****Don’t miss a great evening event ****

"Amanitarita's Freaky and Fabulous Fungi"
A Presentation by Debbie Viess, October 22, 2015 at 7PM
Ukiah Garden Clubhouse, 1203 West Clay Street, Ukiah

Please join us for a quick peek at local fungi with Debbie Viess, aka Amanitarita, also co-founder of the Bay Area Mycological Society, a science-centric mushroom club. She will introduce us to the wonder and magic of North American mushrooms. Examples of edible, deadly, incredible and even creepy fungi will be shown. Learn about the world of wonder underneath your feet, through beautiful photos and compelling stories, with a soupçon of humor. Perhaps she will make a mushroom fan out of you?

Debbie is a biologist, naturalist, writer and artist, obsessed with mushrooms in general and amanitas in particular for over 20 years. She has been instrumental in creating and managing the annual Point Reyes National Seashore Fungus Fairs, and has been a prominent contributor to the Point Reyes Mycoblitz and the ongoing Yosemite Fungal Survey. In 2009, she published an extensive, illustrated article on "Amanitas of the East Bay" in the Bay Area botanical journal, *The Manzanita*. She has written for Bay Nature Magazine, is a contributing editor at Mushroom, the Journal of Wild Mushrooming, and was a contributing editor at *FUNGI Magazine* until 2014.

Debbie loves making mycology accessible and fun for everyone, and uses humor and great visuals to sweeten her science. She is a member of several local and national mycological societies.
**Fall Field Trips**  *(call to confirm if rain is in the forecast)*

**September 27, Sunday – A Day in the Oaks at the UC Hopland Research and Extension Center**
Join botanist, Kerry Heise exploring the common oaks near the middle elevations surrounding the HREC headquarters. We will likely see up to 7 different tree oaks as we walk from the center including coast live oak (*Quercus agrifolia*), canyon live oak (*Q. chrysolepis*), blue oak (*Q. douglasii*), Garry oak (*Q. garryana*), black oak (*Q. kelloggii*), valley oak (*Q. lobata*), and Shreve oak (*Q. parvula var. shrevei*), and some hybrids as well.

Bring a sandwich or a small dish to share afterwards. 10am – 1pm. Meet at CVS shopping center on Orchard Ave. in Ukiah to carpool at 9:15a.m. Call Kerry at 462-4533 for more information.

**October 18, Sunday – Fall Botany Walk in Low Gap Park**
Although flowers may be sparse, there is an abundance of plant life to observe this time of year. This delightful walk will explore the rich diversity of woody plants, herbaceous perennials, ferns, mosses and lichens that Low Gap Park supports. Sanhedrin Chapter members Gail Johnson and Kerry Heise will lead this walk beginning at 10am – 1pm. Call Kerry at 462-4533 or Gail at 462-2018 for more information.

**October 25, Sunday – Geology walk in Low Gap Park**
Chuck Williams of the Sanhedrin Chapter of CNPS will lead a tour of the geology and its effect on the plant habitats of Low Gap Park. Areas displaying fall colors are good indications of different geologic types such as the Melange formation and the less broken Graywacke units with specific plant species preferring one over the other. Chuck will have examples of most major rock types in the area, in addition to the only petrified wood found in the county; and its geological significance. Meet at the park parking lot picnic area – 10am to 1pm. Bring water, and if you want to stay past noon, bring a snack or lunch. Call Chuck at 462-8984 for more information.

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**Evening Presentations**

- October 22 - Presentation by Debbie Viess, Amanitarita's Freaky and Fabulous Fungi, Ukiah Garden Clubhouse, 7pm.
- January 28 - Mia Monroe will talk about our declining Monarch butterflies as well as their relationship with our native milkweeds. Mia Monroe is a Xerces Society volunteer and coordinates the Thanksgiving Count of Western Monarch Butterflies, Ukiah Garden Clubhouse, 7pm.
- February 16 - Kathy Schick presents The World of Oak Galls. Kathy is curator at the Essig Museum of Entomology and serves as a visiting professor. She has a PhD in entomology and specializes in Cynipodea which includes the gall producing wasps. Collaboration of Sanhedrin Chapter, CNPS and the Peregrine Chapter, Audubon, Ukiah City Council Chambers, 7pm.
- March 24 - Judith Lowery will offer a presentation on Backyard Restoration Gardening at the Ukiah Garden Clubhouse, 7pm.

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**Other Events**

- September 24 - Board meeting, Sanhedrin Chapter, CNPS, Ukiah Garden Club, 6:30pm
- October 2, 3 - Mendocino College Plant Sale
- October 17 - Eel River cleanup. Meet up at the Eel River Road Bridge at 9 am, contact Beb Ware, 743-1525.
- October 24 - Hopland-Cloverdale Russian River cleanup, meet 9 am at the Real Goods parking lot, Highway 101, Hopland, contact Ken Johnson, 570-9226, ken@ncfems.com
Book Reviews

The Triumph of Seeds: How Grains, Nuts, Kernels, Pulses, and Pips Conquered the Plant Kingdom and Shaped Human History
by Thor Hanson, Basic Books, 2015

This is an amazing book. Dr. Thor Hanson is a Guggenheim Fellow, a Switzer Environmental Fellow, and an award winning author and conservation biologist. He has managed to put scientific information into a most engaging narrative that rates high on being a page turner. Here, he presents evolutionary botanical concepts in a way that make it so clear and enjoyable. I’m familiar with plant lists being in phylogenetic order, but my bits and pieces of information didn’t really hang together but Hanson presents the process in a way that filled in the missing parts and connected the dots. Plus, he includes the latest scientific information.

I loved reading the chapter on how plants made the reproduction leap from spores to seeds. Hanson makes it clear that this was a major environmental adaptation, with seeds waiting out less than optimal conditions to reproduce. This book points out the incredible intelligence at work in seeds. Really, what else can you call it? I loved the example of the seeds that can tell when to sprout based upon the angle of the sunlight under six feet of snow!

~ Gail Johnson

Gathering Moss: A Natural and Cultural History of Mosses
by Robin Wall Kimmerer, Oregon State University Press, Corvallis, 2003

We were preparing information cards for the RVOEP 6th grade outdoor education program on forest ecosystems stressing the interconnections of species and the food web when the question arose, “What eats mosses?” Well, a Google search didn’t help much (reindeer moss is not a moss). We could have the students share about its importance creating habitat and uses for nesting material and marvel at its ability to spring back to life with the rain after months of desiccation, but the question still hung there.

So I was delighted to discover this book that really delves into the world of mosses in a series of personal essays filled with scientific information woven together with perspectives from the author’s Native American heritage. Robin Kimmerer is not only a professor with a passion for mosses along with a PhD but also a gifted storyteller. In her preface she sets the stage:

"Just at the limits of ordinary perception lies another level in the hierarchy of beauty, of leaves as tiny and perfectly ordered as a snowflake, of unseen lives complex and beautiful. All it takes is attention and knowing how to look. I’ve found mosses to be a vehicle for intimacy with the landscape, like a secret knowledge of the forest. This book is an invitation into that landscape."

As I read this book I felt a wonderful affirmation of the miracle of life, such is the amazing world of mosses. I look forward to taking a closer look as my hands run along the mossy velvet soon to be reawakened by the rain. I think this book will inspire you as well. And, by the way, not much eats mosses but bears make an interesting use of its indigestibility.

~ Cathy Monroe
Why Should You Include Milkweed in Your Garden? by Andrea Davis

I wonder if our native milkweeds would have fared better if they had been named Monarch flower or butterfly plant? When a plant is named a weed, people think that it is something to be hoed out, sprayed, exterminated. Most of us are aware that the Monarch, king of butterflies, depends upon the maligned milkweed as food for its larval form, caterpillars. Although many people recognize Monarchs, too few notice the milkweed plants they depend on, and that these are rapidly disappearing.

Milkweeds, of the genus *Asclepias*, are perennials in the dogbane family. *Asclepias* is taken from Asclepius, the Greek god of healing, due to the many medicinal uses for the plants. The common name milkweed is due to the milky latex sap that the plant exudes when it is injured. There are 15 species of milkweed in California and 5 in Mendocino County. The 5 species in our county are *A. cordifolia* (purple or heart leaf milkweed), *A. eriocarpa* (Kotolo, Indian or Monarch milkweed), *A. fascicularis* (narrow leaf milkweed), *A. solanoana* (serpentine milkweed) and *A. speciosa* (showy milkweed.) *A. solanoana* is rare but the other species are fairly common and can sometimes be found in unlikely places like road sides and abandoned lots as well as wild, more pristine areas.

Counts of Western populations of Monarchs show a dramatic decline from a total of 1.2 million individuals in 1997 to just under 235,000 in 2014. The average number of butterflies per site was 12,000 in 1997, bottoming out to 1,000 per site in 2009, then slightly increasing in 2014 with 1,200 per site. The causes of decreased Monarch populations are likely varied, but decreased milkweed as a food source for caterpillars is thought to be one of the main factors. Most milkweeds are toxic, containing alkaloids and cardenolides (cardiac glycosides). The sticky latex sap also prevents herbivory. Monarch caterpillars have adapted to these toxins using them to prevent being devoured by birds, mammals and other invertebrates. The toxicity persists in the adult butterfly which advertises its distastefulness, as does the larva, with bright colors. However, there are predators such as orioles and black-headed grosbeaks with resistance to the cardenolides so it takes many caterpillars feeding on many milkweed patches to get even a few monarchs in flight.

Fortunately, many milkweeds can be grown in our gardens, enabling us to enjoy the plants and the insect life that they draw to the garden. Our local species are all perennials, almost disappearing in the winter. They produce seeds but often reproduce primarily through new shoots forming off of creeping horizontal roots. Seed pods are large and dramatic with the large seeds inside attached to pappus capable of floating the seeds away from the parent plant. The plants are often very attractive such as *A. cordifolia* has large purple leaves and flowers. It blooms in May, much earlier than the other species and seems to prefer dry slopes. *A. eriocarpa* can be seen locally in grasslands and gravelly riparian areas. It can grow tall, up to 3’, has large fuzzy leaves and pinkish white flowers. *A. fascicularis* can be found along roadsides and has narrow leaves, a bushier form and less showy flowers than the other local milkweeds. It can be hard to spot, especially in a dry year and when stressed by yellow oleander aphids. *A. speciosa* is also tall, with showy pink flowers and can be found in the valleys, and of the 4 species, is probably the easiest to find at nurseries.
I know that adding milkweed to my garden won’t solve all the problems that the Monarchs confront but I am hopeful, if not entirely optimistic. It does seem that if you plant it, they will come. Somehow the butterflies sense the scattered little garden plots of milkweed and find their way to them to lay their eggs to continue their life cycle. Barbara Kingsolver’s book, Flight Behavior, is partially about a theoretical Monarch migration that has gone wrong and the fragility of the species. Here is a quote from an interview question about her book and her thoughts on optimism:

Here’s how I would describe it. The pessimist would say, “It’s going to be a terrible winter; we’re all going to die.” The optimist would say, “Oh, it’ll be all right; I don’t think it will be that bad.” The hopeful person would say, “Maybe someone will still be alive in February, so I’m going to put some potatoes in the root cellar just in case.”

By planting milkweed in our gardens as well as helping with restoration efforts, we are putting “potatoes in the root cellar” for this iconic species. Locally, this year seems to be a better year for Monarchs. There have been many sitings of butterflies and caterpillars and it will be interesting to see if this results in higher overwintering numbers.

Cathy Monroe, a Sanhedrin chapter board member shares a quote that captures the joy she experiences from her milkweed and Monarch interactions:

It’s been wonderful to get a chance to be more intimate with monarchs in their incredibly different forms. The stocky caterpillars are almost clownish with their bright stripes and black horns front and rear and create an exquisitely beautiful celadon chrysalis dotted with shining gold from which emerges a brilliant winged creature with long legs that could no way fit in that chunky chrysalis. Aren’t we blessed to be witnesses of such miracles? Hopefully, we can help many others have this experience.

If you have a favorite Mendo milkweed spot, please let us know. We are trying to collect seed in order to increase populations of our local plants. And, be sure to catch the Sanhedrin CNPS presentation on Monarchs January 28, 2016.

Resources:
Plants: Calflora Nursery, Fulton. CA. Mendocino College in Spring 2016 - hopefully
Seed: Hedgerow Farms, Winters, CA
More information: Xerces Society, Monarch Watch
Summary of the recent Chapter Council Meeting in Fort Bragg by Jen Riddell

CNPS chapters from across the state met in Fort Bragg on Sept. 12th and 13th to discuss how we can use the California Environmental Quality Act (CEQA), and the Timber Harvest Plan process (THP) to propose better land use practices in our areas.

Gordon Leppig from the North Coast Chapter covered CEQA, and when and where there are opportunities to provide comments on proposed projects. Key points from his talk include making sure you identify the “lead agency” that is in charge of the proposed project, as well as agencies that issue permits for the various activities within the project. The lead agency is required to notify affected entities in the project area, and respond to comments on the proposals. Making sure you are on their list of interested parties can be a way to help you get the information you need to comment. Findings of No Significant Impacts or Mitigated Significant Impacts mean they don’t anticipate the project will cause environmental damage of significance, or that their mitigation efforts are anticipated to balance or remediate their effects. In this context, significance is a vague word with few to any definitions of impact thresholds. Projects exempt from the CEQA process include emergencies (firefighting, for example). It’s our job to see if we think these predictions are realistic and that the proposal is adequately informed and descriptive. Findings of significant impacts can lead to the requirement of an Environmental Impact Report (EIR), a more demanding process requiring in-depth studies of the biological impacts of a given project, and more work on the mitigation side of a project.

The discussion of THPs was less encouraging, but highly interesting. Peter Baye from the Dorothy King Young Chapter on the Mendocino Coast spoke about how the THP process differs from the CEQA process, and when he would recommend fighting a THP. In essence, a THP is supposed to be equivalent to an Environmental Impact Report. In practice, it has significantly fewer requirements for proposals, permitting, and mitigation, effectively creating what is often a rubber stamp process. They become very difficult to challenge because there are so few requirements, and comments frequently find little to no response from the lead agency (most often Cal Fire). Baye recommended that people be very selective on which THPs to challenge, focusing on projects that have the potential to evoke interest from the public, or have enough environmental impact to be worth the hard work involved in the challenge.

Strategic Plan:
Additionally, the chapter council has put together a draft Strategic Plan (in documents on Agenda Page: https://sites.google.com/site/cnpschaptercouncilsept2015/sunday-agenda). The overarching message of the draft are that we seek the best science on native plants and conservation in California, that we save and restore native plants and habitats, and that we engage California’s citizens, including young people, in our efforts. Comments on the draft are due by October 15th to Andrea Davis, tworns@pacific.net

Saturday’s meeting was wrapped up with a fine dinner put on by the DKY chapter, and a presentation from the Bryophyte chapter chair, Paul Wilson. It was engaging and informative, including an introduction to bryophytes common to the north coast.
**Seed Collecting Guidelines** by Diana Jeffery

Be sure that you have the necessary permits and/or permissions to collect seeds on the property. Take the time to assess the distribution of the target plant species and estimate the number of individuals in the population. Are there enough individuals and seeds to allow for seed collection? Label bags with these four items:

<table>
<thead>
<tr>
<th>1. Name of plant species</th>
<th>Seeds are ripe when they shake in the pod, are easily removed from the plant and/or are turning dark in color. Seeds should come away easily or they are not ripe. Come back in a week or two. Dry fruits should be harvested into paper envelopes or bags. Moist fruits can be placed into plastic bags or containers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Date collected</td>
<td></td>
</tr>
<tr>
<td>3. Location</td>
<td></td>
</tr>
<tr>
<td>4. Name of collector</td>
<td></td>
</tr>
</tbody>
</table>

**Preserve Genetic Diversity**

- Collect fewer seed from several different plants as opposed to collecting many seeds from one to a few plants.
- If practical, sampling should be done randomly and evenly from throughout the population.
- Collect a similar quantity of seed from each sampled plant. Do not collect more seeds from plants that produce many seeds than you do from plants that produce fewer seeds.
- Leave plenty of seed behind. Most state and federal guidelines limit sampling to no more than 5% of the current season seed either on a population or on a per-plant basis.

**Seed Cleaning and Storage**

Be sure to store the seeds you collect under proper storage conditions. Wet fruits should be refrigerated for a short period if they cannot be cleaned and dried immediately. See [CNPS Native Plant Propagation](http://www.cnps.org/cnps/grownative/propagation/seed_collect_clean.php) for more instructions on how to clean seeds. Keep seeds loosely in bags or newspaper until well-dried. Air-dry wet seeds on paper towels or newspaper. Store cleaned dried seeds in paper bags or paper envelopes in a cool, dry place.

For more information:

- [http://www.fs.fed.us/wildflowers/Native_Plant_Materials/developing/collecting.shtml](http://www.fs.fed.us/wildflowers/Native_Plant_Materials/developing/collecting.shtml)

Don’t forget to check out our beautiful website with the latest updates: [http://sanhedrin.cnps.org](http://sanhedrin.cnps.org)

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Attention Sanhedrin Chapter Members

The Sanhedrin Chapter Newsletter is available as a pdf document for those who would like to receive it via email. Please contact us at sanhedrincnps@gmail.com if you would like to receive the newsletter as an emailed pdf instead of a paper copy and help us to save paper, chapter revenues, and gas.

Please make sure we have your email address. We would like to be able to send all of our members occasional email updates about recently added and upcoming field trips that may not be in the newsletter. We don’t have email addresses for everyone, so if you don’t currently get our emails and would like to, please email us at sanhedrincnps@gmail.com and we’ll add you to our list.

Material suitable for the Sanhedrin Chapter newsletter can be sent to the editor, Kerry Heise, kheise@copper.net