

COOPERATIVE EXTENSION

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

the Cochise County Master Gardener

NEWSLETTER

VOL. I, NO. II

January 1990

WHAT TO DO --- WHAT TO DO --- WHAT TO DO --- JANUARY

Jackie Dillon-Fast
Staff Writer

(In each newsletter issue we will focus on gardening projects you may want to concentrate on for that month. No doubt we'll leave some "to-do"s off our list, but we will try to cover the main ones. We'll also try to expand on one of the projects in a longer feature article in the same issue. This month we're featuring pruning.)

This is great weather for some winter gardening clean-up. The sun is shining, the sky is blue, and there's a slight nip in the air. So throw on a sweatshirt and grab those pruning shears - we have gardening to do!

> WINTER PRUNING: This is essential for fruit trees; less so for shade and ornamentals.

> PROTECT FROST-TENDER PLANTS: Remember, cold air settles in the lowest spot, which is why Willcox may get a heavy frost but not Bisbee. This also holds true for low areas in your garden.

> REMOVE OLD MULCH FROM TREES AND PLANTING BEDS: Apply fresh mulch to protect plants from frost and to retain moisture. Bag or burn old mulch. This gets rid of insects that may have laid eggs or pupated under the mulch, planning to overwinter in this nice moist environment you've provided. Follow this advice and you'll have fewer problems with pests come spring.

> DIG TREE HOLES: If you're planting bare-root trees this winter, it's best to start digging the holes early and working on it over a week or so. It will make it alot easier on your back. Most tree holes

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Bits 'N' Pieces

> Biodegradable trash bags are now available. Check your local grocery store. If they don't stock this item, encourage them to do so!

> The new telephone books are out. Recycle your old one by composting, mulching, use as packaging; etc!

> Plan to be away from home for a few days? Make your own self-watering device by setting a pail of water in the center of a circle of pots, burying one end of an old nylon stocking in each pot of soil and placing the other end in the pail of water.



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BIOSPHERE II

Rose Veselak Land
Staff

Even a casual look at the amazing world of Biosphere II reveals a country, a society, a vision of the future. It creates the excitement of sensing new scientific horizons, of new concepts cultivating keener minds, changing tempos, and illuminating directions in everyday life.

Once past the manned entry gates, the rolling landscape takes on the mien of great care and thrifty elegance. While the reception center is crisply efficient, framed watercolor elevations in the hallway introduce the imaginative architectural plans of the closed ecosystem designed by project director CEO Margret Augustine and Phil Hawes, co-architect.

During a talk by the manager of Sun Space Ranch Conference Center, the Master Gardener tour learned that Space Biospheres Venture is funded by a venture capital commitment of \$30 million. The total structure of Biosphere II, covering about 2 1/2 acres, consists of several biomes.

The five-story habitat biome includes apartments (for eight researchers), laboratories, workshops, libraries, computer and communication facilities, and room for recreation. The intensive agricultural biome, about 20,000 sq. ft., is for raising food, fiber, and other crops, with domestic animal and aquaculture areas behind the crop area. Later, in walking through the experimental glasshouses, we saw the Vietnamese pigs, rooster and hens already acclimated. The tropical rain forest biome is close to 90 feet high and also covers 20,000 sq. ft. A transition section includes a

tropical savannah biome, a marsh biome, and the marine biome, a miniature sea 25 feet deep. Just beyond is a desert biome, designed after the low-rainfall, high-humidity of the Viscaïno Desert in Baja California.

Our guide took us through this Experimental Intensive Agriculture Complex which is not to be a closed system but a series of glasshouses used for conducting research on plant species, cultivation, pest management and recycling techniques, as well as a training place for candidate researchers. Income from sales of produce such as vegetables; fruits such as bananas, strawberries, papaya, grains, legumes; and herbs have paid greenhouse operating costs since February 1986.

Though I did not see the aquaculture bay, we did get an outside view of the Biosphere II Test Module. The building was sealed because of testing occupation by a researcher, isolated for three weeks or more.

World wide scientists, agriculturalists, engineers, botanists, entomologists, astronauts, biologists, and others with great technical experience and unlimited vision are involved in the project.

Biosphere II will be sealed again in September of 1990. For two years, eight resident researchers will live, and work inside the solar-energized, air-water-and-waste-recycled 2 1/2 acre mini-world of mountain forest, ocean, marsh, and desert. They will communicate with mission control by TV, video, and computer. Repairs to major systems (heating, cooling, and electricity) can be made from outside.

What will come of it? Perhaps enough research to supply space scientists with data for the next century - to help plan and to accelerate the wisest possible use of space, to

you'll end up handicapping the tree by removing too much healthy wood at once. Space it out over two or three years.

How pruning works. Pruning removes part of a tree's top growth and reduces the demand on the roots for nutrients. The tree now has more energy (nutrients) to dedicate to healthy new growth and top quality fruit production. You can channel this energy into specific areas of your tree by placing your pruning cut directly above a bud or side branch (a header cut). The bud will then develop into a side branch, or the already-existing side branch will become stronger and more dominant. By removing an entire branch (a thinning cut), you can remove dead or damaged wood, long droopy branches, or fruit-bearing wood that is no longer productive.

Header cuts. When making a header cut (used principally on fruit trees), prune out 1/3 or 1/2 of new growth from the branch and make the pruning cut above a bud, side branch, or main branch that will grow in a favorable direction. In windy locations, it is best to select a bud or branch that will grow into the wind to reduce the likelihood of it breaking. Make all of your cuts on an angle, with the bud or branch on the high-side of the cut. On a tree less than four years old, concentrate on creating a strong branching system. Be wary of making header cuts on older branches with no side branching. The latent buds on these branches may have been dormant for too long to develop.

Thinning cuts. When making a thinning cut (used on fruit and shade trees), prune out the entire branch, making your cut close to its junction with the main branch. Never leave a

stub. If you are removing a large diameter branch, make a preliminary cut underneath with your pruning saw to keep the bark from tearing when the branch is cut. Eliminate "crow's feet" (places where three branches join) by removing one of the branches and leaving in place the two branches that form the widest angle. This is the stronger union and allows more room for side branching.

Pruning shade trees. Concentrate on thinning out congested branches and shaping an aesthetically pleasing tree. It is best to allow shade trees to grow naturally. It is healthier for the tree and will save wear and tear on your pruning shears. To encourage branching high enough on a shade tree to allow for travel beneath it, shorten the branches that grow below where you want branching to begin. Don't remove them completely in the first year or two. The leaves on these shortened branches will supply nutrients to the crown of the tree and lead to faster development than if you just lopped them off. To shorten an overambitious shade tree, cut the tallest branch lower than the rest of the branches. This is better than shearing all of the top branches equally because it still retains the natural shape of the tree.

Pruning fruit trees. Concentrate on making header cuts to increase side branching and fruit production, and thinning cuts to remove congested branches and improve the shape and size of the tree. Thin out branches that are growing straight up (except in pear trees), straight down, or toward the center, as well as branches that are touching or crossing. It is important to know the growing and fruiting

anticipate the health and quality of future life on this planet. What a mentally nutritional boost to the very roots of education!

* * * COMING NEXT MONTH * * *

Look for the home gardener's question and answer column.

DORMANT-OIL SPRAYS: A SAFE AND EFFECTIVE WAY OF CONTROLLING PESTS BEFORE THEY BECOME A PROBLEM

Jackie Dillon-Fast
Staff Writer

After pruning your trees, you may want to consider applying a dormant-oil spray to kill insect eggs and larvae overwintering on the twigs and bark of your trees. Three types of insects in particular can be controlled with careful dormant-oil spraying: aphids, which lay eggs on tree bark, peach tree borers, which overwinter as larvae; and that foe of apple, pear, and walnut growers, the codling moth, which overwinters as pupae.

Dormant-oil works by suffocating the pupa, larva, or egg of the insect. It works only on pests that overwinter on the surface of your tree and it has not been approved by the FDA for use on all fruit and nut trees so it is important to read the label on the dormant-oil spray carefully. Your tree must be fully dormant at the time of spraying and you'll save money by spraying after pruning because you'll have less tree surface to cover.

Check your local nurseries or garden suppliers for different brands of dormant-oil (Volcks Oil is one), and remember to read that label carefully!

CIELO EN TIERRA POTLUCK

Rose Veselak Land
Staff

A house by the year-round running waters of the Babocomari River is what we found at Mary Diamond's secluded place. Our arrival was celebrated in a golden autumn light glittering everywhere as a light breeze scattered bright, shimmering leaves.

Entering the house is like starting a world travel adventure with handsome objects enriching each surface, memories of many countries. Soon luncheon disappeared as we became better acquainted - Josie, Deborah, Mary, Cathé and child, Rose and Karen (Mary's house guest). We did break away from the table to see other places of interest on the property: a lodge to house weekend groups for meetings and conferences; a fenced-in section for fancy fowl, pheasants, and a garden; and farther up the hill a very classy yurt.

This yurt is a far cry from the original Asiatic nomads' shelter, but retains the classic circular form created by expandable, trellis-like units. It is a very large pre-fab by Yurts Pacific made permanent by exterior foundation walls of stone. An incredibly polished wood floor and the ceiling rafters seem to be made of the same fine wood used in Mary's home. The only furnishings are pillows and a stereo system and lights. Roll-up shades cover 2 or 3 plastic windows. Definitely a shoes-off-before-you-enter place, dedicated to music and meditation.

It was a beautiful day, well spent in getting acquainted with another Master Gardener. We look forward to a variety of future informal visits with Master Gardener Program participants.

WINTER PRUNING

Jackie Dillon-Fast
Staff Writer

The hardest thing about pruning trees is getting up the courage to make the first cut. After that, each cut gets a little easier. The fact is, the second hardest thing about pruning is knowing when to stop. But both problems can be solved with a little knowledge of how pruning works and why it is good for our deciduous trees and especially good for our fruit trees.

There are two main reasons for pruning. The first is to improve a tree's shape and size, and it is the purpose behind pruning of ornamental and shade trees. The second is to improve fruit production, and it is especially critical for owners of fruit trees who want a good harvest next summer. Both reasons center around improving the health of our trees.

January is generally a good month for pruning deciduous trees. By mid-January, most deciduous trees are in the deepest phase of their winter rest, a condition called full dormancy. It is extremely important that a deciduous tree be fully dormant before it is pruned. Pruning a tree when sap is still flowing in its branches may stimulate the tree to bud prematurely while we are still facing danger of frost, or it may open the pruning cuts to infection by airborne fungi. To make certain your tree is in full dormancy, break off a few small branches and check the ends for sap flow. There should be a little moisture still present in the branches, but not enough to ooze or flow from the break. And, of course, a tree that still has leaves is very much "awake" and should not be pruned in mid-winter. This includes non-deciduous trees such as evergreens which should be pruned from summer to fall.

Also, hold off on pruning those rose bushes until early spring. Roses are not heavy sleepers.

Once you've determined that your trees are fully dormant, it's time to inspect the tool shed. You'll need a pair of hand-held pruning shears; loppers, which are pruning shears on-a-stick; and a pruning saw. All of your pruning tools should be well constructed with sharp blades.

You may also want to invest in a spray can of pruning paint to seal off any pruning cuts larger than a pencil. There is some disagreement over the importance of applying pruning paint. Some gardening experts believe it is essential to keep pruning cuts from drying out and cracking, while other experts argue that it really isn't necessary, and a few believe using pruning paint actually increases the likelihood of a cut drying out. Since the verdict is still out, you'll need to decide this one for yourself. Pruning paint must be applied immediately after pruning in order to be effective.

So now that you've checked your trees and they're fully dormant, sharpened your tools, and made up your mind about pruning paint, it looks like you're ready to start cutting. Before you head out, you might want to review some pruning fundamentals. Knowing why you should prune out one branch and not its neighbor will help you make good decisions when you have pruning shears in hand. The following paragraphs offer a quick overview of how pruning works, some good pruning techniques, and suggestions for the pruning of specific fruit trees. A word of caution: if you've inherited an older, unpruned tree, don't try to prune it all in one year -

habits of the specific fruit tree you are pruning or you may inadvertently prune out the best of your fruit-bearing wood. In that sense, pruning fruit trees requires more care than pruning shade trees.

1. Peach and nectarine. These fruit trees are vigorous growers with fruit occurring on the previous years new growth. This growth produces fruit only once and then becomes unproductive. You need to prune hard to encourage side growth from these older branches. Remove about 2/3's of the new growth on each branch, but do not cut back to two-year-old wood. (You can often tell new growth from old by color changes in the bark as you move down the branch. Older wood is usually a duller shade.) Peach trees are naturally multi-trunked and vase shaped. Thinning cuts should be used to prevent crowding of trunks and to open up the center of the tree.

2. Apricot and plum. These fruit trees are almost as fast growing as peach, but their fruiting habit is different. Apricot and plum trees produce both fruit-bearing branches and fruit-bearing spurs. Spurs are stubby fruit-producing twigs up to 3 inches long and often resemble long thorns with buds. Never prune spurs from your fruit trees. These spurs will remain productive for three to five years. Apricot trees are naturally multi-trunked and vase shaped. Remove older side branches to encourage new spurs to form and cut off 1/3 to 1/2 of the new growth on each branch to promote new side growth.

3. Apple, pear, and cherry. These fruit trees grow much slower than peach or apricot and produce little fruit-bearing wood each year.

Pruning consists of thinning out dead, rangy, or crowding branches, with only minimal header cuts. Apple trees are naturally central leader (having one dominant branch) with fruit-producing spurs occurring on two-year-old wood. These spurs can continue to bear fruit for five to eight years. Pear trees can be central leader or multi-trunked, though all of their branches seem to grow straight up. They also produce fruit on long lasting spurs growing on two-year-old wood. Cherry trees are similar to pear in that they can be central leader or multi-trunked.

4. Citrus trees. There are few citrus trees in Cochise County and, in general, citrus trees are not pruned. The exception (there is always an exception) is the lemon tree. Lemon trees produce strong, upright growth on their main branches that should be removed as soon as it appears. These are suckers and are rarely productive.

Frost damage. Hold off on pruning until early spring when there is no longer a danger of additional damage and you can distinguish between the dead and live wood.

Although this pruning review by no means covers all aspects of pruning, it should help you get started on your winter pruning project. If this winter continues to be mild, you need to be certain to check your trees for dormancy before beginning to prune. Sources consulted for this article include *Sunset Western Garden Book*, George Brookbank's *Desert Gardening*, and *Plants for a Dry Climate*. These and other sources of pruning information are available in your local library or bookstore.

Happy pruning!

should be 5 feet by 5 feet by 5 feet - quite a hole, but necessary for the health and longevity of your tree.

> PLANT THAT TREE: Remember to dig the hole before buying the tree. Keep the roots from drying out by wrapping them in damp sawdust or sacking and tying a plastic bag around them. **KEEP THOSE ROOTS DAMP!**

> WATER PERIODICALLY: Even though your tree's top growth has stopped, its roots will continue growing during the winter as long as soil temperatures are above 45 degrees F. In order to remain healthy, your tree's roots depend on a winter water source such as winter rains and supplemental watering. During wet cold winters (soil temp. below 45 degrees F) trees will get enough dormant time to recover from the previous year's growing season. But if the winter is mild, trees may not get enough rest or enough water and will produce small leaves and a light fruit crop in spring. There is little you can do to prevent this. Withholding irrigation to delay budding will only increase the stress on your tree, not slow down budding.

> STRATIFY SEEDS: Some seeds, such as salvia and gayfeather, require a cold-moist pretreatment to germinate. This is best accomplished by planting outdoors in fall and keeping the planting bed moist throughout the winter. In mild winter areas, however, the weather may not stay cold long enough for cold-stratification. In these areas, seeds should be cold-stratified in the refrigerator for 1 to 3 months, depending on the type of seed.

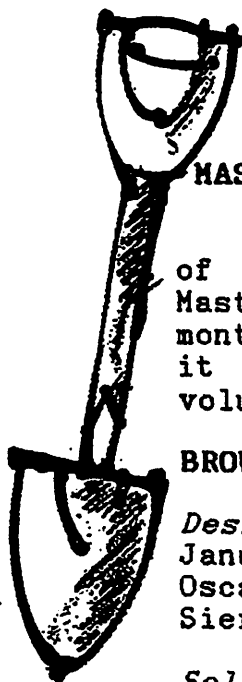
> PREPARING SOIL: If you have a dormant garden or an undeveloped area that you'll be planting in spring, now is a good time to add manure to the soil. This will increase the organic matter content and improve soil structure. As a rule, manure should be added at least three months prior to planting.

> FERTILIZE ASPARAGUS: If you're lucky enough to have an asparagus bed and it is dormant, fertilize it lightly. The asparagus plants will not break dormancy, but will store the nutrients in their roots for vigorous spring growth.

> PERUSE THOSE SEED CATALOGS: By the end of this month your seed catalogs should be dog-eared and your seed orders ready for mailing. If you haven't requested seed catalogs yet, hop to it - time is running out!

> GENERAL GARDEN CLEAN-UP: Keep at those winter weeds and remove piles of leaves and debris from your garden.

> GLOAT A LITTLE: Turn on the news for the weather in the Midwestern region and be glad you live in warm and sunny Arizona!



MASTER GARDENER QUESTIONNAIRE

A special thanks to those of you who responded to the Master Gardener Survey in last month's newsletter. Remember, it is never too late to volunteer!

BROWN BAG CLINICS

Designing your home landscape
January 23, 1990, 12 noon
Oscar Yrun Community Center
Sierra Vista

Selecting landscape plants for Sierra Vista
February 5, 1990, 12 noon
Oscar Yrun Community Center
Sierra Vista

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