

 **FILE**

From: Puco ContactOPSB
To: PUCO-Docketing
Subject: public comment 22-0549-EL-BGN
Date: Wednesday, April 12, 2023 2:07:20 PM
Attachments: 20230411DCA public hearing comments Oak Run solar facility and transmission line.docx
20221125DCA comments Oak Run solar facility and transmission line.pdf

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From: asasson@aol.com <asasson@aol.com>

Sent: Wednesday, April 12, 2023 1:26 PM

To: Puco ContactOPSB <contactopsb@puco.ohio.gov>; Matthew.Butler@puco.state.oh.us

Cc: Lamoreaux, Matthew <Matthew.Lamoreaux@epa.ohio.gov>; Cooper, Marshall <Marshall.Cooper@epa.ohio.gov>; Sluga, Wesley <Wesley.Sluga@epa.ohio.gov>; Doherty, Heather <Heather.Doherty@dnr.ohio.gov>; Kevin Kasnyik <kasnyik@metroparks.net>; John Tetzloff <jftetzloff@aol.com>; Staudt Chettley <darterland@yahoo.com>; Scott Brockman <betterboulder@hotmail.com>; commissioners@madison.oh.gov

Subject: Comments to the Ohio Power Siting Board re: Case No. 22-0549-EL-BGN, Oak Run Solar

April 12, 2023

Matt Butler

Public Utilities Commission of Ohio

180 E. Broad St

Columbus, Ohio 43215

Via Email: contactOPSB@puco.ohio.gov, Matthew.Butler@puco.state.oh.us

Comments to the Ohio Power Siting Board re: Case No. 22-0549-EL-BGN, Oak Run Solar; and 22-0550-EL-BTX: Oak Run Solar Transmission Line, Madison County

Public Hearing and supplemental comments submitted by Anthony Sasson on behalf of the Darby Creek Association, darbycreeks@aol.com, 614 288-0313

Anthony Sasson
Darby Creek Association
8351 Patterson Road
Hilliard, Ohio 43026

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business.

Mr. Butler:

Technician  Date Processed APR 12 2023

Attached are comments of the Darby Creek Association for entry into the public record concerning the proposed Oak Run Solar facility and transmission line in Madison County. Please note that the attached file dated April 11, 2023, was presented in written form to the court reporter when I provided verbal testimony at the April 11, 2023, public hearing at Jonathan Alder High School. As stated in those comments, we also have attached DCA's comments from November 25, 2022, which still apply.

We are submitting the following as supplemental comments and are submitting them

as part of the public record.

Agrivoltaics and stormwater:

In addition, as I mentioned in verbal comments at the public hearing, the use of agrivoltaics (growing crops under or adjacent to the solar panels) at the proposed facility provides an additional aspect regarding stormwater management and meeting the Big Darby Creek watershed stormwater permit, which is referred to in our attached comments. We are not aware that this issue has been previously addressed. This Big Darby Creek watershed stormwater permit includes requirements beyond those for the general permit applying to the rest of Ohio. Any stormwater management with agrivoltaics would have to meet this permit. The addition of crops, which implies that the soil would not be heavily vegetated all year, appears to add the possibility of more stormwater runoff than solar panels alone. We ask that the PUCO/OPSB work with the Ohio EPA, Division of Surface Water, and investigate this issue to determine any differences in stormwater runoff and make recommendations for addressing these. This seems appropriate to address right away and before any stormwater permit is issued by Ohio EPA. This PUCO/Ohio EPA investigation should focus on the Big Darby Creek watershed, in which this facility is mostly located, but might apply to other facilities. Specifically, we are concerned about increased stormwater and its impacts on rare and sensitive species in Spring Fork and Little Darby Creek, to which land in the area of this facility drains, and how the combination of agriculture and solar power generation at these facilities might increase pollutants, stormwater runoff temperatures, or alter natural flow regimes to streams.

Attachments:

1. Darby Creek Association Comments of April 11, 2023, to the Ohio Power Siting Board re: Case No. 22-0549-EL-BGN, Oak Run Solar; and 22-0550-EL-BTX: Oak Run Solar Transmission Line, Madison County
2. Darby Creek Association comments of November 25, 2022

(submitted electronically to contactOPSB@puco.ohio.gov,
Matthew.Butler@puco.state.oh.us)

cc:

Matt Lamoreaux, Ohio EPA/DSW, Matthew.Lamoreaux@epa.ohio.gov
Marshall Cooper, Ohio EPA/DSW, marshall.cooper@epa.ohio.gov
Wesley Sluga, Ohio EPA/DSW, wesley.sluga@epa.ohio.gov
Heather Doherty, ODNR/DNAP, Heather.Doherty@dnr.ohio.gov
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Charlie Staudt, DCA, darterland@yahoo.com
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Madison County Commissioners, commissioners@madison.oh.gov

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Matt Butler
Public Utilities Commission of Ohio
180 E. Broad St
Columbus, Ohio 43215
Via Email: OPSB@puco.ohio.gov, Matthew.Butler@puc.state.oh.us

April 11, 2023

Comments to the Ohio Power Siting Board re: Case No. 22-0549-EL-BGN, Oak Run Solar; and 22-0550-EL-BTX: Oak Run Solar Transmission Line, Madison County

Public Hearing comments submitted by Anthony Sasson on behalf of the Darby Creek Association,
darbycreeks@aol.com, 614 288-0313

Anthony Sasson
Darby Creek Association
8351 Patterson Road
Hilliard, Ohio 43026
614 519-9291
asasson@aol.com

Ohio Power Siting Board:

These comments of the Darby Creek Association (DCA) are regarding construction of an up to 800-megawatt Oak Run Solar Project electric generation facility proposed to be sited on approximately 6,050 acres in Madison County, Ohio, OPSB Case No. Case No. 22-549-EL-BGN, and the accompanying proposed Oak Run Solar transmission line (Case No. 22-550-EL-BTX). Per the application, "the Project may also contain a large-scale co-located battery energy storage system (BESS)" and include two 230 kilovolt (kV) aboveground generation tie-in lines, including a crossing of Spring Fork, a key tributary of National Scenic River Little Darby Creek.

In summary, these comments are the following.

For full comments, please see the DCA's comments of November 25, 2022, on this facility submitted to Matt Butler, Public Utilities Commission of Ohio. All of those concerns still apply. We note that these comments were not adequately addressed in the March 27, 2023, Staff Report of Investigation on this facility, such as regarding protection of the Darby Plains prairie vegetation local genotype, fencing, stream buffers and the other issues.

In summary, we remain concerned about the following. Please refer to the DCA's November 25, 2022, comments, as they remain relevant.

Use of "Native vegetation" - The proposed facility has a significant footprint near enough to native prairie at the W. Pearl King Preserve that genetic contamination of the Darby Plains genotype could be possible. In fact, the staff reports might encourage such genetic contamination by stating compliance with ODNR recommendations and the Ohio Pollinator Habitat Initiative. Our concern is that this genetic contamination would result in the loss of the unique Darby Plains prairie vegetation genotype, one of the outstanding features of the Big Darby Creek watershed, which includes the easternmost extent of the tallgrass prairie, and is a National Scenic River and one of Ohio's outstanding natural features. The Pearl King Preserve site is the last remaining "large" (at only about 12 acres) original site for these Darby Plains species and local genotype. See page 58 of the staff report, Item 25.

Fencing - The facility should be required to use wildlife-friendly (wildlife-permeable) fence, which must have openings large enough at ground level to be readily passable by mammalian predators and other wildlife (such as turtles). This might mean fence weave openings larger than the staff report's stated 6X6" (i.e., 7x8" or 7X9"). We recommend that the fence not just avoid "wildlife entrapment" (page 62, Item 46(b), but ensure that predators such as foxes and coyotes can readily move through the fence to prey on small mammals such as mice, voles, rabbits and other small mammals that otherwise would reproduce and increase their populations uncontrolled.

Attention to invasive species management – In the area of the transmission line and many other parts of the facility, we expect invasive species to continually threaten to displace native and non-invasive species. The application will need much, and detailed, attention to invasive species, such as callery pear at the proposed transmission line crossing of Spring Fork and at any stream restoration and buffer areas required by the Ohio EPA stormwater permit for the Big Darby Creek watershed.

Stream buffers – The Big Darby Creek watershed, in which this facility is mostly located, is in danger of losing rare aquatic species, including federally listed species immediately downstream of the proposed project. While pages 30 and 31 of the staff report list fish and mussel species, and then state that there is "No in water work planned," we emphasize that these species are rare because they are sensitive to environmental disturbances that often originate miles away from the stream they reside in. The Little and Big Darby Creeks are at great risk of losing many of these species, and declines in their occurrences have been documented. Therefore, environmental improvements are needed at this and other facilities well beyond those in a typical Ohio site, and beyond standard OPSB staff report content.

In order to lessen the impact of this facility, the project should maximize the width and vegetation quality of all stream buffers, allow full shading and an adequate buffer along all streams, and avoid mowing of these buffers. These buffers should meet and exceed the minimum requirements of the Ohio EPA stormwater permit. The streams' riparian vegetation should shade the streams and be composed of native trees and shrubs. Otherwise, lack of shade along streams leads to "local warming," increased solar insolation to the stream, and consequently undesirable higher temperatures in these streams. The Big Darby Creek watershed stormwater permit provides the minimum requirements for buffers in the appendix for the Ohio EPA general stormwater permit https://epa.ohio.gov/static/Portals/35/permits/OHC000005/Final_OHC000005.pdf.

Cut and fill - Solar facilities may cut and fill soil to level the ground for solar panel/array installation. We strongly encourage avoidance of cut and fill, even when a top layer is later added after excavation. Our concern is that this practice will permanently remove natural topographic features which would have created natural variation and vegetation habitat in the future after the project's use ends, such as for restoration of native vegetation and wetlands.

Again, please see the full comments submitted by DCA on November 25, 2022. We do not feel these comments were fully addressed by the Staff Report of Investigation, and we ask for their further consideration and implementation.

Thank you for your attention to these comments. Please contact me with any questions.

Sincerely,

Anthony Sasson
Darby Creek Association
asasson@aol.com
614 519-9291

Attachment:

Darby Creek Association comments of November 25, 2022 (submitted electronically to OPSB@puco.ohio.gov, Matthew.Butler@puc.state.oh.us)

cc:

Matt Lamoreaux, Ohio EPA/DSW, Matthew.Lamoreaux@epa.ohio.gov
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Matt Butler
Public Utilities Commission of Ohio
180 E. Broad St
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Via Email: OPSB@puco.ohio.gov, Matthew.Butler@puc.state.oh.us

November 25, 2022

Comments to the Ohio Power Siting Board re: Case No. 22-0549-EL-BGN, Oak Run Solar; and 22-0550-EL-BTX: Oak Run Solar Transmission Line
Madison County

Submitted by Anthony Sasson, Scott Brockman and Charlie Staudt on behalf of the Darby Creek Association, darbycreeks@aol.com, 614 288-0313

Anthony Sasson
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8351 Patterson Road
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Ohio Power Siting Board:

These comments of the Darby Creek Association are regarding construction of an up to 800-megawatt Oak Run Solar Project electric generation facility proposed to be sited on approximately 6,050 acres in Madison County, Ohio, OPSB Case No. Case No. 22-549-EL-BGN, and the accompanying proposed Oak Run Solar transmission line (Case No. 22-550-EL-BTX). Per the application, "the Project may also contain a large-scale co-located battery energy storage system (BESS)" and include two 230 kilovolt (kV) aboveground generation tie-in lines, including a crossing of Spring Fork, a key tributary of National Scenic River Little Darby Creek.

In summary, these comments are the following.

- **Use of "Native vegetation"**
The applicant might propose to plant "native" prairie vegetation species within the arrays or in perimeter areas. The proposed facility has a significant footprint near enough to native prairie at the W. Pearl King Preserve that genetic contamination of the Darby Plains genotype could be possible. The applicant should use only Darby Plains genotype prairie vegetation seed in any vegetation plantings (For prairie species, see <https://ohioplants.org/darby-plains-prairie-plants/>) or avoid planting these species. This is an important point given the 45+ years that Metro

Parks has worked to protect and grow the Darby Plains prairie genotype. The applicant should be required to consult and reach agreement with Columbus and Franklin County Metro Parks and the Ohio Department of Natural Resources Scenic Rivers Program on this issue to ensure protection of the Darby Plains prairie species genotype, avoiding the planting of prairie species from seed outside of the Darby Plains. This consultation needs to happen before any vegetation plans are established. Please note the attached email and species list from Bob Gable of the Ohio Department of Natural Resources, Scenic River Program, dated September 21, 2022, to Lauren Devine, Savion Energy.

Savion, another OPSB applicant for two solar facilities in Madison County, through communications with the Columbus and Franklin County Metro Parks and the Ohio Department of Natural Resources Scenic Rivers Program, has agreed to a limit the plant species that would be planted among their solar arrays and within the facility perimeters. This list limits the species to those that avoid the genetic transfer of non-Darby Plains prairie species to the native genotype of the Darby Plains. We appreciate this consideration of effort and ask that all facilities in and near the native prairies of the Darby Plains, including Apex Springwater, avoid these species and work with Columbus and Franklin County Metro Parks and the Ohio Department of Natural Resources Scenic Rivers Program.

- **Fencing**
The facility should be required to use wildlife-friendly (wildlife-permeable) fence, which must have openings large enough at ground level to be readily passable by mammalian predators and other wildlife. This might mean fence weave openings larger than 6X6" (i.e., 7x8" or 7X9"). Aesthetically, this type of fence is more desirable as it is more similar to conventional agricultural fencing and more desirable than chain link fence, which might have an "institutional appearance" to neighbors and passersby. It also might not be any more expensive than chain link fence and could cost less to install.
- **Attention to invasive species management**
The application will need much, and detailed, attention to invasive species management, which threatens the integrity of adjacent and nearby natural habitats, including at the nearby W. Pearl King preserve.
- **Stream buffers**
The project should maximize the width and vegetation quality of all stream buffers, allow an adequate buffer along all streams, and avoid mowing of these buffers. The streams' riparian vegetation should shade the streams and be composed of native trees and shrubs. Otherwise, lack of shade along streams leads to "local warming," increased solar insolation to the stream, and consequently undesirable higher temperatures in these streams. While DCA does not consider the Big Darby Creek watershed stormwater permit buffer adequate, we note that an example of buffers that are more protective are found in the appendix for Big Darby Creek in the Ohio EPA general stormwater permit https://epa.ohio.gov/static/Portals/35/permits/OHC000005/Final_OHC000005.pdf.
- **Screening**

The full comments below provide recommendations for appropriate and inappropriate species that might be proposed for planting along the facility perimeter for screening, such as trees and

vines. Species should not be grown at a solar facility or along a transmission line if they are not native to the county or habitat.

- **Cut and fill**

Solar facilities cut and fill soil to level the ground for solar panel/array installation. We strongly encourage avoidance of cut and fill, even when a top layer is later added after excavation, as this practice will permanently remove natural topographic features which would have created natural variation and vegetation habitat in the future. It also would alter and limit the top layer of soil for future agriculture, or restoration of native vegetation and wetlands.

Full comments

Use of "Native vegetation"

The applicant might propose to plant "native" prairie vegetation species under or adjacent to this transmission line. The applicant should use only Darby Plains genotype prairie vegetation seed in any vegetation plantings (For Darby Plains prairie species, see <https://ohioplants.org/darby-plains-prairie-plants/>) **or avoid planting these species.** Any Darby Plains and related vegetation species proposed to be planted should be done in consultation with Metro Parks and the Ohio Department of Natural Resources Scenic Rivers Program, and with their prior concurrence. **This consultation needs to happen before any vegetation plans are made. Any plantings should avoid the planting of prairie species from seed with genetics originating outside of the Darby Plains.**

The proposed facility has a significant footprint near enough (around one mile) to Metro Parks' W. Pearl King Preserve (At intersection of David Brown Road and Mechanicsburg-Sanford Road; 40.0453862, -83.4786916; King 1981:

<http://images.library.wisc.edu/EcoNatRes/Efacs/NAPC/NAPC06/reference/econatres.napc06.cking.pdf>;

<https://ohiodnr.gov/go-and-do/plan-a-visit/find-a-property/w-pearl-king-prairie-savanna-nature-preserve>) areas that genetic contamination of the protected and restored Darby Plains prairie plant genotype at the W. Pearl King Preserve could occur and be problematic.

These prairie plant species could be proposed in the solar array area, in the perimeter surrounding the solar array, or in the transmission line area. We are very concerned about use of certain prairie vegetation species, i.e., especially those with seedstock from outside the Darby Plains. These might genetically contaminate those Darby Plains prairie species that Metro Parks has carefully grown and propagated since the 1970s using only local seedstock. The use of seedstock from outside the Darby Plains would lead to genetic transfer, or extensive genetic "contamination" of the Darby Plains genotype that Metro Parks and ODNR have carefully maintained for decades. The applicant should be required to consult and reach an agreement with Columbus and Franklin County Metro Parks and the Ohio Department of Natural Resources Scenic Rivers Program that would eliminate this possibility of genetic transfer from planting.

Please note that species referred to in the Oak Run Solar Project application, Exhibit F Vegetation Management Plan (<https://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=ff40c183-3b4e-46ff-a272-a999aedb0676>) **might violate this protection of the Darby Plains genotype.**

Also, we note that in the "Response to Fourth Data Request from Staff of the Ohio Power Siting Board ...", <https://dis.puc.state.oh.us/DocumentRecord.aspx?DocID=8c26efd8-23ee-4dd0-a9c1-07cc46ee1eea>, also might violate this protection of the Darby Plains genotype. See page 5:

"C. Post-construction/operational requirements

- 1) Solar development sites are required to plant a minimum of 70% of the developed project area in beneficial vegetation, utilizing plant species as described in Attachment A (or other suitable species as approved) and follow the Ohio Solar Site Pollinator Habitat Planning and Assessment Form with a minimum score of 80 points."

For a list of appropriate Darby Plains species, please refer to the September 21, 2022, email and species list from Bob Gable of the Ohio Department of Natural Resources, Scenic River Program, to Lauren Devine, Savion Energy, titled "Combined Recommendations on Seed Mix for Madison Fields and Oak Run Solar Facilities" (attached).

On page 6, see the Savion response regarding to the above ODNR letter re: OPSB's statement:

"2) Should solar facilities be proposed adjacent to environmentally sensitive sites such as State Scenic Rivers or State Nature Preserves with significant and unique plant and/or animal communities, additional species or seed mixes may be recommended."

Applicant Savion, through communications with the Columbus and Franklin County Metro Parks and the Ohio Department of Natural Resources Scenic Rivers Program, has agreed to a list of plant species that would be planted among their solar arrays and within the facility perimeter. This list limits the species to those that avoid the genetic transfer of non-Darby Plains prairie species to the native genotype of the Darby Plains. We appreciate this consideration and effort and ask that all solar facilities in and near the native prairies of the Darby Plains, including Madison Fields, Oak Run, Apex Springwater and Pleasant Prairie, avoid these species and genetic transfer, and work with Columbus and Franklin County Metro Parks and the Ohio Department of Natural Resources Scenic Rivers Program. We are asking the OPSB to recognize and document that the owners of proposed facilities cooperate in the protection and perpetuation of the Darby Plains genotype.

Concerning related proposed solar facilities, comments on the Pleasant Prairie Solar in Franklin County and Apex Springwater Solar in Madison/Franklin Counties included similar comments. Please see the section titled "Loss of Darby Plains prairie plant species genotype through use of seedstock from elsewhere (outside of the Darby Plains)" in comments of July 20, 2021, "Regarding Pleasant Prairie Solar Energy Project, Case Number 20-1679-EL-BGN."

See related comments on Case 20-1679-EL-BGN (Pleasant Prairie Solar) on this topic emailed to the OPSB on July 20, 2021, that included the following two attachments ((See <https://dis.puc.state.oh.us/ViewImage.aspx?CMID=A1001001A21G20B22703I01149>):

DCA Public Hearing Full Statement Pleasant Prairie 20210719.docx

Darby Creek Association Public Hearing Statement Summary 20210719.docx

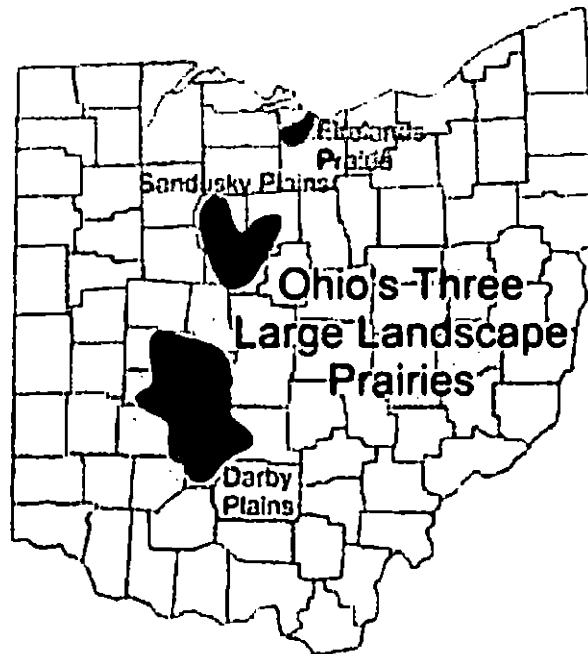
Also, see the Darby Creek Association's

Additional comments to the Ohio Power Siting Board re: Case No. 22-94-EL-BGN Springwater Solar, LLC;

Madison and Franklin Counties" at

<https://dis.puc.state.oh.us/ViewImage.aspx?CMID=A1001001A22J24B25126A03247>

The following map showing the general location of the Darby Plains prairie prior to European settlement is from the Ohio Prairie Association at <http://www.ohioprairie.org/how%20prairies%20persisted.htm>.



Fencing

The facility should use wildlife-friendly (wildlife-permeable) fence, which must have openings large enough at ground level to be readily passable by predators of small mammals, and by other wildlife, such as turtles. To be easier for wildlife to find and navigate, and therefore presumably most effective, the larger fence weave at ground level should be continuous. Another option would be to make long, logically located, extensive sections of the fence wildlife-permeable by installing fence with adequately-sized openings at and near ground level. Fence with adequately sized continuous openings is preferred. This allows the animals to spend less energy traveling to or searching for limited openings, maybe among other reasons.

Predators referred to above might include red fox (*Vulpes vulpes*) and coyotes (*Canis latrans*). The fence also should allow the passage of turtles (such as Eastern box turtle (*Terrapene carolina carolina*), and where there is suitable habitat (streams, wetlands), Midland painted turtle (*Chrysemys picta marginata*) and Snapping turtle (*Chelydra serpentina*)).

The purpose would be to allow predators of small mammals, such as foxes and coyotes, to readily pass through the fence and prey on small mammals (rabbits, mice, moles, voles, shrews) within the fence. This establishes a more natural balance between predators and prey, and helps, in part, to limit populations of small prey mammals that will reside in the vegetation within the fence. This might help control nuisance populations of prey animals, such as mice and groundhogs. Aesthetically, this type of fence is more desirable as it is more similar to conventional agricultural fencing and more desirable than chain link fence, which might have an “institutional appearance” to neighbors and passersby. It also might not be any more expensive than chain link fence and could cost less to install.

The fence needs to be permeable to predators of small wildlife. This is an essential distinction from the “small mammals” recommendation of the ODNR¹. Even chain-link fence is permeable to “small mammals,” so the fence weave must be much larger than that of chainlink fence in order to be permeable to predators. Most semi-natural habitats, such as a solar facility, would support small wildlife such as mice, moles, voles, shrews and rabbits, regardless of the type of fence. These are common “small wildlife” in Ohio (See Harder, J.D. and G.N. Cameron. 2022. Mammals of Ohio. Ohio University Press, Athens. 437 pp.). Chainlink fence, or any inadequately-sized fence weave, allows the small, prey animals to cross through easily, but can exclude their larger predators. If the fence weave (the openings between wires, especially at ground-level) is not large enough to allow their predators, the populations of these small mammal species (mice, voles, moles, etc.) could greatly expand without natural predator controls. Therefore, the fence should be a wire weave with opening large enough to be permeable for larger wildlife such as foxes and coyotes, which are predators. This means it would need to be larger than ODNR’s recommended “at least 6 inches x 6 inches to allow passage of small mammals.”

The Nature Conservancy in North Carolina has been emphasizing “wildlife-friendly” fencing for solar facilities (personal communication, Liz Kalies, TNC). The dimensions of the wire spaces in the fence they recommend are closer to 8-9” wide and start at about 7” tall. Again, to emphasize the critical and important point, if the fencing is something like 17/75/6 deer mesh, it needs to be installed “upside down.”

The wildlife-friendly (or “wildlife-permeable”) fence has the larger wire spaces at the bottom, and then the “holes” (the wire space openings in the weave) get smaller (vertically) as you go up from the ground. This might be thought of as installing the fence “upside down,” but the larger wire spaces are at the bottom, near the ground, allows more wildlife – the mammalian predators – through. This makes it “wildlife-friendly.” Again, without these predators, the enclosures within the fence might have an overabundance of prey species such as rabbits and rodents.

This predator-prey imbalance could be avoided by fencing that has a weave that is large enough to readily allow passage of predators. We don’t know that 6X6” is an adequately large fence opening – e.g., it might not be large enough for coyotes, which are now relatively common in the Big Darby Creek watershed and throughout Ohio. The weave might need to be larger (i.e., 7x8” or 7X9”), which is a standard weave in the North Carolina examples below.

Please see these items related to solar facilities in North Carolina, where they have installed wildlife-friendly fences that allow predator passage:

<https://www.nature.org/en-us/about-us/where-we-work/united-states/north-carolina/stories-in-north-carolina/making-solar-wildlife-friendly/>

Also see:

“The quick gray fox jumped through the upside-down solar fence—a photo essay”

<https://pv-magazine-usa.com/2019/12/16/the-quick-gray-fox-jumped-through-the-upside-down-solar-fence-a-photo-essay/>

¹ Ohio Department of Natural Resources (ODNR) Guidance for Proposed Solar Energy Facilities in Ohio (updated 4/7/22)

<https://pinegaterenewables.com/pine-gate-renewables-announces-start-up-of-new-solar-project-in-yadkinville-northcarolina/>

"To facilitate wildlife movement through the project area, Pine Gate installed permeable fencing around the perimeter of the project. The fencing has larger holes at the bottom through which animals can easily pass."

<https://www.solarpowerworldonline.com/2019/02/pine-gate-renewables-the-nature-conservancy-wildlife-permeable-fencing/>

Keep rooftop arrays clear and solar fields open to animals

<https://www.solarpowerworldonline.com/2020/05/keep-rooftop-arrays-clear-and-solar-fields-open-to-animals/>

This link below is a commercial website of a fencing company that installs fencing for solar facilities, which is an example of what we are referring to. This mention implies no recommendation for this particular product.

Example:

Bekaert Fence Products

<https://fencing.bekaert.com/en/rural-and-industrial-fence/solar#:~:text=of%20the%20fence,-HEIGHT,with%20local%20and%20federal%20regulations>

Solar Field Perimeter Fence Needs

"As utilities, municipalities, businesses and residences turn to alternative forms of energy to meet increased energy consumption and demand, the need to protect these investments grows. Solar arrays located in rural areas face perimeter security challenges that are best met with high-tensile woven wire fence solutions. Agricultural style fences also blend more aesthetically with rural environments compared to chain-link fence.

"Bekaert's exclusion fence designs allow beneficial small animals and pollinators through but deter larger animals like deer and humans. Unlike chain link, which can require poured concrete posts for stability and has a thicker, heavier design, high-tensile wires are lighter and stronger and don't always require concrete for installation. This flexibility and performance makes high tensile wire products ideal for rural installations. They can be installed quickly and more cost-effectively while providing less shadowing over the solar panels. They are more tamper-resistant to animals and humans."

Bekaert's brochure on high tensile wire for solar arrays:

https://fencing.bekaert.com/-/media/Brands2017/Fencing/Files/BEK-3317_3Fold-Solar-Arrays_LR-netto.pdf?la=en

Please note that this request regarding fencing is not referring to a forest fragmentation issue or the entrapment or exclusion of deer. We believe deer will be able to leap over a 6-7' fence.

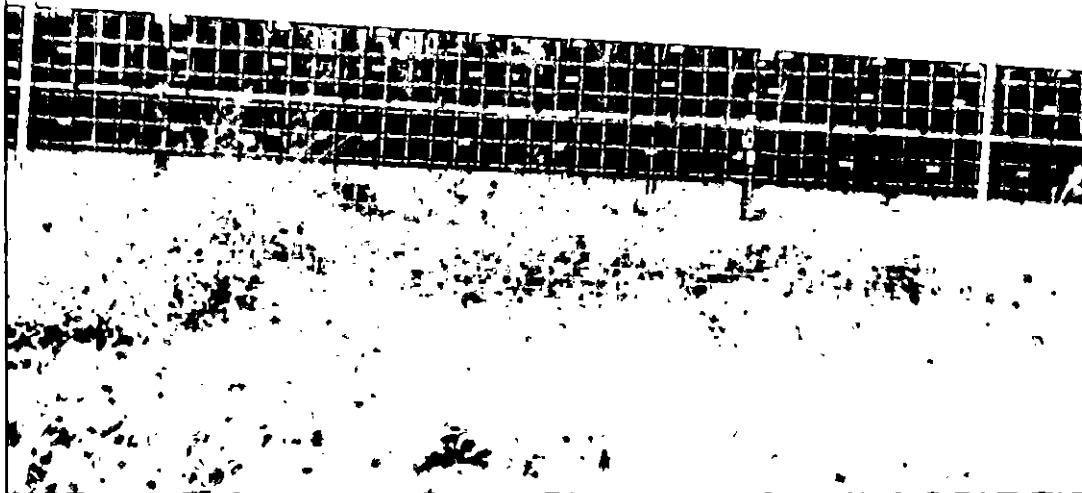


Figure 1 Fencing for Big Plain Solar facility as seen from Hume Lever Road, Madison County 10/16/2022

Figure 1 shows an example of a fence we do not believe is wildlife friendly. This photo shows a woven wire fence at the Big Plain Solar facility as seen from Hume Lever Road in Madison County. As can be observed in this photo, the wider weave is not appropriately mounted at the bottom. This is not the mounting that should be used for wildlife-friendly fencing, as it is too small on the bottom for mammalian predators to readily pass through. Also, please see the discussion below for the size of the weave that is necessary for predator passage. The wider weave on this Big Plain fence might not be large enough for mammal predator passage. We are concerned that “deer fencing” might not be appropriate and wildlife-permeable (or wildlife-friendly). For example, as mentioned above in contrast to the discussion on North Carolina fence, this weave does not appear to be at least 7x8” or 7X9” and might not allow passage by predators of small mammals, such as foxes and coyotes.

Where the fence weave varies in size from top to bottom of the fence, a “wildlife friendly” fence is usually mounted with the larger (i.e., 7x8” or 7X9”) opening on the bottom. If a small weave is on the bottom near the ground, that is not passable to wildlife – see Figure 1 above - it would not be “wildlife friendly.” Again, see the above fence installed in 2022 at Big Plain Solar along Hume Lever Road in Madison County.

Summary regarding fencing:

- Any facility fencing should be “wildlife-permeable” or “wildlife-friendly. This includes predators such as foxes and coyotes.
- We encourage a “wildlife-friendly” fence that has a continuous, wider (7x8” or 7X9”) weave, with continuous openings in the weave that are large enough and in the right position (at and near the

ground) to allow for mammalian predator passage through the fence (e.g., large enough for red foxes and coyotes to pass through, at least). The fence also should allow the passage of turtles (such as Eastern box turtle (*Terrapene carolina carolina*), and where there is suitable habitat (streams, wetlands), Midland painted turtle (*Chrysemys picta marginata*) and Snapping turtle (*Chelydra serpentina*)).

- Chain link fence should be avoided.

Screening

In addition to enhancing vegetative screening with locally native trees, shrubs and taller forbs and grasses planted in the sites' perimeter, vines planted along fences and allowed to grow on the fence can provide significant screening for fences, including the woven wire fence described above. We encourage planting of species native to the county and habitat in which the facility is found. Appropriate native Ohio species local to this area might include, but not be limited to:

Virginia Creeper (*Parthenocissus quinquefolia*)
Trumpet Creeper (*Campsis radicans*)
Virgin's Bower (*Clematis virginiana*)

Again, species should not be grown at a solar facility or along a transmission line if they are not native to the county or habitat. We encourage referring to these references for plants native to each Ohio county. Ensuring that the species are native to the county in which the facility is located is important. Including any species that might be documented somewhere in Ohio is not appropriate:

Braun, Lucy E. 1961. The Woody Plants of Ohio. Ohio State University Press, Columbus. 362 pp. (Reprinted 1989)
Braun, Lucy E. 1967. The Monocotyledoneae (of Ohio), Cat-tails to Orchids. With Gramineae by Clara G. Weishaupt. Ohio State University Press, Columbus. 464 pp.
The Biota of North America Program/North American Vascular Flora, plant species county distribution maps in (<http://bonap.net/fieldmaps>)
USDA PLANTS Database (<https://plants.usda.gov>)

Tree species selected as part of the screening should be known to have naturally occurred in the area and habitat prior to European settlement. For example, white pine (*Pinus strobus*) is not known to naturally occur in central Ohio, such as Madison or Franklin Counties, prior to European settlement (Braun 1961). Nearby to the Oak Run site, northern white cedar (*Thuja occidentalis*) is known from wetlands like Cedar Bog and in Franklin County in calcareous outcrops, but is not known to have grown, at least naturally in the extensive glacial till of Madison County and the Oak Run site area. Red cedar (*Juniperus virginiana*) is a common species of the glacial till areas in central Ohio and readily grows in this area.

Existing woodlots should be maintained, and tree cutting and removal should be minimized. Please note that the removal of trees must be addressed under the Big Darby Creek water stormwater permit.

Attention to invasive species management

The application will need much more, and more detailed, attention to invasive species management, which threatens the integrity of adjacent and nearby natural habitats, including a state nature preserve set aside to preserve the original prairie savanna of the Darby Plains. We note that Oak Run's boundary is only a mile or so from Metro Parks' W. Pearl King Preserve, a distance close enough it might provide a source for additional invasive species introductions to the preserve, which includes the last known original prairie left in the Darby Plains. This preserve contains many of the prairie plant species that define the Darby Plains prairie and represents (along with other sources of seed that were identified decades ago) the original genotypes for these species. It is among the last remnants of the original prairie savanna in Ohio, especially in the Darby Plains. Invasive species threaten the survival of these species and these genotypes. We expect that control of invasive species will be a major problem at solar facilities, given those species' prominence in the area already.

"Project Surveys and vegetation Impacts, page 7 "Impacts to wetland vegetation will not occur because direct impacts to wetlands have been avoided." However, species including callery pear (*Pyrus calleryana*; <https://ohiodnr.gov/discover-and-learn/plants-trees/invasive-plants/callery-pear>) or phragmites (*Phragmites australis*; <https://www.oipc.info/uploads/5/8/6/5/58652481/5factsheetcommonreedgrass.pdf>) are present in the area and could become dominant in any wetlands in the project area. Inadequate control of such species will likely lead to wetland degradation; this problem is commonly observed in central Ohio.

Stream buffers

The project should maximize the width and vegetation quality of stream buffers, allow an adequate buffer along all streams, ensure shading of all streams and avoid mowing. The streams' riparian vegetation should shade the streams and be composed of native trees and shrubs. Otherwise, lack of shade along streams leads to "local warming" in those streams - increased solar insolation to the stream, and consequently undesirable higher temperatures in these streams. Lack of woody vegetation along streams also reduces habitat quality, which is well documented through over 40 years of the application of Ohio EPA's QHEI (Qualitative Habitat Evaluation Index) in stream quality analysis. Lack of native, woody vegetation and shade reduces the likelihood that temperature-sensitive fish and macroinvertebrates can live in such streams. Lack of this vegetation also reduces stream habitat quality, which is essential for stream health. Discussion of the importance of stream habitat quality is at: https://epa.ohio.gov/static/Portals/35/documents/QHEI_1989.pdf.

Stream buffers that are more protective are found in the Ohio EPA general stormwater permit, https://epa.ohio.gov/static/Portals/35/permits/OHC000005/Final_OHC000005.pdf. Appendix A of this permit applies to all construction in the Big Darby Creek watershed.

While we consider the riparian buffers in this stormwater permit to be inadequate in width, DCA emphasizes that these Ohio EPA general stormwater permit riparian buffers may exceed those recommended by the Ohio Department of Natural Resources, Scenic Rivers Program, in their letter to Savion of October 28, 2022. We strongly encourage the facility's stream buffers to be wider than that required in the Ohio EPA stormwater permit or ODNR Scenic Rivers program.

We strongly encourage every solar facility to provide at least the buffers in the Big Darby Creek watershed position of the Ohio general stormwater permit. Otherwise, these solar facilities are adding to continued stream degradation because of inadequate stream habitat.

Summary: Stream buffers at this site and all other solar facilities in the Big Darby Creek watershed need to, at a minimum, comply with the Ohio EPA general stormwater permit, Appendix A, for the Big Darby Creek watershed. The Darby Creek Association strongly encourages stream buffers that provide generous, native tree and shrub species stream shading beyond the riparian buffer widths in the Ohio EPA permit or recommended by the ODNR Scenic Rivers program.

Cut and fill

Solar facilities cut and fill soil to level the ground for solar panel/array installation. We strongly encourage avoidance of cut and fill, even when a top layer is later added after excavation, as this practice will permanently remove natural topographic features which would have created natural variation and vegetation habitat in the future. It also would alter the top layer of soil for future agriculture, or restoration of native vegetation and wetlands.

Attachments:

September 21, 2022, email and species list from Robert Gable of the Ohio Department of Natural Resources, Scenic River Program, to Lauren Devine, Savion Energy, titled "Combined Recommendations on Seed Mix for Madison Fields and Oak Run Solar Facilities."

October 28, 2022, letter from Robert Gable of the Ohio Department of Natural Resources, Scenic River Program, to Sean Flannery, Savion Energy, concerning native riparian forest buffers and the buffer in the transmission line area.

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