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High on the Desert

Cochise County Master Gardener

Newsletter

The University of Arizona and U.S. Department of Agriculture cooperating.

People Profile: Gardeners

Common names: Green Thumbs, Dirt People, The Manure Party

Range: Since this species has been introduced, it has spread quickly and can be located all over the world, unfortunately no cure has been found.

Of all the people in the world, gardeners have got to be one of the most interesting as they are constantly subjecting themselves to all kinds of abuses normal people would not think of tolerating.

The first step into the world of gardening is usually small, a few houseplants or turning a postcard patch of earth into a flower or veggie garden. After minimal success they often decide to cross over into other areas. Usually beginners are soft, both mentally and physically, until the challenges of battling pests and diseases, moving tons of rocks, mourning over dead plants, digging planting holes in caliche, and varmints destroying everything in sight, eventually hardens them up. Most gardeners develop broad vocabularies, spouting Latin effortlessly and, of course, speaking that universal language–cussing. Some take the ultimate vow and enroll in classes and become Master Gardeners.

Gardeners are usually referred to as 'big dreamers.' There is no end in sight for gardeners, once you start there is no stopping. In fact, there are documented cases of people gardening for over 50 years!

Really great gardeners can be easily identified. Ask them about a problem you have and they will be the first to pass along their mistakes, how they solved them, and as a bonus, an additional hour of useful tips. Usually after a few years in the field, most gardeners develop a passion for one or two subjects. Whether it's propagation methods, integrated pest management, or xeriscape gardening, they are a wealth of information and are highly regarded as 'Garden Figures' in the community. As we bravely venture into a brand new year of gardening, here are some garden resolutions.

► Teach someone - especially a child - to garden
► Plant a herb garden
► Conserve water – request a free WaterWise audit for your home or business. Contact Cado Daily at 458-8278, Ext. 141 or on Fort Huachuca, Ginger Maxey at 538-7283
► Reduce, Reuse, Recycle
► Start a compost pile
► Become a Master Gardener - contact the Extension Office at 458-8278, ext. 141 for details
► Plant a tree
► Start a garden journal
► Get into native plants - plant a penstemon, dalea or agave
► Start a wildlife garden
► Mark your calendar for February 17-18 and attend the Seventh Annual High Desert Gardening & Landscape Conference
► Sow only one squash/zucchini plant this year
► Thank the person who taught you how to garden.

Cheri Melton
Master Gardener

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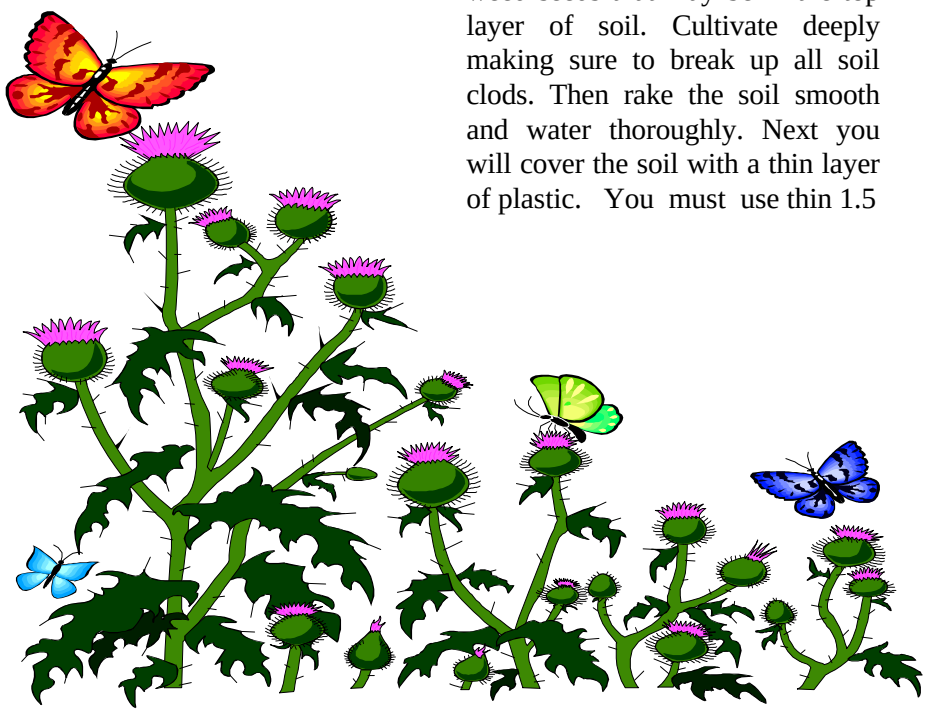
Controlling Weeds

First off, let me say that all plants may be considered weeds. Generally speaking, a plant may be designated a weed when it is out of place in the landscape. In addition, a weed is a volunteer plant that has invaded the landscape or has expanded beyond desirable parameters in the landscape.

There are many reasons to be concerned about weeds other than the aesthetic ones. In an area where we should be concerned about conserving our precious water resources, weeds compete with desirable plantings for the limited supply of water and soil nutrients. Weeds also can provide habitat for undesirable insect and fauna populations that can run amuck in your garden and wreck havoc. Trying to remove weeds from around your trees and shrubs can result in injury to your plants which in turn may open up your plants to opportunistic insect infestations or disease. Weeds are also an eyesore detracting from your home's value or even worse, in our high desert environment, a fire hazard.



So, how do you manage weeds in your landscape or garden? Well, you could resign yourself to that "natural" look, adopt a slash and burn third-world approach to landscape management, or instead you could choose to manage the problem before your home disappears amidst the tumbleweeds, desert broom, and goatheads. Needless to say, if you truly want to control weeds in the landscape, the most critical time for effective control is before you plant.

In preparing your soil, remove all existing weeds as the first step in your new garden or landscape. You can hand pull weeds or rototill to uproot and bury them. Then you should irrigate the disturbed soil to promote germination of existing weed seeds then cultivate again to destroy the seedlings that have sprouted in the disturbed soil. Repeat these steps several times. Be sure to make each cultivation shallower than the previous to avoid bringing deep seeds closer to the surface where they can germinate.

You may also choose to solarize the soil before planting to destroy weed seeds that may be in the top layer of soil. Cultivate deeply making sure to break up all soil clods. Then rake the soil smooth and water thoroughly. Next you will cover the soil with a thin layer of plastic. You must use thin 1.5 to 2 mils thick CLEAR plastic. Do this during the hottest time of the year. Here in the high desert that would be optimally June. The soil should be moist when covered and it must remain covered for 4-6 weeks. Make sure the edges of the plastic is sealed to avoid escape of the built-up heat. Plant as soon as possible after removing the plastic. Do not work the soil too deeply or you risk bringing undamaged weed seed to the surface where it will germinate. This sort of defeats all your hard work.

(Note: See also *The Virtual Gardener - Weed Warrier III* in the June 1999 *High on the Desert Newsletter* for more information on solarization.)

To those so inclined, you can also use chemicals to do all this work. All existing weeds can be destroyed with herbicides. Follow container directions exactly. It is generally best to add a very small amount of dish soap to the herbicide to facilitate coverage of the weed leaf surfaces. Some weeds such as Bermuda grass will require more than one application. After killing all existing weeds, cultivate the soil and plant. Once plants are in you should apply a pre-emergent herbicide to prevent germination of weed seeds. Again follow label directions closely to maximize effectiveness of the herbicide and minimize damaging your new plantings.

John Phillips
Master Gardener

Robert E. Call
Extension Agent, Horticulture

Carolyn Gruenhagen
Editor

The Virtual Gardener

Sustainable Landscape Planning: Creating a Base Map

In October we examined the principles of planning for a sustainable urban landscape as discussed on the University of Minnesota Web site at **http://www.sustland.umn.edu/**. Instead of moving on to discuss the actual steps in developing a landscaping plan, I'm going to digress this month and explain how to develop a base map of your property. Virtually all discussions of landscape planning–including the University of Minnesota Web site–assume you have such a map but I have never seen directions for creating one. All you need is a 100 foot measuring tape, a ruler, a drawing compass, a piece of graph paper, and maybe a partner to hold the end of the tape when you take measurements. Standard 81/2 by 11 inch graph paper is available almost everywhere. Larger sizes are available at stores that sell engineering supplies.

The first step in developing your map is deciding on a scale. This is nothing more than determining how many feet will be represented by each square on your graph paper. If you pick a scale that is too large, your map won't fit on the graph paper and if you pick a scale that is too small, your map will be smaller than it need be. To get the scale right, you need to measure the maximum length and width of the area to be mapped using your 100 foot tape and then count the number of squares along the length and width of the paper. Divide the larger number (either squares or feet) by the smaller number for the length and then do the same thing for the width. If the number of squares is larger than the number of feet, round the answer down to the nearest whole number. Otherwise round the number up. The overall scale of your drawing is going to be the smaller of the scale along the length or along the width. Figure I shows some sample calculations.

> Suppose the area of the property you want to map is 100 feet long by 50 feet wide and the area on the graph paper is 80 squares long by 60 squares wide. Dividing the larger numbers into the smaller numbers for length and width we get:
>
> For length: 100 feet / 80 square = 1.25. Rounding up we get 2 feet per square.
> For width: 80 squares / 50 feet = 1.6. Rounding down we get 1 foot per square.
>
> In order to fit the whole area on the graph paper we have to use an overall scale of 2 feet per square.

Figure I

Once we have determined the scale of the map, we need to establish some reference points which will be used to locate all other features on the map. Define a base line on the ground with at least two marked points. This can be a fence line, property line, side of a house, or even two stakes arbitrarily placed in the ground. The points on this line will be used as references to define the locations of other points on the ground. Once you have established this line on the ground, you need to draw it to scale on your graph paper, showing the precise locations of the reference points. When you draw the line on the graph paper, make sure you place it so that the features you want to map will fall on the paper and not off the edge. Label the reference points both on the ground and on the graph paper.

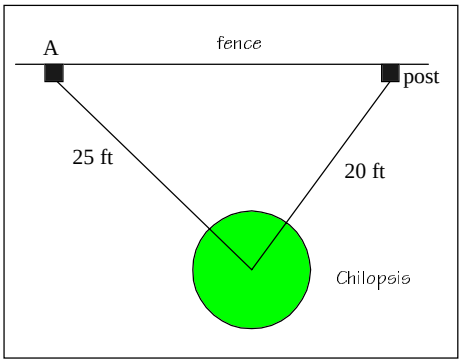
Before you begin taking measurements on the ground, you need to create a table to record the measurements. The table should have five columns–one for the name of the object you want to plot on your map, one to identify each of the reference points you are measuring from, and one for each of the distances you will measure from the reference point to the object.

After you have set up the table, you can select the objects on the ground you want to include on your map and begin measuring the distances from the reference points to the objects and recording the data in your table. If you have a choice of several pairs reference points to use for a measurement, choose the ones that are farthest apart. *(continued on next page)*

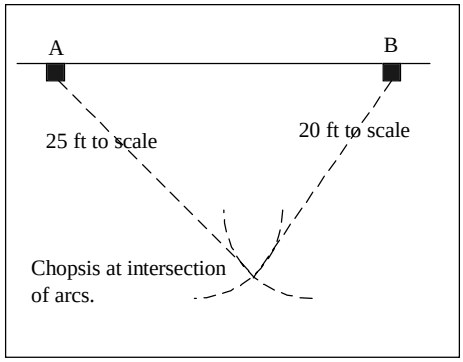
Object	Ref 1	Distance 1	Ref 2	Distance 2
Chilopsis	A	25 ft	B	20 ft
Oak	B	55 ft	D	35 ft
Mesquite	C	45 ft	E	30 ft

Example Data Table

Now you are ready to start drawing your map. Using the ruler and compass plot the points from your table of measurements on the graph paper by drawing arcs from each of the two reference points. The radii of the arcs should be the scaled distances shown in the table of measurements, and the location of the point you want to plot will be at the point of intersection of the two arcs.



YARD



DRAWING

Using the plotted points as references, sketch in whatever other details you want to include on your map. If you find some objects in your yard you cannot directly measure from your original base line, you can create additional reference points by locating them with respect to your original reference points. After you have drawn in all the details you wish to include in your base map, add a north arrow and you are done.

Gary A. Gruenhagen, Master Gardener
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Call's Comments– Gardening Myths

Myth #1: Soil structure and chemistry can be changed with amendments. Soil is huge; it is under our feet everywhere. The weight of one cubic foot of soil is from 80 to 120 pounds depending on the soil type. Many western desert soils have from 1 to 10% free lime or calcium carbonate content of the soil. It is not leached through the soil because of our limited rainfall. Back in the East and the Midwest the high rainfall amounts removes the calcium by leaching and the result is acid soils. Assuming a cubic foot of soil weighs 100 pounds and has a 1% calcium carbonate content then there would be one pound of calcium carbonate present. It takes one pound of sulfuric acid or its equivalent to neutralize one pound of calcium carbonate. Therefore, to decrease soil pH from alkaline to neutral or acid it would require equal mixing of one pound or equivalent of sulfuric acid throughout the cubic foot of soil. If the soil had 10% calcium carbonate then 10 pounds of sulfuric acid or its equivalent would be needed to neutralize the soil. This is not cost effective to do and is not going to happen. We need to learn to work with the soil we have on our property.

Myth #2: Chemical fertilizers harm the soil and the organisms in it. The soil is a dynamic, living world of microscopic bacteria, fungi, nematodes, and other organisms which are not static but constantly changing. When anything is added to the soil there is a reaction in terms of soil chemistry and organism. "For every action there is an opposite and equal reaction" applies to the soil. As a fertilizer is added to the soil, whether from a "chemical" or "organic" source, the population and ratio of organisms changes. If the fertilizer is high in nitrate-nitrogen, the bacteria and fungi that consume it will increase in population, perhaps "pushing out" of balance other organisms for a while. When the nitrate-nitrogen is consumed by soil organisms and/or plants the soil returns to prenitrate-nitrogen "normal" and the population of organisms returns to "normal." "Organic" forms of fertilizer have the same effect on the soil, however they normally break down more slowly. "Organic" sources of nitrogen, for example, have to be broken down by soil organisms to nitrate-nitrogen before they can be used by plants for growth. Plants can use only inorganic sources of nitrogen. Just because something comes from a "natural" source does not mean that it is better or worse than "conventional" sources. Some of the most toxic compounds known to man come from "natural" sources, *i.e.*, botulin toxin, nicotine, and the venom of a South American sea snake. Bagged fertilizers are mined in the cases of phosphorous and potassium.

(continued on next page)

Nitrate and ammonium nitrogen comes from natural gas and air (which is 78% nitrogen gas) that are combined and processed under high temperatures and pressure. These are all natural products combined to make an "artificial" product.

Myth #3: Organically grown food does not use pesticides. "Organically grown food is food grown without pesticides, grown without artificial fertilizer, grown in soil whose humus content is increased by the additions of organic matter; grown in soil where minimal content is increased with applications of natural mineral fertilizers, has not been treated with preservatives, hormones, antibiotics, *etc.*" —Robert Rodale. This quotation from Mr. Rodale, whose father, J.I. Rodale, began *Organic Gardening Magazine*, states that "organic" growing does not use pesticides. Webster's *New Collegiate Dictionary* defines a pesticide as "an agent used to destroy something that pesters or annoys." What are rotenone, pyrethrum, or insecticidal soap used for? To kill pests! I believe that Friend Sykes (1888-1965), an English estate owner, had a better prospective on "organic" growing. He said, "Organic Farming...is another name for...Humus Farming. Organic methods are not, therefore, a matter of avoiding the use of artificials; they require that the cultivator should encourage the fertility which lies, actually or potentially, in the soil itself, and should regard the soil not as inert matter but as a living organism."

Myth #5: Wives' tales are information passed down from generation to generation with a grain of truth. There are many wives' tales that at one time might have contained some truth, but over time become so distorted that they are pure fiction. I'm sure that everyone can think of a wives' tale. My thought is why are there no husband tales?! Here are three wives' tales from different parts of the country.

1. There is an important feature about sowing parsley. It is to be sown by the head of the household or it is very unlikely to grow at all. So, get out and put it in the ground before your husband is up! Not that there could be any dispute on this point, but better be on the safe side.
2. From Virginia, "I recently gave a new neighbor in rural Virginia some camellias, but she said she could not thank me. If thanks is expressed for a gift plant, the plant will die."
3. Not proven or disproved as far as I know, but last summer my aunt told me to be sure to keep my daughter away from the cucumbers when she is on her menstrual cycle or the cucumbers would not bear fruit. I thanked her and ignored the advice but have not been observant enough to note if it was without merit.

Robert E. Call
Extension Agent, Horticulture

Happpy New Year
&
Happy Gardening!

From the volunteers that bring you the
High on the Desert Newsletter
as we begin our 11th year of publication and a new millennium!

What is a Master Gardener Anyway?

The Master Gardener program began in King and Pierce counties of Washington state in 1972 where an overworked Horticultural Extension Agent, Dr. David Gibby, began training volunteers to assist him in providing support to the community. Dr. Gibby's program was simple and effective. In exchange for a promise to donate a certain number of hours service, he gave volunteers specialized, university-level training in horticulture. Word of his success in recruiting volunteer support soon spread to other communities, and today Master Gardener programs are flourishing throughout the United States and Canada.

The Master Gardener program was started in Cochise County in 1987 by County Horticultural Extension Agent, Dr. Deborah Young. The current agent, Rob Call, has continued the program, teaching thirteen week Master Gardener classes. Prospective Master Gardeners who take the course study such topics as soils, pest management, botany, gardening, landscaping, and environmental stewardship.

The University of Arizona Extension Offices are located in Willcox and Sierra Vista and you may reach a Master Gardener to assist you with your questions about gardening by calling the numbers listed on the cover of this newsletter. There is no charge for this gardening service–it is all part of the U of A's commitment to excellence and the people they serve.

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High on the Desert

The Cochise County Master Gardeners Association (CCMGA) is awarding up to five full scholarships to the 2000 High Desert Gardening & Landscaping Conference to be held at the Lakeside Activity Centre located on Ft. Huachuca, AZ on February 17 and 18, 2000. Applicants (open to everyone) are invited to submit an essay on one of the following topics:

- Gardening for food production
- Landscaping with native plants
- Environmental stewardship

Essays must meet the following criteria:

1. 750 to 1000 words in length.
2. Double spaced and typed on plain bond paper.
3. Represent original scholarship and be suitable for publication. All references and authorities cited must be properly attributed.
4. Entries must be accompanied by an official cover sheet obtainable from the Cooperative Extension Office at the University of Arizona South campus.
5. Entries must be received at the Cooperative Extension Office at the University of Arizona South campus not later than close of business on January 14, 2000.

Entries will be judged by the Cochise County Horticultural Extension Agent and a committee of Master Gardeners appointed by the President of CCMGA and the names of awardees announced not later than January 28, 2000.

High Desert Gardening & Landscaping Conference
February 17 & 18

Registration forms are in this newsletter and on our web site!
www.ag.arizona.edu/cochise/mg/
Hurry and register to avoid late fees!

We hope to see YOU at the conference in 2000!