
# RAVINIA

*An Advocate for Community Resources*

Published by Friends of the Ravines (FOR)
Spring/Summer 2004


# Glen Echo Stream Restoration Receives Clean Ohio Funds

In September 2003, the Columbus Recreation and Parks Department was awarded $230,800 to rehabilitate the stream in Glen Echo Park. This park includes a portion of Glen Echo Stream east of Indianola in the area north of Hudson Street, west of Con Rail Corridor, and south of Kensington Place. Brad Westall, Greenways Coordinator for Columbus Recreation and Parks, partnered with Friends of the Olentangy Watershed (FLOW), Friends of the Ravines (FOR), Columbus Division of Sewers and Drains (DOSD), and Friends of the Ravines on Glen Echo (FORGE). The vision for this project grew out of a history of failed attempts to stabilize Glen Echo Run and concern about repeated flooding when the creek is at peak flow. The estimated total project cost is $335,000.

## BE CAREFUL WHAT YOU WISH FOR.

Two years ago, FORGE Coordinator Chris O'Leary applied for an Urban Infrastructure grant to fix the stone walls and gabions (stone baskets) along the streambed. After applying for the grant, Chris wondered if simply repairing the walls would be a stop-gap solution or if there might be a better, more permanent approach to consider, since degraded streams and armored stream banks seem to go hand and hand.

When the Urban Infrastructure grant was approved by the city, Recreation and Parks staff recognized the opportunity to use the grant money to match a larger Clean Ohio Grant Proposal incorporating naturalized remedies. FORGE was in full support of restoring the stream instead of repairing the walls and lent its support to the R&P staff. The result: a Glen Echo Clean Ohio Grant proposal for Glen Echo Park that will address erosion problems and provide funds to purchase open space parcels or easements along the ravine.

How do you correct the stream's problems with a naturalized approach? By creating a channel shape that more closely resembles that which a stable healthy stream system would build and maintain for itself. This should result in reduced bank erosion and a higher quality stream than before.

## WHAT ARE THE PROBLEMS?

Glen Echo's stream faces numerous problems. Some are obvious, while others are not. Urban streams like Glen Echo receive more water, faster water, and more polluted water than comparable rural streams. A bigger yet often overlooked problem is the diminishing of the stream's ability to accommodate and treat these flows. Often the physical changes in a stream's depth and shape make it less able to adjust or compensate for increased flows or even to treat water as well as it did before. Simply put, urban streams often are channelized and lose their flood plains.

"Deepened and held in place" is a good description of many urban streams. "Deepened" means the stream is

***Top Photo:*** *Deep and entrenched: Glen Echo stream banks are predominately vertical walls that limit natural processes and stability.*

***Bottom:*** *Portion of Glen Echo contrasts a high-walled (entrenched) section in the foreground with a relatively unentrenched section upstream.*

*continued on page 3*

## FROM THE CHAIR OF THE BOARD

We have had some surprises in our post office box lately! We received a new supporting membership from a resident of Connecticut who used to live on Glen Echo Ravine, the favorite ravine of another new supporter who resides in Mount Vernon, Ohio.

Speaking of Glen Echo, the southern slope restoration has been delayed until we secure funding for completion. Thanks to donations from Oakland Park Nursery, we have plant stock to install on the southern slope this spring.

*The Art Sale To Benefit the Glen Echo Restoration* held on February 28 was a smashing success. Friends of the Ravines thanks the participating artists for their hard work and thanks all of you who attended. Community response to the event was heartwarming, and the Glen Echo Restoration Fund reaped the benefits of your support.

In January we were invited to brief the staff of *Ohio Citizen's Action* on FOR's activities and agenda. The majority of the staff was not from Columbus and had little knowledge of our ravines. Board member Sherrill Massey brought a file of topography maps she has assembled and we were able to give overviews of many of the ravine systems that cut through neighborhoods in Franklin County.

In a recent letter to the editor, a Clintonville *Booster* reader wrote that ravines were a good reason to live in Clintonville. Clintonville is well known for its ravines. Clintonville ravines were certainly among the earliest ravine properties developed in Columbus, although there are many other ravines throughout Franklin County. Many were amazed by our *Name the Ravine* 2003 Bioblitz display, which included twelve ravines on the west side and eleven ravines on the east side of the Olentangy River. Did you know that there are more than 40 ravines in the Greater Columbus area and there are unnamed ravines that are not included in this inventory? We have a lot to learn about our area ravines.

The Board of Trustees is grateful to all of our supporting members. You are a key component in fulfilling our mission to protect and restore ravines.

Thank you for being Friends of the Ravines.
Martha Harter Buckalew, Chair, Board of Trustees

## *Roster of Supporting Memberships*

### (Memberships received since Fall 2003)

K Adamson
Anonymous
Marian Clover
Colby Grimes
Louise Guthman
Richard Hand
Barbara Hord
Felecia and Steven Krakowka
Karen MacCracken
Mike Peppe
Craige Roberts
Dr. Peter Robinson
Lisa Staggenborg

## NEWS FROM THE RAVINES

**Adena Brook Community** (ABC) continues its inspired efforts to improve the Adena Brook ravine environment. Over the last two years, it has documented removal of more than 50 tons of invasive plants and 330 bags of trash. It is also working on educational efforts, with an active e-mail network, an educational forum on invasive plants, and a walking team that delivers ravine information to more than 500 residents twice a year.

ABC will continue this season with monthly ravine cleanups from 9:00 a.m. to 11:00 a.m. on the second Saturday of each month, March through November. Two teams will meet, one at the intersection of Overbrook and Canyon Drives or at the intersection of Overbrook and Yaronia off Indianola Avenue.

**Rush Run** is beginning to form a ravine conservation group in Worthington. Rush Creek Village residents are discussing a proposed small-stream restoration project.

**Walhalla Ravine Association** (WRA) reports much construction activity during 2003 (see "Ravine Sewer Repair Capital Improvements Project" article in this issue). WRA was actively involved in asking the City of Columbus to pursue ravine-friendly approaches and monitoring effects of the construction. WRA has ambitious goals for 2004. In addition to ravine clean-ups and invasive plant removal, the agenda includes neighborhood crime watch programs, traffic calming measures, and developing ravine protections that go beyond current zoning controls. Although most WRA communication happens through an e-mail discussion group, the association takes opportunities to socialize, such as a neighborhood summer picnic.

**Friends of the Ravines** held its 2004 Plant Walk on Overbrook Ravine on Adena Brook on April 18th with plant walk guide Jim McCormac. Friends of the Lower Olentangy Watershed and Adena Brook Community co-sponsored the event.

## Log on to Friends of the Ravines' Web Site

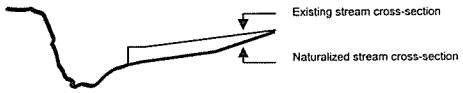
You can visit Friends of the Ravines' web site by logging on to ***friendsoftheravines.org.*** We thank Forrest Husted and Fred Whiteman at The Graham School for tackling this project and invite any of our technocratic readers and supporters to participate in maintaining the site.

entrenched or cut off from an accessible floodplain. Floodplains help keep a stream stable, build aquatic habitat and treat stream flows for pollutants.

When streams are deepened, they lose access to stream side areas (floodplains) that act as a pressure relief valve during high flows. As higher flows are contained in the same channel, rising up instead of spreading out, more bank erosion occurs. The engineering term is "higher shear stress." Natural streams also export fine sediments and attached pollutants onto floodplain areas. When streams are cut off from their floodplains, they also lose their naturally occurring pollution treatment.

Glen Echo Run's stream pattern and direction now are artificially controlled through a series of gabions (wire baskets of rock), rock walls, and masonry bridges. This has resulted in severe bank erosion that is undermining portions of the ravine's steep, wooded hillside. Increasing stream capacity, reducing erosion, and preventing slumps of ravine walls are goals of naturalizing the stream channel profile.

*Figure A*



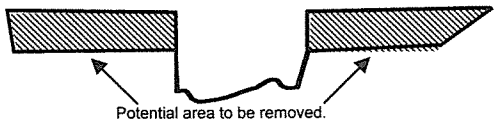

## WHAT WILL BE DONE?

Two major approaches will help rehabilitate Glen Echo's stream. The first step will likely be to stabilize the bottom using stone riffles or grade control structures that stop downward erosion of the stream channel. This portion of Columbus was developed at a time when storm water was simply piped into streams, and Glen Echo's Stream carries much more water than it naturally did. It will probably be necessary to provide the stream some stability through stone riffle structures.

The second approach will be to reshape some stream banks to achieve a more naturally stable stream profile, typically with gravel point bars on the inside bends of the creek. In contrast, the typical channelized urban stream has steep vertical banks. On creek bends, entrenched channels look more like a rectangle than nature's form, which is more like a Nike swoosh™ (see Figure A). Natural channels swoosh, while heavily modified streams often are kept in place by concrete or some other hard armor.

A stream grows during large storm events, and when not channelized or confined by gabions, the flow rises and spreads out. Creeks with better access to these usable floodplains are more stable and have cleaner gravels and deeper pools. The floodplain area acts as a pressure relief valve for the opposite side by relieving the energy and height of water flowing against the streambank. Lowering or eliminating gabions or stone walls on inside bends of Glen Echo can reduce erosion on the outside of the channel and can help clean, filter, and slow the water. This will mean lowering the grade along the stream. Where there is now a five to seven foot high wall, a lower bench, terrace, or graded slope will be created (see figure B.)

*Figure B*




While most of the stream is deeply entrenched, there are some lower banks. Actively creating this condition in more of the park will be a major part of the project.

## WHAT HAPPENS NEXT?

Columbus Recreation and Parks Department has selected Steve Phillips of Oxbow River and Stream Restoration Inc. to oversee the Glen Echo Stream Restoration. Steve and his company Oxbow are nationally recognized for their expertise in stream restoration. Oxbow has completed more than 120 stream and river restoration projects. There will be a public meeting before construction begins. Both Columbus Recreation and Parks and Oxbow are committed to providing forums for community input. Volunteers will be invited to participate in planting sessions. Work should begin in midsummer, with a scheduled completion date by late October. The park will remain open during the restoration, and work areas will be cordoned off for public safety. For more information call Greenways Coordinator Brad Westall at 645-2441.

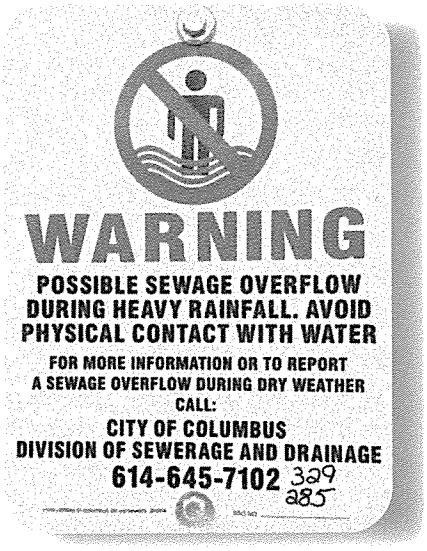
## *How Friends of the Ravines Spends Supporting Membership Contributions*

Friends of the Ravines could not exist without your supporting memberships. Your contributions help us pay for layout and printing of *Ravinia,* postcards, postage, photocopying, miscellaneous office supplies, liability insurance, and honoraria for plant walk guides and community forum speakers. In other words, your supporting memberships help fund operating costs. FOR is run entirely by volunteers. Members of the Board of Trustees are not compensated but can receive reimbursement for expenses.

FOR's most visible project, the Glen Echo Park Slope Restoration, is not paid for by supporting membership contributions unless specifically designated for the restoration. Funding for the restoration has been raised through conservation grants from The Columbus Foundation, The Environmental Challenge Fund through NiSource Inc., and the Clintonville Fund. In February, restoration funds got a boost from the *Art Sale to Benefit Glen Echo Ravine* and several supporters who requested that donations be earmarked for the Glen Echo Restoration.

# City Upgrades Sewers

## *Capital Improvement Projects Repair Ravine Sewers*




### Sanitary Sewer Overflow Points

- Glen Echo Ravine and I-71 have more than ten overflow points.
- Glen Echo Ravine at Indianola
- Glen Echo West of High Street
- Numerous SSO points are within the stream from Indianola to the Olentangy River.
- Walhalla at Clinton Heights
- Adena Brook Ravine east of Indianola
- Adena Brook/Indian Springs Run at gauging station
- Adena Brook west of High Street south of Croswell in Whetstone Park
- Rustic Bridge and Beechwold Boulevard/Rathbone and Delawanda
- Royal Forest and Olentangy Boulevard
- Webster Park west of Olentangy Boulevard
- Rush Run at Sharon Springs
- Rush Run at Loveman
- Olentangy River at North Broadway
- Olentangy River west of Como
- Olentangy River at Henderson Road
- Olentangy River at Pacemont
- Olentangy River north of Woody Hayes
- Olentangy River and Kanawha

The City of Columbus Division of Sewers and Drains (DOSD) has committed to repair or replace its antiquated sanitary sewer system in the ravines near The Ohio State University campus and Clintonville. This upgrade is an effort to reduce sanitary sewer overflows (SSO) into ravine streams and downstream rivers. Anyone who has walked the ravines after a brisk rain knows the distinctive sewage smell caused by an SSO. Last year's high rainfall totals caused many SSOs in ravines and elsewhere.

### The Consent Decree

The DOSD entered into a legally enforceable agreement called a consent decree with the Ohio Environmental Protection Agency (OEPA) in August 2002. The DOSD-OEPA consent decree was made the day before the Central Ohio Sierra Club was scheduled to file suit against DOSD because of SSOs in Columbus area rivers, creeks, and basements. The consent decree stopped the threatened suit and required Columbus to reduce any sanitary sewer overflows into local streams and backups of sewage into basements. The consent decree also requires DOSD to inform the public when overflows occur and to post warnings of potential overflows at the overflow points. Unfortunately, many of the ravines have SSOs. Glen Echo Ravine has more than 10 SSO points. Walhalla Ravine, Adena Brook, Rush Creek, the Rustic Bridge area in Beechwold Park, and Whetstone Park have SSOs as well.

While the consent decree does cover SSOs when pure sewage overflows, it does not cover CSOs, overflows of the combined sewer system. Combined sewers handle surface storm water and sewage together and are the most likely to overflow after heavy rain. The Short North, The Ohio State University, German Village, and the parts of downtown served by combined sewers are not covered by the consent decree.

### Aging Sewer Infrastructure

When many of the older neighborhoods in Columbus were developed, sanitary sewer pipes were sited along streams and rivers. They were the lowest points within the landscape, and gravity moved sewage and wastewater to treatment centers downhill and downstream. Originally, sewer pipes were ceramic or bricks with mortar. Many older neighborhoods downtown, and in the Short North, the University District, and Clintonville used existing streambeds and rivers as the routes for sewer and wastewater pipes. The old pipes are in poor condition; some leak sewage into area streams and rivers while simultaneously allowing runoff of surface storm water into the sewer system. Although DOSD has not seriously considered the preferable alternative of taking utility pipes and storm water out of the ravines, it has embarked on significant capital improvement programs to upgrade what exists.

### Project Updates

#### *Iuka Ravine*

Early in 2003, DOSD began emergency sewer repair of a leaking 18-inch sanitary sewer line in Iuka Park Ravine (which served households uphill and outside of the ravine). Originally, DOSD had hoped to use "trenchless" technology, which involves relining sewer pipe without having to dig it up. The 18-inch sanitary sewer line was partially collapsed and had to be excavated, causing the loss of large trees and other hillside vegetation. Because of the emergency nature of the work, rerouting of the broken sewer line entirely outside of the ravine was not seriously considered, and an opportunity for a more environmentally conscious approach was missed.

Engineers did, however, respond to neighborhood concerns by putting the

sewer line under the roadbed and not through the park and trees. DOSD was also willing to rebrick the streets in the historic neighborhood and replace the traditional stone curbs. It also agreed to amend its original proposal to plant ivy in the disturbed areas and to plant native species on the hillside. In addition, contractors were willing to work with neighbors to create safe, functional steps on the steeper parts of the slope to ensure adequate access to ravine parkland.

*Contractors relining sewers with plastic inserts.*

### *Walhalla Ravine*

If you walked in Walhalla Ravine in 2003, you would have noticed three different projects that cost more than $4 million total and closed the road for many months. As of spring 2004, work is ongoing.

DOSD designed a new storm water system for parts of the ravine and rebuilt several catch basins. Work was hampered by the discovery that the stream had deposited so much sediment over the years that it flowed into rather than out of some of the catch basins. Heavy rains caused delays and severe erosion of construction debris into the stream. Ideally, future cleaning of culverts and catch basins will be scheduled for more than once a year.

The sanitary sewer lines in the whole neighborhood were relined to stop leaking and infiltration. The massive project by Reynolds Inliner, Inc., a contractor from Indiana, involved videotaping the inside of the sewer pipes before and after relining. The relining itself was accomplished by sending a soft plastic insert into the sewer pipes, which was then hardened by circulating hot water and catalysts. Excavation and trenching was necessary in one small area in the ravine. A small new warning sign was installed at Walhalla and Clinton Heights, where sewage can overflow into the stream. Additional signage is also needed downstream to warn residents to stay out of the stream after heavy rains.

DOSD installed new culverts for the stream itself at three places within the ravine where it crosses under the road. These culvert projects were by far the largest construction in Walhalla during 2003 and had both positive and negative impacts. On the positive side, the new culverts are much larger than the small pipes they replaced, which helps control flooding. A collapsing section of the roadway was stabilized. And the city responded to neighbors' concerns by facing the large concrete walls where the culverts met the road with attractive masonry work and by agreeing to put in native plant landscaping.

On the negative side, the culvert project required the removal of mature trees and led to several episodes of intense erosion, when large amounts of sediment entered the stream channel during heavy rains. At this time it is not clear how the new culverts will affect ongoing erosion along the stream.

### *Adena Brook*

DOSD organized a public meeting in 2003 to discuss sewer upgrades in Adena Brook Ravine. Relining will be the standard procedure, but disruptive trenching may be necessary in the areas of Yaronia and Wynding streets, which seem to have sewage pipe problems. Work is scheduled for 2005. Neighbors are pleased that an earlier proposal to build a storm water line from Arden Road to the ravine has been put on hold; it would dump more surface runoff into an already over-capacity ravine stream.

### *Glen Echo Ravine*

For years the Glen Echo Ravine neighborhood and environmental activists have asked DOSD to abandon the sanitary sewer line that runs beneath the Glen Echo streambed. Prior to the consent decree and the change in DOSD administration, DOSD refused even to discuss the idea. Local residents started a petition drive to request a study of abandoning the sewer line. Last October, representatives from Friends of the Ravines on Glen Echo, Friends of the Ravines, and concerned neighbors presented the petition to Columbus Councilwoman Patsy Thomas. Letters and postcards requesting sewer line removal from Glen Echo have been sent to city council and other public officials.

Perhaps DOSD is starting to listen. An update of the Clintonville Sanitary Sewer and Stormwater description of the Beulah Road Trunk Line, which runs through Glen Echo reads: "Investigate rehabilitation, replacement and/or relocation of options of sewer and manhole structures in Glen Echo Ravine." The Beulah Road Trunk Line sewer primarily serves customers outside of the immediate ravine neighborhood, connecting sewers east of I-71 with the main trunk line along the Olentangy River. Since fewer than six ravine residents actually are tied into the sewer line within the Glen Echo stream, a real opportunity to reroute sewage outside of the ravine exists. There are eleven designed sewer overflow points around Glen Echo Ravine, and sewage overflows were evident and unpleasant in 2003. The University Area Commission and the Clintonville Area Commission passed a resolution in the fall of 2003 asking the city to seriously consider abandoning the sewer line within the streambed.

For more information on DOSD Capital Improvements, visit the DOSD web site at *DOSD.org* and click on the Project Clean Rivers.

# Students Bring New Life to Glen Echo Ravine

The continuing restoration work in Glen Echo Ravine Park received a helping hand from the students of the Graham School this past October. Urban ecology students planted a variety of native trees and shrubs along the newly restored southern slope. Susan Weber from Urban Wild Landscape Design provided a history of the plants' uses, from the Native Americans and the pioneers through the present day.

The students' handiwork can be seen at the entrance to the park at Fourth Street and Cliffside Drive. Logs laid in tiers parallel to the hillside and secured with rebar have revived this severely eroded slope. Because of the steepness of the incline, a slinger truck spewed topsoil through a chute onto the hillside. This soil held in place by the logs created spaces for new plantings. As the logs decay over time, the soil will be held in place by the new vegetation. Volunteer John Husted, reclamation specialist with the Ohio Department of Natural Resources, devised the restoration plan specifically for this project. It is similar to techniques used in land reclamation efforts in abandoned coal mines in southern Ohio. The priorities for the restoration have followed the Glen Echo Master Plan created by The Ohio State School of Landscape Architecture.

Native plants adapted to the region, the soil, and the growing conditions were planted. All of the following plants were purchased with funds from the Columbus Foundation. The plants include *Amelanchier laevis*/Allegheny Serviceberry, a small multi-stemmed tree that produces clouds of white flowers in April and berries in June that are favored by many species of birds, including migrating cedar waxwings in the fall; *Hamamelis virginiana*/Common Witchhazel, a small tree that produces flowers in October and November; *Lindera benzoin*/Spicebush, a small fragrant shrub; *Viburnum dentatum*/Arrowwood Viburnum, a shrub that produces showy white flowers in June and blue berries that attract birds in the fall; *Rhus aromatica* "Gro-Low"/Fragrant Sumac, a dense, fragrant, low-growing, spreading shrub; *Aronia melanocarpa*/Black Chokeberry, a thicket-forming, vase-shaped shrub with black berries that are attractive to birds in the fall.

*Students from the Graham School gather before removing invasive plants in Glen Echo in Fall 2003.*

In restoring the Glen Echo Ravine, Friends of the Ravines has given new life to one of Columbus' oldest and most unusual parks. Glen Echo Ravine Park is becoming an urban classroom for Columbus' students, creating awareness of the necessity for erosion control, promoting wise stream stewardship, and increasing understanding of and appreciation for a ravine's unique ecosystem. Friends of the Ravines thanks Graham School science teacher Steve Winters and the urban ecology students for all of their hard work.

**YES! I WANT TO BE A SUPPORTING MEMBER OF FRIENDS OF THE RAVINES.**

Name_____ E-Mail_____ Phone (____)_____

Address_____ City/State/Zip_____

Indicate any special instructions for listing of your name in the Roster of Supporting

Members._____

**Membership Category** *(Make check payable to Friends of the Ravines.)*

___ Friend: $15 ___ Sponsor: $35 ___ Sustainer: $50
___ Contributor: $25 ___ Household: $40 ___ Patron: $100 ___ Corporate (Over $100) _____

Indicate Shirt size: ___ M ___ L ___ XL *Anyone contributing $100 or more will receive TWO T-Shirts!!*

I want to volunteer to help Friends of the Ravines carry out its mission to protect ravine areas and educate the public. I can help by:

___ Distributing *Ravinia* ___ Writing Articles for *Ravinia* ___ Preparing Mailings
___ Maintaining the Website ___ Giving Computer Advice ___ Helping with Ravine Clean-ups
___ Planning Community Forums ___ Removing Invasive Plants in Ravines ___ Becoming an On-Call Volunteer

My special area of expertise is _____ My favorite ravine is _____

Friends of the Ravines, PO Box 82021, Columbus, Ohio 43202

# *What is a Ravine?*

The word *ravine* is a geographical term with the following synonyms listed in Roget's *International Thesaurus*: gap, gorge, dell, canyon, arroyo, gulf, chasm, abyss, valley, and pass. A ravine is a deep narrow valley worn by water that is larger than a gully and smaller than a canyon, (Webster's *Ninth New Collegiate Dictionary*). While each term has topographical meaning, it also evokes historical, mythic, and psychological connotations.

The word *canyon*, for instance, derived from *callon* (Spanish) or *calle* (French) brings to mind one of the most noble of America's geologic features, the Grand Canyon, which inspired Ferde Grofé to compose a musical suite to immortalize its grandeur. In his novel *The Call of the Canyon*, Zane Gray described the Grand Canyon as "a ragged black rent" in the face of the earth. Gray's charming westerns are rife with florid descriptions of gullies, gulches, hollows and other features similar to ravines.

Gorges, gulches, gullies. The words interweave in a poetic suite in G. Some features are major, and some are minor – in size, if not in key. A gorge is a narrow, steep, walled canyon or part of a canyon. A gulch is a deep, precipitous cleft or portion of a ravine. A gully is a miniature valley or gorge worn in the earth by running water or a small ravine in the face of a precipice. The nuances are minuscule. The definitive difference between canyon, ravine, and gully is size.

The word ravine may come from the old French word for mountain torrent (Webster's *Third New International Unabridged Dictionary* – rapine). Many of the ravines in Franklin County are identified by the streams that flow through them. We have Turkey Run, Rush Run, Flint Run, and Bill Moose Run, to name a few. A run is by definition a small, fast-flowing stream, or brook. A synonym for a small creek is ditch, a natural or artificial long, narrow watercourse or waterway. West of the Scioto, Clover Groff Ditch and Hamilton Ditch merge to form Hellbranch Run. To ravine lovers it is an atrocity to learn that the streambed in Glen Echo Ravine is labeled a ditch on Columbus Sewer and Drains maps. A ditch or a run might not necessarily be in a deep ravine, but all ravines are (or were) traversed with a flowing brook, stream, creek or run, in some cases above ground (Flint, Adena, and Bill Moose) and in other cases below ground (Iuka and Glen Echo).

Of the other synonyms that Roget lists for ravine, only one does not mention water. Dells are small, secluded, wooded valleys or hollows. Here there is no mention of a stream, brook, or creek. Whereas a chasm along with the synonyms cleft, fissure, ravine, valley, gorge and canyon imply the presence of water, an arroyo, gap, gulf, abyss, and pass suggest either the presence or absence of water.

Literary references provide contexts that further expand perceptions of a ravine. The *Oxford English Dictionary* includes an entry from George Washington's diary written September 30, 1781: "We also began two enclosed works on the right of Pigeon Hill – between that and the Ravine above Moves Hill." For Washington the ravine provided tactical and strategic military advantage in the Revolutionary War. Seventeen days after Washington made this entry in his journal, Cornwallis surrendered British posts at York and Glouster.

Another quote from the *OED* comes from Washington Irving's *The Adventures of Captain Bonneville*, written in 1837: "Obliged to travel along the edges of frightful ravines, where a false step would have been fatal." This description of the perilous trek along the precipitous ravine rim evokes dread and awe and conjures up the image of a menacing, cavernous abyss that invited death. The quote epitomizes the bravery of a remarkable man who set out in 1832 to explore the wonders of the West.

*The Secret of Steep Ravines*, a theatrical production that ran in New York in 2003, is a dark, dreamlike return to the spirit of the Great Depression. The play explores the dynamics beneath the surface of ordinary life through a main character who spends her days opening doors and boxes with a key her grandfather has given her. The stirring title explores the psychological nuances of properties of ravines and implies mystery, search, and hope through struggle.

In *Ravine*, a novel for juvenile readers published in 2002, children slip into a world of fantasy set in medieval times when they disobey adult warnings to stay away from the ravine. The story was inspired by a tale called "Gudrun" found in the book *German Hero-sagas and Folk-Tales*. The setting for the story is Clintonville, where the author, Janet Hickman, lives. The plot captures the other-worldliness and intrigue that ravines hold for children as well as adults. When the youngsters ponder the mystery of their neighborhood ravine metamorphosing into a world of ancient warriors, the author writes: "Ravines are hidden places where water runs, erasing secrets. One ravine slips easily into another. Open fields are much less likely." When the story's main characters disappear into the ravine, they move seamlessly from their daily routine to an exploration of another time and place.

Gully gee! A person can find inexhaustible inspiration in a ravine.

# *In with Natives*

*October 7, 2003*

*Left: Native plants line Cliffside Drive for "In with Ravines" session in Glen Echo ravine.*

*Right: Glen Echo's southern slope is studded with markers designating the location of new plantings.*

# Thank You...

***Equipment for Invasive Removal***
Keep Columbus Beautiful
City of Columbus Mobile Tool Library Program

***Plantings***
Oakland Nursery

***Southern Slope Plant Plan***
Susan Weber from Urban Wild

***Out with Invasives – In with Natives***
Steve Winters
The Graham School Students

***Editing and Planning***
Jerry Wager

***Community Forum Speakers***
John Mathews
Brad Westall

***Web site***
Forrest Husted
Fred Whiteman

***Plant Walk Guide***
Jim McCormac

***Art Sale Benefit***
Benjamin Barnes
Meg Beech
Christine Bobco
Amelia Cooper
Andrea Gorzitze
Helma Groot
Pug Heller
Alice Kelley
Dawn McCombs
Jennifer Radcliff
Laura Sanders
Melissa Woods
David Ziels

***Art Sale Storefront***
Euro Classics Antiques

***Proof reading***
K Adamson
Susan McKinley

# How Old Is My Tree?

Amaze your friends and impress your neighbors. Use this simple formula to determine the DBH (diameter at breast height) of your tree. Measure the trunk circumference at 4 to 4½ feet from the ground and then divide by the magic number, 3.14. This is the DBH. Multiply this diameter by species factor (the number of years it takes for each species to grow one inch in diameter) to estimate the age of your tree. Remember that trees tend to grow quickly when young and more slowly when old, so this method is not 100% accurate. The only precise way to tell the true age of a tree is to take an increment boring, which is expensive, or to wait till the tree comes down to count the annual rings.

**SPECIES FACTORS**

| | |
|---|---|
| Silver Maple | 3 |
| Sugar Maple | 5.5 |
| Norway Maple | 4.5 |
| Hedge Maple | 4 |
| Horse Chestnut | 8 |
| Buckeye | 5 |
| White Birch | 5 |
| River Birch | 3.5 |
| Shagbark Hickory | 4.5 |
| American Beech | 6 |
| European Beech | 4 |
| White Ash | 5 |
| Green Ash | 4 |
| Kentucky Coffee Tree | 3 |
| Black Walnut | 4.5 |
| Sweetgum | 4 |
| Tulip Tree | 3 |
| Sycamore | 4 |
| Black Cherry | 5 |
| Bradford Pear | 3 |
| White Oak | 5 |
| Pin Oak | 3 |
| Red Oak | 4 |
| Little Leaf Linden | 3 |
| American Elm | 4 |

**SPECIES FACTORS FOR CONIFERS**

For conifers, count the number of branches and add 5 to determine the age. If you cannot see all the whorls, here are Species Factors for some common conifers.

| | |
|---|---|
| White Fir | 7.5 |
| Douglas Fir | 5 |
| Norway Spruce | 5 |
| Blue Spruce | 4.5 |
| Austrian Pine | 4.5 |
| Red Pine | 5.5 |
| White Pine | 5 |
| Scots Pine | 3.5 |

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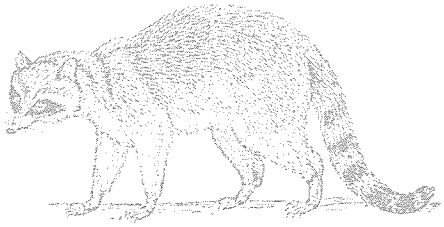
e-mail: mhbuckalew@aol.com

Ravinia
P.O. Box 82021
Columbus, Ohio 43202



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