UpS is a non-profit education organization dedicated to preserving native medicinal plants.

Re-Wilding the West

Ocotillo
Ginseng Expo
Osha
Chaga

Lewis & Clark’s Influence on Echinacea

Wu Wei Zi

The Plight of Peyote
Re-Wilding the West
by UpS Executive Director, Susan Leopold, PhD

The cover picture of this issue is that of the Vochol.1 I spotted this work of art on display this past summer at the Denver Airport, one stop of many on this VW’s global world tour. When I saw this work of art, I thought of two cultures—one that is grounded in a sense of place, that of the Huichol (the art work) and the cultural time of the 1960s (the iconic VW bug), when the call of those seeking a spiritual road trip often led them westward. It is this western direction that we all seek at some point in our lives often in the form of our own unique rite of passage or vision quest. Many of us come from no distinct cultural identity such as the Huichol culture represents, yet United Plant Savers is a group of individuals that has reconnected with plants due to some moment in their lives when a spark was ignited. As a collective group of plant people, we have all witnessed, in one way or another, the need for conservation of these native medicinal plants we have all come to cherish.

Re-Wilding the West is this year’s theme for our annual Journal. The idea of re-wilding is not that the western landscape needs to re-wild, it is that our knowledge of tending these wild places needs to grow if we are going to protect and conserve critical habitat. The Vochol represents many wonderful aspects of the theme Re-Wilding the West because it shows a shift in understanding and acceptance of the cultural significance of healing plants and, in this case that of peyote. Displayed for all to see in the Denver Airport, this iconic work of art was there to educate and open our hearts. For me it symbolized that we are in the midst of a paradigm shift that has a western breeze, bringing a sense of maturity to how we understand the relationship between humans and plants.

Commissioned by the Museum of Popular Art, the Vochol brings to life the remarkable work of two Huichol artisan families that spent over 9,000 hours covering this classic VW with more than two million glass beads. The beaded peyote stitching that wraps every inch of the VW represents the animals and plants that are of extreme importance to the Huichol culture of the Mexican lands where peyote is collected and consumed as a healing pilgrimage. Here in the U.S. the Native American Church is allowed to use peyote in ceremony protected under the religious freedom act, and it grows naturally in its native range in parts of Texas. Peyote is on the UpS “At-Risk” list, and concerns over its habitat and ability to regenerate after sustained harvesting are detailed in an article spearheaded by Martin Terry. His research looks to further understand the regeneration and long-term sustainable harvest of this amazing cactus, and in addition Terry has looked at the conservation needs of many other native cacti that thrive in this vastly unique and fragile landscape. Terry has started the Cactus Conservation Institute, to continue to advocate and conduct research to ensure these plants continue to have a home.

Kiva Rose submitted an herbal overview of ocotillo (Fouquieria splendens) using her poetic voice to place you in the ecosystem of Guadalupe’s torch, that of the Sonoran and Chihuahuan deserts of Arizona and New Mexico. Like the cactus habitat found in Texas, Kiva’s article highlights the unique plants that appear in these dry vast regions of the U.S. that are so different from our more common eastern forests.

This year’s Journal has many wonderful contributors who highlight important western medicinal plants on our “At-Risk” list. Phyllis Hogan and Jessa Fischer from the Arizona Ethnobotanical Research Association, wrote about the significance of osha (Ligusticum porteri) in the western landscape and herbal traditions. Kelly Kindscher contributed an article about how Lewis and Clark, on their historic journey west noted the importance of echinacea while crossing the magical prairie lands. It is also important to mention a project that was done as an online exhibit that highlights the life of Lucy Marks, Meriwether Lewis’s mother, who was a locally known healer in her day. She most certainly may be a clue to Lewis’s understanding of medicinal plants and his interest in...
learning from the Native people as he traveled west. He noted in his journal those plants that provided “rations and remedies” along his journey that were no doubt critical to Lewis and Clark’s success and survival. The online exhibition in regards to his mother's life of healing is highlighted by the work of several artists who depict the medicinal plants Lucy would have likely used in her herbalism. To read about her story and explore the amazing artwork of native medicines see the website below.

I was able to travel out to Kansas this past year to check in on the UpS “At-Risk” tool that is being worked on by Kelly Kindscher, PhD, Rachel Crafts from the University of Kansas and Lisa Castle, PhD from Southwestern Oklahoma State University. Together we will be presenting on the “At-Risk” tool at this year’s Ethnobiology Conference in Denton, TX. The tool will soon go into publication and on the UpS website. It can then be used to review native medicinals when concern is raised, such as in the article submitted by Stephen Byers about the medicinal mushroom chaga (*Inonotus obliquus*) and, of course, concern for other plants that are potentially at risk.

While out west I had the once in a lifetime opportunity to hear Wendell Berry speak at the Land Institute. A true elder in the understanding of sense of place, Wendell Berry in 2012 received the highest honor for a distinguished intellectual achievement, the invitation to deliver the Jefferson Lecture. His essay “It all turns on Affection”, written specifically for this event is a brilliant and poetic reflection of Wendell Berry’s quest to understand the environmental problems of today and to reflect on our future though the meaning of affection. “Knowledge without affection leads us astray. Affection leads by way of good work, to authentic hope.” Wendell Berry’s insight into what drives us to do good work, the knowledge that is acquired in the process and the true affection that makes us hopeful are part of a thread that I feel connects us to the land. I see this thread of affection and connectivty when I travel looking at how plants influence the history of the landscape.

For me the element of three often appears, and while traveling and learning the history of the landscape this past year, a triangle connecting various places and species became apparent. This fall while traveling out to Hawaii for the UpS sponsored International Sandalwood Symposium, the element of three was the connection between ginseng, sandalwood and seals. In 1823 Charles Hammatt arrived in Honolulu from Boston with the task of securing sandalwood for the China trade. Americans were limited with what they could bring to China to trade for tea, silk, porcelain and other things. There were hopes that American ginseng would be a valuable export, but it had not reached that capacity, so when news hit Boston of the successful first sale of sandalwood in Canton, Charles Hammatt was sent to negotiate a deal with King Kamehameha II—a ship in exchange for sandalwood. When I left Hawaii, stopping over in Northern California, I encountered Fort Ross, the first state park established in 1906, named Ross short for Russia. This port was where all sort of pelts were collected, and then on the way to China these ships stopped in Hawaii to get supplies and trade for sandalwood. Not only was Hawaiian sandalwood being cut to near extinction, but the sea otters were facing a similar fate being killed for their pelts.

The Russian-American company that founded Fort Ross introduced a moratorium on seal and otter hunting, establishing the first marine-mammal conservation laws in the Pacific. So here we have three species: sandalwood, seals and ginseng, and what they all have

continued on page 4
This past year we launched our first e-bulletin as a means to more frequently inform our members of important events and news and cut down on printing costs.

We highlight our efforts in regards to Outreach, Activism, and Community. After we sent out our first e-bulletin, we had a member, Kay Parent email us back this wonderful poem:

awoke this morning at first light to the new bulletin happiness and joy oozes all over it even though the topics are serious a sense of inner joy with nature spirits & us you have captured the essence of UpS and that which is the basic foundation of Rosemary’s cellular structure here, here

To join the list to receive the quarterly e-bulletin is free. You can sign up from the Homepage of our website.

You can also join our Facebook group page where lots of great information is shared by our growing network of people who care about plants.

Please help spread the word about United Plant Savers and encourage others to join and become members! in common is that they share a long history of being in demand for purposes of international trade. American ginseng would soon become very popular among markets in China, and though it is on Appendix II of CITES, the American Ginseng Expo, held in North Carolina in 2012, demonstrates that still much more work needs to be done. But for Hawaiian sandalwood there still is no protection; in fact, it’s the only place in the world where sandalwood is native/ endemic that there is no regulation of its harvest or trade. As I looked out over the seals sunning on the wild California coast, I thought about how looking forward we could ensure healthy populations of sandalwood and ginseng. This past year has been about bringing awareness to two important plants on our “At-Risk” list – American ginseng and Hawaiian sandalwood, and in 2013 UpS will keep working on these important medicinal plants, as well as many others.

At its peak around the 1830s Fort Ross was a multicultural settlement with individuals from native Siberia, Alaska, Hawaii and the local people of the Kashaya Pomo cultures. Imagine the immense knowledge of such unique cultures engaged in exchange of plant use and skills. Those at Fort Ross were blessed with native flora and fauna that provided abundant food along with a perfect climate for the fruit orchards that the Russians established. The Pomo were especially well known for their basket making skills for which they used sedges, bulrush roots, redwood bark, willow and redbud branches in their weaving. So impressed by these baskets was the naturalist and artist Ilya Voznesenskii he brought them back with him, and they are now on display at the Peter the Great Museum in Russia.

The baskets are a perfect symbol for Wendell Berry’s ideas of affection as a method of engagement and solution, because the materials for the baskets are collected from the wild and lead to a deeper relationship with the natural resources, just as it is with the respectful harvesting of medicinal plants and the art of medicine making. Engagement and solution are well defined by Kat Anderson in her work with the Pomo Indians of Northern California and other tribes featured in her book Tending the Wild. The rewilding movement is a grassroots collective of those who are sharing knowledge of how to use wild plants. In these chaotic times, as we look to live within moderation of our natural resources by being local in how we source our food and medicine, I thought about the Pomo collecting wild acorns in the fall and wild clover in the spring. A food/medicine source that is harvested from the wild speaks to the concept of health sovereignty, protecting our wild places for the native plants that have sustained cultures for generations. How we look to our wild areas in our local ecosystems, as well as how we learn and share knowledge about them will be a determining factor in how we manage and care for them with affection. The west is still an open, vast rolling mountainous wild that draws the human spirit to a state of blissful wanderlust. Enjoy this year’s Journal and be inspired towards engagement and affection as you read about some amazing western medicines.

(Endnotes)
1: http://vocholamap.blogspot.com Official website of this amazing traveling art exhibit
2: www.cactusconservation.org was formed in 2004 is a source of published research in regards to peyote and other endangered plants of the desert.
3: www.azethnobotany.net established in 1983 is a bioregional organization to promote environmental education and ethnobotanical awareness.
4: www.monticello.org/library/exhibits/ucymarks/about/introduction.html website of the online exhibit of Doctress Lucy Marks
We have two species of ginseng that are native to North America, American ginseng, *Panax quinquefolius*, and dwarf ginseng, *Panax trifolius*, the former being “At-Risk” due to loss of habitat and overharvest for trade. Some folk names, similar to its botanical ones, include sang, pannag, red berry, Root of Life (Hutchens), Ren-Shen (Foster), and Garentiquen, “five-leaved cure-all” by the Mohawk (Bergner). American ginseng is a perennial woodland-herb, which favors “north-or-east facing slopes in well-drained humus rich soil”, and is primarily identified by its “bright red two-seeded berries” (Foster), which ripen in late-July through October.

Ginseng was a highly-favored herb by Native Americans and used for fertility, to induce childbirth and help with feminine problems and headaches, by the Cherokee and Crow; as a general tonic and strengthening herb, similar to the Chinese’s use, by the Ojibwa, Menomonie, and Seneca; for sore eyes, earaches and body sores by the Potawatomi and Iroquois, and fresh root for healing wounds by the Creek; for croup and fever as a tea. Ginseng was also used by the Ojibwa, as a good luck charm, and by Meswaki women when mixed with, “gelatin, and snake-meat to lure a husband” (USDA).

Ginseng also became a tradable item and was so between Native Americans and Europeans from the 1700s–1800s, and Jesuit missionaries in Canada to the Chinese around 1718. By 1880, American ginseng had been listed in the *U.S. Pharmacopeia* for 40 years and was used by many an eclectic and homeopath (Bergner). Later, in 1932, Huron Smith stayed with an Ojibwe tribe and noticed their possibly-sustainable harvest of ginseng, “…root when the red berries were mature, but before they were ready to drop. Into the whole from whence the root came, they would thrust the fruiting top”, and in 3-5 years they’d return to find many more (USDA).

With American ginseng still being used for immunity and exhaustion, it has become one of the most popular herbs, along with echinacea, but I fear that if we don’t reverse this process of exporting, and thus overharvesting (see CITES treaty), that we’ll escalate past this: By 1989, “over 2,350,510 pounds of cultivated ginseng…valued at $54,299,600, while over 203,440 lbs of wild root were exported, valued at… $18,867,000”.

We must preserve this herb for fear of losing a unique indigenous and ancient medicine, and with that, part of our North American culture, be it Native American, or natural medicine practitioners.

For information regarding growing, preserving and using alternatives to American ginseng:

- [http://dnr.wi.gov/topic/endangeredresources/ginseng.html](http://dnr.wi.gov/topic/endangeredresources/ginseng.html)
- [www.cites.org/](http://www.cites.org/)
- [Planting the Future, edited by Rosemary Gladstar](http://www.cites.org/)
- [The Earthwise Herbal by Matthew Wood](http://www.cites.org/)

Jennifer has an herbal blog [www.motherearthliving.com](http://www.motherearthliving.com), including one recently published on Echinacea in December, and her business at [www.etsy.com/shop/ThymesAncientRemedy](http://www.etsy.com/shop/ThymesAncientRemedy).
A vibrant patch of arnica, with flowers radiant in the summer sun, is a lovely focal point of the apothecary garden. In herbal medicine, arnica is among the most useful of remedies. The tincture or oil infusion of the dried flowers, applied topically, is an effective treatment for blunt traumatic injury, strains and sprains. The herb is an effective discutient, increasing circulation and helping dispel morbid matter – swelling goes down, bruises dissipate. Since antiquity, arnica (Arnica spp.) has been combined with calendula (Calendula officinalis) and St. John’s wort (Hypericum perforatum), a dynamic threesome that assuages pain, fights infection, promotes nerve reparation and speeds healing, a formula that proves useful to this day.

Arnica montana (mountain arnica), the endemic European species, is considered official. However, other species of arnica (there are 28 in North America) are used by local herbalists and appear to be medicinally interchangeable with the official species.

Arnica chamissonis (meadow arnica) enjoys a wide distribution in North America and Europe and is listed in the German Commission E Monograph as a viable substitute for A. montana in herbal medicine. Finding substitutes for the official species is a worthy goal, since populations of A. montana are declining over much of its range.

Collection of flowers for medicinal purposes is illegal in France. The plant is classed as “vulnerable” in Bosnia-Herzegovina, Croatia, Germany, Lithuania and Slovenia. A. montana is variously protected in Czech Republic, France, Italy, and the Ukraine. The plant is listed as “critically endangered” in Luxembourg, “threatened” in Sweden, and “extinct” in Hungary. Collection of flowers and roots for medicinal purposes, combined with encroaching agriculture and urbanization have contributed to depopulation of the wild stands, creating shortages of the herb in commerce. Under the circumstances, it makes sense to grow arnica and arnica analogs, and this is precisely why United Plant Savers has chosen arnica for the spring seed giveaway.

We’re supplying 100% certified organic seed of Arnica montana, Arnica chamissonis, and the “arnica analogs”, Helichrysum italicum and Calendula officinalis. In this seed set, there is certainly a little bit of something for every gardener. Those living at altitude will do well to concentrate on the A. montana, which makes large flowers that are easy to pick and make lots of medicine. Those living at lower altitudes might have better luck with A. chamissonis, which is a bit easier to grow. Given a suitable soil and sun exposure, this plant will thrive even at sea level. Helichrysum italicum (curry plant) is native to the Mediterranean and grows well in hot, dry climates with mild, wet winters. The herb is anti-inflammatory, fungicidal and astringent. The yellow flowers of Helichrysum are pretty and aromatic, very good in dried arrangements, and can be distilled, tinctured or infused in oil to make the medicine. Everybody knows calendula, and we’re offering our nicest large-flowered orange calendula, the easiest of all herbs to grow, and one of the finest medicinal herbs to know.

Arnica seeds respond well to standard flower seed propagation methods. Prepare a light seeding mix that is free of lime and contains sand, forest loam and peat moss (or coir). Press the seeds into the surface of the soil or barely cover and tamp, and then keep the flat warm, in the light, and evenly moist until germination, which occurs in 1 to 3 weeks. The seedlings will be quite small and slow growing at first. Once they are large enough to handle, individuate into pots and tend them for up to a year before transplanting out to the garden. Once a good patch is established, it is fairly easy to produce more plants by means of division. Dig a rhizome, pot it up, and aerial parts will soon appear.
Arnica enjoys a full sun exposure and loose, moist to mesic, acidic soils. The plant is intolerant of lime. Because it is rhizomatous (reproducing by way of underground creepers), it quickly populates a raised bed with a dense, monotypic stand. We have found that amending the native soil with compost, coir, peat, and sand, making a very loose mix that can easily be penetrated by the runners, helps promote the spread of Arnica and will result in a good yield of medicinal flowers in the fall of the first year, in the summer of the second year and for years thereafter. Harvest the flowers in early flowering stage and dry on screens in a warm, dark and well ventilated place. Dry until crispy. It is a good idea to use the flowers soon after drying, as they tend to get buggy in storage.

Arnica is apomictic, meaning that seed formation is initiated asexually by spontaneous division of the gamete prior to the blossoming phase. The plant does not require pollination in order to make viable seed, and every seed will produce a plant identical to the mother plant. For the purpose of seed saving, this means that there is no need to collect seed from a minimum number of individuals, and there is no concern about hybridization with other species – the seeds you harvest will remain true and strong whether harvested from one seed head or a thousand. So feel free to grow your Arnica and save your own seed – nature needs your help!
A Candle in the Desert: The Healing Heart of Ocotillo

The desert has a raw poetry that peels back the visitor’s skin, exposing shimmering bone and raw sinew until finally, there is nothing else. Veins of turquoise and chrysocolla thread through stone and stun me into silence. My hands still smell like Larrea resin and red clay, while the mesas, buttes, and crumbling redrock spires surround me and remind me what home is.

This place where the mountains and deserts of Arizona and New Mexico meet, where the ocotillo flowers stand scarlet against the rising moon and osha coils its roots down into the stony soil of the Mogollon Rim, is a landscape fallen from a storybook or carved from an ancient myth. While many use the word “barren” when describing or imagining the American Southwest, nothing could be further from the truth. The deserts and forests of southeastern Arizona and southwestern New Mexico are actually some of the most biodiverse landscapes in North America.

Even in the Sonoran Desert, set ablaze with wildflowers after a rain, there are few sights as striking as the ocotillo (Fouquieria splendens) in flower. Its scarlet blossoms burst from twelve foot wands adorned with multi-colored thorns and small waxy leaves. Growing at the base of mountains jutting out of the wild deserts of the American Southwest and Mexico, La Guadalupe’s Torch is a sign of healing and heart in even the most extreme of landscapes.

The common name of ocotillo stems from the Náhuatl word ocotl, meaning “torch”, an apt name considering its brilliant flowers and towering stature. Whenever I see this plant in flower, I think of Guadalupe striding through the desert, her torch held high to show the way to the profound medicine found at the heart of this land. Prickly as it may be, the healing power of the Southwest is intense and undeniable.

Ocotillo is found in the desert, canyon, and foothill regions, generally below 5,000 feet in the deserts of the U.S. but occasionally up to 9,500 feet. I have personally experienced the plant primarily in the Sonoran and Chihuahuan deserts of Arizona and New Mexico and speak from my experience rooted in those ecosystems. Appearing to be a haphazard array of thorny, crooked sticks for much of the year, ocotillo only unfurls its leaves once the rains come. These flame flowered plants are amazingly well adapted to their arid surroundings, and leaf growth can be initiated a scant 24 hours after a rainfall. Their leaves are semi-succulent and waxy. Their sour-sweet flavor and slightly bitter aftertaste are so intriguing, that when I’m processing the plant’s branches for medicine, I often get distracted eating them. A number of birds and insects, including several species of hummingbird, are attracted to the sweet nectar of Fouquieria’s blossoms.

Blossom, Root & Thorn: Plant Parts Used

While the bark seems to be the only part of the plant in common use in mainstream American herbalism by Anglos, all parts of the plant have been utilized traditionally and have value as medicine, fiber, and food. In fact, when I have been taught about this plant by local New Mexico and Arizona Hispanics, they have almost invariably referenced the flower rather than the bark. I have also known several Apache grandmothers to prefer the root over any other part, which speaks both to the versatility of the plant and the diversity of cultural traditions and habits. I work with all parts of the plant, including the curved thorn, preferring to integrate all possible facets of the plant and its medicine into my healing work.

Coughs & Colds

The flowers as well as the bark have long been used to treat spasmodic coughs, and while their action is fairly mild, it is consistent and widely applicable. I frequently use an elixir made of flowers, leaf, and bark extracted into honey and alcohol to treat the dry, hacking coughs common in my mountain village each winter. Since the plant is also a lymphatic decongestant, it’s especially helpful in seasonal colds accompanied by persistent, spasmodic cough and hypoimmunity indicated by swollen glands, chronic sore throat, and the tendency to catch every bug that comes around.
Pelvic Congestion

The bark is best known as a pelvic decongestant, and this is indeed where it tends to shine in clinical practice. Southwest herbalist Michael Moore said of ocotillo:

I have also found it useful in some cases of what is commonly diagnosed as interstitial cystitis, a frequent urge to urinate and accompanying discomfort, but with little actual fluid in the bladder. In the cases where ocotillo will be most effective, it will be accompanied by at least some of the typical signs of pelvic congestion, including varicosities, constipation with hemorrhoids, a feeling of fullness in the abdomen and/or groin, and an inability to efficiently digest fats. Along these same lines, local Hispanics sometimes recommend the use of ocotillo bark in the treatment of bladder infections. It can certainly help alleviate the symptom of feeling unable to urinate even when the bladder is full. Ocotillo frequently finds its way into my formulae for prostatitis and similar conditions, and I find that it tends to increase the effectiveness of other commonly recommended herbs for this ailment, especially nettle root and saw palmetto. Again, look for the signs of pelvic congestion common to benign prostate inflammation and enlargement, including a feeling of fullness in the groin and difficulty urinating.

Local regulations when harvesting. It’s often best to harvest from private land, or where it’s being dug up anyway for development purposes. If you plan to have a long term alliance with this herb, you may wish to cultivate it from a harvested branch. This is also a great way to be sure the plant continues to thrive and proliferate. This is a long lived perennial, and adult plants can easily be over a hundred years old, so treat ocotillo with respect and care when gathering it. Please note that harvesting branches, flowers, or leaves from the plant in a sensible manner doesn’t harm the plant at all, but be sure to make a clean cut and do the least possible damage to the surrounding tissue. Also remember that this plant, while common in its range, is only native to a small portion of the United States.

Preparations

The medicine of ocotillo bark tends to be best extracted via alcohol, although decoctions are a traditional preparation throughout the American Southwest. The flowers may be prepared as an alcohol tincture, an infused honey, an elixir (alcohol and honey), or as a tart and tasty beverage tea.

Consideration & Contraindications

There is no known toxicity in reasonable amounts as a food or medicine, but due to its blood moving nature, this is not an appropriate herb during pregnancy.

Resources & References

Austin, D. Baboquivari Mountain Plants: Identification, Ecology, and Ethnobotany.
Garcia, C. Healing with Medicinal Plants of the West.
Hodgson, W. C. Food Plants of the Sonoran Desert.
Moerman, D. Native American Ethnobotany.
Moore, M. Los Remedios.
Moore, M.- Medicinal Plants of the Desert & Canyon West.
Limitations to Natural Production of Peyote: 
Lophophora williamsii

by Martin Terry, Teodoso Herrera, Keeper Trout, Bennie Williams and Norma Fowler

This article was recently published in 2012 in the Journal of the Botanical Research Institute of Texas. The full article is available on the www.cactus-conservation.org website. The article is shortened for our Journal and excludes the methods section and some aspects of the data and discussion. The website of the Cactus Conservation Institute is an amazing source of information, and we would like to applaud the efforts of the organization to protect native plants of such a unique and fragile environment. This study is monumental because it clearly demonstrated over a four year period that peyote is a classic case of over harvesting of a wild medicinal plant and in this case a cactus. Peyote can be easily cultivated, and our hope is that this study will help encourage a shift from wild sourced peyote to cultivated, but this will take action from regulatory agencies to clarify the rules and regulations in the handling of this sacred medicine.

Effects of Repeated Harvesting at 2-Year Intervals in a South Texas Population

Abstract
In 2008 we began a long-term study of the effects of harvesting on a wild population of the cactus Lophophora williamsii (peyote), including harvesting treatments similar to those used to harvest it for legally protected religious use by members of the Native American Church. Here we assess the effects of harvesting in three different treatments: (1) plants that were harvested once, (2) plants that were harvested every two years (typical of commercial harvesting rates), and (3) control plants that were never harvested. After four years, the survival rate was significantly greater in the unharvested control plants (94%) than in the harvested plants (73%). Average harvested mass of fresh tissue per plant decreased significantly (by 44%) between the first and second harvest, and then further decreased significantly (by 32%) between the second and third harvests. The average number of crowns per plant, which increased after the first harvest, decreased after the second harvest. Estimated total volume of the above-ground crown(s) of each plant, which was closely related to harvested plant mass, was used to compare growth rates between treatments. The average growth rate of the multiple-harvest plants was significantly lower than the average growth rates of plants in the other two treatments. Growth rates in the control and single-harvest treatments did not differ significantly in 2012, but because the single-harvest plants were so much smaller than the control plants in 2010, they remained smaller than the control plants in 2012. The annual number of crowns harvested and sold commercially as “buttons” by licensed peyote distributors continued its slow decrease in 2011, while the price per unit continued to rise. These trends and the results of this study all indicate that present rates of peyote harvest are unsustainable.

Introduction
Lophophora williamsii (Lem. ex Salm-Dyck) J.M. Coult. (Cactaceae), known as peyote both in Spanish and in English, is a small cactus (rarely exceeding 10 cm in diameter) of northeastern Mexico and adjacent border areas of Texas. The aerial crowns of plants are approximately hemispherical in shape. Some plants are caespitose; i.e., they have multiple crowns arising from a single rootstock. The literature on the biology of this plant up to the mid-1990s is summarized by Anderson (1996), who first suggested that the species might be endangered by overharvesting (Anderson 1995).

There is active commercial trade in the harvested crowns of peyote, which are collected and sold by licensed distributors to the Native American Church (NAC) for religious use as protected by U.S. law. There is substantial concern that the rate of harvest of peyote from wild populations is not sustainable. Anecdotal reports by members of the NAC include descriptions of the decline or decimation of natural populations and a decrease in both the availability and the quality of peyote being offered for sale in the regulated peyote market (TH, pers. obs.). A number of papers in the scientific literature have described the decline of peyote in its native habitat, apparently due to overharvesting (Anderson 1995; Trout 1999; Terry & Mauseth 2006; Powell et al. 2008; Terry 2008 a,b,c; Terry et al. 2011). Despite such reports involving both Texas and Mexican populations, the species is not (yet) considered in danger of extinction (NatureServe 2012; Fitz Maurice and Fitz Maurice 2009), except in Texas, where NatureServe determined it to be in the S4 (imperiled) category. The work of Terry et al. (2011) was the first experimental investigation of the effects of harvesting on peyote plants in situ. In that paper we reported the effects that were detectable two years after the initial harvest. The present report focuses on effects detectable four years after the initial harvest.

Results
Survival. – Of the 100 plants of the initial (2008) census, 4 (2 control, 2 harvested) were dug up by feral hogs and were therefore dropped from all further analyses, leaving 96 plants. Of these 96 plants, 6 (1 control, 5 harvested) died before the second (2010) census. Ninety plants were still alive in 2010 (census 2): 47 control plants and 43 plants that had been harvested in 2008. Of these 43 surviving plants that had experienced one harvest, 23 were assigned to
Peyote shows many of the hallmarks of a classic case of unsustainable harvesting of a wild resource. First, the decline in total harvest combined with an increase in price/unit is characteristic of overharvested wild species (cf. Fig. 1 in Schippman et al. 2002). A declining number of wild plants is a likely explanation for the failure of the harvest to increase in response to the increase in unit price (because a declining population causes decreases in “catch” per unit of harvesting effort, so that increasing the harvest is financially unrewarding even if there are still individuals to be harvested (Hilborn and Walters 1992; Thurstan et al. 2010). Second, there are anecdotal reports of declining unit (button) size (TH, pers. obs.). Declining body size is another classic indicator of overharvesting (Stergiou 2002; Berkeley et al. 2004; Genner et al. 2010). Third, there are anecdotal reports of declining quality of the harvested buttons (TH, pers. obs.). Fourth, the harvesting frequency (every other year) shown to be unsustainable by the present study is typical. Finally, our results may underestimate impacts of harvesting, as our harvests may have been less damaging to individual plants than a commercial harvest, due to the care taken in the harvests of this study.

As far as we are aware, this study is the first well documented case of overharvesting of a cactus species (but see Jiménez-Sierra and Eguiarte 2010, in which browsing was also involved). It is also one of a limited number of well documented cases of overharvesting of non-timber plant species in general. Most well documented cases of overharvesting of wild resources involve marine and freshwater species (Jackson et al. 2001; Allen et al. 2005; Genner et al. 2010). There are detailed reports of overharvesting of many tree species (e.g., Schwartz et al. 2002; Schulze et al. 2008). There are some detailed reports of overharvesting of herbaceous plant species, of which ginseng (*Panax quinquefolius*) is perhaps the best documented (Nantel et al. 1996; McGraw 2001; Case et al. 2007; McGraw et al. 2010). However, many hundreds (at least) of other plant species are threatened by overharvesting, especially plant species harvested for medicinal uses (Schippman et al. 2002), for lumber (Oldfield et al. 1998), or for collectors (Oldfield 1997).
The regulatory panorama

At the moment there are only two major interested parties with any standing in the discussion about the fate of peyote in its natural habitat: (1) the Native American Church (NAC), whose right to consume peyote for religious purposes is protected by legislation such as the American Indian Religious Freedom Act (AIRFA), and (2) the Drug Enforcement Administration (DEA), which is obliged by the Controlled Substances Act to regulate the use and distribution of peyote by and for the NAC, and to prevent the diversion of peyote to non-persons. Neither of these parties is speaking very audibly about regulatory solutions to mitigate the deteriorating state of the wild peyote populations. This is unfortunate, as the problem has a feasible solution, namely the regulated cultivation of peyote by and for the NAC, which would reduce authorized persons. Neither of these parties is speaking very audibly about regulatory solutions to mitigate the deteriorating state of the wild peyote populations. This is unfortunate, as the problem has a feasible solution, namely the regulated cultivation of peyote by and for the NAC, which would reduce the harvesting pressure on the wild populations (as in, e.g., Kay et al. 2011). Furthermore, this solution is technically within reach (Chandra et al. 2006) and culturally acceptable (TH, pers. obs.) The barrier to bringing this solution to fruition is essentially a regulatory one. Cultivation of *L. williamsii* is anticipate in the American Indian Religious Freedom Act (as amended 1994), which “...does not prohibit such reasonable regulation and registration by the Drug Enforcement Administration of those persons who cultivate...peyote....”

But to date no interested party (e.g., the NAC of North America) has petitioned the DEA to promulgate any such “reasonable regulation” spelling out the details for such registration. Pending such action, cultivation of peyote, though not illegal, lacks the needed regulatory framework to provide legal certainty and protection for NAC members who would prefer to produce their own sacrament by cultivation rather than continuing to overharvest the wild populations. Until such time as the NAC and the DEA negotiate specific regulations to govern cultivation, the harvesting pressure on the wild populations can only increase.

But let us assume that the current level of unsustainable harvesting pressure is maintained, and that populations of peyote continue to produce steadily decreasing yields, as demonstrated in this study. Under the current system – which can accurately be described as “management by extirpation” – at some point the conservation crisis will become so critical that the U.S. Fish and Wildlife Service who will be obligated by the terms of the Endangered Species Act to evaluate the conservation status of the species *Lophophora williamsii*. At that point the regulatory situation will become substantially more complex. If a regulatory stalemate then ensues the NAC’s options may broaden (or narrow) to include the Supreme Court and/or Congress as sources of relief.

REFERENCES


Jiménez-Sierra, C. and L. Eguiarte. 2010. Candy barrel cactus (Echinocactus platyacanthus Link & Otto); a traditional plant resource in Mexico subject to uncontrolled extraction and browsing. Econ. Bot. 64:99–108.


Texas Department of Public Safety. Peyote sales data. Unpublished.


U.S. Department of Agriculture. 2012. USDA Field Office Climate Data for WETS Station at Hebbronville, Texas.

Mt. Rose River Project by Jacqueline Logan

Everything you spray, grow, flush, discard, or dispose of enters your watershed, and this is a major reason why a large percentage of our freshwater systems, including rivers, streams, and lakes are polluted. All of us at Mountain Rose Herbs realized that immediate recovery actions were necessary to further protect and enhance our watersheds, and this is why we created the Mountain Rose River Project, which is a company run grassroots action campaign that is entirely coordinated and funded by Mountain Rose Herbs. Each year we manage 6-8 restoration projects that are fully staffed by paid employees, and these employees are compensated for their work by our Paid Time for Community Involvement Program. Our projects focus exclusively on riparian ecosystems, stream health, and fish habitat, and we work with several organizations and agencies to achieve our goals of total watershed protection. The Mountain Rose River Project conducts the following:

- Planting native trees and shrubs along eroded or compromised river banks. This work is done in partnership with any one of our local watershed councils or land trusts.
- We aggressively pursue hand removal (never chemicals) of invasive species along our river corridors and we currently target English Ivy, Scotch Broom, Japanese Knotweed, and Himalayan Blackberry.

Each year we extract numerous water samples from segments of the Willamette and McKenzie rivers. These water samples are tested for impurities and pollutants, and if excessive quantities are found, we alert the appropriate agency for immediate action and recovery.

We currently remove an average of 500-800 yards of garbage and waste from our watersways.

We are currently enrolled in the ODFW Salmon/Trout Enhancement Program, and we will sometimes assist this agency with fish counts, macroinvertebrate populations, and river conditions.

We have formally adopted a riverside trail, which spans about 4 miles. This trail is known as the “Anglers Trail” and is located between Elijah Bristow State Park and Dexter State Park. We maintain this stretch by removing invasives, planting natives, clearing the waterway of garbage, and upkeep of the riverside trail.

We have formally adopted 2 segments of the Willamette River through the Oregon state program called SOLV. The segments we adopted include the Upper Middle Fork of the Willamette between Lookoutpoint Point and Hills Creek and the section from Elijah Bristow State Park to Dexter State Park.

We have recently finished the enhancement of our industrial campus bio-swale. The headquarters for Mountain Rose Herbs sits on 2 acres of industrial land, and in order for us to prevent all of our wastewater and storm water from entering our public waters, we need the bio-swale to retain it for further filtering and purification. This alone prevents countless contaminants from entering our river systems.

Jacqueline Logan is Media and Public Relations Coordinator for Mountain Rose Herbs. For more information, please visit: www.mountainroseherbs.com/riverproject/
Lewis & Clark’s Influence on Echinacea
by Kelly Kindscher

Lewis and Clark are known to have made the first US expedition to explore what would become the western United States. They should also be known in herbal circles as the first US citizens to ship echinacea (Echinacea spp.) roots and seeds back East from the Great Plains. For the expedition, they were looking for a water route to the Pacific Ocean, knowing they had to cross the Rocky Mountains, and also looking for valuable resources. One resource that they learned about from the Native Americans was the use of echinacea.

In May, 1804 they left from St. Louis and traveled up the Missouri River where they visited the Arikara village (that was located in northern South Dakota) and stayed near the Mandan village (in central North Dakota today) during the following winter. Although Lewis and Clark are viewed as some of the first European-heritage travelers up the river, the Arikara villages and people had already been decimated by smallpox (a European disease). Also, when they were at the Mandan village, an English trader of the North West Company arrived from their Assinboine River outpost in Canada (at present day Brandon, Manitoba). He visited with William Clark and told him on December 16, 1804 about Echinacea angustifolia root as “the cure of a Mad Dog.” Clark wrote in his journal (in quaint language) on February 28, 1805 that in addition to its use for rabies, it also was used for snake bite and other ailments.

Meriwether Lewis was the first person to ship echinacea roots back East from the Great Plains. From their Mandan village camp, he discussed echinacea in his note that accompanied a botanical specimen (which was unfortunately lost), a “parcel of its roots, and seeds that were sent to President Thomas Jefferson. He commented in these notes written on April 3, 1805, that an Arikara chief, who had accompanied them from his village up the river to the Mandan village, had told him that the root “pounded in either green or dried state makes an excellent poltice for swellings or soar throat.”

The echinacea was shipped on one of their small boats, along with other unique wonders of great interest, including many other plant specimens, a live caged prairie chicken, four magpie, and a prairie dog (one magpie and a prairie dog survived the travels and were received by Thomas Jefferson). We don’t know what happened to the echinacea seeds or roots, but Lewis and Clark’s interest in echinacea is noteworthy, especially their effort to document the value of this herbal product to both Native Americans and for future herbal product users.

If you want to read more, Lewis and Clark’s journals are now on line (at the U of Nebraska Press, see: http://lewisandclarkjournals.unl.edu/index.html) and are searchable by key words like echinacea. Also, Thomas Jefferson’s botanical interests were significant and were related to the Lewis and Clark expedition specifically; see: www.monticello.org/site/house-and-gardens/public-treasures-thomas-jefferson-and-garden-plants-lewis-and-clark and www.monticello.org/library/exhibits/lucymarks/medical/periodpractices.html

Kelly Kindscher is well-known for his study of prairie plants. He is the author of two books: Edible Wild Plants of the Prairie (1987) and Medicinal Wild Plants of the Prairie (1992).

Kelly is a former UpS board member, currently working on a UpS-funded “At-Risk” project (which members will hear about soon, with an article in the Journal).
Considering the Commercial Future of Chaga: *Inonotus obliquus*

by Steve Byers

My sustainability alarm went off a few months ago when my mother gifted me a bag of “Chaga Chai.” The label touted its many medicinal benefits, such as its very powerful anti-tumor, anti-oxidant, and anti-viral qualities. It’s true—tradition and modern research prove chaga’s numerous medicinal benefits. Yet, I wondered about the fate of wild harvested chaga populations and the growing market for it in America. After a quick browse of the internet, I discovered other products are being marketed, such as chaga skin creams, encapsulated chaga powder (which is likely to pass through undigested since it needs to be broken down either with hot water or alcohol), and a popular mushroom website exalting chaga as a successful replacement for hops in a homemade beer recipe. Are wild chaga populations able to keep up with this popularity and commercialized demand?

Traditionally, chaga has been used for centuries in Russia and Eastern Europe as an important remedy for cancer, diabetes, TB, arthritis, and heart disease (Winston, 2011). It wasn’t until the 1950s in Russia that chaga became commercially available after receiving approval as an anti-cancer drug called Befungin for treatment of breast, lung, cervical and stomach cancers (Hobbs, 2003). Now that it is gaining global attention, especially in underdeveloped markets like North America, it could be prudent to begin monitoring the commercial harvest of wild chaga. It also seems essential that we not only find ways to cultivate this valuable resource, but also better understand its reproductive cycle and how that is affected when we remove the chaga sclerotium (the crusty, black, and hardened woody mushroom that is a non-sporulating fruiting body) from the tree. Mushroom expert, Paul Stamets recently posted a Youtube video stating, “What scientists do not know is whether or not the removal of Chaga will harm the formation of the spore producing crust. We do know that wild harvesting of Chaga is radically reducing this species’ populations. And since we can grow mycelium - sustainably - while retaining its beneficial properties, please refrain from harvesting wild chaga for commercial purposes.”

A new study has explored the chemical similarities and in-vitro anti-tumor effects of the wild harvested chaga sclerotium, cultivated chaga sclerotium, and the cultivated fruiting body. The fruiting body is the spore reproducing structure found growing briefly on a dead tree or the ground nearby where the sclerotium grew. The cultivated sclerotium extract was found to have the greatest anti-tumor effect, and both the cultivated sclerotium and cultivated fruiting body had the same principal compounds (lanosterol, inotodiol, and ergosterol) as the wild sclerotium (Yong et al, 2011). The study concluded that these cultivated forms could serve as an ideal commercial alternative to the wild chaga. Human clinical trials would also be essential to further affirm the efficacy of these new forms in promoting a shift in harvest practices amongst the greater commercial market.

I interviewed Jerry Angelini, the National Science Educator for Paul Stamets’ company, Host Defense, and asked about the risk of the commercial over-harvesting of chaga in the wild. He explained that the chaga sclerotium isn’t like a plume of maitake; it takes 7-20 years to mature. “We are always wanting to think that species are abundant, and we can harvest as much as we want to. That has gotten us into trouble in the past,” said Angelini. Chaga is not an inexhaustible resource, but it can be cultivated with success. When I asked Angelini if he knew of anyone selling chaga spores, he said, “Spawn plugs are being discussed but since no one has been asking for them, no one is supplying them commercially yet.”

For the time being, it seems that an occasionally and ethically harvested chaga sclerotium for personal use is sustainable. But to meet the growing global commercial demand, it is worth considering our cultivation options.

RESOURCES:
Angelini, J. Phone Interview on 11/27/12 about “Chaga and Sustainable Harvest”

Steve Byers is an herbalist currently living in East Montpelier, Vermont with his wife and daughter. He is a student at the Vermont Center for Integrative Herbalism.
Statement of Purpose

For the benefit of the plant communities, wild animals, harvesters, farmers, consumers, manufacturers, retailers and practitioners, we offer this list of wild medicinal plants which we feel are currently most sensitive to the impact of human activities. Our intent is to assure the increasing abundance of the medicinal plants which are presently in decline due to expanding popularity and shrinking habitat and range. UpS is not asking for a moratorium on the use of these herbs. Rather, we are initiating programs designed to preserve these important wild medicinal plants.

**“At-Risk”**

| American Ginseng | Panax quinquefolius |
| Black Cohosh | Actaea (Cimicifuga) racemosa |
| 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 |
| Sandalwood | Santalum spp. (Hawaii only) |
| Slippery Elm | Ulmus rubra |
| Sundew | Drosophyllum peltatum |
| 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”**

| Arnica | Arnica spp. |
| Butterfly Weed | Asclepias tuberosa |
| Cascara Sagrada | Rhamnus purshiana |
| Chaparro | Casatella 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 marilandica |
| Pipsissewa | Chimaphila umbellata |
| Spikenard | Aralia racemosa, A. californica |
| Stoneroot | Collinsonia canadensis |
| Stream Orchid | Epipactis gigantea |
| Turkey Corn | Dicentra canadensis |
| White Sage | Salvia officinalis |
| Wild Indigo | Baptisia tinctoria |
| yerba Mansa | Anemopsis californica |

Osha

by Phyllis Hogan & Jessa Fisher

It is the new moon in October; I am sitting in my herb store holding a tattered pillowcase with 25 pounds of freshly gathered osha roots. Collected by one of my trusted wildcrafters, I can rest assured that he blessed the roots with prayer offerings, songs, and a heart full of gratitude. He finds the shade-loving plants growing in aspen or spruce forests on the west slopes of mountains in mature stands of conifers. Because of its very narrow habitat requirements, osha (Ligusticum porteri) is extremely difficult to cultivate, which is why he utilizes a technique of *in situ* root propagation to ensure the continued health of the species. He removes the crown of every fourth root and replants it in the same spot where it was picked. Four years will pass, and my collector will revisit the site and find that 80% of...
the plants will have grown new roots, but he will not collect them—not for another four years, allowing eight years to pass before he collects in the same spot. This is sustainable wildcrafting, and as far as I know, only a few folks nowadays follow these honorable methods.

I sprinkle a small amount of cornmeal on the roots as a symbolic gesture, feeding the powerful spirits that accompanied these plants on their journey from western Colorado to my hands in northern Arizona. I sit with the medicine as the aroma of the volatile oils penetrates my skin. I remember the first time I smelled and tasted the roots of *Ligusticum porteri* nearly 40 years ago. A Hopi medicine man, who carried some with him at all times called it bear root (hongyapi). It was his talisman, and now is mine. The large, gnarly-rooted plant is called bear root for a reason—bears love it! Osha to a bear is like catnip to a cat. When they come out of their winter-long hibernation, bears seek out osha root and will rub it all over their body, tasting the pungent plant to help stimulate their sluggish digestion. This gives testimony to a long tradition of belief that animals first discovered the medicinal uses of plants.

Osha is also a bear of a medicine, used and revered by all of the tribes living in the Rocky Mountains, the plains, down south into Mexico where it is called chuchupate, and west and north up into Alaska, where other varieties of *Ligusticum* grow. Osha, being a protector plant, is the first line of defense for many illnesses. It is a traditional remedy for coughs and sore throats, headaches and nausea. It is an effective, reliable expectorant and is one of the best herbs to help your body combat an invading flu virus. The roots have an anodyne effect on the throat, which is why Navajo medicine men, who sing lengthy chants for hours and even days at a time find it immensely valuable. Whenever I travel, I place a small piece of the root between my cheek and gum allowing the juice to trickle down my throat and coat my mouth with a powerful taste that also refreshes my breath.

Osha is in the carrot family, with a beautiful, robust umbel of white flowers and wide, flat, celery-like leaves. Utmost precaution must be used so as to not mistake this plant for its relatives, poison hemlock and water hemlock, which prefer wetter areas. Going to the right habitat and finding osha growing in the wild is one of the most exhilarating mountain experiences one can have. The plant as a medicine retains the qualities of its environment, and holding these damp, fresh roots in my hand is like holding the earth itself. I love osha like a member of my family. This plant is so important to me that I would have a difficult time living without it. Whenever I travel, I take the protection of bear root medicine along. I place a small piece of the root between my cheek and gum allowing the juice to trickle down my throat and coat my mouth with a powerful taste that also refreshes my breath.

Phyllis Hogan is the director and co-founder of the Arizona Ethnobotanical Research Association (AERA) and owner of Winter Sun Trading Company in Flagstaff, Arizona. Jessa Fisher sits on the board of directors of the AERA.

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Robert Dalelogowski.
He looked all of 5 feet 2 inches tall, with piercing, deeply set blue eyes that belied his Cherokee/Creek heritage. His name was Doug, and he worked in maintenance at a state park near Memphis. I was looking for a place to hold herb walks near my home and was introduced to Doug as the person who knew what was growing there. Within 5 minutes of our meeting, Doug pulled out a leather medicine bag from his pocket and poured into my palm some dried berries. “These look like schizandra,” I mused aloud. I tasted one and recognized the familiar pungency of Wu Wei Zi (the Chinese name for schizandra). “Years ago I began to notice this vine, so I went to the library to research what it might be and found out it was Schizandra glabra. These berries are what healed my Hepatitis C,” said my new best friend.

Thus began a friendship and a chronicle of the status of a local population of Schizandra glabra, North American kin to the famed Schizandra chinensis of Traditional Chinese Medicine. Schizandra glabra, also known as magnolia vine, is federally listed as threatened, but because the few populations that exist are well established, it has stayed off the endangered species list. Over the years, Doug monitored the vines closely, checking every summer for dangling clusters of cherry-red berries. Most years between 2000 and 2008, the vines failed to produce more than a few berries, if any at all. I got involved in 2009, going along with Doug on his yearly sojourn into the deep woods to check the harvest. The following year saw enough of a crop to produce about an ounce worth of ruby red tincture, and this year the vines throughout the park fruited outrageously.

I began to look through my own references and could find no record of any historical usage of the plant. An internet search turned up Matthew Valente, a graduate student in biology at the University of Tennessee, Knoxville who wrote his master’s thesis on Schizandra glabra. I contacted Matthew, who graciously sent me a pdf of his thesis. He noted the fragmented distribution of the plant across the Southeastern U.S. For his research, Matthew analyzed 10 populations of schizandra, revealing distinct genetic variability within populations. Like me, Matthew could find no record of any usage by native people. More searching turned up an online article, “Saving the Starvine” from Emory University. Carl Brown, biologist and resident expert at Emory on Schizandra glabra, noted a gap in the ethnobotanical record of the piedmont due to a war between the Creeks and the U.S. at the time early botanists would have been canvassing the area. Brown contacted biologists across the U.S. looking for information regarding historical usage, with no luck.

It is interesting to me to note that two prominent populations of this plant are located in proximity to large metropolitan areas, Atlanta and Memphis. Herbalists have always known that the best medicine grows nearby, and Valente’s observation of genetic variability within populations could be illustrative of this axiom. Hopefully Schizandra glabra will get the attention and study it deserves.

Schizandra glabra seeds are available from Horizon Herbs.

References
‘Clonality and Genetic Diversity Revealed by AFLPs in Schisandra glabra, (Brickell) A Rare Basal Angiosperm,’ Matthew Valente

Glinda Watts, AHG is a Lightworker and Herbalist living somewhere in Middle Tennessee.
An historic event took place in Mills River, North Carolina (outside Asheville) in early December, 2012 when the North Carolina Natural Products Association held a “wild and wild-simulated” American Ginseng Exposition. This gathering accomplished a number of “firsts”. It was the first “wild” American ginseng conference that excluded cultivated and sprayed woods-grown plants. The conference was also unique in that it had a well-received “value-added” American ginseng panel geared toward export of value added products instead of roots, demonstrating the potential for expansion in the American and international markets. The expo was also the first time Bob Beyfuss, Scott Persons, Dr. Jeanine Davis, and Robert Eidus were together discussing their knowledge of wild-simulated American ginseng. The event was dedicated to Andy Hankins, who recently passed away. Andy was an extension agent for the state of Virginia. He taught at UpS events and helped many small farmers start ginseng, among many other incredible projects geared towards small farms, such as cut flowers and herbs. You can read about Andy Hankins and his research at http://pubs.ext.vt.edu/author/h/hankins-andy-res.html.

Three staff members from Washington, DC regulating agencies were there and were excited about wanting to see efforts towards a “wild-simulated” American ginseng conversation program. A wonderful presentation was given by the West Virginia ginseng coordinator about a three-year old “wild-simulated” ginseng program that has been very successful. West VA is leading by example of what states can do if they are serious about wild-simulated ginseng as a non-timber forest product.

The event was well attended, and those who were there were well rewarded with food that was what I call “beyond organic”, since it was all sourced locally from our NCNPA friends and businesses. The highlight of the reception was the Ginseng Chicken with wild mushrooms, and did I mention the ginseng truffles? The after-hours get-together included ginseng wine and a performance by a local flute player and Doug Elliot. On the UpS website you can see Doug perform “Ginseng”, a song written by Jim Duke. This event was recorded by Ned Doyle and will soon be made available; for further info about the taping and the event go to www.ncnaturalproducts.org. Several interviews about the event were featured on a wonderful radio show www.oursoutherncommunity.org.

A really interesting and innovative aspect to the expo was a polling of questions that took place live, as each person was given a remote clicker to answer a survey on important questions. For example, one of the questions asked was if local native ginseng seeds should be available to growers, and nearly 90% answered yes. In answer to the question whether the U.S. Fish and Wildlife Service should change the age restriction for the export of wild ginseng roots, 5% thought it should be lower, 21% said it should be raised, 26% thought it should stay the same and 42% needed more information. There was deep concern expressed about the rapid decline in wild populations, and there was enthusiasm about those who grow ginseng locally figuring out how to market “NC ginseng” in locally made value added products. The Natural Products Association helped make the in person survey happen, as well as the expo. There was also a concern and a need expressed that those who choose to plant ginseng do so with local germplasm as a source for seeds, versus buying ginseng seeds from farms in Wisconsin.

The conference was covered by the Hendersonville Times under the headline, “Forest farming key to saving wild ginseng from extinction.” The key point mentioned was that “Conference speakers agreed that more ginseng must be grown on private lands by forest farmers to take the pressure off wild populations on federal lands, which have been hard-hit by drought, poaching, and decades of intense collecting pressure”. Pat Ford, with the U.S. Fish and Wildlife Services, was quoted as saying, “Getting more ginseng grown on private lands is key to sustainability of ginseng long term.”

Highlights of the International American Ginseng Expo
by Robert Eidus, MPCA Recipient, 2009 & Susan Leopold

Dr. Maria S. McIntosh, Professor of Plant Science, University of Maryland, published researcher in regards to ginsenoside content and variation among and within wild populations of American Ginseng with Susan Leopold, PhD, UpS Executive Director
Time and time again, I’m reminded to be still and listen. Sit and observe. Watch and wait before proceeding with action. I am reminded that as a human being, I am only a part of the circle of life. And there are other points of view to explore, circles within circles to get to know.

Within certain circles, wild ones are not just considered medicines for humans. Many are regarded as medicines for the Earth, balancing, cleansing, and healing. But sometimes, certain native ones are thought to become overwhelmed when living in isolation, as their homes become surrounded by imbalance or they are separated from their place of origin and companions.

Rather than ‘the survival of the fittest’, Charles Darwin’s emphasis was on local adaptation. Henry David Thoreau added another line of thought which was also novel at the time: that mankind influences nature. And, both of these ideas have been evolving ever since.

Land set-asides, preserves for future generations, began in earnest in the times between Darwin, Thoreau and our own, aided by such notables as Abraham Lincoln, Teddy Roosevelt, Aldo Leopold and others. Yet, it’s been found that land set-asides, alone, are not quite working as expected. They degrade, too, if fragmented and isolated, and if the plants and animals, land, air and water, both within and surrounding these areas, have been affected by a number of factors, including human alteration.

‘Defragmentation’ is one of the key words in what is now being called a ReWilding movement, relevant to reconnecting pieces of land, as well as parts of the human mind, too.

Natural plant communities do change over time, as is most evident in the in-between places: edges of biomes (regions influenced by geography and climate) and along floristic tension zones (physiographic boundaries, for example, between former glaciated and unglaciated areas), but also in other transition zones, such as woodland and prairie edges, wetland edges, and others. These are areas of natural adaptation where both genotypes and phenotypes reflect local shifts. (genotype: underlying genetics; phenotype: a combination of genetic and environmental influences)

These are not the only examples. Most native plants have evolved and adapted to particular ecosystems, in cooperation with their companions, in tune with their surroundings - quite a different concept than the adjustment of plants introduced by humans.

Within some circles of people, the words ‘plants out of place’ refer to plants from different countries introduced into ‘new’ habitats by enthusiasts and entrepreneurs. These are usually non-native colonizers, which have had unexpected consequences on native populations.

However, not all ‘plants out of place’ are from other countries. Some can be native medicinal plants, too. And, although they may or may not thrive in either ‘old’ or ‘new’ habitats (some need help), there may still be a bit of the old colonial mindset in moving them around the country.

Similar plants may grow in a variety of places, but local environments can create genetically unique populations. Protecting and encouraging these local genotypes and phenotypes are considered vital, by some people, as a type of insurance for the future. Much of our modern industrial and agricultural practices reduce biodiversity, but so does introducing ‘plants out of place’. Is awareness of these issues a blessing or a curse?

There are a few circles of plant enthusiasts and entrepreneurs which advocate for native plants and seeds to be obtained from within 15 miles of where they will be planted. Others see such a limited mile restriction as impractical and go farther, perhaps 150 miles or many, many more. Yet, for people who may be interested in plants and seeds that are genetically similar to those in their own home and place, it is important to know that most of the time, bioregionally identified plants or seeds will not be sent when placing an order with a native plant business unless specifically asked for. How do we know what to ask for? There are online databases which make plant profiles and distribution maps available.
And some, although not all, native plant businesses are willing to talk to customers and coach them on ecotype selections.

When exploring for plant and ecosystem matches, it is helpful to pay careful attention to Latin names. The 1st Latin name (first letter capitalized) is the genus name, a generalized name given to a group of related plants that have traits in common, but are not all the same kind of plant. The 2nd name (no capital letter) is the species name, which usually tells us something about a detail, often a physical characteristic, a location where it was first found or a person for which it was named. Sometimes, there will be a 3rd name, a subspecies name, giving more detail, perhaps a clue to a phenotype, a hybrid origin or a deliberate cultivar. Some people consider man-made cultivars as improvements over nature, but these are technically no longer classified as native plants. Ah, the devil can be in the details.

Two examples with opposite results come to mind. The 1st: An enthusiastic friend living on the prairie in Nebraska was very proud of her native plantings. She had a variety of plant groupings, including one which contained certain at-risk medicinals from Eastern Woodland Regions planted on the shady side of the barn along with several young trees for cover, and, in another grouping, in a sunnier location, row upon row of echinacea. The woodland species near the barn which were not doing very well were acknowledged as ‘plants out of place’, but she wondered why some of the locally purchased echinacea were ‘ugly’ and others were not. A few of these were beginning to show signs of susceptibility to disease because of overcrowding, but many turned out to be not local at all - they were different species of echinacea commercially brought in from other states. Some of these differing echinacea had the potential to crossbreed with the natives of that area which naturally grew within several miles of her farm.

The 2nd: Another excited friend was also proud of her native plantings. Yet, one type of plant which seemed to be doing better than the rest, turned out to have originated from a nursery in a Western Region which she had unknowingly introduced into her Wisconsin ecosystem. It had become aggressive and out-competed a local plant not only of the same common name, but also of the same genus and species names. How could that be? It was a different variety. It had a 3rd name.

With family farms in decline, some University programs offer help by encouraging alternative crops, including both native and foreign herbs. On a more grassroots level, small groups across the U.S. encourage locally grown herbs for local people. Many people interpret both as self-sufficiency and a lessening dependence on foreign imports from questionable sources. Still other people may take these issues a step further and ask: What has Nature already provided in her wisdom?

Is there a way to support and encourage natural communities in the habitats where we live, no matter where we live, even if it is in a city?

“When we see land as a community to which we belong, we may begin to use it with love & respect”

~ Sand County Almanac, Aldo Leopold, 1949

In late Winter, when looking at colorful catalogs and contemplating offerings, many of us, myself included, tend to plan according to our own dreams and desires. Is it even possible to engage in a Co-Creative model when it’s still cold and snowy outside? To consider nature as an equal partner?

I remind myself to be still and listen. Watch and wait. Gather information. Then proceed where the heart leads.

Carol Jacobs has been professionally involved in federal, state and private forestry projects, woodland and prairie plant inventories and the native plant and seed industry, as well as, in her community as an Herbalist and an advocate of local food, local herbs and local probiotics. She is an Herbalus Educatorus from the Driftless Region of the Upper Midwest – an area where the glaciers split and left the land untouched – an area shared by portions of 4 states: SE MN, SW WI, NE IA, NW IL.

“Why Use Chemical Drugs when nature in all her wisdom and beneficence has provided in her great vegetable laboratories – the fields and forests – relief for most of the more common and simple ills of mankind?”

~ Joseph E Myers, 1935 The Herbalist
United Plant Savers’ vision is to see UpS Botanical Sanctuaries established in people’s backyards, farms and woodlands, creating a living greenway of native medicinal plants across the landscape of America. A sanctuary isn’t defined by size or magnitude, but as sacred space, a place where one can find protection and the peace and renewal of nature. Nor is a sanctuary necessarily designated or defined by government agencies or large organizations, though often we think of it as such. We can all create sanctuary on the land we care-take. As our Sanctuary Members are demonstrating, Botanical Sanctuaries can be created in small backyards as well as on large plots of wilderness, in towns as well as in the country. As you well know, it takes attitude, willingness, and a desire to transform the way we value land, our assumptions about land use, and the way we design our gardens and farms. If we want to preserve wilderness and the wild populations that thrive there, we can’t look to others to do it for us. We need to be willing to actively participate in the preservation and restoration effort, and as good a place to start as any, is in our backyards. And that is what you’re doing. That is what the Botanical Sanctuary Network program is about.

Thank you to all Botanical Sanctuary Network members for being part of this vision and for your efforts to help preserve and restore the native landscape and our treasured medicinal herbs.

Meet Some of our New BSN Members!

The desire to create a refuge for people and plants was where the Serpentine Project and BLD farm met. We wanted to create a place where native and medicinal plants could thrive; but we also wanted a place where those striving for social and environmental justice could escape their work in the city, take time to heal, and learn about living more sustainably.

Leah Wolfe decided to work toward developing a UpS Sanctuary for medicinal plants while she was studying plants in Oregon. Much of her studies centered on indigenous or native plants and naturalized ones. Some of the indigenous plants are rare and require ethical wildcrafting and propagation to ensure that they continue to exist. So she invites them to the places she lives and hopes that they settle in and get comfortable. In 2009, Leah started the Serpentine Project. She had a garden in Oregon and then later started another garden around the meditation center at Anathoth Community Farm in Wisconsin that is still doing well. Now she lives in NE Ohio at BLD farm.

Charles Schiavone started BLD farm on his family’s land. He is an artist and an environmental justice activist. Originally, BLD was a warehouse in Columbus, OH that he transformed into a studio and gallery. He carries that experience with him, hoping that as we build infrastructure more people will join us in the adventure.

The wooded areas at BLD farm house Jack-in-the-pulpit (Arisaema triphyllum), black cohosh (Actaea racemosa), trillium (two species, Trillium spp.), bloodroot (Sanguinaria canadensis), goldenseal (Hydrastis canadensis), blue cohosh (Caulophyllum thalictroides), partridgeberry (Mitchella repens), and mayapple (Podophyllum peltatum). We also have open areas where two kinds of lobelia (Lobelia spp.) grow. Some of the wooded areas were fields 50 years ago, and the understory plants are not as diverse as those in the wood lots. Mayapples and partridgeberry have begun to live there because they are propagated by deer and birds, but plants like trillium, propagated by ants, will need some help getting there.

We have medicine gardens among the vegetable and food forest gardens. We are in the process of building a greenhouse that would also include a sunroom made with timber frame and cob. We are hoping to grow other “At-Risk” plants and adjunct medicinal plants locally so that they can be supplied without taxing native populations.

A learning garden with the “At-Risk” species has been established closer to the house so that people who want to come learn and see the plants can do so without braving ticks and mosquitoes. So far that garden has a few plants each of Jack-in-the-pulpit (Arisaema triphyllum), black cohosh, bloodroot, goldenseal, wild ginger (Asarum caudatum), great blue lobelia, and red trillium. The other medicine gardens are in open areas near the garden and the work site for the greenhouse.
Dandelion Herbal Center sits on 10 acres of land in Kneeland, in the coastal redwoods of Northern California. My husband Ken and I have been on this property for almost 20 years raising kids and hosting 100’s of herb students. On the North Coast of California, we are blessed with a temperate rainforest, and our property harbors a wonderful representation of the variety of plant and animal species that are native to this type of ecosystem.

The canopy contains redwood (Sequoia sempervirens), Douglas fir (Pseudotsuga menziesii), and alder (Alnus rubra) with a secondary layer containing evergreen huckleberry (Vaccinium ovatum), red huckleberry (Vaccinium parvifolium), cascara sagrada (Rhamnus purshiana), willow (Salix spp.), salal (Gaultheria shallon), native blackberry (Rubus laciniatus), thimbleberry (Rubus parviflorus) and flowering red currant (Ribes glutinosum). Underneath that there is a variety of herbaceous plants and ferns, including trillium (Trillium ovatum), wild ginger (Asarum spp.), yerba buena (Satureja douglasii), redwood sorrell (Oxalis oregana), redwood violet (Viola sempervirens), bracken fern (Pteridium aquilinum), Western sword fern (Polystichum munitum), common lady fern (Athyrium filix-femina), deer fern (Blechnum spicant), licorice fern (Polypodium glycyrrhiza) and horsetail (Equisetum arvense). And this is merely a sampling of our most prolific plants! With the help of my students, I am blessed to be able to care for these and many more species of native medicinal plants.

We have, for years, been avid about conserving and fostering the native plants by providing a safe environment for them to grow and reproduce unhindered by excessive mechanical or human traffic and by keeping the soil free from chemicals and as nutrient rich as possible. We also do extensive recycling and composting of food and plant materials. Within the past couple of years we have installed a large rainwater catchment with a filtration pond and waterfall aeration system to provide drinking water for the people and plants on our beloved piece of land.

We are primarily geared toward herbal education and offer a variety of classes here at Dandelion Herbal Center. In her classes, Jane likes to provide a balance of information about the herbs and how to identify them, as well as their medicinal uses and effects on the body. It is such a pleasure to be able to share plant wisdom with our students in the plants’ native environment, as well as the hundreds of non-native medicinal plants we grow in our demonstration garden beds. Students also have the opportunity to get their fingers into the soil by aiding Jane in planting more native and medicinal plant species.

One of our greatest offerings to the UpS Botanical Sanctuary Network and the world at large is put very succinctly by one of Jane’s students from the past: “This one person teaches and inspires these 25 people, who in turn teach and inspire another 25 people and so on...to regain their relationship with and appreciation for the earth. This relationship will send positive energy, respect and love back into the earth, thus bringing all its inhabitants to a higher level of health and existence.”

The workshops include plant walks, medicine making classes, ethical wildcrafting, materia medica, assessment and intake skills, backyard and kitchen cabinet medicine, community and herbal approaches to disaster situations, herbal first aid, and more. There is a more complete list on our website (address below). All workshops include information about UpS and the “At-Risk” plant list.

Our long-term plan is to establish a school at BLD farm that emphasizes Earth-based skills (such as herbalism) and other folk arts that can contribute to a more sustainable society. We are currently working on the design of the primary classroom and apothecary; thus we are beginning the process of becoming a non-profit so we can apply for grants and accept tax-deductible donations. To learn more about our work, visit us at http://serpentine-project.org.
The energy is high on this Ozark Mountaintop. There are many native medicinals, including heal all (*Prunella vulgaris*), bloodroot (*Sanguinaria canadensis*), goldenseal (*Hydrastis canadensis*), etc. The Deva guided gardens are happy here.

My husband and I have lived lightly on these 19 acres of mostly woods. Over the last 26 years we have watched as the electric company has changed our tunnel of tree and plant to a regulated two-lane country road.

I have foraged on our land, using the native gifts as medicine for myself, my pets and my family. I see the butterfly weed (*Asclepias tuberosa*), goatsbeard (*Aruncus dioicus*), and mayapple (*Podophyllum peltatum*) populations dwindle. My goal is to keep Happy Homestead/Blue Bird Botanical Farm a sanctuary where it is safe to make my simple tinctures and salves freely. It is my hope to hold classes in tincture and salve making, along with co-creative organic gardening and appreciation for nature spirits and the joys of “less is more” homesteading.

Juggling all that life sends us, along with work, gardens, maintenance, and play is the dance for all of us. Stewarding this beautiful Ozark Mountaintop is a gift of grace. If I can save one little corner of green on this planet, then I feel like I’ve been true to my Soul’s work.

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Florida School of Holistic Living’s “Bodhi Garden” is a 40’ x 40’ herb garden in the heart of urban downtown Orlando. The garden is surrounded by an eclectic and supportive community, including an organic vegetarian teahouse, a yoga studio, a healing center, a massage and chiropractor office, and the school’s two-story educational facility.

Our botanical sanctuary offers a peaceful respite for education, meditation, and communion with nature, smack in the middle of the concrete jungle. As an urban sanctuary, we often trade out the sweet sounds of the countryside for the rhythms of planes overhead and cars whizzing by along the nearby highway. Still, we delight in the wildlife that gathers in our urban garden – birds, butterflies, and small wildlife find a habitat in our small oasis. We grow approximately 50 species, which are used for educational purposes. These focus on medicinal herbs but also include species to feed and support pollinators.

Our school offers organic gardening, herbalism, and sustainable living curriculum using the garden as our classroom and model. We offer both extended courses and one-time workshops on topics such as gardening practices, plant life cycles, and sustainable technology. In addition, everyone has an opportunity for hands-on education through internships and our volunteer program. Students at the school also use the garden for educational research on growth rates using different organic fertilizers, herbal treatments, and seed stock. Finally, anyone who visits our neighborhood has the opportunity to enrich their experience by wandering through the garden and learning more about individual plants through educational placards and our plant guide. In addition to our classes, we hold music and meditation circles in the garden every full and new moon.

As an educational garden, each harvest is carefully scheduled based on earth, lunar, and garden cycles. Garden classes and volunteers are coordinated to facilitate all harvesting. We focus our harvest on educational activities and on propagating new plants to distribute in our community. We are proud to have distributed over 1000 plants, through harvests from our garden in the form of seeds and propagated seedlings to community members, local school gardens, and local community gardens. Volunteers and students in the garden also have an opportunity to take home freshly harvested herbs according to the harvest schedule.

Our garden’s centerpiece, the Bodhi tree (Ficus religiosa) is a fifth generation descendant from the Bodhgaya grove in India, where the Buddha is said to have sat when he reached his enlightenment. This tree was rescued by staff of the Florida School of Holistic Living from the University of Central Florida, where the administration was removing its mother to pour a concrete courtyard.

This tree was planted on September 11th, 2007 – a New Moon – with 250 community members in a procession of prayer. Each participant added a shovelful of soil along with their prayers for peace and harmony within our community. Around the Bodhi tree is a community altar, which stands as a testament of our community’s spirit, and individuals often leave tokens of gratitude, blessing, and prayer for loved ones or the planet.

In addition to the Bodhi tree, medicinal herbs that get extra attention in our garden include henna (Lawsonia inermis), beautyberry (Callicarpa americana), vitex (Vitex spp.), rue (Ruta graveolens), elderberry (Sambucus spp.), lion’s tail (Leonotus leonurus), lemongrass (Cymbopogon citratus), passionflower (Passiflora incarnata), and a stately neem tree (Azadirachta indica). Garden beds were constructed from lumber made from recycled milk jugs. An arbor was recently erected with a locally grown bamboo roof to highlight the entry as a sacred space. We also recently launched a Garden Map, which outlines the species we grow and directs visitors to visit our website to download a garden guide with more information about the medicinal and culinary uses, growth habits, and historical roots of each plant.

It has been a deep privilege to steward this small garden and to hear the feedback of those who have found a moment of peace among its borders. Our garden is open year-round, and you can visit www.HolisticLivingSchool.org to learn more.
It Takes a Community to Tend a Sanctuary
by Jessica Rubin

All living things require tending as they grow, evolve, change, and transform. In East Montpelier where an old farm dump once sat embedded in layers of ferns and moss, now grows a sweet sanctuary of endangered, threatened, and habit-enhancing species. While blue cohosh (Caulophyllum thalictroides), maidenhair fern (Adiantum pinnatum), and red trillium (Trillium erectum) already grew amidst the wild ginger (Asarum canadense) and baneberry (Actaea pachypoda) in a hemlock forest, new green friends continue to join the networks here. It has been fascinating to watch what is able to adjust and firmly take root and what is not, due to predation, lack of sufficient soil nutrients, microbial intricacies, or various other synergistic gaps.

Certain plants like lady’s slipper (Cypripedium acaule) that require a particular mycorrhizal fungi, we decided to not replace. However, we tried again with goldenseal (Hydrastis canadensis). Fifth grade students in Cathy Elie’s botany unit researched the plant’s needs using Richo Cech’s book, Growing At-Risk Medicinal Herbs and Rosemary Gladstar and Pamela Hirsch’s book, Planting the Future. Students were amazed to discover how ferns and horsetails were the size of trees, that certain mammals and pollinating insects co-evolved with angiosperms, and how lichen served as a crucial pioneer for terrestrial succession. What dramatic changes in plant succession and evolution are occurring right now that we cannot see from our limited life span lens?

This spring we rekindled the flame of phenological tracking, which sixth grade students had started the first year they planted the trail in 2008. This year’s students came up with criteria we plan to use throughout the years as we collect data each year in early June. We hope that over a decade or two this data will not only be valuable in recording trends of particular species’ propagation rates, but also in terms of tracking the flowering phases as they relate to global climate change. The current criteria the students came up with is as follows: common and Latin name of plant, date, time, alive or dead, healthy or sick, height and width, habitat description, how many plants, and phase of growth. I wonder if we should add temperature and weather. Any ideas?

This past year I have heard several scientists, such as Dr. Beth Kaplin, Bernd Heinrich, and Dr. Richard Primak discuss the importance of phenology and in particular the relationship between birds, shrubs, insects, and flowers. The windows of flowering for pollination and fruiting for seed dispersal are dramatically changing. How this relates to migration patterns and the resulting trophic cascade is critical and complex.

Today we spent a lot of the day working with Volunteers for Peace from Turkey, Taiwan, Germany, Mexico, and Spain removing common buckthorn (Rhamnus cathartica), fly honeysuckle (Lonicera canadensis), and common burdock (Arctium minus). Though it is not the season for harvesting burdock, we did make tea and burdock chips so that these young adults could experience some of this plant’s many gifts. We laid piles of coppiced buckthorn and honeysuckle along an eroding river bank in an effort to slow the erosion from Irene. We hope to eventually put in willow waddles there. We were able to harvest many first year and catch second year burdocks before seeds were ripe. Buckthorn berries were not visible. And we were not sure if the red honeysuckle berries were fully ripened in packages ready for mammals to successfully transport.

Continually the question arose for me as I scythed and pruned branches: What is our relationship with
these plants? While their non-native origins are a historical fact, as is the reality of native species being displaced as a result, I kept wondering why we two-leggeds are not being scythed and pruned off the planet, for aren’t we, too currently displacing various species at an alarming rate? The honeysuckle blossoms provide nectar and pollen while the berries provide food, though less nutritious than native berries. At whose expense? At the expense of various species such as spicebush (Lindera benzoin), elderberry, dogwoods (Cornus spp), viburnums, witch hazel (Hamamelis virginiana), serviceberry (Amelanchier alnifolia), and native trumpet honeysuckle vine (Lonicera sempervirens). Is this the fine line where we can help our wild friends by tending to parts of our forests as gardens?

Bees hop to and from tall, white, black cohosh (Actaea racemosa) spikes flowering from the bottom up. Arnica (Arnica cordifolia) and bloodroot (Sanguinaria canadensis) flowers are no longer visible, while their leaves are a faded green. Pleurisy root (Asclepias tuberosa) buds swell with impending opening. Echinaceas (Echinacea spp.) slowly open their radiant disks. Goldthread (Coptis spp.) and partridge berry (Mitchella repens) flowers have already blossomed, and now the hardy green plants ramble across the forest’s lower sinusium. Vibrant green goldenseal buds look ready to burst. Elderberry’s few green leaves seem to have survived recent foraging. I would like to stay here and curl up, like one of those caterpillars weaving a chrysalis, with a periscope allowing me a bird’s eye view of the whole trail to see who is visiting who and what phases are passing by. The glimpses we have caught are just milliseconds in the long days of summer when trillions of interactions are happening each moment. As we linger at the kiosk garden, I realize how much more there is to see, hear, smell, feel, touch, and sense. A giggle floats down from the canopy reminding, “You did not even begin to look beneath the humus layer.”

Jessica Rubin just earned her Masters of Environmental Studies and NH/VT middle and high school science teaching license from Antioch New England. She co-founded this Botanical Sanctuary Trail at Orchard Valley Waldorf School in East Montpelier where she used to teach Earthcrafts. She still tends the trail while helping with botany units, monitors Green Mountain Corridor, runs ‘Roots and Trails’, and will begin serving as a middle school science teacher at Lyndon Town School in September.

Sending a special strand of deep gratitude to Liz Moniz for her steady support as a local UpS consultant, and to Susan Leopold and UpS for their continued assistance in our Sanctuary maintenance projects!

United Plant Savers offers a special student membership fee of $20 per student for all herbal schools, apprentice programs and training courses that enroll their students as a group. Each student receives a UpS membership package with all the benefits ~ informative Journals, access to Member Resources on the UpS website, plant/seed giveaway twice a year, membership discounts at UpS conferences and more. When your school/program joins Partners in Education you will receive our publications, the UpS Education Guide and the Take Action! Guide, a copy of the UpS book Planting the Future, free rental of the UpS “At-Risk” Slide Show & DVD, a listing in both the UpS Journal and on our website, guidance from experienced educators and the opportunity to make a difference ~ One Seed at a Time. PIE students are welcome to apply for the UpS internship program at Goldenseal Sanctuary in Ohio. With a recommendation letter from the PIE school, students can receive a $100 discount on the internship fee.
Thank You For Your Generous Contributions & Support

We extend a special thank you to all members of UpS who continue to support us with memberships and donations. Your support, efforts and concern are the only thing that can really make a difference in the protection and conservation of our important medicinal plants. All donations and help, whether it be organizational, cultivating, educating or choosing medicinal herb products more consciously are appreciated. Great gratitude goes to the many in-kind donations of goods and services from companies and friends that support our work. We gratefully acknowledge the following long-time Green Angels, Leaders, Lifetime Members and Donations in 2012:

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Thank you also to the many people who made smaller donations this year!
Donations were also given in fond memory of Patrick Ndumbi and John Nortahge.
Great thanks to the 2012 Advanced Apprenticeship Class at Sage Mountain for their generous donation!
Many of our members have herb businesses and have created ways for their “money green” to support the UpS green! We want to highlight several companies whose contributions to UpS come as percentage of sales of dedicated items. You will see a section for Partners in the Green on the left of the front page of the UpS website and we’ve made it easy for you to link to these thoughtful businesses. By supporting these companies, you are supporting UpS!

Alchemilla Pure Skin Care - skin care trial kit
www.myalchemilla.com/Summaries-Kits/Summary-TrialKits.html

Dreamseeds Organics – avena soap
www.dreamseedsorganics.com

Elemental Herbs – herbal products
www.elementalherbs.com

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Equinox Botanicals – herbal syrups
www.equinoxbotanicals.com

Herbal Lodge – herbal salves
www.HerbalLodge.com

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LearningHerbs.com – Wildcraft! boardgame
www.learningherbs.com

Level Naturals, LLC – 100% vegan, gluten free, cruelty free soaps, bath bombs, scrubs, butters, and candles
www.levelnaturals.com

Old Ways Herbals – organic tinctures, salves & syrups
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315-845-1515 or woodland@ntcnet.com

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Great thanks to all the generous sponsors of this year’s UpS Events:
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We’re also grateful to the sponsors of the NE Women’s Herbal Conference – Herb Pharm, Mountain Rose Herbs, Frontier Natural Products Cooperative and New Chapter, Inc.

UpS has also begun receiving donations from wonderful programs like Network for Good, 1% For the Planet and the Standard Matching Fund. Thanks to Elemental Herbs!

Great appreciation is also due to:
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The PawPaw Festival
Traditions in Western Herbalism

These conferences make UpS info available at their events. This is especially helpful because we meet many new members and have a lot of opportunity to let folks know about native medicinal plant conservation at these kinds of events.

Special thanks also to UpS Interns Ashley Reiger, Kelsey Siekkinen and Denise deSpiritito, as well as Aimee Fairman and Desiree Cripps for staffing tables for us! Many other people make UpS information available at farmers’ markets, workshops, Herb Day and other events. We are deeply grateful for all this support! If YOU know of a great opportunity for plant-lovers to connect with UpS, we are happy to provide you with brochures, newsletters and more!

No Journal would be complete without thanking the friends who make our publications possible – Liz Butler, our graphics goddess and Beth Baugh, our wonderful editor! We love you!
Herb Events 2013

May 3-5: 7th Annual Gaia Gathering for Women
Weaving the Web of Community
Charlottesville, VA
www.sacredplanttraditions.com

May 4: Herb Day
Have your local event featured for Herb Day!
Register at www.herbday.org

May 15-18: 34th Annual Meeting of the Society of Ethnobiology
Denton, Texas
Kelly Kindscher & the UpS "At-Risk" tool
www.ethnobiology.org

What the Frack?
by Susan Leopold

On February 17th over 50,000 people showed up on the national mall to stand up for “Forward on Climate Change,” the largest protest to date in an effort to move beyond coal and the use of fossil fuels. In Ohio near the Golden-seal Sanctuary several protesters were arrested this February attempting to shut down a disposal site for fracking waste-water. Sasha White, who runs the UpS fall internship program at the Sanctuary, wrote a detailed article entitled “On the Fracking Lines of Southeast Ohio” that highlights the threats to our national forests and local resources if the fracking trend continues. This article is on the UpS website under the NEWS section.

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Appalachia Resist! www.appalachiaresist.wordpress.com
Athens County Fracking Action Network: www.acfan.org
End mountain top coal removal: www.ilovemountains.org

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The Hawaiian Sandalwood Project

by Susan Leopold

This past fall United Plant Savers co-organized the International Sandalwood Symposium that took place over four days, with over 30 academic presentations on the following topics: local and global markets and threats, chemistry and genetics, cultivation and propagation, ecology and environment, regional use and development, regulation and sustainable management. Speakers were from several countries, including the United States, Australia, Fiji, New Caledonia, India, Indonesia, Sri Lanka, Tonga and Vanuatu. I would like to highlight three take home points of the ISS gathering, beginning with the fact that the sandalwood story of Hawaii is one that is sadly playing out in island nations throughout the Pacific as small fragmented populations that are left of endemic species and varieties are struggling to survive due to an increase in price as supply shrinks. Secondly, it is important for consumers to understand that nearly half the world’s global supply is being poached and that adulteration of sandalwood products is taking place. Third is that sandalwood as a value-added product has the potential to be an economic contribution to remote, rural island nations if efforts are invested in research, education, conservation and cultivation.

In the winter of 2012 before the ISS gathering I traveled with my three kids to the Big Island to investigate the Hawaiian Sandalwood issue. I conducted four interviews filmed on my iPhone that highlight various people involved in sandalwood conservation. I encourage all to watch the videos, briefly described below that are now up on the UpS website.

“Nature at Work”. This interview highlights the spontaneous return of sandalwood (S. paniculatum) to Dr. Shay Bintleff’s property. Dr. Shay, a retired pediatrician and famous local surfer, sells sandalwood seeds to those who wish to grow sandalwood, and she also markets her seeds as a tasty unique local food, perfect for making pesto.

“Sandalwood Man”. Watch sandalwood restoration in action as Mark Hanson, founder of the Hawaiian Restoration Project and also known as the sandalwood man, talks about his life’s passion. The video demonstrates the obstacles to saving native Hawaian endangered plants.

“Permaculture Sandalwood Style”. This video shows how to create a natural guild by using secondary species to mimic natural succession. Sandalwood is a perfect fit for this kind of permaculture approach to growing food on the short term and forest restoration on the long term. This interview is with Neil Logan who is an ethnobotanist, farmer and researcher who lives on the Big Island with his wife Sofia and their daughter Ona on their Mohala Lehua farm.

“The Plant of Aloha”. This interview tells the brief history and culturally significant meaning of sandalwood, also known as iliahi in Hawaiian. The interview is with Leigh-Wai Doo, sandalwood activist and passionate retired Hawaiian planner, politician and proponent of the sandalwood bill that has been proposed at the state legislature. This interview demonstrates the symbolic nature of sandalwood as the ultimate plant of Aloha.

Medicinal Plant Conservation

2012 AWARD

Jeanine Davis

–––––– recipient –––––

United Plant Savers is happy to announce that Jeanine Davis is the 2013 Medicinal Plant Conservation Award recipient. Jeanine is a whiz at getting small farmers into specialty crops, including medicinal plants. Her influence over the last two decades in North Carolina is legendary; just take a look at her amazing website, www.ncherbs.org for resources for small organic farmers and how to grow guides for black cohosh (Actaea racemosa), bloodroot (Sanguinaria canadensis), echinacea (Echinacea spp.), false unicorn (Chamaelirium luteum), goldenseal (Hydrastis canadensis) and more to come. Jeanine is a big supporter of UpS; has taught at Planting the Future Events, and recently helped coordinate the Ginseng Expo this past December. Below is a brief bio of Dr. Jeanine Davis, and with this award we would like to further send a thank you for the hard work of extension agents across the U.S. who are the on the ground working directly to help small farms succeed.

Jeanine Davis is an Associate Professor and Extension Specialist in the Department of Horticultural Science at North Carolina State University. She is also the Coordinator of the N.C. Specialty Crops Program, which is a multi-agency program in eastern North Carolina. The primary objective of her program is to increase diversity, sustainability, and profitability of agriculture through development of high-value crops such as herbs, native botanicals, specialty vegetables, industrial crops, and organics. She and her coauthor, W. Scott Persons, wrote the book Growing and Marketing Ginseng, Goldenseal, and Other Woodland Medicinals (2007), which will be an ebook soon and though it is currently out of print, it is in the process of being revised. She is a founding member of the immensely popular Organic Growers School and the N.C. Natural Products Association.

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