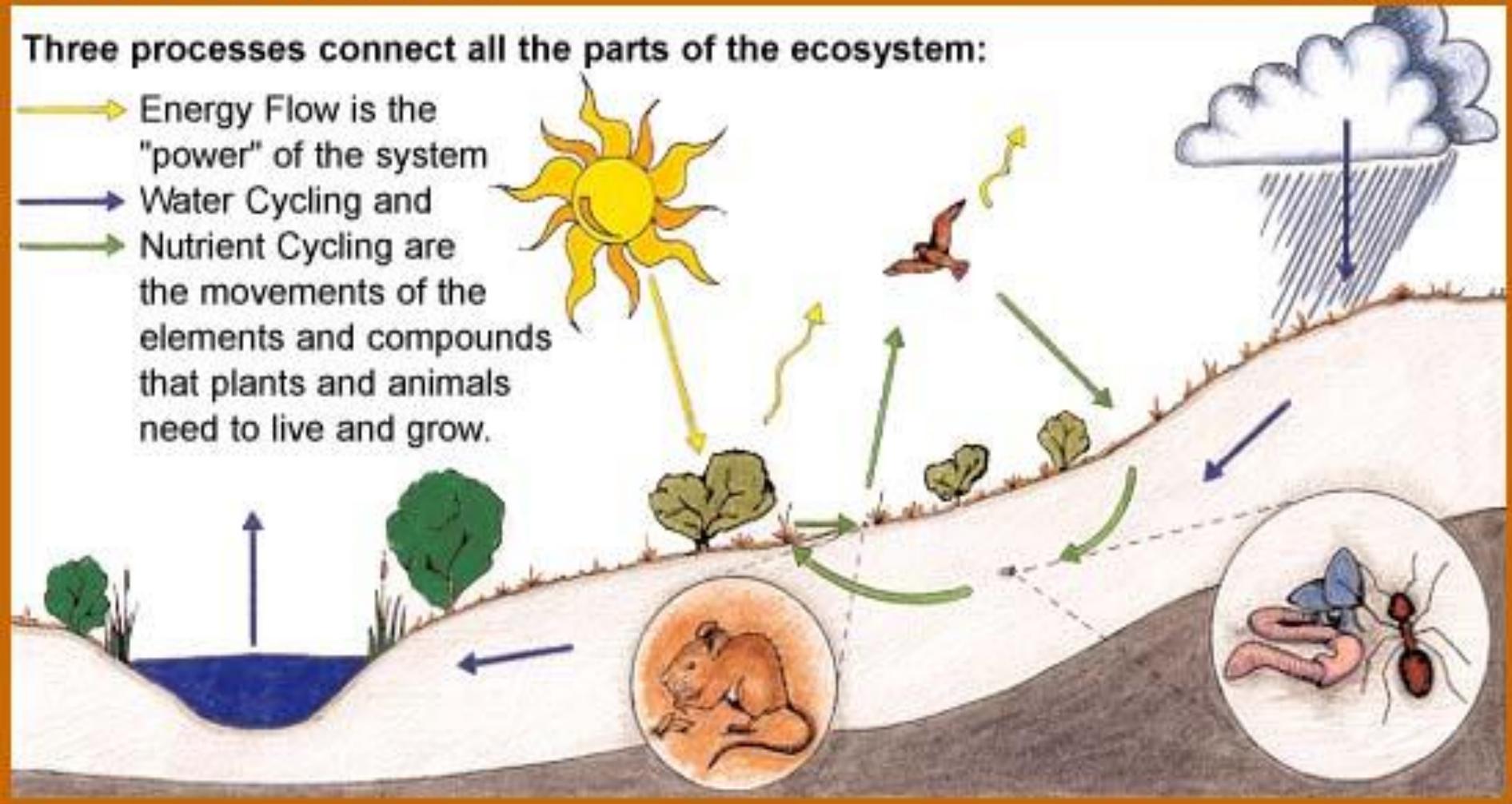
Ecosystem Model from Nature

ECOSYSTEM PROCESSES

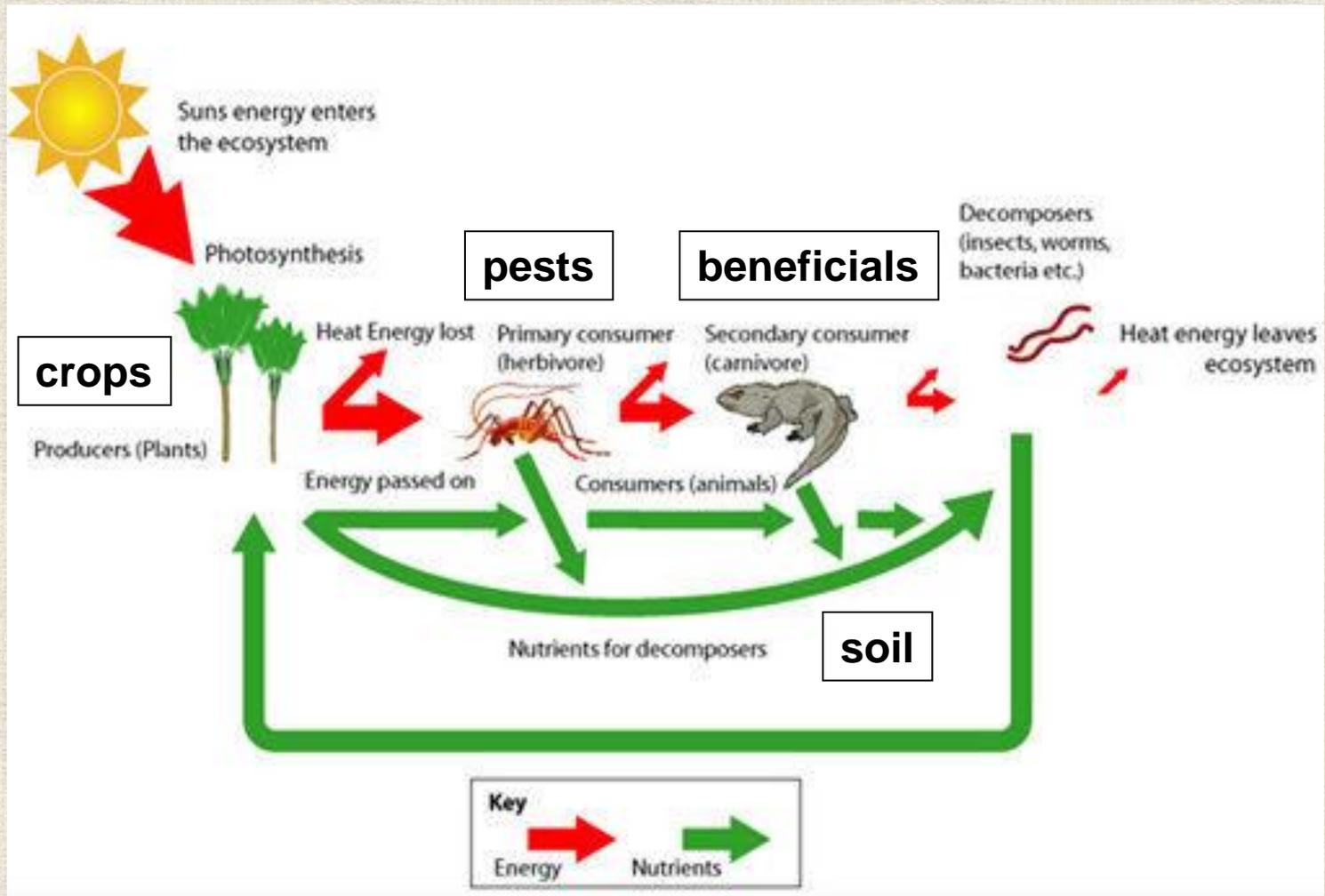
ILLUSTRATION: NICOLE BRAND

Three processes connect all the parts of the ecosystem:

- Energy Flow is the "power" of the system
- Water Cycling and
- Nutrient Cycling are the movements of the elements and compounds that plants and animals need to live and grow.



Food Garden Ecosystem



- Garden agroecosystems have functional properties & subsystems from **biodiversity management**

Review:

Contemplative Garden Approach

- ❖ Discover your inward garden to grow your outward garden
- ❖ Your inward garden lies in your imagination, memory, character, & dreams
- ❖ Your outward garden lies upon your land – a private landscape for wandering, for dancing, for daydreaming

J.M. Messervy
Landscape Architect Visionary



Food For Your Soul

Show Me Your Garden And I Shall Tell You
What You Are . . .



Toronto Music Garden

Designed by Julie Noir Messervy



Photo: Gera Dillon

<http://www.harbourfrontcentre.com/thewaterfront/parks/musicgarden.cfm>

The Toronto Music Garden

The old hard hat geometry of the cities of this world
speed-straightening highways has freed up this ground,
out from under its heavy-lid concrete/asphalt sarcophagus.
Reborn in sunlight it is the garden it was meant to be.
HOORAY!

Our heavy-lidded eyes once saw only Fugi-san's
Euclidian perfection. Now Mandelbrot's fractal/quaternion
new millennium geometry refocuses every mountain
and microcosm, the whole Creation into eye-of-God beauty
HOORAY!

Guerilla fighters saving old humane enclaves in this city
tree by tree, cottage and house, armed with council hearings
whisper this comfort into the branches of your beloved trees:
This is the beginning of the world as parkland regenerated.
HOORAY!

Four parts in time: the Cello Suite; its garden parallel
on paper, paths winding into stillness; that draft sculpture
living; and last, at last, we have a path through the deadwood
mind-entanglement, a choreography – a kiss to awaken Beauty.
HOORAY!

Once a mulberry worm spun her silk wings in fantastic colour
and flew to her kindred spirit in the emperor's kimono
they rested there the four of them – eternal quaternism –
self-reflective – anticipating the millennium flying toward us.
HOORAY!

POLLY FLECK

Toronto Music Garden



Toronto Music Garden

475 Queen's Quay West

Welcome to the Toronto Music Garden

Inspired by the First Suite for Unaccompanied Cello, composed by Johann Sebastian Bach in about 1720, the garden is made up of six "movements" whose form and feeling correspond to that suggested by the music:

- Prelude : An undulating riverscape
- Allemande : A forest of wandering trails
- Courante : A swirling path through a wildflower meadow
- Sarabande : A conifer grove in the shape of an arc
- Menuett : A formal parterre garden of flowers
- Gigue : Giant grass steps that dance you down to the outside world

You may start your musical journey from any point in the Music Garden, but if you want to "follow the music" begin at the Prelude (1) and follow the signs.

ALLEMANDE

2

QUEEN'S QUAY WEST

SARABANDE

4

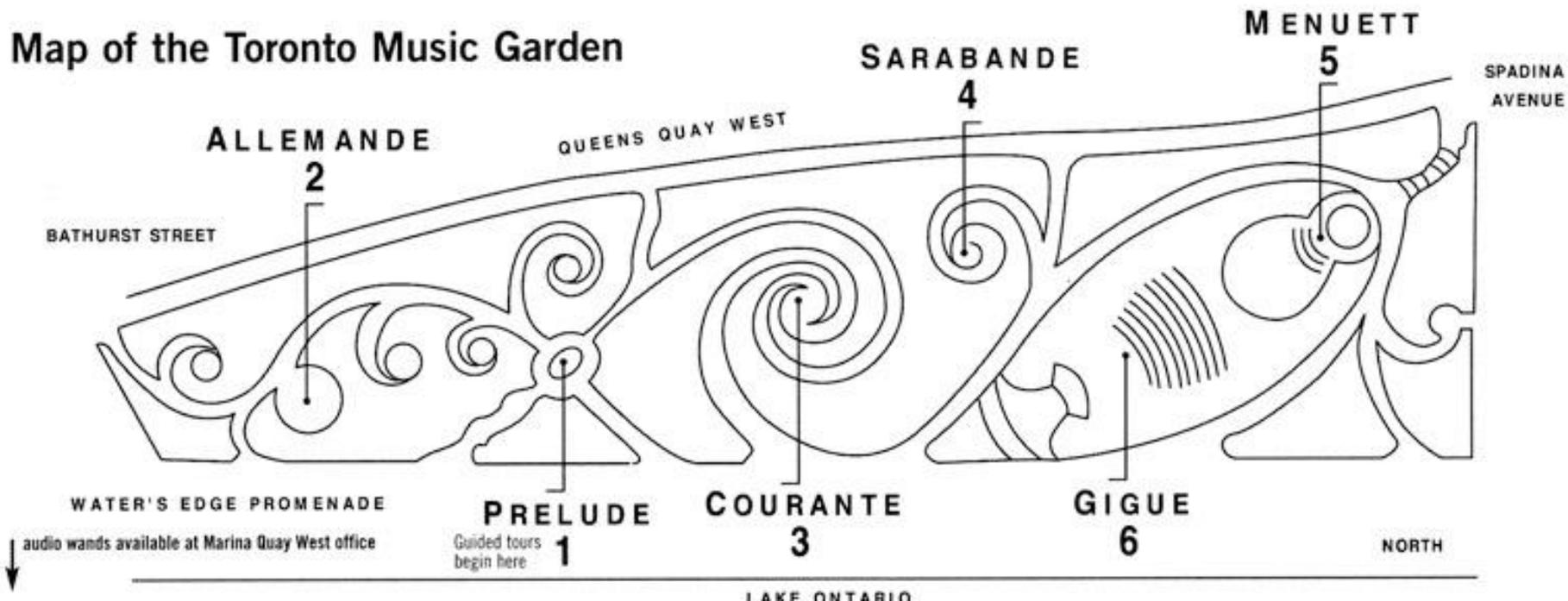
MENUET

5





Map of the Toronto Music Garden



Toronto Music Garden



Yo-Yo Ma' Cellist Performance of J.S. Back's First Suite for Unaccompanied Cello

See Youtube video at
http://www.youtube.com/watch?v=dZn_VBgkPNY



4

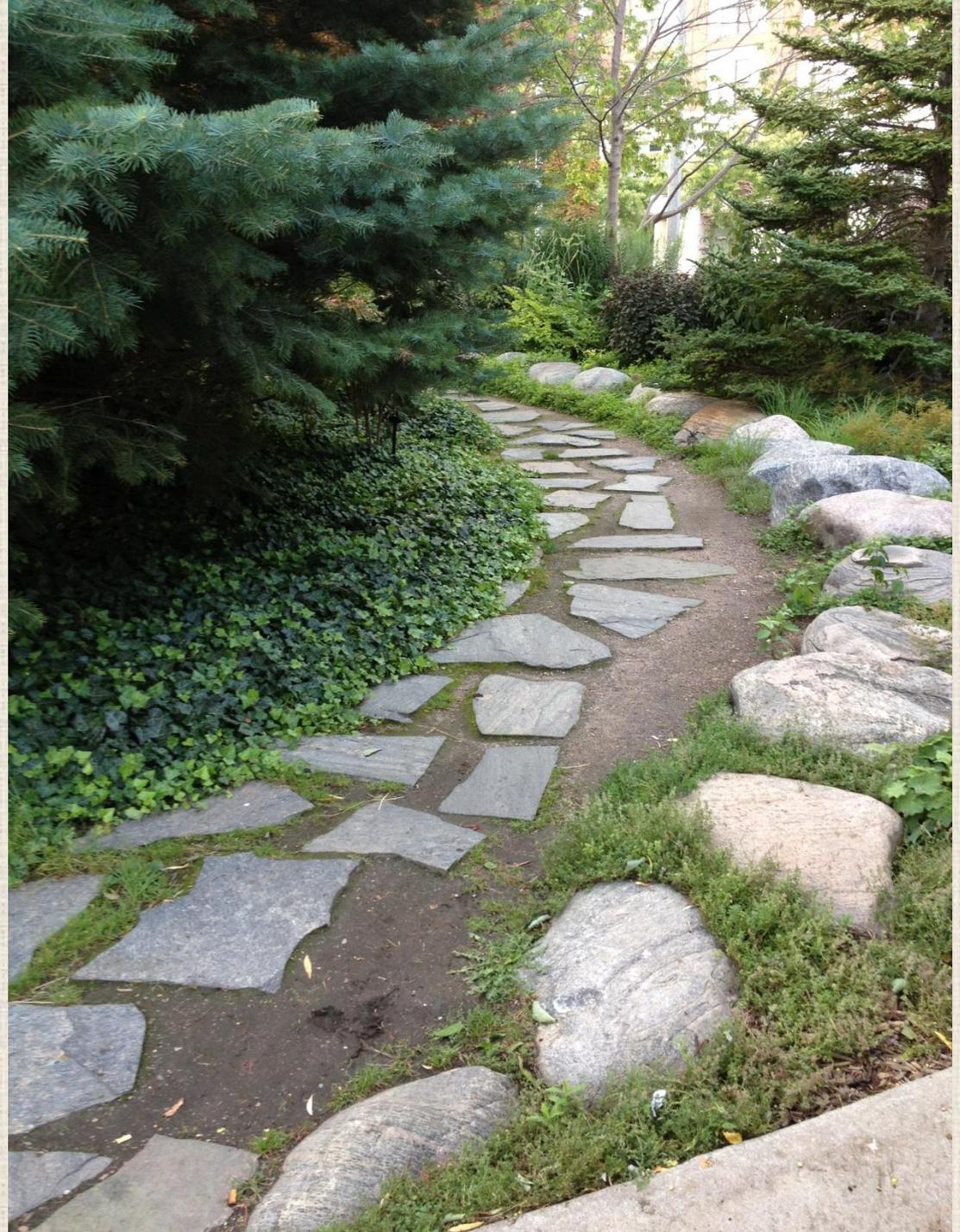
Sarabande



This movement is based on
an ancient Spanish dance form.
Its contemplative quality is interpreted here
as an inward-arcing circle
that is enclosed by tall needle-leaf evergreen trees.

Envisioned as a poet's corner,
the garden's centerpiece is a huge stone
that acts as a stage for readings,
and holds a small pool
with water that reflects the sky.

Walking Tour of Sarabande

















Contemplative Gardening Design Approach

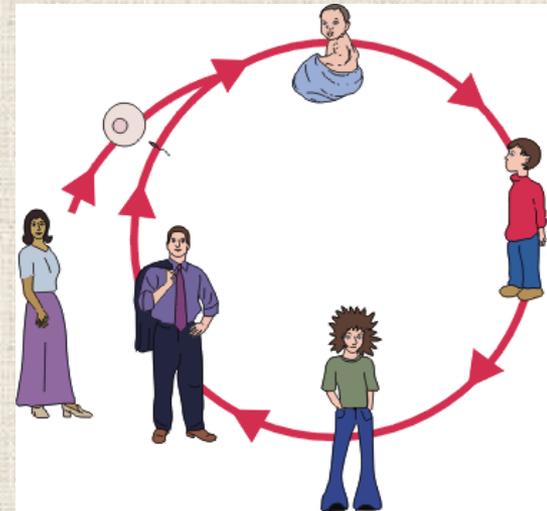
- ❖ **Your Garden Is A Magical Land In Your Life . . .**
- ❖ **Something Out Of Your Imagination That Has Somehow Sprung To Life In Your Own Backyard . . .**
- ❖ **See The World As A Garden.**

Julie Moir Messervy
(The Magic Land: Designing Your
Own Enchanted Garden)

Contemplative Gardening Design Sources

Archetypal places of Mother Earth:

- the first magical places of our lives and, as such, create strong feelings in us
- correspond to stages of the cycle of our life
- when we visit such places, we often re-experience the emotions associated with it



Contemplative Gardening Design Sources

Landscape Feature

Sea

Cave

Harbor

Promotory

Island

Mountain

Sky

Archetypal Feature

Womb (immersion)

Birth (emergence)

Infant (exploration)

Toddler (mobility)

Juvenile (separation)

Adult (independence)

Maturity (fulfillment)

Garden Images of Sea Archetype



❖ This archetype is early experience of being immersed underwater—in the sea—in a pool—or in the womb. But, interestingly, in a garden, and according to Messervy, this archetype doesn't necessarily require water. It can be recreated with any element that creates a sense of immersion or engulfing.

Garden Images of Cove Archetype



Open Pergola



Closed Pergola

❖ What characterizes a cave-like place in particular is that it's both small and snug—and that it has an opening from which to look out at the world. In this way, it's a bit different from immersion. One is contained by a space—but looking out.

Garden Images of Harbor Archetype



Sussinghurst Castle Garden, England

A sense of enclosure can be recreated with a fence or a hedge. These can be used to enclose a single garden. They can also be used to create small rooms within a garden. Or a harbor can be created with something as simple as a semi-circular bench.

Garden Images of Promotory Archetype



Utilitarian Terrace Garden



Elegant Terrace Garden

❖ A promontory has to do with going out to the edge of something. Adventure. Exploration. A peninsula. A precipice. A frontier. A bridge. And in a garden? It could be a balcony. A porch. A terrace. A deck jutting out over a ravine

Garden Images of Island Archetype

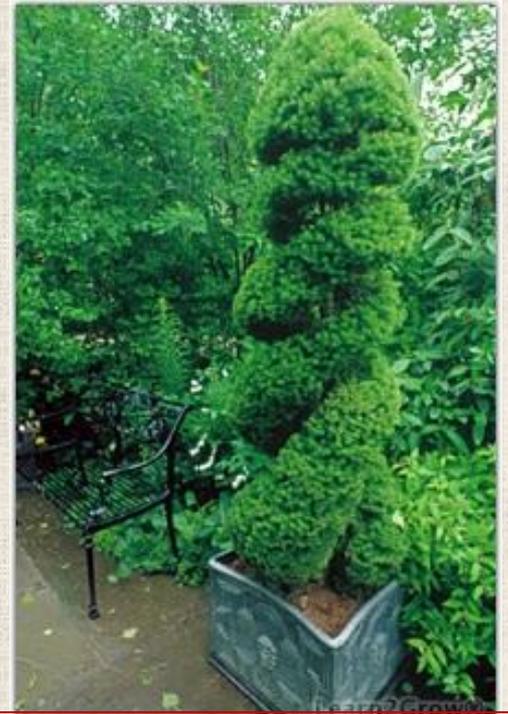


❖ A place that feels remote, surrounded on all sides. Independent. Secure as a world unto itself. In a Japanese garden, rocks are sometimes used to create and suggest island features. 'Tortoise' and 'Crane' islands. For good fortune, longevity and prosperity.

Garden Images of Mountain Archetype



Aerial Viewpoint



Vertical Viewpoint

❖ Literally, an elevated spot in a garden. Say a hill, or a treehouse. But, also, Messervy suggests, any vertical focal point can fulfill this archetype. A birdhouse. A particular tree. A piece of sculpture. The eye is drawn up. One climbs in one's imagination.

Garden Images of Sky Archetype



Large Scale



Small Scale

❖ The challenge here, Messervy suggests, is how to bring the sky down into the garden. This requires a frame. For instance, a reflecting pool. "When its waters lie perfectly still, it mirrors the sky; when raindrops fall, a liquid unity is created between the archetypes sky and sea."

Contemplative Gardening Design Application

- The 7 archetypes offer a vocabulary of forms that you can feel strongly about.
- Choose the archetype(s) that appeals to you.
- They offer you confidence that *you* can design a place that feels like home – a safe space in terms for of its elements, qualities, and dimensions for contemplation.

Contemplative Gardening Application Resources

❖ Container Gardening

- ✓ Excellent for a small and diverse areas
- ✓ Gardens can be grown inside or outside
- ✓ Plants may be moved as needed
- ✓ Offers endless and creative opportunities
- ✓ Plants that tend to spread are often better grown in a container.

Container Gardening Creativity

Color Principles

- Use more than one color to give a container or planting more dimension and make the planting more interesting
- Color is not only in the flowers but also in the foliage of these plants



Container Gardening Creativity

Warm Colors

- Red, Yellow, and Orange hues
- Area will seem to stand out when Warm colors are used
- Fun, vibrant look



Cool colors

- Blue and Violet hues
- Area will seem to recede when cool colors used
- Very subdued, tranquil look



Container Gardening Benefits

- ✓ Soil-borne diseases, nematodes, weeds, and poor soil conditions are easily overcome
- ✓ Easier to maintain for a variety of lifestyles, i.e., less work than a large garden
- ✓ Option for physically challenged persons
- ✓ Very fast results compared to ground plantings of food crops
- ✓ Convenient method for edible landscaping

Container Gardening Examples



Carport Gardening



Patio/Balcony Gardening

Container Gardening Examples



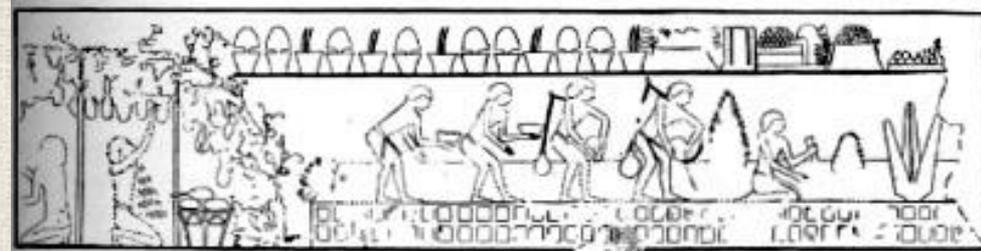
Backyard Gardening



Rooftop Gardening

History of Container Gardening

- It's **NOT** new !
- Ancient world examples:
 - ✓ Hanging Gardens of Babylonia
 - ✓ Mid-period Egypt
 - ✓ Adonis Gardens of Greece



<http://containergardeninginfo.com/a-brief-history-of-gardens-in-containers>

http://www.gardenvisit.com/history_theory/library_online_ebooks/ml_gothein_history_garden_art_design/egyptian_vegetable_gardens

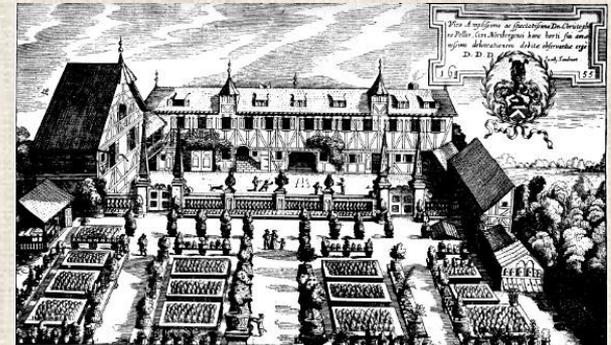
History of Container Gardening

➤ Modern world examples:

✓ Middle Ages gardens

✓ Moorish Spain gardens

✓ Renaissance Era
Germany



History of Container Gardening

- Current world examples (continued):
 - ✓ Venetian courtyard



www.shutterstock.com · 99723701

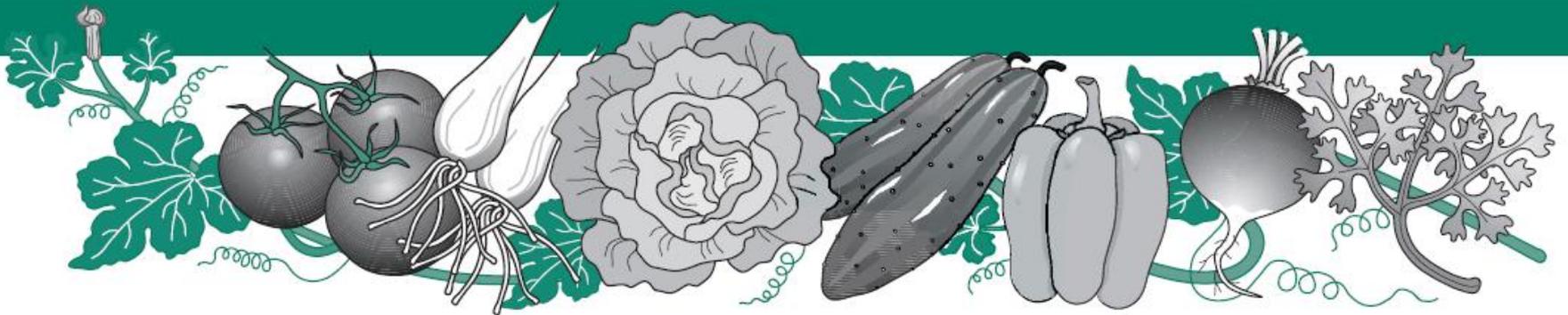
<http://containergardeninginfo.com/a-brief-history-of-gardens-in-containers>

Container Gardening: Basics

- ✓ **Crops**
- ✓ **Location**
- ✓ **Container Types**
- ✓ **Potting mixture**
- ✓ **Water**
- ✓ **Protection**

Crops: Selection

- Most crops that do well in the backyard will do well in container gardens.
- Those with more compact growth will generally do better.
- Follow UF/IFAS recommendations for cultivars and planting dates
- Crops can be planted as transplants or seed.



Crops: Annuals vs. Biennials vs. Perennials

- **Annuals**
 - Most vegetables, some herbs, many flowers
 - Replanted yearly
- **Biennials** (e.g., beets, cabbage, carrots, celery, onions, parsley, some radishes)
 - 1st year roots/foilage
 - 2nd year flower/seed production
- **Perennials** (e.g., garlic/onions, asparagus, rhubarb, citrus)
 - Come back every year
 - Most herbs and fruit, many flowers, a few vegetables

Location: Important Factors

- Containers can be placed on any level surface—decks, balconies, and along driveways and sidewalks. You can also set them on bare ground and allow the plant roots to grow down into the soil or place them on top of a mulched area. Edibles can also be grown in hanging baskets and window boxes.
- Southern and western exposures will be the sunniest and warmest, while northern and eastern exposures will be shadier and cooler.
- You'll need 6-8 hours of direct sun for warm-season crops (tomato, pepper, eggplant, squash) and 3-5 hours of direct sun for cool-season crops (lettuce, spinach, Asian greens).
- Easy access to water is crucial. Some containers will need watering every day when the weather is hot and dry.
- Consider the microclimate in the container garden area. Watch out for heat sinks created by brick, concrete, and reflective surfaces.

Location: Important Factors

Cautionary notes:

- Containers and the water that drains from them can mark and stain concrete and wood decking. Using self-watering containers or plastic saucers to catch water will prevent this problem (and is very helpful if you are gardening “above” your neighbour’s balcony.)
- The light weight of large plastic containers leads gardeners to believe they can be easily moved. But a 20-inch diameter container filled with moist growing medium and plants can weigh 100 lbs! (You can buy or make plant caddies to make heavy containers portable.)

Containers: You Are Limited Only By Your Imagination !

- Pots
- Wastebaskets
- Aquariums
- Waterproof bushel baskets
- Washtubs
- Hollowed-out logs
- Crates
- Bowls
- Crocks
- Urns
- Tubs
- Barrels
- Cans
- Pans
- Chimney flues
- Baskets
- Cement blocks
- Old pair of work boots

Container Example: Flower Pots



Container Example: Raised Containers



Container Example: Self-Watering Units



EarthBox Units

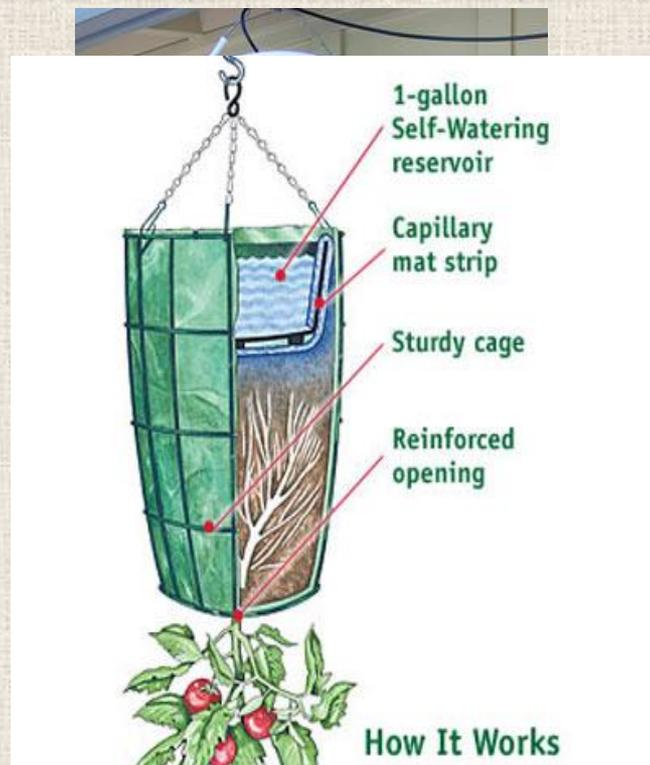


5 Gallon Bucket Pots

Container Example: Hanging Pots



Decorative
Hanging Posts



Upside Down Tomato Planter



Fence line pots

Container Example: Bags



-'Smart Pots'



Tomatoes in Recycled Shopping Bag



-Trash Bags

Potato
Grow
Bags

Container Example: Vertical Units



Vertical 'Living Wall'



Growing Column

Container Example: Trees



Citrus



Espalier Pruning



Fig

Container Example: Hydroponics

* An option only for illustrative purposes today



Soiless 'Bottle' Hydroponics



Floating Hydroponics

Container Example: Miscellaneous Containers



Water Bucket



Bath tubs



Barrels



Cartons



Old Boots

Containers: Use Proper Size

Recommended minimum container size
for various plants

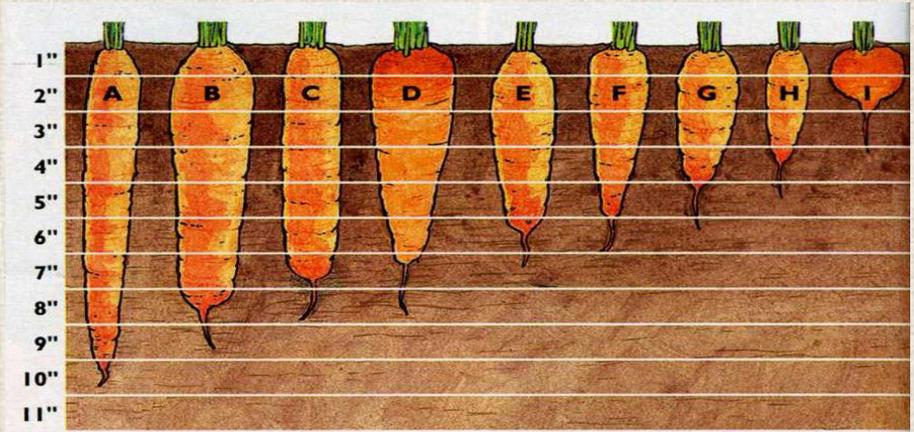
Plants	Hangin g Basket	Small 4"-6" pot	Medium 8"-12" pot	Large >12" pot
VEGETABLES				
Beans (bush)				
Beans (pole)				
Beets				
Broccoli				
Cabbage				
Carrots				
Cauliflower				
Corn				
Cucumbers				
Eggplant				
Lettuce				
Melons				
Onions				
Peas				
Peppers				
Radishes				
Spinach				
Squash				
Swiss Chard				
Tomato				
Cherry Tomato				
Turnips				
HERBS				
Basil				
Chives				
Dill				
Lavender				
Mint				
Parsley				
Rosemary				
Sage				
Summer Savory				
Winter Savory				

Eric de Long, Cornell Extension

Containers: Use Proper Size



- If put in smaller containers first, then move up as plant gets larger



- All varieties are not created equal. Use the books, the Internet and seed catalogs to choose varieties suitable for containers in your location.

Containers: Fruit Trees

- Dwarf fruit trees are ideal for container gardening. Dwarf fruit trees or miniature fruit trees that have been created especially for container gardening and gardening in small spaces.
- A good fruit-tree container is a 15-gallon pot, which is large enough for a 5-foot tree. Such a container could weigh between about 70 and 125 pounds, depending on what the pot is made of, the size of the tree, & the type of soil.

Containers: Fruit Trees

- Available fruit trees include **lemons, limes, mandarins, and oranges, apples, figs, mulberries, peaches, nectarines, cherries, guavas, mangoes** and more.
- An interesting option is the **fruit salad tree**, i.e., a grafted fruit tree of many different kinds of fruit growing off a single tree.

Containers: Fruit Trees

- Pruning controls a tree's size & shape, fruit production, & tree health.
- During the first few years, you may prune a newly transplanted tree, but allow the tree to increase in size several inches a year.
- In the spring, repot the plants before putting them outdoors for the summer. Remove about an inch of the rootball, and comb the root tangles. Prune a similar amount of foliage at the same time. Additional summer pruning is necessary to limit the tree's size.

Containers: Tips

- Choose a large pot or tub for a mixed planting, one that will offer enough root space for all the plants you want to grow.
- Rootbound plants, which have filled up every square inch of the soil available, dry out rapidly and won't grow well.
- Light-colored containers keep the soil cooler than dark containers which have a drying effect due to greater heat absorption.

Containers: Tips

- Use containers created from natural materials such as clay, & wood, or recycled products like buckets, tin cans, and plastic pails of safest* food grade plastic, i.e,



- Note that FDA** approved plastics for recycling include the following



- Soil in containers made of porous materials such as terra cotta pots tend to dry out faster.

[*http://www.hdpe-plastic.com/](http://www.hdpe-plastic.com/)

[**http://www.packaginggraphics.net/plastic-recycle-logo-identification.htm](http://www.packaginggraphics.net/plastic-recycle-logo-identification.htm)

Potting Mixture: Important Factors

- Desirable to use a lightweight, porous growing medium
- Must remain loose, drain well, provide nutrients and retain moisture
- All-purpose commercial potting mixes are permitted if without synthetic chemical additives
- Acceptable fertilizers include organic garden fertilizers, compost, fish/sea weed emulsions, and earthworm castings

Potting Mix: Important Factors

- Garden Soil— never use this by itself for container gardens. Soils hold water and nutrients very well and can drown roots growing in a container. Diseases and weed seeds can also be a problem. And soil is heavy which is an advantage if you are trying to anchor top-heavy plants and pots, but a disadvantage if you want to move pots.

Potting Mix: Important Factors

- Compost contains all the major and minor nutrients that plants need for good growth. This makes it an excellent substitute for sphagnum peat moss, which has very few nutrients (although it does hold water better than compost). Composting effectively recycles the nutrients from gardens, landscapes, and farms thereby reducing nutrient pollution of waterways. However, fertilizing is still necessary because the nutrients in compost are released slowly and are usually not sufficient for an entire season.

Potting Mixture: Add Beneficial Soil Life



Add Earthworms
For “Vermigardening”

Compost Biota

- Fauna
- Protozoa
- Decomposer microorganisms
 - Bacteria
 - Actinomycetes
 - Fungi



Use ‘Mature Compost’ for
Beneficials Inoculation

Potting Mixture: Recommendation Examples

Some good media mixtures for container vegetables:

- 100% compost
- 100% soil-less mix
- 25% garden soil + 75% compost
- 25% soil-less mix + 25% garden soil + 50% compost
- 25% garden soil + 75% soil-less mix
- 50% soil-less mix + 50% compost

Water Tips

- ✓ Irrigation is critical due to reduced soil volumes of containers compared to field vegetable gardens
- ✓ Eating quality and yield will be greatly reduced if plants are allowed to wilt due to lack of water
- ✓ Watering needs will vary depending on
 - container size
 - ambient temperature
 - sunlight
 - humidity

Water Tips

- Potting mix should be kept moist & not soggy
- Add water slowly until you see it leave out drainage holes of container
- Use a watering can or a nozzle at end of hose that produces a soft stream of water
- Small containers dry out faster than larger containers
- Large, mature plants need more water than small, seedlings and young plants

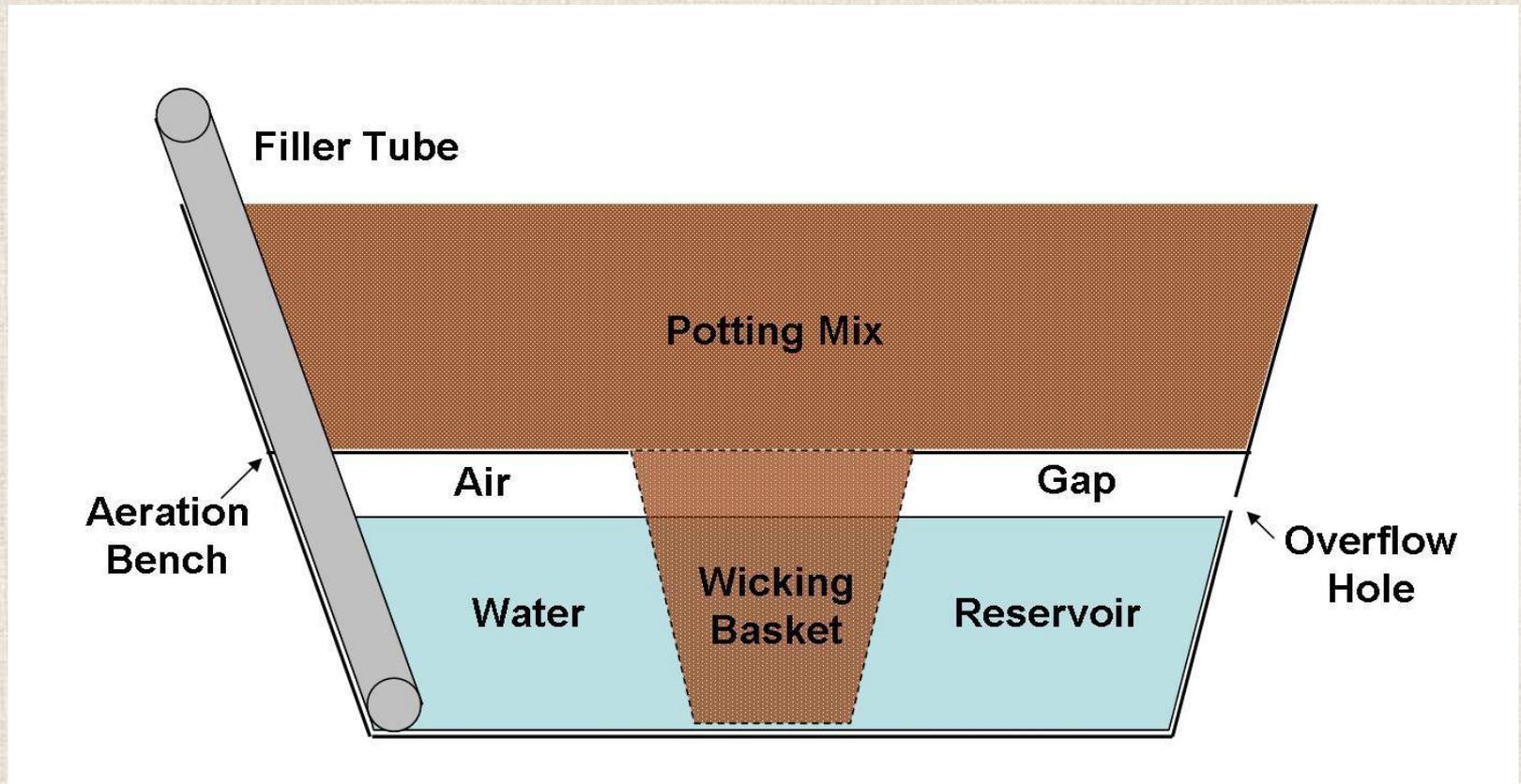
Container Watering Systems

- Micro-irrigation with soaker hoses and drip emitters is efficient, convenient, and relatively Inexpensive.
- Timers can be use for automated watering.



Container Watering Systems

Self-watering containers offers an excellent option of optimal watering



Earthbox™ Design

Water: Self-Watering Container



Homemade Version of Earthbox™ Design

Container Drainage Tips

- Whatever type of container you use, drainage is very important
- Place drainage holes on bottom or sides
- If located on bottom, container must be elevated to allow drainage of excess water

Protection: Cover or Move from Frost

- Container and roots can freezing during the occasional cold spells.



Protection: Use Companion Planting

❖ Companion plants can attract beneficial insects or repel pests



Beets & Strawberry Interplanting



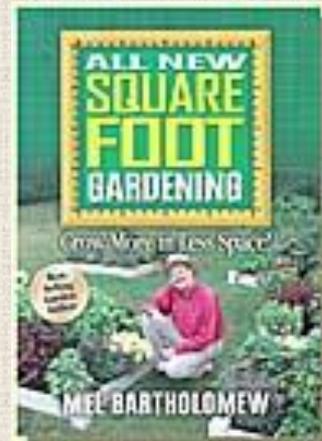
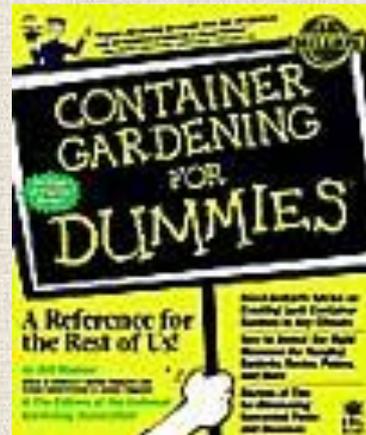
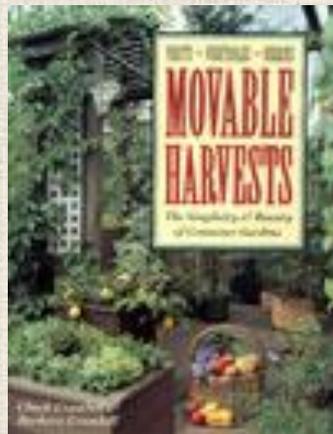
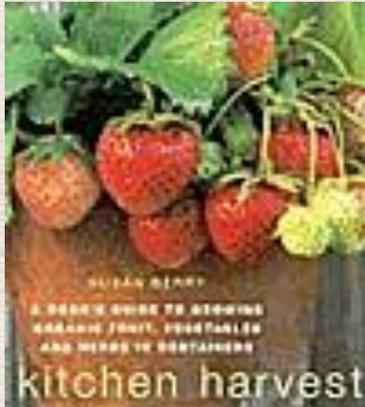
Allysum Insectary Plant Container

Thanks for Attending . . .

Enjoy Your Contemplative Gardening



Container Vegetable Gardening Books



http://journeytoforever.org/garden_con.html

Online Resources

- Container Vegetable Gardening - see <http://containervegetablegarden.org/>
- De Long, Eric. Growing Vegetable, Herbs and Annual Flowers in Containers. Cornell Univ. Extension – see <http://www.gardening.cornell.edu/factsheets/misc/containers.pdf>
- Jauron, R. & D. Nelsen. Container Vegetable Gardening – see <http://www.extension.iastate.edu/publications/pm870b.pdf>
- Martin, J., K. Demboski, & A. Swanberg. Container Vegetable Gardening. Ohio State University Extension Publication HYG-1647-2000 – see <http://ohioline.osu.edu/hyg-fact/1000/1647.html>
- Maryland Cooperative Extension. Container Vegetable Gardening: Healthy Harvests From Small Spaces – see <http://www.hgic.umd.edu/content/documents/hg600.pdf>

Online Resources

- Messervy, J.M. The Magic Land: Designing Your Own Enchanted Garden.

http://www.oneyearofwritingandhealing.com/a_healing_library/reading-and-healing-idea-.html

- Organic Gardening Secrets. 2009. Organic Container Gardening – see <http://theorganicgardeningsecrets.com/organic-container-gardening/>

- Santos, B., et.al., 2010. Solutions for Small Farmers and Home Gardens: Building a Low Cost Vertical Soilless System for Small Vegetable and Fruit Crops. UF/IFAS EDIS Publication # HS1186 – see <http://edis.ifas.ufl.edu/hs1186>

- Seattle Peak Oil Awareness Organization. Making a Self Watering Container or Earthbox™ – see <http://www.seattleoil.com/Flyers/Earthbox.pdf>

Online Resources

- Stevens, J.M. 2009. Organic Vegetable Gardening. UF/IFAS EDIS Publication #CIR375 – see <http://edis.ifas.ufl.edu/vh019>
- Stevens, J.M. et.al. 2010. Florida Vegetable Gardening Guide. UF/IFAS EDIS Publication #SP103 - see <http://edis.ifas.ufl.edu/vh021>
- Stevens, J.M. 2010. Minigardening (Growing Vegetable in Containers) UF/IFAS EDIS Publication HS708 – see <http://edis.ifas.ufl.edu/vh032>
- Sweat, M., R.Tyson, & B. Hochmuth. 2009. Building a Floating Hydroponic Garden. UF/IFAS EDIS Publication HS943 – see <http://edis.ifas.ufl.edu/hs184>