Boulder County Small Acreage Management Newsletter

Fall 2007

http://www.coopext.colostate.edu/boulder/AG/smallacreage.shtml

From the Extension Agent

In this edition:

- **Hay Prices – p. 2**
- **Organic vs. Synthetic – p. 3**
- **Emergency Evacuation – p. 5**
- **Permaculture – p. 8**

Conservation District News

The Boulder County Natural Resources Conservation Service is accepting applications for its Environmental Quality Incentives Program. Qualifing applicants may be eligible for cost-share dollars (grants) for projects such as:

- irrigation design and improvement (sprinkler and drip included)
- erosion control
- shelter belts/windbreaks
- wildlife habitat
- grazing management
- stock water tanks
- etc.

Please call the NRCS office, managed by the Boulder Valley and Longmont Conservation Districts, at 303-776-4034 x3 and check to see if you are eligible.

More online at:
www.co.nrcs.usda.gov/programs/eqip/eqip.html

Application deadline is November 2, so please call soon!

Also, the Longmont and Boulder Valley Conservation Districts are accepting orders for seedling trees sales for properties >2 acres. These may be used for windbreaks or wildlife habitat. Call the same number for details.

Past SAM Newsletters Online

We've gotten requests to make past newsletter edition available. These are on the SAM page linked above in the header. Lots of good info in past editions.

SAM Email Listserv

If you are receiving this newsletter for the first time and are not subscribed to the boco_small_acreage@colostate.edu listserv, you may request subscription on the SAM website (linked in header above). This quarterly e-newsletter and other timely info will be distributed via this email listserv.

Subscribers may use the listserv also as a SAM info gathering mechanism. For example, you may inquire about who is available in the area supply hay, to perform swathing/baling, etc.

The listserv is not a marketplace, however. Because it is hosted on the CSU server, NO COMMERCIAL EMAILS ARE ALLOWED. DO NOT ATTEMPT TO SELL ANYTHING VIA THE LISTSERV – THANKS. Use the newsletter ad section for these purposes.

Currently, there are 167 subscribers to the listserv (up from 146 last quarter).

2008 SAM Volunteer Training

Applications are now being accepted for the 2008 Small Acreage Management Volunteer training. SAM volunteers provide management options to clients over the phone on grazing management, weed control, pasture revegetation, and fire mitigation. SAM vols also work with special projects such as created 3-D weed samples for weed education, tabling at SAM conferences, newsletter articles, crops show, and more. Please see the SAM website link in the newsletter header and visit the SAM page for a brochure and application.

CART Manual Available

The Country Acres Resource Team (composed of Extension, NRCS, etc. colleagues in Northern Colorado) have released their "A Manual for Success" for purchase.

2008 Small Acreage Management Conference

The Colorado Agriculture Big and Small Conference will be including a small acreage management day on Saturday, February 23 at Island Grove Regional Park. Stay tuned for more details.

Adrian Card
Agriculture/Natural Resources Extension Agent
SAM Program Coordinator
CSU Cooperative Extension, Boulder County

Hay Prices

By Meg Sitarik, SAM volunteer

A collective sigh could be heard from the livestock owners in my neighborhood this past spring. A wet spring had finally arrived and with it the assumption of lower hay prices. This was followed by a loud gasp as the realization set in that the price of hay has come down but only by about a dollar per bale (small square bales). It is highly unlikely that we will see the prices of four to six years ago; premium quality grass hay for $3-3.50 per bale is a thing of the past.

Agriculture costs are driven by the price of crude oil. In March of 2002 oil prices were in the $25 per barrel range. Compare that to $89 as of September 18, 2007. One of the many factors that affect the price of crude oil is the continued rapid growth in Asian economies and their petroleum consumption. At one time the United States was the number one consumer of crude oil. Not so anymore. As we learned in Economics 101, price is driven by demand. Increased demand equals higher prices. This is a very simplified version of oil pricing. There are many other factors such as hurricanes, the weak dollar, current oil reserves and global conflicts such as in Iran and Iraq.

How does this affect the local hay prices? Consider that 75%-%80 of everything needed to grow and harvest hay is petroleum based. This includes diesel fuel, grease, oil, tires, baling twine even fertilizer. The cost of a box of baling twine has increased on average by $8 per box since last year. Fertilizer prices have sky rocketed by approximately 20% from last year.

The average rate of application is 50-100 pounds per acre applied up to twice a year. A 20% increase is significant.

Residual hay inventories that are reported by the Livestock Marketing Information Center are a variable used to determine the expected price of hay. As of May1, 2007 inventories in the United States are at the lowest level since 1982.

Another factor is corn and other feed by products are higher than last year. Livestock producers, the largest consumer of hay, will use more hay to feed and less corn. Again this is an overly simplified version. When you look at supply versus demand hay prices will rise this year. According to the LMIC in March 2007 alfalfa was $20 per ton higher and grass hay was $21.40 higher that 2006.

The USDA Ag Market News, Colorado Hay Report, September 14, 2007 currently lists small square premium bales of grass hay at $5-7 per bale and good quality at $5-5.50. In Boulder County the prices for premium grass hay are running between $5 and $6.50.

One last factor is that a lot of today's hay producers are educated in Ag Economics. These farmers and ranchers are savvy businessmen. They know that to survive in today's world they must have knowledge of the global economy and the bottom line of their business.

As you plan your 2008 farm budget you should continue to consider moisture levels. However you must also open the newspaper and watch the news to see what's happening around the globe.

Organic versus Synthetic Pesticides, Which is Safer?

By Sharon Bokan, SAM volunteer

When we think "organic" we think healthy and safe, but are "organic" pesticides really that much safer than "synthetic" pesticides. In an effort to provide SAM volunteers and other interested parties with more information, we have undertaken the task of comparing safety information for "organic" with "synthetic" pesticides and chemicals. This is a large task and this first article will define terms used to relate toxicity and other safety information and provide some initial impressions from the data. The project will be a continuing task as new information is obtained. The data collected to date has come from the Material Safety Data Sheets (MSDS) for the pesticide products or individual chemicals. Further information will be obtained from the product labels. We will also be comparing common items such as nicotine, alcohol, deet and caffeine to the products for reference.

We are also looking at the effects to other life forms and to the environment. Is it especially toxic to fish or honeybees or does it have a long half-life in the soil or water? Could the product move in the soil or water and damage other crops or species. Over a period of time does the product cause sensitization in certain people or are certain people more likely to have an allergic reaction to the pesticide.

Terms that are used to define how toxic a chemical may be or define safety information are listed below.

"Synthetic" chemical or product – a chemical or synthetic pesticide product that is produced from chemical processes. The chemical may be from a naturally occurring substance but is radically altered through chemical processes or it may be completely produced from chemical processes.

"Organic" chemical or product – a chemical or pesticide product that occurs naturally that has not been chemically altered. "Organic" products are usually oils from herbs, extracts from plants, oils, and naturally occurring bacteria.

LD_{50}, LC_{50} – The Lethal Dose 50 and Lethal Concentration 50 quantify how lethal a chemical or pesticide is. It is the amount of the chemical or pesticide that if ingested, absorbed or inhaled will kill 50% of the population. The product must be taken orally, absorbed through the skin or inhaled. It is measured in milligrams per kilogram of body weight (LD_{50}) or milligrams per liter of air (LC_{50}). The lower the number the more lethal the chemical is. For example, Diquat (a commonly used herbicide) has an LD_{50} of 215 mg/kg while Glyphosate (Roundup) has an LD_{50} of 4300 mg/kg. For a 75 kg person (165 lb.) it would take 16 grams of Diquat to kill 50% of the population or 323 grams of Glyphosate to kill

50% of the population. Although a good measure of a product's toxicity, it does not take into account a specific individual's (human or animal) age, health and sex. They are for a single dose not accumulated dose over time.

PPE – Personal protective equipment. The equipment and clothing required protecting the applicator while applying the pesticide.

Half-life – The amount of time for 50% or the chemical to decay to another form. Sometimes the decay product is less harmful and other times it may be more harmful to other species or the environment.

Carcinogen – capable of producing cancer
Teratogenic – capable of producing birth defects.
Mutagenic – capable of producing genetic change
Oncogenic – capable of producing tumors (may or may not be cancerous)
Reproductive – causing problems with the reproductive process.

Signal word - Words that are required on a pesticide label denoting the relative toxicity. The words are Danger, Warning, and Caution.

Toxicity category – A system developed by the Environmental Protection Agency (EPA) based on the LD_{50}/LC_{50} information. The categories are from I to IV with I being the most toxic.

The one thing that has come forth so far in the research is that there is not a lot of information for the "organic" pesticides. Not all products have MSDS available or the information on the MSDS is limited. The "synthetic" pesticides have been in use and subject to more industry and government regulations longer and most of them have more information available. Most of the "organic" pesticides had limited half-life, carcinogen, teratogenic, mutagenic and reproductive information. Quite a few did not have LD_{50} and LC_{50} information. It is obvious that significant testing needs to be done on "organic" products to fill in the data gaps.

In a first analysis, the LC_{50}/LD_{50} information that is available for both indicate that the "synthetic" have lower values and thus are more toxic. However, with the limited information available on "organic", it would not be valid to assume all "organics" are "safer". For comparison nicotine (50 mg/kg), pyrethrins (200-2600 mg/kg), and caffeine (127-227 mg/kg) have LC_{50}/LD_{50} in a range similar to the "synthetic" products.

Some new organic herbicides are made from acetic acid. In case you don't know vinegar is made of acetic acid normally about 5%. Any containing acetic acid in excess of 10% has the potential to cause burns to eyes, skin and the respiratory system. Pyrethrins are derived from a variety of chrysanthemum, which would make one think that they are "safe" but they can be quite toxic (200-2600 mg/kg). Nicotine is also used in commercial as well as homemade insecticides and is very toxic (50 mg/kg). "Organics" may contain other ingredients that are harmful such as silicon dioxide, which is a respiratory hazard.

Most "organics" carry the same or similar recommendations for PPE as "synthetic" pesticides. The "organics" appear to cause a higher potential to cause allergic reactions or cause sensitization in certain people as they continue to use them. A surprising number also have the potential to be harmful to aquatic life and honeybees.

My own reaction to the research thus far is that pesticide applicators should treat "organics" with the same respect, care, safety and PPE as "synthetic" products. With the lack of information on "organics", we don't know what the long-term effects might be. With any pesticide, the applicator should read the label carefully, following the PPE recommendations, mixing, application and storage directions.

As stated earlier, this is a continuing project. As we continue to collect data and analyze it, we will provide more information on the "organic"/"synthetic" debate. In the next article,

we will analyze the data collected and provide more specific information.

References:
MSDS obtained from the producers Internet site
"The Standard Pesticide User's Guide", Dr. Bert L. Bohmont, Pearson Education, Inc., Prentise Hall, 7th Edition.

Emergency Evacuation

By Meg Sitarik, SAM Volunteer

You answer your telephone. It's a reverse 911 call from the Sheriff's Department instructing you to prepare to evacuate your farm/ranch. Would you know what to do? How would you begin this process? The purpose of this article is to help large and small animal owners formulate a plan of action.

Animal owners must not try to "ride out" the situation. As soon as you receive the first bit of information that evacuation is a possibility is the time to activate your plan. Of course this means you may be ready and not have to leave. However the up side of this is that you will have had a practice drill which gives you the opportunity to assess your plan and make any revisions necessary.

Step One:

Assess your property's location and layout. Look for special problems that may exist such as limited access. This is especially true for homes located in the foothills. If you have this type of property do some research on Fire Mitigation. This information is available on our web site www.ext.colostate.edu/pubs/natres/pubnatr.html#for

Determine the type of disaster most likely to affect your area. Are you in an area prone to forest fires, floods or tornados? Gather information; The Federal Emergency Management Agency's web site at www.fema.gov is a fascinating with a wealth of interesting and informative information addressing everything from how to survive a tornado to what to do in a terrorist attack, including specifics for pet owners.

Step Two:

Gather information for your written plan. When writing your rough draft be sure the information is concise and easy to understand. Use as few words as possible. Do not jumble communication with notes about Sparky's personal quirks. The fact that Sparky likes a certain brand of treats is irrelevant and only serves to clutter the information. Think of it as static that just muddles the message. If Sparky doesn't survive the disaster he won't need treats. Relay basic survival information only. In a high stress situation you need to be able to communicate information easily, clearly and effectively. Plan to post the evacuation plan in several locations easily available to all, such as near the telephone, in the tack room and in each vehicles glove compartment. Consider if this information needs to be posted in a second language. Also think about those of us who are "seasoned" and need reading glasses that we may not always have with us. Type this information using double spacing and a font size no smaller than 14 pts.

Select a reliable friend or relative, who is willing to be the central contact. If possible a person located within 2-10 miles. It's wise to have an alternate person incase your primary is not available. Someone with the means to accommodate your animals is ideal, however not 100% necessary. This person will be a central communication point for everyone involved in your evacuation. Communicate any change of plans to this person who will notify others in your group that may not be in your immediate area. This will free you to focus on the evacuation. Fielding phone calls will be a waste of your valuable time and will tie up your phone. If you need more than one trailer enlist another friend or relative, not the same as your central contacts, who are willing to help. Primary and secondary persons are recommended. Again these folks need to be located 2-10 miles away.

Experienced drivers are best. Your contact and trailer folks need to have a copy of your contact phone numbers.

List all phone numbers at the top of each plan. The numbers needed are:

- Your home and cell.
- Name and number of central contact and alternate.
- Name and number of extra trailer person and alternate.
- Your Veterinarian

Step Three:

Inventory your animals. Dogs, cats and chickens will need pet carriers. Each dog and cat needs a collar with ID. The tags need to include your last name, house and cell numbers along with veterinarian and contact person's number. Tags are available at most of the "big box" pet stores in the area. Don't waste precious space on the tags, aside from your last name only list phone numbers. For chickens tag the carrier. Carriers, tagged collars, and leashes should be kept together in one specific place. Horses and other large animals need halters with the same information. Dog tags can be easily attached to halters, in a pinch label halters with duct tape. Halters need to have lead ropes. Since it's not practical to have a separate set of halters and leads assign someone to collect all tagged halters and leads at the first sign of disaster. Place these next to the area where the horses are located.

Excuse me for a moment while I climb up on my soap box. **During an evacuation is not the time to teach your horse to trailer load.** Did everybody hear me?? As a horse owner you have the responsibility to teach your horses to load calmly and consistently. Even the most well trained well behaved horses are going to be nervous and "squirrelly. Do your self and your horses a favor and work on this ahead of time and practice, practice, practice.

Use a notebook binder and create an "animal book". Include pictures of each of your animals. Be sure to include photos of any specific identifying marks. List pertinent information such as breed, name, age, amount of feed and any medications needed. Also include contact phone numbers. This serves two purposes, first it provides information for anyone that may be caring for your animals and it ensures that you have photos incase an animal is lost. This book can be left with your "house sitter" when you travel.

Step Four:

Identify and list specific steps to take as soon as you are notified of the possibility of evacuation.

1. Notify your contact and trailer persons.
2. Gather dogs, cats and other animals. Confine them to a limited area. For example, cats in the bathroom, dogs in the bedroom, horses, cows and pigs in pen near barn, chickens in the hen house. Place your "animal book" in your vehicle.
3. Tag all animals.
4. Move pet carriers near animals.
5. Hook up truck and trailer. As a precaution toss a few bales of hay in the back of the truck include a few water buckets and containers of water. If you live in a high risk area you should try to keep a full tank of gas.
6. Park truck and trailer pointing towards the way out.
7. Make sure your cell phone is charged and that you have a charge cord in the truck. The type that plugs into the truck as well as the standard wall plug in.
8. Monitor news for any change in information.

The Boulder County Sheriffs Department will contact the major TV and radio channels of a pending evacuation. The reverse 911 system may also be implemented. Therefore it's best to be near a phone or have a cordless phone that is connected to your house phone. You can also have your home number forwarded to your cell. Keep in mind that if there is a loss of power you will not be able to use your cordless phone.

*******Reverse 911 only works on hard line numbers, which means your "land line". It will not work on cell numbers, computer base phone systems or blocked phone numbers. Find out how to unblock your number and post "how to" steps near the phone. The Sheriffs Department said that the technology is being developed but is not available presently.

9. Leave as soon as you are told.
10. Travel on designated route only. Do not use short cuts, they may be blocked by fire, flood etc.
11. Do not stop unless you absolutely have to. There will be many people behind you, do not block the evacuation.
12. Once you are away from the area, do not deviate from your plans. If you must be sure to notify your contact person so she can relay the information to others in your group.
13. Once you have reached your destination safely get out of your truck, take several deep cleansing breaths exhale slowly and smile.

Evacuation is not an easy process. In any emergency situation it is extremely important for the person in charge to keep a cool head. Others around you will take cues from you. By keeping a cool head you will set the example for everyone else, if you are frantic and flailing around the rest of your group will be too. Remember a persons' character is judged not by the way you react during good times, but how you react in the bad times.

If you are given the evacuation order and your horse won't load you will have no choice but to leave him/her. Do not jeopardize the lives of other animals and people. If you must leave an animal behind, make sure they have water and hay for 48 to 72 hours. Use a water tank. Some automatic watering systems will not function without power. Depending on the disaster water supplies may be interrupted. This brings us to the halter dilemma. Some information says remove the halters others say leave them on. At the Singing Heart Ranch the halters will be removed. Halters can get caught on debris. During a fire nylon halters can melt. The other side of the argument is that it the animal will be easier to catch. Leave the animal in an area you have determined is appropriate for the disaster situation. I will leave these last two issues to your judgment and personal preference. If you must leave your large animal behind without a halter be sure to ID him. There are two ways to accomplish this. Use brightly colored spray paint to paint your cell phone number or other number on the animals' side. If you do not have spray paint or the animal will not stand still use duct tape. Duct tape comes in 3 neon colors. Blaze Orange, Island Lime and my favorite Funky Flamingo (bright neon pink), these are available at Wal-Mart. I have tested this method on my 2 horses. Use a long 18-24 inch piece and write the information on the tape (don't try to do it once it's on the horse). Then grab a small handful of mane and apply the tape so that the middle of the tape grips the mane and the 2 ends are pressed together. This will leave a visible "streamer" with your information on it. This is very secure. I placed one on my horse 3 days ago and it's still holding firm. I tried cleaning off a section of his coat with alcohol and applying tape, it only lasted 1 day.

I have a few last pieces of advice for you to consider. Keep an emergency kit stocked and

ready to go. Include the standard first aide kit of bandages, tape, pressure dressings, thermometer and Phenylbutazone (Bute) paste. A word of warning: Bute can be given to horses, cow, dogs and pigs. ***Never*** give a cat any type of pain medicine without consulting a veterinarian. I also like to keep a half dozen cloth diapers. These are wonderful to help control bleeding. Also make up an Evacuation Kit. Things to include are a portable radio and batteries, high quality flashlight or spot light, a $20 bill and $2 in change. I also have in mine 2 bottles of Fix-A-Flat, bottled water and ibuprofen (Advil/Motrin). There are many more items that you can include. I encourage you to look at FEMAs web site for more information.

The Boulder County Fair Grounds has covered stalls and several pens for large animals. According to the Boulder County Sheriffs office these are available to anyone in an emergency situation. The stalls are usually unlocked if they happen to be locked the Sheriff's Department or a Parks and Recreation employee can unlock them. In the event of an evacuation in the area the Fair Grounds the Sheriff's Department will ensure they are open. Water is available however feed is not.

Your evacuation plan is just that, your plan created to work for you. Each person's plan will be different depending on the needs of the farm. My goal is to stimulate your thoughts and give you a starting point.

Permaculture -A Unique Partnership with Nature

By Marsha Williams, SAM volunteer

When hiking in the mountains, I am overcome with the wild abundance of flowers and trees, of butterflies and birds. I am aware of a riotous aliveness, a sense of order in the randomness, a presence of dynamic energy. When I return to my modest garden there is no comparison. I do battle with drought, thistles, blight, hornworms and raccoons just to help my plants survive. Yet, Nature manages all these challenges, as well as a thousand other things at once with carefree grace. Nature provides shelter and food for insects, birds, deer and people; harvests, stores, and cleans water; renews and enriches the soil; cleans the air, and on and on.

Permaculture bridges the gap between Nature and our gardens. It's a way of creating landscapes that look, feel, and work much like nature, but provide wonderful homes for people as well. Permaculture is a contraction of permanent agriculture. It's a unique approach to sustainable living, gardening, and farming developed in the 1970s in Australia. Thriving permacultures, borrowing principles from nature, benefit both people and wildlife. Blending ageless wisdom with modern scientific knowledge, permaculture builds relationships between plants, animals, landscapes, and humans, which nurture each other without degrading the environment.

Permaculture designs provide fruits, vegetables, herbs, habitats for beneficial insects and wildlife, soil-building mulch, and soul-satisfying beauty. Yet, when established, these gardens take minimal materials, energy, and labor to maintain. They have higher yields with fewer pests and diseases; they become self -sustaining. There is virtually no pollution, as apparent waste becomes a resource reused in the system.

A permaculturist always starts with the ethic of 1) caring for the earth, 2) caring for all life, including people, and 3) investing in the future. He or she will carefully observe over time the existing natural cycles, energies and resources. Then a clear vision will be formed for a specific site. Finally, a design, that imitates Nature's interrelationships will be created by incorporating these permaculture principles.

Using relative placement. In nature, neighboring elements often support each other. For example, current bushes thrive in the shade of a fir tree where shaded, damper soil results in more fruit. The fir benefits from the organic matter dropped

by the current. We could borrow that idea.

. Creating multiple elements for each function. Nature supports each important function in more than one way. Converting carbon dioxide to oxygen is done by trees, plants, soil microorganisms and ocean plankton. We could heat a greenhouse in several ways at once - with a thermal wall, warm air pumped under plant beds, and an insulated north wall.

. Creating multiple functions for each element. In Nature, everything has more than one function. Birds provide meat, eggs, manure, seed dispersal, pollination, insect control and song. We can plant locust trees to provide windbreaks, fence posts, wildlife habitats, and nitrogen-fixing for the soil.

Using biological resources. By feeding the soil with organic matter, as Nature does, we better feed and nurture the crops. Worms and microbes can be encouraged with animal and green manures. Leguminous cover crops replenish nitrogen; organic mulch holds moisture-discouraging weeds.

Recycling energy and nutrients. Nature recycles water. A plant takes it up, then an animal can be hydrated by eating the plant, then the water is excreted as urine onto the forest floor. We can capture rain in swales or shallow channels dug along a slope's contour. These slow the water and catch organic materials such as leaves, adding nutrients to the soil - thus crops established in the swale or berm thrive.

Mimicking natural succession. When a forest is disturbed, Nature first sends hardy weeds to prevent erosion, fix nitrogen, create mulch, and more. Next come intermediate plants. Eventually, climax trees reappear. Similarly, overgrazed pastures can be restored by first controlling thistles with weevils, next planting legumes to fix nitrogen, and then establishing nurse plants to protect the emerging grass crop.

Maximizing diversity- Diversity is measured by the number of symbiotic relationships resulting in increased resiliency and stability. We could plant strips of mutually beneficial crops such as sunflowers, alfalfa and wheat. Sunflowers create mini-windbreaks for the wheat and alfalfa. Alfalfa fixes nitrogen for the sunflowers and wheat. Wheat can provide mulch after the harvest.

Stacking in space and in time. Nature stacks in space by using every available niche. Vegetation carpets the soil, bushes grow under trees, birds live in tree branches. Stacking in time means having plants that mature at differing times. We can plant a food forest with herbs and onions covering the soil under an apple tree, while fruiting shrubs grow under its shade and vines climb the trunk. Maturation times vary.

Using appropriate technology. We can often choose technology that is more natural, inexpensive, easy to use, non-toxic and abundant. For example, we could choose straw bales covered with adobe for building.

To make permaculture part of your life, start simply and slowly. First make the fewest changes possible to yield the greatest benefit - including capturing wasted resources such as manure or straw, planting cover crops, and using mulch. Later, explore other principles such as stacking or diversification. By starting small and building on each success, you will be delighted to see your yard taking on a rich and resilient life of its own!

Resources

Pamphlet: (the primary source for this article)

Permaculture- Sustainable Farming, Ranching, Living by Designing Ecosystems that Imitate Nature
By Sandy Cruz and Jerome Osentowski

Colorado Permaculture Institutes:

High Altitude Permaculture Institute
Sandy Cruz, PO Box 36, Ward CO 80481,
(303) 459 - 3494

Central Rocky Mt. Permaculture Institute
Jerome Osentowski
PO Box 631, Basalt, CO. 81621,
(970) 927 - 4158, www.crmpi.org

Pikes Peak Permaculture
PO Box 60098, Colorado Springs, CO 80906,
www.pikespeakpermaculture.org

Books:

Permaculture: A Designer's Manual, by Bill Mollison, 1988

Introduction to Permaculture, by Bill Mollison and Reny Mia Slay, 1991

Earth User's Guide to Permaculture, Bosemary Morrow, 2006

Magazine:

The Permacultue Activist,
www.permacultureactivist.net

Internet:

http://sunsite.unc.edu/london/permaculture.html