University of California
Agriculture and Natural Resources

"Smart and Good-looking: Garden Redesign for Sustainability and Year-round Beauty"

The typical residential landscape has been designed with an unconscious disregard for nature; however we can redesign our home gardens to meet our needs for rest, recreation and beauty while incorporating the principles of sustainability. Learn how to create a personal and regionally-appropriate landscape that requires less water and less garden chemicals while remaining attractive throughout all four seasons!

"Smart and Good-looking: Garden Redesign for Sustainability and Year-round Beauty"

What do we want? We want a landscape that is Smart and Good-looking.
Good-looking – Looks attractive in all 4 seasons and is functional, meeting our family's needs.
Smart - "Smart Gardening", earth-friendly, or sustainable.

I want to take a minute to outline the issues related to "smart" or sustainable gardening. We all think of water concerns in terms of sustainability, however there are a wider set of issues to consider.

The source for this information is ***The California Garden Web***. The UC Master Gardener Program designed the California Garden Web to serve as a portal to organize and extend the University of California's vast collection of **research-based information** about gardening to the public. The California Garden Web focuses on **sustainable gardening practices**. We urge you to bookmark this site and refer to it often on your journey to a more sustainable garden and a healthier environment. *http://cagardenweb.ucanr.edu/*

On that site you will learn that:

Sustainable gardening has evolved from concern about the effects of our gardening practices on:
1. **Water availability** (water conservation)
2. **Off-site water quality** (reduce water movement off property, polluted water into aquifer)
3. **Energy use** (power equipment, hauling green waste)
4. **Landfill space** (reducing green waste removal)
5. **Fire-safe landscaping** (fire safe zone around your home)
6. **Soil degradation** - (Decline in soil quality caused by its improper use.)
7. **Spread of Invasive plant species**
8. **Protection and enhancement of wildlife habitat.** - (Choosing the right plants and avoiding chemical fertilizers and insecticides.)

Here are a couple of valuable resources for information on Fire-safe landscaping (point #5) and Invasive Plant Species (point #7) which we cannot adequately cover in this talk today:
CA Dept of Forestry and Fire Protection *(Fire-safe landscaping) http://www.fire.ca.gov/*
Plant Right *(Invasive plants) http://www.plantright.org/*

Those are the eight issues related to sustainable gardening, and **at the heart of "Smart" or sustainable gardening lies Integrated Pest Management,** since many negative environmental impacts result from pest control in the landscape – including control of weeds, insects, diseases and vertebrate pests (such as rodents.)

IPM, or Integrated Pest Management, is a **process** we can use to prevent and solve pest problems while minimizing risks to people and the environment. To learn more about IPM go to ***UC IPM.*** *http://www.ipm.ucdavis.edu/*

We want a landscape that is Smart and Good-looking, however most of us currently have landscapes that are not sustainable, and also may not be functional and meet our needs year-round beauty.

Why? **Why is there a disconnect between what many of us want in our landscapes and what we we actually have?**

Most of us are still gardening in the styles of past centuries and foreign lands.

Our landscapes are typically "mini" versions of grand historical European estate gardens from the Sixteenth through Nineteenth Centuries. Although we are quick to adopt modern ideas and proud of our American style in most areas of life, our most popular residential garden designs are based upon Italian Renaissance, French Baroque, or English Cottage Garden styles from foreign lands and centuries past.

And within our gardens designed for another time and place and a vastly different lifestyle, we are also typically **struggling to grow plants on intensive life-support**. That is, we often choose to grow plants that are not well adapted to our climate, soil conditions and space constraints – shearing and pruning excessively, pouring on the water and the fertilizer and the pesticides – with negative impact upon our environment.

However, help is here! Today garden designers are creating beautiful landscapes that reflect the world that we live in now, creating functional outdoor spaces that are regionally appropriate and sustainable by design.

How **will we redesign our landscapes to create functional outdoor spaces that are regionally appropriate and sustainable by design?** (requiring less water, less energy, less green waste, and less garden chemicals)
It's as easy as 1, 2, 3!

We start with a:
1. Thoughtful design *(plan)*
We give thoughtful consideration to our choices of:
2. Hardscaping *(all of the non-living elements in your landscape such as paving, patios, decks, walls, fences, pergolas, trellises, garden furniture and mulch)*
3. Softscaping *(plants)*

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1. Thoughtful design:

The most efficient way to get the beautiful sustainable landscape you desire is to create a simple functional design with sustainability and "four-season gorgeous" designed in from the start. If we have inherited gardens that are not earth friendly, we can still work over time to move these landscapes toward sustainability and four-season beauty.

Designs for sustainable gardening include not only consideration of plants, which we will be referring to as "softscape", but also all of the "hardscape", or non living elements of the landscape. Designs for sustainable gardening reduce the environmental impact of all of these elements – hard scape as well as softscape.

Creating a thoughtful design:

Whether you have the opportunity to "start fresh" in redesigning your landscape, or if you need to make incremental improvements in your established landscape, consider your entire landscape when you are creating your design, even if you are only interested in doing a small section at a time. Having the "big picture" in mind will prevent oversights and "do overs."

Start with a **written list of your needs and wants –** what you and your family need and want to include in your landscape – and then design these features and characteristics into your garden.

Include "sustainable" and "attractive in all seasons" at the top of your list, and make every decision with those issues in mind.

After the list of wants and needs is completed then go out in the landscape and decide where these things will go. **Create "outdoor rooms" and spaces with strong geometric shapes within your yard.** If you like to make **scale plans on paper or on the computer,** then do so. For example: This rectangular space is divided up into rectangles and squares set on an angle, and the design is created with the hardscaping.

However you might find it more effective if you **make a plan right on the ground** (landscape paint if on the soil, or use hoses or chalk or flags or hardscape.)

Then go for a trial run for a few days. Engage in every activity you wish to include on your property within the spaces you have drawn out on the ground. This is the best time to evaluate your choices and make the necessary adjustments.

Once you have your landscape design all planned out, whether on paper or on the ground, only then can you move onto the hardscaping and softscaping of your garden.

2. Hardscaping:

Create year-round design structure, the bones of your garden, with environmentally friendly hardscaping.

The design structure is created primarily by hardscaping – paving, patios, paths, decks, walls, fences, pergolas, trellises – and the lines of the design hold up even in the absence of plants.

The strongest designs are simple, created with balanced geometric shapes.

If the garden has been well designed with an emphasis on the "hardscape" then the design will be less reliant on the "softscape" (plants) for year-round beauty.

Whenever possible use **water-permeable hardscaping** so water filters down into the ground rather than runs off the property. This will positively impact both water conservation and water quality issues.

Use **locally sourced materials when possible.** Locally sourced materials are more "green" because the materials do not need to be transported long distances, but also, local materials look more "at home" or regionally appropriate in your landscape than exotic materials.

When possible, to enhance sustainability, in addition to using water permeable and local materials, choose materials that are **reused or repurposed.** Sections of broken or sliced concrete from a driveway remodel can be used in place of flagstones for a patio, for example.

In your journey to creating a sustainable landscape, when possible, use materials that are **sustainably produced.**

Instead of cedar or redwood consider using jarrah (eucalyptus) or ipe from South America or mahogany from Central America. Look for woods that have the **Forest Stewardship Council certification,** these lumbers have been sustainably harvested. *https://us.fsc.org/*

Or consider **wood alternatives** such as *Trex, ChoiceDek* and *TimberTech.* These products reduce the impact of logging by blending plastic with wood fiber.

Irrigation equipment is part of the hardscaping of your landscape, and your choice of irrigation products needs to be guided by your desire to create a more sustainable landscape.

Upgrades to make your irrigation practices more sustainable might include installing drip irrigation for non-lawn areas, replacing spray sprinkler heads with MP rotators, and installing a Smart Controller for your irrigation system. These are ideas that you should consider in your redesign. **However do not overlook the enormous water savings that would result from monthly inspection of your irrigation system and the monthly adjustment of your watering schedule.**

Most of us set our timers to irrigate our landscapes while we are sleeping. Unless we actually go out and **test our equipment,** we cannot know if water is being wasted. Also, many people have a "set it and forget it" attitude toward their controllers. Again, at a minimum, controller should be **reset once every three months, but once a month would be better.**

3. Softscaping

We created a thoughtful design based on our wants and needs with "sustainability" and "4 season gorgeous" at the top of the list. The "bones" of our designed was created with environmentally friendly hardscaping using balanced geometric shapes, and now we are adding the plants.

These are the essential elements of my strategy for creating attractive sustainable softscaping:

+Use fewer plants.

+Choose only plants that are well-adapted to our climate and are not invasive.

+Group plants by water needs (hydrozoning) on separate irrigation valves.

+Use less (or no) lawn.

+Create additional design structure and four-season beauty with evergreen plants featuring colored foliage and/or strong texture and shape.

Use Fewer Plants:

Fewer plants means less water, and potentially less green waste and garden chemicals. Use plantings only where you need it in your design. Do not overplant. Give each plant the space it needs to grow to its natural size and shape without shearing or excessive pruning.

Choose only plants that are well-adapted to our climate and are not invasive.

Select plants that are **well adapted** to our climate and soil conditions and do not need to be babied along on a **life-support of heavy irrigation and garden chemicals.** Choose plants that are **disease resistant.**

Choose plants that have **evolved to thrive in climates similar to ours**, plants native to this area or plants from the Mediterranean area, southwestern sections of South Africa and Australia, and parts of Chile and Central Asia. These plants will thrive in our area with minimal water and often no fertilization or pest control.

Look for plants such as the **UC Arboretum All-Stars.** This is a collection of 100 tough, reliable plants that have been tested in the Arboretum at UC Davis that are easy to grow, don't need a lot of water, have few problems with pests or diseases, and have outstanding qualities in the garden. *http://arboretum.ucdavis.edu/arboretum_all_stars.aspx*

You can also ask a UC Master Gardener, or check out plants at our **Garden of the Sun**, or consult with a local nursery person for suggestions about well-adapted plants.

Do not choose **invasive** plants that will try to take over your garden. A good source for identifying plants that could be invasive in our area is **Plant Right.** *http://www.plantright.org/*

In our efforts to move toward sustainability, we should use Garden Chemicals only when necessary and as directed. (An IPM principle)

Fertilization is not a required activity. Just as we would not use a pesticide without knowing if it was absolutely necessary, we should not fertilize unless it is observable that fertilization is necessary.

Fertilizing plants is not a regularly required maintenance activity for the care of most well-adapted plants. Excessive fertilization can lead to **excessive plant growth** producing more **green plant waste.** Excessive fertilization leads to a **fast, unnatural growth rate which can attract pests.** Fertilizers can **leach into our local water aquifers or run off** of our property and in to our waterways.

When you do need to fertilize use **natural fertilizers** such as compost, rock phosphate, kelp, seaweed, fish meal or alfalfa meal not only feeds the plants but also the microorganisms in the soil thereby increasing the health of the soil. **Healthy soil = Healthy plants.**

Also in your journey to creating a sustainable garden:

Group plants by water needs (hydrozoning) on separate irrigation valves to save water. If you group your plants by water needs on each irrigation valve, you can give more water where needed and less whenever possible – thereby saving water as well as perhaps the lives of your plants that will not tolerate any wet feet.

And speaking of lawns:

Consider using little (or no) lawn in your sustainable landscape.
The lawn is a prime example of landscaping in the style of past centuries and foreign lands. The American residential lawn has its roots in the English country estate, and these lawns were mowed and fertilized by sheep. In the 1800's however, suburban Americans began growing lawns on our mini-estates – minus the sheep.

Perhaps 50-70 percent of our residential water is applied to landscapes now, and most of that outdoor water is applied to lawns. According to the EPA nearly 70 million pounds of pesticide ingredients are applied to suburban lawns each year, **making polluted runoff from residential landscapes the single largest source of water pollution nationwide, affecting ground water, lakes and streams,wildlife and our own human health.** In addition, gas powered lawn mowers contribute 5% of the nations air pollution; a gas powered lawnmower emits 11 times the air pollution of a new gas powered car.
(source: National Wildlife Federation http://www.nwf.org/)

However if in your list of "Wants and Needs" you really need a lawn for some activity:

Use lawns only when needed for specific purposes. If your family requires a patch of lawn in the landscape design, these are the keys to **reducing the impact of a lawn on the environment:**

-Keep the lawn as **small as possible, level, of a geometric shape** for irrigation without over spray, and use a **mulching mower to reduce fertilizer needs**.
-Use a water **efficient irrigation system, and do not overwater.**
-Choose the **most drought tolerant lawn grass that will meet your needs.**
For more information on reducing the environmental impact of lawns, go to the
UC Guide to Healthy Lawns *http://www.ipm.ucdavis.edu/TOOLS/TURF/*

The next strategy to consider in creating your sustainable "4 season gorgeous" landscape is to: Create additional design structure and four-season beauty with evergreen plants featuring colored foliage and strong texture and shape.

(Evergreen: always has foliage, does not drop all of its foliage for part of the year or disappear underground like a daffodil.)

In areas where the design of your garden is dependent on plants, select evergreen perennial plants with foliage that is colored and has interesting texture or strong architectural interest for **year-round structure and interest. Flowers** are "icing on the cake" of your design, but you **cannot create a successful garden design based primarily on flowers.**

If plants are essential to providing the bones or the structure to the garden, then the design may collapse during some seasons if the plants are not evergreen.

If **vegetable gardens** are to be incorporated into the garden design, for sustainability as well as to maintain the design structure of the garden through out all seasons, keep the edible garden **small. Grow only what you will actually use.** Containing a vegetable garden in **pots or raised beds in raised beds and/or containers will probably be easier to integrate into your design.**

In Conclusion:

As we redesign our landscapes for sustainability and four-season beauty, I invite you to make a break from the past.

We can stop creating gardens that mimic historic estate styles from foreign lands using plants that need to be grown here on life support.

We can create beautiful landscapes in an earth-friendly style that is both "Smart and Good-looking."

To enhance our lives and the health of our planet, we can create beautiful and functional outdoor landscapes that are regionally appropriate and are "California Sustainable" - by design.

Smart Gardening Conference topic, February 22, 2014 at 10 a.m. - 10:50
Sharon Rossi, Master Gardener