

Be a Green Gardener

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**If you have a garden and a library,
you have everything you need.**

~Cicero

Grow Green by:

- Composting wastes.
 - Recycling.
- Using organic techniques.
- Applying integrated pest management techniques.
 - Conserving water.
- Garden for ecosystem restoration.
 - Planting an edible landscape.

Composting wastes

- **Composting yard and kitchen wastes to conserve energy and carbon.**
- **Use compost to feed your soil and plants. The organic approach to gardening - healthy soil will grow healthy plants.**

What is composting?

- **Composting is a natural biological process whereby organic materials are decomposed by microorganisms.**
- **Making compost rapidly requires management of this natural process.**

Plants thrive because compost:

- conditions soil- increases porosity.
- holds water- 80-90 % of its weight.
- increases water absorption.
- contains nutrients that feed plants and beneficial soil organisms.
- moderates excess pH, buffers soil.
- slowly releases nutrients.

Modes of Composting

1. Passive or “Let it Rot”- composting may take a year or two. Needs water. May not kill weed seeds or pathogens effectively.
2. Active or batch composting - faster and requires more active participation- monitoring, turning, stirring and watering. Kills majority of pathogens, weed seeds. Aerobic.
3. Worm composting- uses worms to continually process a limited amount of food scraps.

**Compost = Browns + Greens +
Water + Air + Microorganisms +
Time**

What to compost?

What are browns?

Browns are higher in Carbon

Ratio of Carbon: Nitrogen >30:1)

- **Dried leaves, grass, or weeds. Straw, coffee filters, paper, bread, egg shells, lint, sawdust, hair, tea bags, newspapers, wood shavings, pine needles.**

What to compost?

What are greens?

Greens are higher in Nitrogen.
Ratio of Carbon: Nitrogen <30:1)

Fresh lawn clippings, fruit and vegetable scraps (kitchen wastes), green weeds or leaves, coffee grounds, barnyard manures.

Carbon : Nitrogen

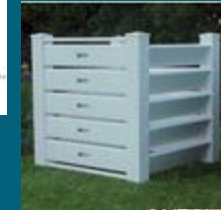
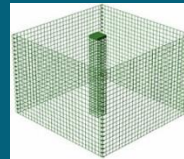
- Ratio Needs to be about 30 to 1
 - Ratios vary by material
 - Sawdust 500:1
 - Straw 40-100:1
 - Leaves 60:1
 - Grass clippings 20:1
 - coffee grounds 20:1
 - Poultry manure 10:1

Kitchen wastes makes good compost



Composting bin types*

- Plastic bins- flexible
- Plastic bins-rigid
- Wire bins
- Rotating drums or tumblers
- Cement or cinder block bins
- Wooden / pallets



Important to allow for aeration- some commercial bins are inadequate.

*Pictures compliments of GREENculture,Inc.

Moving/mixing compost



Compost uses

Mulch



Seed Starting



Potting Soil



Soil Amendment



Ways to recycle- 1

- Use newspapers /cardboard to mulch-suppress weeds, kill turf for perennial beds.
- Use plastic bottles to cover & protect plants.
- Old boards can be sawn into garden stakes or flats for seed starting, or garden seed trays.
- Wire, string, panty hose, can be used for ties.
- Milk cartons, food containers-for plant starts.
- Use a length of pipe to drop seeds through to avoid bending over.

Ways to recycle- 2

- Use old kitchen knives for removing plants from flats and repotting.
- Use shingles or metal cans under melons so they ripen faster and avoid rotting.
- Scatter nursery containers or buckets as waste baskets for: rocks, compostable weeds, etc.
- Plastic bags for covering newly seeded flats.
- Used envelopes to store saved seeds.
- **Other**

Recycle- beverage cartons for seed starting



Use scrap iron for a garden trellis



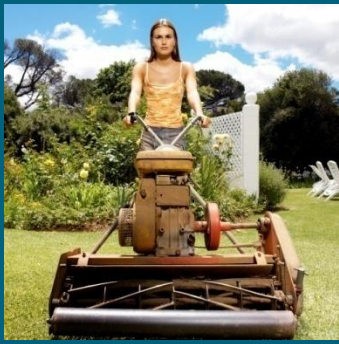
Protect your plants



Milk jugs protect plants from frost and insects and act as a mini greenhouse. Be sure to remove them on warmer days!

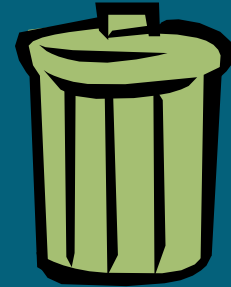


Strawberry baskets can protect your young plants from birds and snails



Grass Cycling

1. Leave grass on the lawn as a mulch.
Use a mulching blade.
2. Will not create thatch conditions.
3. Less green waste.
4. Feeds the lawn.
5. Less work, fertilizer, time and \$.



Conserving water

- Use drip irrigation which also reduces weeding.
- Use drought tolerant plants.
- Hydrozone- group your plants by water needs.
- Harvest water from your home's roof or other structures to provide water to your landscape.

Drip Irrigation



Use drought tolerant plants



Consider - 100 All Star Plants from the UC Davis Arboretum

- They are tested and thrive in the Central Valley and are attractive most of the year. Many are CA natives.
- They are recommended for Central Valley Gardens and have one or more features:
 - Low maintenance
 - Drought tolerant
 - Attract beneficial wildlife

Water harvesting



Using organic techniques

- Feed the soil and soil organisms using compost--the soil will nourish your plants.
- Mulch plants with organic material to conserve moisture, control weeds.
- Avoid toxic chemicals/herbicides/pesticides.
- Nurture more complex ecosystem-habitat for beneficial insects, wildlife, butterflies.

Integrated Pest Management Components

- 1. Pest Identification.**
- 2. Monitoring for pest outbreaks.**
- 3. Know the biology of pests and their hosts, enemies and competitors.**
- 4. Use ecologically sound control methods.**

First question: Is the pest doing damage that will matter?

- If the damage is only cosmetic, then, What is the problem? Don't look for trouble and run for the pesticide sprayer.

Pests that do damage most of the time.

- Earwigs- sometimes beneficial, but usually eat young plants and tender buds. Put out tuna fish cans with a $\frac{1}{4}$ inch of canola or other oil and you will trap and kill them.
- Snails and slugs—nocturnal pests. Can be trapped using beer in shallow pans or hunted by flashlight and stomped, or use Iron Phosphate bait which will not poison pets.
- Aphids---can be washed off.

Integrated Pest Management Approach

- **Know your friends and your enemies.**
 1. Who are the beneficial insects?
 2. What are their habitats?
 3. What can I do to promote them?
 4. What plants do they need?
 5. Who are the bad guys?
 6. What can be done to discourage them?

Know your beneficials



Soldier beetle

Lady Bugs



Syrphid flies



IPM- Know the pest



IPM- Know the pest



squash bug eggs

The best resource

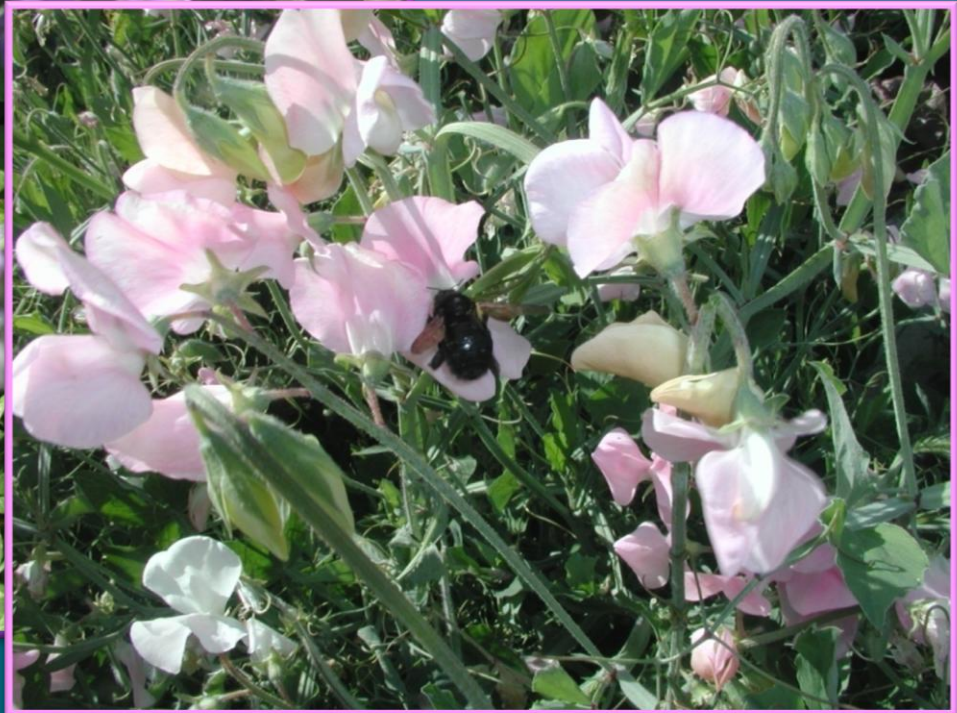
- *UC Statewide Integrated Pest Management Program.*
 - Helpful information to identify pests and beneficial insects.
 - A wealth of information on pest management techniques for each pest.

Garden for ecosystem enhancement/restoration

There are 1,600 species of native bees in California



pollinators



Garden for ecosystem enhancement/restoration

- James Howard and Meredith Manning- A bird-friendly landscape makeover.



In the beginning-front yard-2005



Front yard enclosed – July 2008



Native plants were mostly used



Back yard in 2005



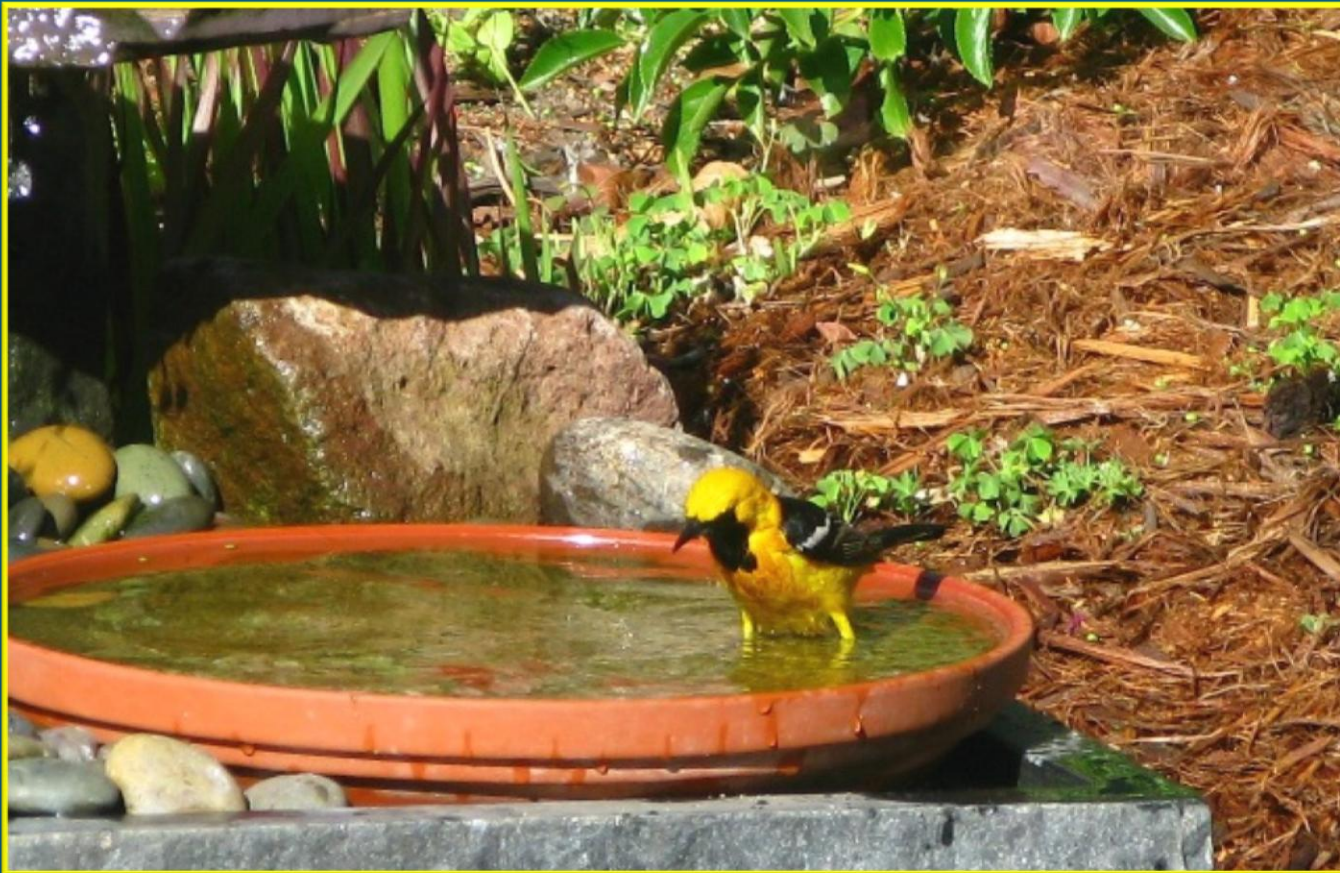
Breaking out concrete-2005



Back yard in 2008



**Birds visitors-hooded oriole
before-- 3 species; after--33 species**



**Unemployment is capitalism's way of
getting you to plant a garden.**

Orson Scott Card



Planting an edible landscape

- **Reduces your carbon footprint-food is close to home and less fossil fuels involved. Be a locavore.**
- **Get fresher produce and high quality food.**
- **Make your land produce for you instead of generating land-fill wastes.**

Take out some lawn



Enjoy the rewards



Edibles and Flowers are fine



Be inspired







Fall / winter gardening



Onions and garlic



Snow peas



What can beat fresh fruit?



Citrus and California go together





Can I Save Money?

- If you grew a 20' x 30' garden, it would yield 350 pounds of vegetables.
- If you went and purchased all those 350 pounds of vegetables in a grocery store, you'd pay more than \$600 dollars.
- This garden costs about \$70 to plant. So you're saving money and getting great food to eat.

– *Adapted from: Vegetable Gardening for Dummies (Wiley Publisher, 2009).*

**Though an old man I am but a
young gardener ...**

Thomas Jefferson

In Summary--Grow Green:

- Compost kitchen and yard wastes.
- Recycle in managing your garden.
- Use drought tolerant plants to save water.
- Group plants by water needs.
- Learn organic and Integrated Pest Management approaches.
- Enhance habitat for wildlife.
- Make your landscape edible.
- Use efficient drip irrigation to conserve water.
- Harvest rain water for your garden needs.

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