

OHIO DEPARTMENT OF NATURAL RESOURCES  
**DIVISION OF WILDLIFE**

# Wind Energy and Wildlife in Ohio

Erin Hazelton, Wind Energy/Wildlife Administrator



5 MW, 516 feet tall  
OFFSHORE / NEXT  
GENERATION



1.8-3.6 MW, 391-591 feet tall  
LAND-BASED / CURRENT USE



0.11 MW, 72 feet tall  
ALTAMONT PASS /  
“OLD STYLE”

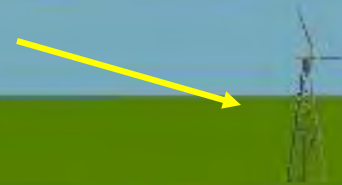
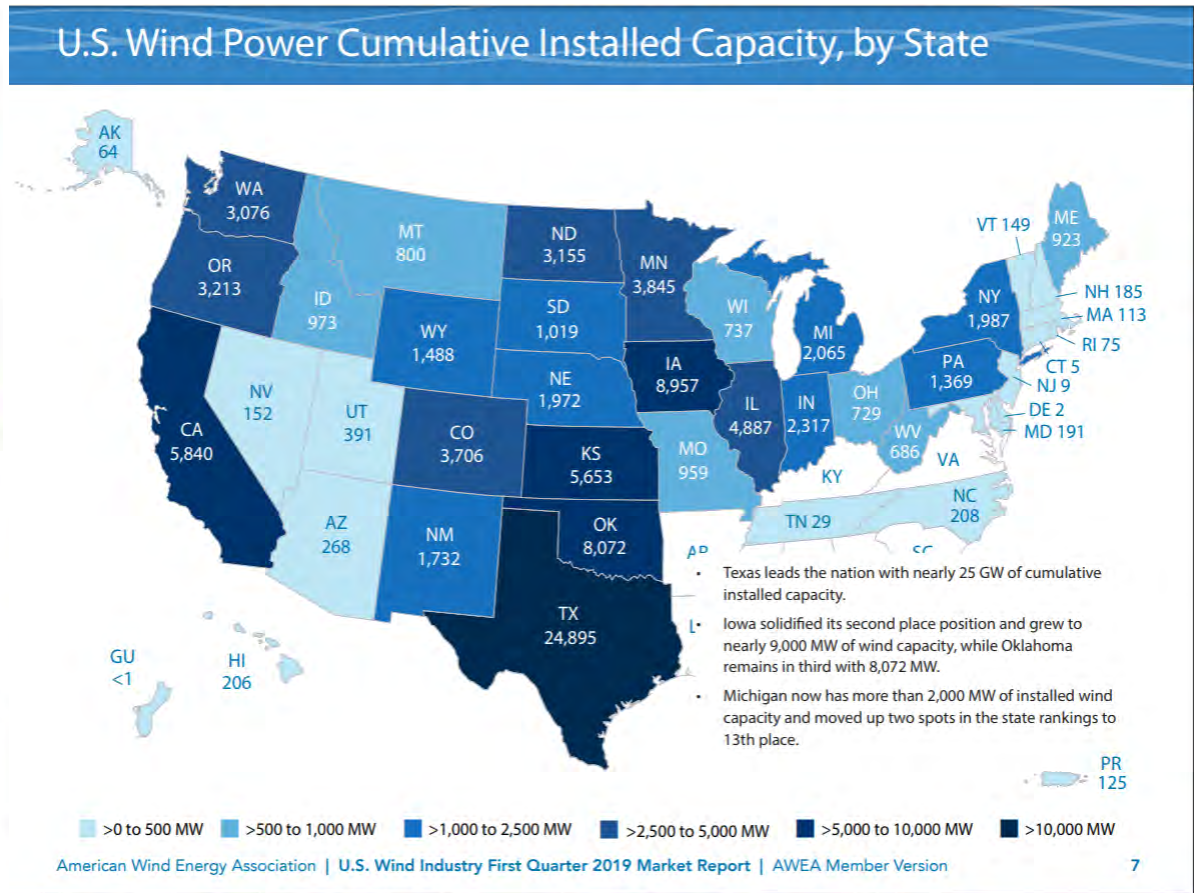
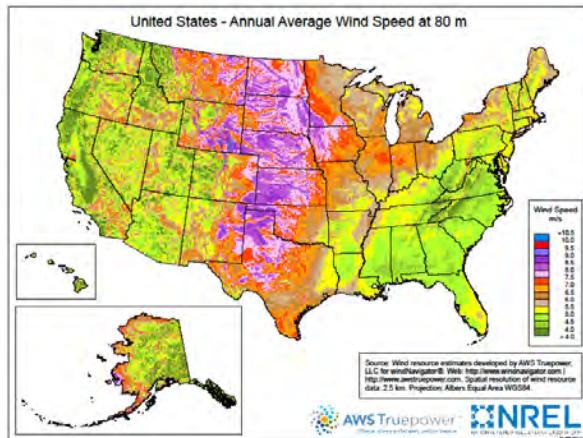
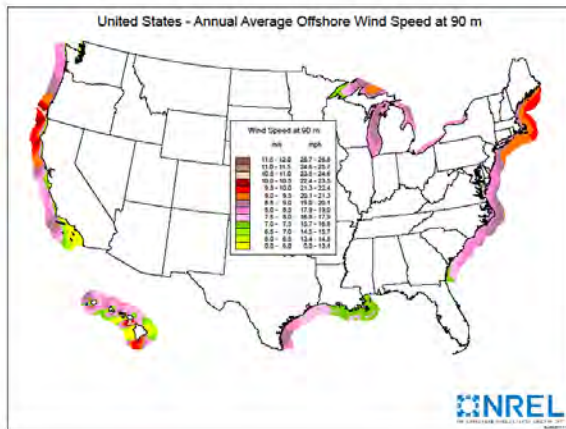




Photo: Kate Parsons



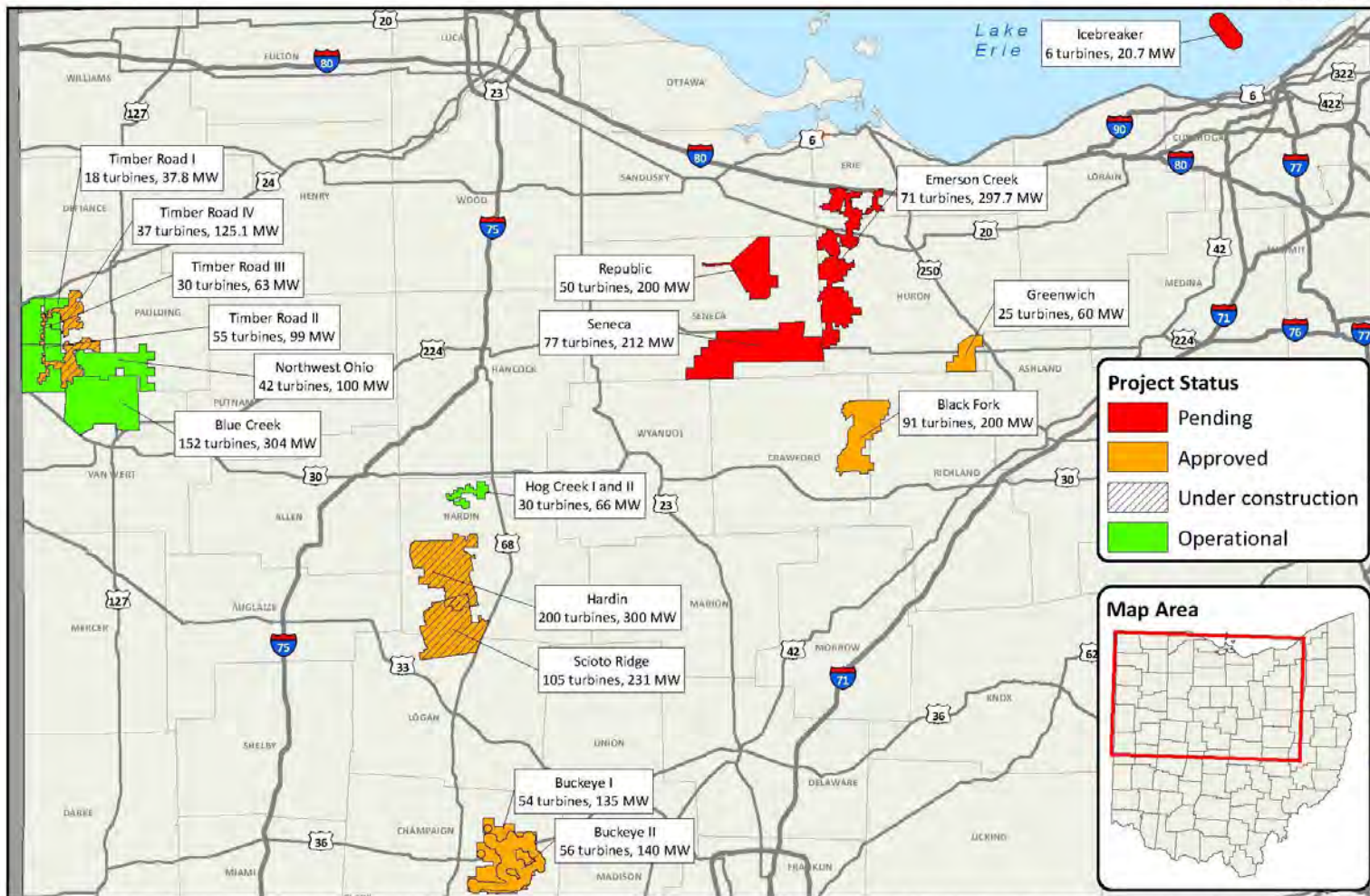




Power Siting  
Board

## Power Siting Wind Case Status

As of 4/18/2019



Notes: Project area boundaries are provided by applicants. Case and construction status is determined by the case filings. The nameplate capacity shown is the maximum capacity that could be built based on the number of approved turbines and the highest nameplate capacity of the approved turbine models. Map produced on 4/18/2019. Prepared by: Adam Bargar

## Net generation : wind : Ohio : all sectors : annual

thousand megawatthours



Source: [U.S. Energy Information Administration](https://www.eia.gov)

Source: U.S. Energy Information Administration. Net Generation from Wind. Updated Annually.



Q1 2019:  
729 MW will  
power  
148,292  
homes

(assumes 25%  
capacity factor &  
household use of  
10,766 kWh per  
year)

## Capacity & Generation

### Installed Capacity

729 MW

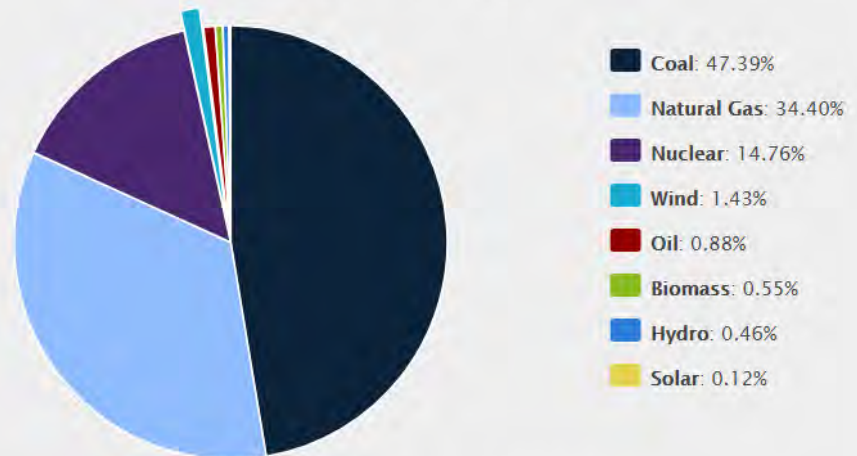
Source: American Wind Energy Association Market Report

### MW Under Construction

133 MW

Source: American Wind Energy Association Market Report

### Electric Grid Mix in Ohio



Source: U.S. Energy Information Administration's Open Data API, Electricity Net Generation.

# ODNR's Role

- 5 MW or larger & connected to grid must be approved by the Ohio Power Siting Board (OPSB)
- ODNR is a member agency on the OPSB
- ODNR provides technical support & recommendations for evaluating project impacts
- USFWS officially involved if there is a federal nexus (funding, permit, or take of federally listed species)

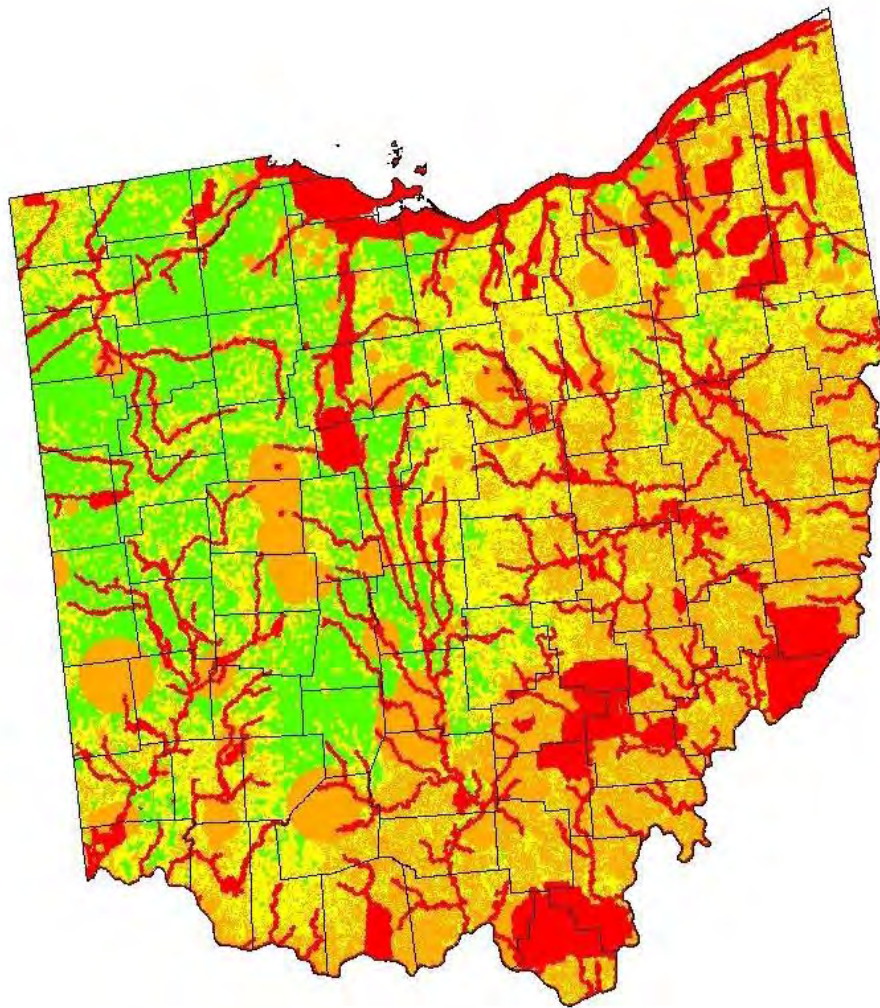




# ODNR's Objectives

- Determine if wind energy facility operations are causing an unacceptable level of impact on wildlife and make recommendations on additional minimization or mitigation measures.
- Use the best scientifically and statistically appropriate methodology that is standardized among projects in Ohio, based on 2009 protocols.
- Use an adaptive approach for each site after year 1.





- Minimum
- Moderate
- Moderate (where applicable)
- Extensive

0 25 50 100 Miles



## Minimum

Breeding bird surveys  
Acoustic bat monitoring  
Raptor nest searching &  
Monitoring

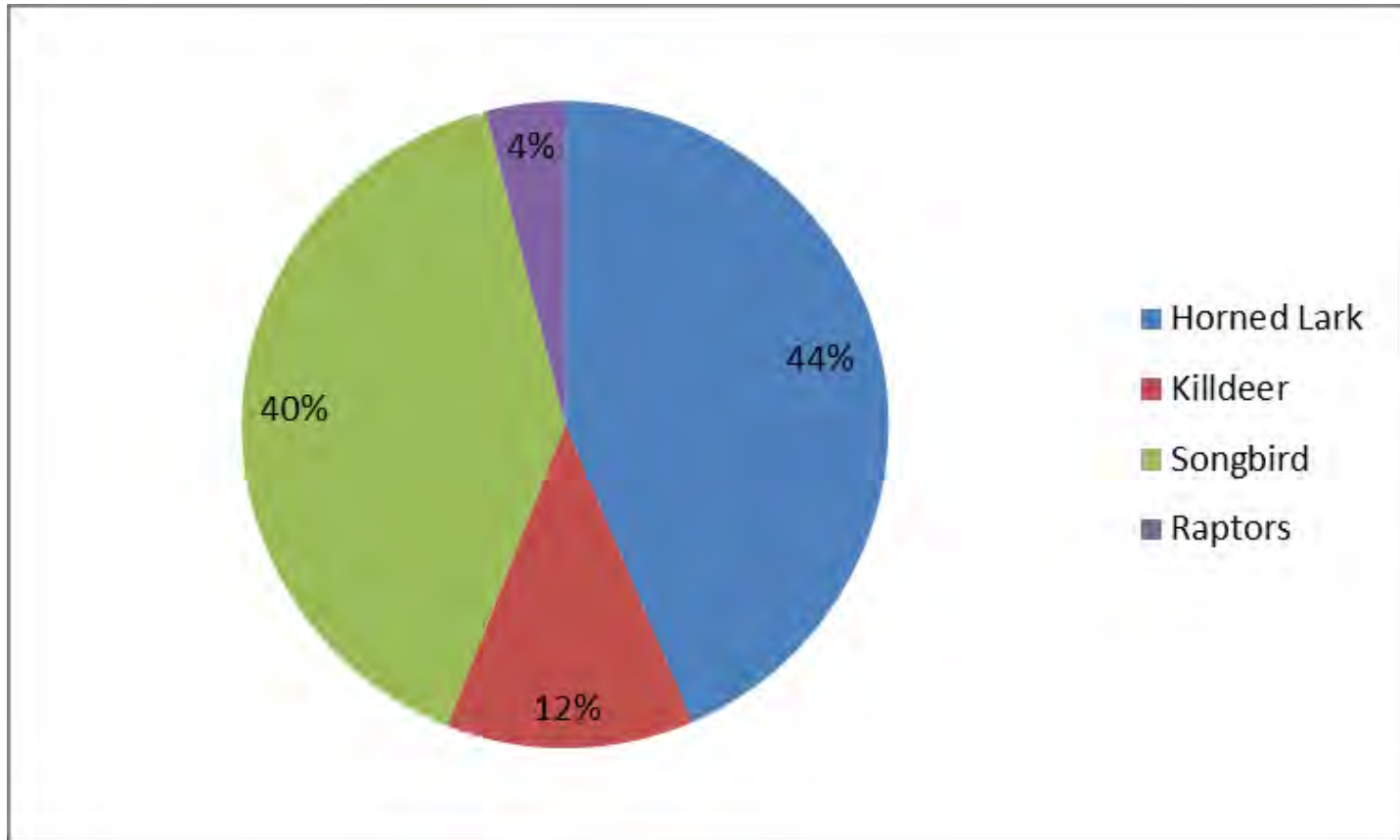
## Moderate/Moderate

Passerine migration  
Diurnal bird/raptor migration  
Sandhill cranes  
Owl playback surveys  
Barn owl  
Bat mist-netting  
Nocturnal marsh bird surveys  
Waterfowl surveys  
Shorebird migration

## Extensive

Radar monitoring

# Ohio Bird Fatality Estimates

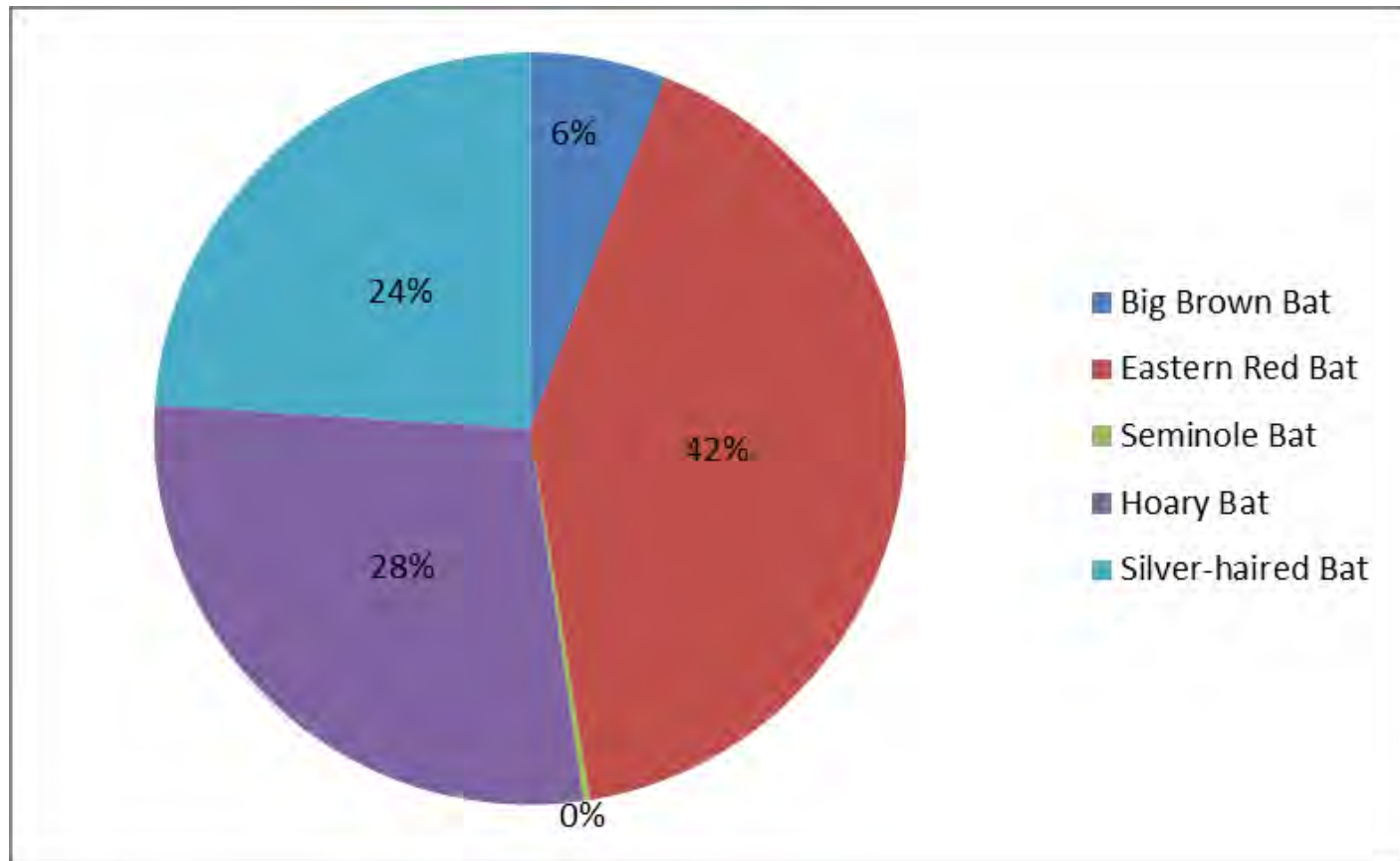


Estimated 1.1 – 6 birds /MW/yr  
(2-12 birds/turbine/yr)

**Ohio fatality estimates calculated under turbine curtailment (6.9 m/s)**



# Ohio Bat Fatality Estimate



Estimated 2-17 bats/MW/yr  
(4-34 bats/turbine/yr)

**Ohio fatality estimates calculated under turbine curtailment (6.9 m/s)**



327 grid-tied turbines in Ohio

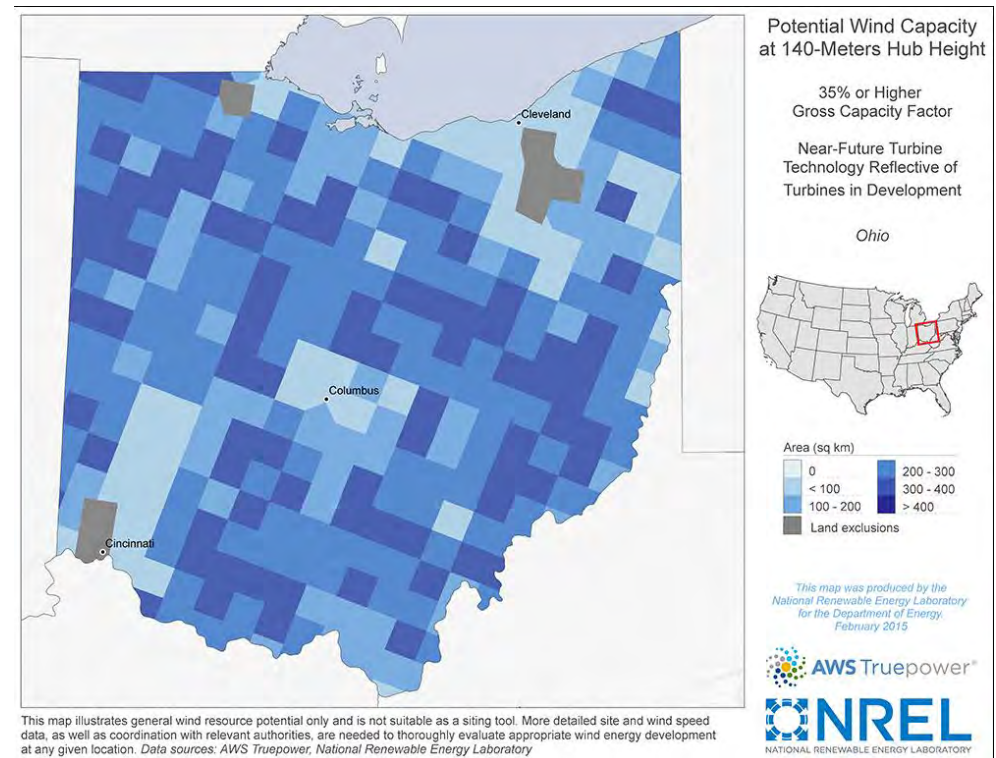
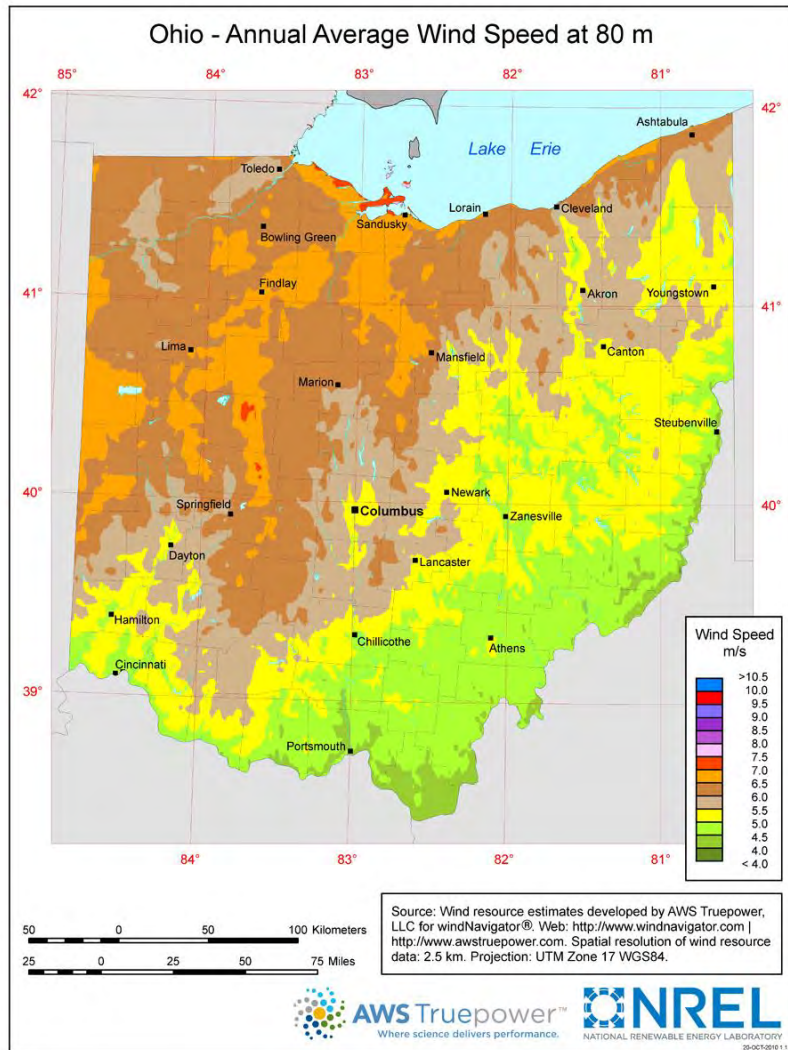


654 - 3,924 birds/year



1,308 - 11,118 bats/year

# Future trends





# Future Trends

- Acoustic Deterrents
- Visual deterrents
- Smart curtailment
- Radar and infrared detectors





# Future items

- Legislation regarding wind setbacks and energy tax credits
- Off-shore wind development
- Ohio monitoring guidelines & incidental take rules



# **Thank you!**

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