

# Renewable Energy and Wildlife in Maine

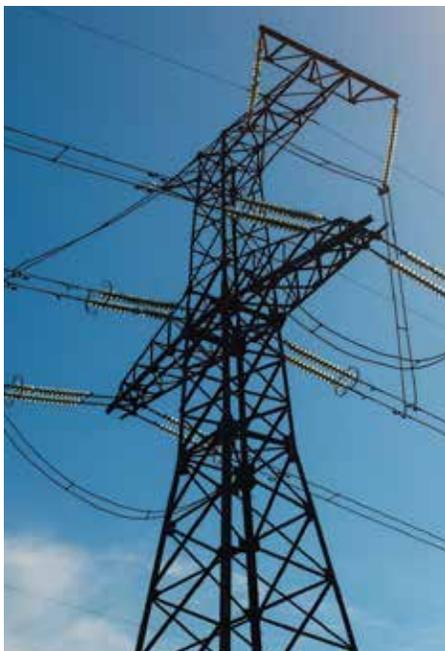
Avoiding, Minimizing, and Mitigating Impacts to Wildlife  
and Habitat from Solar, Wind, and Transmission Facilities



November 2019



*Photo: Phillip deMaynadier/MDIF&W*



## EXECUTIVE SUMMARY



### **The biggest and most pervasive threat to Maine's wildlife and habitat is climate change driven by carbon pollution.**

To abate this threat, Maine must meet its recently adopted goals to reduce annual greenhouse gas emissions by at least 45% below the 1990 annual emissions level by 2030, and by 80% below the same level by 2050. This can be achieved, in part, by meeting the state's commitment to procuring 80% of retail electricity sales from renewable energy sources by 2030 and 100% by 2050. By replacing fossil fuels used to generate electricity with renewable energy sources such as wind and solar, we can significantly reduce the state's greenhouse gas emissions and give our wildlife and habitat a chance to thrive.

To generate this new, clean energy, Maine must develop and operate renewable energy facilities. But any development—even development that will help us address climate change—can have negative consequences for wildlife if it is not sited and operated thoughtfully. We must act swiftly, but we must also act strategically so we don't degrade the very same plant and animal species and habitats we seek to protect.

Maine Audubon is confident, based on our research, that Maine can meet its renewable energy goals while protecting wildlife and habitat. To achieve this, new renewable energy development must strive to first avoid and then minimize impacts to wildlife, and only in rare cases compensate for unavoidable impacts. If improvements are made to the planning, siting, operations, and maintenance of future renewable energy projects, their considerable climate benefits will not be diminished or negated by unnecessary harm to wildlife and habitat.

# The Report

*Renewable Energy and Wildlife in Maine* describes the potential impacts of a specific portion of new energy infrastructure—onshore and offshore wind power, solar power, and transmission projects—on wildlife and wildlife habitat. It outlines policy considerations based on a review of the current literature, conversations with experts in the field, and policies in neighboring states, that Maine Audubon recommends Maine regulators, developers, and policy makers adopt in order to avoid, minimize, and mitigate impacts from renewable energy on wildlife and habitat.

The report focuses exclusively on onshore and offshore wind energy projects, solar energy projects, and transmission lines because this is where we expect to see the most new growth in energy infrastructure in Maine. This potential growth is driven by: a suite of new laws; increased public support for combating climate change and embracing new technologies; and, Maine's proximity to renewable energy sources in Canada and off the coast.

## Additional Resources

An **interactive map** that allows you to explore the results of Maine Audubon's analysis of the intersection of wildlife resources and wind resources in Maine can be found at: [maineaudubon.org/energy](http://maineaudubon.org/energy)

**Reports by the Appalachian Mountain Club** use the same new wind data to evaluate the visual impacts of wind power projects on high-value scenic resources across Maine and to analyze the overlap between wind resources and areas of high climate change resilience. These reports will be available in the winter of 2019/20.



Photos: Pat Clayton

# 5 Principal Policy Recommendations

**1 Maine must strongly encourage solar in built and disturbed environments.** Co-locating solar where it is consumed, in the built environment or in disturbed areas, can remove the threat of habitat loss, as well as the need for extensive new transmission facilities that can fragment existing habitats. Compared to other renewable energy technologies, solar in the built environment has the fewest negative impacts on wildlife and wildlife habitat.



**2 New technologies in terrestrial wind must be used to site projects that avoid impacts to wildlife and habitat.** A GIS analysis demonstrates that taller wind towers, which are becoming more readily available, mean that commercially-viable wind can be “reached” in more places, providing more opportunities to site wind projects in places that avoid impacts to high-value wildlife and habitat.

Solar arrays, wind facilities, and transmission lines should avoid and minimize risks to vulnerable species, including Bobolinks, Wood Turtles, Little Brown Bats, and migratory songbirds such as the Scarlet Tanager (front page).

**3 We must direct resources toward developing offshore wind technology, including understanding how it can coexist with wildlife.** Maine has an estimated 156GW of offshore wind potential—65 times greater than the amount of energy Maine people use each year—located in proximity to Maine’s coastal population centers. This capacity, coupled with a reduced need for extensive terrestrial transmission infrastructure, means that the potential for meeting our renewable energy goals while minimizing impacts to wildlife is high. But there are many unknowns. Most of Maine’s potential is in deep water, a new venture in the United States. Maine must direct resources toward understanding how to capture this potential, while evaluating and minimizing impacts to wildlife.

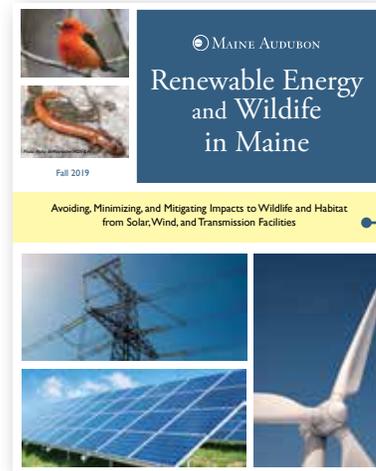
**4 Maine and other states in the region must engage together in long-term planning to reduce the prevalence of transmission lines.** There are many opportunities for improving the efficient use of our current infrastructure to reduce the need for many, if any, new transmission lines. Where new lines are justified, they should be co-located with existing linear development whenever possible. To avoid lines that crisscross the state, stakeholders must come together to plan how to generate and transmit electricity in a way that maximizes efficiency and minimizes impacts to wildlife and habitat.

**5 Mitigation must reflect harm to all impacted species and habitats.** Projects must strive to first avoid and then minimize harm to wildlife and wildlife habitats, but where impacts are unavoidable they must be compensated for. Traditionally, compensatory mitigation has been limited to listed species and directly impacted acreage, usually wetland acreage. True compensatory mitigation for the impacts of new development must address all harm to all impacted species and habitats. Renewable energy developers should strive to create projects that provide a net benefit for wildlife. That means addressing cumulative and landscape-scale impacts caused by fragmenting features like transmission lines and accounting for impacts to both common and uncommon species and habitat types.



Eastern Brook Trout and Northern Spring Salamanders (front page) both need wide multilayered forested buffers around the streams where they live to protect the clear cold water they rely on.

# What's in the Full Report?



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- **A Statewide Geographic Analysis of the Intersection of High-Value Wildlife Resources and Wind Resources**
- **Supplemental Material**
  - An annotated bibliography detailing the literature reviewed for this report
  - Compendium of policies and best practices utilized in other states related to siting renewable energy projects and wildlife

**Download a copy of the complete report at:**  
[maineaudubon.org/energy](http://maineaudubon.org/energy)

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