2023-24 Education & Outreach Statements

Pennsylvania Audubon Council

Produced by the Pennsylvania Audubon Council

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Introduction to the 2023-24 Education and Outreach Statement Booklet

This compendium of the Education and Outreach Statements includes the draft statements that were previewed at the January 3, 2023 Council meeting. Those Statements have been revised as a result of input from participants following that Council Meeting. There are additional Education and Outreach Statements on Conservation Issues of Highest priority as identified by our chapters. Others need to be drafted and will be circulated for review and input and added to this compilation. These Statements are intended to be biennial to coincide with the 118th Congress and the two-year session of the Pennsylvania General Assembly. They are "living documents" that require periodic update and review as circumstances and situations require during 2023-2024.

The process to determine what issues mattered most to our chapters began in June 2021. Chapters had the opportunity to "brainstorm" the myriad of issues that were a concern. The brainstorming effort was followed through the fall of 2021 for chapter leaders to review and rank the extensive list of issues. A group led by Jim Bonner reviewed the responses and the results were reported in February 2022. Their work noted that the issues identified lend themselves to be addressed at the individual, community, and state (or Federal) levels. The group used a table to summarize the priorities:

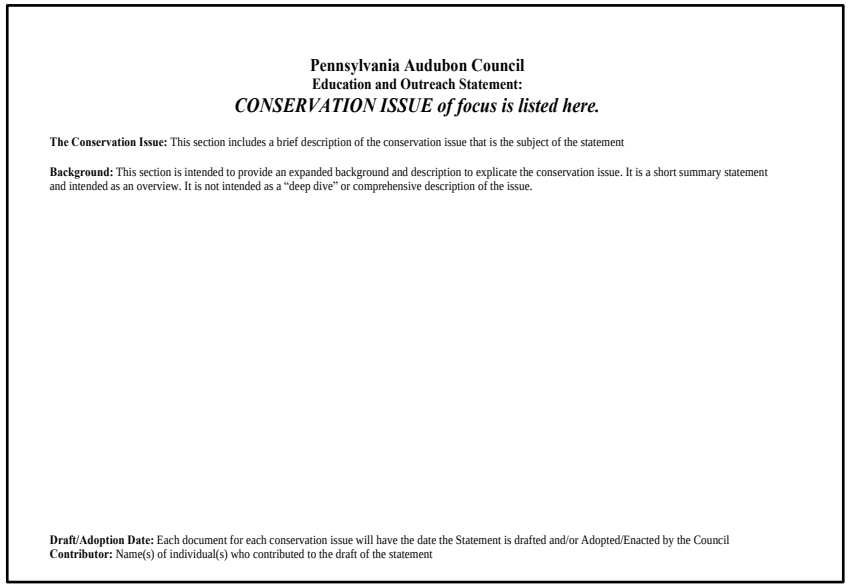
	Individual	Local/municipal	State
Overarching Goals	Chapters work to engage members and other members of the public to take personal action.	Chapters work to influence local public properties and the communities in which they are based.	Chapters work collectively to effect policy and outcomes across the state.
Specific Priorities identified by chapters	• Promote bird-friendly habitats by encouraging the use of native plants • Recognition of Bird-friendly properties • Educate about native plants • Control non-native and invasive plants • Minimize window strikes	• Bird Town • Promote EACs • Lights Out X/Bird Safe X programs • Properly site renewable energy • Wildlife Corridors and riparian buffers • IBAs	• Environmental Education Standards • Environmental Funding • Plastics in the environment • Bird Safe Pennsylvania • Properly Sited Renewable Energy • National Forests, State Parks, and Game Lands management • Fracking
PAAC Role	To facilitate the sharing of best practices among chapters and provide education or technical support.	To facilitate the sharing of best practices among chapters, provide technical support, and coordinate state-wide action.	To coordinate and drive advocacy efforts of statewide issues of mutual concern. Provide support for statewide conservation initiatives.
PAAC Potential Actions	• Provide a communications mechanism for chapters to share information • Be a clearing house for useful information	• Function as the fiduciary organization for Bird Town • Function as the "home" for IBAs • Function as the "home" for bird-friendly habitat program • Facilitate chapter gatherings/ communications	• Develop policy positions/statements on environmental above issues • Develop mechanism to efficiently promulgate positions and encourage support • Develop relationships with key state influencers. • Coordinate activities with Mid-Atlantic Audubon

The means to follow up on how best to frame our work on these issues continued through the spring and into July 2022. We looked at models offered by the Audubon Council in New York and other state Audubon Councils. This resulted in the creation of a "template" that we identified as "Education and Outreach Statements" with each statement focused on one of the "Conservation Issues of Highest Priority." We determined that an approach that identified "opportunities" for the

chapters and the Council was the best way to move forward to act on these issues. The Council leadership recognized that actions around any given issue needed to be determined by each chapter. The format of the Education and Outreach Statements embodied this approach in the drafting of each two-page statement. We recognize that these Statements help to frame how we can network, collaborate, and provide support for one another as we advance each of our priority issues.

An overview of the two-page template for the Education and Outreach Statements follows.

- The first page of the document is intended as a brief introduction and overview of the issue that is the focus of each Statement.
- The second page of the template outlines potential opportunities. The Statements are not prescriptive. We recognize that chapters do not have the independent capacity to address every issue. The matrix provides a means for chapters to select ways to become involved with any given issue.

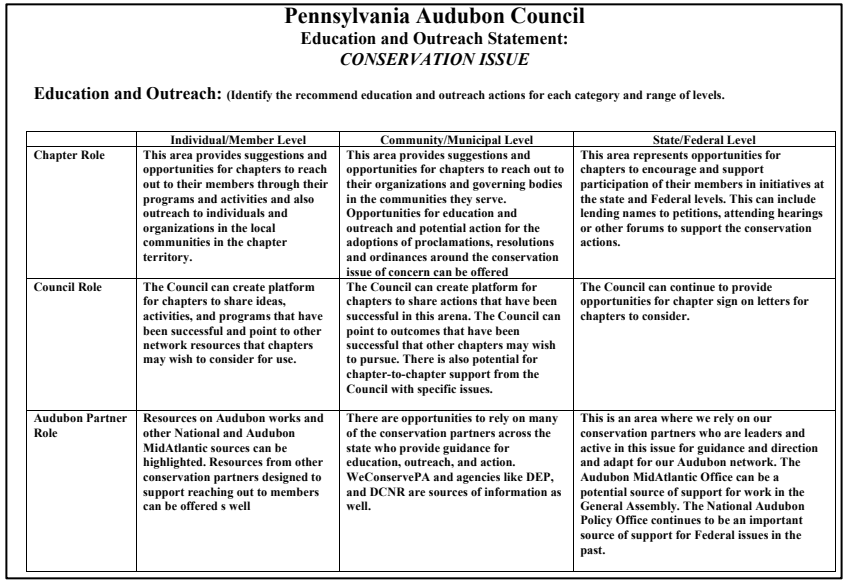


Pennsylvania Audubon Council
Education and Outreach Statement:
CONSERVATION ISSUE of focus is listed here.

The Conservation Issue: This section includes a brief description of the conservation issue that is the subject of the statement

Background: This section is intended to provide an expanded background and description to explicate the conservation issue. It is a short summary statement and intended as an overview. It is not intended as a "deep dive" or comprehensive description of the issue.

Draft/Adoption Date: Each document for each conservation issue will have the date the Statement is drafted and/or Adopted/Enacted by the Council
Contributor: Name(s) of individual(s) who contributed to the draft of the statement



Pennsylvania Audubon Council
Education and Outreach Statement:
CONSERVATION ISSUE

Education and Outreach: **(Identify the recommend education and outreach actions for each category and range of levels.**

	Individual/Member Level	Community/Municipal Level	State/Federal Level
Chapter Role	**This area provides suggestions and opportunities for chapters to reach out to their members through their programs and activities and also outreach to individuals and organizations in the local communities in the chapter territory.**	**This area provides suggestions and opportunities for chapters to reach out to their organizations and governing bodies in the communities they serve. Opportunities for education and outreach and potential action for the adoptions of proclamations, resolutions and ordinances around the conservation issue of concern can be offered**	**This area represents opportunities for chapters to encourage and support participation of their members in initiatives at the state and Federal levels. This can include lending names to petitions, attending hearings or other forums to support the conservation actions.**
Council Role	**The Council can create platform for chapters to share ideas, activities, and programs that have been successful and point to other network resources that chapters may wish to consider for use.**	**The Council can create platform for chapters to share actions that have been successful in this arena. The Council can point to outcomes that have been successful that other chapters may wish to pursue. There is also potential for chapter-to-chapter support from the Council with specific issues.**	**The Council can continue to provide opportunities for chapter sign on letters for chapters to consider.**
Audubon Partner Role	**Resources on Audubon works and other National and Audubon MidAtlantic sources can be highlighted. Resources from other conservation partners designed to support reaching out to members can be offered s well**	**There are opportunities to rely on many of the conservation partners across the state who provide guidance for education, outreach, and action. WeConservePA and agencies like DEP, and DCNR are sources of information as well.**	**This is an area where we rely on our conservation partners who are leaders and active in this issue for guidance and direction and adapt for our Audubon network. The Audubon MidAtlantic Office can be a potential source of support for work in the General Assembly. The National Audubon Policy Office continues to be an important source of support for Federal issues in the past.**

The booklet of Education and Outreach Statements is maintained and can be accessed on the website of the Pennsylvania Audubon Council. It is accessible to any chapter leader, conservation partners, or anyone interested in visiting our site. In addition, we will use the "blog" and other tools on the website to provide additional information, actions, or updates for each of the issues. Additional Education and Outreach Statements and/or revisions to these first waves of Education and Outreach will be noted on the website. The documents will also be downloadable for anyone interested in a hard copy.

Issue Statements and Education & Outreach Opportunities

Updated: March 2023

Mitigation of Bird Mortality Caused by Collisions With Glass, Windows, and Other Reflective Surfaces

The Conservation Issue: The leading human cause of bird deaths is bird collisions with buildings, especially glass facades, windows, and other reflective and transparent surfaces.

Background: Peer-reviewed, published research estimates that a minimum average of one million birds collide with windows in the USA daily; 365 - 988 million annually. The majority of these deaths occur in low-rise buildings of four stories or less. The Bird-window Collision Working Group (BCWG) has worked to address and reduce avian mortality at residential and low-rise buildings through education. An Audubon in Action Grant to Lehigh Valley Audubon Society funded the work of the BCWG partners which include the Acopian Center of Ornithology at Muhlenberg College, Audubon Pennsylvania, and the Lehigh Valley and Wyncote Audubon Societies. This group focused on creating a tool kit, for use by volunteers, that includes a wide range of resources. The aim is for trained volunteers to educate people about the causes and patterns of collisions and ways they can be prevented. The BCWG program is an avenue of education and outreach to partners that include nature centers, bird clubs, garden clubs, civic associations, and others to inspire action. It also serves as a platform to reach out to architects, municipal planners, and “green building” organizations.

“Lights Out” programs serve as a “gateway” program to address the more imposing issue of bird mortality that results from collisions with glass, windows and other reflective and transparent surfaces. Mortality due to collisions with reflective and transparent surfaces is ongoing, year-round, and accounts for the majority of bird deaths caused by collisions. These events do not typically garner notable media coverage because the bird kills occur in small numbers, are very widespread, and are ongoing. Municipalities are often eager to adopt “Lights Out” initiatives to get on board and be part of the “success” experienced by sister cities. These programs attract publicity and help raise awareness of the problem of bird collisions which, in turn, create new opportunities for individual property owners and municipalities to engage and take action. It becomes possible to pivot from a successful “Lights Out” program to campaigns to mitigate bird collisions with windows, glass, and other reflective surfaces.

A program that addresses mitigation of bird mortality caused by collisions with glass, and other reflective surfaces, provides a path to move individuals from personal action to collective community action, and on to campaigns to address the issue at the state and Federal level.

ADOPTED: January, 15 2023
Lead Contributor: Peter Saenger, Lehigh Valley Audubon Society

Mitigation of Bird Mortality Caused by Collisions with Glass, Windows, and Other Reflective Surfaces

Education and Outreach: **There are a range of opportunities to take action to address the issue of bird collisions.**

	Individual/Member Level	Community/Municipal Level	State /Federal Levels
Chapter Role	Provide information and presentations on bird collisions through chapter programs. Engage in outreach to chapter members and community partners to encourage meaningful, individual action to address windows at home and work.	Support the adoption of LEEDS criteria that address this issue with architects designing buildings in your chapter territory. Support model ordinances in municipal building codes, SALDOs (Subdivisions and Land Development Ordinances) and regulations that address windows. Promote the use of full exterior screens with contractors that replace windows in existing buildings, etc.	Support inclusion of mitigation requirements in the Federal Bird Safe Building Act and in state BOCA – Building Officials and Code Administrators – standards and regulations.
Council Role	Provide a platform for chapter-to-chapter sharing on information, handouts, best practices, and approaches used to reach out to members and groups in the communities they serve.	Provide workshops and webinars for our Audubon chapters, Pennsylvania Bird Towns, Environmental Advisory Committees, and others to support approaches and campaigns on the local level. These can utilize the BCWG Program and Tool Kit.	Coordinate efforts to reach out and educate our Pennsylvania General Assembly and Congressional delegations when there are opportunities for education and action on the issue of Bird Collision. Support state agencies like the Department of Conservation and Natural Resources (DCNR) to retrofit and mitigate collisions with glass at buildings in state parks and other state buildings.
Audubon Partner Role	Connect with the National Audubon, Bird Friendly Communities Program, the American Bird Conservancy, and others to provide information for individual property owners to take DIY measures to address windows in the places they live and work.	Share model ordinances and actual ordinances that can be adapted, proposed, and adopted at the municipal level (ex. shareable/editable resources from the National Audubon, American Bird Conservancy, and WeConservePA).	Work with Audubon's Federal Policy Office to help campaign for cosponsors of the Federal Bird Safe Building Act when introduced in the next Congress.

ADOPTED: January, 15 2023
Lead Contributor: Peter Saenger, Lehigh Valley Audubon Society

“Lights Out” Initiatives

The Conservation Issue: Artificial light at night, especially in major cities, poses a major threat to birds especially during migration.

Background: Over the years, reports of major bird mortality events that have occurred in large cities have received widespread news coverage. These events have typically occurred during spring and/or fall migration and have generally been associated with inclement weather conditions. The news coverage associated with these major bird kill events has sometimes led to a significant response in the municipalities where the event occurred.

For example, a major bird mortality event occurred in Philadelphia on October 2, 2020 where an estimated 1,500 birds were killed. This resulted in substantial news coverage in local papers and broadcast media. This led to the founding of “Bird Safe Philly,” a coalition of several conservation partners which subsequently initiated a “Lights Out” effort beginning the following spring migration. The project has continued to expand with participation from building and property managers in communities surrounding the city. Similar “Lights Out” projects have also been established in Pittsburgh and Harrisburg.

“Lights Out” programs were established in many cities across the county and were precedents of the programs in Pennsylvania. Through education and outreach there is potential to expand the “Lights Out” program to many other cities and towns in Pennsylvania. Major cities like Allentown, Erie, Scranton, State College, Williamsport, and Wilkes-Barre, as well as smaller municipalities, can be encouraged to start programs. Guidelines for establishing a “Lights Out” program are available and have proven successful in obtaining initial support and “buy-in.”

“Lights Out” also has the potential to serve as a “gateway” program to address the far more concerning issue of bird mortality that results from collisions with windows, caused mainly or exclusively by glass and other reflective and transparent surfaces. Mortality due to collisions caused by reflective and transparent surfaces is ongoing, year-round, and results in well over half of bird deaths. These do not benefit from the same media draw as public programs because the bird kills occur in small numbers, but they are very widespread and ongoing. “Lights Out” represents an opportunity as “low hanging fruit.” Municipalities have been “eager” to get on board and want to be part of the “success” experienced by sister cities. It becomes possible to pivot from “Lights Out” programs to campaigns to mitigate bird collisions, caused by glass, and other reflective and transparent surfaces.

ADOPTED: January, 15 2023
Lead Contributor: Ali Bowling, Appalachian Audubon Society

“Lights Out” Initiatives

Education and Outreach: There are opportunities to establish “Lights Out” initiatives in many of the cities and towns across the Commonwealth.

	Individual/Member Level	Community/Municipal Level	State /Federal Levels
Chapter Role	Provide presentations that offer background and information on the impact of artificial light on birds. Reach out through chapter programs to address ways property owners can reduce and manage the use of artificial light.	Support “lighting provisions” included in model ordinances in municipal building codes, SALDOs, and other local regulations. Seek partners like local astronomy or “Dark Sky” groups who share the goal of reducing artificial light in our communities. Learn from successful efforts such as Lights Out Harrisburg.	Support “lighting provisions” included in Bird Safe Building Act and promoted by the Dark Skies Association in state BOCA regulations.
Council Role	Provide a platform for chapter-to-chapter sharing on information, handouts, best practices, and approaches used to reach out to members and groups in the communities they serve. Promote the active sharing of programs and presentations	Provide workshops and webinars for our Audubon chapters, Pennsylvania Bird Towns, Environmental Advisory Committees, and others to support approaches and campaigns on the local level. Promote opportunities to learn from other initiatives, such as New York City Audubon’s successful effort adopted by New York City Council.	Coordinate efforts to reach out and educate our Pennsylvania General Assembly and Congressional delegations when there are opportunities for education and action on the issue. Promote initiatives with the General Assembly that can result in state wide action.
Audubon Partner Role	National Audubon, Dark Skies Association, American Bird Conservancy, and others provide information for individual property owners to follow to reduce exterior lights and lighting.	Partners have model ordinances and adopted ordinances that can be emulated or adapted by governing bodies at the local level (ex. WeConservePA). Work with Audubon Bird Friendly Buildings programs.	Work with Audubon’s Federal Policy Office to help campaign for cosponsors of the Federal Bird Safe Building Act if/when it is introduced in the 118th Congress. Ensure that there are strong guidelines for artificial light in new and renovated buildings.

ADOPTED: January, 15 2023
Lead Contributor: Ali Bowling, Appalachian Audubon Society

Guidelines for Siting of Utility-Scale Solar Projects

The Conservation Issue: Science has documented that climate change is an existential threat to birds and the major factor in the decline in bird populations over the last five decades. There is an urgent need to increase responsibly-sited utility-scale solar in Pennsylvania's clean energy portfolio in order to meet state and national goals of 100% clean energy and net zero emissions.

Background: Climate change is one of the biggest threats to birds and the places they need, now and in the future. The National Audubon Society report, "Survival by Degrees," identifies 389 species of North American birds at risk of becoming endangered or possibly extinct if the global temperature rises more than 1.5 degrees Celsius over preindustrial levels. The Cornell Lab of Ornithology study published in 2019, "Decline of North American Avifauna," reports that many bird species have suffered serious declines over the period of the last 50 years. The study states that over 2.9 million breeding birds have been lost in the United States and Canada since 1970.

Other threats to birds are not insignificant. These include: predation from outdoor cats; invasive flora and fauna species; nighttime lighting on buildings and other stationary fixtures in the built environment; collisions with glass; transmission lines; wind turbines and communication towers; and pesticides and other toxins.

Counteracting the threat of climate change means not only dramatically reducing carbon emissions, but also doing so in a way that does not cause further harm to birds and their habitats. A guideline for appropriate development comes from the 2021 white paper, "Beyond Carbon-Free: A Purpose Led Renewable Energy Procurement and Development" produced by the National Audubon Society, the Nature Conservancy and Level Ten Energy to move the renewable energy industry toward a sustainable and equitable carbon free energy transition. The paper emphasizes the importance of engaging local communities early and often to build a trusting dialogue around the project and community goals, avoid negative community and cultural impacts, and support community needs and benefits while also supporting local workforce development and diversity, equity, and inclusion goals.

The Pennsylvania Audubon Council white paper: "Guidelines for Municipalities: Developing Bird-Friendly and Environmentally Responsible Utility Scale Solar" provides broad information on the procedures in play in Pennsylvania, a "home rule" state, in permit requirements for renewable energy projects, including utility-scale solar. Pennsylvania Audubon Chapters are "local everywhere" across the Commonwealth and have a critical role in these local permitting processes.

ADOPTED: January, 15 2023
Lead Contributor: Laura Jackson, Juniata Valley Audubon Society

Guidelines for Siting of Utility-Scale Solar Projects

Education and Outreach: A spectrum of education and outreach actions that reflect the broad range of chapters in our Audubon Network

	Individual/Member Level	Community/Municipal Level	State /Federal Levels
Chapter Role	Provide information and presentations on the impact of climate change on birds and their habitat. Work through chapter programs, outreach to members and community partners to understand the urgency of the shift to renewable sources of energy and the role of utility scale solar in the matrix of carbon-free options for energy.	Determine if ordinances have been adopted in the counties and municipalities located in your chapter territory. Evaluate their effectiveness. Support the adoption or strengthening of municipal and County ordinances with intelligent guidelines for siting of utility scale solar projects. Support model ordinances in municipal building codes, SALDOs, and other local regulations	Support Federal and State legislation that provide resources and support for renewable energy and bird friendly guidelines for utility scale solar. Serve as local "experts" to ensure that the regulatory agencies of DCNR, DEP, PGC, F&BC, WPC, are effectively informed, involved, and engaged in the permitting and construction of Utility Scale Solar Projects that are located OR are intended to serve your region.
Council Role	Engage the Renewable Energy Committee to identify or create resources that may be useful to chapters. Provide a platform for chapter-to-chapter sharing of information, handouts, and approaches used to reach out to members and groups in the communities they serve.	Provide workshops and webinars for our Audubon chapters, Pennsylvania Bird Towns, Environmental Advisory Committees, and others to promote the bird friendly guidelines included in the Pennsylvania Audubon Council Renewable Energy Committee "white paper."	Coordinate efforts to reach out and educate our Pennsylvania General Assembly and Congressional delegations when there are opportunities for education and action on the issue of renewable energy and utility scale solar.
Audubon Partner Role	Keep current with information available from the National Audubon, American Bird Conservancy, Sierra Club, Penn Future, Penn Environment and others to keep current on guidelines.	Share model ordinances, actual ordinances, and best practices that can be adapted, proposed, and adopted at the municipal level (ex. WeConservePA series of model ordinances).	Work with Audubon's Federal Policy Office and other advocacy organizations to promote support for legislation that supports renewable energy. Support is needed to identify sites amenable for utility scale solar projects.

ADOPTED: January, 15 2023
Lead Contributor: Laura Jackson, Juniata Valley Audubon Society

Guidelines for Siting of Land-Based Industrial Wind Projects

The Conservation Issue: It is well documented that climate change is an existential threat to birds and a major factor in the decline in bird populations over the last five decades. There is an urgent need to responsibly site land-based industrial wind projects as a part of Pennsylvania's clean energy portfolio. Unfortunately, hundreds of wind turbines are located on forested mountains that serve as important breeding sites, migratory pathways, and critical stopover sites for birds during migration. Significant numbers of bird and bat kills have been documented by the Pennsylvania Game Commission at the state's wind turbine projects.

Background: Climate change is one of the biggest threats to birds and the places they need now and in the future. The National Audubon Society report, "Survival by Degrees," identifies 389 species of North American birds at risk of becoming endangered or possibly extinct if the global temperature rises more than 1.5 degrees Celsius over preindustrial levels. The Cornell Lab of Ornithology study published in 2019, "Decline of North American Avifauna," reports that many bird species have suffered serious declines over the period of the last 50 years. The study states that over 2.9 million breeding birds have been lost in the United States and Canada since 1970.

Other threats to birds are not insignificant. These include loss of habitat; predation by outdoor cats; invasive flora and fauna species; nighttime lighting on buildings and other stationary fixtures in the built environment; collisions with glass; transmission lines, wind turbines, and communication towers; and pesticides and other toxins.

Counteracting the threat of climate change means not only dramatically reducing carbon emissions, but also doing so in a way that does not cause further harm to birds and their habitats. A guideline for appropriate development comes from the 2021 white paper, "Beyond Carbon-Free," by the National Audubon Society, the Nature Conservancy and Level Ten Energy, which suggests ways that the renewable energy industry can move toward a sustainable and equitable carbon-free energy transition. The paper emphasizes the importance of engaging local communities early and often to build a trusting dialogue around the project and community goals, avoid negative community and cultural impacts, and support community needs and benefits, while supporting local workforce development and diversity, equity, and inclusion goals.

Pennsylvania Audubon Chapters are "local everywhere" across the Commonwealth and have a critical role in these local permitting processes. One chapter, Juniata Valley Audubon Society, has been diligent in educating local communities on how to work with developers and government agencies for proper wind turbine siting. Their advocacy efforts led to the formation of the non-profit organization, Save Our Allegheny Ridges, which has a plethora of information on wind energy at https://saveouralleghenyridges.org.

ADOPTED: December 27, 2022
Lead Contributor: Laura Jackson, Juniata Valley Audubon Society

Guidelines for Siting Land-based Industrial Wind Projects

Education and Outreach: Some recommended education and outreach actions for the range of levels in our Audubon Network

	Individual/Member Level	Community/Municipal Level	State /Federal Levels
Chapter Role	Provide information and presentations on the impact of climate change on birds and their habitat. Work through chapter programs, outreach to members and community partners to highlight the urgency of the shift to renewable sources of energy and the proper siting of land-based industrial wind projects in the matrix of carbon free options for energy.	Determine if ordinances have been adopted in the municipalities and counties located in each chapter territory. Evaluate their effectiveness. Support the adoption or strengthening of municipal and county ordinances with comprehensive guidelines for land-based industrial wind project siting.	Support federal and state legislation that provide resources and support for renewable energy and bird friendly guidelines for industrial wind projects. Ensure that the regulatory agencies of DCNR, DEP, PGC, PFBC, and USFWS are effectively informed, involved, and engaged in the permitting, construction, and mitigation of land-based industrial wind projects that are located OR proposed for your community.
Council Role	Engage the Renewable Energy Committee to identify or create resources that may be useful to chapters. Provide a platform for chapter-to-chapter sharing on information, handouts, best practices, and approaches used to reach out to members and groups in the communities they serve.	Provide workshops and webinars for Audubon chapters, Pennsylvania Bird Towns, Environmental Advisory Committees, and municipal officials to promote the proper siting, construction, and mitigation of land-based industrial wind projects.	Coordinate efforts to reach out and educate our Pennsylvania General Assembly and Congressional delegations when there are opportunities for education and action on the issue of renewable energy and land-based industrial wind projects.
Audubon Partner Role	Keep current with information available from the National Audubon Society, American Bird Conservancy, Sierra Club, Penn Future, PennEnvironment and Save Our Allegheny Ridges.	Share model ordinances and actual ordinances that can be adapted, proposed, and adopted at the municipal level (ex. Partners like WeConservePA).	Work with Audubon's Federal Policy Office and other advocacy organizations to promote support for legislation that supports renewable energy. Support is needed to identify proper locations for land-based industrial wind projects.

ADOPTED: December 27, 2022
Lead Contributor: Laura Jackson, Juniata Valley Audubon Society

Support for Environmental Education

The Conservation Issue: The next generation of conservation leaders are enrolled in the schools of our Commonwealth today. We need a strong, knowledgeable, and diverse corps of individuals to sustain and grow efforts to protect birds, and the environment they need, today and tomorrow!

Background: The Academic Standards for Environment and Ecology, adopted in 2002, marked an important milestone in the curriculum requirements for K-12 public school education. These standards made explicit the need for students in our schools to have the opportunity to learn and master the basic knowledge to equip them for the environmental challenges they will need to contend with as citizens in the twenty-first century. We are witness to the continuing need to understand, judge, and act at the local, state, and Federal levels to address the environmental and conservation challenges we increasingly face. The Academic Standards form the foundation of curriculum and instruction in our public schools. These standards are the basis on which local school boards make decisions on the curriculum they adopt and the in-service training they provide to teachers for effective instruction. Colleges and universities that prepare teachers need to ensure that pre-service teachers are grounded in the science behind these standards. Environmental education centers, nature centers, zoos, and state parks build their programs on the foundation provided by these standards. Support for adequate funding for schools and these programs in ecology and the environment is an imperative.

Audubon chapters have the opportunity to partner with their local schools and environmental education centers to provide support for teachers and programs that benefit from the expertise that our volunteers can bring. There are also opportunities for chapters to support individual teachers with assistance to attend programs such as Educators' Week at the Audubon Camp in Hog Island, Maine.

ADOPTED: January 15, 2023
Lead Contributor: Leigh Altadonna, Wyncote Audubon Society

Support for Environmental Education

Education and Outreach: Opportunities to promote and strengthen environmental education in schools, nature centers, state parks, etc.

	Individual/Member Level	Community/Municipal Level	State /Federal Levels
Chapter Role	Provide information and background on the PDE K-12 Environment and Ecology Standards and the importance of their inclusion in the curriculum of area schools. Reach out to parents to ensure their children benefit from programs that fully integrate the Ecology and Environment Standards in their school program. Provide scholarships to teachers to attend Educators Week at Hog Island Audubon Camp in Maine.	Promote and support effective environmental programs in the schools and school districts in your chapter territory. Sponsor Audubon Adventures or other age/grade appropriate materials for students. Consider a volunteer program to provide "school yard bird walks" or other programs. Encourage school-wide projects that enhance native plant gardens, protect birds from window collisions, incorporate solar panels and renewable energy sources, etc.	Support PDE and State funding for local schools and school boards that enhance environmental education. Encourage targeted support by PDE for environmental education that focus on underserved schools, especially in rural and urban areas through Title I and other Federal funding sources. Advocate for expanded support for the educational programs offered through state parks and area environmental centers.
Council Role	Provide a platform for chapter-to-chapter sharing of information, handouts, best practices, and approaches used to reach out to members and groups in the communities they serve. Focus on dissemination of quality, online and print resources that can be used by chapters for school-based programs.	Provide workshops and webinars for our Audubon chapters, Pennsylvania Bird Towns, Environmental Advisory Councils, and others to support and strengthen environmental education. Establish partnerships with PAEE and other environmental education partners to collaborate on this issue. Provide workshop at conventions or webinars including NEA, AFT, PAEE, and others.	Coordinate efforts to reach out and educate our Pennsylvania General Assembly and Congressional delegations when there are opportunities for education and action on the issue of Environmental Education. Advocate for continued inclusion of Ecology and Environment Standards in statewide curriculum development.
Audubon Partner Role	Connect with Audubon Centers, state parks, nature centers, etc. to collaborate on messaging to members.	Collaborate with community partners to support effective environmental education programs in schools. Reach out to Parent Teacher Organizations.	Work with partners at the state and Federal levels for effective evaluation of environmental education in schools.

ADOPTED: January 15, 2023
LEAD CONTRIBUTOR: Leigh Altadonna, Wyncote Audubon Society

Elimination of Single-Use Plastics in the Environment

The Conservation Issue: Pollution of our environment with single-use plastics is a key threat to birds and other wildlife.

Background: Single-use plastics are any items made primarily from fossil fuel-based chemicals that are designed to be used once and then thrown in the trash. Some examples are bottles, Styrofoam containers, straws, cutlery, shopping bags, and plastic packaging. More than half of non-fiber plastic comes from plastic packaging alone, much of which is for single-use items. Three hundred million tons of plastic are produced each year worldwide, half of which is for single-use items. Single-use plastics also constitute approximately half of global plastic waste generation. These plastic items don't biodegrade. They don't break down; they just break up. The result is microplastics, which are smaller plastic particles. When sampled, 100% of Pennsylvania waterways were found to contain microplastics.

For birds, microplastics can be particularly dangerous. When eaten, they can easily accumulate inside the body and cause health issues, like punctured organs or fatal intestinal blockages. Birds often mistake shredded plastic bags for food, filling their stomachs with toxic debris. Studies found plastic in the guts of 90 percent of tested seabirds. Terrestrial birds that live closely with humans are exposed to significant plastic waste. In urban areas, where nesting material is scarce, birds have been found to use plastic debris in building nests. Nestlings can eat this plastic waste that may be coated in toxic chemicals, or become entangled in it.

Plastic production contributes to planet-warming greenhouse gas emissions. The process of drilling for plastic's source materials, oil and gas, leads to methane leaking and flaring. This is compounded by the clearing of forests and wetlands for drilling, landscapes that would have typically stored excess carbon. Polluting "cracker plants", where components of natural gas are broken down to produce plastic pellets, use large amounts of energy generated by burning fossil fuels. The manufacture of single-use plastics is also an equity issue. Plastic resin, the feedstock for single-use and other plastics, is produced in petrochemical factories. In the United States, the majority of these factories are built in low-income communities and communities of color.

The key to reducing plastic pollution is curbing consumption. Banning single-use plastic products is a more useful strategy for reducing plastic use and pollution than recycling, which is ineffective. Only 5–6% of plastic waste was recycled in the U.S. in 2021. Most types of plastic packaging are economically impossible to recycle now and will remain so for the foreseeable future. Companies in the U.S. and around the world must urgently phase out single-use plastics by replacing their packaging with reuse and refill systems, and offering packaging-free products.

Programs, policies and legislation are all needed to address bird illnesses and deaths caused by single-use plastic. The personal actions of consumers, and collective community actions, can lead to this problem being addressed at the local, state and federal level.

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Lead Contributor: Susan Murawski, Presque Isle Audubon Society

Elimination of Single-Use Plastics

Education and Outreach: Some recommended education and outreach actions for our Audubon Network.

	Individual/Member Level	Community/Municipal Level	State /Federal Levels
Chapter Role	Through chapter programs and outreach, provide information on personal alternatives to single-use plastics. Chapters can consider creating and/or providing reusable "bags" for members and community members.	Support phase-outs and bans of single-use plastics through local ordinances (e.g. ban plastic bags and straws, ban outdoor balloon releases). Support ordinances that require reusable utensils for onsite dining.	Support any state and federal legislative efforts to ban production and use of single-use plastics. Educate the local representatives to the PA General Assembly and US Congress on opportunities for action on single-use plastics.
Council Role	Become a clearinghouse for information about single-use plastics, for chapter-to-chapter sharing of information, handouts, best practices, and approaches used to reach individuals. Provide suitable options for demonstrating alternatives at chapter events. Add information and links to resources on the Council website.	Provide workshops and webinars for our Audubon chapters and other local conservation groups about campaigns to ban single-use plastics.	Coordinate efforts to reach out and educate the PA General Assembly and Congressional representatives about the hazards of single-use plastics. Advocate for the institution of a ban on single-use plastics. Advocate for state and federal regulators to establish extended producer responsibility regulations for plastic manufacturers, to hold them responsible for the waste they create.
Audubon Partner Role	Work with partners such as the Plastic Pollution Coalition, Break Free from Plastic, Plastic Free Foundation and other organizations to provide information about the problem of single-use plastics, and on personal alternatives to single-use plastics.	Leverage existing campaigns from statewide and national conservation groups for assistance with crafting local ordinances to ban single-use plastic. Partner with Environmental Advisory Committees (EACs) and other local community groups to address change at the local level. Look to organizations like PennEnvironment for research and outreach materials for shared use.	Align and assist state and national conservation groups with their efforts to ban single-use plastic including the Conservation Voters of PA, PA Chapter Sierra Club, PennEnvironment, and PennFuture. Align and assist national coalitions with their campaigns to ban single-use plastic at the Federal level.

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Lead Contributor: Susan Murawski, Presque Isle Audubon Society

Promoting Habitat Restoration Using Native Plants

The Conservation Issue: Habitat loss and degradation has negatively impacted bird and insect populations. “Plants for Birds” initiatives, promoted by the National Audubon Society Bird Friendly Communities Program, and scientific research conducted by field experts like Dr. Doug Tallamy, serve as platforms to build engagement and increase action in response to this issue.

Background: Bird populations have declined by over 3 billion breeding birds since 1970 in North America, with one of the primary causes being habitat loss and degradation.

Many native plants, insects, and birds have co-evolved together over millions of years, resulting in a symbiotic relationship that is mutually beneficial. Insects comprise 85% of the diet of most adult terrestrial birds and most baby birds require insects for 100% of their diet, usually in the form of caterpillars which provide a major source of protein and carotenoids. For example, it takes between 6000-9000 caterpillars to feed just one clutch of Black-capped Chickadees to maturity. Having coevolved with plants over millions of years, more than 90% of all plant-eating insects are specialists, requiring plants native to their ecosystems for their survival. For birds to be successful, they need caterpillars, which in turn need native plants.

The absence of native plants can render a landscape inhospitable for many insect species, creating a food and habitat shortage for many birds. A healthy habitat needs a minimum of 70% native plants to provide adequate food, optimally 94%. Landscapes that feature less than that percentage and/or high percentages of non-native plant species can result in ‘food deserts’ or ‘habitat sinks’ (places with habitat sufficient to attract animals but insufficient to support their survival or their young). Unfortunately, these types of landscapes are prevalent among the 40 million acres of manicured lawns and backyards throughout the United States.

Educating and engaging homeowners and municipal leaders about the vital importance and community benefits of native plants is imperative for supporting healthier bird and insect populations. Bird Town Pennsylvania and other conservation organizations can serve as reliable sources for educational materials, planting guidance, and opportunities for increased impact, such as participation in Backyard Habitat Recognition programs.

It’s also critical to engage and educate local leaders at the state and federal level with regard to the development and implementation of impactful legislation and allocation of funding to support this issue.

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Lead Contributor: Heidi Shiver, Bucks County Audubon Society

Promoting Habitat Restoration Using Native Plants

Education and Outreach: There is a range of opportunities through education and outreach activities to promote the widespread adoption of approaches to expand the uses of native plants, reduce/remove nonnative invasive plants, and restore bird habitat in our properties, neighborhoods, and communities.

	Individual/Member Level	Community/Municipal Level	State/Federal Levels
Chapter Role	Promote bird friendly habitats by encouraging the use of native plants. Promote the different Backyard Habitat programs. Provide education and calls-to-action about the importance and benefits of native plants.	Work with local conservation groups such as Bird Town, Penn State Master Gardeners, and Watershed Associations to increase habitat and reduce mowing by installing meadows and rain gardens on municipal and school properties. Promote proclamations, resolutions, and ordinances (PROs) to support native plantings and lawn mowing reduction.	Engage and educate local leaders about the importance of healthy habitats needed to support local birds and wildlife. Invite them on Walk and Talk Bird Walks to learn more discuss opportunities. Encourage them to develop legislation and funding including, for example, Wildlife Corridors, and other similar initiatives.
Council Role	Facilitate the sharing of best practices among the chapters and provide resources and/or technical support. Connect with the network of Bird Towns to share stories and disseminate successful approaches to engage more people and properties.	Facilitate the sharing of best practices among the chapters and provide resources and/or technical support. Promote opportunities for participation in the Bird Town program.	Identify issues that chapters can support through sign-ons and direct communications with their members and communities including the Recovering America's Wildlife Act or Endangered Species Act. Coordinate and drive these advocacy efforts and provide support for statewide conservation initiatives.
Audubon Partner Role	Contact National Audubon Bird Friendly Communities, American Bird Conservancy for resources and materials to share. Connect with local Bird Towns, EACs, Watershed Associations, etc. to engage residents by partnering on events, pop-up gardens, and other opportunities with shared goals.	Contact local Bird Towns, Environmental Advisory Councils (EACs), Watershed Associations, and local nurseries, greenhouses, landscapers, etc. to create native plant demonstration gardens, restore habitat in public spaces (parks and schools), and host public planting events.	Work with Audubon's regional and national offices and other organizations such as the American Bird Conservancy (ABC), National Wildlife Federation, WeConservePA, and others to promote state and/or Federal native plant initiatives. Work to identify additional invasive and nonnative plants as barred for sale in Pennsylvania. Look to the legislation adopted by Delaware as a model

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