# SUSTAINABLE LIVING IN DRYLANDS

**NETWORKING NEWSLETTER OF THE SONORAN PERMACULTURE ASSOCIATION**

*"Agua Clara y Sonora"*

ISSUE NO. 3 . SUMMER 1988

## BILL MOLLISON: PC FOUNDER

Nearly two decades ago, an Australian environmental and peace activist named Bill Mollison realized that the only lasting way to counter this culture's dive toward oblivion was to adopt a workable alternative—a permanent culture, or ***Permaculture*** as he called it.

Mollison drew on traditional native agricultural and housing practices from around the world that had proven to be sustainable in the past. He merged those practices with simple and cost effective elements of appropriate technology. He patterned a system of human land use that attempts to meet human needs for energy, sustenance, and habitat without waste (pollution). It is a system modelled on relationships observed in nature where each part supports the whole in many ways—a system in flux and balance. Those attracted to the concept soon realized that it is actually a pattern for a way of life, and that nature's patterns for sustainable land use serve as templates for sustainable community.

For the last eleven years Mollison has been lecturing, teaching, and consulting in the field of environmental design. He has written two books, *Permaculture I* and *Permaculture II*, which have sold over 100,000 copies and have been translated into four languages. A third book, *Permaculture: A Designer's Handbook* will be available this fall.

In 1979, Mollison formed the Permaculture Institute to disseminate information and to sponsor courses in permaculture design. His Permaculture Design Courses are exciting, 72-hour presentations that enable participants to integrate available information, acquired skills, and resources into practical, efficient, and environmentally beneficial designs for earthscapes and communities.

Mr. Mollison brings to the lectern his wealth of education, experience, and observation. His illustrious background includes: a degree in bio-geography; nine years as senior technical officer in the Commonwealth Scientific and Industrial Research Organization (where he studied animal populations and forest regeneration); three years as a biologist for the Inland Fisheries Commission; one year as curator of the Tasmanian Museum; ten years as instructor at the University of Tasmania; independent research and publication of treatise on the history and genealogy of Tasmanian Aborigines; founding of the Permaculture Institute, for which he serves as president; and receipt of the 1981 Right Livelihood Award ("Alternative Nobel Prize") for his pioneering work in environmental design.

***The Sonoran Permaculture Association is delighted to announce that Bill Mollison will conduct a Drylands Permaculture Design Course in this region from November 6th through the 19th (see pg.3 for information). Don't miss this rare opportunity to learn from the world's foremost permaculturalist.***

### NAME THE NEWSLETTER!

The S.P.A. newsletter is looking for a name.
We welcome your suggestions.
Send ideas to S.P.A., Box S, Bisbee Arizona 85603

## GABIONS: A PC RECLAMATION TOOL

Cultural adage: When faced with a technical question, consult an expert. *"Gee Beave, why would anyone purposely build a dam that leaks?"*

Gabions are *porous* dams; literally, stone filled baskets constructed of any suitable material. In this country the basket fabric is generally wire, while in China the traditional material is bamboo. The baskets are usually placed across streams or arroyos, but different alignments can be used to accomplish a variety of goals.

A porous dam *delays* the passage of water over a small portion of the earth. Infiltration increases, runoff decreases, and the channel broadens. The slower moving water drops its load of silt and duff. Expansion of the lush riparian edge follows.

The beaver, a fellow edge being, once occupied the niche that we attempt to fill by building gabions. He instinctively found ways to expand and enhance his environment to insure life, and a future.

Gabions allow us to use the beaver's strategy on watercourses that flow intermittently, extending the riparian edge high into the drainage system.

In addition to revitalizing riparian areas threatened by erosion, gabions can be used in a number of water harvesting strategies, as well as to focus and harvest water *energy*.

Gabions are easy to build and make use of cheap and readily available materials. In spite of their simplicity, they have the potential to make powerful changes. Their application in riparian areas is limited only by the creativity of the designer.

It's important to remember that a drainage system is made up of land as well as water courses, just as a human face or a leaf is composed of more than veins. An effective permacultural strategy must deal with the whole, and may require an array of tools and techniques such as those described here.

*Tim Murphy*
*1250 E. Edison St., Tucson, AZ 85719*
*(602)792-4106*

### PRODUCTION STAFF: ISSUE #3

| *Production Team:* | *Mailing Crew:* |
|---|---|
| Joni Keating | Pat Baxter |
| Vicki Marvick | Dee Frame |
| Tim Murphy | Alex Harrison |

Special thanks to Kevin Dahl for his many contributions.

# LAND RESTORATION: A WATERSHED PERSPECTIVE

Historically, humankind has exploited the earth and its resources with little thought toward the future. While reaping us short-term rewards, this pattern of exploitation has been gradually destroying the very resources we need to sustain us permanently. If civilization is to progress forward, our use of the land must shift in a direction of sustainable use.

Sustainable use of land and resources is the essence of conservation. While simple in concept, however, conservation sometimes requires a broad understanding of natural systems. Watersheds provide an excellent example.

Briefly, a watershed is all the land that drains into a specific watercourse. Large watersheds, such as that which feeds the San Pedro River in southeastern Arizona, are composed of many smaller watersheds.

Many conservation problems in the lower part of a watershed—e.g., erosion, flooding, and desertification—are actually the results of poor land use in the upper watershed. Practices such as overgrazing or inappropriate development in the upper part of a watershed, for example, can have a devastating impact downstream. Occasionally, even natural disasters such as fire can adversely affect an entire watershed—although under some circumstances fire may also be beneficial.

For maximum effectiveness, techniques used to control erosion on a lower watershed—such as the construction of gabion walls—should be used in concert with good land use practices in the upper watershed.

The re-seeding of grasses can sometimes help to heal a degrading watershed. In the arid southwest, however, re-seeding projects often fail due to the unpredictable rainfall here. Such projects can also be costly. If undertaken successfully, re-seeding must be followed up with proper landuse. Often, simply shifting to environmentally sound land use practices can restore the landscape more economically and effectively than re-seeding.

If overgrazing is causing a watershed's deterioration, it must be permanently prevented. Otherwise the land will once again deteriorate. For cases in which land degradation is due to improper or poorly planned development, the solution may be more difficult to achieve. Clearly, conscientious land use planning prior to development is the answer; but this, unfortunately, is often neglected.

Addressing an entire watershed is not a simple task, particularly for the landowner who only lives on a small portion of the landscape. Being a conservationist means working with our neighbors to develop a plan that can heal the whole system. Aldo Leopold defined conservation as "living in harmony with nature." Determining how to apply this definition to the restoration of our land is a challenge. But it is a road we all must travel to create a sustainable future.

*Randall L. Gray*
*Soil Conservation Service*
*Tohono O'odham Nation, Sells, AZ 85634*

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# LETTERS TO THE SONORAN PERMACULTURE ASSOCIATION

Dear S.P.A.:

The article by Dan Howell on the runoff homestead (*Issue #1*) is particularly interesting since this technique dates back to ancient times. Prior to the present occupation, the Israelis have a long history of practicing dry-land run-off farming. Here is the address of the Israeli Consulate in Los Angeles if you wish to inquire: Israel Consulate, 6380 Wilshire Blvd., Los Angeles, CA 90048.

*Joseph E.Steger*
*Box 1202, Truth or Consequences, NM 87901*

Dear S.P.A.:

I don't know how you found me, but I was happy to get your newsletter....Several years ago I bought 22 acres of land near Cerrillos, NM; but for a number of reasons, mostly financial, I've never been able to move there or do anything with it except keep up the payments. It's about 1 1/2 miles off the highway and there's a road and telephone line, but no water or electricity. There's a mobile home that's structurally sound, and could be made livable with a little work. If anyone feels they'd like to live on my land or could use it for some purpose, I'd like to hear from you. It's heartbreaking to see the soil washing away and the arroyos getting deeper and not be able to do anything about it.

*Donna Higdon*
*Route 6, Box 11-B, Santa Fe, NM 87501*

Dear S.P.A.:

To use permaculture is to put back maybe just a grain of sand into this earth. That is why it makes me feel good inside to know people that are using the techniques of permaculture. This is the way my ancestors, the Hohokam, have walked with all the beautiful things that our Creator has given them. We have to show the desert that all people will respect her beauty. The O'odham know she has the power to take life or to save life.

I am grateful that I'itoi (our Creator) put Mr. Bill Steen and Mr. Tim Murphy into my life, to help in doing our first gabion project here at the San Xavier District. I would like to thank all the other people that came to help also. May the Creator give his blessings to each and every one of them for taking the time out of their lives to work side by side with the O'odham at San Xavier.

*Daniel Preston*
*Vice Chairman of the San Xavier District*
*Tohono O'odham Nation*

Dear S.P.A.:

I want you to know that I came home from the workshop with a lot of ideas and hope for the future of the world. Thank you. Tonight I was thinking about the Earth as a Permaculture Design, but can't decide about people—would I put humans into a system?...

*Denise Markwell*
*Box 595, Placitas, NM 87043*

Dear S.P.A.:

I used to put out "Dry Country News" in the olden days, and am glad to see this type of information being printed again. Keep up the good work!....Best to you.

*Gordon Solberg*
*Box 23, Radium Springs, NM 88054*

Dear S.P.A.:

I would like to join your group. Your Newsletter is great, and it really lifted my spirits to discover there are "others" out there. I have a 19 acre farm here, and although I use irrigation, it is delivered by a restored, prehistoric, ditch system. It seems there aren't many of us in New Mexico that are inclined to support your type of thinking and we end up reaching to Tucson for fellowship.

Recently, I've been working on an INNER GARDEN journal—dealing with spiritual aspects of a garden—for the Regeneration Project....To give you a little preview: raindrop becomes snowflake, travels around the world passing over Tibet, ending up in Las Huertas again, and entering the Underworld for a four-part fantasy....I've also started a local newspaper called *The Las Huertas Regeneration Times*....Keep up the good work.

*Lynn D. Montgomery*
*Sun Farm de las Huertas*
*Box 6112, Placitas, NM 87043*

# UPCOMING EVENTS

DRYLANDS WEEKEND WORKSHOP. July 23-24. See ad this page.

SWALING WORKSHOP. August 7 and/or 8. A hands-on experience with surveying contours and creating a swale water-harvesting system. Presented by Tim Murphy. Location: NE Tucson. $20/day. Contact: Dee Frame, (602)749-4595 (Tucson)

LAND IMPRINTING TOUR. August 13. Tour of sites treated with an innovative technique for land restoration. Conducted by Bob Dixon of the Imprinting Foundation. FREE. Contact: Tim Murphy, (602)792-4106 (Tucson)

GABION CONSTRUCTION WORKSHOP. August 14. A hands-on experience with gabion wall construction. Presented by Tim Murphy. Location: Bisbee AZ. $25. Contact: Carol Escott, (602)432-4292 (Bisbee)

EXPERIENCE THE RUNOFF HOMESTEAD. October 7-21. Hands-on experience of a homestead operating solely on harvested runoff water. Location: Datil NM. $50/day, including rrom and board. Contact: Dan Howell, Box 74, Datil NM 87821, (505)772-2634.

ARID LANDS DESIGN COURSE WITH BILL MOLLISON. November 6-19. See ad this page.

MAYAN GARDENS TOUR. Fall, 1988. One week tour of traditional Mayan forest gardens, Yucatan Peninsula, Mexico. Conducted by Bill Steen. Contact: Bill Steen, HCR Box 324, Elgin AZ 85611, (602)455-5548.

## BARTERING BOARD

*Items for barter:* SEEDS—literally hundreds of distinct cultivars including S.W.native/Spanish crops, Mexican/South/Central American crops, other rare and/or endangered varieties of garden crops. *Service for barter:* Consultation and information concerning native food crops; seed storage and longevity; and maintaining genetic purity. *Brett Bakker, Star Route Box 301-G, Tijeras NM 87059*

Two women who live in the country near Prescott, AZ have garden and chickens but would like to take short trips. Will share our good life with other women of similar interests. RV space and hookup in exchange for caretaking. *Ginny Treuer, HC61 Box 582, Dewey AZ 86327.*

I have Eldarica pine seeds (USSR seed service) and a few other arid land tree seeds from various countries that I'll swap. *Paul Brick, 1121 N. Avenida Jeanine, Tucson AZ 85715 (602)586-3631, ext 215 (days); (602)298-2974 (eve.)*

## DRYLANDS WEEKEND WORKSHOP

AT SUNGLOW RANCH RESORT
(in the beautiful Chiricahua Mountains)

**July 23 & 24**

**SUSTAINABLE LIVING IN DRYLANDS**

*PERMACULTURE DESIGN PRINCIPLES*
*HOW TO SELECT LAND*
*LOW COST HOUSING*
*WATER HARVESTING SYSTEMS*
*INDEPENDENT ENERGY SYSTEMS*
*ARID LAND GARDENS AND TREES*
*SUSTAINABLE FUTURE*

**Fee - $95**
SLEEPING ACCOMMODATIONS - $15

**TO PRE-REGISTER:**
Send $25 Deposit with registration form below.
Checks payable to Cathe' Fish.
For details contact instructors:
Cathé Fish: (602)432-5109, Bisbee
Bill Steen: (602)455-5548, Canelo

The Sonoran Permaculture Association is honored to present

## BILL MOLLISON

conducting an

**ARID LANDS DESIGN COURSE**

**November 6-19, 1988**

an in-depth study of the design and development of bountiful, environmentally compatible, and economically practical systems of land use attuned to the Sonoran bioregion, and applicable to drylands everywhere.

**Fee: $650**
Includes accommodations and meals.
Non-refundable deposit of $100 required.

For information contact
Tim Murphy,
1250 E. Edison St., Tucson AZ 85719 (602)792-4106

*Interested in engaging Mr. Mollison as a design consultant during his stay in the Southwest? Contact Tim Murphy.*

## CHECK YOUR MAILING LABEL!

Your mailing label will have a colored stripe *or* a numerical code. *Pink stripe:* this is the last issue you will receive. *Green stripe:* you will receive one more issue. ***To continue receiving the newsletter, fill out and return the form at the right.*** The numerical code next to your name on the mailing label tells you the year and month when you will receive your last issue (example 8809-last issue Sept. 1988). ***If you want to continue to receive the newsletter after that month, you must send us the form at the right.***

This newsletter is funded solely by donations from readers. If you value it, please consider donating. In any case, please take time to send us your name today.

## HOW TO STAY ON THE MAILING LIST:

Mail to S.P.A., Box S, Bisbee AZ 85603

[] YES, I would like to continue to receive newsletters and event announcements of the Sonoran Permaculture Association.

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Moving? Send us your new address. Want to share the newsletter with an interested friend? Send us his or her name.

[] I am making a donation toward the newsletter.
(Suggested donation: $5-$25) AMOUNT ENCLOSED_____

# SHEET MULCHING: STRATEGY FOR HEALTHY SOIL

Summertime! Everyone's planting. Forget digging and aching backs. Sheet mulch instead.

In the '60s, Ruth Stout came up with a no dig, less work, higher yielding garden plan. She used constant, very thick mulch (10 inches or more) on her garden beds to build excellent soil and suppress weeds. Her method saves time, labor, and water, and is more likely to be disease-free.

In Permaculture, we call this method *sheet mulching* and use it extensively, close to our homes in Zones 1 and 2.

Last year I redid my garden beds with sheet mulching. The results have been amazing. My fall, winter, and spring gardens have been my best—extremely healthy, despite lower than normal temperatures and three weeks with 18 inches of snow covering the vegetables.

This summer I'm finding huge fat garden worms that seem to have moved in permanently, and the soil quality has improved dramatically despite the many rocks. (My gardens are on rock terraces.) I've also noticed the soil has much better water retention.

I consider this method a fast and easy solution for keeping soil permanently alive. It works well anywhere, even on compacted soil. Here's how to do it:

1) Don't level the ground. Don't dig. Don't weed the area. Bend over any weeds or leftover plant material.
2) Sprinkle on some bloodmeal or bonemeal. Cover the area with one inch of chicken manure (optional). Water.
3) Next throw on any available household food scraps (for the worms). Add weeds, hay, straw, or anything that may have seeds at this level. Water.
4) Overlap completely with cardboard or four sheets of newspaper (no glossy print, especially yellow, orange,or red). If there are existing plants or trees you want to keep there, overlap up to the plant(s). Then fold newspaper up the plants (at right angles to the ground) about six inches. Water well.
5) Apply three inches of any mixture of the following materials, which must be as seed-free as possible: horse-stable straw, seaweed, leaves, rotted alfalfa hay, or pine needles (in alkaline soil).
6) Apply six inches of dry material which is free of weed seeds: leaves, straw, pine needles, old sawdust, or wood chips (which must be left on the surface until broken down—no redwood bark).
7) Soak, and it's ready to plant!

*To plant large seeds, tubers, small plants, and seedlings:* Take a machete and cut a hole down through the cardboard. Put a handful of good soil down through the hole. Plant. Put on another handful of good soil. Pull the mulch softly to the base of the plant. Water.

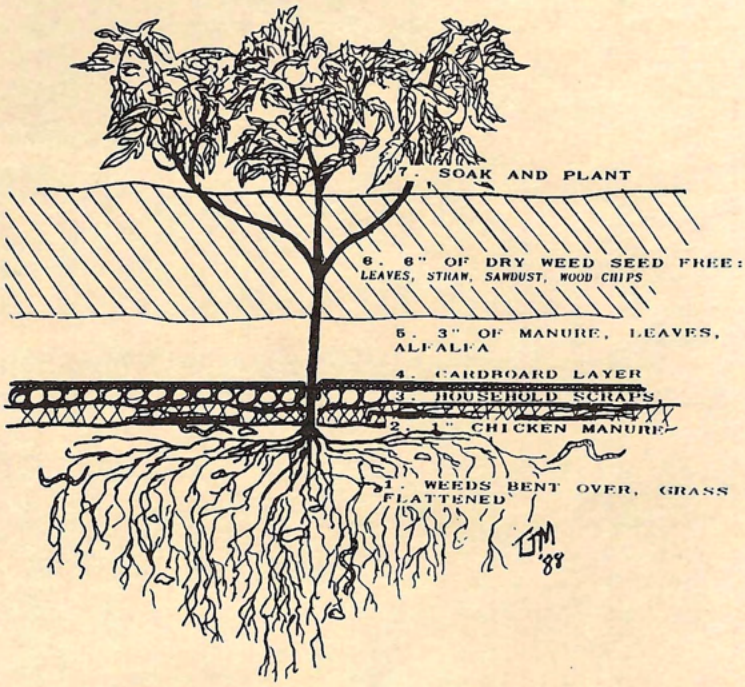
*To plant small seeds:* Make a long slit with a machete. Fill the slit with good soil. Plant. Water. Lightly cover with mulch. Add more mulch as the plants come up.

*Note*: Root crops don't do well the first year because the soil is compacted. Also, there is too much manure for root crops—they'll fork out. Set up a temporary root bed until the second year.

*Maintaining the sheet mulch garden:* Food wastes from the kitchen are continually "tucked under" the cardboard. Any unwanted weeds, including bermuda grass, are smothered with wet newspaper and "tucked under". Occasionally, scatter a handful of bonemeal and bloodmeal, and add top mulch to keep the pile at 10 inches. Keep the mulch loose, don't walk on it, and don't let it mat.

*For repeat planting:* No need to rotate or rest the soil. Keep planting year round.

*Cathé Fish*
*Box 612, Bisbee, AZ 85603*
*(602) 432-5109*

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# PC BRIEF: VIABLE ECONOMICS SUMMIT

This summer in Raleigh, NC, The Fourth World and The School of Living are co-sponsoring a conference entitled *Community Economics As If The Earth Mattered.* The conference will consist of forums conducted by individuals who are active in developing social, ecological, and economic alternatives around the world. In addition to these main events, the conference will feature experiential workshops, a wealth of networking opportunities, and possible evening discussions with individuals such as Wendell Berry, permaculturalist Dan Hemenway, and many others. Dates: July 31—August 4. Location: Merideth College, Raleigh. All-inclusive fee: $150. Contact: Jubal Stucki, (703)237-7507. *This is an incredible opportunity for anyone interested in the ecological, permacultural, decentralist, bioregional, and related movements.*