



High on the Desert Cochise County Master Gardener Newsletter

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

The Virtual Gardener—Book Review

Collapse by Jared Diamond
Viking Penguin, 2005, 575 pp

I hadn't planned on writing a book review this month but after finishing *Collapse*, I felt compelled to review it for you. A central theme of the book is the relationship of a society to its natural environment—a topic we all need to spend some time considering. Many people today are so disconnected from nature that they fail to appreciate that the Web of Life both includes and sustains all of us. They often look at nature as something our advanced civilization has outgrown and can do without. Diamond punctures that illusion.

In this encyclopedic book, Pulitzer prize winning author Jared Diamond, professor of geography at the University of California at Los Angeles, compares and contrasts a number of societies from the past to determine the natural and human factors that caused them to succeed

or fail. Some, like the Icelandandic society founded by Vikings over a thousand years ago, have survived to the present despite the challenges of a harsh environment. Others, like Easter Island in a much more benign environment, crashed after about a thousand years, leaving only the famous Easter Island heads staring vacantly out to sea. Why?

As a result of his analysis, Diamond identified five key factors under which to group the causes of a society's success or failure. His five factors are:

1. Damage inflicted on the natural environment by the society.
2. Climate change, whether natural or manmade.
3. Aggression by hostile neighboring societies.

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4. Support by friendly neighboring societies.
5. The internal response of the society toward solving its problems.

After analyzing societies of the past, Diamond turns his focus on some modern societies to determine how they are doing with respect to his five factors. Case studies include Montana, Rwanda, the Dominican Republic, Haiti, China, and Australia. The results of his analyses are both encouraging and discouraging.

Global deforestation, depletion of fisheries, and the exponential increase in the negative impact of humanity on the global environment are discouraging. A rising tide of environmental awareness on the part of individuals, corporations, and governments, as well as some successes in reversing or containing environmental damage is encouraging.

Australia, one of the examples of a modern society discussed by Diamond, exhibits reasons for both pessimism and



cautious optimism. Having lived in Australia myself a number of years ago, I found that discussion particularly interesting. Interesting because Australia is in many respects a miniature version of the United States. It is a modern, technologically sophisticated society; it has an advanced First World economy; and its population is well-educated and shares our Western European moral and ethical values. The major difference is that it is located in a far more fragile physical environment than the United States.

Over the past 150 years, Australians have followed a path of environmental destruction. They have stripped their continent of a large portion of its native vegetation, destroyed much of its top soil, contaminated its ground and surface waters, depleted its fisheries, polluted its coastal waters, and introduced exotic plants and animals that have severely disrupted the native ecology. Much of the destruction is irreversible, at least on a human time scale. Yet there is hope for cautious optimism. Australians individually and collectively have become aware of the damage they have done and are taking steps to deal with the problems they have created. But is it too late? Time will tell.

The very fragility of the Australian continent and the degree of damage inflicted upon it make it a useful case study for us. Although North America is less fragile, it is not indestructible. Its robustness only means that it will take us longer to inflict a comparable degree of damage, giving us a little more time to clean up our act before it

is too late. Thus Australia can serve us as a sort of canary in the coal mine.

Collapse is a must-read for anyone interested in or concerned about the environment. Although Diamond is an environmentalist, he delivers a balanced message that looks at environmental problems from a variety of perspectives. His goal, I believe, was not to point fingers or preach a Chicken Little message but to raise awareness of the long-term consequences of our actions and stimulate ideas for creating a sustainable global community.

If you would like to read some other reviews of *Collapse*, check out these URLs:

<http://www.americanscientist.org/template/BookReviewTypeDetail/assetid/40741;jsessionid=aaa72zdXHBxg1T>

<http://sciencepolitics.blogspot.com/2005/06/books-collapse-by-jared-diamond.html>

<http://www.davidbrin.com/collapse.html>

Until next time Happy Surfing.

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Garden Insects: Identification and Control

In a typical backyard it is possible to find a greater number of insect species living in more diverse and surprising ways than would be found among all other plant and animal groups. For example, in an average county a list of all flowering plant species found there would be somewhere between 500 and a 1,000 names. A person making a list of insects for an average county in North America would find thousands of species. In North America, there are about 91,000 species of insects. (A note: these are just the known species.) In the world, there are some 900,000 known species of insects and many experts believe that the numbers of unknown species outnumber the known. So, with this in mind it would take one person a lifetime to collect and identify even a fraction of all insects in North America.

For the gardener, there is good news. Most of these insects are innocuous or even beneficial. It has been estimated that about 80% of these are labeled 'neutral'; being neither a pest or beneficial. The first thing for the gardener to determine is the positive identification of the insect. This is an essential requirement.

If identification is not known, one can utilize their county Cooperative Extension. I found a helpful resource to be *Garden Insects of North America* by Whitney Cranshaw. A person can also supplement these sources with local informational sources such as 'tried and true' methods of control.



The life history and habits of the insect in question will also need probing. This will help in the understanding of the potential to damage and when the insect may be most vulnerable. This is part of Integrated Pest Management of IPM.

Once these questions concerning identification, life history, habits, *etc.* have been answered, the next course of action can be taken. Does the plan call for control? If so, it is usually best to use a variety of methods of control. There are four methods of management: 1) cultural; 2) physical or mechanical; 3) biological; and 4) chemical. An example of cultural control is growing plant 'X' in a certain manner. Trapping and handpicking are examples of physical or mechanical control. Biological control is seen when natural enemies are utilized. And, of course, chemical control is self-explanatory.

Using a complementary approach or a combination of these methods is known as Integrated Pest Management.

David Davis
Associate Master Gardener

Cuttings 'N' Clippings

* The next CCMGA meeting is 5:00 p.m. Thursday, October 5, 2006 at the University of Arizona South campus, Room 505. The guest speaker will be Extension Agent, Rob Call, with a tour of the Royal Botanical Gardens of Kew, UK.

* The free October Water Wise workshop will be held on Saturday October 7 from 9:00—11:00 a.m. at the UAS campus. The title is *Fix Those Drips!*, Come and learn how you can be your own plumber for easy-to-fix plumbing problems. For more information contact Cado Daily at 458-8278, Ext. 2139.

* The Highlands Garden Conference will be held at the Hondah Resort near Pinetop on October 13 & 14. For information contact Jeff Schalau, Yavapai County Extension Agent at jschalau@ag.arizona.edu

October Reminders

- ◆ Be ready for the first frost
- ◆ Thin seedlings
- ◆ Overseed lawns
- ◆ Plant spring bulbs
- ◆ Divide perennials
- ◆ Don't let weeds go to seed

Monsoon: Nature's Earth Mover

The recent summer torrential rains moved a lot of soil, as seen in pictures of washed out roads, earth slides, and flooding that occurred in the media almost everyday. These graphic images spark our interest, but they only tell part of the story. Closer to home, we must be vigilant of how soil movement changes our landscape.

As I look around my community, I see that many plants have suffered from events of soil erosion or overfill around their trunk by surrounding soil. These situations are best remedied as soon as observed and monitored for reoccurrence.

Erosion of soil exposing plant root systems is unfavorable to plant health in general as it is not a natural occurrence for roots to be exposed to our sun's radiation. The possibility of personal hazard or mechanical damage should also be realized. Remediation of this event is typically a no-brainer, just re-cover the exposed roots, but I recommend that fill soil be as similar to that which was eroded, and avoid compacting the fill soil. You may have to fill the area some more after the soil settles. Then, investigate ways to repel future erosion from occurring.

However, overfill of soil, mulch, or other debris around the main stem, or trunk, of any perennial plant can bring about extremely unfavorable consequences, including early mortality. Inspection, correc-

tion, and continued monitoring of this event are advisable through the end of this exceptionally diverse monsoon season, and of course, after any similar earth-moving event.

Research has shown that when the main stem of trees and shrubs are in continual contact with soil,

... we must be vigilant of how soil movement changes our landscape.

mulch (especially organic), or other materials that retain moisture, they are predisposed to biotic conditions unfavorable to plant health due to the fact that an unnatural environment has been created. This often-moist environment not only disallows essential sunlight from reaching the stem base, it also inhibits respiration, and most unfavorably, sets up an environment conducive for soil-born and water-born disease organisms to take up residence, such as *Phytophthora* spp., *Armillaria mellea*, both are rots, or *Verticillium dahliae*, a wilt causing fungi.

Remediation is usually an easy cultural practice. Simply remove all material in contact with the stem at soil level well away from the area. Brush the stem clean of any remaining foreign material using a flexible non-damaging brush, and the plant should be back to natural. Again, investigate ways to mitigate similar occurrences. Now if your plant was originally planted too deep or has subsided due to poor installation practices, you may have problems

determining how much overfill needs to be removed. This is often shocking. You should remove and clear from the area all material above the first sizable root initiation. That would be a root that is well attached to the stem, not necessarily ones that are hair-like and adventurously seeking respiration due to deep planting. Unless you are willing to subject your plant to undesirable stress you must remove this material to its root crown where natural rooting occurs.

Information on plant health care and proper planting procedures may be obtained on-line at www.isa-arbor.com.

While you are out inspecting your plant's earth-movement damage look for the path rainwater takes as it moves across your landscape and where it goes leaving your property. If you can not only figure out how to direct water from causing erosion and overfill, but also harvest this flow for your plantings. We will all benefit, as you will need less ground water for your plantings. Much information is available on water harvesting. Knowing where your water flows is always best by experiencing a rainy day in your yard with shovel in hand.

This monsoon season has been more dramatic, more earth moving, than the past several years, maybe as far back as 1983. Your landscape is valuable to our community. Investing the time to check soil movement around your plants, mitigating potential problems, and checking water flow pathways around your yard, is time well spent.

*DeForest Lewis Jr., Master Gardener
& ISA Certified Arborist*

The Agent's Observations

Q I have mealy bugs on some shrubs around our home. Is it okay for me to spray them at any time of the year?

A Mealy bugs (*Pseudococcus longispinus*) are a soft scale insect and can be treated any time by washing off infested plants with a high pressure water spray, followed up with a horticultural oil that may include a "hard pesticide" like malathion. (Caution: horticulture oils may burn foliage.) A hard pesticide is one that traditionally has its origins in agricultural production and is frequently more toxic to animals and man and not as gentle on the environment. "Soft pesticides" on the other hand are those which are typically more environmentally and non-target organism friendly. These terms were coined with the rise of Integrated Pest Management (IPM). Dormant oil is a soft pesticide and malathion is a hard pesticide. Always read and follow the pesticide label. For more information on mealy bugs see the website: <http://www.mda.state.mn.us/biocon/plantscape/mealybugs.htm>

Source: *Insect Pests of Farm, Garden and Orchard*, Eighth Edition. 1987. Ralph H Davidson & William F. Lyon. John Wiley & Sons, New York. p. 523.

Q I am seeing bulbs in local nurseries and getting nursery catalogues for spring bulbs. Is the quality of mail order bulbs worth the premium for their so-called superiority, or are local sources just as good?

A There is a much greater selection of bulbs through mail order. As far as the quality is concerned, it is always nice to be able to pick through the bulbs and select for size and quality yourself rather than trust someone to do that and then ship them. Always select the largest bulbs of each variety, because there is a direct relationship between bulb size and flower size. Damaged and undersized bulbs found on clearance racks are not a bargain. A bulb should be plump, firm and heavy for its size. Avoid bulbs that show evidence of mold, scars, cuts, soft spots or blemishes, or appear withered or dried out. Two exceptions to this rule are anemone and ranunculus, which naturally look shriveled and shrunken. Nurseries normally buy pre-chilled bulbs. These can be planted directly into the ground. However, if you are saving bulbs from year to year, then some bulbs will have to be dug up and chilled before planting in the spring or they may not bloom especially if they will be planted in a lower elevation location. These include



crocus, hyacinth and tulip. To chill place these bulbs in the refrigerator for six to eight weeks. Do not put them in a sealed container or they will rot.

Remember bulbs, corms and rhizomes are living organisms that are respiring. They need to take in oxygen and release water and carbon dioxide. Also, prevent bulbs from drying out over the course of the six to eight week cold treatment. Never put bulbs treated with a fungicide in a refrigerator where food contact may occur. Other bulbs such as amaryllis, anemone, calla, daffodil, muscari, oxalis, ranunculus, spraxis (harlequin flower), and watsonia have a low chilling requirement and do not require chilling in subsequent years but may need to be divided periodically. The four page University of Arizona Cooperative Extension Publication, *Bulbs for Southern Arizona* has more information on bulb planting and care. It is available at Cooperative Extension Offices.

Source: *Xtreme Horticulture*, September 11, 2006. Robert Morris, Area Extension Agent, Clark County, Nevada.

Robert E. Call, Extension Agent, Horticulture

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High on the Desert

Mark your calendars —
**the 14th Annual High Desert Gardening & Landscaping
Conference is scheduled for February 15 & 16, 2007!
Exciting changes—watch for details!**

Taste the Desert

Thursday, October 19, 2:00 to 6:00 p.m., at Sierra Vista Farmers Market a demonstration of making tortillas with mesquite flour by Esperanza and Javier Arevalo of Tortilleria Arevalo. Mesquite flour tortillas and sugar-free mesquite cookies for sale. *Free samples.*

Saturday, October 21, 8:00 a.m. to 1:00 p.m. – Mesquite milling at Bisbee Farmers Market. Bring your clean, dry

mesquite pods to be ground into flour by Desert Harvester's hammer mill for a small donation. *Free mesquite pancake breakfast.*

For more information e-mail vallimac@cox.net or call (520) 378-2973. Funding for this event comes from a mini-grant for Desert Foods for Diabetes & Health from the Cochise County Health Department's STEPS Program.