



ONAPA NEWS

"We are dedicated to promoting, protecting, and improving Ohio natural areas and preserves."

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Cooperrider-Kent Bog (Tom S.) State Nature Preserve— The Untold Story

Although it was many years ago, I vividly remember driving the back roads in and around Portage County searching for signs of yet undiscovered tamarack bogs, good candidates for sites hosting a variety of rare bog plants thus worthy of becoming state nature preserves. As the Assistant Chief of the newly created Division of Natural Areas & Preserves, I was always on the lookout for natural areas of statewide ecological significance. It was late October, after the leaves of deciduous hardwood trees had fallen. This was the perfect time of year to search for the illusive tamarack (*Larix laricina*), a tree more at home to the boreal forests of



Kent Bog Boardwalk

Canada than to the Ohio landscape. Tamaracks are deciduous cone-bearing trees or conifers. Most conifers retain their needles throughout the year, however, tamarack needles turn bright yellow in late autumn before falling, well after the leaves of hardwoods have fallen. Thus a tamarack, with its bright yellow needles, can be seen at some distance across an otherwise naked landscape. Surprisingly, a few tamaracks remain in Ohio, typically surrounding sphagnum kettle-hole bogs, as relicts of the last Ice Age. As the great ice sheet lumbered southward from northern latitudes, it moved slowly enough to enable a wide band of boreal vegetation to precede it. Eventually, about 18,000 years ago, the glacier reached its furthest point south in Ohio before slowly melting back northward. As it receded, large blocks of ice often broke free and were buried by sand, gravel and clay being washed out of the melting ice

of the continental glacier. As these buried blocks of ice eventually melted, within the depressions they left, deep lakes called kettle-hole lakes developed. Rare Canadian plants typical of the boreal forests, including tamaracks, colonized the edges of these deep lakes. As the glacial wall of ice continued to melt northward, the band of boreal forest retreated with it except in a few places where special environmental conditions enabled these northern relicts to subsist even to this very day. This is what makes tamarack sphagnum kettle-hole bogs so special; they truly are living relicts of the Ice Age.



(Continued on page 2)

INSIDE THIS ISSUE

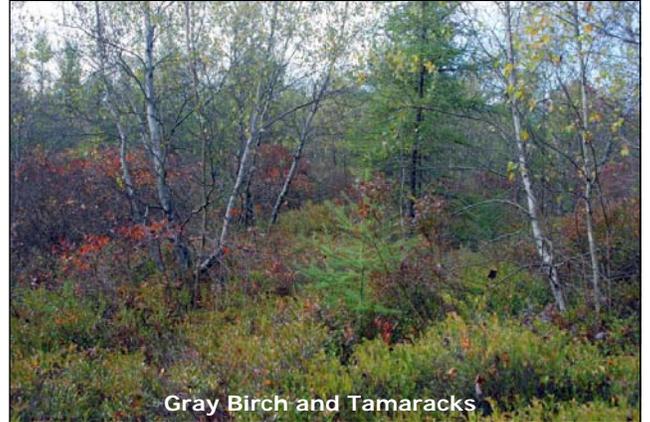
Cooperrider-Kent Bog State Nature Preserve-The Untold Story	1
Cooperrider-Kent Bog State Nature Preserve- The Untold Story (cont'd)	2
Lesser Celandine: An Invasive Plant that Defies Control!	3
Stewardship in Action	4
Join us this Summer for a Stewardship Project	4
Stewardship in Action (cont'd)	5
Join us this Summer for a Stewardship Project (cont'd)	5
ONAPA 4th Annual Banquet	6
Kroger Community Rewards	7
Thank You New Members & Donors	7
2016 ONAPA Field Trips	7
Rarity Watch: Old Growth Forest	7
ONAPA Summer Picnic	8

Cooperrider-Kent Bog (Tome S.) State Nature Preserve— The Untold Story (cont'd)

(Continued from page 1)

I was headed north on State Route 43 into Kent to get something to eat, when all of a sudden, out of the corner of my eye, I saw an extensive band of yellow off in the distance. Tamaracks, and not just a few, but what appeared to be an extensive grove of tamaracks! But how could this be? How could a tamarack bog of this size have gone unrecorded so close to Kent State University home of Dr. J. Arthur Herrick who in the 1970's was the leader working with the Ohio Biological Survey to inventory the best remaining natural areas throughout Ohio? Of the 19 sites he recorded for Portage County, this bog was not on his list. This was also the home of Dr. Tom S. Cooperrider, a nationally renowned botanist and chair of the Ohio Flora Committee of the Ohio Academy of Science and professor emeritus at Kent State University, but he hadn't reported this bog either. Surely, this had to be some kind of tree plantation of non-native Asian or European tamaracks. I quickly pulled over and began bushwhacking my way toward the tamaracks; the site had to be checked out to determine its origin. As I entered the site, it quickly became apparent, this was no tree plantation; this was the real thing. No bog lake present, but otherwise complete with numerous species of rare Canadian plants including possibly the largest, southernmost stand of tamaracks in the continental United States. Few kettle-lake bogs remain this far south, for over time they fill with peat and are transformed into wet woods more typical of these latitudes. Only the very deepest have survived since the Wisconsin Glacier receded from Ohio some 12,000 years ago. I could see from the outline on a topographic map, this site had once been a huge glacial lake that had since filled in.

A week or so later I learned from courthouse records Carter Jones Lumber Company owned the southern half of the bog while Harry and Olive Stark owned the northern half. I was a little uneasy upon knocking on Mr. Stark's door to see if he would allow me to explore his bog. Many landowners do not like strangers on their property, especially ones driving state vehicles. Much to my relief, Harry Stark was very proud of his bog, knew how precious it was, and was most accommodating. He told me stories about how long ago he allowed folks from all over to pick wild blueberries in the bog, and how one year the bog peat caught on fire and burned all summer long. He told me how spotted turtles, a very rare species that live in his bog, would often come up into his garden. Harry was up in years by that time and was ready to give up the hard work of farming and raising cattle. Yet, he and his wife Olive wanted to see the bog preserved for the enjoyment of future generations.



Gray Birch and Tamaracks

In 1987, the Starks sold the 43 acre farm which they had owned since 1944 to the ODNR Division of Natural Areas & Preserves. This was the very first nature preserve to be purchased entirely with funds donated to DNAP by the citizens of Ohio through the Ohio Natural Areas Income Tax Checkoff Fund.

In 1993, DNAP staff, under the direction of Field Operations Manager Bill Loebick and Preserve Manager Eddie Reed, completed a 2,750 foot long and 4 foot wide boardwalk loop trail through the bog constructed entirely out of recycled plastic lumber derived from recycled soda bottles and stretch wrap. Prior to construction of the boardwalk, built under guidelines of the American Disabilities Act, the dense shrub layer made access to the bog nearly impossible. It is now wheelchair accessible from the paved parking lot throughout its entire length along which are located numerous interpretive signs explaining the ecology and identifying some of the rare plants and animals occurring here. This boardwalk trail was funded on a 50/50 cost-share basis between DNAP and the former ODNR Division of Litter Prevention & Recycling.

As it turned out, this bog actually wasn't entirely previously unknown. In July 1961, Kent State botany professor, Tom Cooperrider and one of his students had collected plant specimens from this bog, including specimens of the state endangered small cranberry (*Vaccinium oxycoccos*), but the location of this bog had since fallen into obscurity. In 1995, Kent Bog was rededicated as Tom S. Cooperrider Kent Bog State Nature preserve to honor the life work and achievements of Dr. Cooperrider to the citizens of Ohio.

This nature preserve is open to the public. It is located on the south side of Meloy Road just west of State Route 43 at the southern outskirts of Kent, Ohio. Following the boardwalk into the bog is like stepping back in time. It is an adventure you definitely want to experience.

Guy Denny

LESSER CELANDINE: An Invasive Plant that Defies Control!

Lesser celandine (*Ficaria verna*, formerly *Ranunculus ficaria*) is a spring-blooming invasive plant that is prevalent in riparian corridors and stream valleys. Lesser celandine is a serious threat to spring ephemerals in the northeastern United States. In Ohio, it is found primarily in the northeast and southwest regions. However, it is spreading throughout the state, including central Ohio. Cindy Decker recently had an article in The Columbus Dispatch about it, reporting it from the Olentangy River floodplain and properties nearby. She insisted that control should be "ruthless".

It has multiple means of reproduction including seeds, tubers, and vegetative bulbils. The bulbils are the primary means of spread throughout the year and have a high probability of transport because of flooding. Understanding the phenology of lesser celandine is key to early detection and successful treatments. Bulbils sprout in early winter and basal leaves can form during mild winters, much like the one that we had this year. First-year plants establish permanent tubers quickly. In northern Ohio, lesser celandine begins flowering in early spring and peaks with the early spring ephemerals. The treatments for celandine coincide with the growth of native wildflowers putting them at high risk of damage from herbicide treatments. Lesser celandine withers completely by early June, making it difficult to find after then.

Land managers must find the best ways to use limited resources to combat the greatest threats to biological diversity and ecosystem function. Often it seems that the most limited resource is the time and funding needed to measure the effects of invasive plant management strategies. Systemic chemical herbicides are typically required for the successful control and



Lesser celandine. Photo by Jennifer Windus.



Lesser celandine roots and tubers.



Lesser celandine in the floodplain at Olsen Preserve. Photo by Jennifer Windus.

eradication of lesser celandine. It may be critical to utilize an aquatic herbicide since lesser celandine is often found in wetland and riparian habitats. An aquatic glyphosate, utilized at a 1% -1.5% rate is an effective systemic herbicide that is readily available. A non-ionic surfactant should also be added to the chemical mix to improve penetration through lesser celandine's waxy leaves. It is important to note that glyphosate is a non-selective herbicide, therefore it will kill non-target species that receive any overspray. Mechanical digging can be an effective option for small populations outside of riparian corridors. It is not recommended in areas where flooding is likely because the soil disturbance will increase the likelihood of remaining tubers and bulbils floating into areas that are not infested, thus increasing spread. It is also difficult to dig without leaving tubers and bulbils in the ground.

Unfortunately, a number of state nature preserves are already infested with lesser celandine. A recent ONAPA stewardship project to Augusta-Anne Olsen Preserve in Huron County was a depressing experience for our volunteers as huge areas of the Vermilion River floodplain were already taken over by lesser celandine (see photo). DNAP staff have been spraying it, but it has monopolized more acres than they can effectively treat. ONAPA volunteers did some digging in an area where the spring wildflowers were still dominant and spraying would be difficult, without affecting non-target species. The best advice we can offer is to eliminate this species as soon as it arrives – the longer you wait and the species becomes well-established, it will defy control!

**Jennifer Windus, ONAPA Board
& LaRae Sprow, Toledo
Metroparks**

ONAPA Stewardship in Action

ONAPA helps other organizations and agencies with natural areas management, such as invasive plant control and prescribed burning. Our stewardship projects are typically held on state nature preserves, assisting the Natural Areas & Preserves Program (DNAP). This year we were able to assist Crawford County Park District, Killbuck Watershed Land Trust, and Gorman Nature Center with prescribed burns.



A Prescribed Burn at Daughmer Savannah, In Partnership with Crawford County Park

Daughmer Savannah is a dedicated State Nature Preserve managed by Crawford County Park District. On April 5, 2016 ONAPA, including 3 ONAPA volunteers and 3 Park District staff, burned a unit approximately 10 acres in size on the north end of the preserve. This prescribed burn should invigorate the prairie grasses and forbs, as well as the wetland sedges, while controlling the invading woody species.



Focusing on Garlic Mustard Removal at State Preserves,

On Saturday, April 23, 2016, 10 volunteers and the preserve manager, Josh Deemer pulled garlic mustard, Japanese barberry, and privet at Lake Katharine State Nature Preserve in Jackson County. Just a few days later, on Wednesday, April 27, 2016, 6 volunteers and 2 DNAP employees pulled garlic mustard at Collier Preserve in Seneca County. Both projects focused on removing this very invasive biennial which threatens to reduce spring wildflower diversity. Both preserves have excellent spring wildflowers and regular, annual management is necessary.



A Prescribed Burn at Brinkhaven Oak Barrens In Cooperation with the Killbuck Watershed Land Trust

ONAPA has been working with the Killbuck Watershed Land Trust for the past 2 years to assist with habitat management in the south barrens. On April 15, 2016 an excellent prescribed burn was conducted in the barrens and surrounding oak woods. It should have great results for controlling woody species and helping the prairie species thrive in the restored opening. ONAPA has a field trip to see this site in August, so we are excited to see it later this summer.

Join Us this Summer for a Stewardship Project

For project details, what to bring, locations and sign-up instructions, visit www.onapa.org.
When applicable, herbicide treatment will be done by DNAP staff or trained ONAPA volunteers.

Wednesday, June 15, 2016, 10:30 a.m. – 3:30 p.m.

Sweet-clover & Teasel Removal at Chaparral Prairie State Nature Preserve, Adams County

Our project will include removing yellow and white sweet-clover, and common teasel which are invasive plant species throughout the preserve. Control will include pulling and using a small digging spade, if applicable.

Saturday, June 18, 2016, 10 a.m. – 3 p.m.

Teasel Removal at Daughmer Savannah State Nature Preserve, Crawford County

We will be cutting the flower heads off any plants getting ready to flower, then using a shovel to cut down on an angle about 4-5 inches below the base of the plant to sever the tap root, and then pull the mature plant or rosette out of the ground.

Wednesday, July 13, 2016, 10 a.m. - 3 p.m.

Bush Honeysuckle Removal at Clifton Gorge State Nature Preserve, Green County

This project will focus on removal of bush honeysuckle in sensitive areas in the preserve. We will be working on the south side of the river which is the scientific research side which usually requires an access permit.

Saturday, July 23, 2016, 10 a.m. - 3 p.m.

Invasive Woody Control at Johnson Woods State Nature Preserve, Wayne County

We will be removing invasive woody species such as bush honeysuckle, Japanese barberry, multiflora rose, as well as Japanese knotweed.

ONAPA Stewardship in Action (cont'd)

For picture galleries of these projects, visit www.onapa.org or www.facebook.com/OHNAPA. Upcoming stewardship project details, driving directions, and sign-up instructions can be found at www.onapa.org/stewardship-projects.html.

Teasel Control

ONAPA's first Stewardship Project of 2016 was on March 12, 2016 at Milford Center Prairie Natural Area in Union County, northwest of Columbus. This remnant prairie spans more than 1.5 miles beneath a Dayton & Power Light power line. The weather cooperated and we had a good 4-5 hours to work, including lunch and a short prairie tour at the end of the day. We had 13 volunteers that helped us dig common teasel and poison hemlock rosettes, as well as cut invading woody species in the prairie. All the cut woody stems were treated with herbicide to prevent re-sprouting. We filled 9 large garbage bags with teasel and poison hemlock rosettes!



Garlic Mustard Removal

ONAPA held its second Stewardship Project at Boch Hollow State Nature Preserve in Hocking County on March 23, 2016. It was the first project during the week and we were very pleased to have seventeen ONAPA volunteers, along with five Natural Areas and Preserves Program (DNAP) staff, assist in the removal of garlic mustard on a new parcel at this preserve. We also had our first reporter attend, which resulted in a nice article in the Logan Daily newspaper. It was a great day and a short field trip at the end of the day rewarded us with some spectacular waterfall views. This portion of the preserve is only accessible by permit from DNAP.



Lesser Celandine Removal

The third ONAPA stewardship project was held at Olsen Preserve, just north of Wakeman on April 6, 2016. Thirteen (13) intrepid ONAPA volunteers and two DNAP staff braved the cool, breezy, rainy weather to work on controlling lesser celandine in some of the best wildflower areas of the preserve. Unfortunately this invasive plant has overwhelmed much of the floodplain areas, covering the ground with a carpet of pretty yellow buttercup flowers in the spring. Volunteers worked in an area with many native wildflowers to pull and dig up lesser celandine plants. After lunch, we had a pleasant hike along the Sassafras Trail to see the Vermillion River.



Join Us this Summer for a Stewardship Project

Wednesday, August 10, 2016, 10:30 a.m. – 3:30 p.m.

Invasive Species Control at Myersville Fen State Nature Preserve, Summit County

We will be removing invasive plant species, such as narrow-leaved and hybrid cattail and glossy buckthorn, which are encroaching upon the fen meadows.

Saturday, August 20, 2016, 10:30 a.m. – 3:30 p.m.

Invasive Species Control at Jackson Bog State Nature Preserve, Stark County

We will be removing invasive plant species, such as narrow-leaved and hybrid cattail, glossy buckthorn, privet, and purple loosestrife, which are encroaching upon the fen meadows.

Wednesday, August 24, 2016, 10 a.m. - 4 p.m.

Bush Honeysuckle Removal at Gallagher Fen State Nature Preserve, Clark County

We will focus on the secondary preserve management goals. We will be cutting and treating the stumps of bush honeysuckle (primarily Amur), as well as any other invasive shrubs in these communities.

Wednesday, September 7, 2016, 10:30 a.m. – 3:00 p.m.

Invasive Species Control at Springville Marsh State Nature Preserve, Seneca County

Our project includes hand-wicking (applying herbicide with gloves & old socks) narrow-leaved cattail and cutting woody species in the sedge meadows. Herbicide treatment will be done by DNAP staff or trained ONAPA volunteers.

Tuesday, September 20, 10 a.m. - 4 p.m.

Invasive Species Removal at Prairie Road Fen State Nature Preserve, Clark County

The goal of this project is to remove woody vegetation in the fen meadow, which by means of succession, are invading the fen meadows. We will target all woody species, but glossy buckthorn will be the primary species of concern.

Join Us in Southwest Ohio for ONAPA's 4th Annual Meeting & Banquet Saturday, September 17, 2016

Our theme **Natural Heritage, Art, and Native Peoples** will provide participants with opportunities unique to their particular interests in Ohio's natural history.

ONAPA volunteer field training sessions will be conducted on Saturday morning at the Cincinnati Nature Center in Milford, Ohio. Topics will include invasive species management and nature preserve site monitoring. Learn how to participate in these stewardship activities and the importance they provide to our state nature preserve system.

This year's field trip activities will be held at multiple locations. We have ONAPA, Natural Areas and Preserves Program, universities, and local experts in all fields of natural science participating at each activity location

Fort Ancient State Memorial

Fort Ancient is a significant component of the Hopewell Ceremonial Earthworks. These sites are national, historic landmarks, and the Hopewell Ceremonial Earthworks has been nominated and could become Ohio's first United Nations World Heritage Site.

Our activities will include archeological tours of the museum and earthworks and a botanical tour of the old growth forest.

Caesar Creek Gorge State Nature Preserve and Caesar Creek State Park

This site was once covered by vast tropical seas and later by giant glaciers. Ordovician fossils ranging from 450 to 500 million years old are found in the limestone forming the crest of the Cincinnati Arch. The activities will feature the fossil areas above the gorge, the state park's Visitor Center, the gorge



**Sycamores at Caesar Creek State Nature Preserve
Photo by Ian Adams**

areas formed by glacial meltwater exposing Ordovician limestone and shale rich in fossils, along with botanical tours of the habitat-rich forested hillsides of the Caesar Creek Gorge State Nature Preserve.

Cincinnati Nature Center (CNC)

The CNC has over 16 miles of trails that wind through natural habitats of grasslands, uplands, ridge tops and eastern deciduous forest. The 12,000 year old glacial outcrops and 65 acres of old growth forest are just two of the features of this award winning trail system.

The CNC's Center for Conservation and Stewardship promotes research and develops educational programs to support and serve those with an interest in land and water management, applied ecology and environmental research throughout the greater Cincinnati region.

Our Meet and Greet social activity with hors d'oeuvres and local Cincinnati-brewed beer will start at 3:00 p.m. at the Heritage Banquet Center in Goshen, Ohio. Join the ONAPA trustees, advisors, and supporters to hear about the successes of the last five years and our plans for the future. This will be followed by a brief business meeting, buffet dinner, and special keynote presentation.

Registration will begin in mid-June on the ONAPA website at www.onapa.org or can be done by calling Christine Hadley at 513-850-9585. More details will be available in the coming months.

This is going to be a great event, and we look forward to seeing all our members, friends, and supporters at the 4th ONAPA annual meeting and banquet in southwest Ohio!

When you purchase the Nature Preserves plate, your \$15 donation will support facility and trail improvements, as well as provide new educational opportunities for visitors. Let Ohio know you support your nature preserves! Visit www.oplates.com.





It's time to re-enroll for the new year of Kroger Community Rewards. Those of you supporting ONAPA will need to re-enroll now in order to continue contributing to us through the May 1st 2016 to April 30th 2017 year. Follow the information to re-enroll at www.onapa.org under SUPPORT ONAPA/KROGER COMMUNITY REWARDS

Thank you for your support! Newest Members & Donors

Benita Barlow
Angel Bradford
Dr. Nicole M. Gnezda
Ashley Jernigan
Nathan Johnson
Dan & Molly Kenney
Scott Kenreich
Mary Tarantino &
Robert L. Larrimer
Stephanie Lyon
Jane McCullam

Michael Moore
E. J. Offutt
Greg Payton
Tara Poling
Anthony Sasson
Greg Smith
Patricia A. Tuttle
Mary Webster

As of 05/01/2016

2016 Field Trip Schedule

Field trip details and sign up instructions can be found at www.onapa.org

May 31—Heritage Garden at the Governor's Residence (Tour the regions of Ohio represented at the Heritage Garden with Hope Taft)

July 16—Smith & Bigelow Cemeteries & Milford Center Prairie SNPs (Joint field trip with CWPS to see remnant tall grass prairies in the Darby Plains with Dave Kuehner)

July 19—Marblehead Alvar and Glacial Grooves

July 30—Guy Denny's Prairie and ONAPA Picnic

August 13—Brinkhaven Barrens

September 24—Prairie Seed Collecting at Guy Denny's Prairie

Rarity Watch: Old-Growth Forest

Many authors occupy space upon my shelves. Wendell Berry has moved my heart, but Joan Maloof has moved my feet. After reading Maloof's "Among the Ancients" I had to go see the last remains of our Old-Growth Forests: Cathedral Woods West Virginia, George Washington National Forest Virginia, Cook Forest Pennsylvania, Congaree National Park in South Carolina, and Ohio's own Johnson Woods.

Only by immersing oneself into true Old Growth Forests can we measure what we have lost. These forests boast of many species and great biodiversity. Well-fed chipmunks and birds scamper across rotting logs that are protein rich in beetle larva. The hydrology is deeper, moister. Wildflowers and ferns respond in abundance to the sponge-like humus of the forest floor. The woodland fungi run unseen, beneath the leaf-covered forest floor and bind together under rotting bark. These fungal components of our forest play important roles in the ongoing drama. They are the communication system called the "woods wide web." This tree communication system draws forth nutrients and sends out signals of impending attack. No need for Druids or sprites in a forest, the fungi help trees "talk" to each other through their entangled roots. It may stretch our limited imaginations, but scientists are documenting this "web" in ongoing studies.

Breathe deeply in an Old-Growth Forest... the Japanese call this "deep forest bathing" or Shinrin-yoku. The documented health benefits include lowered blood pressure, boosted immune system, stress reduction, increased energy level, and improved sleep. You too, will probably *feel better* talking a slow walk in an Old-Growth Forest. It is part of our DNA.

Ohio has but a handful of these protected Forests. Mohican has the Clear Fork State Nature Preserve. Johnson Woods near Wooster offers a peek into our past. Dysart Woods near Belmont remains lauded, but endangered by underground mining. Ohio would benefit by setting aside more sites like these.

One walk in an Old-Growth Forest teaches anyone attuned to nature the vast difference between 100-200 year old forests and the single-species woodlots used for timber production. Woodlots for timber production are as important as any other type of farm, but forests only begin to reach their true potential after the passage of time.

A visit to witness astounding, centuries-old trees commune in a natural Old-Growth Forest is an experience you will long remember. Never again will you believe "woods can 'over mature'."

Cheryl Harner

ONAPA Summer Picnic, July 30, 2016 – Come Join us to Celebrate!



Guy Denny's prairie in Knox County

Our stewardship schedule is off to a great start for 2016. Field trip attendance is excellent. Membership is growing, and the ONAPA message "Promoting, Protecting and Improving Ohio's Natural Areas" is being well received across the state. Plan on attending a great field trip and cook-out at Guy Denny's prairie in Knox County. His 22 acres of planted prairie are about 20 miles east of the original prairies of the Sandusky Plains. This is one of the best created prairies in Ohio and is designed to look like the prairies in that area would have looked prior to European settlement

Our host, Guy Denny, is a gifted naturalist and storyteller who brings to life the history of the prairie with stories of the plants and the people who lived in the grasslands. Learn about the origin, ecology and numerous prairie plants native to the state. Come with your questions and appetite. ONAPA experts will discuss anything on prairies or any other question you may have about our great state's nature preserve system. The field trips on this site will begin at 10 a.m. and run until 1 p.m. The picnic from 11:30 a.m. to 2 p.m. will be hosted by ONAPA for our members and friends. Your presence will provide the camaraderie and friendship for an all-around good time throughout the event. That's why it's called Food, Friends & Fun! Contact Christine Hadley at christinehadley@earthlink.net or 513-850-9585 for any questions. Register for the event at www.onapa.org/onapa-field-trip-registration.html.



Guy Denny



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