



Breathtaking views of Ohio's fall foliage

Some of the best colors of the season will be on display at Conkle's Hollow State Nature Preserve during this year's Fall Foliage Festival, which runs October 18-19.

"Conkle's Hollow offers autumn visitors brilliantly-colored hills, winding trails and spectacular views of the Hocking Hills," said Nancy Strayer, acting chief of the Division of Natural Areas and Preserves. "Uniformed preserve managers will be on-hand to direct visitors to the natural and scenic features of the preserve."

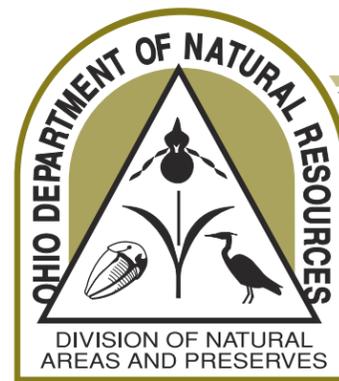
The event features 3.5 miles of trails, including the preserve's West Rim Trail and a reenactment of a 1790s pioneer encampment, complete with period tents, settlers in pioneer dress and late 18th century cooking. The early Ohio settlers, portrayed by the Hock-Hocking Historical

Trekkers, will set up camp west of the parking lot to show visitors what life was like for early pioneers.

The 87-acre Conkle's Hollow is home to Canada yew, teaberry, various ferns and several species of native orchids, as well as white-tailed deer, turkey and fox. The preserve is open sunrise to sunset year-round.

To learn more, visit our website at www.ohiodnr.com/dnap. ✓

**Conkle's Hollow
Fall Foliage Festival
October 18-19, 2003
9 a.m. to 4 p.m.**



DIVISION OF NATURAL AREAS AND PRESERVES

Natural Ohio

Bob Taft, Governor • Sam Speck, Director
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Going green at Old Woman Creek Turning a dream into reality

After eight years of proposing, conceptualizing, planning and coordinating, it still seems to surprise Gene Wright that the environmentally-friendly renovation and redesign of Old Woman Creek's visitor center, research center and dormitory became a reality.

Old Woman Creek is a joint state and federal program—it is both a state nature preserve and a national natural estuarine research reserve; the only one on the Great Lakes.

"We started thinking about our need for a renovated facility in 1995 and in the spring of '98 we applied for a \$50,000 grant to conduct a Facilities Needs Assessment for Old Woman Creek," said Wright, administrator of the National Estuarine Research Reserve.

continues on page 2

Migration of the Majestic Monarch

One of the truly spectacular events of the natural world is the annual migration of the monarch butterfly (*Danaus plexippus*). The monarch belongs to a family of lepidopterans known as milkweed butterflies.



Weighing less than a few grams, these tiny insects are able to fly from as far north as the Canadian provinces all the way to forested mountains in central Mexico, where they will winter in large roosts, often numbering in the millions.

continues on page 6

PRESERVING NATURE TODAY FOR THE NEEDS OF TOMORROW

The Division of Natural Areas and Preserves' Mission Statement
Administer a system of nature preserves and scenic rivers by identifying and protecting Ohio's significant natural features.

Vision Statement
Leading Ohio in the stewardship of its natural heritage.

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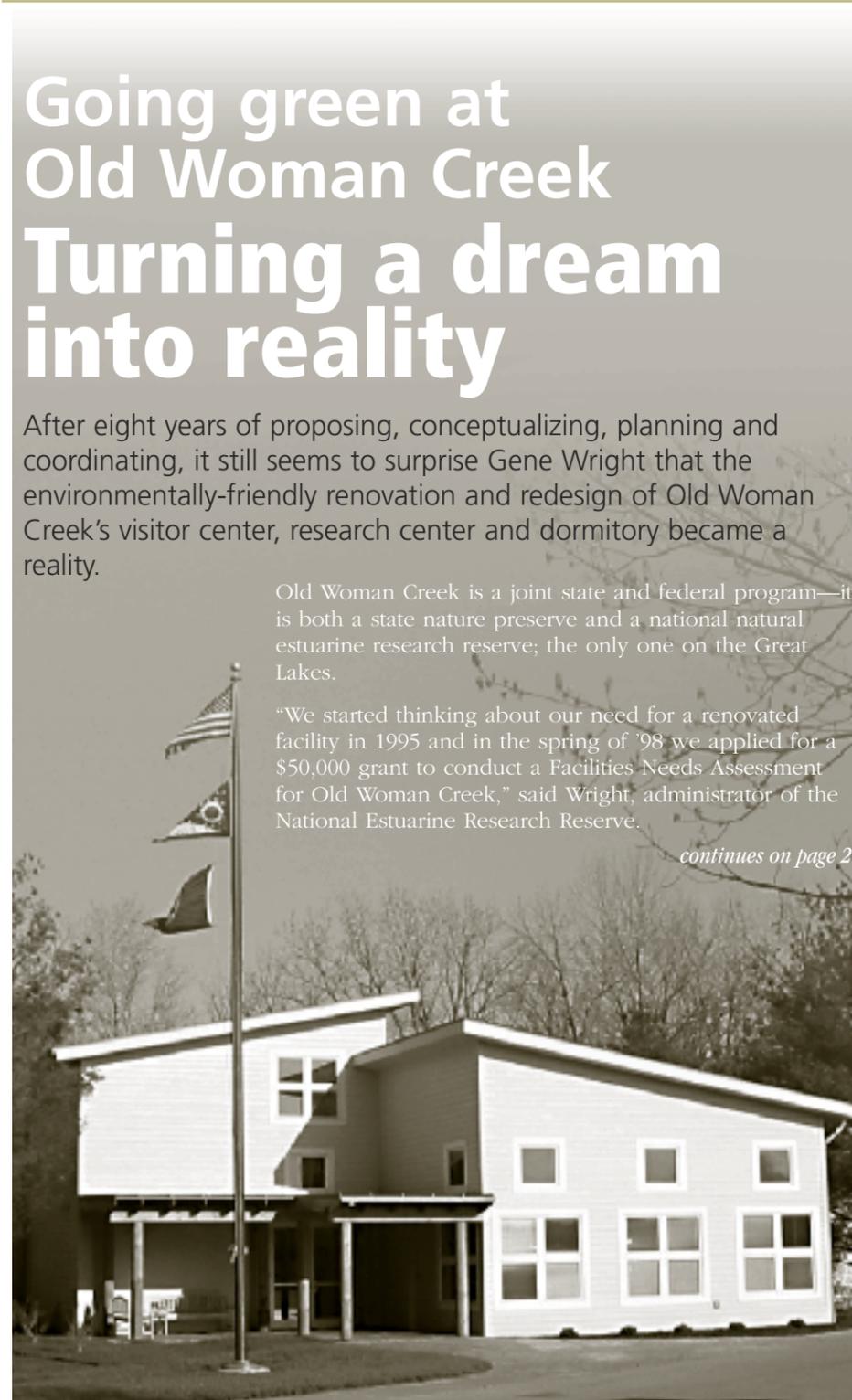


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In This Issue

- The Power of Biotics..... 3
- Preserve Spotlight..... 4
- Mentor Marsh..... 5
- Ohio's Amphibious World..... 7
- Fall Foliage Event..... 8

It's been a busy year for the staff of the Division of Natural Areas and Preserves. We'll only be printing three Natural Ohio issues in 2003; the next issue will be mailed in December.

continued from page 1

Working with the Ohio Department of Natural Resources' (ODNR) Division of Engineering and an architectural firm, the division had a conceptual model, blueprints and construction documents by 2000. The only element of the project missing was the funding.

In late 2001, the division combined federal dollars from the National Oceanic & Atmospheric Administration (NOAA) with capital improvement funds and private donations to bring the concept documents to life.

"It's a terrific example of a state-federal partnership working in concert over several years to achieve a project," said Wright.

Renovation emphasizes sustainable building

Education coordinator Linda Feix can be credited with bringing sustainable design to the renovation and redesign project. According to Wright, Feix had been involved with teaching workshops on conservation practices in agricultural and residential settings.

The construction project at Old Woman Creek was a perfect match for showcasing the best of today's green design technology.

Sustainable architecture recognizes the impact buildings have on our natural resources and focuses on designing and constructing more ecologically friendly living and working spaces. Its benefits include: increased efficiency, fewer toxic chemicals, less pollution and healthier natural systems.

"As long as the result was practical and we could afford it, we thought we should include as many sustainable techniques and proven products as possible," said Wright.

Working with Myers & Associates Architects, Wright was lucky to be assigned a young architect, Heather Yellen, who dedicated quite a bit of her time to learning about sustainable design and green materials and techniques in

construction. Yellen did a thorough investigation, and the result is a new building that utilizes more than 30 environmentally friendly products and techniques.

Groundbreaking occurred in November 2001 and the project lasted about 18 months. Feick Contractor in Sandusky and Johnson Company in Huron were the companies who installed recycled products, used green building techniques and oversaw all aspects of the project.

Surrounded by recycled materials

Sustainable building products run the gamut from creative, frog imprinted recycled pavers outside the main entrance to a geothermal heating and cooling system for the enlarged and renovated visitors center at Old Woman Creek.

Wright says visitors are really impressed by the new look. Vaulted ceilings allow cross ventilation throughout the addition.

The hardy plank siding on the outside of the building is a fiber-cement composite, offering a durable, attractive and fire-proof alternative to wood.

The insulation used is a cellulose product, made from recovered wood pulp, mostly recycled newsprint. It is made from at least 80 percent post-consumer recycled wastepaper. Other recycled materials used include recycled wallboard, organic-based asphalt shingles and carpeting.

One of the most experimental elements of the project is the pervious grass pavement at the visitors center for overflow parking. Funded by a grant from ODNR's Office of Coastal Management, staff are taking a serious look at how the grass and gravel mix works. If it works in a parking lot situation, Wright thinks it might even work with hiking trails.

Wright explained that tracking the efficiency and practicality of all those recycled products and environmentally friendly techniques is part of the project as well.

The grass pavement was the last phase of the project to be completed

and it will be monitored over the next two years.

Teaching others about sustainable building

Feedback from visitors has been overwhelmingly positive according to Wright. Staff are conducting guided tours just to talk about the sustainable building project. Local colleges are using the facility to teach sustainable design.

"Coastal communities need to practice sustainable development and design," said Wright. "Sustainable building is the future; we are in the pioneer stage of sustainable design."

With so much invested, both professionally and personally, the new building at Old Woman Creek is a legacy for all of Lake Erie and Ohio's nature preserve system.

To learn more about the project, visit our website at www.ohiodnr.com/dnap or contact Old Woman Creek at (419) 433-4601. ✓

Invasive Plant Alert #12

Eurasian water-milfoil (*Myriophyllum spicatum*)

Description: Eurasian water-milfoil is a non-native rooted aquatic plant with long stems that branch near the water's surface to create a canopy of floating foliage. The leaves are in whorls of four with 14-20 pairs of feathery leaf divisions. A spike of pink flowers emerges above the water and then falls horizontally when in fruit.

This invasive plant resembles the native northern water-milfoil (*M. sibiricum*). A reliable distinguishing characteristic is the number of leaf divisions; northern water-milfoil has fewer (5-12) than the non-native Eurasian water-milfoil.

The Power of Biotics

The Ohio Natural Heritage Database, managed by the Division of Natural Areas and Preserves, was created in 1975. Today, it is the most comprehensive repository for data on Ohio's rare flora and fauna.

The database contains more than 13,000 records detailing Ohio's rare plant and animal species, significant plant community records, as well as other unique natural features including geologic formations, breeding animal populations and champion trees.

"A database is only as good as its records," said Acting Chief Nancy Strayer. "It is vital that Ohio's Natural Heritage Database maintains accurate records, which are also up-to-date."

New technology is helping the division improve accuracy while increasing efficiency."

Ohio's Natural Heritage program is a member of a hemisphere-wide network of Natural Heritage programs, including all 50 states, the District of Columbia, 11 Canadian provinces and nine Latin American countries. This network is coordinated by NatureServe, a non-profit conservation information agency, headquartered in Arlington, Virginia.

NatureServe provides customized database software and support which ensures that all member Natural Heritage programs maintain compatible data. NatureServe can then pool data from all heritage programs and, using the data, analyze the continental distribution of rare species.

Last December, the division began a two-step process to upgrade Ohio's Natural Heritage Database from the Biological Conservation Database, which was installed in 1995, to the Biotics software which uses geographic information system (GIS) technology.

NatureServe's new Biotics software enables division staff to map database records on digital topographic maps and aerial photos and store these images in ArcView files. Additional location data for each record is

automatically calculated by the system and stored in an Oracle database.

How do these new capabilities affect Ohio's endangered species? The new software greatly enhances the efficiency of mapping new rare species occurrences.

"Biotics has revolutionized the way we collect data," said Greg Schneider, manager of DNAP's Resource Services.

"Not only does it give us precise data, but when the data is entered into the system. The program automatically calculates and records all the geographical information, which saves staff from looking up a lot of related data," Schneider explained.

When botanists are in the field, the process for collecting locations for rare species has become more accurate.

The data, recorded by handheld GPS units, is easily uploaded into the

continues on page 7

Habitat: It can grow in a variety of aquatic habitats, but prefers fertile, fine-textured inorganic sediments. It is an opportunistic species that invades disturbed lake beds, recreational waterways and slow-moving streams. Optimal growth occurs in alkaline systems with high concentrations of dissolved inorganic carbon.

Distribution: Native to Europe, Asia and northern Africa, Eurasian water-milfoil was introduced to the United States by the aquarium industry. It has been spread both purposefully by fisherman who introduced it



to lakes for fish habitat and accidentally when caught in boat propellers and carried to a new body of water.

In the last five decades it has spread throughout much of North America from Florida to Quebec in the east, and from California to British Columbia in the west. Eurasian water-milfoil was first found in Ohio in 1950 and is now common throughout the state.

Problem: Dense canopies of Eurasian water-milfoil shade out native vegetation, alter

the species composition of aquatic invertebrates and may impair the ability of some fish species to spawn. As an opportunistic species, this plant starts growing early in the spring and is capable of rapid dispersion through fragmentation of plant parts. Each fragment is able to grow roots and develop into a new plant. Due to the plant's ability to form dense growths, water recreation activities, such as swimming, boating and fishing, are inhibited.

Control: Mechanical cutters and harvesters, as well as hand-pulling, are the most common methods of control. To be most effective, all fragments must be collected and removed from the site to eliminate new establishments. Biological controls include a native weevil, which has been found to feed and reproduce on the plant. ✓

Kitty Todd Nature Preserve

Established in 1972, the 633-acre Kitty Todd Nature Preserve protects one of the finest remnants of northwest Ohio's Oak Openings region, which harbors more rare species than any other area in Ohio. To date, 572 native vascular plants have been located on the preserve—90 of which are state listed. Of the wildlife living at Kitty Todd, 20 are state listed, including Ohio's only population of the federally endangered Karner blue butterfly.

Originally named Schwamberger Prairie, the preserve is home to globally rare black oak savanna and wet prairie habitats. It was renamed in honor of Kitty Todd, one of the region's earliest conservationists. Located in Lucas County, the preserve is owned and managed by the Ohio Chapter of The Nature Conservancy (TNC).

Before European settlement, the Oak Openings region was a landscape of scattered oaks and open prairies, vastly different from much of Ohio's dense forest cover. The combination of a high water table, sandy soil and periodic wild fires kept the area open. These three factors promoted a balance between the growth of trees and shrubs and the grasses and wildflowers.

After European settlement, fires were suppressed and much of the land was drained. The result was a dramatic increase in the growth of trees and shrubs. Heavily shaded woods and thickets replaced many of the sunny, open oak savannahs and wet prairies.

To reverse the process at Kitty Todd, The Nature Conservancy is working to recover the natural landscape by mowing woody vegetation, thinning trees, restoring drainage patterns and conducting prescribed burns. This ongoing process has restored much of the preserve's original vegetation, evident by the abundance of unusual plants and animals at the preserve.

Widely spaced black and white oaks grow on top of ancient wind-blown sand dunes. Under this light canopy



Karner blue butterfly

of oaks a mixture of sun-loving, drought resistant prairie plants and grasses flourish including: wild lupine (*Lupinus perennis*), plains puccoon (*Lithospermum caroliniense*), little bluestem (*Schizachyrium scoparium*), eastern prickly pear cactus (*Opuntia humifusa*), June grass (*Koeleria macrantha*), rough blazing star (*Liatris aspera*), New Jersey tea (*Ceanothus americanus*), western sunflower (*Helianthus occidentalis*), porcupine grass (*Stipa spartea*), sand milkweed (*Asclepias amplexicaulis*) and sweet-fern (*Comptonia peregrina*).

Wetter sites in the savanna support tall-grass prairie plants including: big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), the globally rare Skinner's foxglove (*Agalinis skinneriana*), tall coreopsis (*Coreopsis tripteris*), yellow wild indigo (*Baptisia tinctoria*), tall green milkweed (*Asclepias birtella*), the insectivorous spathulate-leaved



sundew (*Drosera intermedia*), fireweed (*Epilobium angustifolium*), colic-root (*Aletris farinosa*), wood lily (*Lilium philadelphicum*), grass pink orchid (*Calopogon tuberosa*), orange-fringed orchid (*Platanthera ciliaris*), soapwort gentian (*Gentiana saponaria*) and the cross-leaved milkwort (*Polygala cruciata*).

Some of the specialized animals found here include several rare species of butterflies, such as the frosted elfin, Persius dusky wing and Karner blue, all of which depend on lupine as their sole larval food source. Other unusual insects relying on Kitty Todd's unique habit include the silver-bordered



fritillary, Edward's hairstreak and the blazing star borer moth.

Certain birds, like the lark sparrow, utilize clumps of little bluestem for nesting; sedge wrens nest in dense patches of big bluestem and redheaded woodpeckers thrive in the open savannahs.

Wet prairies occupy the lowest areas in elevation, the swales between the ridges and dunes. Here the water table is near or above the surface during much of the year. Unlike the acidic soils of the oak savannahs, the wet prairie has alkaline soil and contains a different array of plant species, including plants more typical of fens. Many rare species of sedges, such as twig-rush (*Cladium mariscoides*), slender sedge (*Carex lasiocarpa*) and sartwells sedge (*Carex sartwellii*) thrive in this environment. Prairie grasses like blue-joint (*Calamagrostis canadensis*) and northern reed (*Calamagrostis inexpansa*) also flourish here.

Wildflowers are abundant including dense blazing star (*Liatris spicata*), fringed gentian (*Gentianopsis crinita*), Riddell's goldenrod (*Solidago riddellii*), Great Lakes goldenrod (*Euthamea remota*), Kalm's St. Johns-wort (*Hypericum kalmianum*), tubercled rein-orchid (*Platanthera flava*) and very rarely, prairie milkweed (*Asclepias sullivantii*).

Unusual animals found in the wet prairie include the state endangered blue-spotted salamander, the state threatened spotted turtle and the common snipe, a species of special interest in Ohio.

Kitty Todd Nature Preserve is open weekdays from 9 a.m. to 5 p.m. and the first full weekend of the month from May through October. Visitors may hike the .5 mile Savanna Trail, the .4 mile Cactus Loop Trail or stroll through the Oak Openings natives demonstration garden. To learn more, contact (419) 867-1521. ✓

Contributed by guest author Gary Haase
Oak Openings Land Steward
The Nature Conservancy

Mentor Marsh abounds with greenery after massive fire

On a late spring afternoon, more than 250 firefighters from nearly 40 communities battled into the late evening to contain a fire that swept through nearly half of Mentor Marsh State Nature Preserve in Lake County.



The worst time for marsh fires is between the months of March and June, when last year's vegetation is dead and dry. At Mentor Marsh, phragmites, or reed grass, dominates the landscape. The 6 foot and taller dead grasses fueled the fire's blazes.

The fire and its huge black wall of smoke caught the attention of national media, as well as the concern of neighboring homeowners whose homes, some built since the last major fire, were in the line of fire.

Contained without any major casualties to firefighters or neighboring homes, the fire of unknown origins was the worst blaze to strike the marsh in over 10 years. More than 325 acres were affected.

continues on page 6

Mentor Marsh

continued from page 5

By late May, the marsh had already regained its green appearance as new phragmites replaced those burned in the fire. Biologists determined that impact to wildlife was minimal, but unfortunately, the preserve did suffer some casualties not easily repaired.

The fire destroyed birds' nests and young saplings growing around the marsh rim. Luckily, the fire occurred before most migratory birds, other than Canadian geese, had returned to the area.

Its flames also damaged the 2,000-foot boardwalk and overlook.

In the 1960s, the current marsh was a swamp-forest; however, a salt spill caused the trees to die off and allowed the highly invasive phragmites to take over. The sapling trees, mostly on the southern rim of the marsh, were an indication that the high salt content of the marsh's ground water was lessening.

Although this year's fire was a setback, the marsh's long-term future includes the growth of more trees, which will help retard the growth of phragmites and help return Mentor Marsh to a swamp-forest ecosystem. This natural process will take hundreds of years.

Meanwhile, because of the significant damage to the Wake Robin boardwalk and the overlook, both located off of Woodridge Lane, the area is closed to the public. It will cost at least \$100,000 to repair and replace the damaged trail facilities.

Despite the toll the fire took on the preserve, its other nature trails remain open to the public. Mentor Marsh State Nature Preserve is jointly owned by the Cleveland Museum of Natural History and the Division of Natural Areas and Preserves. ✓

For visitation information, please contact the museum at (800) 317-9155.

Monarch Butterflies

continued from page 1

In the face of storms, predation and the vagaries of nature, these small sojourners are the future of the entire species. Their survival is the thread for next year's cycle.

The tiny spot where the eastern band of monarchs migrates to is in the mountains of central Mexico, at altitudes of about 10,000 feet above sea level. In a location barely more than a few acres in size, countless millions of these butterflies will completely cover the branches and limbs of the forest trees, remaining here throughout the winter months where the temperatures are low enough to slow down the insects' metabolism, allowing them the strength to return northward early in the spring to begin the cycle anew. The forests offer protection from predators and provide adequate moisture.

Until the mid-1970s, little was known about the mystery of the monarch migration or of their winter destination and sanctuary. Their winter roosts usually remain a few degrees above freezing, but in some years temperatures fell into the mid-twenties, resulting in mass die-offs, threatening the future of the species. Winter mortality is usually about 5 to 10 percent.

A smaller population of monarchs occurs west of the Rocky Mountains and winters in coastal California and the Baja Peninsula. They migrate northward along the coast to British Columbia during the summer months.

When temperatures warm in early March, the adults, mostly female, begin the journey northward. Some of these butterflies have been alive since the previous summer and their final act is to lay eggs as they fly north. This first generation will die soon after laying their eggs. As spring turns to summer, subsequent generations of monarchs will emerge to lay eggs and continue the northward migration.

It is believed that each generation will fly several hundred miles northward following the emergence of milkweed plants, which are the single source of food for the larvae. Entomologists believe there are three to five generations created during the summer season.

Monarchs lay their eggs singly on the underside of milkweed leaves. Within several days the tiny caterpillars emerge and begin an eating frenzy which lasts about seven to 10 days. They grow from pin-sized to 2 inches long and are brightly striped. Then each will spin a chrysalis; encased in a jade sac with beads of gold at the top, it will hang suspended for another week or so.

The monarchs then emerge as freshly hued orange and black adults. After drying their wings, they take to the sky and continue the process that eventually produces butterflies all across the eastern and mid-western United States, and as far north as the southern provinces of Canada.

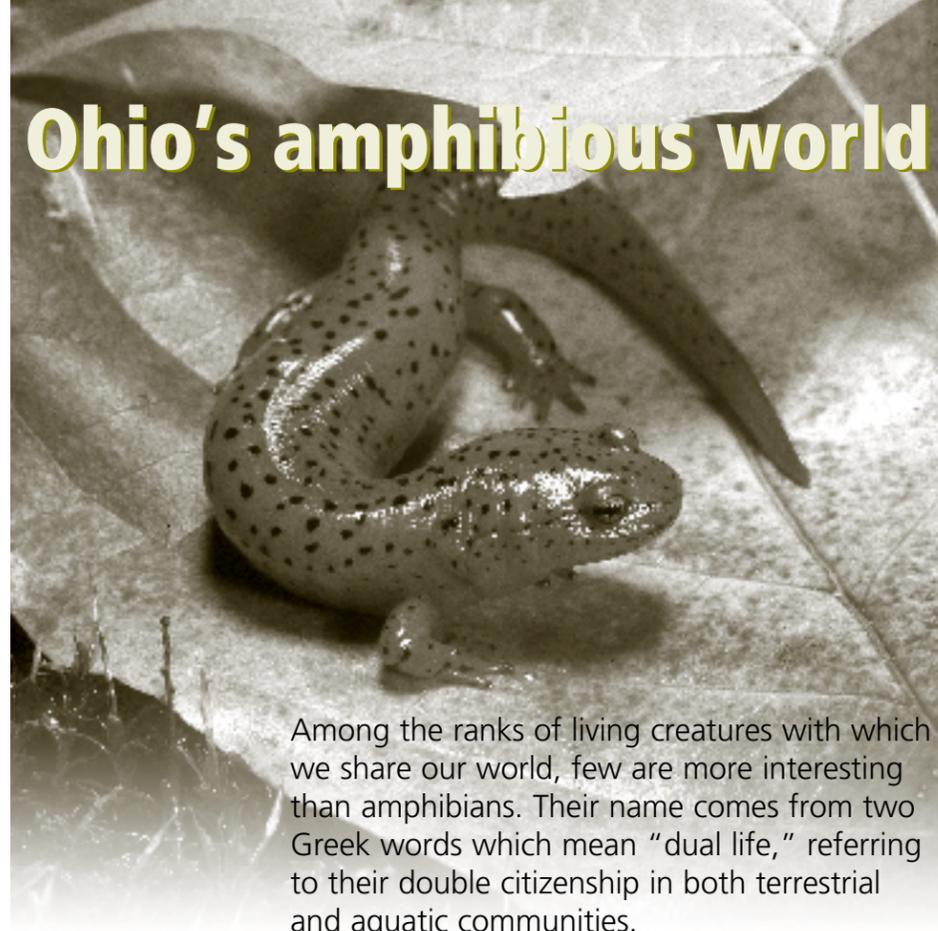
As summer turns to autumn, a last generation of butterflies begins a journey back to the wintering grounds. The fall migrations are more spectacular because all of the surviving butterflies are heading in the same direction. The butterflies' flight becomes more urgent as days shorten and grow colder.

It is believed that the angle of the sun and the length of daylight are what guide this tremendous mass of butterflies homeward. When the migration approaches Texas, the numbers become spectacular as the insects funnel toward their roosts.

Large bodies of water and forested areas are favorite resting spots for the migrants. Here in Ohio, the shores of Lake Erie are good spots to watch the migration. Preserves such as Mentor Marsh, Old Woman Creek, Headlands Dunes and Sheldon Marsh are great for viewing monarchs flying southward. As they fly by, wish them luck on their long and dangerous journey. "Vaya con Dios!" ✓

*Emliss Ricks, Jr.
Northeast District Preserve Manager*

Ohio's amphibious world



Among the ranks of living creatures with which we share our world, few are more interesting than amphibians. Their name comes from two Greek words which mean "dual life," referring to their double citizenship in both terrestrial and aquatic communities.

Amphibians begin life as a collection of eggs protected within a jelly-like mass floating in water. Once fertilized, the eggs develop into gilled larvae, which spend their time eating and growing in ponds, streams and various other wet places. Eventually, most of them trade in their gills for rudimentary lungs and leave the water behind, emerging on land as toads, frogs and salamanders.

Ohio has a large and diverse population of amphibians, creatures who often do not receive the attention they deserve. Take salamanders, for instance. Most of the 300 species known to science are native to the New World; Ohio has 27 of them. Except for mud puppies and hellbenders which can reach 20 inches in length, they are small creatures, hiding beneath rocks and leaf litter where constant moisture keeps their oxygen-absorbing skins functioning properly.

What salamanders lack in size, they more than make up in color. Some are marbled with black and white; others sport spots of yellow, white or black and several come in shades of red. Even drab salamanders may display interesting gradations of tone or a dusting of silvery flecks.

Frogs and toads are the other important amphibians in our state. Although the two are similar in appearance, there are differences. Frogs have smooth, damp skin and legs built for leaping. Toads are less dependent on water, which is why you might find them one hop ahead of your lawnmower miles from the nearest wild water source.

Of the 80 species of frogs and toads native to North America, Ohio has 16. They range in size from the diminutive spring peeper at less than an inch long to the 6 inch bullfrog whose deep

bass voice resonates across summer evenings. Unlike the silent salamanders, frogs and toads are not shy about making their presence known, especially in the spring. The croaks, chirrups and grunts of lovesick frogs and toads can be deafening.

Ohio's amphibious heritage goes way back. Some of the earliest amphibian fossils ever found come from Mississippian rocks at Linton, predating by several million years the arrival of the dinosaurs. Yet for all their venerable priority in this world, they have not fared well at our hands. Our habit of gigging, or jabbing, frogs and using salamanders for bait has certainly had an impact on their populations, but far more serious has been our assault on their water habitat.

As we have drained pools, silted up streams and destroyed the temporary vernal ponds in our woodlands, we have taken from these older citizens the very staff of life. It would be sad indeed if animals with such an ancient lineage should survive so long only to be destroyed by human development.

In Ohio, four species of salamander and one of our two native toads are listed as endangered.

Fortunately, state nature preserves give you a chance to see Ohio's amphibians in their original habitat. Watching for these interesting creatures is just one more reason to visit a preserve near you. ✓

*Tim Snyder
West Central District Preserve Manager*

Biotics

continued from page 3

system. This gives the division the precise location of plant communities and even individual plants.

The new Biotics system also improves the division's ability to provide data to customers as printed maps or as GIS shape files. The division receives hundreds of requests annually for Natural Heritage Database information from a variety of sources including state agencies, county and local park districts, private conservation

organizations, as well as consultants and developers.

The database also serves as an integral part of the Ohio Department of Natural Resources' environmental review process.

"Parts of my job that used to take days, now take hours," said Butch Grieszmer, DNAP data specialist. "It has huge potential for future monitoring and management of Ohio's natural resources." ✓