



Bayou Foliage

Volume 17 No. 3 March 1999

A publication of the Armand Bayou Nature Center Volunteers
"Interested + Informed + Involved"

March Calendar

- 6 Stewardship Saturday (Trail, forest, facilities)
- 7 Volunteer Board Meeting
- 11 Volunteer Meeting
- 11 Bayou Foliage Inputs Due
- 20 Stewardship Saturday (Prairie and Marsh)

ABNCV MEETING

Thursday, March 11, 1999

ABNC Auditorium

6:30 - Snacks and Conversation

7:00 - Program

8:00 - Volunteer Meeting

9:00 - Adjourn

The subject of our program for this month is Reptiles and Amphibians of ABNC. Eric Duran will be our guest speaker. His program will cover the habits, life history, and identification of resident reptiles and amphibians. A slide show, live specimens, and discussion period will be included. Please join us!

Happy Birthday

Merle Bunde	3/02	Dekka Hassey	3/04
Eleanor Haskew	3/04	Sheree Frede	3/08
James Crabb	3/10	Jane Bingel	3/12
Cherry Barfoot	3/15	Zel Arbuckle	3/16
Joan Brunkow	3/20	Fran Cognata	3/20
Ann Brinly	3/23	Joe Clem	3/29
Charles Boyle	3/31	Marsha Galvan	3/31

Printing Compliments of Celanese

CONTINUING EDUCATION

Native Edible Plants! Foragers!

10:00 a.m., Saturday, March 13th

ABNC Auditorium

Is it time to cook up something new for dinner? Looking for some unusual ideas? Barbara and Tim Skyles will show us through a slide presentation how to identify native edible plants. They will then demonstrate how to cook them and provide samples for tasting. Please join us for this interesting program.

Weaving Rag Rugs!

1:00 p.m. - 5:00 p.m., Sunday, March 14th

ABNC Pole Barn

Students will learn to weave a Rag Rug on the Nature Center floor loom. Those who wish may complete their own 40" rug including "fringe" at a later time.

Instructor: Emily Egan

Class Limit: 5

Introduction to the Spinning Wheel at ABNC!

1:00 p.m. - 5:00 p.m., Sunday, April 11th

ABNC Pole Barn

Students will learn to spin on the Nature Center's wheel. Maintenance of the wheel will also be covered. All wool will be provided for the class.

Instructor: Emily Egan

The sign-up sheets for these programs can be found in the breakroom.

Jean Kruse

Volunteer of the Month

The volunteer of the month is Patrick Wornick. Patrick became a volunteer in February 1998 and in October was awarded the TREE award (Terrific Rookie Exhibiting Enthusiasm) for his volunteer class. For a number of years prior, Patrick wanted to become a volunteer but his schedule wouldn't allow it. He says his main reason for volunteering is his commitment to preserving nature for future generations. Patrick's favorite activity at the nature center is his blacksmithing demo, which you can see at the Martyn Farm on weekends. Patrick was born in Galveston and raised in Pasadena so he has been a neighbor of the nature center for a long time. We're glad you've stuck around to help ABNC with its mission of education and stewardship. Thanks Patrick for all you do for us.

MINUTES OF THE ABNCV MEETING Thursday, February 11, 1999

Larry Kruse introduced our speaker, Georganna Collins, who gave a presentation on the Atkinson Island Marsh Restoration Project. (Jean was ill). The business meeting was called to order by Susan Williams; the minutes of the January meeting published in the Bayou Foliage were approved. In the Treasurer's report, Georgia Colyer announced current assets as 3581.20, which includes 2971.57 in the checking account and 609.63 in the savings account. Volunteer Norman Wong is leaving for Scotland in two weeks; he will be greatly missed. Refreshments were provided by Susan Williams and Patsy Baukman.

Susan announced Reptiles/Amphibians at ABNC by Eric Duran for the March meeting. Feb. 13 is the Prairie Monitoring Workshop. CPR class is Feb. 14 and Feb. 21. March 13 is ID and Cook Native Edibles by Barbara and Tim Skyles. Emily Egan will teach weaving rag rugs on March 14; her introduction to the Spinning Wheel is April 11.

Mary Alice Trumble announced that the Volunteer of the Month is Patrick Wornick. Our new co-director, Ephriam Dickson, will be here 02/15/99. He was Director of the Battleship Texas Foundation and Assistant Director of Education at the Houston Museum of Natural Science. The volunteer log will be moved to the Kaneka building; always check in at the Kaneka building. There are 14 in volunteer training. At the March 99 graduation, the tree and moss awards will be announced. ABNC needs Eco Camp teachers; it is a paid position.

Mark Kramer stated that ABNC is waiting for the permits to come in to begin restoration of fringe marsh; we have lost 93% of the marsh here. Regarding the equipment shed, the roof is complete; the storage loft is done; the stairs are being built. We need about \$5000.00 to hang the siding and the doors. We need to play a role in the Trash Bash on March 27; there will be food and music in the greenhouse afterwards. On Earth Day, April 17 and 18, we will try to duplicate most of the demos we do on an entire weekend. Canoe and pontoon boat rides and free tours will be offered. We need help in setting up on April 17 at 8:30am.

Susan announced that Larry and Jean Kruse will be transferring to Chicago soon. Eric Duran was elected the new Vice Chair at the Volunteer Board meeting on Feb. 7. We need 4 mentors. Volunteers for refreshments are needed except for June and December.

Lou Wheatcraft announced details of his UHCL student project in a Strategic Planning Course. Lou is also Chairman of the Education Committee for the Board of Trustees. He outlined a visionary workshop of two hours each on March 14, March 21, and March 28. It will consist of staff, volunteers, and members of the Board of Trustees who will work together to develop a detailed plan for education programs offered at ABNC to the community and the volunteers.

Paula Kennedy announced the 12 week, State of the Earth, CE approved, course being held at Rice University, starting

Feb. 17, 1999, each Wed., 7pm to 8:30pm. Cost is \$135.00. Also, bring your items for sale at the Kaneka volunteer gift shop to Paula. These should be items made by volunteers in connection with demos done at ABNC. An honor system drop box will be used; sales tax will be deducted from collections.

Becky Brignac described Down on the Farm as the dream of Jim Hawkins, Jim Edwards, and Roland Borey. We need your support; check the demo list.

Barbara Hill needs volunteers for greeting, answering phones, parking cars, and selling tickets for the Garden Tour, April 24 and April 25. Tickets are one price only, \$8.00, for 9 gardens. Fliers will be ready in March.

Ruby Dilgrin announced that the volunteer bylaws will be discussed on March 28, 1999 at the Volunteer Board meeting. Please read and offer your comments.

Call Hanna Drago if you know anyone who qualifies for the admissions job. A trained person is needed for Sat., March 27.

The Retention Committee meets Feb. 13 at 2pm; mentors meet at the farmhouse on Feb 13 at 2pm. The meeting was adjourned.

Respectfully submitted,
Linda Hamlett

Comments From the Chair

Bad News/Good News

We will have to say goodbye to two very special volunteers soon. Larry Kruse has been transferred to his company's Chicago office, so he and Jean will only be with us for another couple months. Larry and Jean have been incredibly generous with their time in the three and a half years they have been at ABNC and have made numerous contributions to the nature center. They will be missed by the many, many friends they've made here.

Since Jean is currently serving as Vice Chair, the Board (as specified in the Volunteer Bylaws) is required to fill the position. At its February meeting, the Board voted unanimously to approve Eric Duran as Jean's replacement. Thanks very much for agreeing to take on this responsibility Eric!

Volunteer Training Class

We're fortunate to have 14 new volunteers in the class which began on February 6. Please be sure to try to attend the March 11 general meeting to be on hand to welcome them as they complete their training and graduate.

Special Events

Spring is a wonderful and busy time at ABNC. Upcoming special events bring many visitors, and your help is needed to make them the best they can be. Please sign up for one (or more) if you've never participated in them before; they're lots of fun! Of course, veterans are needed too. The following events are planned: Down on the Farm (April 3); Earth Days (April 17 & 18); Artistry in the Garden (April 24 & 25); and Bayou Boil (May 8).

The 1999 Garden Tour

Please save some time to help out at the garden tour, April 24 & 25. We will be needing some additional people this year. One yard on Beacon Hill in Seabrook has space for only handicap parking. We have permission at Robinette and Doyle Caterers on Kirby to use their parking lot. We will need two people at a time to help monitor traffic there. In addition, we need a few people to help with ticket sales at the admissions building on the two days of the event. To help the receptionist we need need folks to field the telephone questions and of course we need lots of smiling faced greeters at our FABULOUS gardens. Call me after the first of the month (281-488-2653) or sign up at the clip boards in the break room. We want you...all of you! Thanks

Barb Hill

Book Giveaway!

I have some illustrated books about birds which are your for the taking, if interested. They will be on display at the March volunteer meeting. These are not field guides but large books with colored illustrations, some reproductions of Audubon's paintings included. Phone me (281- 488-7293) in advance if you would like detailed descriptions.

Carol MacGregor

A Very Big Thanks!

I would like to take the time to thank all of the volunteers who have allowed me to bend their ears and twist their arms to take weekend demonstrations over the past year, and in advance, to thank those who will again this year. It has indeed been a lot of fun getting to know you guys better. My husband hasn't always understood all the phone calls, and the time I have spent, but just one or two afternoons out at the farmhouse talking to people who wander by, or just gazing over the peaceful prairie has been worth it all. Which is not to slighten the equally enjoyable times in the interpretive building, as our visitors come to check out the critters and material at the nature center, or even one of the guests who has had a unique experience. If you haven't had the opportunity to join my "crew", let me invite you to do so sometime this year. You will not regret it. I have tried to only ask my people once a month, as I realize there are other things we like to do, at the nature center, and elsewhere. Thank you for your time!

Polly Swerdlin

Stewardship Highlights

Here's an update on stewardship coordination logistics. I have taken over Ann Brinly's call list and the interface with Mark to determine what activity is planned. Jim Callan will continue to do his subset of the call list for me. Once again, if you are interested in stewardship, or a specific aspect, and are not being contacted, please let me know.

Folks might be interested to know that since mid-January prairie burns totaling approximately 50 acres have been accomplished on the west side of the bayou. Also a burn line has been put in place for burning additional acreage before the end of February. East side activity, which is under the management of Clean Water for Armand Bayou or (CWAB), should be starting in February.

There has also been progress on the new marsh restoration project. Ten shoreline sites and 4 submerged sites (for widgeon grass) have been selected, and work to obtain the necessary permits to proceed are in the works.

The team leading the construction of the new equipment shed is doing an outstanding and very professional job (take a look sometime). Installation of siding is the next major activity for this project.

Once again, if you have any ideas for stewardship, please let me know.

Ken Russell

VOLUNTEER GIFT SHOP

In case you haven't noticed, Wild Birds Unlimited is no longer operating a gift shop in our entry pavilion. I have talked with a staff and a number of volunteers, including the Volunteer Board, and come up with a plan for the volunteers to stock a small gift shop station in the lobby of the entry pavilion. All items will be related to ABNC activities, such as items made at demos (weaving, blacksmithing, lace making, soap making, etc.), or nature related crafts or items (postcards with photos or drawings of ABNC, bird checklists, ABNC bumper stickers, volunteer cookbooks).

Purchases will be made by putting money in a drop box; the reception person will not be manning the gift shop, except perhaps to make change. All prices will be in even amounts (\$1, \$2, 25 cents, etc.) and will include tax. We will subtract tax out of the amount received. All proceeds will go to the ABNC volunteers. If you have any items you would like to donate for the gift shop, please see me. My office is now in the entry pavilion, and I am usually there during ABNC's open hours. We hope to be up and running by Down on the Farm on April 3.

Paula Kennedy

Administrative Director at Armand Bayou

We have a new staff person at ABNC, and his name is Ephriam Dickson. He has assumed the new position of Administrative Director, and he will be responsible for overseeing all administrative aspects of Nature Center operations including budget, staffing and business planning. The new position will co-direct the nature center with George Regmund whose title is now Facilities and Operations Director, responsible for education and stewardship issues.

Ephriam comes to us from the position of Director of the Battleship Texas Foundation, a non-profit group established to develop educational programs and provide support for the Battleship Texas. Previous to that, he was Assistant Director of Education at the Museum of Natural Science. His extensive experience will be a great asset to ABNC.

Welcome Ephriam!

Visionary Thinkers Needed

In March, we will be holding a series of workshops concerning the future direction of our educational programming for the Nature Center. These workshops will combine the features of a visioning retreat and strategic planning workshop. Participants will consist of volunteers, staff, and board members. These workshops are fun and you will be a part of a special team that will develop the plan that will outline the future of all the educational programs at ABNC.

The workshops will be facilitated by me and fellow classmates from my Strategic Planning class I am taking at UHCL.

The workshops will be held March 14, 21, & 28; 2:00pm - 4:30pm each day in the auditorium. Attendance at all sessions is not mandatory but highly desired. (2 out of 3 is fine.)

I need volunteers to participate in these workshops. Your experience and vast knowledge will add immensely to these workshops. If you are interested in participating, please call me as soon as you can at:
(281)-486 9481.

Thanks,
Lou Wheatcraft



1999 Calendar of Upcoming Events

April

Saturday, 3: **Down on the Farm.**

Saturday, 17 & Sunday, 18: **Earth Days.**

Saturday, 24 & Sunday, 25: **Artistry in the Garden.**

May

Saturday, 8: **Bayou Boil.**

June

Ecocamp

August

Saturday, 21 & Sunday 22: **Scaly & Slimy Weekend.**

September

Volunteer Training Month.

October

Friday 29 & Saturday 30: **Creepy Crawlers.**

November

Saturday 13 & Sunday 14: **Martyn Farm Fall Festival.**

December

Saturday 4: **Yuletide Gathering & Old Fashioned Market.**

Cookies! Cookies! Cookies!

Down on the Farm has been scheduled for April 3rd. We would like to sell cookies at the event. As you all know, we were rained out at Fall Festival, so selling at this event will help make up some of the funds that the Volunteer Organization puts to good use.

All sorts of cookies sell good, from chocolate chip and sugar cookies to brownies. You can bring them ahead of time and leave them in the break room, marked for Down on the Farm, or bring them at the event when you come.

Thank you for all your help. We always depend on you and you never fail to help. See you there!

Stephanie Rogers

Thank You Everyone!

I would just like to thank everyone who has led trail hikes for me over the last year. You all have been great, and thank you so much!

Cris Sanitago

Come See the Nature Center's New Purple Martin Housing

We did it! Last month the Nature Center was able to purchase a gourd rack system to start a new Purple Martin Colony. It can hold 12 Gourds and the entire system rolls up and down the pole, on a rope and pulley system. I would like to take the time to thank everyone who made this possible. Both Volunteers and Members contributed to this great project. In just one Glass Jar, up in the Kaneka Bldg., we were able to raise over 300.00, just since last September. I would also like to thank Colin Shackelford who helped me a lot in getting this project started, and my mom and dad Linda and Roy Hamlett, who helped me put up the gourd rack. Again, thanks everyone for all of your help, and come out and see the new Purple Martin Housing. Hopefully we will attract some purple martins this year. It is located between May's pond and the nature center garden, you can't miss it.

If you would like to read a little more about Purple Martins, I have written an article below. I'm sorry I do not have a photo of the gourd rack yet, I will try to get one for next month.

The Birds Around Us

Purple Martins by Andrew Hamlett

Since we now have a new Purple Martin house out at the nature center, I figured I should write a little something more about them.

This will be my 4th year to host purple martins in our backyard, and I have to say that they are definitely one of my favorite birds. Last year our colony had 32 nesting pairs of martins and fledged over 60 young. It's of course, a lot of work to maintain a colony of that size as you will learn below, but well worth it all. During the spring and summer I can't tell you how many hours I spend in the backyard just watching and listening to them. There are not many birds that can exceed their agility and gracefulness in flight.

The purple martin is not only North America's largest swallow, but its most well known too. Their swiftness, beauty, and ability to eat hundreds of insects in one day are certainly a wonderful addition to any backyard. They are not however the mosquito hungry birds that many people believe them to be. A myth that has been passed around for a long time now is that Purple Martins can eat thousands of mosquitoes a day. This has recently been found to "not be true". Studies have shown by entomologists (scientists who study insects) that mosquitoes only make up between 4% and 6% of their diet. Martins usually prefer larger prey but will eat just about any flying insect, as their

diet consists entirely of insects. Some of the things they feed on are: wasps, bees, flies, beetles, midges, butterflies, moths, dragonflies, mayflies, damselflies, and yes, some mosquitoes.

Purple Martins are attracted to backyards or other places by housing put up for them. However, it's not always as easy as that, as many people try for years with no success, and then others get tenants the first year. In order to have the best chance of attracting martins to your yard, you want to first examine the area. Do you have a fairly large open space? If so that's where you want to start. You need to find an open area away from trees and your home, but where you can still see it to enjoy watching and listening to them. The housing should be placed at least 30-40 feet away from trees, to have the best chance of attracting them. Southern landlords can sometimes get even closer. The housing needs to be placed around 10-15 feet above the ground, and it is ideal to have it set up so that it can be raised or lowered on the pole at any time of the year.

When deciding what type of housing you want to use, you have several different choices to choose from. The best houses are made of either wood or aluminum, plastic martin houses are not recommended. You also want to choose a house that can be easily accessed, ones that have individual compartments which open and close are ideal, and you should be able to raise and lower it on some kind of pulley system. Gourds are also great in attracting martins, sometimes even more so than houses. You have the choice of either using natural or some type of plastic gourd. I use both; the more choice they have, the better your chances are for attracting them. Remember always to try and paint your housing and gourds white, as it is reflective and helps keep the birds cooler, especially in the hotter months. The trim can be another color though.

One of the worst problems that people have with their martin colonies, are the invasion of two unnative birds that can become real pests. I'm talking about house sparrows and European starlings; these birds invade their housing, many times driving away your martins and destroying their nests. I can't tell you how many times I've had problems with house sparrows and starlings trying to run off martins or tear up their nests, and etc. House sparrows and starlings will, if not controlled, take over compartments in housing, destroy their nests, beak pierce their eggs, kill the young nestlings, and prevent martins from nesting, especially at unestablished colony sites. Even adult birds are often injured or killed by starlings. House sparrows and European starlings are not protected species by law (since they are unnative birds). They may be controlled by nest tear outs, trapping them, or whatever method you feel comfortable using. They are very persistent and cannot co-exist safely together.

Environmental Notebook Industrial Ecology, Part 4 by Lou Wheatcraft

Purple martins are one of our earliest spring migrants; they begin arriving on their breeding grounds in southern Florida and Texas by early January. These early arrivals are usually the older adult birds. The adult males usually arrive first and are often referred to as scouts; a few weeks later the adult females begin to arrive as well. Scouts are simply the older birds who are more experienced, returning to their former breeding grounds, most likely to the same house they nested in last year, if they were successful. By arriving early, they can get the best pick of the nesting sites. Martins are usually faithful to their colonies, especially if they have nested there successfully before, and will return year after year, sometimes even to the same compartment in which they nested before.

Once the adult martins get settled and choose their house, usually about 4-6 weeks after the first ones arrive, the adult males begin singing what is known as "dawn song". In the pre-dawn hours, usually between 4-6 a.m., the adult males will fly high over their colony site, singing very loudly. This has been found to help attract prospective migrating martins, usually sub-adults (first year birds) down to the colony site. Many people refer to it as if they are saying, "Look at what a nice place this is to nest. Wouldn't you like to nest here also?" You can purchase a recording of the "dawn song" from the Purple Martin Conservation Association. It's especially helpful in attracting birds to new sites.

Adult male purple martins are entirely dark and glossy blue-black colored. The females and juveniles are gray beneath with a paler belly; they also have a dark blue-gray back; females can also be noticed by a faint gray collar around the neck. They have long shallowly forked tails and pointed wings, and are among the most agile of any bird.

Their nests are rather untidy, consisting of a mass of grass, twigs, and leaves. Many times they will put a rim of mud in front of the nest to help keep eggs from rolling out. They have a very interesting habit of constantly replacing the leaves with fresh new green ones, especially once they've laid their eggs. Martins lay anywhere from 1-7 pure white eggs, which the female incubates from 14-16 days. The young will usually fledge within 4-5 weeks. Usually, for me by the time July rolls around, they have mostly all fledged.

Each fall these birds make incredibly large colonial roosts for several weeks before migration, sometimes numbering in the tens of thousands. Martins make an amazing flight south, migrating down to South America, where they spend the winter in Brazil and Argentina. There, they have a large supply of insects to feed on.

In the last three articles, I have introduced the concepts of Sustainability, Industrial Ecology (IE) and the Product Life Cycle Assessment approach to environmental management. In an age where it seemed that Earth's resources were unlimited and the Earth's capacity to absorb waste, we became a throw-away society. The environmental damage caused by obtaining raw materials, as well as the disposal of waste from the manufacturing process, were largely ignored as "external" factors and not considered part of the overall cost cycle of a product. Today we know better. In this article I will describe a classic example of industrial ecology in real life practice along with examples of successful programs to reduce pollution and minimize waste.

Real Life Examples of Industrial Ecology

There are many illustrations of industrial ecology concepts being implemented throughout industry at all levels. It can mean the recycling of products through a network of companies, so that one uses another's waste, the recycling of waste within one's own company, or even just finding less resource- and energy-consumptive ways to produce one's product. By integrating industrial ecological management practices companies can produce and maintain cost efficiency.

A classic example of a strong Type 2 (waste minimization) industrial ecological system and cooperation is located in Kalundborg, Denmark^{[1][3]} In Kalundborg, a coal-fired power plant, an oil refinery, a pharmaceutical company specializing in biotechnology, a sheet-rock plant, concrete producers, a producer of sulfuric acid, the municipal heating authority, a fish farm, some greenhouses, local farms, and other enterprises work cooperatively together. The Asnaes Power Plant started this process off in the 1980s by recycling its waste heat in the form of steam. It had formally condensed the steam and returned it as water to a nearby fjord; now it sends the steam directly to the Statoil refinery and the Novo Nordisk pharmaceutical company. It also provides surplus heat to greenhouses, a fish farm owned by the utility, and the residents of the local town, allowing 3,500 oil-burning heating systems to be shut off.

The Statoil refinery produces surplus gas, which was not used prior to 1991 because it contained excessive amounts of sulfur. The refinery installed a process to remove the sulfur, so that a cleaner burning gas is sold to Gyproc, the sheetrock factory, as well as to the coal-fired utility (saving 30,000 tons of coal); the sulfur that

is being retrieved is sold to Kemira, a chemical company. The process that removes the sulfur in the smokestacks of the Asnaes Power Plant also yields calcium sulfate, which they will be selling to Gyproc as a substitute for mined gypsum. The fly ash from coal generation is used in road construction and concrete production. Waste heat from the refinery is used to warm the waters of a fish farm that produces 200 tons of turbot and trout sold into the French market, while its fish sludge goes to local farmers as fertilizers. Meanwhile, Novo Nordisk has developed a process to make the sludge generated in its fermentation process useful for local farmers through the addition of chalk-lime and processing at 90°C for an hour to kill any remaining microorganisms.

The end result is that one element of the industrial park supplies materials and energy no longer needed by that element to another element that needs those materials and energy. Thus what would have become waste, is turned into useful inputs of materials and energy to another element in the system. The end result for the system is a minimum of waste and a reduction of raw materials being inputted in to the over all system.

Pollution Control and Waste Minimization

But if an industrial park of the type described above is not available, what can an individual company do to control the amount of pollution and minimize waste?

Many industries that are Type I (use lots of raw materials and produce lots of waste) are primarily concerned with meeting regulatory pollution and waste management requirements. They are using existing processes and plants that are based on 20 - 30 year old technologies. Pollution prevention plans set a sound foundation for waste minimization programs and practices. Pollution prevention techniques are designed to reduce total hazardous waste generation for these Type I industries, risk to human health and the environment, cost of waste management, and liability of waste management methods. Achieving pollution prevention goals results in minimizing generated wastes. As a result of pollution prevention plans, waste minimization contributes to the protection of human life and preservation of the environment. Waste minimization reduces risk to potentially exposed people and environmental impacts from accidental releases.

Waste minimization policies have several applications: to avoid or reduce the generation of hazardous wastes, pollutants, and contaminants at the source; reuse and recycle wastes which cannot be eliminated; treat remaining wastes to reduce volume, toxicity, or mobility before disposal; and dispose of residual waste in an environmentally safe manner. In order to

have an effective waste minimization program, all applications should be used in the most efficient and relevant manner. The absence of a single application can have a negative effect on all remaining facets.

To obtain a successful waste minimization program several activities must occur. Substituting non-hazardous materials for hazardous materials where applicable will also result in less hazardous waste generation. Modification of equipment and processes may be expensive, but waste generation will decline which will reduce waste disposal costs. Reformulating or redesigning products where appropriate can reduce hazardous and non-hazardous wastes. The least expensive way to reduce waste generation is improving housekeeping, maintenance, training, and inventory control. Finally, integrating resource planning into project planning can result in waste minimization. If waste considerations are applied to the early concepts of a project, waste generation will be lower.

Several standard waste minimization practices and activities can be applied to prevent further harm to humans and the environment. Some policies are more expensive than others. Some policies require little or no money and resources while others can be very complex and expensive. The type and size of a company will determine waste minimization philosophy. Some companies will budget a certain amount of money to waste minimization projects while others do not set a budget for waste minimization. Regardless of company size and budget, waste minimization should occur through whatever means applicable.

Competitive firms that recognize the opportunities inherent in this approach may be well positioned for the future.

Sources: "Eco-Efficiency, The Business Link to Sustainable Development"; Livio D. DeSimone, Frank Popoff; MIT Press, 1997. . "Biomimicry"; Janine M. Benyus; William Morrow & Company; 1997. "The Web of Life"; Fritjof Capra, An Anchor Book, Doubleday, 1996.

In next month's article I will be providing examples of recent efforts of major companies to reduce their use of raw materials and reduce the amount of waste produced in their manufacturing processes.

Bayou Foliage

All volunteers are encouraged to submit information to the Bayou Foliage. If you have any ideas, news, or etc., please let me know. Submissions for the Foliage are due the night of the volunteer meeting and can be left in the Bayou Foliage box in the breakroom or e-mailed to me at: Bachwblr@aol.com.

Andrew Hamlett.

VOLUNTEER DUTY SCHEDULE - MARCH 1999

In an attempt to take some of the load off of the Coordinators, and to help cut down on our "no show" rate, a list of the persons who have volunteered for various assignments will be printed in the Bayou Foliage each month. If you are scheduled for a particular duty and you are unable to attend, please use this schedule to try to find your own substitute. You may be able to trade weekends, or swap a Saturday for a Sunday with someone who has the same duty another time during the month. If you do trade, please be sure to call the appropriate coordinator and the ABNC desk to inform them.

<u>DATE</u>	<u>11:00 TRAIL</u>	<u>2:00 TRAIL</u>	<u>INFO. SERVICES</u>	<u>FARM INTER.</u>	<u>FARM DEMO</u>	<u>NAT. HISTORY DEMO</u>
Sat. 3/6	Jim Crabb	John Siptak	Joan Shack	Janet Miller	Ed Adams (Rope Making) Tom Scarcella (Blacksmith)	Ruby Dilgren (Bats) Zel Arbuckle (Snakes)
Sun. 3/7	--	Cris Santiago	Ken Russell	Jennifer Pelletier		
Sat. 3/13	Susan Hesley	Ray Parker	Geri Ross	Jane Bingel	Jim Callen (Farm Equipment) (Indian Crafts)	Pat Grimes (Snakes)
Sun. 3/14	--	Anne Tincher	Paul Brunkow	Polly Swerdlin	Stephanie Rogers (Stereopticon)	Christine Ribeiro (Mammals)
Sat. 3/20	Louise Peck	Eldine, Mike, Justin Owens	Danny Yancey	Susan Williams	Chris Bingham (Cheese)	Louise Peck (Owls)
Sun. 3/21	--	Patty Pennington	Merle Bunde	Christine Ribeiro	Mary Ann Tucker (Basket Weaving)	The Hendrix (Front Porch Birding)
Sat. 2/27	Jane Bingel	Melanie Weisman	Joe Bryan	Susan Hesley	Jane Bingel (Butter)	Jim Crabb (Mushrooms)
Sun. 2/28	--	Merle Bunde	Doug Barfoot	Penny Woodward	Emily Egan (Spin or Weave)	Ann Tincher (Pond Life)

1999 VOLUNTEER BOARD

	<u>Home</u>	<u>Office</u>
Susan Williams	281-487-3033	713-743-8863
Jean Kruse	281-486-0787	Hanna Drago
Linda Hamlett	281-487-1268	Polly Swerdlin
Georgia Colyer	281-996-7888	Cris Santiago
Ken Russell	281-488-0390	Sue Manley
Ruby Dilgren	281-488-1727	Ed Adams
Jane Bingel	281-554-5069	Andrew Hamlett
		Newsletter
		281-487-1268
		Admissions
		281-326-4149
		Weekend Demos
		281-488-8193
		Weekend Trail
		281-471-0979
		Weekday Farm
		281-992-0836
		Weekday Trail
		713-946-2754
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