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United Plant Savers Botanical Sanctuary ***“Becoming Stewards of Healing Herbs”***

“Great Mystery, Creator of all things...I call out to you today in this sacred place in Prayer. Please guide our hearts as one. Creator placed the Plant and Tree People here to be used as medicines for the people. I pray that this site be used in a respectful way as a tool to the better understanding of the medicine ways of my ancestors. Please help bring peace and balance between the colors of the world through education at this site...”

So began the prayer of Chief Soft Shell Turtle Netz at the initiation ceremony of the first UpS Botanical Sanctuary in 1998. That was a huge year for United Plant Savers as we saw the vision of our first Botanical Sanctuary become a reality. With the gracious vision and support of Michael and Judy Funk, UpS was able to purchase a 370-acre farm in the hills of southeastern Ohio. This farm was already abundant with native medicinal plants and contained prairie plantings, woodland plants, a greenhouse and gardens. This farm has become a teacher to us as we learn how better to manage and preserve the rich resources that are there. It also inspired us to begin the UpS Botanical Sanctuary Network project.

Often, when we think of ‘Botanical Sanctuaries’ we envision large tracts of land, generally owned by a non-profit, government agency, or private trust, not something that we as individuals can create. But a ‘Botanical Sanctuary’ is more than mere ownership of land ~ it is a way of regarding the land we live on. It is a stewardship, a relationship, that takes into account the natural resources of the land and its native habitats and inhabitants ~ and helps to restore the sacred relationship between people and land. Even a small garden space in a downtown area can be restored as Sanctuary by simple intent ~ and a lot of hard work! ~ as a manicured lawn area is transformed into a native garden that supports ‘at risk’ native medicinals, wild flowers and other native species. We’ve seen this occur several times already as UpS members ‘grow’ the Sanctuary network, creating beautiful examples of Sanctuary in downtown areas, city neighborhoods and school yards, as well as on farms and country acreage.

Our vision is to see a network of Sanctuaries criss-crossing the country, a botanical quilt that supports the diversity of native plants and other wild creatures that once called this land home. These Botanical Sanctuaries become nesting grounds for wild birds and animals who rely on native species for food and shelter. They become rest stops for migrating butterflies and other native pollinators and home to frogs, snakes and an assortment of wild creatures that thrive in the diversity that Sanctuaries provide. Sanctuaries also become places where people come to rest and renew ~ and to learn about wild plants, even if it’s as simple as a walk through a garden to identify ‘at risk’ medicinal herbs. Many of our UpS Sanctuary members have created teaching centers and/or offer classes at their Sanctuaries.

Chief Soft Shell Turtle said during the opening ceremonies of the UpS Sanctuary, *“When a human being learns a lesson, this is knowledge. When a human being takes this knowledge and betters themselves and others, this is wisdom. May wisdom always stem from this sacred place...”* Since that day, much has happened at the Ohio Sanctuary that rings true to Chief Soft Shell Turtle’s vision. We’ve held gatherings and classes, had hardworking interns, planted wild gardens and ‘at-risk’ herbs, and are currently working on the Talking Forest Medicine Trail ... all in deep respect to the earth and her green skin of healing plants.

But Chief Soft Shell Turtle was referring not only to the Ohio Sanctuary, but to stewardship of land in general. Even more rewarding than the work that’s being done on the UpS Sanctuary in Ohio is the work that our members are doing across the country on their own Botanical Sanctuaries. It has been amazing and inspiring to listen to your stories as you create your own botanical sanctuaries, restore land, plant natives, offer classes and become community resources. The UpS website highlights many of those stories and the great work members are doing. Please read about them at www.unit-edplantsavers.org. Our dream, of course, is that every UpS member will look at their land as sanctuary and create repositories for native medicinal plants and other wild creatures.

We've compiled this Resource Guide to help you in the process of creating a Sanctuary. There's a lot of practical advice here that we've learned along the way ~ and a liberal sprinkling of inspiration. Hopefully, you'll find the mix of inspiration and practicality you need to begin the process of creating a Botanical Sanctuary on your land. We know that each of you will gather wisdom and resources in that process, and we welcome your input and ideas for the next edition.

In the inspiring words of Margaret Meade, "Never doubt that a small group of citizens can change the world! In fact, it's the only thing that ever has". Though there are so many tasks to do to help create a better world ~ some of which seem impossibly difficult and challenging ~ one thing we can participate in, that's joyful and inspiring as well as revolutionary, is changing our relationship to the land we live on. By becoming stewards and creating sanctuaries we create space for well being not only for humans but for all life forms. And that is helping to change the world ... plant by plant, tree by tree, Sanctuary by Sanctuary.

Thank you for becoming a UpS Sanctuary Member. Please remember to send ideas, thoughts, resource and stories for the next edition of the UpS Botanical Sanctuary Resource Guide. Together we grow.

With you in the Spirit of the Plants,

Rosemary Gladstar



Fairy Garden at Sage Mountain – *photo Sage*

What Sanctuary Means

Creating Botanical Sanctuaries

*By Christopher Hobbs L.Ac.,
and Rosemary Gladstar*

The world is changing at an accelerating rate. The Internet, jet travel, and satellite links have helped facilitate this change with increasing fervor. Growing up in southern California in the 1950s, I am used to the kind of change that is quickly reshaping the surface of the earth. I watched chaparral-covered hillsides at the foot of the Sierra Padre Mountains plowed and planted with vast orange and lemon groves, only to be cut and plowed 20 years later for tract housing and strip malls. When I was 15, we moved to a 5-acre piece of land that was full of quail, deer, coyotes, aromatic shrubs and huge 200-year live oaks. I used to roam this land smelling, touching everything, feeling very much a part of the wild animals and plants that called this place home. Several years later, preparations were made to put a major freeway through our backyard; the small country lane that wound peacefully along the front of our house was widened and became a four-lane freeway for frantic travelers. The native habitat with its trees and plants were paved over, buried beneath layers of concrete. But despite these immense disruptions, the wild spirit of the land and of the plants that grew a mile above us on steeper slopes could still be felt.

A few winters ago in the desert where I grew up the 100-year bloom happened. In all the years I had walked through this desert imbibing the essence of flowers and the pungent aroma of the chaparral bush under the bluest of skies, I could not, even in my wildest imagination, have pictured the vast ocean of purple sand verbenas and desert evening primrose sweeping as far as the eye could see. They had been waiting quietly for just the right moment to burst forth in such splendor and were literally blooming their hearts out.

In the Coachella Valley, near Palm Desert, most of the extensive chaparral and mesquite-studded

dunes had slowly been flattened, plowed and made into golf courses, trailer parks, or strip malls. Here and there, however, a few hundred acre-squares were still untouched, more a testament to the outrageously steep price of land than lack of interest by developers. It was here in these untouched lots scattered midst the malls and golf courses that the flowers bloomed most intensely. Since many of the lots had **"For Sale"** signs on them, it was only a matter of time before these too would be paved over, sealed in crypts of concrete. Did the intelligence of the flowers know what was to come? Were they reveling in the sheer joy of being with such bloom in one last majestic effort? It was then that the poignancy of it all struck me. After a half million years of evolution, these flower species, and all the insects, and animals that flourished with them would be no more, soon to be buried beneath malls and roadways. Standing amongst the transitory beauty of a thousand plus blossoms in full glory, witnessing what may never be seen again in my lifetime, I felt a great surge of tears.

It's likely that you have seen similar changes in the areas where you grew up and have experienced similar feelings. Perhaps the woods or fields you ran in as a child, built forts, climbed trees, and breathed in the fresh scent of spring wildflowers is gone now. Perhaps, too, the old forests that you knew as a child have been replaced by a maze of buildings. If you ever had the opportunity of walking in an old growth forest, it's a feeling you'll never forget. It is impossible to fully describe such an experience. The delicate and complex web of life found in an old growth forest is vital, so perfect that one feels completely at home and at peace. Truly, one has entered the ultimate cathedral or temple containing all the beauty and inspiration that is earthly possible. Surely these rare old forests provide an intelligence pattern, a blue print, for life to continue. But of the vast ancient forests that once carpeted the earth providing a home for countless species, only a small portion remains. In North America, the estimates run as low as 4%-5% of these original forests remains intact.

It's impossible not to imagine what will happen to the land, the plants, animals, insects, and other life forms that are being systematically destroyed in our lifetime and replaced by our vision of a convenient world, a world recreated to optimize our shopping opportunities. But this scenario is not inevitable. The land where you live is sacred and alive, even if it lies buried under concrete, or has had toxic chemicals poured into it. It becomes our personal responsibility to act to protect the earth and the creatures and plants who share our home and, furthermore, to nurture and protect the expansion of the intelligence of nature. The land will regenerate; the first soil microorganisms and plants will detoxify, purify, and sanctify it. But we need to be willing to help.

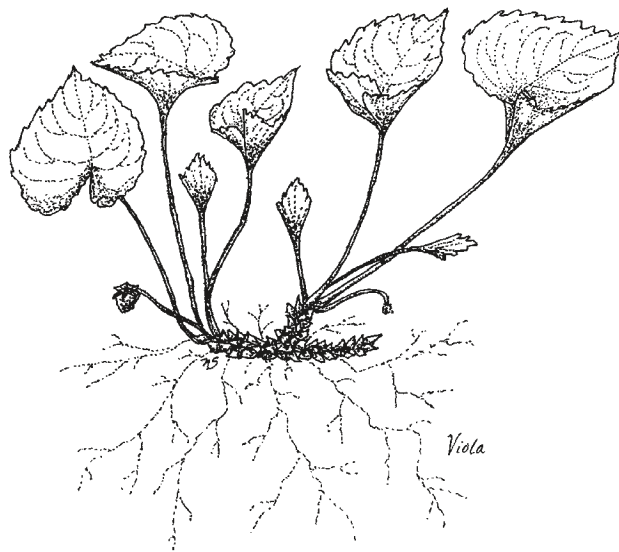
Following are three important ways you can help expand, protect, and reclaim the landscape and thus preserve the rich diversity of life that occupies native land. Though these steps in themselves may seem small in view of the vast amount of habitat destruction taking place daily, they are among the most important ways we can turn the tide and create a greener world, because at the deepest level they empower us to make the difference.

1. **Green Belts.** Think of coordinating land purchases, even small lots of land, with neighbors to create "corridors," or "green belts," so important to the health and continuance of the wild plants and animals. Encourage friends, family and community members to do likewise.
2. **Become Educated about Land Conservation.** Educate yourself about local land trusts, conservation easements and environmental legislation in your area. Consider placing conservation easements on your land to protect its natural environment and resources into perpetuity.

3. **Create a Botanical Sanctuary on your Land.**

Though it may sound daunting, creating a sanctuary is relatively simple. Buy as much land as you can, whether it is a city lot, a one-acre homestead or a 100-acre wilderness parcel, create a sanctuary for life. Though gardens and cultivated fields are lovely, it is important to restore wilderness, even to a small parcel of land. Begin restoring the native species that once grew in your area. This may require some investigation and research on your part. Talk to local wildflower societies; they are often great resources for plant information. Replant the native trees, shrubs, flowers, and medicinal plants that once inhabited your area and witness the rich diversity that begins to return to your acreage, your sanctuary, within a few short seasons. In the process, you will find out much about health, vitality and your own family's well being.

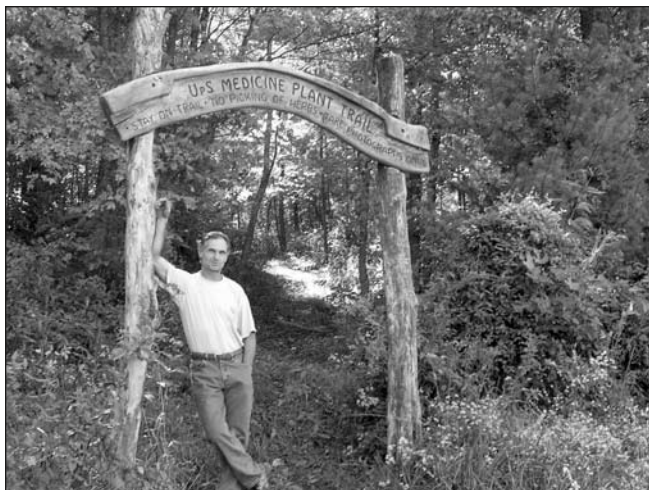
United Plant Savers has created the Botanical Sanctuary Network to support others in creating their land as sanctuary. Our vision is to see a network of private and public botanical sanctuaries spread across the landscape of America and to help ensure that the rich tradition of American herbalism and the plants that comprise it continue for our children and our grandchildren to enjoy.



Viola © Nancy Scarzello

Creating A Botanical Sanctuary – Different Models of Sanctuary

You can create a botanical sanctuary on any amount of land...a city lot, a backyard, or on the other extreme, with 700 acres of forests and fields. Which is exactly what Paul Strauss, herbalist-farmer did. An inspiration to those who meet him, Paul embodies the essence of the Green Man. Three decades of keen observations and commitment to the land has instilled in him a knowledge deeper and more profound than any amount of book learning. In the early 70's, Paul settled on a small farm in South Eastern Ohio. Beginning modestly with only a few acres, Paul continued acre by acre to purchase this inexpensive but lushly abundant land. Land purchase and stewardship became an overriding passion as his relationship with the land developed. Unable to sit back and watch the surrounding forests be clear cut, displacing the plants and animals that lived there, Paul mobilized friends, family and community members to purchase land. Over 700 acres of farmland and forest were preserved in the ensuing years. Strip mines that had devastated the land were reclaimed, the land planted, and ponds put in. The sanctuary evolved naturally as Paul replanted, restored and reclaimed the land.



Paul Strauss at the entrance to the Medicine Trail
at the UpS Sanctuary – *photo Joe Viny*

In 1998, Paul donated 70 acres of his land to United Plant Savers to help form the first UpS Botanical Sanctuary. Shortly thereafter, Michael & Judy Funk of Mountain People, a natural products distributor, made a considerable donation that enabled UpS to buy 300 adjoining acres, completing the first United Plant Savers Botanical Sanctuary. This 370-acre farm has many of the elements of a plant sanctuary already in place. The land is 50% mature diverse native hardwood forest and 50% fields. Extensive botanical assays have been performed to determine the resources present on the land. To date over 500 species of plants, over 120 species of trees and over 200 species of fungi have been identified. Half of the UpS "At-Risk" native medicinal plants are thriving in abundance on this land. Large communities of goldenseal, American ginseng, black and blue cohosh, and grand old medicinal tree species such as white oak and slippery elm flourish in abundance on this reclaimed land. The UPS sanctuary is a living model for protecting diversity, and ensuring that the rich traditions of the North American and Euro-American folk medicine continue to thrive.

But one doesn't need a large parcel to steward land and/or create Sanctuary. UpS member, Katherine Yvinskas has created a different and equally valuable model of a Botanical Sanctuary in her backyard in Morris County, New Jersey. In this small plot, Katherine has created an enchanted sanctuary for plants and people. Her garden landscape is planted in natives, and in a wooded corner of her lot she has planted several of the "at-risk" herbs. Goldenseal, American ginseng, blue and black cohosh, mayapple and bloodroot are thriving where the former owners grew only grass. Amidst her community, Katherine's botanical sanctuary offers a quiet respite for the weary, a reflective place to ponder, a joyous gathering spot to share with friends, and an educational center where others come to learn about the medicinal uses of native plants. Even on this small plot, Katherine is able to offer workshops and herb walks to raise her community's awareness of native plant conservation.



Photo of Katherine's garden
– photo K. Yvinskis

She's planned her sanctuary to be a welcoming spot for others beside the 'two-legged'. By simply installing a birdbath and a small pond, an increase in birds, butterflies and bees were noted in the first season. "The sanctuary reflects my love affair with the Dao, the complementary forces of nature. There is an ebb and flow to the garden. To me, it's a living sculpture, always changing, beautiful to watch as it unfolds season by season. I feel blessed. The garden sanctuary is truly paradise... am I in heaven?" states Katherine when reflecting on her sanctuary.

Rosemary Gladstar, founding president of United Plant Savers, created yet another model of sanctuary. Living in the midst of thousands of acres of wilderness in the Green Mountains of Vermont, Rosemary became acutely aware of the necessity of maintaining the integrity of wilderness and the importance of protecting large 'green belts' for wild life and plant preservation. When a 65 acre parcel of old growth forest abutting Sage Mountain, (Rosemary's 500 acre retreat center and Botanical Sanctuary), was slated for clear cutting, Rosemary appealed to friends and family for help. Through a lengthy and complex transaction, the land was purchased and placed in a UpS land trust with strict conservation easements insuring it remain 'forever wild'. The old growth forest, home to black bear, moose, white-tailed deer, and beaver as well as a rich variety of native plants remains in its pristine state.

But the story didn't end there. In talking with surrounding landowners, there was a great deal of interest in land preservation. Several other landowners in the area along with Rosemary are considering placing large tracts of land in forever wilderness conservation easements. A ½ mile-long self-guided Medicine Trail has been established and it has become a popular place for community members to hike, to learn about the native plants and wildlife, and to become more aware of habitat preservation and plant conservation.

The possibilities are infinite. But what it takes is people willing to make a difference. Whether you have a small backyard like Katherine, a working farm like Paul, or a tract of wilderness, imagine it as a 'sanctuary', a haven for plants, wildlife and people. The idea of ownership of land was unheard of by the native people. How could one own land, own the heart of the mother earth? We are stewards of the land, caretakers in the deepest sense of the word. By creating sanctuary, we begin to restore the idea that land belongs to all life, that it is life, and that our job is to restore it to its richest diversity.



Katherine's garden – photo K. Yvinskis

Growing Awareness

The Practical Side of A Botanical Sanctuary

Once you decide to establish your own botanical sanctuary, what practical steps can you take to help it grow and flourish, and be of service? Focus in these four areas: identification, restoration, preservation, and education.

☞ **Learn to identify plants.** Before this century, herbalists were also botanists. Begin by identifying as many plant species on the land as possible. Invite a friend over that knows some of the plants, and buy several identification guides. When we moved onto our 40-acre piece in the Soquel hills near Santa Cruz, California, I roamed the land observing every plant and tree. As I recognized the plants, one by one, I began a list, which eventually grew to over 200 species. For the eastern United States, I recommend the Peterson Field Guide to Medicinal Plants of the Eastern U.S. by Steven Foster and James Duke. Terry Willard wrote an identification guide to Rocky Mountain medicinal plants, and Michael Moore's excellent books cover the western U.S. Many flower identification books offer full color photos specific to your area and are available at your local bookstore or local wildflower society. For the more technically-minded, order a flora, or technical identification manual for your bioregion or state. (Note book list on page 49)

☞ **Learn where plants come from and where they are going.** Pay special attention to whether a plant is a native plant to your area, an ornamental from some exotic place, or a weedy species. Many weedy plants, though valuable and often lovely to look at, tend to take resources like water and light that native plants require to live. In establishing a botanical sanctuary, you will want to limit the number of weedy species that thrive on your land, especially if they are obviously widespread. Herbalists love dandelion and milk thistle, valuable medicinal plants, but try to limit their growth to specific areas.

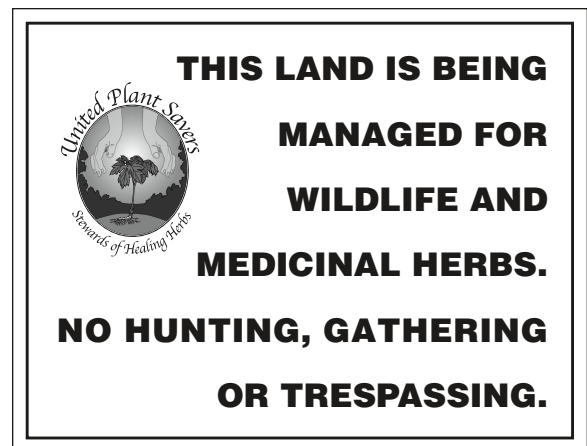
One of the first things I did on our land in the Santa Cruz Mountains was to establish a good weed patch. I collected weedy seeds and plants from all over the county and actually brought them to the land; first because I love their tenacity and survivability, and second, so I could observe them more closely and begin to understand how they fit into the whole botanical tangle on the land. I removed many other weedy plants around the land, especially in those areas/habitats that were most conducive to the native wild species.

☞ **Don't forget about the UpS consultant service.** We can put you in touch with a consultant who can help you learn more about your ecosystem and how to go about establishing and managing a sanctuary.

☞ **Plant Natives.** Identify as many plants and trees that originally came from your ecosystem as possible. The more you learn about the ecosystem where you live, the better able you will be to help the land regenerate. In the processes, you will be renewed and regenerated. Get to know your land intimately. Wander all over it and with permission, the surrounding areas. Get your neighbors involved! Locate a local native plant nursery, wildflower society and/or call one of the suppliers listed in the UpS Nursery Directory.

☞ **Whenever possible use local sources.** This preserves the purity, precedents, and intelligence of the original eco system where you live. You can order the same species from a supplier or nursery, but these may be genetic hybrids or carry the genes of some other species. We do a lot of seed collecting and propagation through cutting of local plants. I carry those little brown coin envelopes with me all the time, to store, identify, and organize weedy and native seeds. These are available from a craft store or stationary store. (See pg. 33 for more on genetic diversity and local ecotypes.)

- ☞ **Preserve and protect the land.** Join the UpS Botanical Sanctuary network, and be your own sanctuary manager. In today's world, the land needs a champion, a steward, and a manager to reduce interference, to bring natives back to the land, and allow the intelligence of nature to work her magic. Signs are available through UpS that can be hung around the perimeter of your land to help people to honor and preserve the sanctuary.
- ☞ **Allow your Sanctuary to become the educational center it naturally is.** Teaching and learning about the land is a lifetime study. Within every community you'll find knowledgeable people who are often willing to share. Invite them to your land. And always be willing to share with others what you have learned about land management, wild plants, and the importance of biodiversity.
- ☞ **Create a medicine trail on your land as part of your educational effort.** It can be a path through your front yard, or as on Rosemary's land, a self guided mile long trail. Make signs or have them made that give the Latin binomial, common name, origin, and uses of the plants on the trail. (Note plant label section on page 29)
- ☞ **Lead herb walks, or encourage others to give classes on the land.** You'll often find knowledgeable and willing people through the local forestry service, wildflower societies, herb clubs, and sometimes senior citizen clubs.
- ☞ **Create a nature center on your land.** Teach others how to grow wild plants, ethical wild-crafting techniques, preservation, medicine-making, and herbal therapeutics.



Botanical Sanctuary and Land Protection signs

Joining the UpS Botanical Sanctuary Network

The BSN application is available on the UpS website, www.unitedplantsavers.org in the Sanctuary section, or by mail from the Vermont office.

An outstanding example of a BSN application from Devon Bonady of Fern Hill Nursery and Botanical Sanctuary:

Please provide details of your land, size, location, time on land, existing medicinal plant species, current conservation projects. What makes your land special?

Fern Hill Nursery and Botanical Sanctuary is nestled in the Southern Willamette Valley of Oregon, between the Coast and Cascade mountain ranges, ranging in elevation from 700-1200 feet. We have 52 acres, almost all of which is diverse native forestland. Our location blesses us with a diversity of plants from the valley and southern hills as well as low and mid-elevation species. Two sides of our property border other private forestlands stewarded with conservation in mind.

We have stands of native medicinals that have grown wild on the land for many generations including: woods Oregon grape (*Berberis nervosa*), tall Oregon grape (*Berberis aquifolium*), cascara sagrada (*Rhamnus purshiana*), red root (*Ceanothus cuneatus*), trillium (*Trillium ovatum* and *T. albidum*), and yerba buena (*Satureja douglasii*). We have also introduced many medicinals to our forest and cultivated gardens including: yerba mansa (*Anemopsis californica*), white sage (*Salvia apiana*), goldthread (*Coptis lanceolata*), coneflower (*Echinacea purpurea*), nettles (*Urtica dioica*), and black cohosh (*Actaea racemosa*). We are currently propagating and preparing to plant other UpS "At-Risk" plants including: spikenard (*Aralia californica*), lobelia (*Lobelia* spp.), butterfly weed (*Asclepias tuberosa*), wild yam (*Dioscorea batatas*), barestem lomatium (*Lomatium nudicaule*), balsam root (*Balsamorhiza deltoidea*), echinacea (*Echinacea tennesseensis*) and bloodroot (*Sanguinaria canadensis*). Our nursery currently grows many types of native and non-native plants but we are directing our efforts to native medicinals and edibles as well as non-native "At-Risk" and special medicinals.

We are practicing native plant cultivation and conservation in many ways at Fern Hill Nursery and Botanical Sanctuary. One is beginning to develop native "nurse" beds in the forests and meadows. These beds are placed according to the needs of specific natives: oak savannah meadow, dry rocky slopes, shady fir forest. We will also be observing how each species grows in different soil and forest situations on the land by planting each species in multiple locations and tracking their progress. Our hope is that the plants will thrive and we will be able to divide and propagate by seed from these individual beds. Our intention is to spread the plants throughout our sanctuary more effectively with our help and also have extra to sell and share with fellow native medicinal plant enthusiasts.

Increasing the biodiversity of our land by using non-toxic, non-mechanized management techniques and engaging people in becoming aware of the ecology here are our goals. We get to know the various habitats, existing plant associations, soil types, and microclimates in the sanctuary landscape. We propagate plants like Oregon grape (*Berberis aquifolium*) into patchy forests, yampah (*Perideridia gairdneri*) under oak groves, balsam root (*Balsamorhiza deltoidea*) onto exposed slopes, large camas (*Camassia leichtlinii*) and mule's ear (*Wyethia angustifolia*) into wet meadows. We are very busy in planting season! We add to existing populations and put seed, cuttings, and roots into similar habitats where these plants might grow well. We take advantage of invasive plants like scotch broom (*Cytisus scoparius*), preventing them from setting seed by coppicing the tops to use for nitrogen-rich compost. We found that by smothering the extra-competitive, invasive exotic tall meadow fescue (*Festuca arundinacea*) with mulch, natives like the harvest brodiaea (*Brodiaea coronaria*) poke up from underneath! By rediscovering simple, well-timed ecological management techniques, perhaps our children's children will find themselves surrounded by a supportive biological community formed both by nature and by nurturing.

What educational programs are offered and on what basis (classes, walks, workshops, plantings)? How often are programs held?

At this time, we offer nursery and land tours and herb walks at our open houses held on the last Sunday of each month during the spring, summer, and fall. Our herbalist offers interactive introductory botany and medicinal plant courses throughout the year. In the future, we plan to develop an internship program in permaculture and medicinal plant stewardship and cultivation. We plan to provide more nature walks, restoration projects for the community, and herbal medicine and cooking classes and are encouraging interaction with the local community college (Lane Community College) and the University of Oregon, both only 25 miles away.

We sell native and medicinal plants from our nursery at the local farmer's market and other plant sales which is another opportunity to interact with the community and answer questions about our land and what we grow. We offer landscape design and consultation for urban and rural people interested in incorporating more native and useful plants at their homes. Instead of simply buying plants that we've propagated, we help the backyard gardener learn how to become conscious of the sun, shade, water situation, and microclimates in their backyard. Instead of simply planting pretty specimens that will grow well, we help people learn how to taste, smell and harvest plants in their backyard.

Please provide additional details describing why you want to be part of the UpS Botanical Sanctuary Network.

We like to call Fern Hill a nurture sanctuary. That's because it's both a nature preserve and a garden--a place to nurture the land. While the goal of many nature preserves and parks is to prevent land from being developed by industry, housing or agriculture, and to protect native ecosystems as they are, we would like to avoid the practice of benign neglect. In the course of habitat restoration, we are not restoring the ecosystem to a historical snapshot of the plants and animals that might have lived here in balance at one time. Instead, we are restoring the connections that people once had as intimate ecosystem stewards. Our goal as land stewards is to play a positive role in developing our own culture and the land into a more diverse, productive, and integrated ecosystem. While the

actions of a farmer, urban landscaper, or forester might be to squeeze every square inch of soil into efficient production through intensive management, we recognize the ability of a diverse ecosystem to thrive and to nurture us without costly and severe disturbance. We believe that through careful observation, biological awareness, engaged monitoring, and thoughtful monitoring practices, we can tip the balance of ecological succession in a direction that benefits wildlife, increases biodiversity, disfavors invasive plant monocultures, promotes food and medicine production, controls erosion, builds soil, and deeply engages us as humans living on earth.

As a part of the UpS network, more people will learn about Fern Hill Nursery and Botanical Sanctuary. We want to share the land with others and foster a wider range of awareness and knowledge about native medicinals in our community and among and between other UpS Sanctuaries. We want to provide a space for people to come together to research and learn, plant and cultivate, and eventually harvest in a sustainable way. The UpS network will help us get in touch with people throughout the nation who share our interests in medicinal plant conservation. We hope that some of those people will discover a way to nurture themselves by visiting and working or learning at our sanctuary. We also look forward to communicating with and visiting other UpS sanctuaries to further our own education and to give us new ideas and methods for growing and harvesting medicine.

We want to give back, to help create the kind of inspiration that we feel when reading about other UpS Botanical Sanctuary stewards. There is a glow that lights up faces of people who let the magic of plants and soil, bird songs, and fresh air seep into their hearts and hands. Let's make sure that earthly glow stays bright!

Another excellent application from Tammi Sweet and Kris Miller of Heartstone Sanctuary:

Please provide details of your land, size, location, time on land, existing medicinal plant species, current conservation projects. What makes your land special?

Our 29 acres of land is almost an equal split of fields and mixed hardwood forest at an elevation of almost 1700 feet. A lovely 30 year old, 1/3 acre pond rounds out the place we call home. We began our relationship with the land in the late summer of 2004 when we started immediately planting the "at risk" roots from the Fall UpS giveaway (goldenseal, American ginseng, wild yam). We have a large, 1900 square foot medicine wheel garden with a wide range of medicinals for teaching, selling and personal use. This medicine wheel is a central portion of our herbal apprenticeship and a beautiful place of worship. Our forest has a beautiful patch of pink ladies slipper we affectionately call "fairy-land". Our June class always visits fairy land and is transformed by the magic of 50 or so pink beauties. The forest is relatively young, (40-50 years), and reclaiming itself quite nicely. We have a stand of hemlock, who protect the ever-increasing trillium, Jack-in-the-pulpit, Indian cucumber, wintergreen, violets and the 9 or so wild yam we've planted. We have a small patch of black cohosh we've planted for teaching. In the spring of 2008, we received the black cohosh seeds, and we are presently germinating the seeds over the winter, and hopefully will have a few plants to add to the forest. Last year we dug blood root from a good, strong stand and transplanted successfully into our north line.

Two years ago, we ordered and planted 150 goldenseal plants with our very first Apprenticeship class. Both "garden" plots in the forest are doing quite nicely, and will do even better with their soon-to-come new fence. Our second year apprenticeship students planted 40 blue cohosh roots in two separate forest beds. We love this tradition of each class planting an "at risk" medicinal in our forest and it will remain part of our curriculum. One of the most amazing things we continually surprised by is the wishing for a particular plant, and sometimes even planting it, only to find it is already on the land. Mugwort, elderberry, nettle, Hawthorne, boneset and blue vervain are but a few examples of this phenomenon.

What educational programs are offered and on what basis (classes, walks, workshops, plantings)? How often are programs held?

At the present time, we have two herbal apprenticeships, one meets one weekend a month for six months and the other meets for one week the first year, and one week the following year. The students stay on the land and do daily herb walks visiting the plants in the garden and in the forest. Educating and planting "at risk" woodland plants is part of our curriculum and teaching. The herbs we choose to teach about are 90-95% local. Our curriculum is based on using plants that grow right outside our door, have multiple uses and are not at risk. If we include any "at risk" plants, we teach the use of cultivated sources, and we talk about the need to grow these plants. An example of how we educate is what we do with white sage. We have quite a large bed of this beautiful medicinal we plant each year for our students to make smudge sticks, for our own personal use and to sell at local markets. In the packages of the smudge sticks we sell, we add a little information card about white sage and the need to buy from reputable sources. We will be joining Partners in Education this year in an effort to further the mission of UpS and our school.

In addition to the apprenticeship we offer at least one workshop per month on the land, in brewing, creams and salves, wild edibles, fire-making and/or primitive skills. All workshops include time with the plants. This year we're planning to offer an additional apprenticeship and a four weekend workshop series focusing on trees and a full range of their uses.

Please provide additional details describing why you want to be part of the UpS Botanical Sanctuary Network.

We wish to be part of the UpS Sanctuary network for three reasons: we wish to support the mission of UpS, the mission of UpS is in direct alignment with our school's mission, and it feels extremely important to continue to give back to the green nation, which supports everything we do.

UpS “At-Risk” and “To-Watch” Lists

The “At-Risk” list consists of plants which are broadly used in commerce and which, due to over-harvest, loss of habitat, poor logging practices, or by the nature of their innate rareness or sensitivity are either at risk or significantly declined in numbers within their current range. The wild medicinal plants on the “To-Watch” list have been proposed for inclusion on the “At-Risk” list but are in need of further research. In some cases the plants are abundant in one bioregion and quite rare in another. Some of these plants are widely used in commerce, while others are not. United Plants Savers is watching these plants and collecting information on levels of commercial usage while monitoring the viability of these plants within their current range.

UpS has formed a committee to gather data and assess the status of these plants. The new assessment tool criteria includes the plant’s life span, reproduction, ability to withstand disturbance, whether it requires interactions with other ecosystem members like specific pollinators or fungi, its abundance and range, the vulnerability of the plant’s habitat to human pressures, the effects of harvest on the plant and its population, market demand and its ability to be cultivated.

UpS has not called for a moratorium on the use of these plants. Rather, we are initiating programs designed to preserve these important medicinal plants in the wild and are calling on others to join our efforts. Your input is welcome and encouraged.

~ “At-Risk” List ~

American Ginseng - *Panax quinquefolius*
Black Cohosh - *Actaea racemosa* (*Cimicifuga*)
Bloodroot - *Sanguinaria canadensis*
Blue Cohosh - *Caulophyllum thalictroides*
Echinacea - *Echinacea* spp.
Eyebright - *Euphrasia* spp.
False Unicorn Root - *Chamaelirium luteum*
Goldenseal - *Hydrastis canadensis*
Lady’s Slipper Orchid - *Cypripedium* spp.
Lomatium - *Lomatium dissectum*
Osha - *Ligusticum porteri*, *L. spp*
Peyote - *Lophophora williamsii*
Slippery Elm - *Ulmus rubra*
Sundew - *Drosera* spp.
Trillium, Beth Root - *Trillium* spp.
True Unicorn - *Aletris farinosa*
Venus’ Fly Trap - *Dionaea muscipula*
Virginia Snakeroot - *Aristolochia serpentaria*
Wild Yam - *Dioscorea villosa*, *D. spp.*

~ “To-Watch” List ~

Arnica - *Arnica* spp.
Butterfly Weed - *Asclepias tuberosa*
Cascara Sagrada - *Frangula purshiana* (*Rhamnus*)
Chaparro - *Casatela emoryi*
Elephant Tree - *Bursera microphylla*
Gentian - *Gentiana* spp.
Goldthread - *Coptis* spp.
Kava Kava - *Piper methysticum* (*Hawaii only*)
Lobelia - *Lobelia* spp.
Maidenhair Fern - *Adiantum pendatum*
Mayapple - *Podophyllum peltatum*
Oregon Grape - *Mahonia* spp.
Partridge Berry - *Mitchella repens*
Pink Root - *Spigelia marilaandica*
Pipsissewa - *Chimaphila umbellata*
Spikenard - *Aralia racemosa*, *A. californica*
Stone Root - *Collinsonia canadensis*
Stream Orchid - *Epipactis gigantea*
Turkey Corn - *Dicentra canadensis*
White Sage - *Salvia apiana*
Wild Indigo - *Baptisia tinctoria*
Yerba Mansa - *Anemopsis californica*

“At-Risk” Assessment Tool

United Plant Savers’ “At-Risk” list is the cornerstone of our medicinal herb conservation efforts. This widely regarded list identifies wild medicinal plants of concern and creates a forum for action.

The original list, created in 1994, was based on the observations and knowledge of a variety of plant experts including the UpS board, UpS members, herbalists, botanists, wildcrafters, and others concerned about the over-harvesting of wild medicinal plants in the U.S and Canada. A broad effort was made to gather as much feedback and participation in evaluating the plants as the new organization could muster. After several formative meetings and collective efforts, it was determined that the plants of most concern would be called the “At-Risk” herbs and there was a secondary list of “To-Watch” herbs. The data used was a combination of available empirical reports and scientific statistics/knowledge about medicinals in the wild. Over the years, this list has become widely adopted and referred to by individuals and organizations worldwide.

About five years ago, the UpS board of directors formally recognized that the “At-Risk” list information would be enhanced and more useful by collecting additional scientific data to then determine a plant’s status. Based on an evaluation matrix concept originally developed by UpS “At-Risk” Committee members Mark Wheeler, Richo Cech and Christopher Hobbs, a more detailed adaptation was proposed by UpS board member Kelly Kindscher and Lisa Castle of the Kansas Biological Survey at the University of Kansas. To review and further develop the work, a ‘summit’ of botanists, herbalists, harvesters, growers and participants from various plant-related fields came together in July 2005 to ‘grow’ the evaluation process. This concerted effort has resulted in UpS’ new, comprehensive “At-Risk” Assessment Tool.

The “At-Risk” Assessment Tool is designed to gather and quantify detailed data on various parameters, factors and variables (i.e., part used, mode of reproduction, use in commerce, etc.) to indicate that a plant is either “At-Risk” or should be classified “To-Watch”. As more scores are collected, UpS will be able to move from a simple list identifying “At-Risk” plants to a prioritized inven-

tory ranking the status of our important medicinals. It is interesting to note here that the original list of “At-Risk” herbs was recently challenged through the more formal, scientific, statistical tool and the list does, in fact, remain almost exactly the same! However, there are many other plants needing to be scored, and the more scores we receive, the more accurate the survey becomes.

Scores provided by the new assessment tool can range from negative twelve (-12) to positive ninety-four (+94) with higher scores indicating a relatively higher at-risk status. This broad range, coupled with the refined data being collected, helps to quantify the degree to which a particular plant may be at risk. Eventually, we will be able to list plants by their at-risk status and focus our conservation efforts on those plants higher on the list. First, we need to accrue more scores in order to publish a ranked list of at-risk plants that is truly meaningful.

The complete “At-Risk” Assessment Tool consists of two complementary parts designed to be used together to rate each plant. Part one contains basic guidelines for completing the score sheet, the scoring schedule to be used when ranking a plant, and five groups of detailed questions regarding each plant. The second part is the *Score Sheet*, which calls for information about the scorer and provides a format to record specific plant scores.

The assessment tool is a dynamic tool that will continually be improved through use and feedback. If you are knowledgeable about a wild-harvested medicinal plant and would like to participate in the UpS “At-Risk” assessment program, you can access the “At-Risk” *Tool Instructions* and *Score Sheet* from UpS’ website, (www.unitedplantsavers.org), or contact UpS office manager, Betzy Bancroft, at plants@unitedplantsavers.org or PO Box 400, East Barre, VT 05649, and we will mail you a paper copy of the Tool forms.

It is our hope UpS BSN members and the plant community will participate in the “At-Risk” survey so that we can collect more information about medicinal plant communities. With more current data, we are better informed to assess the ‘big picture’ and to then make regional plans to preserve, conserve and restore our native medicinal herbs, while ensuring their abundant renewable supply for future generations.

United Plant Savers' Botanical Sanctuary in Meigs County, Ohio

The Medicine Trail at "Goldenseal Sanctuary"

By Joe Viny

United Plant Savers' mission is to protect native medicinal plants of the United States and Canada and their native habitat while ensuring an abundant renewable supply of medicinal plants for generations to come. In keeping with our mission we have established a growing number of independent medicinal plant sanctuaries throughout the country. The cornerstone of our plant sanctuary network is the UpS Botanical Sanctuary located in southeast Ohio on 384 acres owned and protected by UpS. Our sanctuary serves as an educational center, an onsite research center, a repository of native medicinal plant germplasm and a propagation facility.

Central to the objectives and operation of the Sanctuary is our Medicinal Plant Trail. The trail encourages and allows the public to experience the richness of the Sanctuary in a manner that is safe, controlled and sensitive to its special environment. This provides UpS with a powerful educational tool that can be used by individuals or groups with or without staff assistance. Our trail meanders through the most significant botanical sites on the Sanctuary while traversing all five of its distinct ecosystems. Examples of how human activity can more harmoniously interact with the land are shown by projects such as woodland propagation of at risk medicinal plants, pond creation and structures sited and constructed in an ecologically sensitive manner. The trail provides important access to other sites on the sanctuary such as the intern cabin, remote hollows and numerous spur trails. Additionally, the Medicine Trail serves as a working model for our sanctuary network members who we encourage to develop medicine trails at their own sanctuaries.

Natural Setting of the UpS Sanctuary

The flora of the sanctuary is characterized by great diversity. There are more tree and shrub species per acre than almost anywhere in the continental United States. Vast medicinal and edible herb populations exist, including large native populations of at risk medicinal herbs. The sanctuary contains one of America's largest stands of goldenseal. The sanctuary is also home to many animal species including: white-tailed deer, wild turkey, grouse, squirrels, woodpeckers, turtles, song birds, salamanders, snakes, foxes, coyotes, mink, chipmunks, beaver, muskrat, groundhog and raccoons.

The climate is temperate with a long growing season, a moderate to hard winter and four distinct seasons. Our frost free season is approximately from May 20 to October 20 and we are located in zone 6. Rainfall is 40+ inches per year. These factors combine to create an ideal climate for woodland medicinals.

The geographical setting is also uniquely suited for medicinals. A limestone seam under all the soils appears to strongly favor the growth of herbaceous plants. Located in the foothills of the Appalachian Mountains, the rolling hills of the Sanctuary create a diverse habitat of rich bottoms, north and south facing slopes, prairie, hollows and high and dry ridge tops. The approaching glaciers of the ice age stopped just before reaching the sanctuary. This is an important factor accounting for the large number of plant species found on the sanctuary because plants ranging from northern species which fled the approaching glaciers have come to coexist with subtropical species living at the northern edge of their range.

Human History

The area was inhabited by the Adena and Hopewell Indians who are known for their earthworks and mound building. Later, the Shawnee, centered in nearby Chillicothe, used the area as a primary hunting ground.

European settlement was carried out by recipients of revolutionary war grants. The main hollow, earlier known as Payne's woods, was famous for medicinal plants and large timber. The Lee Wood family carved out the family farm which is now the Sanctuary. The Wood family continues to live adjacent to the Sanctuary providing both a connection to the past and a commitment to the future through their assistance in maintaining and preserving the Sanctuary.

The Medicine Trail

The trail was conceived of and laid out by Paul Strauss. Using game trails, old fence lines and other natural and manmade features, he laid out a course which covers the different ecosystems and most significant botanical areas. Attention was paid to many criteria including moisture levels, grade and soil type to create a trail that was both safe for humans and resilient to human impact. The trail is approximately $\frac{3}{4}$ of a mile in length with $\frac{1}{4}$ mile yet to be finalized. The trail runs through several named areas of the Sanctuary including: Hydrastis Heaven (Gold Hill), Dad's Woods, Main Hollow, Beech Woods, Heart Pond, UpS Prairie and the UpS Greenhouse. Access is provided to other important areas such as Turkey Feather Spring, Split Rock, Adams Hollow, Big Beech Hollow, the Mother Oak, the intern cabin, the Yurt and several spur trails. A unique gravity fed water system providing water from Heart Pond to the greenhouse and yurt is highlighted by the trail.

The trail was constructed by UpS staff, interns and volunteers. The first step was removing deadfall, natural barriers, fencing and barbed wire. Woodland planting beds were later constructed intermittently along the trail's edge. All the "at-risk" herbs growing on the trail itself were painstakingly transplanted to allow the trail to dramatically pass directly through large native stands of goldenseal, ginseng, bloodroot and other key plants. To prevent erosion and enhance safety on steep slopes, rock steps were built in some areas while an innovative planking system was installed on others. Small bridges of several designs were built to cross streams. Deadfall was used to mark planting beds and the trail's edge. Following UpS' values, many

of the construction materials were taken from the sanctuary land itself.

As part of the Medicine Trail project, two large signs were created by renowned local woodcarver, Mamerto Tindogan. The wood for both of these signs was salvaged from the largest tree existing on the Sanctuary, aptly named the "Mother Oak." In 1999 a tornado touched down on the Sanctuary causing a good bit of damage including the downing of the Mother Oak. In this way, both signs embody some of the history and heart of the Sanctuary. The first sign marks the entrance to the Sanctuary, and it is inscribed with the words, **"United Plant Savers, Planting the Future, established 1998"**. Also carved into the Oak is an image of two hands planting a goldenseal seedling. The second sign marks the entry to the Medicine Trail. The following words are carved into this sign, **"UpS Medicine Plant Trail, Stay on Trail, No Picking of Herbs, Take Photographs Only"**. Both signs are curvilinear in design with the carving fixed between two massive white oak posts. One walks directly beneath the sign upon entry to the Medicine Trail. The medicine trail also includes numerous signs identifying and providing information on various herbaceous plants and trees. The first of these plant signs are metal plant signs ordered from a manufacturer. Later we learned that handmade signs crafted from Sanctuary hardwood proved more durable and allowed for more extensive descriptions.

The Medicine Trail has already seen a good deal of activity. Some of the groups who have taken advantage of the Trail include: UpS interns, Ohio University botany students, the Northeast School of Botanical Studies, The Tai Sophia Herb and Acupuncture College, Sassafras Outdoor Camp, State of Ohio botanists, Ohio State Foresters, local farmers and local foresters. Several research projects have and are taking place on the medicine trail. One study conducted for the U.S. Department of Fish and Wildlife investigated different harvesting treatments on the regeneration of goldenseal, bloodroot and black cohosh. Another study conducted by Miami University looks at the growth habit of goldenseal. Numerous plantings of native species have taken place on the trail. Some of the prairie species planted include: maximillian sunflower, echinacea (several species), baptisia, liatris,

rudbeckia, lobelia and royal catchflower. Some of the woodland species planted include: ginseng, goldenseal, wild yam, false unicorn, trillium and black and blue cohosh. In this way the Medicine Trail is helping to fulfill UpS' goals for the Sanctuary by providing opportunities for education, research, preservation and propagation.



Goldenseal Sanctuary Sign
– photo Nathan Rodgers



Tree Quiz on the Talking Forest Trail
– photo John Cummings



Interns clear the shade nursery at the Sanctuary
– photo John Cummings

The Talking Forest Trail System

By Paul Strauss

We are very excited about the Talking Forest Trail System, born and growing here in Meigs County Ohio (in Rutland which is near Athens). We developed the trails to expand our existing Medicine Trail at the UpS Sanctuary. By connecting it with adjoining lands in our rural community via a corridor of hundreds of acres of interconnected land, we have created a model educational environment in which plants and animals can feel safe and flourish.

This unique networking of plants, animals and people is possible because of the shared land ethics in our community. All together, the trail will be approximately 7 miles long, traveling over 1200 acres, joining the non-profit UpS Botanical Sanctuary with the non-profit Rural Action farm, and then continuing through Joe & Wendy Viny's Art Farm and Paul Strauss' Equinox Botanicals Farm. As more parts of the trail become open to the public, groups or individuals must contact each landowner for permission to utilize their portion of the trail to protect their privacy. The deer don't seem to care about this.

When I thought about how I had become familiar with so many species, I realized it was simply recognition through repetition because of the long hours I spend in nature. I also realized that not everyone has that same time or interest, so on most of the trails the plants are labeled repeatedly so you can see them over and over again and associate them with their names. With so many different tree & shrub species on our lands, this is very valuable because plants, like people, can look very different as they age. Along the trails there are also short floragrams placed discretely in nature that describe many of our most important and most-used species. Many individual sites on the trail have informational write-ups fostering further understanding of an outstanding botanical treasure or an exceptional habitat. The many trails are clearly marked, using large white lettering on beautiful slate stones, enabling one to read the species or trail from a distance ~ which is especially helpful when learning your trees or finding your way, or just having bad eyes! Visibility also keeps hikers off the trails and off the plants!

These trails are not situated in a densely populated area of the U.S. The lands are 90% forested and there is no major airport or highway close by. I consider our remote location a wonderful and sane choice of where to live, but I know that many people must travel a distance to be here, so we want to give them something unique and memorable when they do make the trek to the woods. Meigs County is mostly known for deer hunting, logging, king coal and marijuana cultivation, yet the real gold in these hills is our monstrous & concentrated populations of herbs. We have more species of trees and shrubs (the Big Herbs) than almost any area of this country or world, with the exception of the planet's rain forests.

There are no lions or grizzly bears, no ocean beaches or giant redwoods, but we have beautiful multi-species forests and boy do we have herbs! Lots & lots of herbs! If you look at a map and find Charleston WV and draw a 200 mile circumference around it, you have found the most varied and valuable deciduous forests in America and most of the world – a true planetary treasure.

Well, by building this new and different kind of educational trail system that highlights our botanical nirvana, in time, a little more Botanical Eco Tourism will come this way and help support the UpS Sanctuary and this very special nature-centered community. Most importantly, the green spark ~ the inspiration of these woodlands ~ will inspire others to do their part, wherever they live, to protect our disappearing botanical resources.



Paul and Interns working on a bridge for the Talking Forest Trail System – *photo Joe Viny*

Wildlife Management at the UpS Botanical Sanctuary in Ohio

By Lee O. Wood III and Randy Wood

The UpS Ohio Sanctuary is a haven for all living species, even though our focus is on the plants. Recognizing the interconnection of Nature, UpS needed to survey the wildlife as well as the plants and form positive solutions for the problems of maintaining wildlife, plants and habitat. Before UpS became stewards of this land, our family lived on or close by it. The hunting and trapping skills we learned early in life, along with many years of experience farming and working the land allowed us to make wise suggestions to UpS about how to maintain and live in harmony with wildlife in the Sanctuary habitat. The UpS plant focus and our experiences living on the land, opened our eyes even more than before to the importance of preserving a healthy and diverse heritage for the future.

For wildlife management, throughout the year, we 'check our numbers'. To do this, we draw on our experience and knowledge of trails, tracks, nesting areas, staging areas and other clues to get us a good accurate count of all wildlife in the habitats. As avid outdoorsmen we believe the land is for use not abuse and when you use it, you must pay it back by making it better than it was before you were there, a lesson taught to us by our father.

Habitat care is one of the most important and controllable ways we, as humans can assist and assure that wildlife needs are met. Habitat is diverse and renewable. We need to maintain our larger wooded areas. For example, take only dead or diseased hardwood for timber or firewood. When you do take a tree, stack all the discarded limbs into a pile and plant in and around the pile. This will give your animals cover and future habitat. It will also give you starts on your plants such as ginseng and yellowroot (goldenseal). Then plant what hardwood you want in that area and allow it to grow for a couple of years before you plant, say, black locust. In that time you will produce great habitat in blackberries and close growing brush for grouse, deer and other animals. An area managed in this way will give you 7 to 10 years of good habitat.

Plant buffer crops on areas too hard or too poor to cultivate. This will keep animals away from profitable crops and allow you to build up soil in areas with little or no topsoil. Here in Ohio we can also plant starter forests for trees in some of these poor areas. Trees like elm, ash, buckeye, dogwood, wahoo and gum would do well. In swampy areas, birch, spice and chestnut would be good. This cover will last for 10-15 years.

Hunting is an important way to help control gene pools and disease in wildlife. It also allows for numbers control so as not to deplete the habitat you have. Poachers and irresponsible trespassers on your land destroy the bond between the land-owners and the responsible hunters, causing loss of income and damage to the animals and habitat. Controlling trespassers is difficult, to say the least. Expanding the number of "No Trespassing" signs is time consuming, but important and worth it. Before hunting season begins, the fellow hunters that come to help out at the Sanctuary cut grape vines, replenish the salt licks, plant ginseng berries and remove their yellowed leaves to deter poachers. Also, before the deers' breeding season, they cull the smaller, less healthy deer and ultimately improve the gene pool. This has created a win-win situation for both the Sanctuary and our neighbor-hunters, since an over-population of deer could negatively impact the plant life that we are dedicated to maintaining.

Currently the variety, abundance and health of wildlife at the Sanctuary are reflected in the plants and trees. We have a strong herd of deer as well as foxes, coyotes and many smaller animals such as squirrels, raccoons and mink. Bobcat has recently returned to the Sanctuary after not being sighted for some time. The many ponds attract a wide variety of water birds including ducks, geese, and herons. There are grouse and turkey as well as several species of owls and hawks. I could go on and on, I love to watch them all.

Let's face it. No one can look at what we have done here on the Sanctuary and hear about what we want to do in the future, and not be impressed! It is unique. Yes, we work hard, but it is all worth it when at the end of the day, you sit up on top of the hill with the sun going down and you say to yourself, "Oh Lord, this is beautiful". And you realize you have helped make it that way, and you helped save it for the future.



Heart Pond at the UpS Sanctuary
– photo Joe Viny

Heart Pond on Goldenseal Sanctuary

They say that Heart Pond is so-named for the shape of a heart.

They also say that Heart Pond is so-named as it sits in the heart of the Sanctuary's bottomlands.

I say that Heart Pond is so-named as it's heartbeat is the earth and the water and the plants and the creatures and the air and the spirits of Goldenseal Sanctuary's habitat.

I also say that Heart Pond is so-named as being there your own heart may open and breathe
your own heart may open and see
your own heart may open and weep
your own heart may open and love.

And they say that when this happens
you just might also be
restored
or recovered
or reclaimed
or renewed.

*Lynda Elizabeth LeMole ~ March 17, 2003
Goldenseal Sanctuary, Rutland Ohio*

Practical Aspects of Creating Sanctuary

Sanctuary Checklist

1. Get to know your land – soil, water, wind, sun (see Mapping Your Land page 20) (see Growing Awareness page 8)
2. Identify plants growing there – use field guides or contact an herbalist, botanist or land consultant (see Resources page 43)
3. Research what plants are native to your area (see Native Plant Society list page 48)
4. Consider what native plants, especially medicinal species, would likely thrive at your Sanctuary based on the type of habitat and plant communities there. (see Genetic Concerns page 29)
5. Create a stewardship plan for any remediation projects like invasive plant removal, soil erosion control or reforestation.
6. Prepare planting areas in conjunction with remediation or other projects.
7. Plant natives!
8. Keep records of your observations.

Mapping Your Land

By Betzy Bancroft

Creating a sanctuary for native medicinal plants can be a big project, so how can we bring the necessary steps into focus and craft a plan of action? This is more than designing an herb garden, really you are creating habitat for all Nature's creatures... as soon as you stop mowing and do a little caretaking, not only plants but birds, bees, spiders and all sorts of other wildlife will return. Remember it's a work in progress!

The first step to creating a plan is to examine what you've got. Plotting environmental information on a map will help you bring it all into view. This map will become the basis for your development process. It will help you define where to create trails, identify planting areas, aid in botanical tours for visitors and establish a baseline so you can evaluate changes and growth.

Perhaps you already have a survey map of your property, or can get one from the town clerk. Libraries and the internet are good sources of topographical maps, for people with hilly or mountainous terrain these maps can be extremely helpful for identifying the various types of areas you have. Start from the 'bottom up' and begin by plotting streams, wetland areas, rocky areas, soil types, whatever physical characteristics are relevant to the topography. Geological surveys are also available to help you understand the soil, stones and water. You may want to include the sun's pathways from solstice to solstice and the prevailing winds. Seasonal changes, rainfall, weather and temperature patterns are also important to track and include in your understanding of the ecology. This process can take time, but it's really essential for the big picture, and you can keep working on it as you go.

Next add the botanical features of your land. Field guides like Peterson's, or a knowledgeable person can help you identify the species of trees, shrubs and understory plants. For Vermont, there is a book called "Woodlands, Wildlands and Wet-

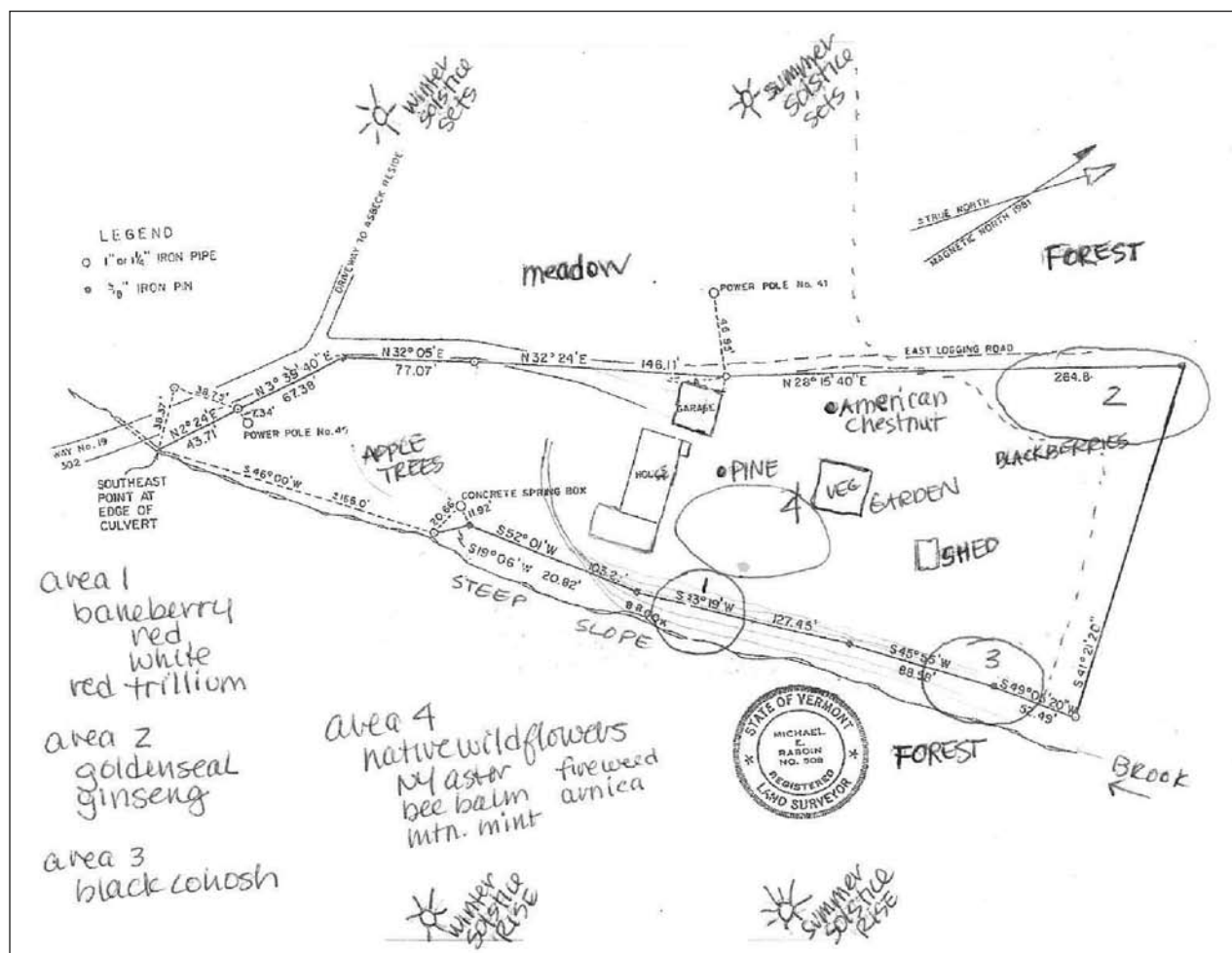
lands" that explains each type of environment—what trees, shrubs, plants, soil types, animals, insects, etc. characterize that habitat. Bookstores at local nature centers, botanical gardens, native plant societies or stores that carry a good selection of local or regional titles will be good places to find such a book. Nearby university botany students, extension agents, herbalists or UpS land consultants may be available to help you identify the plants if you have trouble with field guides. Rather than plot each individual tree and plant, identify areas on your map where various species are found, or make a little legend or list of what's abundant all over. Of course plot any special patches, like the lady's slippers in your fen or the grandmother oak at the top of your hill.

You will need to take 'botanical inventory' several times throughout the year. Many plants will be up and blooming in early spring before the trees leaf out and won't be identifiable later. Other plants don't wake up so early, they wait for the summer sun to grow tall. For dryland ecosystems,

different plants will be identifiable in rainier seasons than dry ones. A time-line of blooming may be another page to your map. Additional pages could be devoted to changes in the plants over the course of years. You may want to keep track of what you intentionally plant and what "arrives" by bird, wind, etc. Pay special attention to changes in flora and fauna from higher elevations to low-land areas, since transition zones often have the most diversity of species.

If you'd like, include an inventory of what insects, spiders, birds, reptiles and animals you identify there. Keeping records of observations will help you learn much about Nature. Note what plants the deer or rabbit browse, where birds locate their nests, which insects pollinate which plants. This information can be both fascinating and useful to your restoration and planning, and will certainly evolve over time.

Once you have your map, and a good understanding of the natural environments of your land, you can begin to research what else may have



grown there in the past, how human activity has changed things like water flow, what weedy species have become dominant, etc. Problems such as soil erosion need to be remedied before you get to planting. Trees can help stabilize soil and water, provide windbreaks, food, shade and cover. Your native plant society or local native plant nursery will have a wealth of information on what plants should be growing in your area. (See Native Plant Society list and resources such as Fish & Wildlife on pp 48, 54.)

All this preparation helps us look at planting from the plants' perspective; that is from the soil up. Rather than say, "I want to plant some ginseng", look carefully at your land. Does it have the qualities that ginseng likes—north or east facing slopes, mature hardwood trees, good drainage, companion plants? If not, it may be a waste of your energy to plant ginseng there because it's unlikely to survive. Other plants may be completely happy there and multiply beyond your dreams! So research each plant's requirements carefully and re-introduce them to areas where they are likely to thrive. You will still have to look after them for the first few years, but they won't take nearly the fuss to get well established. (See *Growing At-Risk Medicinal Plants* or another guide to cultivation.)

If you already have some native 'at-risk' plants, you can propagate more from them. This is one of UpS's strategies at our Sanctuary in Ohio—there is already plenty of goldenseal there, so we gather the berries and grow them into starts in our greenhouse. This perpetuates the local gene pool, which may or may not be desirable. Also, native plant nurseries often propagate from local plant stock, so if you can't propagate your own plants, consider purchasing starts from someone who practices this. Where there are already some members of a species growing on your land, you can add to their population by simply planting more and be assured they'll likely do fine. (see "Think Before You Plant" article pg 29 for more info)

Remember that plants have friends, or companions, just as we do. Plants occur in communities, based on the environment where they grow. It is very helpful to plant a whole neighborhood, or at least a few of each variety of companion plants in an area, or add plants into an existing community. It can be helpful to you, too, to have concentrated

places to work clearing 'weeds' like grass, improving soil if necessary, planting, watering and caring for the plants until they are established. Your map will be a very useful planning tool as you're considering where to plant.

Be sure to plot all your plantings on your map. Keep records of where, when and what the weather was like around the time of planting. This will make it much easier to visit your plantings to care for them and assess their progress. Eventually you will have a fascinating journal of the evolution of your Sanctuary! It will be a great tool for you and your students to learn from.



Bloodroot – *photo Robert Chartier*



Goldenseal berries – *photo UpS*

Creating an Herbal Medicine Trail

by Richo Cech

Edges. The Universe likes edges. It's where stuff happens. If biological entities are going to interact, chances are it will happen along some kind of a margin, usually an area of great diversity where there is an abundance of sunlight and water. This might be the edge of the forest, a ravine, a beach, a stream or a river, or even—a trail. Being a kind of a crotchety gardener, I have sometimes entertained the thought that the most destructive entity in gardens is the human! So I try to make it PATENTLY OBVIOUS where people are intended to step, and where they jolly well better not. My plants, both the ones in my domestic garden and the ones along the wilder woodland medicine trail, are my children, and like any good mother I protect them, feed them, give them water and instruct them in proper behavior. I rejoice at their accomplishments (a new leaf, a flower, a seed, hurrah!) and feel their losses (a leaf eaten, a flower plucked, a gopher at the roots, yikes!) somewhere deep within me—halfway between my heart and my stomach, I think. So I build paths to keep the people in check. I make paths: by treading with my feet, by mowing my way through, by cutting grass by hand and mulching it down, by rototilling, by sheet mulching or by laying down sand or flagstones. I really like to build “people-bumpers” to protect individual plants, beds of plants and sensitive areas. I use fallen logs and stones.

This article will attempt to cover some of the techniques involved in creating a medicine trail, which is really a pathway through the wild medicinal garden. Probably the best way to start is by observing the extent of the land and by noting what boundaries and trails already exist. Then think about the size of your project. Better to start with a small area and a few species of plants. That way, the project will at least *appear* to be something that can actually be accomplished. The rewards will be more immediate, which means you will probably continue to engage the project and feel good about it. After all, if space permits, you can always link-in the next piece of land at a later time. Besides, you'll learn some things on the first bit that'll make the second bit better. Survey the prominent land features and plants (slopes, rocks, water, animal life, trees, groups of bushes, flowers,

medicinals, rare plants, vines, etc.), and determine which of these will benefit from having a path close by. Keep in mind any themes, as in “medicinal plants” and be sure to include spots of special interest or power. “I really must run the path next to the old maple with the hepatica and the wild yam and bloodroot,” you might be muttering as you make for the gate with an axe over your shoulder. Some features (an animal burrow, for instance, or an orchid) will benefit most by being left alone and away from the trail. Out on the site, try to visualize where the trail will lead and where its construction and use will minimize damage to the land while maximizing the human experience. For all practical purposes and almost automatically, the trail will follow you where you like to go.

Paul Strauss is the caretaker of the UpS botanical sanctuary in Meigs County, Ohio, where he and other botanizers built a 3/4 mile medicine trail. (See Talking Forest Project p. 19 for an update on this trail.) According to Paul, the first step in creating this medicine trail was to “Survey and understand the holler.” This process took 4 or 5 months, after which a U-shaped path was marked out that crossed the creek and the holler, taking in both the north and the south slopes, designed to guide visitors past diverse medicinal plants and trees. Plants occurring directly in the path were carefully removed and replanted at the sides of the path. The entryway was marked with a handhewn stairway and a table built of giant limestone blocks. The path was made safer by removing over a mile of barbed wire, which took almost a month to accomplish. Deadfalls were moved out of the way and used to mark the sides of the trails, where they continued to rot and make good beds for growing herbs. Bridges were set in place over small hollers or streams. The bridges were made from boards or logs cut out of dead white oaks. Every spring Paul walks the trail, clearing deadfalls, making sure the markers are still visible, and delighting in the emergence of the seeds that were scattered the previous year in that rich Meigs County loam. Although not all of us, like Paul, will have giant limestone blocks at hand, the entryway of the medicine trail must *beckon*. If it doesn't seem to say “enter here” (even without a sign), then it will be your first project to make the entryway look more inviting. Converging fence lines or rows of trees,

a prominently mowed path edged by bedding plants, tall grass or bushes, an archway bedecked in Virginia creeper, climbing roses, wisteria or virgin's bower, flagstones and a bench, a gate with a tinkling bell, a well-worn footpath leading between two mighty tree trunks—all of these speak the language of welcome.

"Brochures, signs and maps. Oh, my!" There are many schools of thought on this, and the decision to use or eschew these props is yours. Brochures are a lot of work, and as a rule they become outdated about five minutes after they're printed. But they can be a good way to tell people how you expect them to act, and they can include a map, which is very helpful. You can discuss the motivation behind establishing the trail, the history of the land and you can mention a few of the prominent herbs. A list of species is a great addition, as are photos and line drawings. Brochures promote the medicine trail, thereby increasing the number of visitors and encouraging cooperation with other botanical gardens, nature preserves, etc. However, give out too much information, and you might as well have written a book! Used correctly, brochures inform; they stimulate people's imagination and they can actually reduce the number of signs needed on the land itself. Hopefully the brochure will not end up forsaken, bearing only fleeting marks of having been read (perhaps a desultorily penciled underline of "*Lobelia cardinalis*") the brochure folded disrespectfully in half and lost on the side of the path, fallen from a pocket, now shielding slugs. If the brochure came out of a box at the beginning of the trail, it is good to request that people recycle it *back into* the box at the end of the trail!

Signs are educational, too. If they announce ownership of the land (e.g. Dad's Medicine Path—No Smoking) this generally encourages people to respect the land. Such signs work best when they are well maintained (visible, weeded around, peeling paint touched up), giving the impression that the caretaker is nearby. Regardless, mindless destruction and "sticky fingers" occasionally plague almost any public garden or trail. Some caretakers like to set a more specific authoritative sign at the entryway (such as Paul Strauss's "This Land is Being Managed For Medicinal Herbs and Wildlife. No Trespassing Without Permission."). And, for UpS members who have chosen to make their land into a botanical sanc-

tuary, the UpS Botanical Sanctuary signs are a nice touch. Beyond the entryway, then, the medicine trail itself may be left unencumbered, with the exception perhaps of some artfully placed identification markers that orient the visitor to the map or inform the common name and latin binomial of a tree or plant (e.g. White Oak, *Quercus alba*). Tasteful signs made of pottery, wood or metal can harmonize aesthetically. On my medicine trail, I have chosen to use only small metal tags that I attach to twig or stake with a bit of wire. I figure if somebody is really that curious, they'll get down and put their nose close enough to decipher my writing.

The entryway to the trail is best kept well groomed—gardened and mowed where appropriate. The trail itself must be cleared and made safe for hikers, and it is a thoughtful act to make part or all of the trail wheelchair accessible. According to the degree of openness of the understory, the trail may be made as wide as several yards or as narrow as three feet. For the most part, it is best to clear the trail in a wide swath to start, since the woods or grasses will encroach back in, and because greater width of trail means more light, thereby increasing available energy which in turn supports greater biological diversity. Grasslands will quickly erase a trail unless it is kept tilled or mowed and well-traveled. Whether in the woods or in the open, the trail is designed to run through (and in some cases, to remove) common ground covers and guide the visitor to significant medicinal plants, bushes and trees. In the woodland, great strides can be made in creating medicinal plant habitat simply by removing dead wood from the lower portions of trees and from the forest floor. A pruning saw might prove helpful here. Smaller branches and limbs are then piled generously at a distance from the trail, where they become a place of refuge for wildlife—especially songbirds. Roses and berry brambles cleared from the path may also find their way into these tangled woodpiles. The birds will not injure themselves flitting around and into the safety of the pile, and now that the thorns are gone from the path, your visitors will not injure themselves, either. An axe, a garden fork, a shovel, and a heavy hoe may be useful tools for trail making. The axe is good for severing tree roots when it becomes necessary to pull them from planting areas or the path. The fork works well in divining

where the soil is deep and free of stones and roots, and can then be used for aerating the topsoil in preparation for planting. The shovel and the hoe may help in grubbing out berries and scalping the trail, making it clear where people are to walk and discouraging the resurgence of weedy species that would overrun all your improvements.

People-bumpers are best made of natural materials found on site, but if none are available, low wooden or split-rail fences or thick ropes can be installed, designed to keep people from walking on the botany. A large ginseng plant or a clump of fritillary may need individual protection. Simply setting a large stone or driving a long wooden stake next to the plant (taking care not to injure the root system, of course) will significantly increase its chances of survival against unwitting footfalls. Beds of plants (areas that have been mulched, amended, weeded, watered or otherwise encouraged), may be protected by bumpers made of fallen logs, pieces of firewood or lines of hefty rocks. Visitors are then advised to keep to the trails. In my grumpier moods I've been known to tell people "*Don't step over anything.*" These precautions are particularly important when the featured plants are in the sensitive, emerging stage. Once they have matured, they are much more visibly apparent and their tissues become tougher, which means they are better equipped to defend themselves.

Weeding may not be necessary if the medicinals are already well-established along the trail. You can let them go their wild way. But if you intend to encourage the medicinals by gardening, then you will be weeding, probably by hand. Do it *selectively*. There are those plants (such as chickweed and cleavers) that may seem quite aggressive at first, but in reality are very shortlived and generally harmless. Plants like this are natural associates of many forest medicinals. They cover the ground and die back and decompose quickly; preventing erosion, building soil and retaining moisture. Grasses, common bushes, summer annual weeds, and very common plants that seed freely may need to be removed from around the featured plants. This activity is most important during the early spring and into the summer, becoming less of a priority as the medicinals mature. In the fall, any parts of the medicine trail that are under deciduous trees will receive a free mulching of nitrogen-

rich, humus building and weed-discouraging tree leaves. However, this thick covering of leaves may obliterate the trail. Raking the leaves off of the trail and depositing them on the beds and plants at trailside serves the double function of keeping people on track while increasing the depth of the humus around the plants. Barring inputs of weed-seed-loaded manure or mulch, a well-maintained medicine trail will require less weeding as the years progress. Places left bare by the process of weeding become obvious receptacles for seeds and transplants. There is nothing wrong with anthropogenic seed dissemination! We were made with fingers that can discern the difference between a mustard seed and a California poppy seed for a reason! We are *good* at planting seeds. When the bloodroot pods are ready, shell a few into your hand and scatter the seed out across that mellow hillside into the thick leaf mulch. Throw a few more on top of that limestone outcropping. When goldenseal makes a berry, don't wait around for the wild turkeys to peck and digest it—squish the shiny black orbs out of the fruit and tuck a few into the bare soil next to that tree, and a few more under those rotted leaves. Toss a few over toward that rotting stump. If the seedlings come up too closely, keep an eye out, and in the autumn transplant them to a more reasonable spacing. Water-in your transplants, or do it in the rain. Sure, there is a tendency toward attrition in any of these enterprises (only a few seeds actually emerge, a seedling is destroyed by skunk activity) but over the years plant populations will build, and eventually results in great abundance.

Where does the trail lead? I will not indulge in schmaltzy imagery here (i.e. it represents your freedom to choose to serve, it saves the plants, it leads ultimately to an understanding of self). The most important thing is that it leads the visitors back to their car. Then, you and your plants will be left in peace. You are having pesto for the evening meal (again!), and fresh tomatoes, and a young cucumber. Now the sun has dropped below the horizon, and the crickets are tuning up in the afterglow. It is time for a walk. Two large trees close around you at the entryway to the medicine trail. You look up, and a few stars are visible in the dark blue sky. An owl swoops across your path, startlingly white and as silent as a feather. You smile and your feet find the way.

Markers and Labels for Plants at Your Sanctuary

There are almost as many ways to label the plants along your medicinal plant trail or in your garden as there are Sanctuaries! And as long as the labels are legible and stay where they're put, you can get very creative with them.

Include the common name(s), Latin binomial, botanical family (you may want to use the common family names like 'mint family' or 'rose family' if most of your visitors are children or folks just learning about herbs) and perhaps a short description of a plant's uses on your label. The description of the plants' uses can also be provided in a brochure or pamphlet, as Richo's article above points out (see page 23).

A simple, relatively low budget label can be made with a home computer. Use a label format or page layout program to format a page into squares. Type in the information about your plants, print them out and cut the squares apart. Have the squares laminated in 20 ml (thick) plastic to keep them dry and flat. If you leave a wide margin around the paper, you can cut or drill holes through the plastic to connect it to a small post or other device to hold it in place. Some copy centers can insert a grommet for you. At a botanical garden in Miami, FL this type of labels lasts 2-3 years.

Sturdier materials for plant markers include recycled roof slates, cedar shingles, cut-out squares of plywood or pine board (a lumber yard may cut them for you if there aren't too many of them), or squares of anodized aluminum or other metal. Plastic is an option, but we've seen them crack apart after a few years in Vermont. If you use wood, cover the whole sign with a wood protecting sealer to keep it from staying damp and rotting. Paint alone will not protect wood for very long, remember how often you need to paint your home!

A local potter may be willing to make plant labels with the wording incised in the clay before firing. Be sure to include holes for attachment before firing as well or you'll crack the sign trying to put a hole through later. As long as they don't get blown around in the wind or dropped, ceramic signs should be very durable.

On these types of materials, you also have several options for the wording on the markers. Oil based house paint or other exterior paint is very durable, if messy. Even 'permanent' marking pens available at office or art supply stores will work. You may be able to get more information on the sign with a pen than with a brush, but it may not be as durable. Another attractive option for wood signs is to burn the wording in with a wood burning tool. Look for these at craft, hobby or art supply stores. Some of the plant labels at the UpS Sanctuary in Ohio were made this way. Burned onto cedar or locust posts or markers, these make very durable, legible labels.

Next you'll need a way to install your markers where people can see them and relate them to the proper plant or tree. For herbaceous plants, you can screw the sign to a small post and simply tap it into the earth deeply enough that it will remain upright. Be sure to plan for the underground part when you figure the length of your posts and remember to coat both sign and post with sealant to prevent rot. For a simple sign, you can keep the wording on one end of a shingle and press the other end into the earth to install it vertically.

If you wrap a wire around a tree to hang the marker, please remember that trees increase in diameter as they grow. We don't suggest this approach, because it's easy to forget about the wires and they can harm the tree as it grows larger. A particularly creative way to connect a marker to a tree is to wrap wire around a pencil or dowel into a spring. Screw one end of the 'spring' into the tree (even if you hit the tree's vasculature, one spot won't harm it) and connect the other end to the marker. That way the tree's label pops out where people can read it, and it isn't wrapped around a branch or trunk.

If your budget allows, and you would prefer to order markers from a graphics or sign company, that may certainly be an option. Search the internet or local telephone directory for sign makers, graphic arts printers, or similar listings. Plastic or metal markers on which you can write the plant names are sometimes available through garden supply companies and catalogs. Look for them in the tools or accessories sections.

Another source of information on plant markers and examples of their use and installation can be

found at botanical gardens. All the notable plants at a botanical garden should be clearly labeled and you can check out their materials and methods by visiting one near you. A botanical garden may also give you leads for commercial suppliers in your area. If there isn't one near you, plan to visit a botanical or historical garden on your next business trip or vacation!

Have fun with your plant identification markers!

Resource for plant signs:

Orion Industries – carry many kinds of plant labels, including metal, plastic, wood and terra cotta

1131 Palomino Rd.

Cloverdale, CA 95425 USA

Phone: 707-529-8707

Fax: 707-894-0215

email: info@gardenmarker.com



New plant labels for the UpS Sanctuary
– photo John Cummings



A commercially made sign at the UpS Sanctuary
– photo Peg Brevoort



A hand-made sign at the UpS Sanctuary
– photo Peg Brevoort

Sustainability

Plant Rescues: Volunteers in Action Rescuing the Green

By Nancy Scarzello

"Frustrated by seeing new strip malls and housing developments wipe out green spaces and native plant species?" So begins the flyer promoting Plant Rescues put together by UpS Botanical Sanctuary member Gigi Stafne and the Center for Healing Arts Herb & Eco School. Many of our members have voiced similar concerns for our green friends; yet have not had any idea of how to do anything about it. I talked to three of our Botanical Sanctuary members that *have* done something about it and each of them, Gigi Stafne, Robert Eidus and Wendy Wagoner, has eagerly shared ideas and information to pass along to like-minded members.

Making a connection with local agencies is a good place to start in identifying possible sites where development will take place. Robert Eidus of Eagle Feather Organic Farm recommends contacting the Department of Transportation, local surveyors, real estate agents, and individual landowners to gain permission to remove plants prior to development. Wendy Wagoner of Creekside Herbs says that her local Conservation District has been the backbone of all that they have been able to accomplish and recommends contacting local and state organizations that are already established for partnering on these types of projects. She sends a flyer from their Northern Wild Seed & Plant Cooperative on Plant Rescues to contractors and township offices explaining why rescuing the plants can benefit the community and asks for notification when development is taking place. That way she and her group can go in and assess the plant community, determine if there are plants that warrant a rescue operation and get in there and dig the plants before the bulldozers arrive. For a copy of her flyer you can contact Wendy by email at creekside@cedarville.net.

Once you have located a site you must gather your volunteers together and plan accordingly. Gigi Stafne has a flyer about their Volunteer Ac-

tion Program encouraging folks without past experience to participate in a "hands-on" learning opportunity rescuing the plants. Robert Eidus suggests a press release or contacting local newspapers inviting them to do a story on the rescue making sure you provide a telephone number where a facilitator can gather names of interested volunteers.

Planning ahead is important, not only in determining what and where you will collect, but where the rescued plants will be transplanted. This is a great opportunity to place the plants in a botanical sanctuary, because after all isn't that the essence of a sanctuary? To provide refuge for beings in eminent danger of demise? So, there needs to be transplanting sites that suit the needs of the plants, i.e. shade, wetland, meadow or forest. Volunteers may also bring plants home if they have a place where the plants can thrive and will be safe from further displacement.

Now for the big day. Permission has been granted from the landowner, your volunteers are assembled, your plants to be rescued and their transplant sites have been identified. Robert Eidus suggests doing an initial survey of the site, marking plant groupings to be dug, assessing the terrain for access and making complete lists of supplies to bring along including: Field Guide for ID purposes, drinking water, insect repellent, First aid kit, digging forks and log bladed spades for plant removal and finally plastic bags with handles and five gallon plastic buckets for transporting the plants. Robert also gives a scenario for a typical rescue, with specific directions to take you through the entire process ~ from assembling your volunteers to the final transport home.

For the full story, contact Robert for a copy of his *Guide to Plant Rescues* as well as an audiotape of his talk on Plant Rescues that he gave at Herb-Fest in Iowa. And Gigi Stafne has announced that she now has a booklet available on Plant Rescues that we think would benefit any "Rescuers of the Green"; note the discount to UpS members!

With spring fast approaching (or here!), now is the time to start investigating and planning for plant rescues in your area. We hope that the information and guidelines provided here will inspire you to get started and that you will utilize the great suggestions and examples from your fellow UpS Botanical Sanctuary members, Robert Eidus, Gigi Stafne and Wendy Wagoner. Many thanks to each of them for contributing to and sharing the "Rescuing of the Green".

Contact Robert Eidus directly for his *Guide to Plant Rescues*, audio tape from HerbFest, as well as several other publications he has written on growing ginseng, goldenseal and woodland botanicals at: Robert Eidus, North Carolina Ginseng & Goldenseal Company, 300 Indigo Bunting Lane, Marshall, NC 28753, tele. (828) 649-3536 or www.ncgoldenseal.com

WILD EARTH WALK: A Medicinal Plant ID Checklist for Botanical Sanctuaries of the Northeast by Gigi Stafne, M.H. and Sara Krueger

A plant identification checklist to utilize as you trek along trails of Botanical Sanctuaries of the Northeast, or to use on hikes and 'wild weed walks' in other natural areas. This 20-page booklet includes information on ethical wildcrafting, botanical sanctuaries, At-Risk & To-Watch plant lists, a 100 plant ID check-off section, United Plant Savers and Center For Healing Arts Herb & Eco School contact information.

To order, UpS members may send \$3.50 to order the booklet. Non-members please send \$5 to: Center For Healing Arts Herb & Eco School, 29588 State Road 40, New Auburn-Long Lake, WI 54757-8107, tele. 715.967.2300 Email: fireweed@citizens-tel.net



Transplanting in the forest – photo UpS

Native Plant Genetic Concerns Think Before You Plant

By Betzy Bancroft

Over time, plants adapt to areas where their populations have endured. These local variations are known as ecotypes. Even though plants may look similar, their gene structure may be somewhat different from the original plants based on the uniqueness of local environmental conditions.

UpS Advisory Board member and botanist Christopher Hobbs believes, "One has to consider that the unique genome and adaptive traits found in wild populations could well be altered by gene flow from a cultivated version of the plant. It may be unlikely to happen if the cultivated plants are far away from the populations, but who is to say that someone couldn't buy a plant that came from one population and grow it close to the other population. It could happen. If it did happen, the unique genome (and "essence") that evolved over millions of years that "is" that plant, could be altered in such a way that it could not survive in that habitat. Yes, if the cultivated plant grows readily, like a weed, then some version of it will continue to exist. But not the unique plant of the wild population."

Jim Chamberlain, Research Scientist with the US Forest Service puts it this way: "We as stewards of native plants need to really consider the impact of introducing genetic variants to isolated populations. Our introductions can, and have changed the gene pool significantly, and irreversibly. We may not be aware of the genetic changes, but they happen and the plants are therefore not the same as they were before anthropogenic activities."

On the other hand, Nature is never static, and has always provided means for plants' pollen, seeds and spores to travel via the wind, water, birds, and animals, including humans. Humans have been relying upon, propagating, and wittingly and unwittingly disseminating plants, both domestic and wild ones, for a very long time. Rosemary Gladstar reminds us "We all have to change in order to survive. That's the message. Sometimes we are the winds ~ or the animals ~ that blow or carry the seeds to better grounds to grow in. That's genetic transformation and survival."

A lack of genetic diversity can occur when habitat destruction fragments the natural range of a plant. This is known as “inbreeding depression,” a phenomenon that limits the gene pool and the adaptability of the plants, making them vulnerable to dramatic changes or catastrophic events in their environment. Seedsman and UpS Advisory Board member Richo Cech points out that this phenomenon can occur with plants in cultivation, as well. “When cultivated plants begin to lose vigor due to inbreeding depression,” he says, “there’s an easy fix. You go to the wild, pick seeds, grow the plants from the wild seeds, and intermix those wild plants with the existing domestic population. The seeds from subsequent generations will exhibit increased vigor.”

So how much do we have to be concerned with the genetic makeup of plants that we introduce to our gardens, and is it a good idea to introduce plants into the local wild lands? For UpS members, this is certainly something to think about as we plant our little fall give-away rootlets. One factor is how the new plants were raised. Agriculture and Natural Resources Issues Leader of Cornell University Cooperative Extension, Bob Beyfuss explains, “when plants are removed from their environment and propagated artificially, they are subjected to ‘artificial selection’ by the conditions they are grown under. If they are grown in a greenhouse for example, individuals that survive become adapted to greenhouse culture. After a few generations in captivity, they may shed genes that were needed in their natural environment while favoring genes that allow survival in the greenhouse. If these plants are then re-introduced to the wild, they may pass some of these newly acquired greenhouse survival genes to wild plants, called ‘outbreeding depression’. These genes may put the remaining local plants at a disadvantage if they have replaced shed but needed genes.

If you mail order plants from other areas, they may not be greenhouse propagated, but still a different ecotype, or strain of the species. You can purchase plants from a local nursery, particularly one that sustainably propagates local stock. Resources are available to help you learn how to propagate existing populations of plants as well. This perpetuates the local gene pool, and helps ensure that your new plants are adapted to your area, one way to give them a better chance for survival.

In practice, however, especially among plants which humans find useful, there has and continues to be widespread dissemination of various ecotypes. This dissemination can result in permanent changes in local plant genetics. On the other hand, there is a widely held belief that if wildcrafters had not replenished ginseng with introduced seed it would be gone by now. From his experience with ginseng, Bob Beyfuss has found that “ultimately, it is the environment that determines who lives or dies through the process of natural selection. Humans have irrevocably changed many environments to the detriment of the species that inhabit them. These human disturbances are inescapable to the point where they now constitute ‘natural’ selection processes. One needs to consider risks versus benefits when re-introducing plants into any environment. The benefits of reestablishing a plant species in an area where it has been or is likely to become extirpated far outweigh risks of genetic contamination”.

All these factors bring us to some fundamental questions: How rare is a particular plant, and how widely distributed was it originally? Has this plant already had much genetic change from cultivation? Is the plant’s natural habitat (especially last remaining) in danger? Can we get ourselves out of the way and determine what is truly in the plants’ best interest? From both a scientific and philosophical viewpoint it may be best to leave an intact population of native plants alone to preserve their genetic uniqueness and continuity. For truly imperiled plants and for the remediation of human damage, whether overharvesting, clearcutting etc., rescuing and reintroducing plants may be the most ecological approach.

Gary Kaufmann, a botanist with the National Forests of North Carolina, sums things up this way, “I think one always needs to examine the question of propagation of a rare species as a tool to further enhance the species. Propagation can be useful. However for critically rare species we need to be very careful how far afield we introduce them, particularly if in the case of attractive natives they become commercially available. This becomes more critical as more and more folks are establishing in remote locations (real estate agents always promote lands for sale next to federal or state lands) issues come up with genetic pollution

as well as invasive species. For me the critical issue is preserving or restoring the habitat to allow natural regeneration of the rarer species.”

Perhaps above all, these issues point to the need for preservation of habitat. Whether preserving intact populations of native plants or reintroducing them and giving them a chance to eventually naturalize and adapt, the safe haven a botanical sanctuary can create is an important part of conservation strategy for the plants.



Prairie planting at the UpS Sanctuary
– photo UpS



Goldenseal patch at the UpS Sanctuary
– photo UpS

United Plant Savers Replanting Statement

Formed in the spirit of hope, United Plant Savers is a group of plant enthusiasts, committed to raising public awareness of the plight of our native medicinal plants and to protecting these plants. Our mission is twofold, to preserve and conserve wild medicinal plant populations and to ensure an abundant renewable supply of native medicinal plants through sustainable agricultural practices.

Part of our work is the planting of native medicinal plants back into their natural habitat. Other plant conservation organizations have raised concern over replanting back into the wild without extensive research and monitoring. These concerns are valid, as some plants, especially non-natives, can be excessively invasive and/or disruptive to native plant communities that are already established. There is also concern that by planting new communities of at risk medicinal plants, biologists will not be able to accurately measure the status of existing plant communities.

We wish to be clear that we are not advocating members of United Plant Savers randomly plant at risk species into wilderness areas, but rather, in their backyards, gardens, farms, and privately owned natural habitats and that they monitor their status. We also want to make it clear that all of the plants on the UpS “at-risk” list are noninvasive, non-weedy type plants and most require very specific conditions to grow which is one of the reasons they have become “at-risk” in the first place. United Plant Savers support the “grow your own medicine on your own land” mentality.

Like Margaret Mead we feel that often the greatest effects are made by concerned citizens taking action. Though large planting projects, research and biological studies are a necessary part of plant conservation, so is individual participation. We support UpS members growing these native medicinal plants and helping establish native medicinal “wild gardens” on their own land across the country. This, in the end, can only help the mission of other plant conservation groups whose goal is to preserve native medicinal plants.

Benefits of Sanctuary

Education - Giving a Presentation on Native Medicinal Plant Conservation

By Betzy Bancroft

Any plant-lover can help raise awareness in his or her community by giving a presentation to a receptive audience. You don't need to be an experienced public speaker, teacher or herbalist to be effective! Some time, planning and passion are all that's required! Here are some ideas for the Who, What, Where, and How UpS can help with information and visual aids.

It only takes one person's initiative to get a workshop or other event going, but you must also be willing to follow up and see it through. Contact local groups such as wildflower societies, master gardeners' groups, after-school programs, environmental groups, your local herb shop, herb studies class, health food stores, senior centers, nature study centers at parks, etc. and offer to give a presentation on UpS and the "at-risk" and "to-watch" species. Perhaps you are already a member of such a group, or have attended other events sponsored by one. Find out who the speaker or education coordinator is—he or she will be your contact person and guide you through the planning process. It may be helpful to write a short proposal, and many groups will want some sort of description of the presentation for advertising purposes. Try to make it concise but intriguing.

Working with an established group, store or center will give you the "who" will be attending the presentation and the "where" it will be held. The above-mentioned places publish or circulate schedules of their regular series of events, you just need to work out a date with the coordinator. Outreach to other plant-lovers will bring more attendees and help foster networking in your community. For example if you are giving a presentation at a nature center or school, also put flyers up at natural food stores, contact any local herbalists who teach classes and send a press release to lo-

cal newspapers. Check with your contact person if there may be limitations on this, such as space or membership requirements. You can also organize your own event to be held at your home, business or farm, and advertise it through any of the above places. Newspapers and newsletters often have free community events calendars published in them. Contact the paper in advance so you know when their submission deadline is.

Keep an eye out for environmental fairs, Earth Day events and other festivals that offer table space to non-profits and environmental groups. UpS members have staffed tables at a number of such events. It is a great way to meet people and have fun letting people know about native medicinal plant conservation. For example, if the fair is at a natural food store, talk to people about sustainable choices in their purchase of herbal products. The UpS office can provide you with brochures and other materials to make your table successful.

UpS members are welcome to use the UpS "At-Risk" Slide Show Presentation and Education Manual as guides. We offer the Slide Show for rent in both carousel and PowerPoint formats, and also have slides and cds available for sale. Contact the Vermont office to arrange the rental—\$35 is the rental fee. In either format, it comes with a "script"—a short paragraph of information on each slide. There are beautiful photos of the "at-risk" and "to-watch" species organized by native habitat, as well as images of cultivated plants, the "at-risk" list, planting projects and the UpS Botanical Sanctuary in Ohio. More information on the "at-risk" species is found in the accompanying Education Guide. It also contains a wealth of information on UpS projects and other ways you can help our native medicinal plants. There are pages in the Education Guide that you may reproduce for handouts. UpS can send brochures and other information as needed too.

You may also want to hand out other, more locally specific information to your participants. Contact your state wildflower or native plant society, Fish & Wildlife Service, office of environmental

conservation or botanical garden. Visit their websites to download and print resource materials. The UpS office can provide you with your state's native plant organization contact info. Investigate the government listings of your phone book, visit your library and search the internet. Provide time after your presentation for organizing and networking, planning a plant rescue or other project or discussion of local plant conservation issues.

Snacks and herbal goodies may be available to you for free or at low cost. For example, at a presentation given by natural food co-op personnel who are also UpS members, they obtained free tea samples from an herbal tea manufacturer and snacks from their deli department. If your workshop is for a gardener's group, bring some potted-up herbs or "weeds" that are effective analogs to "at-risk" plants to talk about and give away. Be creative—the more hands-on and colorful your presentation the more people are likely to remember it and be inspired to join our effort to preserve our green friends!



Richo Cech teaching at Planting the Future
— photo Liz Butler

Research Projects

Botanical Sanctuaries are excellent places to develop long-term propagation or other types of research projects. The following is an example of a study of False Unicorn at the Braverman/Neidhardt Botanical Sanctuary in Ohio. The full article is available from the UpS Vermont office.

False Unicorn Root (*Chamaelirium luteum* (L. Gray)): Evaluation of survival and yield after six growing seasons of varying size rootstock and mulching treatments

By Amy Brush

As I sit here under the redwoods in my new home in majestic northern California I am reminded of precisely why I took on the following study; to honor my deep connection to the photosynthetic world and strong desire to understand and protect our plant allies. Also, it was an excellent rea-



False Unicorn – photo UpS

son to travel back to beautiful rural Ohio where our dear friends are doing phenomenal work protecting many rare medicinal plant species and the forests they call home.

Studying this species was a tremendous opportunity and I chose to take it on largely because the study had already been initiated by another researcher in 2000, thus providing me with methods and data to build on. However, picking up someone else's research after it had been abandoned for 5 years also resulted in many challenges such as maintaining consistent methods whenever possible and developing new evaluation criteria to allow for building and improving upon existing data, which will be discussed later on.

Methods and Materials

There are many important considerations when designing a research study. Conducting a thorough literature review is important to provide a baseline for what information already exists on an individual species and help guide research design. There is no reason to reinvent the wheel, unless one is conducting a replicate experiment to determine if results are repeatable. Consistency of methodology is important; Once a protocol is determined, be sure to stick to it as much as possible and describe methods in a way that is understandable and repeatable. Be consistent and take detailed notes about both proposed methodology as well as what was actually conducted in the field. Chances are good that modifications will be required once the project is implemented. Some important variables to consider when studying medicinal plants include soil tests (pH, minerals, etc.), moisture, site location, light, and general plant/site care. Much of the protocol design will be determined based on the species of study. When in doubt, keep it simple! Simply recording observations on an understudied species can be extremely valuable.

The study period was from 2000 to 2005 in a mesophytic forest in Rutland, OH on property owned, at that time, by Rural Action using transplanted *Chamaelirium luteum* plants that were rescued from a road-widening project in NC. Rural Action has since transferred the property to the Braverman/Neidhardt family.

Aims of this study were to (1) Evaluate woods-cultivation production methods for *C. luteum* and (2) add to the knowledge base on cultivation of this species. Objectives were to (1) Compare the effects of weight at planting time on survival and yield of *C. luteum* (2) Compare the effects of divided and undivided rhizomes on survival and yield of *C. luteum* (3) Compare the effects of two mulch treatments on survival and yield of *C. luteum* and (4) Observe insects, diseases, browse and any other problems associated with false unicorn rhizome woods-cultivation production.

In May of 2000, 1,280 *C. luteum* plants were divided into four propagation weight-groups and randomly planted into 32 plots containing four rows of ten plants each. The weight to the nearest gram and location of each plant was recorded. Four of the eight weight-group plots received two

inches of hardwood sawdust mulch. The other four weight-group plots were not mulched.

In October of 2005, the second set of data collection proceeded in the following manner:

- Plots were cleaned of weeds and leaf litter;
- Total number of plants per plot were counted and recorded;
- Evidence of signs of browse, insects, disease or stress was recorded;
- Each plant was carefully removed from the soil and each rhizome was gently cleaned;
- The weight to the nearest tenth of a gram of each individual rhizome was recorded;
- Each rhizome was carefully replanted in the same location where it was found;
- Any seeds found were planted next to the parent plant.

Statistical Analysis & Results

A statistical analysis comparing the 2000 and 2005 rhizome weights to determine differences between weight groups and mulched/not mulched plots was conducted. Experimental design was a completely randomized 2 (mulch treatment) x 4 (weight-group) factorial. Each mulch treatment was replicated four times. A factorial design is frequently used to understand the effect of two or more independent variables (mulch treatment) upon a single dependant variable (weight groups). Although it is statistically more simplistic to manipulate evaluating the effect of one variable at a time, it is not always possible as two factors may be interdependent. This is common in agricultural studies where field-testing often requires factorial designs to test the effect of variables on crops because it is impractical to isolate and test each variable individually.

Total weight and number of plants in all plots decreased. There was no statistically significant difference ($P>0.05$) in survival among weight groups or amendments. Rosettes appeared healthy and no insects, slugs or diseases were observed. Some of the plots exhibited signs of browse. On at least two occasions dogs were seen running through, and napping in, the beds.

Study Problems: Neglect, Inconsistent Data Collection & Physical Damage

It is important to note that this study was initiated in 2000 by a researcher other than myself and the original study protocol called for annual soil testing, moisture monitoring, mulching and general care of the plants including weeding. Soil testing at the study site should have been conducted since soil plays a major role in plant health and soil deficiencies may have played a role in the survival and growth patterns that were observed. However, due to lack of funding, this proposed protocol was not followed. The beds were almost completely neglected from 2000 to 2005, which may have negatively affected the results. Additionally, when cultivating a plant one would assume that most growers would provide attention in the form of weeding, observing for diseases, pests, etc. at least several times per year. If the plots had been weeded, observed and monitored on an annual basis, increased survivorship for this group (and all others) may have occurred.

The method of data collection and the scale used were different. The 2000 data was collected to the nearest gram while the data collected in 2005 was recorded to the nearest tenth of a gram. When evaluating slow-growing plants with relatively low weights (1-9 grams) it is important to record data as precisely as possible, therefore the 2000 data set is too ambiguous to make definitive conclusions. For sake of comparison, the 2005 data was rounded to the nearest gram, making the data more ambiguous than if both data sets had been collected to the nearest tenth of a gram.

Plot location may have also played a role in the success (or lack of) of the plants. Plots were sited near a path and the plants may have been disturbed by animal traffic, including humans. Several of the plots that were located directly next to the path had the highest mortality. Additionally, dogs frequented these paths and may have contributed to mortality or breakage of plants stems and leaves, which could be mistaken for deer browse.

Suggestions for Future Research

The cultivation of *C. luteum* is extremely understudied, thus the range of possibilities for future research is vast. Suggested focus areas include: a more rigorous repeat study in the same location that includes monitoring environmental factors such as soil properties, light and moisture, a comparison of propagation from seeds versus root division and further investigation into weight group difference effects on establishment and yield. Additional observations of rhizomes to determine if any correlation between age, weight or size of rhizome and rotting rhizome tip is apparent are needed. More specifically, this should be done over a minimum of five years to see if rhizomes begin to maintain a consistent weight after a certain age, size, or weight is reached. Investigation of whether or not choosing a site located away from a well-established path to decrease effects from human associated activity, including dogs would be valuable as well.



Goldenseal in bloom – photo UpS

Spiritual Benefits – The Spirit of Sanctuary

by Pam Montgomery

Many years ago the north-facing slope of Marble Mountain was covered with Ginseng. I discovered this about the mountain I live at the base of after meeting an old timer who, in the past, hunted the Ginseng. He told me, with his distinctive Vermont accent, that years ago he would go “sanging” in the mountains. I thought it was so sweet that he would go and sing in the mountains and said so to him. He laughed and said, “No, sanging, you know Ginsenging.” He said the mountain once was covered with the plants that produced the “old man root”. Today there is one Ginseng plant, which I know of, on the entire mountain. Ginseng, whose essence is of longevity and wild vitality, no longer roams this mountain in great numbers, but still the echo of this survivor rings with the possibility of the vibrancy that once flourished here. To lose the essence of Ginseng in these mountains would diminish the vitality of not only the land but the people who walk this land. Could the loss of Ginseng in so many of the northeastern woods have contributed to massive chronic fatigue in the human inhabitants? Could it be that the essence of Ginseng is necessary for our vital existence, to feed the flame of our spirit that keeps us alive? When contemplating these questions, providing sanctuary for these survivors, whoever they may be, becomes not only important but imperative.

Sanctuary has a two-fold role to play for our native plant brothers and sisters. First, it is a refuge, a place that is safe from molestation. Plants that are in sanctuary know they are being kept safe with life-giving intent. This knowledge brings a heightened level of positive response to those who care for and enjoy the sanctuary. Cleve Backster’s ground-breaking work with plants clearly shows that plants respond to the people who engage with them. By attaching polygraph electrodes to plants’ leaves Backster showed that plants respond to the mere intent of doing them harm. Likewise, during a business trip, when Backster had the first thought of returning home, the plants in his office responded positively to this knowledge.

The second role of a sanctuary is that of sacred space where the “Holy of Holies” exists and communion is shared. When a botanical sanctuary is seen in this light it becomes a living church/temple where communication with the spirit of plants occurs. The loving intent of creating a sacred and safe place for native plants causes plants to respond with equal, if not more, loving vibrations. Within a sanctuary one experiences relaxation, peace, vitality and an over-all sense of well-being. Here the common union between plants and people – breath - can be intentionally shared. The exchange of “greenbreath” with plants in a sanctuary, where one is placed in the fold of intentional sacred space with plants responding to safety and care, is a primary experience that brings profound healing. Our hearts open wide as the *prana* of “greenbreath” carries the vital essence held to give life, otherwise known as Spirit. In this open-heart space we move into harmony with the rhythm of Earth, taking our place in the vast web of life as a co-creative partner. Botanical sanctuaries not only save our precious native plants from unconscious predation, they provide healing at a source level by feeding our essential nature so that both plants and people are held in life-giving balance.



Ginseng berries – photo UpS

Resources

Land Trusts

There are two basic kinds of land trusts, Conservation Land Trusts and Community Land Trusts. The difference is that the Conservation land trusts are involved with land conservation/preservation of open or wild spaces and areas in need of ecological protection. This often involves larger and more valuable acreage to protect these areas (for example the kinds of areas the Nature Conservancy helps protect), but regional land trusts also help individual landowners find ways to protect their land. One of the overall national organizers for conservation land trusts is the Land Trust Alliance, and their website can help locate local projects, resources and organizations all over the country. There are over 1,600 nonprofit land trusts that operate independently of government in the US. Land trusts have been extraordinarily successful, having protected over 37 million acres of land, according to the National Land Trust Census.

The Community land trust movement is involved with primarily more urban areas and neighborhood or historical preservation, organized by people who wish to preserve their affordable economic situations (i.e. the Burlington, Vermont Community Land Trust). The overall national organizer for Community Land Trusts is the Institute for Community Economics based in Springfield, MA.

Resource Organizations

American Farmland Trust
1200 18th Street NW, Suite 800
Washington, DC 20036
Phone: 202-331-7300, Website: www.farmland.org

Institute for Community Economics
57 School Street, Springfield, MA 01105
Phone: 413-746-8660, Website: www.iceclt.org

Land Trust Alliance
1331 H Street NW, Suite 400
Washington, DC, 20005
Phone: 202-638-4725, Website: www.lta.org

Northeast Wilderness Trust
14 Beacon Street, Suite 506, Boston, MA, 02108
Phone: 617-742-0628
Website: www.newildernesstrust.org

Sweet Water Trust
Faneuil Hall Marketplace
4 South Market Building, 4th flr.
Boston, MA, 02109
Phone: 617-263-7776
Website: www.sweetwatertrust.org

The Trust for Public Land
116 New Montgomery St. 4th floor
San Francisco, CA, 94105
Phone: 415-495-4014, Website: www.tpl.org

Vermont Land Trust
8 Bailey Ave., Montpelier, VT, 05602
Phone: 802-223-5234, Website: www.vlt.org

There are several ways Land Trusts accomplish land conservation—they may protect land through donation and purchase, by working with landowners who wish to donate or sell conservation easements (permanent deed restrictions that prevent harmful land uses), or by acquiring land outright to maintain working farms, forests, wilderness, or for other conservation reasons.

Conservation Easement

A conservation easement is a legal agreement between a landowner and a land trust or government agency that permanently protects the land by limiting rights such as building additional structures on the property. The landowner maintains private ownership and can sell the land or pass it on to heirs. Donating the easement can result in substantially reduced income tax and estate tax. In

August 2006 Congress passed legislation that increased the benefit for donations of conservation easements. This is the most common type of contribution to land trusts.

Land Donation

Land can be donated to a land trust. The donation can be set up in a way that allows the donating landowner to continue to live on the land or to receive a life income through a charitable gift annuity.

Bargain Sale of Land

Land can be sold to a land trust at less than its fair market value, which can provide tax benefits to the seller and make it affordable for the land trust.

Use the Land Trust Alliance's website or one of the other websites listed above to find programs, organizations, resources and individuals like attorneys familiar with land conservation in your area.



Hickory at UpS Sanctuary – photo UpS

Grants

See also "Government Agency" section pg. 54

SARE (Sustainable Agriculture Research and Education) Funding Opportunities

SARE is a competitive grants program providing grants to researchers, agricultural educators, farmers and ranchers, and students in the United States.

- **Research and Education Grants:** Ranging from \$30,000 to \$150,000 or more, these grants fund projects that usually involve scientists, producers, and others in an interdisciplinary approach.
- **Professional Development Grants:** To spread the knowledge about sustainable concepts and practices, these projects educate Cooperative Extension Service staff and other ag professionals.
- **Producer Grants:** Producers apply for grants that typically run between \$1,000 and \$15,000 to conduct research, marketing and demonstration projects and share the results with other farmers and ranchers.
- **On Farm Research/Partnership:** Supports on-farm research by Extension, NRCS, and/or nonprofit organizations. Northeast, Southern and Western regions.
- **Sustainable Community Innovation:** Forges connections between sustainable agriculture and rural community development. Northeast and Southern regions.

More information is available from their website www.sare.org. SARE is a program of USDA's Cooperative State Research, Education, and Extension Service (CSREES).

National Office: USDA-CSREES, Stop 2223, 1400 Independence Ave. SW, Washington, DC 20250-2223

UpS Community Grant Guidelines

United Plant Savers has a fund designated for community planting projects. UpS guidelines require that the project have educational merit and that the land proposed for planting be protected either by individual ownership, or be a part of a school or park system.

Considerations for Grants:

- Grant proposals must be community oriented. Projects with the most benefit to the community shall be considered first. Grants are not given to benefit individuals (i.e. someone wants to plant ginseng for personal use on private land) but must serve the community in some way.
- Grant proposals must be educational in nature. Educational proposals will be considered primary. An example is a replanting project of endangered plant species at a local public school.
- There must be some return to United Plant Savers. This is usually a photographic report of the project or a written report that could be of value to other members.
- The applicant must be a current member of United Plant Savers.
- Consideration for UpS Community Grants will be given first to Botanical Sanctuary Network members.
- Grants will range from \$200-\$500 to allow for several small community based projects rather than one or two larger projects.

Guidelines for Grant Proposals:

1. All proposals must be submitted in writing.
2. Proposal must include how the project will benefit the community.
3. Proposal must include what the project proposes to return to UpS.
4. Proposal must include the monetary value being requested and details of how the funds will be spent, such as specific quantity and species of plants/seeds requested.

**Submit Grant Proposal to United Plant Savers,
P.O. Box 400, East Barre, VT 05649**

Many of our members have taken advantage of our Community Grants Program to help fund their projects. Here are some examples of their projects to inspire you:

Urban Remediation Project in Charlottesville, Virginia

By Kathleen Maier

Five years ago, I made the move from rural, Rappahannock Co., Virginia where I had been stewarding a 25 acre blend of meadow and woodlands to downtown Charlottesville where the city property that acquired me had only a large house and under ¼ acre. The adjacent lot was a 2-acre woodland with an abandoned field, which I thought, was owned by the city, but the day I closed on the property, bulldozers appeared on the lot next door and began construction for a condominium project called the Belmont Lofts. Needless to say, soon there was great “re-arrangement” of the landscape.

The land north of the condos was a brownfield site (contaminated site) and the City of Charlottesville entered into the state of Virginia’s Voluntary Remediation Program that was designed to clean up such sites. A railroad runs through the property, and in the past this location was used as a dumping ground and refueling area. The soil has been tested and found to contain arsenic and other heavy metal contaminants. Remediation was completed to state standards by bringing in approximately 2 feet of new fill to cover the area, and some revegetation was established on steep slopes. The land was then sold by the City of Charlottesville and privately developed into the Belmont Lofts condos. After three years of head-banging and heart-wrenching attempts to work with the developer, I surrendered. I placed the UpS Botanical Sanctuary sign on a tree and with a spring equinox ceremony offered my services to the land and let go of the “plan”. The following spring, the residents themselves were the ones who asked for help.

From that request I designed an eight-month course, Healing the Land, Healing Ourselves with environmental consultant Christine Gyovai. This was a permaculture-based eco-design, medicinal plants, and restoration course taught through Sacred Plant Traditions. To begin, we studied the

area by conducting a site analysis. We took soil samples and compiled a species inventory of what was currently growing in the area. The class then used principles of permaculture to work towards creating a design that would increase the biodiversity and wildlife habitat of the site. We specifically choose plant and mushroom species that have regenerative properties and are capable of breaking down the excess of nitrogen and other toxic residues in the soil as well as medicinal plants that are native to the area, some of which are included on the UpS as well as Virginia's to-watch or endangered species lists.

The students drew maps of the meadow area we were restoring. Texts for the course were Bill Mollison's Permaculture: A Designer's Manual and Toby Hemenway's excellent primer, Gaia's Garden. We developed a walnut guild for planting a variety of species compatible with *Juglans nigra*, received a discount from local nursery Edible Landscaping and planted a large variety of nut and fruit trees, berry bushes and vines. Jeff McCormick of Garden Medicinals and Culinaries also donated a number of goldenseal, false unicorn and American ginseng roots.

With the grant from UpS we purchased the above-mentioned trees as well as native medicinals from Enchanter's Garden in Hinton, West Virginia including goldenseal, ginseng, trillium, bloodroot, black cohosh, spikenard, wild yam, and more! The woodlands project was also an area where we did diagnostic energetic readings as taught by Stephen Buhner. The results of the readings were profound and reflected an area of conflict, arguments and "border wars". The history of the site revealed that this woodland area, next to the train track, was indeed a site of cockfights and gatherings of questionable merit. The relationship between the developer of the condos and the neighbors also had been contentious, to say the least.

The last project we undertook was to restore a riparian buffer in a wetland area adjacent to the condominiums. A landscape business was piling mounds of compost close to a creek and excessive levels of nitrogen from run-off were destroying the creek. In line with the city's new watershed plan for enhancing buffers and streams, the restoration included building swales at the bottom of the culvert opening for the run-off to pool. We stacked

bales of hay behind the swales, planted nettles for nitrogen fixing activity and seeded spores of King Stropharia mushrooms to set up a mycoremediation site.

It is so fascinating to see that the history of the land lives on in some form and that this is played out (i.e. border wars) until a healing and release can take place. I write this as an inspiration for others whose projects may be confronted with what seems to be insurmountable odds. I know that engaging in prayer and working directly with the spirits of the land enabled this project to move forward; that working with the land energetically is evident in plants that look vibrant and strong.



Urban remediation, Charlottesville, VA
– photo Kathleen Maier

Center For Healing Arts Herb & Eco School in Long Lake-New Auburn, Wisconsin

By Gigi Stafne

At the Center for Healing Arts Herb & Eco School and Botanical Sanctuary in northern Wisconsin, we are happy to describe some of the exciting ways that we have been utilizing your gracious grant gift for native medicinal plant preservation and education projects.

The two outdoor plant education projects that we have been able to focus our efforts on include the "Moonlodge Medicine Trail" and the "Medicine Wheel Teaching Garden" on our 40-acre sanctuary. In April, we re-groomed and nourished the winding Moonlodge Trail, while monitoring the black cohosh, wild ginger and goldenseal plants

that are part of a national monitoring project. Additionally, we were able to conduct 3 ‘official’ ‘plant identification walks’ and presentations that were open to both our herbalism students and the public. One of the first took place on Earth Day and numerous formal and informal walks have taken place through the present date. In addition to these, we were able to utilize a portion of the UpS grant for cedar stakes and plant identification signs. One of our Master Herbalism students, Kathy Miller, has digitally photographed many native woodland plant medicinals and created new signs for that trail, as well. The Moonlodge itself has been completed entirely by recycled and donated materials, with the help of an all-volunteer team. Monthly gatherings have taken place there since February of 2005. It has also been an ideal spot for our “Plant Spirit Medicine” workshops!

We have utilized \$300 of the UpS grant toward purchases of additional native plants that now grow along the educational Medicine Trail and in the creative Medicine Wheel Teaching Garden. Some of these new plant ‘babies’ have included black cohosh, blue cohosh, bloodroot, lobelia, blue flag, sweetgrass, goldenseal, native ginseng, Jack-in-the pulpit, wild sarsaparilla and some additional cedars. We could not have made these additional purchases for educational and cultivation purposes without your help! Finally, \$150 of the UpS grant money was used for the printing of several of our resource materials, specifically our “Plant Rescue” literature and our “Wild Earth Walk” booklet. The “Wild Earth Walk” booklet has been designed in 2 formats—one for purchase and the other free as a plant identification guide for those who visit our sanctuary. Both versions include statements explaining the vision, mission and contact information for the United Plant Savers organization. We hope this will help promote the cause!

Two additional events that we were able to host in autumn 2005 were the ‘Plant Spirit Medicine Intensive’ weekend where participants deeply engaged in 3 days of learning about the medicinal and spiritual properties of native plants and the final plant ID walk of the autumn entitled, “The Tradition of Trees”. These learning opportunities took in the Medicine Wheel, the UpS sanctuary trails and our Moon Lodge.

Monica Skye ~ Standing Rock Reservation Botanical Sanctuary ~ Selfridge, ND

Grants were awarded in two consecutive years as Monica and her husband Aubrey expanded the scope of the educational and conservation opportunities on the Standing Rock Reservation. The initial grant saw the formation of the Standing Rock Botanical Sanctuary ~ the first on tribal lands. Native medicinal plants were cultivated and re-introduced along with increasingly rare/endangered indigenous plant species to this Northern Plains biome. The UpS “At-Risk” Plants power point slide show was presented at the local planning district meeting and to 5th graders on the Standing Rock Reservation. The sanctuary also provided opportunities for elementary school students and ethnobotany students from Sitting Bull College to gain first hand knowledge of the plants with visits to the sanctuary. Elders and neighbors began to contribute their knowledge and energy as well.

The second grant provided plants for a multi-generational planting project to help restore native flora around an established inipi (sweat lodge) area within the sanctuary. Scarred by bulldozer activity and cattle grazing, the area around the lodge was restored with Horizon Herbs’ Earth Healers Seed Mix and planted with native plants including echinacea, choke cherry and ceremonial sage. Volunteers included children and elders of the community, who together planted and restored the land.



Planting at Standing Rock – *photo Monica Skye*

Minnehaha Ave. Community Gardens in Minneapolis, MN

By Sandi Arseth

This season was very busy for the gardens and medicinal beds located here in the heart of Minneapolis on a reclaimed vacant city lot on 31st St. and Minnehaha Ave. Thanks to the United Plant Savers grant we were able to increase our plant species and get labels for the garden's plants, an important tool when utilizing the beds for educational purposes and self-guided tours. Here is a synopsis of what happened this season at our inner city gardens:

Kari Tauring had her "Green Thumbs" class of boys and girls ages 7-11 throughout the growing season working and learning about medicinals at our garden site. They made their own identification books on what they had learned and their own drawings of the medicinals. Then, during the American Community Garden Association conference in August, they helped as Kari gave a seminar on their "Green Thumbs" project. They were spectacular! They were also a great help in watering and planting some of the plants we received this year for the medicinal beds.

Lisa Wolff, a well-known local herbalist, utilized our garden space for one of her classes this summer. Her students seemed to soak in the knowledge she expertly shared and of the plants that so lovingly gave of themselves.

The American Community Gardens Association conference came to Minneapolis in August. We were a stop for several tours that were given. People came from all over the world and wandered through our gardens and medicinal beds. They learned of our little project and of United Plants Savers. They also learned that medicinals are everywhere you look, that growing and harvesting sustainably is vital to all for our survival. They heard about how our "weeds" need to be looked upon in a whole new light: one of respect, love and knowledge. One man from Ohio, after learning the benefits of yellow dock and burdock, could barely contain his excitement! It had never occurred to him that these two "noxious weeds" had a purpose, a reason for Being, that part of their proliferation was their way of correcting an imbalance or healing an illness. I was grateful to meet with

such a wide variety of people and show them our inner city medicinal herb beds. I know some people think that nothing healthy, balanced and energetically potent can come from land that has been abused for so long. But, I beg to differ ~ loudly! I see it every morning parking on a busy inner city street (Minnehaha Ave.) and then walking into our gardens and being greeted by rabbits, a hummingbird, Mourning Cloaks and Swallowtails. A hawk swoops down now and then to check us out. I hear it in the plants as they speak, beneath my feet, in a language of vibration that I have not heard for a very long time. It brings me to my knees every time in joy and gratefulness. Participating in the restoration of the land and Beings in our metropolitan cities is healing from within and radiates outward endlessly.



Harvesting in Minnehaha Ave. Community Garden
– photo Sandi Arseth

Planting Guides & Resources For At Risk and Endangered Plants

Recommended Books

A Handbook for Stream Enhancement & Stewardship. This handbook is a basic resource for individuals, classes, organizations, volunteer groups, or communities, wishing to carry out environmentally sound, cost-effective stream corridor assessment, enhancement, and stewardship programs. For more information see www.mwpubco.com/stream.htm; it lists for \$34.95 (sewn binding, soft cover; 0-939923-98-X).

Compiled Publications by Richo Cech. Drawing from over 25 years experience gardening medicinal plants, Richo shares his tried and true growing techniques, harvesting and processing methods and stories. Seed germination theory and practice are also covered. This book was originally available as "Growing Guides." \$11.95 (144 pp., soft cover) Available through Horizon Herbs, P.O. Box 69, Williams, OR 97544 or 541-846-6704.

Eco-Herbalist Fieldbook by Greg Tilford, Mountain Press, Missoula, MT 1993. One of the first herb books to address the issues of medicinal plant conservation and the role herbalists play in the conservation and cultivation of native medicinal species. Provides excellent eco-sensitive guidelines for wildcrafting medicinal herbs.

Edible and Medicinal Plants of the Rocky Mountains and Neighboring Territories by Terry Willard, Wild Rose College of Natural Healing, Calgary, Alberta 1992. Great information on identifying, collecting and using plants of the Rocky Mountain region.

Educational Resources for Growing Ginseng and Goldenseal by the North Carolina Ginseng and Goldenseal Company. Audio tapes on site evaluation and start up kits for growing ginseng and goldenseal. Write to Robert Eidus, NC Ginseng & Goldenseal Co. 300 Indigo Bunting Lane, Marshall, NC 28753.

Energy Efficient and Environmental Landscaping – Cut your utility bills by up to 30% and create a natural, healthy yard by Anne Simon Moffat, Marc Shiler and the Staff of Green Living, Published by Appropriate Solutions Press, South Newfane, VT, 05351. Includes sections on landscaping for wildlife, gardening with native plants, compost and pest management.

From Earth to Herbalist: An Earth Conscious Guide to Medicinal Plants by Gregory Tilford. Published by Mountain Press, Missoula, MT 1998. This practical full color guide to the sustainable cultivation, harvest and use of North American medicinal plants profiles 52 species. The book highlights UpS At Risk and To Watch herbs and offers alternatives or adjuncts as well as propagation techniques. An excellent resource guide--highly recommended by UpS.

Ginseng and Other Medicinal Plants by A.R. Harding. This may be the real "bible" of ginseng growing. Written in 1908 this book is full of information from the pioneers of ginseng and goldenseal farming. Both Green Gold and A.R. Harding's books are available through Sylvan Botanicals, P.O. Box 91, Cooperstown, NY 13326.

Growing 101 Herbs That Heal by Tammi Hartung, Storey Publications, Pownal, VT 2001. An excellent reference for growing medicinal herbs. Highly recommended.

Growing and Marketing Ginseng, Goldenseal and Other Woodland Medicinals by Scott Persons and Jeanine Davis. Originally the "bible" of ginseng cultivation, this new edition is completely revised and includes goldenseal, black cohosh and many other forest botanicals. Emphasis is on commercial production and economic feasibility, including interviews with a range of different growers. Bright Mountain Books, Fairview, NC 2005.

Growing At-Risk Medicinal Herbs by Richo Cech, UpS Advisory Board member and founder of Horizon Herb Seeds. Richo has a great wealth of experience with propagating, growing and seed saving medicinal herbs. This book includes American Ginseng, Black Cohosh, Bloodroot, Blue Cohosh, Echinacea, Goldenseal, Lomatium, False Unicorn and many others. Beautiful and accurate botanical illustrations. \$14.95 (336 pp., soft cover) Available through the United Plant Savers office.

How to Create and Nurture a Nature Center in Your Community by Brent Evans and Carolyn Chipman-Evans, University of Texas, ISBN: 0292720971. This excellent and inspiring book provides proven models for creating natural sanctuaries within a variety of communities. Step by step instructions for creating and maintaining a nature center are provided. This practical handbook is an essential resource for anyone wishing to create a nature center and/or botanical sanctuary.

How to Grow American Ginseng by Scott and Sylva Harris. A Publication of Sylvan Botanicals/ American Ginseng, this small pamphlet was written by two successful ginseng farmers. Write to Sylvan Botanicals, P.O. Box 91, Cooperstown, NY 13326 (607) 264-8455

Introduction to Permaculture by Bill Mollison with Reny Mia Slay, Tagari Publications, Tyalgum, NSW, Australia Great basic intro to the principles of permaculture by one of the founders. Permaculture is more than "permanent agriculture," through an understanding of nature, ecologically sound and economically viable systems can be created for food production and much more.

Medicinal Herbs in the Garden, Field & Marketplace by Lee Sturdivant and Tim Blakley. Published by San Juan Naturals, Friday Harbor, WA. \$24.95. Co-authored by two experienced herbalist/farmer/gardeners, this is simply one of the best guides available on the cultivation of medicinal herbs. The information is fully practical, easy to read, and invaluable for the farmer of medicinal plants. Tim Blakley, one of the authors, was farm manager and steward of the Center for the Preservation of Medicinal Plants in Rutland, Ohio, and is a UpS Board Member.

Native American Ethnobotany by Daniel E. Moerman, Timber Press, Portland, OR 1998. An essential reference for all those interested in medicinal uses of North American plants. This book is an important scholarly compendium and lists the use of 4029 native plants with a total of 44,691 uses!

Peterson's Field Guide to Medicinal Plants by Steven Foster and James Duke. Standard field guide for Eastern and Central US medicinal plants, including shrubs and trees. Indispensable for helping identify plants used for medicine, with traditional uses. Peterson Field Guide Series, Houghton Mifflin Co. Widely available in bookstores. There is also a Peterson's Field Guide to Pacific West region medicinal plants.

The Medicinal Herb Grower Volume 1 by Richo Cech. A guide to growing plants that heal, the brand new edition of Richo's extensive experience growing medicinal plants. Horizon Herbs (see Compiled Publications above.)

The National Wildlife Federation's Guide to Gardening for Wildlife by Craig Tufts and Peter Loewer, Rodale Press, Emmaus, PA. Creating wildlife habitat in your yard wherever you live!

The Practical Guide to Growing Ginseng by Bob Beyfuss, Cornell Cooperative Extension Specialist for American Ginseng Production. This 65 page booklet is available from the extension office for \$7.00. You can order a copy of it by calling 518-622-9820. Bob has also written two USDA Forestry Service Agroforestry Notes, AF Notes #14 and #15 *American Ginseng Production in Woodlots* and *Economics of Marketing Ginseng*. Both are available for free from the USDA National Agroforestry Center, East Campus-UNL, Lincoln, Nebraska 68583-0822 (phone 402-437-5178).

Principles and Practices of Plant Conservation by David R. Given, Timber Press, Portland, OR 1994. Commissioned by the WorldWide Fund for Nature and The World Conservation Union as part of a joint effort, this work elucidates the concepts that underlie successful conservation efforts. Chapters are devoted to the ethical, educational and economic aspects of plant conservation.

Secrets of the Soil by Peter Tompkins and Christopher Bird. Especially recommended is the chapter "Heaven on Earth." This book and another by the same authors, *The Secret Life of Plants* is available (with many other excellent books) from ACRES USA, PO Box 91299, Austin, TX 78709, or www.acresusa.com.

Seed Germination: Theory and Practice by Norman Deno. The best book on seed germination specifics for many of the "At Risk" species. Available by writing the author: Norman Deno, 139 Lenor Drive, State College, PA 16801.



Blue Cohosh in bloom – photo Liz Butler

Magazines and Journals

Northern Woodlands: A publication of the Center for Northern Woodlands Education. Their mission is to encourage a culture of forest stewardship in the Northeast by producing and distributing media content to increase understanding of and appreciation for the natural wonders, economic productivity, and ecological integrity of the Northeast region's forests.

Website: www.northernwoodlands.org

Native Plant Journal: A journal that provides a forum for dispersing practical information about the planting and growing of North American native plants for conservation, restoration, reforestation, landscaping, highway corridors, etc. phone (800) 842-6796 Subscriptions are available by accessing the following website:

<http://nativeplants.for.uidaho.edu/journal/>

Websites

ATTRA - National Sustainable Agriculture Information Service: Central website for the latest in sustainable agriculture and organic farming news, events and funding opportunities, as well as in-depth publications on production practices, alternative crop and livestock enterprises (including herbs), innovative marketing, organic certification, and highlights of local, regional, USDA and other federal sustainable agricultural activities.

Website: www.ATTRA.org, P.O. Box 3657, Fayetteville, AR 72702, Phone (800) 346-9140

Environmental Protection Agency:

For publications relating to native plants, visit: www.epa.gov/greenacres/nativeplants/pub-resor

Native Plant Network: The Native Plant Network is devoted to the sharing of information on how to propagate native plants of North America (Canada, Mexico, and US).

Website: <http://nativeplants.for.uidaho.edu/>

Plant Conservation Alliance: The plant conservation division of the National Park Service is a great place to find organizations and projects all over the US.

Federal Native Plant Conservation Committee Cooperators – hundreds of links to botanical organizations - www.nps.gov/plants/coop.htm

Medicinal Plant Working Group includes information on monitoring projects you can volunteer for - www.nps.gov/plants/medicinal/index.htm

Restoration Working Group facilitates ecological restoration projects, lots of opportunity to get involved – www.nps.gov/plants/restore/index.htm

Global Restoration Network: a free, online hub for comprehensive information on ecological restoration at www.GlobalRestorationNetwork.org. A unique resource, the interactive website is rich with data, information, expertise and the latest techniques and innovations in restoration.

United Plant Savers:

www.unitedplantsavers.org

Organizations

Center for Plant Conservation: The mission of the Center for Plant Conservation is to conserve and restore the rare native plants of the United States. Missouri Botanical Garden - 4344 Shaw Boulevard, St. Louis, MO 63110, website: www.mobot.org

Native Plant Society/Nature Conservancy: Your local chapters of the Native Plant Society and the Nature Conservancy are good resources for keeping track of what plants are threatened. They are also good sources of harvesting non-native “invasive” types of plants during “weed pulls,” as well as workshops and internships. Website: www.tnc.org. see Native Plant Society listings

New England Wildflower Society/Garden in the Woods: Promoting conservation of North American native plants through education, research, horticulture, habitat preservation, and advocacy. 180 Hemenway Road, Framingham, MA 01701-2699 phone: 508-877-7630, e-mail: newfs@newfs.org, website: www.newfs.org

Lady Bird Johnson Wildflower Society: To educate people about the environmental necessity, economic value, and natural beauty of wildflowers and native plants. Online calendar of native plant events. 4801 La Crosse Avenue, Austin, TX 78739-1702, phone: 512-292-4200, fax: 512-292-4627, website: www.wildflower.org

Rural Action Forestry /Appalachian Forest Resource Center: Rural Action’s mission is to promote economic, social, and environmental justice in Appalachian Ohio by creating model strategies for the region that involve a broad base of citizens in sustainability projects. PO Box 157, Trimble, OH 45782, websites: www.ruralaction.org, www.appalachianforest.org

Theodore Payne Foundation: a nonprofit retail California native plant nursery north of Los Angeles offering plants, seeds, books and educational programs. They offer over 300 native species for sale and a bookstore, as well as demonstration garden areas, a picnic area, wildflower nature trail, and natural canyon areas. 10459 Tuxford Street, Sun Valley, CA 91352-2116, phone: (818) 768-1802, website: www.theodorepayne.org

Trust for Public Lands National Office: The Trust for Public Land is a national organization dedicated to improving the quality of life in our communities through protection of our natural and historic resources. They can furnish information about local land trusts and how to start a land trust in your area. 116 New Montgomery, 4th floor, San Francisco, CA 94105, website: www.tpl.org

Land Trust Alliance: The Land Trust Alliance is a national organization of local and regional land trusts. LTA promotes voluntary land conservation and strengthens the land trust movement by providing information and resources needed to conserve land. 1319 F Street NW, Suite 501, Washington, DC 20004-1106, website: www.lta.org (See also section on land trusts p 43)

TRAFFIC: TRAFFIC is the joint wildlife trade-monitoring program of the WWF - World Wildlife Fund and IUCN - The World Conservation Union. TRAFFIC aims to help ensure that wildlife and plant trade is at sustainable levels in accordance with domestic and International laws and agreements. For current information on their plant species of concern, please see their website: www.traffic.org.

Wild Farm Alliance: The Wild Farm Alliance (WFA) was established by a group of wildlands proponents and ecological farming advocates who share a concern for the land and its wild and human inhabitants. Their mission is to promote agriculture that helps to protect and restore wild Nature. Provides great information on biodiversity and habitat restoration on farmland. PO Box 2570, Watsonville, CA 95077, phone: 831-761-8408, fax: 831-761-8103, email: info@wildfarmalliance.org, website: www.wildfarmalliance.org

Wild Ones: Native Plants, Natural Landscapes: promotes environmentally sound landscaping practices to preserve biodiversity through the preservation, restoration and establishment of native plant communities. Wild Ones is a not-for-profit environmental education and advocacy organization. PO Box 1274, Appleton, WI 54912, phone: 920-730-3986, email: info@for-wild.org website: www.for-wild.org

Resources available from UpS

Directory of Native Plant Nurseries, Seeds and Sustainable Bulk Herbs: This booklet comes free with membership and renewal and additional copies are available for \$5.00 per copy. It is a valuable resource for locating sources of planting material of a wide variety of herbs including those on the UpS "At Risk" and "To Watch" lists. All the plant and seed stock offered is nursery grown and sustainably sourced. There's also a section of herb farmers and distributors from whom cultivated bulk herbs for medicine is available. There are resources listed for most areas of the US. This Directory is included with all new member and renewal information packages.

Education Guide: A 28 page publication to help you organize a presentation and to provide necessary resources for native medicinal plant conservation. Sections include information on the "At Risk" plants and sample handouts. Available on the UpS website and through the Vermont office.

Land Consultation Service (LCS): Provides a network of professional land consultants ready to answer your questions. Each of the individuals who are part of the LCS is a member of UpS and is knowledgeable about native landscape techniques, medicinal plant and habitat restoration. This information is part of your 'new member' package and is available on the UpS website.

Slide Show of "At-Risk" Plants – Available for Rent or Sale: UpS members can rent an informative slide show of "at-risk" medicinal plants. The show contains over 80 slides showing the roots, leaves, seeds and flowers of these plants and comes with an informative script. Perfect for presentations to garden clubs, conservation groups and local communities to create an awareness of the plight of our native medicinals, it is available for rent/sale in carousel or PowerPoint formats. See our website or contact the Vermont office for details. Please call our home office (802-476-6467) to arrange the rental at least three weeks before your presentation date.

Video: We also have a 12-minute video in a VHS cassette about the mission of United Plant Savers available for sale or rent that is very nice for introducing United Plant Savers and presentations. Available on VHC cassette or DVD.

Rental of the UpS "At Risk" Slide Show, Power-Point Presentation or Video comes with a Presentation Package, including Education Guide, UpS Journals, brochures, articles and more.

Take Action! Guide: A publication of United Plant Savers that includes information on projects such as creating medicinal plant trails, monitoring wild populations, organizing plant rescues, planning native plant gardens and more. Available through the UpS Vermont office.



Wild Yam – photo UpS

Native Plant Societies

These organizations are a wealth of regional information! Many of them have bookstores with great selections of regional botanical references, floras, gardening books and more. They also have lists of local nurseries where you can purchase plants specific to your area, or like in the case of the New England Wild Flower Society (www.newfs.org) they have their own nursery. Regional events, workshops, job opportunities, etc. will also be listed on their websites.

ALABAMA

Alabama Wildflower Society
11120 Ben Clements Rd.
Northport, AL 35475
205-339-2541
vernagates@aol.com
www.alabamawildflower.org

ALASKA

Alaska Native Plant Society
P.O.Box 141613
Anchorage, AK 99514-1613
907-563-7216
leonard.grau@acsalaska.net
www.alaskakrafts.com/pages/anps

ARIZONA

Arizona Native Plant Society
Sun Station, P.O.Box 41206
Tucson, AZ 85717-1206
wdr@theriver.com
www.aznps.org

ARKANSAS

Arkansas Native Plant Society
Box 294
813 Oak St. 10A
Conway, AR 72032
Gatti_Clark@mercury.hendrix.edu
www.anps.org

CALIFORNIA

California Botanical Society
c/o Jepson Herbarium, 1001 VLSB #2465
University of California
Berkeley, CA 94720-2465
510-643-7008
www.calbotsoc.org

CALIFORNIA

California Native Plant Society
2707 K St., Suite 1
Sacramento, CA 95816-5113
916-447-2677
cnps@cnps.org
www.cnps.org

CALIFORNIA

Southern California Botanists
Dept. of Biology,
California State University
Fullerton , CA 92834
714-448-7034
aromspert@fullerton.edu
www.socalbot.org

CONNECTICUT

Connecticut Chapter,
New England Wild Flower Society
25 Lanz Lane
Ellington, CT 06029-2310
860-871-8085
ctnewfs@att.net
www.newfs.org

FLORIDA

Florida Native Plant Society
P.O.Box 278
Melbourne FL 32902-0728
772-462-0000
info@fnps.org
www.fnps.org

HAWAII

Hawaiian Botanical Society
Susan Ching Harbin, Pres.
www.angelfire.com/hi4/nhos

ILLINOIS

Illinois Native Plant Society
Forest Glen Preserve
20301 E. 900 North Road
Westville, IL 61883
217-662-2142
ilnps@aol.com
www.ill-inps.org

COLORADO

Colorado Native Plant Society
P.O. Box 200
Fort Collins , CO 80522-0200
303-556-8309
kimberley.fayette@att.net
www.conps.org

DELAWARE

Delaware Native Plant Society
P.O. Box 369
Dover, DE 19903
302-674-5187
dnps@delawarenativeplants.org
www.delawarenativeplants.org

GEORGIA

Georgia Botanical Society
320 Ashton Drive
Athens GA 30606-1622
706-353-8222
members@gabotsoc.org
www.gabotsoc.org

HAWAII

Native Hawaiian Plant Society
P.O. Box 5021
Kahului, Maui , HA 96733-5021

INDIANA

Indiana Native Plant &
Wildflower Society
Friesner Herbarium, Butler Univ.
4600 Sunset Ave.
Indianapolis, IN 46208
317-940-9413
quinnell@iquest.net
www.inpaws.org

CONNECTICUT

Connecticut Botanical Society
P.O. Box 9004
New Haven , CT 06532-0004
860-633-7557
casper.ultee@ct-botanical-society.org
www.ct-botanical-society.org

DISTRICT OF COLUMBIA

Botanical Society of Washington
Smithsonian Institution,
Dept. of Botany, NHB/166
Washington , DC 20560
kathy@fred.net
www.botsoc.org

GEORGIA

Georgia Native Plant Society
P.O. Box 422085
Atlanta , GA 30342-2085
770-343-6000
ed.mcdowell@cox.net
www.gnps.org

IDAHO

Idaho Native Plant Society
P.O. Box 9451
Boise , ID 83707-3451
idahoplants@arczip.com
www.IdahoNativePlants.org

IOWA

Iowa Native Plant Society
Dept. of Botany, Iowa State Univ.
Ames, IA 50011-1020
thomasrosberg@drake.edu
www.public.iastate.edu/~herbarium/
inps/inpshome.htm

KANSAS

Kansas Wildflower Society
 c/o R. L. McGregor Herbarium,
 Univ. of Kansas
 2045 Constant Ave.
 Lawrence, KS 66047 -3729
 jduncan@fs.fed.us
 785-864-3453
 www.kansasnativeplantsociety.org

MAINE

Josselyn Botanical Society
 566 N. Auburn Road
 Auburn, ME 04210
 rspeer@LPL.avcnet.org
 www.umext.maine.edu/
 onlinepubs/2500.htm

MASSACHUSETTS

Botanical Club of Cape Cod and
 the Islands
 P.O. Box 423
 Woods Hole, MA 02543
 Chris Pollini, webm.
 hometown.aol.com/bccci/page/
 index.htm

MASSACHUSETTS

New England Wild Flower Society
 180 Hemenway Rd
 Framingham, MA 01701 -2699
 508-877-7630
 newfs@newfs.org
 www.newfs.org

MINNESOTA

Minnesota Native Plant Society
 250 Bio Sci Center, U. Minn.
 1445 Gortner Ave. Jason
 St. Paul, MN 55108-1020
 www.mnnps.org

KENTUCKY

Kentucky Native Plant Society
 PO Box 1343
 Richmond, KY 40476
 lmckinney@eqm.com
 www.knps.org

MAINE

Maine Chapter, New England
 Wild Flower Society
 Sawyers Island, RR. #1, Box 79
 Boothbay, ME 04537
 207-633-4327
 gccarr@ghi.net
 newfs@newfs.org

MASSACHUSETTS

Cape Cod Chapter, New England
 Wild Flower Society
 33 Lakeway Lane
 Harwich, MA 02645-2031
 508-432-4188
 newfs@newfs.org
 www.newfs.org

MICHIGAN

Michigan Botanical Club
 7951 Walnut Ave.
 Newaygo, MI 49337-9205
 616-652-2036
 dbsibley@mail.riverview.net
 www.michbotclub.org

MISSISSIPPI

Mississippi Native Plant Society
 Millsaps College, Box 15037
 Jackson, MS 39210-0001
 662-325-7896
 www.mnpscp.gulfcoast-gardening.com

LOUISIANA

Louisiana Native Plant Society
 216 Caroline Dorman Road
 Saline, LA 71070
 www.lnps.org

MARYLAND

Maryland Native Plant Society
 P.O. Box 4877
 Silver Spring, MD 20914
 410-286-2928
 MNPS@toad.net
 www.mdflora.org

MASSACHUSETTS

New England Botanical Club
 Gray Herbarium, 22 Divinity Ave.
 Cambridge, MA 02138-2020
 617-383-3656
 neystersmith@bentley.edu
 www.rhodora.org

MICHIGAN

Wildflower Association of Michigan
 15232 24 Mile Rd
 Albion, MI 49224-9562
 517-630-8546
 mcase15300@aol.com
 www.wildflowersmich.org

MISSOURI

Missouri Native Plant Society
 P.O. Box 20073
 St. Louis, MO 63144-0073
 635-300-9290
 www.herbarium.missouri.edu

MONTANA

Montana Native Plant Society
P.O. Box 8783
Missoula, MT 59807-8783
edk@digisys.net
www.umt.edu/mnps/

NEW JERSEY

The Native Plant Society of New Jersey
Cook College
102 Ryders Lane
New Brunswick, NJ 08901-8519
732-583-2768
info@npsnj.org
www.npsnj.org

NEW YORK

Long Island Botanical Society
P.O. Box 507
Aquebogue, NY 11931
631-722-5542
elamont@optonline.net
www.molins.sunysb.edu/libr/libr.HTML

NEW YORK

Syracuse Botanical Club
Janet Holmes
101 Ambergate Rd.
DeWitt, NY 13214
315-445-0985

NORTH CAROLINA

Western Carolina Botanical Club
Bonnie Arbuckle
P.O. Box 1049
Flat Rock, NC 28731
828-696-2077

NEVADA

Nevada Native Plant Society
P.O. Box 8965
Reno, NV 89507-8965
775-329-1645
www.heritage.nv.gov/nnps.org

NEW MEXICO

Native Plant Society of New Mexico
PO Box 35388
Albuquerque, NM 87176
505-523-8413
http://npsnm.unm.edu

NEW YORK

New York Flora Association
New York State Museum
3140 CEC
Albany, NY 12230
editor@nyflora.org
www.nyflora.org

NEW YORK

Torrey Botanical Society
New York Botanical Garden
200 St. and Kazimiroff Blv.
Bronx, NY 10458-5126
718-817-8651
zanoni@nybg.org
www.torreybotanical.org

OHIO

Ohio Native Plant Society
(six chapters, see following):
6 Louise Drive
Chagrin Falls, OH 44022-4231
440-338-6622
inky5@juno.com
www.dir.gardenweb.com/
directory/onps1/

NEW HAMPSHIRE

New Hampshire Chapter,
New England Wild Flower Society
8 Boulsters Cove
North Hampton, NH 03862
603-964-1982
anmoo@earthlink.net
www.newfs.org

NEW YORK

Finger Lakes Native Plant
Society of Ithaca
532 Cayuga Heights Rd.
Ithaca, NY 14850
607-273-1765
www.fingerlakesnativeplantsociety.org

NEW YORK

Niagara Frontier Botanical Society
Buffalo Museum of Science
1020 Humboldt Parkway
Buffalo, NY 14211
716-896-5200
JTocke@aol.com
www.acsu.buffalo.edu/~insrisg/botany

NORTH CAROLINA

N. Carolina Wild Flower
Preservation Society
c/o N. Carolina Botanic Garden
Totten Garden Center, 3375
U. N. Carolina
Chapel Hill, NC 27599-3375
919-834-4172
alice@ncwildflower.org
www.ncwildflower.org

OHIO

Central Ohio Native Plant Society
(Chapter of Ohio NPS)
1411 Cambridge Rd
Columbus, OH 43212
614-488-3671
www.hcs.ohio-state.edu/hcs/
webgarden/wgn/native.html

OHIO

Cincinnati Wild Flower
Preservation Society
(Chapter of Ohio NPS)
8 Tanglewood Lane
Cincinnati, OH 45224
513-761-2568
cwfps@worldnet.att.net
<http://home.att.net/~cwfps>

OHIO

Native Plant Society of
the Miami Valley
(Chapter of Ohio NPS)
444 Acorn Drive
Dayton, OH 45419
947-698-6426

OREGON

Native Plant Society of Oregon
P.O. Box 902
Eugene, OR 97440
president@NPSOregon.org
www.NPSOregon.org

PENNSYLVANIA

Muhlenberg Botanical Society
Franklin and Marshall Coll.
North Museum
P.O. Box 3003
Lancaster, PA 17604-3003
<http://home.djazzd.com/jpwolff/index.html>

RHODE ISLAND

Rhode Island Wild Plant Society
P.O. Box 114
Peace Dale, RI 02883-0114
401-783-5895
office@riwps.org
www.riwps.org

OHIO

Mohican Native Plant Society
(Chapter of Ohio NPS)

1778 Dougwood Drive
Mansfield, OH 44904
419-774-0077
mklein@neo.rr.com

OHIO

The Botanizers
(Chapter of the Ohio NPS)
The Wilderness Center
4134 Shelby Circle
Worcester, OH 44691
www.wildernesscenter.org

PENNSYLVANIA

Botanical Society of
Western Pennsylvania
5837 Nicholson St.
West Newton, PA 15089
724-872-5232
www.pcee.org/default.asp

PENNSYLVANIA

Pennsylvania Native Plant Society
1001 E. College Ave.
State College, PA 16801
falene@ceinetworks.com
www.pawildflower.org

SOUTH CAROLINA

South Carolina Native Plant Society
P.O. Box 21266
Charleston, SC 29413
843-928-4001
brubaker@scnps.org
www.scnps.org

OHIO

Native Plant Society of
Northeastern Ohio
(Main chapter of Ohio NPS)
640 Cherry Park Oval
Aurora, OH 44202
330-562-4053
groups.msn.com/nativeplantsocietyofnortheasternohio/-homepage

OKLAHOMA

Oklahoma Native Plant Society
Tulsa Garden Center
2435 S. Peoria
Tulsa, OK 74114-1350
918-496-2218
www.dir.gardenweb.com/directory/onps

PENNSYLVANIA

Delaware Valley Fern &
Wildflower Society
1030 Limekiln Pike
Maple Glen, PA 19002
215-723-3639
alice-simonson@webtv.net
www.dvfw.com

PENNSYLVANIA

Philadelphia Botanical Club
Academy of Natural Sciences
1900 Benjamin Franklin Parkway
Philadelphia, PA 19103-1195
215-299-1192
www.acnatsci.org/hosted/botany_club/

SOUTH DAKOTA

Great Plains Native Plant Society
P.O. Box 461
Hot Springs, SD 57747
www.gpnps.org

SOUTHEAST

Southern Appalachian Botanical Society
 Newberry College, Biology Dept.
 2100 College
 St. Newberry, SC 29108
 803-321-5257
www.sabs.appstate.edu

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Native Plant Society of Texas
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 Georgetown, TX 78627
 512-868-8799
dtucker@io.com
www.npsot.org

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 Warren Road, Box 327
 Eden, VT 05652
 802-635-7794
www.vtbb.org

WEST VIRGINIA

West Virginia Native Plant Society
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www.wvnps.org

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www.vnps.org

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 Wisc.Acad. Arts, Sciences
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<http://wisplants.uwsp.edu/BCW/>

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Lady Bird Johnson Wildflower Center
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 512-292-4200
nwrc@onr.com
www.wildflower.org

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 New England Wild Flower Society
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www.newfs.org

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 Seattle, WA 98115
 206-527-3210
wnps@wnps.org
www.wnps.org

WYOMING

Wyoming Native Plant Society
 P.O.Box 2500
 Laramie, WY 82073
www.uwadmweb.uwyo.edu/wyndd/wnps_home.htm

Government Agency Conservation Programs

Following are agencies, both federal and state, that may have programs and grants to assist you in the development of your Botanical Sanctuary.

ATTRA - National Sustainable Agriculture Information Service is managed by the National Center for Appropriate Technology (NCAT) and is funded under a grant from the United States Department of Agriculture's Rural Business-Cooperative Service. It provides information and other

technical assistance to farmers, ranchers, Extension agents, educators, and others involved in sustainable agriculture in the United States. P.O. Box 3657, Fayetteville, AR 72702 phone: 800-346-9140 (7am to 7 pm Central Time)

website: www.attra.org

Farm Service Agency - Part of the US Department of Agriculture; administers a variety of Conservation Programs. U.S. Department of Agriculture - Farm Service Agency, Public Affairs Staff, 1400 Independence Ave., S.W., STOP 0506, Washington, DC 20250-0506

website: www.fsa.usda.gov

National Civilian Community Corps (NCCC)

- Provides a residential service program for young Americans to work in teams of 10-12 for several days at a time. Each year, AmeriCorps*NCCC engages teams of members in meaningful projects in communities across the United States. Service projects, which typically last from six to eight weeks, address critical needs in education, public safety, the environment, and other unmet needs. Members tutor students, construct and rehabilitate low-income housing, respond to natural disasters, clean up streams, help communities develop emergency plans, and address countless other local needs. AmeriCorps, 1201 New York Avenue, NW, Washington, DC 20525, phone: (202) 606-5000, e-mail: questions@americorps.org

website: www.americorps.gov

National Recreational Trails - The National Recreation Trail Program supports designated NRT's with an array of benefits, including promotion, technical assistance, networking and access to funding. Its goal is to promote the use and care of existing trails and stimulate the development of new trails to create a national network of trails and realize the vision of "Trails for All Americans." American Trails, P.O. Box 491797, Redding, CA 96049-1797, phone: (530) 547-2060, fax: (530) 547-2035, email: trailhead@americantrails.org

website: www.americantrails.org

Natural Heritage Program - State programs that inventory, catalogue, and support conservation of the rarest and the most outstanding elements of the natural diversity of each state. Contact NatureServe at www.natureserve.org to find programs near you. Each state has a NHP, but they are administered by different offices for each state. See also your state's Department of Natural Resources. NatureServe's home office: 1101 Wilson Boulevard, 15th Floor, Arlington, VA 22209, phone: 703-908-1800. fax: 703-908-1917

SCORE = Senior Core of Retired Executives - SCORE "Counselors to America's Small Business" is a nonprofit association dedicated to entrepreneur education and the formation, growth and success of small business nationwide. SCORE is a resource partner with the U.S. Small Business Ad-

ministration (SBA). They are a great source of free and confidential small business advice for entrepreneurs.

website: www.score.org

Small Business Administration provides many resources for small businesses, from starting out to marketing, loans and lots more.

website: www.sba.org

State Departments of Environmental Conservation - Municipalities, local or regional government agencies, nonprofit organizations and citizen groups can receive grants for environmental restoration projects. Contact the DEC for your state through the phone book listings or internet.

State Forest & Parks Departments - State Forest & Park Services sometimes have programs for Recreational Trail Grants and other activities. For contact information consult your local phone book under state listings.

USDA Natural Resources Conservation Service (NRCS) - WHIP (Wildlife Habitat Improvement Program) - Through WHIP you can obtain technical and financial assistance to landowners and others to improve wildlife habitat, especially wetland areas. Natural Resources Conservation Service, Attn: Legislative and Public Affairs Division, P.O. Box 2890, Washington, DC 20013. There is a lot of information, technical resources, programs, local office contacts, etc. on their website.

website: www.nrcs.usda.gov

US Dept. of Fish and Wildlife - The U.S. Fish and Wildlife Service's mission is to work with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. Lots of info available on their website. 1849 C Street, NW, Washington, DC 20240, phone: 800-344-WILD (between 8:00 AM and 8:00 PM Eastern Time, Monday through Friday).

website: www.fws.gov

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Fern Hill Nursery – *photo Devon Bonady*



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