

 **FILE**

 **Audubon | GREAT LAKES**

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Ohio Power Siting Board
180 East Broad Street
Columbus, Ohio
43215

Re: proposed rules to amend Ohio Administrative Code 4906-1 through 4906-7

To Whom It May Concern:

National Audubon Society protects birds and the places they need, today and tomorrow. Audubon works throughout the Americas using science, advocacy, education, and on-the-ground conservation. State programs, nature centers, chapters, and partners give Audubon an unparalleled wingspan that reaches millions of people each year to inform, inspire, and unite diverse communities in conservation action. A nonprofit conservation organization since 1905, Audubon believes in a world in which people and wildlife thrive.

Audubon's climate science, *Survival by Degrees*, available at <https://climate.audubon.org> reveals that 389 species of North American birds may go extinct if global warming reaches 3° Celsius above pre-industrial levels. As a result, Audubon strongly supports the development of photovoltaic solar energy that is responsibly sited and operated to avoid, minimize, and mitigate effectively for the impacts on birds, other wildlife, and the places they need now and in the future in order to meet our goal of net zero greenhouse gas emissions. Audubon encourages Ohio to take the steps necessary to achieve net-zero carbon emissions economy-wide by 2050.

For birds and many other wildlife species, however, climate change mitigation must also preserve key habitats and climate refugia needed in coming decades to both sequester carbon and provide a safe haven for wildlife in the decades to come. These issues are especially true in Ohio, a central stopover for birds migrating along the Mississippi Flyway, where a rapid growth of clean energy must coexist to support a diverse bird community year-round.

Rule changes to the referenced administrative code should serve to accelerate renewable energy permitting process and incentivize applications to apply for expedited processing with a clear, predictable pathway towards successful permitting. By accelerating the permitting process and providing predictability and transparency, Ohio has the opportunity to realize the environmental and economic benefits from solar energy projects while minimizing negative implications. As written, the proposed rule changes would likely slow down this process, reducing the likelihood of the state realizing the full benefits of these projects.

AGL appreciates the inclusion of provisions that increase community awareness and participation in these projects. Specifically, we support the provisions compelling

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applicants to present aerial maps of the project alongside sensitive receptors, maps with resolutions that allow for property owners to identify the location of their property in relation to the facility, as well as the collection and summarization of comments from community stakeholders.

Audubon is the North American partner of BirdLife International in using scientific criteria to identify Important Bird Areas in North America where there are high concentrations or populations of birds or birds that are endangered or threatened with extinction including protected lands, public lands, and private lands. We recommend that OPSB include language that highlights these areas as requiring extra review for impacts on birds such as bird use surveys, avian monitoring or other on site pre and post construction research that can be planned in coordination with U.S. Fish & Wildlife Service and Ohio Department Natural Resources.

Additionally, we have included our previous comments below, submitted to the OPSB, which detail additional recommendations for the OPSB to consider in order to increase confidence from stakeholders and the public in Ohio's decision-making process for utility-scale solar and other facilities, reduce regulatory uncertainty and delays, and ultimately achieve the desired outcome of little to no impact on birds and other wildlife as Ohio works to achieve its clean energy goals.

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Re: Recommendations for SB52 workshops to be held by Ohio Power Siting Board (OPSB) on October 4-8, 2021 in advance of draft rules for utility-scale solar and other facilities

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To increase confidence from stakeholders and the public in Ohio's decision-making process for utility-scale solar and other facilities, reduce regulatory uncertainty and delays, and ultimately achieve the desired outcome of little to no impact on birds and other wildlife as Ohio works to achieve its clean energy goals, we provide the following recommendations:

1. Engage in a transparent spatial planning process, using stakeholder engagement and scientific knowledge, to identify **least conflict areas** for development.
2. Identify processes for incentivizing siting solar and wind projects in areas to best avoid impacts with birds and other wildlife.
3. Coordinate with wildlife agencies to ensure there are appropriate measures in places to avoid, minimize, and mitigate for potential impacts to Endangered Species Act-listed species and migratory birds through adequate conservation measures.
4. Incentivize developers to employ best practices to minimize impacts to birds and other wildlife at projects during construction and operation.

We provide explanations below to support the above listed recommendations.

Recommendation 1: Engage in a transparent spatial planning process, using stakeholder engagement and scientific knowledge, to identify least conflict areas for development.

SB52 states:

County commissioners can designate all or part of the unincorporated area of a county as a restricted area; no applications or amendments may be filed for a facility in the restricted area if the facility type is prohibited in that restricted area (R.C. 303.58).

Conversely, the draft rules could provide an alternative to identifying “restricted areas” with a rapid state, regional, or county stakeholder spatial planning process, possibly with funding or matching funding from the State, to identify “least conflict” lands near to transmission as a voluntary tool to guide and encourage development as an alternative to resolutions that prohibit construction of proposed facilities.

There are several examples of successful stakeholder-driven spatial planning process to identify least conflict areas for solar development:

- BLM Solar Program that defines solar zones and include wildlife in the analysis¹
- Desert Renewable Energy Conservation Plan (DRECP)²
- Mapping Lands to Avoid Conflict for Solar PV in the San Joaquin Valley³
- Long Island Solar Roadmap⁴

¹ <https://blmsolar.anl.gov/>

² <https://www.blm.gov/programs/planning-and-nepa/plans-in-development/california/desert-renewable-energyconservation-plan>

³ <https://www.law.berkeley.edu/research/cee/research/climate/solar-pv-in-the-sjv/>

⁴ <http://solarroadmap.org/>

- Scenic Hudson's How To Solar Now toolkit⁵

For Audubon, this planning process could encourage identification of lands of low impact on birds and biodiversity. Based on current industry standards, the cost of environmental mitigation following construction of solar facilities on undeveloped or high conservation value lands can be very high. Further, solar sited on low biodiversity value land could result in up to 14% overall project cost savings when compared to solar projects built on high biodiversity value land.⁶

Recommendation 2: Identify processes for incentivizing siting solar and wind projects in areas to best avoid impacts with birds and other wildlife.

We suggest that Ohio consider permitting processes that encourages developers to pursue projects on less impactful sites through tax incentives and strategic permitting processes. We suggest the following criteria to help identify sites to best avoid impacts to birds and bird habitat, understanding that each site is unique and potential impacts should be considered on a project by project basis:

1. Prioritize siting on developed landscapes, such as commercial buildings and parking lots.
2. Favor siting near transmission lines to reduce the amount of new transmission lines required.
3. Building on disturbed or contaminated lands or brownfields should be incentivized, with the caveat that some disturbed lands may have high conservation value.
4. Ohio's Wildlife Action Plan and Landscape-level spatial planning processes can help identify least conflict sites for PV solar development.

Siting PV solar on previously developed spaces, disturbed lands, and brownfields often create the fewest conflicts with birds and other wildlife. However, costs associated with building in these spaces (e.g., higher property values, environmental remediation) lead developers to site in areas of high conservation value. While developers must comply with federal, state, and local regulations to reduce impacts to wildlife, Ohio can provide tax incentives and efficient permitting processes for developers that choose to site projects on lands identified as less valuable for wildlife.

Audubon recognizes that siting solar on developed spaces, like rooftops, carports, and parking lots, has the least impact to birds and wildlife because it is less likely to

⁵ <https://www.scenichudson.org/our-work/climate/renewable-energy/howtosolarnow/>

⁶ Dashiell et al, Green Light Study: Economic and Conservation Benefits of Low-Impact Solar Siting in California, November 2019, https://www.scienceforconservation.org/assets/downloads/FINAL_Green_Light_report.pdf

alter land of high conservation value. Installing PV solar on already developed landscapes, such as commercial buildings and parking lots, provides the best net benefit, as this type of land conversion results in the smallest loss of albedo (if any), the least disturbance to functioning habitat, and the least loss of carbon sequestration.⁷ Conversely, developing on undisturbed lands releases carbon stored in the soil and impacts birds through habitat loss, displacement, and potential collision with infrastructure.

Understanding the ecological services that a proposed site currently serves will help to understand what impacts development may have. Previously disturbed lands are generally preferred over undisturbed lands for solar development. These may include, but are not limited to fruit groves, hayfields, sod farms, dairies, pastureland, and pine plantations. However, disturbed lands of high ecological value (e.g., disturbed lands near wetlands, reclaimed mines converted to grasslands) may, in some cases, be less desirable for PV solar development. Industrial or commercial buildings or parking lots are preferred in almost all cases (though transmission may still be a concern).

Agricultural lands can be preferred over undisturbed lands but may be of high ecological value and will lose significant albedo when converted to solar, especially in northern latitudes. Likewise, undisturbed grasslands and deserts are much less preferred because they are significant sources of albedo, necessary to mitigate global warming. Grasslands, while quicker to recover than deserts, are one of the most threatened landscapes globally, contributing to a disproportionate loss of grassland birds compared to other bird groups.⁸ Forested landscapes can be of a concern, especially in the Pacific Northwest and the Northeast where old growth forests provide important climate change mitigation.⁹ Considering age is important when converting forested land, as older forests generally have higher carbon sequestration rates.

Ohio's Wildlife Action Plans can also help identify large contiguous tracts of valuable habitat that may pose a concern for developing solar, as well as land that may be more appropriate for solar development. Installing solar panels on agricultural land can often be preferential, as the land may already be degraded, and solar installations (with proper land management) may help to recover degraded soils. However, Ohio should take great care when considering projects in

⁷ Hernandez RR et al. 2019. Techno-ecological synergies of solar energy for global sustainability. *Nature Sustainability* 2:560-568.

⁸ Grand J, Wu J, Michel N, Grogan-Brown J, Trusty B. (n.d.). North American Grasslands and Birds Report:57. Available online at https://nas-national-prod.s3.amazonaws.com/audubon_north_american_grasslands_birds_report-final.pdf.

⁹ Thom D, Golivets M, Edling L, Meigs GW, Gourevitch JD, Sonter LJ, Galford GL, Keeton WS. 2019. The climate sensitivity of carbon, timber, and species richness covaries with forest age in boreal-temperate North America. *Global Change Biology* 25:2446-2458. Available online at <https://onlinelibrary.wiley.com/doi/10.1111/gcb.14656>.

these spaces and provide incentives only if these spaces are determined to be of low conservation value.

Important Bird Areas (IBAs) can provide excellent opportunities for conservation mitigation and identification of specific issues for solar development with species of birds, large congregations of birds or large percentages of bird populations. The Important Bird Areas Program, which National Audubon Society administers in the U.S., is a global initiative which aims to identify and conserve the most important places for bird populations. The foundation of the IBA Program is its emphasis on science-based identification, assessment, and conservation of birds and the habitats they need to survive. These areas should be identified early in the siting process so that potential conservation concerns can be properly addressed and mitigated. The background of a specific IBA in question is also helpful to understanding the biological value of this area and the precautions that should be taken if development occurs near it.

It is also important to consider social implications from solar siting. Research out of University of Rhode Island suggests that property values are only affected in non-rural areas where open space is scarce.¹⁰ While rooftop and parking lot solar in urban areas is favorable, siting solar in open space near lower income or otherwise marginalized communities, is less favorable. Social justice and impacts to the community should be considered in the cumulative impacts for a proposed utility-scale solar project.

Recommendation 3: Coordinate with wildlife agencies to ensure there are appropriate measures in places to avoid, minimize, and mitigate for potential impacts to ESA-listed species and migratory birds through adequate conservation measures.

The rules could incorporate a recommended standard language for counties that permit utility-scale solar projects, and distribution utilities or electric services companies that issue Requests for Proposals (RFPs) that documents coordination with federal and state wildlife agencies in siting. For the purposes of an example we submit the following language from a Nebraska utility RFP:

The Respondent shall provide documentation that the US Fish and Wildlife Service and the Nebraska Game and Parks Commission has reviewed the private developer-controlled site presented in the proposal. In the documentation the Respondent shall also indicate any initial environmental and ecological concerns with the private developer-controlled site. The

¹⁰ Gaur V, Lang C. (2020). Property value impacts of commercial-scale solar energy in Massachusetts and Rhode Island:46. Available online at <https://today.uri.edu/wp-content/uploads/2020/09/PropertyValueImpactsOfSolar-1.pdf>.

Respondent shall also provide a copy of any site environmental assessment(s) they have performed, if available.¹¹

Recommendation 4: Incentivize developers to employ best practices to minimize impacts to birds and other wildlife at projects during construction and operation.

While the state should strive to maximize the amount of rooftop solar and advocate for reduced energy consumption, land will have to be converted to utility-scale solar power to meet clean energy goals and mitigate climate change. To maximize the net reduction in radiative forcing (climate) and minimize ecological costs from solar, we suggest the state incentivize developers incorporate a selection of the following mitigation measures in their plans. Recognizing that measures may not be feasible in all cases, some states have employed pollinator scorecards which use a point system to determine whether or not a developer qualifies for the incentives program. Though named for pollinators, these scorecards often provide guidance to support native plants and animals—the benefits are not limited to pollinators. Ohio Pollinator Habitat Initiative has produced its own pollinator scorecard.¹² We suggest the state use this resource in conjunction with our considerations below in order to devise its own best practices incentives program.

1. Site preparation and native plant management

Site preparation should minimize the use of blading and be conducted using crushing and mowing whenever possible. Complete blading and sterilization of the site is destructive and could harm wildlife species and negatively impact biodiversity.

When any action requires disturbance, all soil materials should be salvaged, safeguarded from loss due to wind or water erosion or machinery activity, and should be replaced on all disturbed areas. Reclamation should re-establish native grasses, forbs, and shrubs (reseed all disturbed areas with native species). The goal of reclamation should be to achieve cover, species composition, and life form diversity commensurate with the surrounding plant community or desired ecological condition to the degree that environmental conditions allow. In addition, reclamation of disturbed areas must include control of invasive plant species (avoid use of chemicals to address noxious weeds).

Managing for native plants can benefit energy production efficiency by reducing the

¹¹ Request for Proposal for Renewable Energy Resources, RFP No. 21020, Nebraska Public Power District, April 19, 2021

¹²<http://nebula.wsimg.com/7cf0240c398d5819e3e6ff011f0ba456?AccessKeyId=570E4FC7FCD2ED2F0C1A&disposition=0&alloworigin=1>

temperature under the solar panels. Low growing diverse, native flowering plants and grasses can additionally reduce long term maintenance costs¹³, reduce ground water runoff, provide better root stabilization¹⁴, and remediate chemical leaching better than turf or gravel¹⁵ and provide habitat for native insects that support native bird communities. Audubon recommends using a mix of plants native to the specific region which cover a large breadth of blooming seasons, from early spring to fall.¹⁶

Invasive plants should be removed (a practice which will likely take most of the management effort in the first several years). As applicable, mowing should occur no more than once per year, between October and March so as not to harm nesting birds. Hedge rows, with native plants, shrubs, and trees too tall for under the panels, may also be planted around the boarder of the solar property and within corridors. In addition to providing more plant diversity, these hedgerows provide structural diversity to support bird, bat, and insect communities. Supporting these pollinating taxa has additional benefits to neighboring farmers, other landowners, and in the case of agrivoltaics.¹⁷

2. Wildlife considerations

In addition to planting native flora, there are further practices that can be incorporated into development plans to minimize impacts for wildlife:

- Consider wildlife use patterns during construction timing and maintenance.
- Carefully consider placement and type of fencing used around solar facilities. Avoid fencing to the greatest extent possible. Where fencing is deemed necessary for human safety, work with the state game and fish agency to determine location of fencing to that it will not obstruct wildlife movement or manipulate it to such a degree that more conflicts arise (e.g., funnel wildlife to cross roadways, etc.). Fence types should be of the minimum necessary for its purpose while still allowing for wildlife movement, notably through 'wildlife-friendly fencing.'
- Consider providing a setback between roads and the project, to enable safe wildlife movement.

¹³ Wigginton SK, Meyerson LA. 2018. Passive Roadside Restoration Reduces Management Costs and Fosters Native Habitat. *Ecological Restoration* 36:41–51.

¹⁴ Pohl M, Graf F, Buttler A, Rixen C. 2012. The relationship between plant species richness and soil aggregate stability can depend on disturbance. *Plant and Soil* 355:87–102.

¹⁵ Yoon J, Cao X, Zhou Q, Ma LQ. 2006. Accumulation of Pb, Cu, and Zn in native plants growing on a contaminated Florida site. *Science of The Total Environment* 368:456–464.

¹⁶ <https://www.audubon.org/PLANTSFORBIRDS>

¹⁷ Walston LJ, Mishra SK, Hartmann HM, Hlohowskyj I, McCall J, Macknick J. 2018. Examining the Potential for Agricultural Benefits from Pollinator Habitat at Solar Facilities in the United States. *Environmental Science & Technology* 52:7566–7576. American Chemical Society.

- Include panel-free corridors to allow wildlife passage through the solar facility.
- Add elements such as perches, platforms, nest boxes, bee boxes, and burrows with priority for species of conservation concern and threatened and endangered species.
- Leave some biomass (i.e., from smaller downed trees) behind to support herpetofauna.
- Purchase, and reserve for conservation purposes, adjacent land of high ecological value.
- Leave existing healthy natural systems on the site intact and create conservation easements if appropriate.
- Maintain and enhance existing wetlands, canals, or other water features by removing exotics and doing additional plantings.
- Use native plants when planting buffers, demonstration areas, reclaimed areas, etc. Consider native plants appropriate for the project's zone.
- Consider adjacent ecosystems and design buffers or any additional plantings as transitional zones allowing for natural recruitment of native vegetation.
- Create connectivity between pockets of wetlands and other intact natural systems when possible.

3. Dual use and agrivoltaics

To conserve undeveloped land, developers may consider dual purpose solar farms, built to support agriculture, in addition to solar, in order to limit the total amount of land conversion overall. This may include livestock or produce. Tomatoes, for example, grow well under solar panels and help to reduce the temperature under solar panels. Audubon continues to recommend planting native ground cover in these cases as well, as the presence of native insects and pollinators will continue to provide benefits for both the agrivoltaic development as well as native birds and wildlife.

Audubon appreciates the opportunity to submit comments in advance of draft rules for utility-scale solar and other facilities. We look forward to working with the Ohio Power Siting Board throughout this process to encourage responsibly-sited solar projects that avoid, minimize and mitigate impacts to birds and their habitat.

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