

**Oregon Ridge Park Painted Tree Report:
Recommendations to the Baltimore County Council
From CEQ**



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Executive Summary

Concerned citizens contacted members of the Baltimore County Commission on Environmental Quality (CEQ) about a painted tree project at Oregon Ridge Park, asking whether the project was allowed and whether it might harm the trees. In response, the CEQ researched the project and its impacts, composed this report of its findings, and made recommendations to the Baltimore County Council.

Oregon Ridge Park is a 1043-acre, mostly forested, natural park purchased by the citizens of Baltimore County in 1969 and enlarged in 1989 and 2004, and the Nature Center was built using public funds in 1983 to promote a better appreciation for the environment by offering recreational and educational programs to the public¹.

In September 2017, 53 large, healthy canopy trees in Oregon Ridge Park were painted with two coats of exterior latex acrylic paint as a fundraiser for a private foundation. The Director of the Baltimore County Recreation and Parks Department gave permission to the private foundation (Nikki Perlow Foundation) to install a permanent art exhibit using the 53 mature hardwood trees on public land to raise funds (\$150,000) and increase awareness of the mission of the Foundation, which is supporting recovering addicts. The Foundation covered the lower several feet of the tree trunks with thick, brightly-colored acrylic paints, and installed 54 signs.

Defacing living trees in Baltimore County parks is illegal (Baltimore County Code, Article 30, Recreation and Parks, Title 1, Subtitle 2, § 30-1-201²). The decision to override this regulation was made with no record of public notice or input, and without documentation of advice from stakeholders and forestry or environmental education experts who could have redirected the Foundation toward other, less damaging projects that would have met the goals of this project. Only the Director of the Department of Recreation and Parks is allowed by County Code to make such a decision.

This private fundraising project represents a major shift in the mission of Park, yet plans for the project were not included in the Baltimore County Land Preservation, Parks and Recreation Plan for 2017 (www.baltimorecountymd.gov/Agencies/recreation/policies/lpprp.html). Nor was this type of project recommended in the Oregon Ridge Forest Health Assessment and Management Plan of 2007³. This tree-painting project is contrary to established educational and recreational purposes and goals of the Park. Its effects are contrary to the mandate of the Department of Recreation and Parks, which is to protect the plants, animals, and land in the Park.

This is an issue of fundamental importance to the way the County manages its resources. No one official should be able to make such a decision unilaterally without consultation and input from others with a key role in managing and protecting the resource.

Negative impacts of the project include: damage to the health of the trees—especially the ability to breathe through the bark; damage to other tree-dependent species, including lichens, mosses, invertebrates, and birds; interference with programming in environmental education at the Park; interference with nature and historic interpretation at the Park; interference with recreational experiences at the Park; interference with the positive psychological and emotional effects of spending time in natural parks; unintended lessons about vandalism in parks and the implication that painting trees or other living features is acceptable; negative effects on the County's reputation as a responsible steward of its forests and parks. Further, because the painted trees are located near the Nature Center and the handicapped-accessible trail, the painted trees'

¹www.baltimorecountymd.gov/Agencies/recreation/countyparks/mostpopular/oregonridgelodge/index.html: Oregon Ridge Park Master Plan - 1973; Oregon Ridge Nature Center Feasibility Study - 1979

²https://library.municode.com/md/baltimore_county/codes/code_of_ordinances?nodeId=ART30REPA_TIT1ADREPA

³www.baltimorecountymd.gov/Agencies/environment/forestsandtrees/foresthealth.html

effects include markedly decreased access to a natural forest for those with limited mobility (i.e., disabled, elderly, and families with young children). Because of the visibility of the painted trees, the effects of the project extend far beyond the 53 planned (+ 11 unplanned) painted trees.

Although we understand the reason for the request and the importance of supporting recovering addicts, there is a fundamental question about the detrimental use of public lands by a private entity without public input or consideration of how such a project relates to the mission of the park.

This tree-painting project must not be allowed to set a precedent for other foundations and non-profit organizations to propose similar, damaging projects in this and other County parks, whether or not for the purpose of raising funds.

Recommendations

1. Prevent further damage in this Park and in other County Parks by revising the Baltimore County Code to make it harder to make an exception to protecting the plants, animals, and natural ecological systems of the parks.
 - a. Revise the Code to state that the purpose of any future exception must be to enhance, not damage, forest health and to enhance, not compromise, the educational and recreational goals of the Park.
 - b. Revise the Code to require that any major shifts in goals and programming in a Park, or any exception to the regulations that prohibit damage to the natural features of a Park, can be made only after due process including input from stakeholders and panels of experts rather than by the Director alone.
 - c. Revise the Code so that the decision-making process includes stakeholders, the public, and DEPS natural resource professionals.
 - d. Revise the Code to include a set of criteria/questions for granting exceptions to the prohibitions; for example, What kind of harm? Who are the individuals and groups who will be affected by a decision to harm the park? How will the permitted action enhance the health of the natural organisms and systems in the Park?
2. Establish the Nikki Perlow Foundation's painted tree installation as a temporary exhibit that will end after a set amount of time—six months to one year. Do not permit the Foundation or direct County staff or volunteers to repaint the trees as the colors fade or to repair the paint. Allow the paint to wear off the trees naturally.
3. Remove the signs near each painted tree immediately. They are a hazard to hikers, to children who are exploring or playing in the forest near the painted trees, and to those who hike, run, or cross-country ski up and down the slope where the painted trees are. They also distract from existing educational signage.
4. The Director of Recreation and Parks should deny proposals for potentially damaging projects in the Park, or redirect the proposals to activities that are compatible with the Park's mission and that will enhance the biological health of the Park.
5. Attempt to minimize the unintended lessons about defacing trees at Oregon Ridge Park. As the paint wears off the trees, add educational signage near the current entrance to the exhibit about the importance of respecting living things and the role of lenticels—the breathing holes in the bark—of living trees.

Report

Overview of the Park

Oregon Ridge Park is a unique, 1043-acre natural park, mostly forested, purchased by Baltimore County for its citizens in 1969 and enlarged in 1989 and 2004. The Nature Center was built in 1983. Features include: forest; hiking trails; historic quarry site; historic miners' houses; historic interpretation building; lodge for events; outdoor amphitheater; picnic pavilions; streams (Baisman Run and Oregon Branch), a quarry pond, and nature playground. The Park is one of the few places in the County where citizens can experience a large natural forest.

Mission: From its beginning, Oregon Ridge Park was purchased and developed to provide the people of Baltimore County with recreational and educational opportunities that can only happen in a nature-dominated setting. The Master Plan for the Park, developed in 1973 with the Baltimore County Department of Recreation and Parks, states that⁴:

“This land completely represents the natural state of our native ecology. Therefore, the best use of the largest part of the park is a Nature Center. At this Center all people can learn in the field about their ecology, see the life sciences at work, help in conservation and wildlife management, observe the natural cycles that restore our environment, and gain a respect for life and our natural roots in the earth. School students, individual visitors and organized groups will all have the same opportunities. An outdoor education building will be the principal feature of the complex, but the learning will be done on the trails and in the outdoor learning stations. The education center will be one of the most outstanding of this type in the eastern United States and will undoubtedly serve as a model for other urban areas.”

Even before its construction in 1983, the Nature Center at Oregon Ridge had the following objectives for visitors⁴:

1. Appreciation of the immediate surroundings.
2. Understanding of his [/her] place in the broad environmental picture.
3. Guidance in areas of participation to keep his [/her] community attractive and the environment life supporting.

The 1973 Master Plan for the Park noted that “aided by resources of the park, it [a Nature Center] should provide an innovative interpretive program” that “would help park visitors toward these specific achievements⁴:

1. A realization that man can destroy the environment that supports him.
2. An improved learning through use of real objects and demonstrations.
3. An appreciation of natural beauty.
4. A chance to compare the park with his neighborhood.
5. An opportunity to contrast a park visit with the Monday-at-work scene.
6. An understanding of the need to preserve adequate open space in the community.
7. An understanding of natural resources and their wise use and preservation.
8. An awareness of man's history on the park land.
9. The development of an environmental conscience or ethic.
10. Training as professional or lay managers of the environment.
11. Enjoyment of the outdoors.
12. Finding solitude which enhances the human spirit.”

⁴ Master Plan for the Development of Oregon Ridge Park, Baltimore County Department of Recreation and Parks, 1973, pp. 9 and 10

Last year 150,432 people visited the park, and 3,500 schoolchildren arrived by bus for programs at the Nature Center. Many other home-schooled children and university students visited the Park as part of their curriculum and as part of ongoing research.

Other Educational and Research Activities in the Park

Oregon Ridge Nature Center is a Green Center for the Maryland Association of Environmental and Outdoor Educators. “The Maryland Green Center Award is a way to recognize and honor a facility’s efforts in implementation of environmental education, best management practices and community engagement”⁵. The Park and the Nature Center are Maryland Master Naturalist training sites. The entire Park is the focus of long-term, nationwide ecological research, the Baltimore Ecosystem Study, which includes researchers from all over the Country. The Johns Hopkins University is engaged in a long-term hydrology study of the Park. In January of 2017, a professor from the University received funding to create a field observatory in the Park to study the Park’s hydrology. The U.S. Geological Survey maintains one long-term gage in the Pond Branch watershed, which lies within the park, and one on Baisman Run, a short distance downstream of the park boundary. These are important reference sites for comparing the hydrology and water quality of a largely forested park ecosystem with the more heavily modified suburban watersheds.

Students from Towson University, Loyola University, Notre Dame University, UMBC, and Johns Hopkins University visit the park regularly to learn about the forest ecosystem.

All these activities support the environmental mission of the park.

Overview of the Nikki Perlow Foundation Painted Tree Project

A private foundation, the Nikki Perlow Foundation, sought and received approval from the Director of the Baltimore County Department of Recreation and Parks to paint 53 mature, healthy canopy trees with two coats of latex acrylic paint (primer coat and top coat) in Baltimore County’s Oregon Ridge Park to raise funds (\$150,000) and awareness of the Foundation and its mission, which is to support recovering addicts. The painted trees were installed as a community art exhibit and memorial garden. The project was intended as a permanent, fundraising art installation by a private foundation on public park land.

Exterior primer paint was applied to 53 targeted trees. Then on September 16, 2017, a group organized by the Foundation applied another coat of brightly-colored paint to 64 trees—53 trees planned for the project, and 11 unplanned trees. The mature canopy trees that were painted with designs from the project include 22 Tulip poplars (*Liriodendron tulipifera*), 17 Black oaks (*Quercus velutina*), 11 Chestnut oaks (*Quercus montana*), 2 Scarlet oaks (*Quercus coccinea*), 2 American beeches (*Fagus grandifolia*), 2 Red maples (*Acer rubrum*), 1 Mockernut hickory (*Carya tomentosa*), and 1 Blackgum (*Nyssa sylvatica*). The paint extends around the entire circumference of each tree, starting at 1.5 feet and continuing to between 8-12 feet from the ground.

At the base of each of the fifty-three targeted trees and at the entrance to the project, project participants installed signs made of plastic, metal, and foam on which is printed literary quotes and the name of the Foundation. The signs range in height from 33–42” tall.

At the request of this Commission, the Baltimore County Executive Director of Agriculture, Nature and Special Facilities asked the Foundation for details about the paint used on the trees. But as of January 4, 2018, no answer was forthcoming to him or us. He reported to this Commission that this Project of the Nikki Perlow Foundation is complete (i.e., with no intention to paint more trees), even though 100 trees were originally approved by the Director of Recreation and Parks for painting.

⁵ <https://maeoe.org/>

From a quote in a video on the Foundation's website, the artist who assisted with the project described the paint as "high-end acrylic." We assume that the paints used were exterior latex acrylic paint. The paint is termed 'water-based' or 'water soluble,' which means that it can be removed with water from skin, brushes, and surfaces while the paint is still wet. Once dry, it forms a solid, durable layer.

The painted tree exhibit is within 70 yards of the nature center. It begins at the children's nature playground with introductory signs that adjoin the playground. The painted trees line and dominate the path from the playground into the woods, the major entry point for families and others entering the forest. Further into the forest, the painted trees line the paved, handicapped accessible trail that leads to historic features and signage along the interpretive trail. Further along the trail into the forest, the painted trees line the Red Trail, the Connector Trail, and the Marble Quarry Trail, directly impacting these trails. The painted trees continue up the hill to the nature interpretation trail. The trees are visible from the parking lot, the nature center, from the surrounding forest, and from the hill above them (Appendix - Visibility map).



Photo 1 – Broad view of painted trees up the hill

Baltimore County Code

Defacing trees is illegal in Baltimore County Parks⁶. The County Code permits the Director of the Department of Recreation and Parks to override such prohibitions in the Code, prohibitions that otherwise protect the living trees in the Park and thus protect associated educational and recreational activities. Such an exception would allow the painting of living trees at Oregon Ridge Park.

ARTICLE 30. - RECREATION AND PARKS

TITLE 1. - ADMINISTRATION AND REGULATION OF PARKS

SUBTITLE 2. - REGULATION OF PARK ACTIVITIES

§ 30-1-201. - PROHIBITED ACTIVITIES.

h) Disturbing or damaging wildlife or flora prohibited. A person may not, unless otherwise authorized by the Director or by law: (1) Catch, molest, or kill wildlife in a park or disturb a nest, burrow, or den of an animal or fowl in a park; (2) Damage or destroy flora in a park; (3) Conduct an activity that: (i) Is detrimental to the natural resources and ecological function of park property; (ii) Interferes directly or indirectly with the use of park property; or (iii) Is harmful to human, animal, plant, or aquatic life on park property; (4) Mow, cut, remove, dump, deposit, or otherwise disturb vegetation within a stream or wetland buffer or a floodplain located on park property; or (5) Plant or cause the planting, seeding, or propagation of vegetation on park property.

⁶https://library.municode.com/md/baltimore_county/codes/code_of_ordinances?nodeId=ART30REPA_TIT1ADREPA

§ 30-1-203. - AUTHORITY OF DIRECTOR TO ISSUE PERMITS.

(a) Authority of Department to issue permits. The Department may issue permits for exclusive group use of a park or part of a park.

Overview of the Effects of the Project

Negative impacts of the project include: interference with programming in environmental education at the Park; interference with nature interpretation at the Park; interference with recreational experiences at the Park; interference with the positive psychological and emotional effects of spending time in natural parks; negative effects on the health of the trees; negative effects on the health of other forest species; unintended lessons about defacement of trees in parks and the implication that painting trees or other living features is acceptable; negative effects on the County's reputation as a steward of its forests. Further, because the painted trees are located near the Nature Center and the accessible trail, the painted trees' effects include markedly decreased access to a natural forest for those with limited mobility (i.e., disabled, elderly, and families with young children).

Because of the visibility of the painted trees, the effects of the project extend far beyond the 53 planned (+ 11 unplanned) painted trees.

The tree-painting project must not be allowed to set a precedent for other foundations and non-profit organizations to propose similar, damaging fundraising projects in this and other County parks. The installation of community art/fundraising project by a private foundation in a public park sharply diverges from the intended and ongoing mission and focus of the Park: to preserve the nature of the Park so it can provide recreational, educational, and research opportunities to the citizens of Baltimore County and beyond.

Physiological Effects of Paint on Living trees

Trees breathe through their bark. All trees have small pores called **lenticels** scattered over their bark, although they are more noticeable on some trees than on others. "Lenticels (pores) in the bark allow gas exchange between the stem and the atmosphere."⁷ Lenticels serve as "'breathing holes,' allowing oxygen to enter the living cells of the bark tissue."⁸ Lenticels "facilitate the controlled gas exchange — necessary for bark photosynthesis — of carbon dioxide and oxygen through the protective outer bark. Lenticels are readily visible on many species, especially on smooth bark, where you can also feel how they protrude from the surface."⁹

⁷ <http://www.daviddarling.info/encyclopedia/B/bark.html>

⁸ <https://hortnews.extension.iastate.edu/2005/4-20-2005/twigholes.html>

⁹ <http://www.americanforests.org/magazine/article/the-language-of-bark/>



Photo 2 – Close-up of paint showing lenticels

Paint applied to the crevices in a tree’s bark will clog the lenticels, and the painters on this project did paint in the cracks of the bark. Dr. Vanessa Beauchamp, botany professor at Towson University, noted that if the two coats of paint on the Oregon Ridge trees clog the lenticels of some of the painted trees, over time the lenticels will probably reopen again as the trees grow and expand in circumference. “The tree trunk expands in circumference every year as the tree adds new layers of xylem and phloem. The lenticels are simply weak places in the bark that tear as this expansion occurs. Even if they got covered in paint one year, the radial growth of the trunk would cause them to open further next year and essentially become unplugged.” (Email communication, 11/14/17).



Photo 3 – Close-up of painted bark – purple in center – cracks filled.



Photo 4 – Close-up of paint on bark – yellow/purple.

Dr. Matthew Baker, Geography and Environmental Systems professor at the University of Maryland Baltimore County, has taken his Forest Ecology class to Oregon Ridge Park many times, and he saw the painted trees on a field trip in Fall 2017. He noted:

“I am uncertain about the effects of paint from a toxicological perspective, but since the paint is made to seal, I'd say the most obvious concern is the effect that the paint will have on respiration by the tissues of the inner bark. Respiration will probably be curtailed if not completely prevented by the area that is painted. ...The biggest problem with the lack of respiration will probably be local, so the tissues underneath the outer bark will struggle to get oxygen and some may degrade. Necrotic stem tissue is not a great thing for the tree, but so long as there is no serious disruption of the phloem and oxygen is still getting to those inner bark tissues, then the trees should survive it. The bigger concern over the long term in my mind is the potential for degraded or dead tissue to be a vector for infestation or infection of the rest of the tree. Now, trees weather injuries to their bark all the time, so it's hard to say if this will result in permanent damage to the trees. It would also be tough to determine for certain that the paint caused the vulnerability to infection after the fact.”
 “Since the paint is ‘water-based’ (i.e., the pigment and other chemicals are mixed with water, not oil), I think it’s unlikely that the paint will permeate through the bark to the inside of the tree”
 (Email communication, 12/5/17).

Research about the physiological effects of paint on trees

Since painting (and otherwise defacing) living trees is prohibited in all town, county, state (<http://dnr.maryland.gov/publiclands/Pages/lnt.aspx>), and national parks (Code of Federal Regulations, Title 36 – Parks, Forests, and Public Property <https://www.gpo.gov/fdsys/pkg/CFR-2011-title36-vol1/xml/CFR-2011-title36-vol1-chapI.xml#seqnum2.1>) in this country, plant scientists have not researched the impacts of two coats of exterior paint on the bark of healthy canopy trees. No research has been conducted on the effects of mildewcides and other biocides in exterior latex acrylic paint on bark ecosystems and on tree health. No research has been done to determine the effects of paint on the trees in Oregon Ridge Park—long-term or short-term.

Effects on Other Forest Species

Many organisms live on the bark of trees. Mosses on bark intercept and absorb rain, and in the process sequester nutrients and slow the flow of water, and thus decrease erosion. “A piece of moss about the size of a muffin, would harbor 150,000 protozoa, 132,000 tardigrades, 3,000 springtails, 800 rotifers, 50 nematodes, 400 mites, and 200 larvae... Without mosses there would be fewer insects and stepwise up the food chain, a deficit of thrushes.” (Appendix - Other forest species affected by the paint). “The lichens that live on bark fix nitrogen. Due to their association with algae, lichens are able to convert nitrogen in the air into nitrates, which they need for their growth. Conversion of atmospheric nitrogen impacts the ecosystem, because when it rains, nitrates are leached from lichens for use by nearby soil-based plants¹⁰”. Many birds forage on tree bark at Oregon Ridge Park (e.g., Red-bellied woodpecker, White-breasted nuthatch) for the invertebrates that live on the bark. A tree’s bark and the organisms that live on it together form an ecosystem that relies on the healthy functioning of all the individuals. Paint on bark poisons or suffocates these organisms and interrupts the finely balanced food web on and around the bark and tree.

Acrylic Paint

Since at this time (1/4/18) we do not know exactly what kind of paint was used on the trees, we do not know the toxicity of the paint. Acrylic paints vary in ingredients; some are far more toxic than others. (See Appendix - Tree painting - safety of acrylic paints)

¹⁰ <https://sciencing.com/two-roles-lichens-play-ecosystem-8789.html>

“There are many water-based products that may still carry significant toxicity. Especially cheaper products may contain powerful toxins such as glycol ether, plastic softeners (phthalates), formaldehyde, unreacted volatile monomers, or even trace amounts of benzene.¹¹”

Another question: Where will the chemicals from the paint end up as they wear off the trees?

Longevity of the Paint

The two coats of paint—primer and top coat—applied to the living trees in this project will probably take about 20 years to wear off the trees, which is a human generation. For a whole generation, then, the effects of the paint on these trees will persist.

History of Painting Trees

In the past, landowners applied paint to the wounds of trees. This practice is now thought to damage trees. With a few exceptions, paints are not now recommended for this use¹². Some orchardists who grow fruit in warm climates still paint the base of young trees to protect them from sun scald¹³. In that case, they use interior latex acrylic paint at 20-50% concentration (i.e., diluted with water) in a single coat vs. the two coats of full-strength paint used to paint the trees in this project. Similar diluted paint is used to deter insect pests. Likewise, a single layer mixture of paint and sand painted at the base of trees deters beavers from chewing. In all these cases, the intention of the painters is to protect the health of the tree.

Some artists in the United States have painted dead trees or those targeted for removal. Other artists have painted trees with ephemeral, non-toxic paint in temporary exhibits. (Appendix – Painting trees - art)

Removing Paint from Living Trees

Research and recommendations on removing paint from trees exist in publications that address defacement such as graffiti. A National Park Service publication about graffiti on historic masonry notes that “removing graffiti as soon as it appears is the key to its elimination—and recurrence.¹⁴”. Parks spend lots of time and money on removing paint applied by graffiti ‘artists’ and vandals. In all parts of this country, paint on living trees in parks is prohibited and considered to be defacement, vandalism.

Online suggestions from the federal government and local municipalities for removing painted graffiti from trees include using chemical solvents, oils, alcohol, sand blasting, and power washing. Botany professors we consulted (Dr. Beauchamp from Towson University and Dr. Maloof, executive director of the Old Growth Forest Network and retired botany professor at Salisbury University) noted that using the above methods might harm the living trees by damaging the growing, green cambium layer. Dr. Maloof suggested that we increase the natural wearing down of the paint by applying “a sander wheel on a battery powered drill, scruffing the paint down to the bark in some places.” “The external bark sheds so I would expect the paint to come off in....20 years? It would help to speed weathering by sanding it a bit.” (email - November 17, 2017)

Other online resources warned against sanding the bark itself and noted the potential for damaging thin-barked trees (Maple and Beech in this stand of trees) by sanding. “Removing paint from a tree is tedious work and requires attention to detail and consideration, to prevent further damage to the bark and living tissue.¹⁵”

¹¹ www.nontoxicprint.com/acrylicresistetching.htm

¹² <https://pnwhandbooks.org/plantdisease/pesticide-articles/tree-wound-paints>

¹³ www.gardeningknowhow.com

¹⁴ www.nps.gov/tps/how-to-preserve/briefs/38-remove-graffiti.htm

¹⁵ www.extension.purdue.edu/extmedia/fnr/fnr-474-w.pdf

Removing the paint from these trees may damage the trees further, so this Commission does not recommend that.

Educational Impacts of the Painted Trees

Interference with current educational programs and interpretation

The forest in Oregon Ridge Park provides a unique service to Baltimore County: educating people about forests through Nature Center exhibits and programs, naturalist and teacher-led hikes, and by offering opportunities to be surrounded by the sights, sounds, textures, and smells of a natural forest. Since the painted trees are close to the Nature Center and the adjacent playground, they interfere with education by distracting visitors' attention with painted color and shapes, and by inserting a human component into the otherwise natural forest experience. The attention of all visitors to this part of the forest in the Park will be visually hijacked by bright colors, and the visibility of these painted trees extends into the forest in all directions beyond the installment. Education about the forest at the Park has been compromised.

The painted trees are located on the main interpretive nature trail, which guides visitors with numbered posts linked to an interpretive pamphlet. This nature trail is used regularly by volunteer trail guides and naturalists when they lead groups of school children and other visitors into the forest. During educational programs at the Center, visiting students are routinely grouped with volunteer trail guides and teachers, and then dispersed from the Nature Center along nearby trails, two of which pass by and through the painted trees. The bright colors and human-created designs on the painted trees visually impose themselves on any group educational activity near them. How do we teach school children who visit the park how trees look and feel, and how they function, if the eye-catching colors of painted trees distract their attention and obliterate the natural appearance and textures of the trees? How can the children focus on the subtle differences between the bark of a Black oak vs a Tulip poplar if that bark is covered with purple and yellow paint, or if the surrounding trees are pink, blue, and orange?



Photo 5 - Several painted trees – middle ground



Photo 6 - Cluster of painted trees in foreground



Photo 7 – Signs along historic interpretive trail with painted tree in background

The painted trees line the historic interpretive trails, too. These trails lead to historic quarries and iron ore pit. Large interpretive signs near these features are now surrounded by brightly-colored trees and lots of competing signage. The colors and designs on the trees visually distract from the signage about the historic features in the park. How can a visitor imagine the history described on the sign when those signs are flanked by other signage and by blue and yellow trees? The archeological interpretation of the site, fixed to this location, has been visually compromised by painted trees and competing signage.



Photo 8 - Painted tree next to Iron Ore Pit interpretive sign

These painted trees are at cross-purposes with interpretation of the historic and natural features of the Park. How will children know what a real forest is like if the view of trees from the Park's playground includes trees with multi-colored trunks? How can they imagine themselves as part of the history of the Park when they're surrounded with brightly-colored visual distractions? The painted trees diminish the experience of the natural forest and the historic features by imposing artificial, human-created images. The forest at Oregon Ridge Park was acquired, planned, and designed to educate the public about what a healthy forest is and about the history of the site; it's not a place to paint living trees. The painted trees compromise the ability of the Oregon Ridge Nature Center to offer environmental and history education to the citizens of Baltimore County.

Interference with sensory learning of young children

Young children learn through all their senses. The paint on these tree masks the natural colors and textures of the trees right next to the playground where the youngest visitors play. For older children, school field trips provide a way for to experience a forest firsthand while studying forest ecosystems. The best way to understand a forest is to be in the forest itself, but the painted trees compromise students' experience of a natural forest.

Unintended lessons of the project about tree defacement and vandalism

For all visitors to the Oregon Ridge Park, the paint on these living trees normalizes the defacement of trees (i.e., painting, carving, etc.). Paint on living trees in public places sanctions defacement as a way to relate to nature—to a forest. This is in direct contrast to the 'Leave No Trace' guidelines that the State of Maryland publishes and which the staff at Oregon Ridge Park promotes¹⁶, and to the first nature lessons parents teach children: respect all living things. Yet most children who visit the Park will see these painted trees. Children learn by imitation. How can we teach the visitors—young and old—to respect the trees if this project demonstrates that it is acceptable to paint living organisms?

Publicly sanctioned defacement encourages additional acts of defacement (Appendix - Tree painting – graffiti/vandalism). Although the Foundation planned and was permitted by the Recreation and Parks Department to paint 53 living trees, by the end of the project's painting event, 11 additional living trees had been painted by the project's participants. This additional, unplanned defacement includes a smiley face on one tree and painted swatches of paint over the bark of trees near the planned exhibit (see photos below)—perhaps a participant cleaning a paintbrush or testing a color? In one case, participants painted the trunk and branches of a nearby sapling--a young, living tree (Blackhaw - *Viburnum prunifolium*) that was not part of the project. Such a young tree may suffer a slow death by suffocation. This additional painting of living trees during the painting event demonstrates that the painted trees freed participants from the cultural taboo against defacing living trees. The unintended message of this project: it is acceptable to deface living trees with paint. However, a forest is not an art gallery with living trees as the canvas; it is a living system worthy of respect and care.

¹⁶ <http://dnr.maryland.gov/publiclands/Pages/Int.aspx>



Photos 9, 10, 11 – Examples of unplanned defacement of trees on the day of the event

Decreased Accessibility to the Natural Forest

The painted trees occur along the Park's paved trail, which was designed and located to enable access to the historic features of the Quarry trail and to the sights, sounds, and smells of the forest by able-bodied visitors and by those with mobility challenges. Visible in all directions, the painted trees now block accessibility to the undisturbed natural forest for those who require a paved path, those with limited mobility: the elderly, the disabled, and the very young.

Recreational Impact

The Park was purchased and set aside by the citizens of Baltimore County as a place to seek recreation and to find respite from the human-dominated urban and suburban life (Appendix - Oregon Ridge Park Master Plan, 1973). Visitors come to Oregon Ridge Park to be refreshed in a natural environment, away from human impacts. Painted trees interfere with that experience by inserting an attention-grabbing human component in the forest that is adjacent to the nature center, parking lot, playground, pavilion, historic interpretation trail, nature interpretation trail, and handicapped accessible trail. The trees were painted in bright colors, so their visibility of the trees extends far beyond the immediate area around the trees, to the nature center parking lot, and far into the surrounding forest. (Appendix - Visibility map)

Benefits of time spent in natural parks

Numerous research studies describe the benefits of spending time in natural parks and other natural areas without the intrusion of human-made elements. They include improved short-term memory, restored mental energy, stress relief, reduced inflammation, better vision, improved concentration, sharper thinking and creativity, reductions in blood pressure, possible anti-cancer effects, immune system boost, improved mental health, and reduced risk of early death (Appendix - Benefits from being in nature). Time spent in green places also improves the symptoms of those with anxiety disorders and improves recovery from addiction (Appendix - Other benefits). Medical insurance companies in Japan now cover transportation costs to visit nature-dominated parks where they experience 'forest bathing.' Because of the increased productivity of workers, corporations arrange for buses to take employees to natural parks (Appendix - Forest Therapy). Specific health benefits to children who spend time in natural settings include improvement in attention and self-discipline (Appendix - Benefits for children from being in natural settings). Oregon Ridge Park is the prime publicly-managed location in Baltimore County to experience such forest benefits.

A natural forest environment provides these benefits; natural forests have no brightly-painted trees.

Mission Shift

Allowing the defacement of living trees in the park by a private foundation for the purpose of raising funds and awareness of a public health problem is a major shift in the mission of Oregon Ridge Park. In this case, such a decision allowed a private foundation to deface living trees in a natural park next to a nature center that has been tasked by the citizens of Baltimore County to offer site-specific nature and history education. There is no precedent in Baltimore County or in the state of Maryland for private foundations to install permanent art exhibits in Parks for the purpose of fundraising.

Setting a Precedent

The approval of this project has the potential to set a precedent for future private fundraising projects that damage this and other Parks. With this Project in mind, other private organizations might request permission from the County to install projects in this park and others. Thus, the damage done in the present case might be only a harbinger of future activities, unless the County Council clearly states that such requests will not be granted from this point forward.



Photo 12 – Foundation signage installed at the base of every painted tree

Contrary to the County's Efforts and Reputation in Forest Conservation and Stewardship, and Its Commitment to Parks

Over the years Baltimore County has been considered a leader in forest conservation and stewardship in the State, Country, and beyond. The County has launched innovative programs, and the County's Master Plan – 2020 includes examples of regulations, policy, and projects that underscore the County's ongoing commitment to healthy forests (Appendix and master plan¹⁷). For example, "the County is placing its public forests under management plans that prioritize forest health and the protection of water quality, habitat, biological diversity, and the maintenance of forest dependent recreation" (p. 169)

Baltimore County has had a sustained commitment to its parks. For example, the County's Master Plan - 2020 states that "parklands play a vital role in helping to preserve vast natural areas and protect and sustain

¹⁷ www.baltimorecounty.md.gov/Agencies/planning/masterplanning/masterplan2020download.html

the environment.” The Plan includes a policy to “promote a greater appreciation for the natural environment through interpretation and hands-on experiences, and expand efforts to protect sensitive environmental areas within the County’s parklands” (p. 130).

Yet despite this reputation and commitment, the CEQ could find no examples of other municipalities in the United States that granted an override of their prohibition on defacing trees in a natural park as a fundraiser for a private foundation.

Decision Making

The trees in the forest at Oregon Ridge Park were purchased with public funds and are held in trust for the public by the County’s Department of Recreation and Parks. Any decision that negatively impacts the health of the flora and the educational and recreational goals of the Park, that shifts the focus of the Park, and that sets a precedent for future Park use should involve direct participation by the public and by all the affected stakeholders.

The Baltimore County Code specifies that defacing living trees in a Baltimore County Park is illegal unless the Director of the Department of Recreation and Parks authorizes it. The decision to allow painting of living trees as a fundraising art installation by a private foundation was a major shift in focus and direction for the County’s parks. If the County planned to change the mission/focus of the Park, the public should have been given the opportunity to participate in that decision. Yet the decision-making process to permit defacement of trees in Oregon Ridge Park did not include the stakeholders impacted by that decision: the public, educators who take their students to the park, Park naturalists, the volunteer park trail guides, and the Oregon Ridge Nature Center Council. There is no record of the decision in the minutes of the Recreation and Parks Council. And, the decision-making process did not include any consultation with Baltimore County Department of Environmental Protection and Sustainability’s natural resource professionals.

Nor was the public part of the decision; media coverage occurred only after the September 16 painting was complete. This Project was not a publicly-mandated art display (Appendix - Media coverage of the Perlow Foundation’s tree painting event). Indeed, the members of the CEQ and the staff of the Department of Environmental Protection and Sustainability only learned about this project after it was publicized by local news organizations and after concerned citizens raised objections.

This project was not included in the Baltimore County Park Plan from 2017, a plan available for review by the public¹⁸. Nor was the project part of the recommendations in the Oregon Ridge Forest Health Assessment and Management Plan – 2007¹⁹.

In the past, exceptions to the ‘no harm’ rule have been made with the goal of improving the health of the forest (e.g., forest thinning for gypsy moth damage and to shape the species composition of the forest). These decisions were made only upon the recommendation of natural resource professionals. This was not the case in this painted tree project, which grew out of a decision made by a few individuals – without a goal of improving the health of the forest.

Since the whole community is affected, the whole community should have been part of the decision about this Park-altering project. Public hearings should have been held. In such hearings, the public’s concerns about the project would have been heard and considered, and alternative, non-damaging ways to achieve the Perlow Foundation’s goals would have been suggested. The Project planners and the County decision makers could have helped the Foundation use the metaphor of forest growth and community without damaging living trees, interfering with educational programming, and sending negative messages about

¹⁸ <http://resources.baltimorecountymd.gov/Documents/Recreation/lpprp/2017lpprpfinalfull.pdf>

¹⁹ www.oregonridgenaturecenter.org/pdf/oregonridge-forestplan.pdf

forest stewardship. Positive examples include planting trees, maintaining trails, and enhancing existing gardens.

If the decision-making process had been open to the public and if the decision had been made with the expertise and experience of DEPS natural resource staff who have been monitoring the health of the forest at Oregon Ridge Park for years, and with the insights of those who teach in the park, then the educational, recreational, and biological impacts would have been considered and avoided. Without those considerations, there was a lack of thorough analysis of environmental, educational, and recreational impacts of the Foundation's painted tree project.

Summary

The tree painting project of the Nikki Perlow Foundation caused what we hope will be short-term damage to mature, healthy trees in the Park and to the associated bark ecosystems. But for the life of the paint on the trees, the project will interfere with existing environmental educational programming by local educators, Park staff, and volunteer trail guides; compromise the effectiveness of the natural and historic trailside interpretation; send negative, unintended messages to Park visitors about the acceptability of defacing flora in the Park; cast a negative light on the County's efforts to remain a leader in forest conservation and stewardship, and park health; compromise recreational and health benefits; limit access to natural forest for people with mobility challenges (elderly, disabled, young children); and set a precedent for other private foundations to propose similar fundraising projects in public parks.

The good news: the lenticels, the breathing holes in the bark of the living trees that were painted, may reopen in time. (No one knows for sure.) The paint probably did not travel into the growing tissues of the tree. And the paint will eventually wear off.

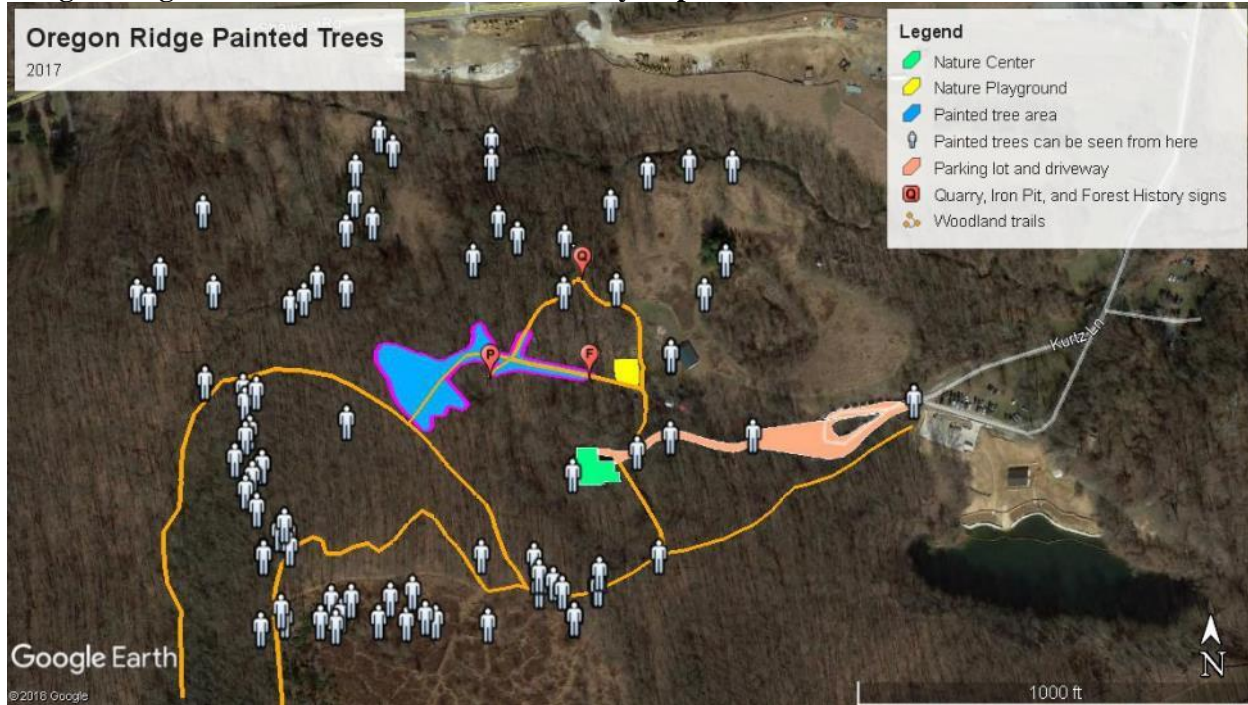
The bad news: unintended lessons about defacement of trees will be learned over a full generation; environmental education, and archeological and nature interpretation in the Park will be compromised over that time; citizens with mobility challenges will experience limited visual and physical access to natural forest and thus limited recreational benefits afforded by the natural forest in the Park. Furthermore, the paint may have caused longer-term damage to the trees.

This unprecedented use of the Park and the painting of the trees, which would be prohibited in any other town, county, state, or national park, undermines the positive reputation of the County as a leader in forest conservation and stewardship, and its commitment to natural parks. Oregon Ridge Park was purchased and set aside by the citizens of Baltimore County to educate the public about what a healthy forest ecosystem is like and about the history of the land, and to provide the recreational and health benefits that only a natural park can offer. It is the responsibility of public agencies and elected officials to protect the park and its resources from disturbance in order to support these objectives. A Park is not a place to paint living trees.

Unless clear action is taken to deter such future incursions, this Project could set a precedent for other private foundations and non-profit organizations to raise funds by installing permanent and potentially damaging fundraising exhibits in County parks.

Appendices – all links were working when the report was completed in February 2018.

Oregon Ridge Painted Tree location and visibility map



Other Forest Species Affected by the Paint

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

Oregon Ridge Forest Health Assessment and Management Plan – 2007

www.oregonridgenaturecenter.org/pdf/oregonridge-forestplan.pdf

Baltimore County Park Plan – 2017

<http://resources.baltimorecountymd.gov/Documents/Recreation/lpprp/2017lpprpfinalfull.pdf>

The Land Preservation, Parks and Recreation Plan (LPPRP) serves as the advisory master plan for the Baltimore County Department of Recreation and Parks. The LPPRP outlines the County's recreation, parks and open space policies, goals, objectives and priorities, particularly those associated with parklands and recreational facilities. The most recent plan, the "Baltimore County, Maryland Land Preservation, Parks and Recreation Plan," was adopted by the Baltimore County Council as a Master Plan 2020 Addendum on June 5, 2017.

History of Oregon Ridge Park

www.baltimorecountymd.gov/Agencies/recreation/countyparks/mostpopular/oregonridgelodge/index.html

Oregon Ridge Nature Center Master Plan - 1973

Objectives of the Center

1. Appreciation of the immediate surroundings.
2. Understanding of his [her] place in the broad environmental picture.
3. Guidance in areas of participation to keep his community attractive and the environment life supporting.

An innovative interpretive program would help park visitors toward these specific achievements:

1. A realization that man can destroy the environment that supports him.
2. An improved learning through use of real objects and demonstrations.
3. An appreciation of natural beauty.
4. A chance to compare the park with his neighborhood.
5. An opportunity to contrast a park visit with the Monday-at-work scene.
6. An understanding of the need to preserve adequate open space in the community.
7. An understanding of natural resources and their wise use and preservation.
8. An awareness of man's history on the park land.
9. The development of an environmental conscience or ethic.
10. Training as professional or lay managers of the environment.
11. Enjoyment of the outdoors.
12. Finding solitude which enhances the human spirit.

(Oregon Ridge Park Master Plan - 1973—Baltimore County Department of Recreation and Parks, pp. 9 & 10)

Constructed in 1983, the Nature Center structure now houses “wildlife and nature displays to delight all ages, as well as the library, and an auditorium for classes and meetings. The Nature Center offers a variety of exhibits explaining the history, wildlife, and natural environment of the Park. There are exhibits of the local fauna and flora and displays of our archaeological findings inside the Nature Center. Wildlife exhibits include live snakes, fish, amphibians, honeybees, turtles and other creatures”

(www.oregonridgenaturecenter.org/hstry.html).

Organizations and institutions that use the Park for educational programs

Maryland Association of Environmental and Outdoor Educators MAEOE – Oregon Ridge Nature Center is a Green Center – <https://maeoe.org/>
MD Master Naturalist training site

<https://extension.umd.edu/masternaturalist/master-naturalist-policies-and-guidelines>

Baltimore Ecosystem Study, Long-Term Ecological Research Project at Oregon Ridge Park - (national project; researchers from all over country) - <https://beslter.org/index.html>

Collaboration with Baltimore County Public Schools

- The Environmental Science Freshwater Ecosystem Study
- The Advanced Placement (AP) Environmental Science Stream Team

Johns Hopkins University hydrology study of Oregon Ridge Park and planned field observatory

<https://engineering.jhu.edu/news/2017/01/11/ciaran-harman-nsf-career-award/#.WhX-CEqnHIU>

Media coverage of the Perlow Foundation's tree painting event

Baltimore Sun and Towson Times – 10/30/17

www.baltimoresun.com/news/maryland/baltimore-county/towson/ph-tt-trees-1101-story.html

www.baltimoresun.com/news/maryland/baltimore-county/towson/ph-tt-forestofhope-0920-story.html - 9/6/17

WBAL-TV – 9/16/17

www.wbaltv.com/article/forest-of-hope-celebrates-those-who-have-overcome-addiction/12259800

Nikki Perlow Foundation – Forest of Hope tree painting project

Webpage: www.nikkiperlowfoundation.org/

Facebook page: www.facebook.com/events/1357279167686232/

National Park Regulation about defacing trees

From Code of Federal Regulations, Title 36 – Parks, Forests, and Public Property
www.gpo.gov/fdsys/pkg/CFR-2011-title36-vol1/xml/CFR-2011-title36-vol1-chapI.xml#seqnum2.1

Maryland State Park Regulations – Leave no trace

<http://dnr.maryland.gov/publiclands/Pages/Int.aspx>

Tree painting - Safety of acrylic paints

“Acrylics undergo a dramatic transformation during drying; this is called polymerisation. Tiny acrylic globules, or monomers float individually in a watery emulsion and then link together as the water evaporates. This process can also be aided by the application of gentle heat - by placing the plate in a drying cabinet after the application of acrylics, for example, or by using a hairdryer on the plate.

Polymerisation is complete when the monomers remain firmly linked in long chains, thus turning them into polymers. Once dry, a very tough, plastic-like substance has formed on the metal plate that is both hardwearing, as well as perfectly mordant resistant. Industry already has a history of exploiting these properties; cars are painted with water-based paints, and acrylic photo resists...are used for making printed circuit boards in the electronics industry.

In the 90s water-based paint products were generally hailed as being THE safe alternative to the then dominant VOC and oil-based systems. Quite a few of the claims of improved safety have been borne out by facts, but the idea of 'intrinsic' safety of water based products and polymers is exaggerated, and may even be misleading. Some manufacturers make acrylic paint and printmaking products with impeccable ingredients, full MSDS documentation and certified lab testing, and have a perfect safety record - such products can be deemed 'nontoxic'. But there are many water-based products that may still carry significant toxicity. Especially cheaper products may contain powerful toxins such as glycol ether, plastic softeners (phthalates), formaldehyde, unreacted volatile monomers, or even traces amounts of benzene. Shockingly, some of the recent safety scares in paints and printing materials are connected to products that were actually marketed as being 'safe' and 'green'. Users are advised to familiarize themselves with safety facts and recommendations beyond manufacturer's claims and advertisements; even MSDS information may be misleading or incorrect.” www.nontoxicprint.com/acrylicresistetching.htm

Tree painting - methods for removing paint from substrates

www.extension.purdue.edu/extmedia/fnr/fnr-474-w.pdf – overview of techniques

www.fs.fed.us/t-d/pubs/pdf/98231302.pdf - sandblasting and chemicals

Sherwin Williams staff (email CEQ member, 10/24/17):

“Latex paint is breathable, so they should still be able to get plenty of oxygen and moisture that should not then be trapped within, which if it were, would cause harm or rot to the trees. If it was an interior paint, it will probably wear off in a year or two at most, due to weathering. If it was an exterior paint, designed to adhere to wood and withstand weathering for several years [if only one coat and without primer], then the following removal methods are options:

A) chemical removal (which will also penetrate into the tree, likely causing harm and detriment (it could kill them); B) mechanical removal (corn cob blast, sanding and/or scraping, which will also damage the tree, at least the bark); C) power washer (requires a water source, and excessive pressure (psi) could also damage the tree). I would have someone do a test with the sanding--manually, not with a power tool, and see how difficult and how much it impacts the bark. This should be the least detrimental of the choices.”

Tree painting – graffiti/vandalism

Broken Windows Theory: Defacement yields more defacement - proposed by James Q. Wilson and George Kelling in 1982 that used broken windows as a metaphor for disorder within neighborhoods. Their theory links disorder and incivility within a community to subsequent occurrences of serious crime. www.britannica.com/topic/broken-windows-theory

Taggers paint trees in NY City because it's harder to remove graffiti from them www.nytimes.com/2011/11/18/us/graffiti-taggers-turn-to-trees-with-some-possibly-harmful-effects.html -

Graffiti Removal from trees – Department of Forestry and Natural Resources – Purdue University www.extension.purdue.edu/extmedia/fnr/fnr-474-w.pdf

Tree painting – improving the health of the tree

Prevent sunscald www.gardeningknowhow.com – Paint trees white, ½ strength; 1 coat

Paint on tree wounds

pnwhandbooks.org/plantdisease/pesticide-articles/tree-wound-paints

With a few exceptions, paints are not now recommended for this use.

Tree painting - art

<http://denverconvention.com/about-us/public-art/the-blue-trees/> “The Blue Trees installation in Downtown Denver was a temporary art installation. Since the colorant is water based and non-toxic to the trees, the rain will eventually wash it away.”

Benefits from being in nature

Overview of benefits of being in nature-dominated places: 11 scientific reasons you should be spending more time outside. www.businessinsider.com/scientific-benefits-of-nature-outdoors-2016-4/#1-improved-short-term-memory-1

1. Improved short-term memory – <http://journals.sagepub.com/doi/abs/10.1111/j.1467-9280.2008.02225.x>
2. Restored mental energy - www.sciencedirect.com/science/article/pii/S0272494405000381 and www.sciencedirect.com/science/article/pii/S0272494495900012
3. Stress relief - www.ncbi.nlm.nih.gov/pubmed/22840583
4. Reduced inflammation - www.ncbi.nlm.nih.gov/pubmed/22948092
5. Better vision
6. Improved concentration - <http://journals.sagepub.com/doi/abs/10.1177/0013916591231001>
7. Improve symptoms of attention deficit disorder – <https://well.blogs.nytimes.com/2008/10/17/a-dose-of-nature-for-attention-problems/>
8. Sharper thinking and creativity – <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0051474>
9. Possible anti-cancer effects - www.ncbi.nlm.nih.gov/pubmed/17903349 and www.ncbi.nlm.nih.gov/pubmed/18336737
10. Immune system boost - www.ncbi.nlm.nih.gov/pmc/articles/PMC2793341/
11. Improved mental health - www.ncbi.nlm.nih.gov/pubmed/21996763 and www.ncbi.nlm.nih.gov/pmc/articles/PMC3393816/

Other benefits

Improved recovery from addiction

<http://alcoholrehab.com/addiction-recovery/importance-of-spending-time-in-nature-for-recovery/>

Significant reductions in blood pressure and certain stress hormones

www.npr.org/sections/health-shots/2017/07/17/536676954/forest-bathing-a-retreat-to-nature-can-boost-immunity-and-mood

Benefits for children from being in natural settings

Overview of benefits for children

<http://journals.sagepub.com/doi/abs/10.1177/00139160021972793> -

At Home with Nature: Effects of ‘Greenness’ on Children’s Cognitive Functioning.

<http://journals.sagepub.com/doi/abs/10.1177/00139160021972793>

Views of nature and self-discipline: Evidence from inner city children. Fan, J., McCandliss, B.D., Fossella, J., Flombaum, J.I., Posner, M.I. (2005). *Journal of Environmental Psychology*, 22, 49–63.

The Development of Conservation Behaviors in Childhood and Youth - Louise Chawla and Victoria Derr. *The Oxford Handbook of Environmental and Conservation Psychology* - Edited by Susan D. Clayton

https://books.google.com/books?hl=en&lr=&id=RCjdKjI_qIcC&oi=fnd&pg=PA117&dq=children+trees+nature+connection&ots=SaSvi9Vd6t&sig=pzPT6cVJqFGltdRsvL42ox-gOoc#v=onepage&q&f=false

Forest Therapy

The Association for Forest Therapy: www.natureandforesttherapy.org/

Forest Bathing - Shinrin Yoku - www.ncbi.nlm.nih.gov/pubmed/19568835

Forest Therapy: Physiological Effects of Nature Therapy: A Review of the Research in Japan

www.ncbi.nlm.nih.gov/pmc/articles/PMC4997467/

Berger and MacLeod. Incorporating Nature into therapy: A Framework for Practice.

<file:///C:/Users/Owner/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/117F17XE/naturetherapyarticle.pdf>

Baltimore County Master Plan – 2020 - Forest-related sections (pp. 169, 172 – 173)

www.baltimorecountymd.gov/Agencies/planning/masterplanning/masterplan2020download.html

Policy: Continue to assure the sustainable management of public and private forest resources to provide ecosystem services and meet human needs.

Action:

- Continue to implement the County’s Forest Sustainability Program and promote sustainable forest management among agencies, forest landowners, and environmental organizations, guided by sound science and assessment of forest health.
- Implement actions and commitments for forest management in the Baltimore Watershed Agreement, the Reservoir Watershed Management Agreement Action Strategy, and the County’s Sustainability program.
- Continue to prepare Forest Health Assessments and implement Forest Management Plans for large County-owned forested properties.
- Continue to increase forest cover and maintain forest health using mitigation fees from the Forest Conservation Act and the Chesapeake Bay Critical Area Act.

- Address forest pests, diseases, and other biotic stressors and continue cooperative projects for suppression of Gypsy moths and control of exotic invasive species.
- Continue collaboration with the USDA Forest Service, the Maryland Department of Natural Resources – Forest Service and other agencies and organizations for the collection and use of forest assessment data and research and the implementation of sustainable forest management practices. (pp. 172-173)
- The County is placing its public forests under management plans that prioritize forest health and the protection of water quality, habitat, biological diversity, and the maintenance of forest dependent recreation (p. 169).
- Promote and support programs for community reforestation, including the Tree-Mendous Maryland Program, the County’s Growing Home Campaign, Rural Residential Reforestation projects, and Big Trees program (p. 169).