



# ONAPA NEWS

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VOLUME 5 ISSUE 1

WINTER - 2017-2018

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## Clear Fork Gorge State Nature Preserve

One of Ohio's lesser known state nature preserves is Clear Fork Gorge State Nature Preserve embedded within the Mohican State Park/State Forest complex in Ashland County. This 29 acre preserve is situated on the steep north facing bluff



Clear Fork State Nature Preserve

overlooking the gorge of the Clear Fork of the Mohican River that flows through Mohican State Park. The deep gorge which runs nearly 3 miles from the dam at the adjacent Pleasant Hill Lake through Mohican State Park to the park's main campground at the junction of Ohio SR 97 and Ohio SR 3, is quite outstanding in and by itself. The gorge is more than 1,000 feet wide and over 300 feet deep. Clear Fork Gorge was designated as a National Natural Landmark by the U.S. Department of Interior, National Park Service because of its outstanding geological and ecological features which are of national significance. Geologists tell us that this exceptionally deep gorge is a product of the Pleistocene Epoch or last Ice Age. Prior to glaciation, where the Clear Fork River runs through the park today, there was no gorge. Rather, there were two separate headwater streams flowing in opposite directions, one north and west, the other east, separated by a broad drainage divide that occupied the landscape between these two streams. This solid bedrock divide, capped with erosion resistant Mississippian-age (359-323 million years ago) sandstones, covered an area more than half a mile wide that extended north to south across what was to become the gorge. It was approximately situated between the present-day locations of the State Forest office on the north and the

Youth Camp facility to the south.

At some time during the Ice Age, probably as the last continental glacier, the Wisconsinan, lumbered southward across Ohio, the northwest flowing headwater stream west of the divide was dammed by a

massive wall of glacial ice that came to rest at a point probably just north of the present location of what is now the Pleasant Hill Lake dam. The ice dammed river valley filled with melt waters from the glacier until the resulting glacial lake began to overflow eastward across the drainage divide. This allowed torrents of rushing waters to cut down through the sandstone bedrock of the divide carving a new deep channel across the divide thus connecting the overflowing glacial lake meltwaters to the east flowing headwater stream on the other side of the divide. The force of the rushing water was strong enough to cut down through the erosion resistant sandstone formations but because of their erosion resistance, the newly formed gorge was deep and narrow. After the ice dam melted and the glacier lake receded, the two former valleys of the headwater streams were connected so waters in this region now continue to flow eastward through the cut in the divide to form present-day Clear Fork Gorge. If you were to look at the gorge from high above, you would see the broad river valley of the pre-glacial headwater stream to the northwest, the narrow Clear Fork Gorge in the middle, and then the broad river valley of the former pre-glacial headwater stream to the east, all forming a sort of hourglass shape on the surface of the landscape. The Clear Fork of the Mohican River continues the eroding

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## Eastern White Pine (*Pinus strobus*)

The eastern white pine, native to much of eastern North America, was once frequently used in colonial America as a Christmas tree well before spruce and fir became readily available in the Christmas tree market. Its shape and soft blue-green needles continues to make white pine a favorite Christmas tree for many even to this day. The attractive long pendulant pine cones are often used for



Eastern White Pine (*Pinus strobus*)

wreaths and other Christmas decorations. White pine is an easy conifer to identify by its distinctive shape and especially by its long needles in multiple individual bundles stationed along the branches of five needles each. Just as there are five letters in the word "white," there are five needles per bundle. This is our only conifer with its needles in bundles of five.

When the colonists first arrived along the east coast, they encountered abundant and impressively large white pines, reportedly with trunks six feet in diameter and soaring to heights of 250 feet. This was the tallest and most important of the eastern pines. In those days of majestic sailing ships, the long straight trunks of white pine were the preferred choice for ship's masts. For almost 250 years, eastern white pine was the leader in lumber markets. The colonists exported large quantities back to Europe. Even today, it remains an important source for lumber in the U.S.

Formerly, magnificent stands of virgin eastern white pine forests covered extensive areas throughout the Great Lakes States. It occurs in peatlands to dry ridgetops from Newfoundland to Manitoba and southward through the Great Lake States and New England then along the Appalachian Mountains to northern Georgia. In Ohio, eastern white pine is native and found sparingly throughout much of the northeastern quarter of our state and southward along the Ohio River into Washington County. One of the most impressive natural stands of white pine in Ohio occurs in Clear Fork Gorge State Nature Preserve within Mohican State Forest in Ashland County.

This pine is one of our best trees for reforestation because of its vigorous growth rate and high-quality wood. It is also a favorite landscaping

tree that has been extensively planted throughout Ohio and readily reseeds in suitable habitats. Unfortunately, climate change may make it less suitable for Ohio in the future since it is a species of more northern climes. These are fast growing, long-lived trees. Until it reaches old age, eastern white pine develops one horizontal whorl of branches around its trunk with each year's growth. Counting each

level of branches can be used to estimate the age of the tree.

To native North American Indians, the eastern white pine was a valued source of medicine and more. Woodland Indians soaked the inner bark in water to soften it and then applied it to all sorts of wounds as a soothing antiseptic dressing. A tea made from the inner bark was used as an astringent to treat diarrhea and also used as a cough medicine. As a cough medicine this tea was an expectorant (loosen phlegm) and soothed the mucus membrane linings of the respiratory track. The Iroquois reportedly eat the inner bark, both raw and cooked, as an emergency food. Several tribes also boiled the young green needles of white pine and drank the tea to treat sore throats and to prevent scurvy which is caused by a lack of vitamin C. White pine needles reportedly are rich in vitamin A and supply up to five times as much vitamin C as is contained in an equal weight of lemons. A boiled extract of the sticky pine gum so characteristic of this species was reportedly used to treat rheumatism and muscular pains. This whitish sticky resin was also mixed with beeswax and used to waterproof and seal the seams of birch bark canoes. The Ojibwas also used the seeds of this pine as a flavoring for cooked meat.

The colonists adopted many of these Native American uses of the eastern white pine as both a medicine and as a food. One culinary use was to dry and then grind the inner bark into a flour or mix it with regular flour. As a medicinal plant, the inner bark of white pine was listed in the National Formulary from 1916 through 1965. Eastern white pine is a wonderful component of the Ohio flora with a diverse and fascinating history.

~~ Guy Denny

## Clear Fork Gorge State Nature Preserve (cont'd)

process to this very day by now cutting down through the easily eroded Wooster Shale at the base of the sandstone formations on the bluffs. Undercutting the above sandstones causes slumping of large blocks of sandstone down the valley walls wherever the overlying sandstone bedrock is weakened, thus continuing to very slowly eat away at the former divide further widening the gorge.

During your visit to Mohican State Park, plan on parking at the covered bridge and hiking the Lyons Falls Trail northward toward Pleasant Hill Lake along the western rim of the gorge that lead to Little and Big Lyons Falls, both scenic rock shelters formed in the Black Hand Sandstone of the Cuyahoga Formation of early Mississippian-age. This is the same Black Hand Sandstone noted for the famous geological features in the Hocking Hills Region of Ohio. Eastward of the covered bridge, according to the Ohio Division of Geological Survey, the gorge walls are comprised of bedrock of the Logan Formation of later Mississippian-age starting with a top layer of Vinton Sandstone, Allensville Conglomerate, Byer Sandstone, Bern Conglomerate and finally Wooster Shale.

Although glacial ice rimmed the park and forest complex on three sides during the Ice Age, it stopped at the gorge and except for a small section at the northern end, did not flow into it. Nevertheless, glaciers flow very slowly across the landscape, slowly enough that a band of boreal or northern vegetation moved southward well in advance of the advancing wall of ice. As the glacier melted back northward, the more northern vegetation receded with it disappearing from the landscape except in very special micro-ecosystems including bogs, fens, and deep gorges where special environmental conditions enabled some northern species to persist even to this day. Clear Fork Gorge is one such site. The cold waters of the Mohican River nestled deep within the narrow gorge, sheltered from the baking rays of the sun and drying winds, especially along the north facing bluffs, provide habitat for a number of northern species occurring well south of their normal range. Such rare species within the gorge include Canada yew (*Taxus canadensis*), purple flowering raspberry (*Rubus odoratus*), red-berried elder (*Sambucus canadensis*) and mountain maple (*Acer spicatum*). Included in this mix of typically northern species are eastern white pine (*Pinus strobus*) and eastern hemlock (*Tsuga canadensis*). More northern nesting species of birds including magnolia warblers (*Dendroica magnolia*), black-throated green warblers (*Dendroica virens*), and winter wrens (*Troglodytes troglodytes*) also make Clear Fork Gorge home during the nesting season.

Clear Fork Gorge State Nature Preserve is only 29 acres in size but it encompasses eight acres of

high quality Eastern White Pine – Eastern Hemlock Forest Community. Huge towering old-growth white pines and hemlocks grow on the steep sides of the north-facing gorge wall. Most of the Mohican area was denuded of its original forest long ago, but these ancient pines and hemlocks were fortunately spared simply because the steep sides of the gorge where they grow probably made it too difficult for loggers to remove them. Another rare plant to look for found growing beneath these giant conifers is the round-leaved orchis (*Amerorchis rotundifolia*). It is not uncommon in this nature preserve.



Trail Head to Clear Fork Gorge

Clear Fork Gorge State Nature Preserve and Mohican State Park is a great destination anytime of the year, but during winter once the leaves of surrounding deciduous trees have fallen, one can take in the full grandeur of the stands of towering eastern white pines and eastern hemlocks within the nature preserve. The Hog Hollow Hiking Trail starts just across the road from the Mohican Fire Tower and leads down to the preserve where the nature preserve trail splits off from the Hog Hollow Trail behind the Clear Fork Gorge Nature Preserve sign and kiosk. You might want to consider making Mohican State Park and Clear Fork Gorge State Nature Preserve a special place to explore during your next winter hiking adventure.

~ ~ Guy Denny

The Ohio Department of Agriculture (ODA) will be filing its draft invasive plant rules with JCARR soon. The public hearing for final comments will be on **November 30th at the ODA office in Reynoldsburg**. The updated rules can be found on the ODA website or you can also watch for any updates on the Rule Watch website. Check the Ohio Invasive Plants Council website at [www.oipc.info](http://www.oipc.info) for further updates. We encourage you to attend the November 30th hearing and support the proposed rules.

## ONAPA Stewardship in Action

September:



### Gallagher Fen SNP Stewardship Project

On Saturday, September 9th, twelve ONAPA volunteers and preserve manager, Michelle Comer worked in the savanna area of Gallagher Fen to remove woody species in the understory. This was a continuation of the work we did last year to open up the savanna above the main fen meadow. We cut and treated large Amur bush honeysuckles and other woody species in the understory, in an effort to restore the savanna and encourage prairie plants. We also had a nice hike on the boardwalk and trail around the main fen, seeing many fen and prairie species in bloom.



### Springville Marsh SNP Stewardship Project

On a hot, humid day, September 20th, 3 DNAP staff and 8 ONAPA volunteers worked at Springville Marsh SNP to control narrow-leaved cattails and woody species in the fen meadows. Herbicide was applied to the cattail leaves and cut woody stems. These invasive plants are impacting the remaining small fen meadows by shading out the native fen species. Preserve manager, Ryan Schroeder took the group on a short field trip after lunch - we enjoyed seeing flowering fringed gentians and ladies'-tresses.



### Kent Bog SNP Stewardship Project

On September 27th, ONAPA had a very productive stewardship project at Kent Bog SNP with several partners including 4 Dawes Arboretum Residents, 3 members of the Friends of Kent Bog, and a class of 18 students from Kent State University with Dr. Melissa Davis. ONAPA had 6 volunteers and there were 4 DNAP staff. We all worked together on cutting invasive woody species such as glossy buckthorn, Amur honeysuckle (in the uplands around the bog), and larger red maples. The larger glossy buckthorn were cut and treated with herbicide, while the smaller seedlings were hand-pulled. Glossy buckthorn is a significant problem at Kent Bog, so it was excellent to have a large group cooperating

to control the species. Preserve manager, Adam Wohlever, led a short field trip after lunch along the boardwalk. The Goodyear blimp even passed over us while we were working!



### Jackson Bog SNP Stewardship Project

On Saturday, September 30th, 9 ONAPA volunteers and DNAP preserve manager, Charlotte McCurdy worked to remove invading woody species in several fen meadows along the boardwalk at Jackson Bog SNP. Woody stems were cut, removed, and treated with herbicide to prevent resprouting. There was a short field trip after lunch to see some of the fen's rare and blooming plants. ONAPA continues to help restore the fen meadows which have become very degraded.

THE 2018 Stewardship Project schedule will be published in the Spring 2018 ONAPA Newsletter and at [www.ONAPA.org](http://www.ONAPA.org) in early 2018.

## ONAPA Stewardship in Action (cont'd)

(Continued from page 4)

### October:



#### Karlo Fen SNP Stewardship Project

On Thursday, October 5th, 5 ONAPA volunteers and 3 DNAP staff worked at Karlo Fen SNP to remove woody species invading the small fen meadow. Although it was cloudy, the group was able to clear out a significant portion of the meadow in 3 hours, removing willows, glossy buckthorn, multiflora rose, and dogwoods. Poison sumac was in its peak fall color - impressive, but good to avoid!



#### Brinkhaven Oak Barrens SNP Stewardship Project

On Saturday, October 21st, ONAPA partnered with the Killbuck Watershed Land Trust (KWLT) at Brinkhaven Oak Barrens natural area to continue the important work of restoring the north barrens. There were 21 volunteers, including 5 representing the Land Trust, who cut and hauled brush and trees in the north barrens. These volunteers included 3 ONAPA Board members. The cut stems were treated with herbicide to prevent re-sprouting. The north barrens has responded very well to the stewardship work we did last year and the opening is looking great - lots of little bluestem and Indian grass, with a variety of prairie forbs. After the project was done, ONAPA participated in a gathering

with 15-20 KWLT Board members and landowners to visit and take a tour of the north barrens. KWLT President (and ONAPA volunteer), Randy Carmel led the tour, which was the first time for several KWLT Board members to see the area. ONAPA has been partnering with KWLT for three years - this is an excellent example of ONAPA coming to the rescue on other natural areas than DNAP's state nature preserves. We are so pleased and proud to work with this NE Ohio land trust!



#### Kiser Lake Wetlands SNP Stewardship Project

On Wednesday, October 25th, 8 ONAPA volunteers and preserve manager, Michelle Comer worked at the Headlands unit of Kiser Lake Wetlands State Nature Preserve to remove woody species from the fen meadow. There is plenty of work to be done in this meadow to restore it, including removal of woody species and invasive cattails. The group was able to clear and treat (with herbicide) willows, dogwoods, and ninebark in a significant portion of this meadow.



Tallgrass Prairie National Preserve

### SAVE This Date - The Week of June 11, 2018

The ONAPA out-of-state field trip for 2018 will be to the Flint Hills of Kansas where the tallgrass prairies of North America begin. We will be visiting the Tallgrass Prairie National Preserve located just west of Emporium, Kansas. On the second day of our visit we will head north to Manhattan, Kansas to visit Konza Prairie managed by Kansas State University. Travel details will be forth coming in early 2018 so watch for them on our website.

## Sheldon Marsh to be Destination of Sandusky Bay Bike Path

ONAPA member Dean Sheldon Jr. whose family originally owned Sheldon Marsh Nature Preserve alerted us to a proposed extension of the Sandusky Bay Pathway which presently is a 1.6-mile long trail running through downtown Sandusky and its waterfront. According to the Sandusky Register, city leadership envisions the public bike path eventually evolving into a 12-mile stretch, linking areas and parks between Bay View and Sheldon Marsh State Nature Preserve.



Sheldon Marsh lane facing south.  
Photo by John Blakeman.

Dean noted: "How refreshing to have an Ohio Natural Area incorporated into major urban planning along the south shore of Sandusky Bay and Lake Erie." The proposed route runs through extraordinary wetlands now preserved by the state, Cedar Point Company, Erie Metro Parks, and the city of Sandusky, he stated. He also stated that Cedar Point bought the old airport and made it into a multi-sports complex. Their first act was to set apart the bayside wooded areas and marsh land as natural areas for hiking and nature study, he noted.

The Sandusky Register is seeking comments on this project and encouraged people to express their thoughts and input to city leadership during the planning process. Dean closed his note by saying: "This is a remarkable cooperative effort by several planning agencies worthy of note." ONAPA supports efforts to link parks and nature preserves with communities via bikeways and hiking trails.

If you have not visited Sheldon Marsh, it is located 2 miles west of Huron on U.S. Route 6.

It can be reached by exiting State Route 2 at Rye Beach Road, north to the intersection of Route 6 and west ½ mile to the preserve entrance. The preserve is 463 acres of diverse wetland types including Lake Erie, an open embayment, a cattail and sedge marsh, and woodland swamp. The barrier beach that separates Lake Erie from East Bay Marsh is a segment of old Cedar Point sand spit. Sheldon Marsh is well known for its migratory bird life and

is a stopover for migrating waterfowl and songbirds both in the spring and fall.

The Sheldon property was originally acquired by Dean's father, Dr. Dean Sheldon Sr., who purchased the property from Cedar Point Company in the early 1950's. The property was the original entrance and road to Cedar Point but since the road ended at the lake due to erosion, the property became known as "Sheldon's Folly." The Sheldon Family, however, knew the value of this land and managed it as a private nature preserve and used it as an educational endeavor for local schools and conservation groups. The 56 acre property was acquired in 1979 along with another 330 acre property from Wildlife Realty adjacent to Sheldon's Folly. The properties were dedicated on February 5, 1980 and Sheldon Marsh became the 46<sup>th</sup> State Nature Preserve. Together, they preserved one of the last locations in Ohio where the forest-marsh-beach-lake ecological communities can still be experienced. Plan on visiting the preserve during spring migration next year! You will enjoy the experience.

~ ~ Dick Moseley

### Thank You for Your Support! Newest Members & Donors

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As of 11/20/2017



## Control of Wintercreeper in Natural Areas

Winter creeper (*Euonymus fortunei*) is an evergreen trailing shrub or climbing vine from Asia that is easily propagated and widely used as a groundcover by landscapers. In *The Woody Plants of Ohio*, published in 1961, E. Lucy Braun noted that the plant had escaped from cultivation in Ohio. Winter creeper can form a dense ground cover in forests, where it is a serious threat to native plant abundance and diversity. The vine climbs trees where it flowers and then produces seeds. Birds eat the seeds and disperse them into natural areas through their feces. Winter creeper can also spread into natural areas by creeping in from surrounding residential and commercial properties where it was planted. Earlier this year it was determined to be 'Invasive' by the OIPC Assessment Team.



(A winter creeper infested area in a forest showing in foreground a plot that had been sprayed with glyphosate during late winter. In this plot, winter creeper is dying and native plants, including Virginia creeper, are emerging. The area beyond the red flag was not sprayed and winter creeper is still thriving. Photo by D. Conover)

Over the past few years natural areas in southwestern Ohio have experienced an explosive increase in winter creeper. In some areas deer eat large amounts of the plant, especially in the winter. This helps to slow its spread, but does not prevent it from resprouting.

While partial control of winter creeper can be achieved by physical removal of runners, dense mats require herbicide treatment. Because winter creeper is evergreen, we tested whether foliar application of herbicides on mild days in late winter, before native plants leaf out, controlled the spread of winter creeper in natural areas.

We tested this method in two different wooded natural areas in Hamilton County, Ohio, with two different herbicides: glyphosate [2%



(Dense growth of winter creeper in a natural area in one of Cincinnati's parks. Photo by D. Conover)

glyphosate solution with an added surfactant [79.9 ml Honcho Plus and 14.8 ml dishwashing liquid] per 3.8 L water] and triclopyr [2.5% triclopyr solution with an added nonionic surfactant (156 ml Garlon 4 Ultra and 74 ml RRSI NIS surfactant (Red River Specialties Inc.) per 3.8 L of water)] (Conover, Geiger and Sisson 2016). Glyphosate is a non-selective herbicide that may kill or harm any plant it contacts. Triclopyr is selective, affecting only broadleaf plants. To kill winter creeper with foliar spraying, most of the leaves must be treated. After the snow melted in early March, 2015, at temperatures above 10° C (50° F), we sprayed winter creeper using a fine spray so little ran onto the ground, but most of the leaves were covered. We minimized herbicide exposure of the buds, bark or roots of saplings of native trees and shrubs.

It was confirmed that winter creeper is susceptible to winter foliar spraying with glyphosate because it failed to sprout normally with the return of warm weather in spring. It displayed very slow, distorted growth, and eventually most of the leaves died. Glyphosate did not kill the dormant native plants; many native plants were observed growing in the sprayed areas a few weeks after spraying. Foliar spraying with glyphosate may be required again during one or more subsequent winters to totally eliminate winter creeper from a natural area. Foliar treatment with triclopyr killed an estimated 95% of the winter creeper, and also did not kill the dormant native plants.

We also performed a separate cut-stump treatment on winter creeper vines climbing up trees. We sawed vines off at close to ground level and a few inches above the first cut. We removed the cut section and immediately

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## Control of Wintercreeper in Natural Areas (cont'd)

(Continued from page 7)

treated the cut stump with herbicide, especially the area just inside the bark around the entire circumference. This can be done in the winter (preferably above 0° C (32° F)) or at other times of the year, with the exception of early spring, when rising sap may prevent the uptake of herbicide. For cut-stump treatment we

used a solution containing 20.5% glyphosate and 7.5% surfactant (1:1 Drexal Imitator Plus and water). The cut-stump treatment was effective; it killed roots and prevented resprouting. Upper portions of the vines stayed green for a while, but eventually died.

Reference Conover, D.G., D.R. Geiger and T. Sisson 2016.

Dormant season foliar spraying slows the spread of winter creeper, English ivy, and lesser periwinkle in wooded natural areas. *Ecological Restoration* 34: 19-21.

~ ~ Denis Conover,  
University of Cincinnati

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## News About ONAPA Membership Benefits

We now will be able to mail a paper copy of the ONAPA quarterly newsletter at no additional cost. If you currently receive the newsletter by email and prefer a paper copy, please let us know by emailing us at [info@onapa.org](mailto:info@onapa.org).

We are also working on a great list of member field trips for 2018 and have an exciting out-of-state trip to Kansas planned so be sure to renew your tax-deductible membership so you can enjoy these member benefits.



### Ohio Natural Areas & Preserves Association

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