ENERGY & WILDLIFE POLICY COMMITTEE
Chair: Clay Crowder (AZ)
Vice-Chair: Bob Sargent (GA)

March 06, 2025
1:00 – 2:30 EST

90th North American Wildlife and Natural Resources Virtual Pre-Meeting
Reach out to Meaghan Gade for registration link

Committee Charge: The energy and wildlife policy committee is focused on understanding and ameliorating the effects of energy development and generation in North America and its impacts on fish and wildlife resources and their landscape habitats at the state, province, territory, region, and international levels.

Agenda

37 attendees

1:00 pm Call to Order

1:05 Wind Wildlife Working Group + WAFWA Energy Group update
Karen Voltura, CO Parks and Wildlife

WWWG been around for 5-6 years, great participation, wind is not evenly distributed geographically, and we get great nation-wide state participation, as well as federal and other NGO
Primary goals right now is to develop a wind training program for new staff of states and industry. First step is to gather existing resources to then put into a database that is accessible to everyone. Do want to have some kind of regional in-person training. Funding is a limitation, looking for partners. Thought about a mentorship program for new SFWAs.
Monthly meetings with topics including HCPs, ESA unknowns, supporting feds in the new administration, state incidental take, state partnerships with NGO and how that can improve outcomes, in CO, we have talked a lot about mitigation banking; future topics include risk landscapes for birds, cumulative impacts
Been working with Bat Working Group to develop a guidance document that collects resources on bats and winds. Currently going through state review, in late spring will go through external review including from industry and other NGOs.
Wind Wildlife Working Group meeting in Corpus Christi last November was a great opportunity to bring everyone together.

WAFWA Wildlife and Energy Working Group as part of the Habitat Committee, have submitted a charter to get formal approval. Part of the intention is to support the AFWA group (e.g. solar guidelines national document, how can west fit in?), fact sheets on new technology (critical mineral mining, nuclear, etc.) to support our state partners and have the most impact and get the most up to date information.

1:20 Solar Wildlife Working Group update
Bob Sargent, GA DNR

Recent meetings. November 4 meeting had a presentation from SolSource from REWI which is a one-stop shop for resources related to solar, biodiversity and ecology; Claire Karban from USGS presentation on her recent paper on solar and desert ecosystems. Recent meeting in Feb. had a presentation from Julie Vance of CA DFW on burrowing owls and solar… Burrowing Owl is candidate for state listing and its habitat is ideal for solar development.

Bob is stepping down as Chari of SWWG and we had two people step up to be the ***new co-chairs: Melissa Marinovich (NE) and Emily Grabowsky (WA)***

WG has been able to accomplish: Solar survey, communications framework between SFWA and Industry, Solar BMP database, REWI's solar state of the science library, state consultations policy document; still needing to develop a standard pre/post construction monitoring protocol, GIS-focused resource library, publish solar survey results

1:35 USGS Update
Mona Khalil, USGS

There is personnel loss, hiring freeze, and spending (including travel) freeze, signals of budget cuts and Reduction in Force (RIF's), and possible government shutdown next week. The changes are somewhat expected, but it doesn't change our mission and commitment.

Discussed the organization's mission and recent research updates: Ongoing efforts to map migrations across the West, with the 5th report providing information on 36 additional herds. Mona also mentioned a multi-year collaboration with the Bureau of Land Management on a project called the Gemini Project, which aims to understand the impact of a large facility on desert tortoise habitat. She emphasized the importance of partnerships and the need for continued communication about needs and concerns. Mona also addressed questions about the definition of a herd and the availability of migration maps to the public, stating that the data is not publicly available to avoid misuse. CO added that their migration data is based on game management units and model data, and is already used in high priority habitat management planning.

See attached presentation for many resources and links of publications, software, data and tools over the past year by USGS related to Energy and Wildlife.

1:50 US Fish and Wildlife Service
Michael Oetker, Southeast Regional Director, USFWS

A lot going on during this transition. New SO's and EO's and our update will be pretty general for now. We do not have any politicals in place to step down policies to the agencies. ***Kate McGregor*** *as nominee for Dep Sec of DOI****. Brian Nesvick former WY director is the nominee for FWS Director.***

EO's on declaring a National Energy Emergecy; withdrawal of offshore wind leasing, review of permitting practices on wind energy; unleashing American energy, unleashing Alaska's potential

FWS is exploring emergency authority to authorize permitting, emergency consultation for section 7 under ESA

DOI paused further leasing of offshore wind; begun review of offshore and onshore wind leasing and permitting;

Pause of IRA/BIL funding government wide. Some releases include funding for orphan gas well and firefighting;

Some EO's have revoked or revised previous presidential actions, so trying to figure out what that looks like

SO's on DOI website for energy emergency and unleashing energy dominance; pause on FR publishing and renewable energy review/permits

Migratory bird program has temporarily suspended general permits for IT by eagles at wind facilities. Engaging in review and consultation for renewable energy projects, while also complying with EO/memo

A lot of emphasis on traditional energy sources in these orders, USFWS has a lot of expertise, mention on geothermal and transmission – transmission is a throughline from last admin,

Other EO's including staffing, cutting 10 regulations for each one proposed, that will impact our work
SO on incidental take on migratory birds

Section 10j on ESA on experimental populations being revoked.

***General Permit paused** – temporary pause, doesn't necessarily mean there is no management or reversal on the policy. We need politicals in place to give a guidance. Its pretty normal to have a pause on most actions during an administration transition. Right now, the application for the permit are paused, so if any permits have been submitted, it will be paused.*

2:05 Renewable Industry Outlook
Quintana Hayden, ACP

Presentation attached

Q&A

What drivers do you see for renewable energy with the new admin – we are facing a lot of uncertainty with the tax credit etc., which has implications for investment, the market is rapidly increasing though between datacenters and other energy demand will not be changed or impacted by the new administration, market demand will be there, renewables are the most readily available source of energy, they can be built our much faster than traditional, the projects take years to get through development and permitting, there are real challenges to work through but that pipeline has a lot of momentum and inertia.

There was a push to develop on public lands, how might that change? Uncertainty in that. We don't regularly track development or pipeline by landownership type. Anecdotally, although we have seen uptick in federal lands projects on BLM lands, vast majority of buildout has historically occurred on private lands, and is focused on private lands development. Of the projects in the pipeline, the large majority are likely on private lands.

2:20 Solar Site Assessment Framework Update
Quintana Hayden, ACP; John Anderson, EWAC; Clay Crowder, AZFG

2:30 Adjourn

Energy & Wildlife Research Update

Mona Khalil

North American Wildlife and Natural Resources Conference, March 6 2025

U.S. Department of the Interior
U.S. Geological Survey

USGS Ecosystem Mission Area Programs and Focal Areas

Ecosystems

- Environmental Health ★
  - Contaminant Biology
  - Toxic Substances Hydrology
- Species Management ★
  - Fish & Aquatic Species
  - Terrestrial Species
  - Energy and Wildlife
  - Amphibian Research & Monitoring Initiative
- Land Management ★
  - Priority Landscapes
  - Management & Restoration
  - Wildland Fire
- Biological Threats and Invasive Species
  - Fish & Wildlife Disease
  - Invasive Species
  - Biosecurity
- Cooperative Research Units ★
  - 43 Units in 41 States
- Climate Adaptation Science Centers
  - National CASC & 8 Regional CASCs ★
  - Climate Research & Development

https://www.usgs.gov/mission-areas/ecosystems

USGS science for a changing world

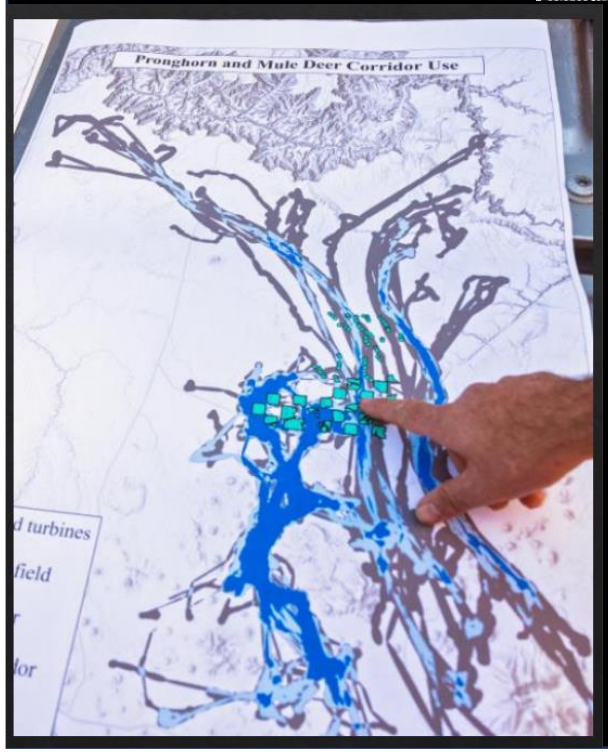
USGS Update to Partners

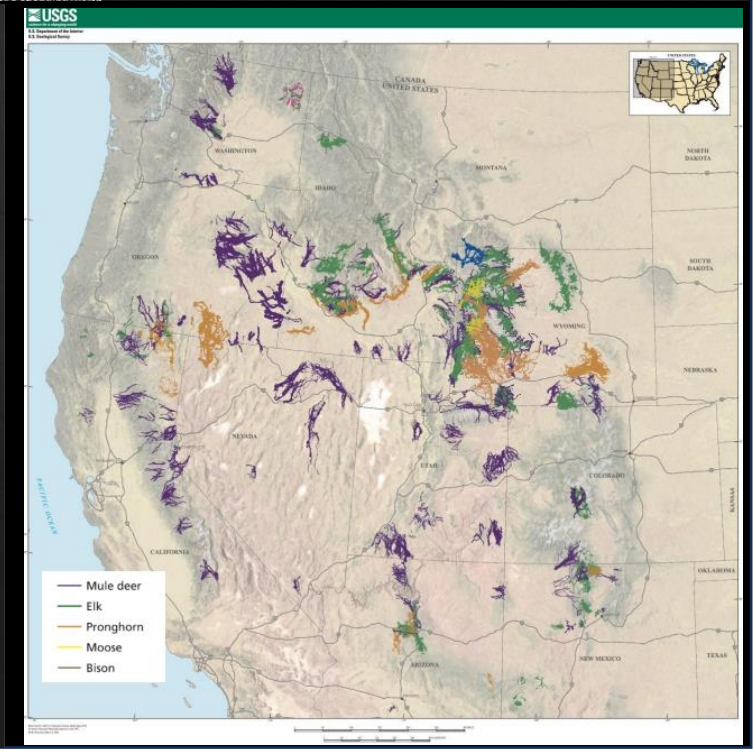
Ungulate Migrations Across the Western United States

Science Support for Management and Conservation

New: Ungulate Migrations of the Western United States, Volume 5

- Migrations and seasonal ranges of **218** unique herds
- Map-based inventory of ungulate migrations across the Western U.S.
- Map files released on USGS ScienceBase
- View and Download from **WesternMigrations.Net** – update available this Spring 2025





Contact: Blake Lowrey and Matt Kauffman

https://www.usgs.gov/publications/ungulate-migrations-western-united-states-volume-5

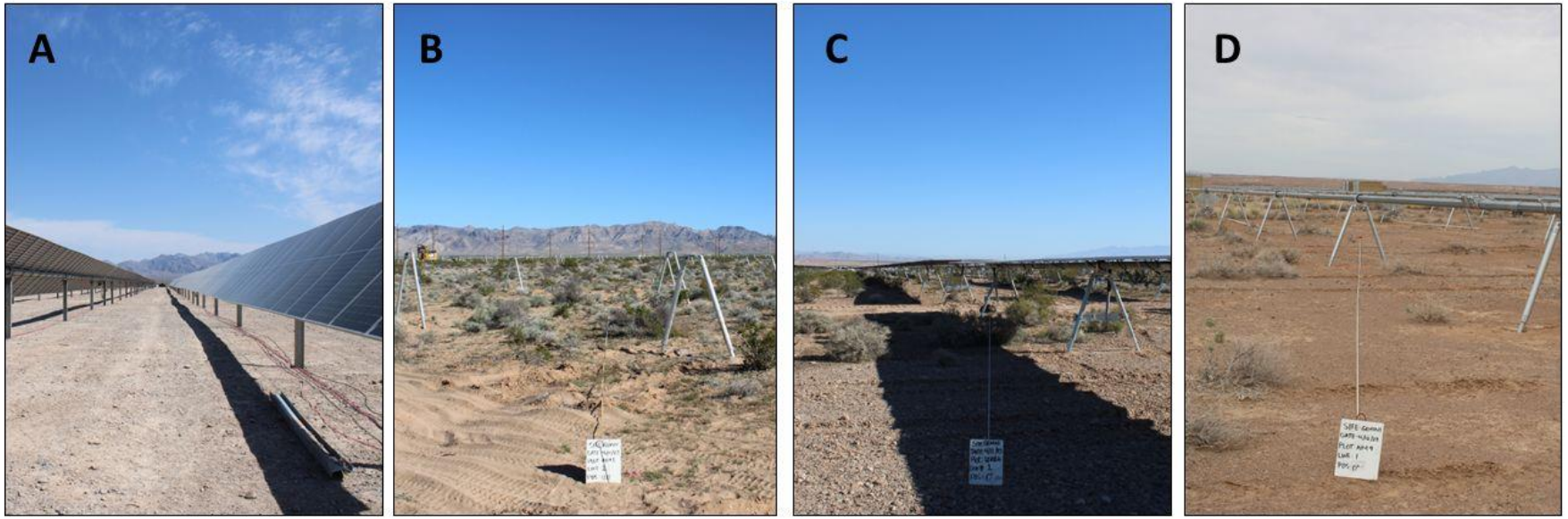
https://www.sciencebase.gov/catalog/item/66dee5dcd34eef5af66da144

USGS science for a changing world

Solar Energy Alternative Construction Practices

Short-term ecological effects of solar energy development depend on plant community, soil type and disturbance intensity

- Response of vegetation, soils, and microclimate to alternative construction methods at PV facility
- Before-After Control-Impact study design of effect of alternative method to “blade and grade” construction



https://www.usgs.gov/centers/southwest-biological-science-center/science/gemini-solar-project

https://www.usgs.gov/media/files/gemini-solar-project-information-brief

https://besjournals.onlinelibrary.wiley.com/doi/abs/10.1111/1365-2664.14882?domain=author&token=RMRZGJKNMUBJPUVBEPJ6

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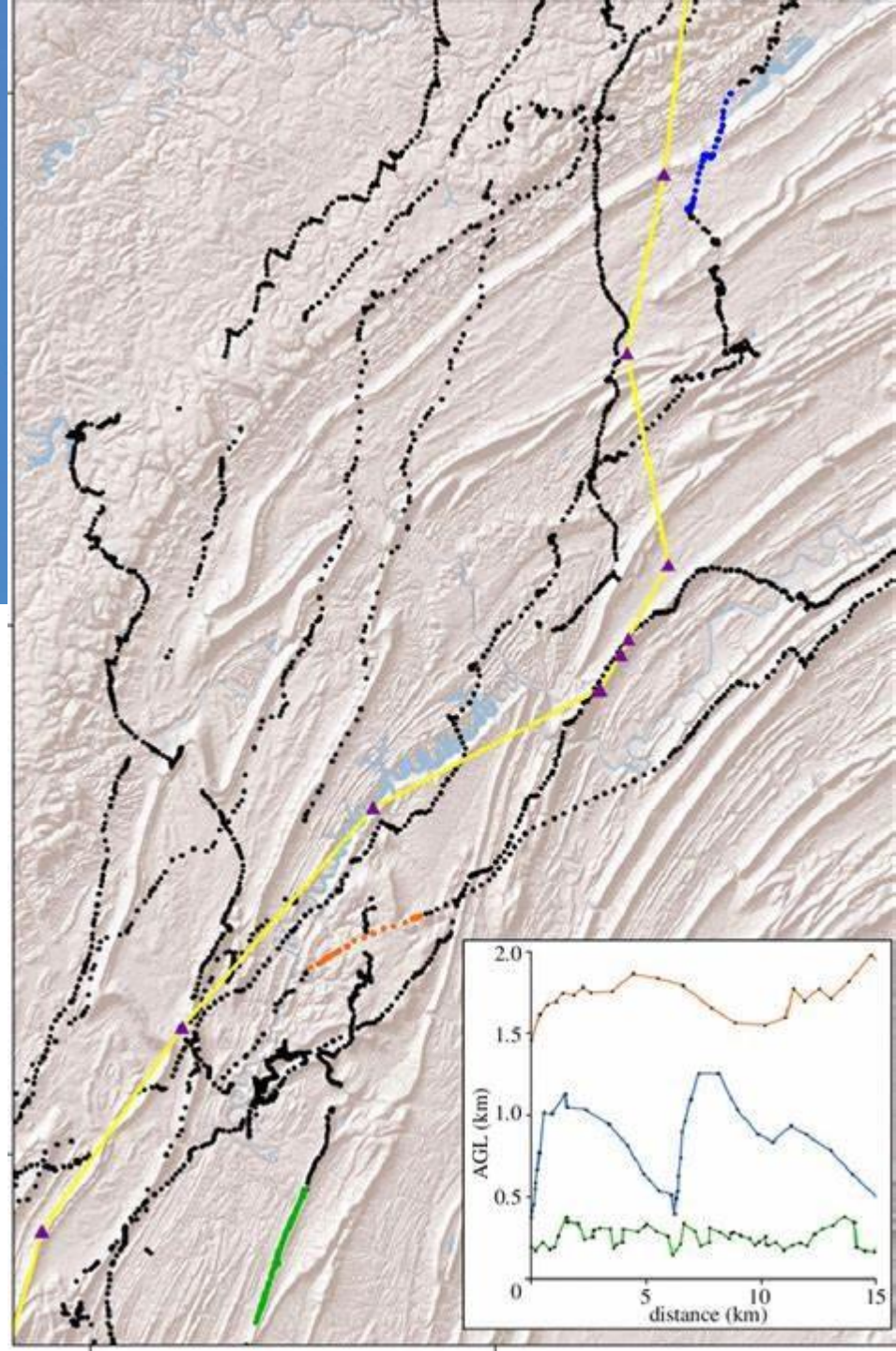
Science for conservation and management of bald and golden eagles and other raptor species

- Maps of prey and habitat needs
- Threats to birds energy infrastructure, lead exposure and illegal hunting
- Human safety concerns stemming from bird-aircraft collision risk.



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Publications, Software, Data and Tools (Oct 2024-Feb 2025)

Bats

The state of the bats in North America

Effect of ultrasonic deterrents and curtailment on bat mortality at an Ohio wind energy facility USGS Data Release

Mid-Atlantic big brown and eastern red bats: Relationships between acoustic activity and reproductive phenology Publication

Offshore Wind Energy

- Marine Bird Populations and the Gulf of Mexico Marine Assessment Program for Protected Species (GoMMAPPS) - Aerial and vessel survey data
- Supporting Interstate Conservation of Atlantic Sturgeon (Acipenser o. oxyrinchus) Using Genetics, Telemetry, and Side-scan Sonar - project page
- California State Waters Map Series—Benthic habitat characterization in the region offshore Humboldt Bay, California

Solar Energy

- The Gemini Solar Project | U.S. Geological Survey - Project Page
- Gemini Solar Project Information Brief | U.S. Geological Survey - Study Summary
- Measurements of vegetation, soil, and disturbance following utility-scale solar energy development in the Mojave Desert, 2021-2023 | U.S. Geological Survey Data Release
- Short-term ecological effects of solar energy development depend on plant community, soil type and disturbance intensity
- Mixed responses of tenebrionid beetles to solar energy development in the Mojave Desert | U.S. Geological Survey

Raptors

Prairie Falcon (Falco mexicanus) abundance in a National Conservation Area in Idaho has increased since the 1970s–1990s | U.S. Geological Survey

Big Game Migrations

Ungulate migrations of the Western United States, volume 5

Mining

From exploration to production: Understanding the development dynamics of lithium mining projects

USGS report on potential uses of remote sensing for monitoring mine lands and mine land recovery

Trash to Treasure: Could energy wastewaters be a viable source of lithium? | Featured Story

New USGS data-driven tools can aid restoration of mine lands across America | USGS News Release

Oil and Gas

Effects of noise from oil and gas development on raptors and songbirds—A science synthesis to inform National Environmental Policy Act analyses

Toxicity of crude oil-derived polar unresolved complex mixtures to Pacific herring embryos: Insights beyond polycyclic aromatic hydrocarbons

Federal lands greenhouse gas emissions and sequestration in the United States: Estimates for 2005–22

Hydrogen

Geologic Hydrogen Prospectivity Map Explorer | U.S. Geological Survey

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USGS Energy and Wildlife Research Program

Contact:

Mona Khalil,
USGS Ecosystems,
Species Management
Research Program,
Energy and Wildlife,

mkhalil@usgs.gov

Link to Website:

Energy and Wildlife

Publications, Software, Data and Tools (Oct 2023-Sept 2024)

Birds and Renewable Energy

The geographic extent of bird populations affected by renewable-energy development

Utilizing high-resolution genetic markers to track population-level exposure of migratory birds to renewable energy development

Numbers of wildlife fatalities at renewable energy facilities in a targeted development region

Eagles and Wind Energy

Predicting the spatial distribution of wintering golden eagles to inform full annual cycle conservation in western North America

Winter distribution of golden eagles in the Eastern USA

Conservation plan for golden eagles in eastern North America

Efficacy of non-lead ammunition distribution programs to offset fatalities of golden eagles in southeast Wyoming

Offshore Wind Energy

A framework for studying the effects of offshore wind energy development on birds and bats in the Eastern United States (frontiersin.org)

Geese migrating over the Pacific Ocean select altitudes coinciding with offshore wind turbine blades

Sea turtle density surface models along the United States Atlantic coast

Bats and Wind Energy

A decade of curtailment studies demonstrates a consistent and effective strategy to reduce bat fatalities at wind turbines in North America

Potential for spatial coexistence of a transboundary migratory species and wind energy development

Understanding fatality patterns and sex ratios of Brazilian free-tailed bats (Tadarida brasiliensis) at wind energy facilities in western California and Texas

Big Game/Ungulates

Conserving habitat for migratory ungulates: How wide is a migration corridor?

Ungulate migrations of the Western United States, volume 4

Renewable Energy Siting and Climate Science

Aligning renewable energy expansion with climate-driven range shifts

Observed impacts of large wind farms on grassland carbon cycling

Wildlife Fatalities and Estimation Tools

Accounting for the fraction of carcasses outside the searched area in the estimation of bird and bat fatalities at wind energy facilities

Energy Development on Public Lands

Structured science syntheses to inform decision making on Federal public lands - Factsheet

Modeling rare plant habitat together with public land managers using an iterative, coproduced process to inform decision-making on multiple-use public lands

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Publications, Software, Data and Tools (Oct 2023-Sept 2024)

Solar Energy

Predicting the effects of solar energy development on plants and wildlife in the Desert Southwest, United States

Mixed responses of tenebrionid beetles to solar energy development in the Mojave Desert

U.S. Photovoltaic Database V 2.0

The interplay of future solar energy, land cover change, and their projected impacts on natural lands and croplands in the US

Integrating land use land cover change into future scenarios of electricity systems - USGS Data Release

Bureau of Land Management Riverside East Solar Energy Zone Volume 1 - USGS Data Release

Investigating the “Lake Effect” Influence on Avian Behavior From California’s Utility-Scale Photovoltaic Solar Facilities

Sustainability trade-offs across modeled floating-solar waterscapes

The Monarch Butterfly

Milkweed and floral resource availability for monarch butterflies in the United States

Non-negligible near-term risk of extinction to the eastern migratory population of monarch butterflies—An updated assessment (2006–22)

Monarch Butterfly Roost Site-Selection Criteria and Locations East of the Appalachian Mountains https://doi.org/10.1007/s10905-023-09844-5

Oil and Gas in the Arctic

Identifying indicators of polar bear population status

Potential impacts of an autumn oil spill on polar bears summering on land in northern Alaska

Oil and Gas

Annotated bibliography of scientific research relevant to oil and gas reclamation best management practices in the western United States, published from 1969 through 2020

Effects of noise from oil and gas development on ungulates and small mammals—A science synthesis to inform National Environmental Policy Act analyses

Illegal dumping of oil and gas wastewater alters arid soil microbial communities

Restoration and Reclamation

Oil and gas reclamation—Operations, monitoring methods, and standards

Dryland soil recovery after disturbance across soil and climate gradients of the Colorado Plateau

Annotated bibliography of scientific research relevant to oil and gas reclamation best management practices in the western United States, published from 1969 through 2020

Power Lines

Ectoparasitism and Energy Infrastructure Limit Survival of Preadult Golden Eagles in the Southern Great Plains (bioone.org)

Challenges Creating Monarch Management Strategies for Electric Power Companies in the United States

Hydropower

Large-scale dam removal and ecosystem restoration

Flooding and dam operations facilitate rapid upstream migrations of native and invasive fish species on a regulated large river

The value of information is context dependent: A demonstration of decision tools to address multispecies river temperature management under uncertainty

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Publications, Software, Data and Tools (Apr-Sept 2023)

Eagles and Wind Energy

Variation in flight characteristics associated with entry by eagles into rotor-swept zones of wind turbines | Ibis

Modeling the spatial distribution of carcasses of eagles killed by wind turbines

Offshore Wind Energy

Status, trend, and monitoring effectiveness of Marbled Murrelet at sea abundance and reproductive output off central California, 1999–2021

Bats

Multi-scale assessment of roost selection by ʻōpeʻapeʻa, the Hawaiian hoary bat (Lasiurus semotus) | PLOS ONE

Fall migration, oceanic movement, and site residency patterns of eastern red bats on the mid-Atlantic Coast | Movement Ecology – June 2023

North American Bat Monitoring Program (NABat) Integrated Summer Species Distribution Model: Predicted Tricolored Bat Occupancy Probabilities

North American Grid-Based Offshore Sampling Frames - ScienceBase

Fish Passage and Hydropower

Closing the gap between science and management of cold-water refuges in rivers and streams | Global Change Biology | USGS (Review Article)

Science for NEPA

Prioritizing science efforts to inform decision making on public lands (usgs.gov)

Solar Energy

Desert ants in and around a solar facility, derived from pitfall trap sampling in 2018: USGS data release, https://doi.org/10.5066/P90NJ687.

Power Lines

Illegal shooting is now a leading cause of death of birds along power lines in the western USA | iScience

Ecological Effects of Oil and Gas Wastewater Contamination

Energy-related wastewater contamination alters microbial communities of sediment, water, and amphibian skin – April 2023

Arctic

North Pacific Pelagic Seabird Database: includes more than 486,000 transect segments and observations of over 20 million birds of 258 species collected over the span of 50 years (1973 to 2022).

Changing Arctic Ecosystems: Science to inform oil and gas leasing, Endangered Species Act decisions and recovery planning, status and trends of migratory birds, and status of Northern ecosystems.

Survival and reproduction in Arctic caribou are associated with summer forage and insect harassment

Dynamic selection for forage quality and quantity in response to phenology and insects in an Arctic ungulate

Caribou use of habitat near energy development in Arctic Alaska

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Publications, Software and Tools (Prior to March 2023)

Ungulates and Wind and Solar Energy:

- Wind-energy development alters pronghorn migration at multiple scales https://doi.org/10.1002/ece3.9687 USGS Link
- Variable effects of wind-energy development on seasonal habitat selection of pronghorn https://doi.org/10.1002/ecs2.3850
- Trade-offs between utility-scale solar development and ungulates on western rangelands https://doi.org/10.1002/fee.2498

Wind and Solar Energy Effects on Raptor Populations:

- Limited rigor in studies of raptor mortality and mitigation at wind power facilities, https://doi.org/10.1016/j.biocon.2022.109707
- Vulnerability of avian populations to renewable energy productions, https://doi.org/10.1098/rsos.211558

Wind Siting for Whooping Cranes/Grassland Birds

- Balancing renewable energy infrastructure siting and habitat loss for migrating whooping cranes, https://doi.org/10.3389/fevo.2022.931260
- Limited land base and competing land uses when siting energy development, https://doi.org/10.3996/JFWM-21-036
- Estimating offsets for avian displacement effects of anthropogenic impacts (Northern Great Plains) https://doi.org/10.1002/eap.1983 and Avian-Impact Offset Method tutorial

Related papers

- Industrial energy development decouples ungulate migration from the green wave. *Nat Ecol Evol* (2022) https://doi.org/10.1038/s41559-022-01887-9
- Wind Turbine wakes can impact down-wind vegetation greenness, https://doi.org/10.1088/1748-9326/ac8da9
- Potential effects of energy development on environmental resources of the Williston Basin, https://doi.org/10.3133/sir20175070

Available Data, Software, and Tools

Ungulates:

- Migration Mapper 3.0 - software for identifying migration corridors and seasonal ranges, https://doi.org/10.1111/2041-210X.13976
- Pronghorn Migration and Resource Selection Near Wind Energy Facilities in Wyoming, 2010-2012 and 2018-2020 (Data)
- Seasonal movements of mule deer and pronghorn in Wyoming, 2014-2021 (Data released Jul 2023)

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Publications, Software and Tools (Prior to March 2023)

Bats and Wind Energy

- Bat demographic look up tables for BatTool R package USGS data release, https://doi.org/10.5066/P9P9BKIG
- BatTool: projecting bat populations facing multiple stressors using a demographic model https://rconnect.usgs.gov/battool/
- Analytical Assessments in Support of the U.S. Fish and Wildlife Service 3-Bat Species Status Assessment, https://doi.org/10.7944/P9B4RWEU
- Statistical assessment on determining local presence of rare bat species, https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.4142

Geothermal Energy

- Hot, wet and rare: modelling the occupancy dynamics of the narrowly distributed Dixie Valley toad, https://doi.org/10.1071/WR22029.
- A Bayesian multi-stage modelling framework to evaluate impacts of energy development on wildlife populations: an application to Greater Sage-Grouse. https://doi.org/10.1016/j.mex.2023.102023
- Median estimates of impact potential from geothermal energy production activities on greater sage-grouse populations in Nevada and California (2022), https://doi.org/10.5066/P9OLC725.
- Geothermal energy production adversely affects a sensitive indicator species within sagebrush ecosystems in western North America (2023) https://doi.org/10.1016/j.biocon.2022.109889

Offshore Wind

- Seabirds: Framework for assessing and mitigating the impacts of offshore wind energy development on marine birds https://doi.org/10.1016/j.biocon.2022.109795
- Modeling at-sea density of marine birds to support renewable energy planning on the Pacific outer continental shelf of the contiguous United States BOEM Report (boem.gov)
- North American Grid-Based Offshore Sampling Frames: U.S. Geological Survey data release, https://doi.org/10.5066/P9XBOCVV
- Structured Decision Making to Prioritize Regional Bird Monitoring Needs, https://doi.org/10.1287/inte.2022.1154
- Revising the marine range of the endangered black-capped petrel: Occurrence in the northern Gulf of Mexico and exposure to conservation threats, https://doi.org/10.3354/esr01143
- Joint spatiotemporal models to predict seabird densities at sea, https://doi.org/10.3389/fmars.2023.1078042

Oil and Gas

- Analysis of the United States documented unplugged orphaned oil and gas well dataset: USGS Data Report, https://doi.org/10.3133/dr1167.

Critical Minerals

- National map of focus areas for potential critical mineral resources in the United States. 2023 USGS Factsheet https://pubs.usgs.gov/fs/2023/3007/fs20233007.pdf

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Science to Inform Solar Energy Development & Conservation

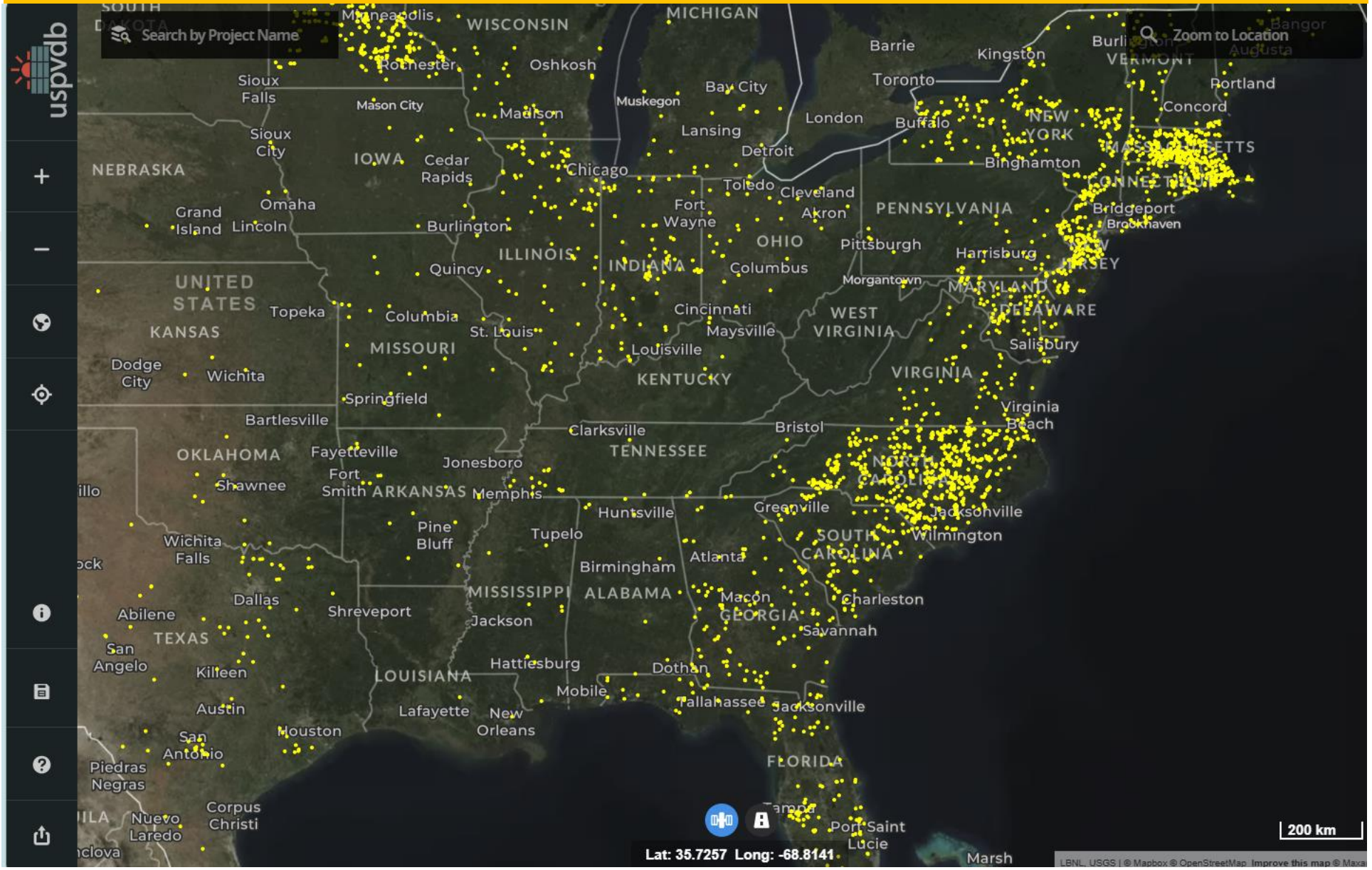
The U.S. Large-Scale Solar PV Database (USPVDB)

Version 3.0 Coming March 2025

The most detailed and comprehensive publicly available large-scale solar facility database

Comprises 4,185 large scale solar ground-mounted facilities with capacities >1 MW in operation across 47 states and Washington, D.C. through August 2023

The web viewer can be used to summarize solar facilities of a particular state, land type, and type (e.g. agrivoltaics)

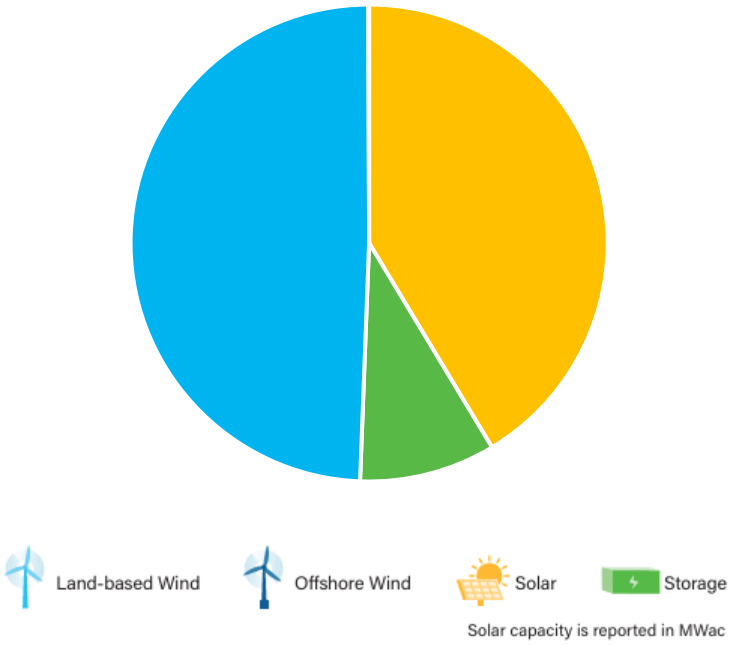


U.S. Clean Power Landscape

March 6, 2025

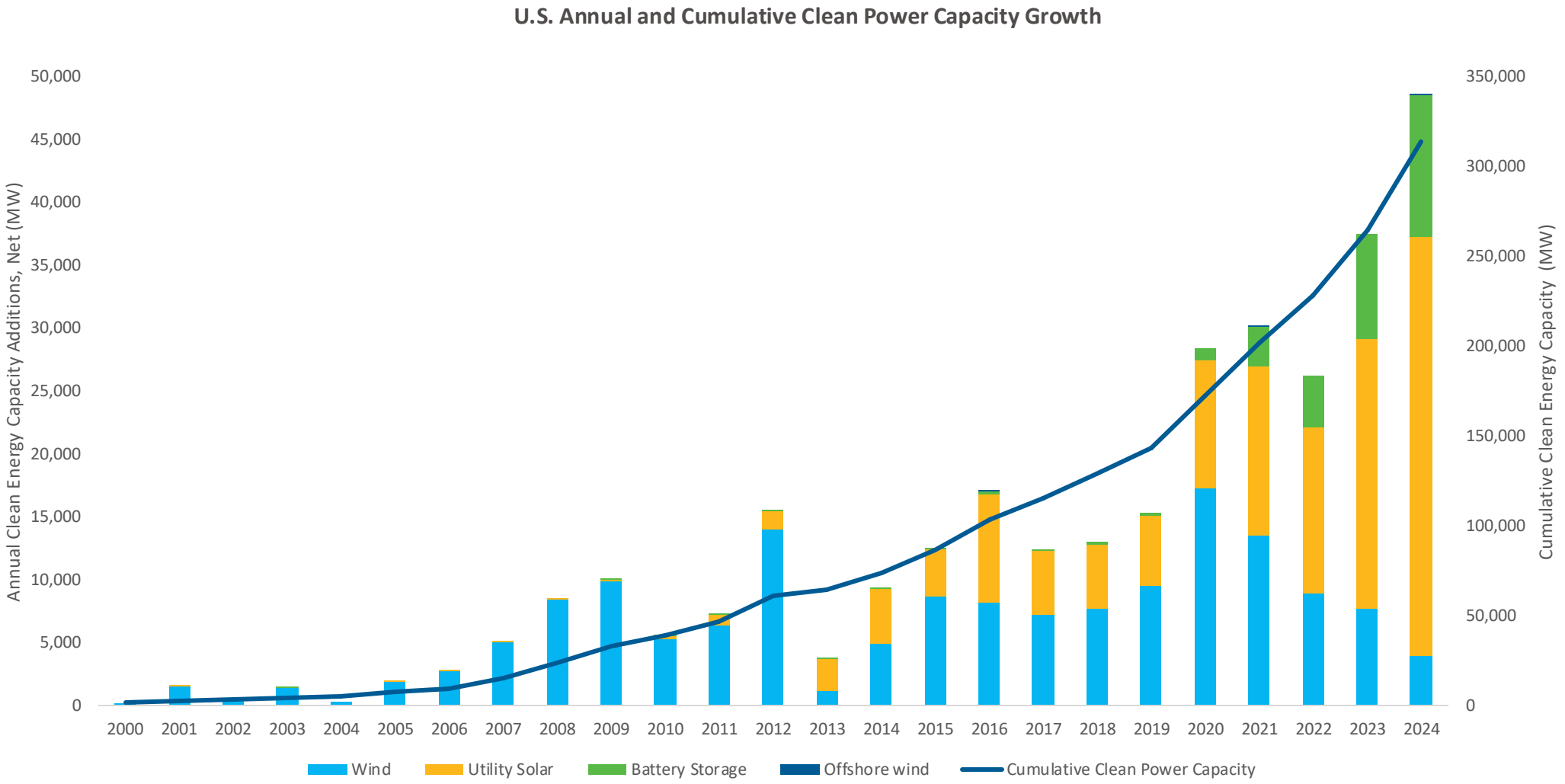
U.S. Clean Power Capacity in Operation

U.S. Clean Power Operational Capacity by Technology



Clean Power Growth Over Time

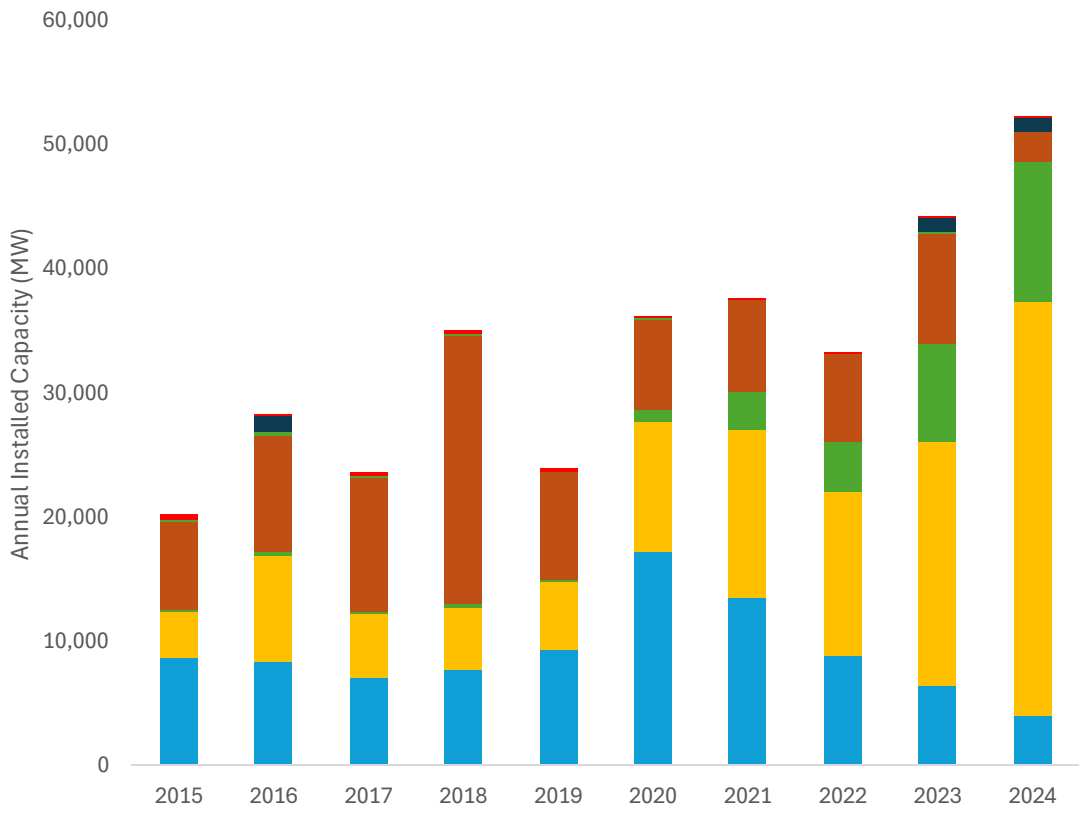
It took more than 40 years for the U.S. to install the first 200 GW of new clean power capacity, but just three years (2022-2024) to install the next 100 GW.



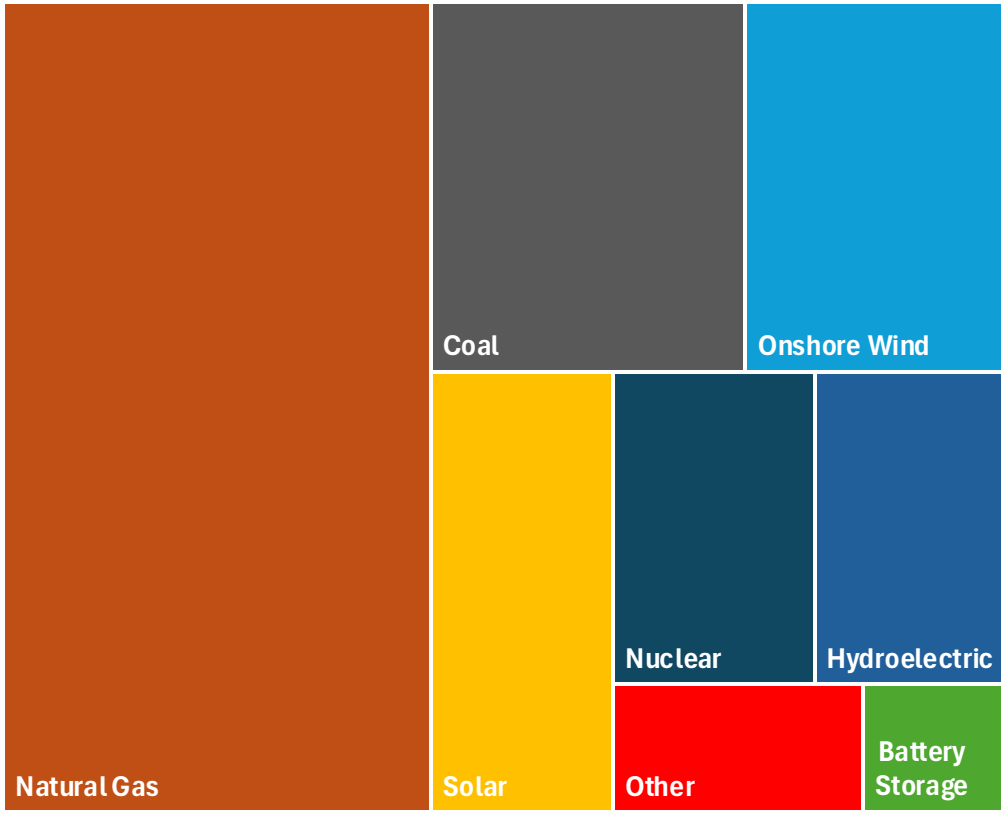
U.S. Generation Capacity in Operation

Utility-scale solar, wind, and storage has provided 75% of all new power capacity on average over the past five years and accounts for 24% of all installed capacity.

Annual Capacity Additions by Technology

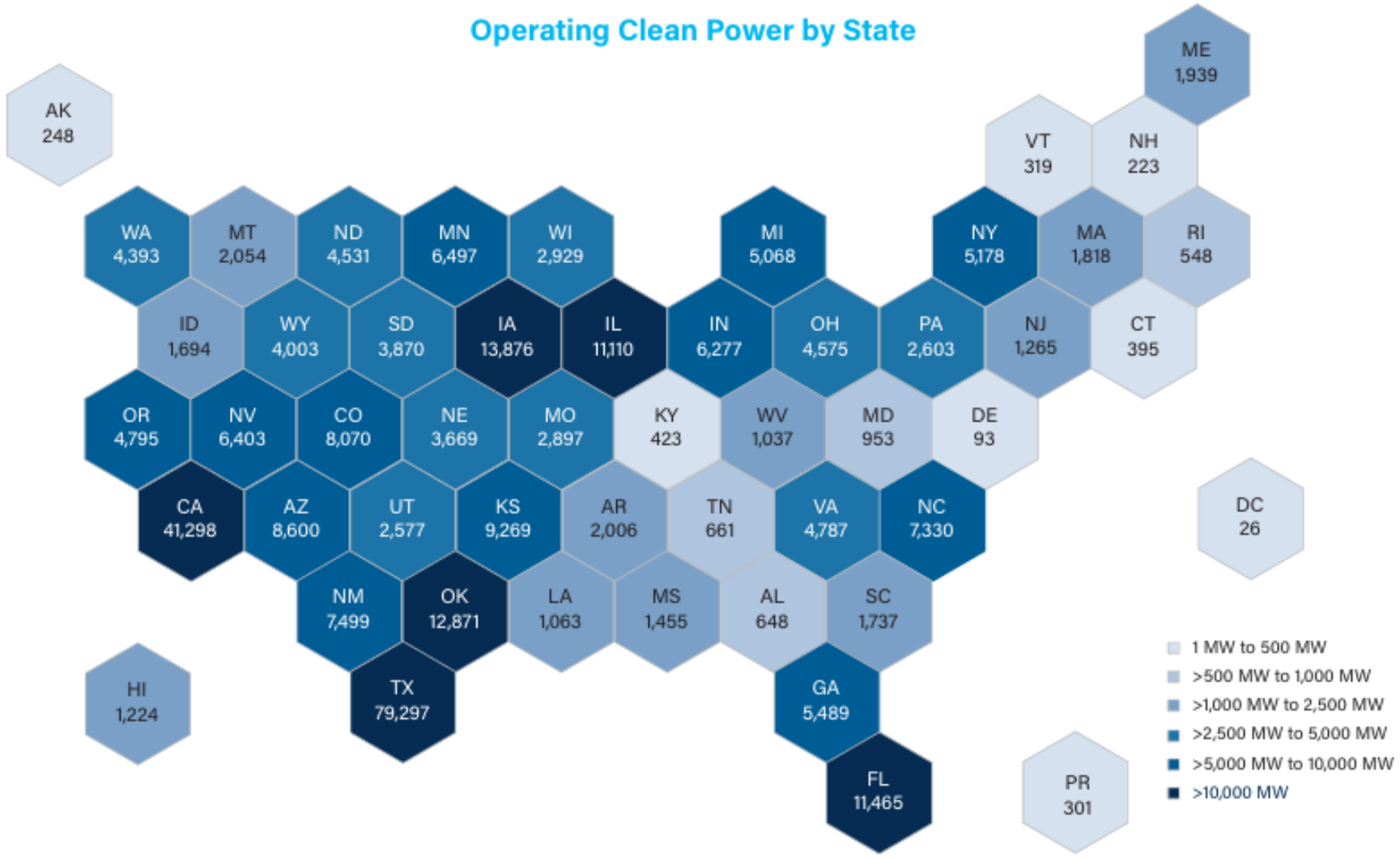


U.S. Operational Power Capacity by Technology



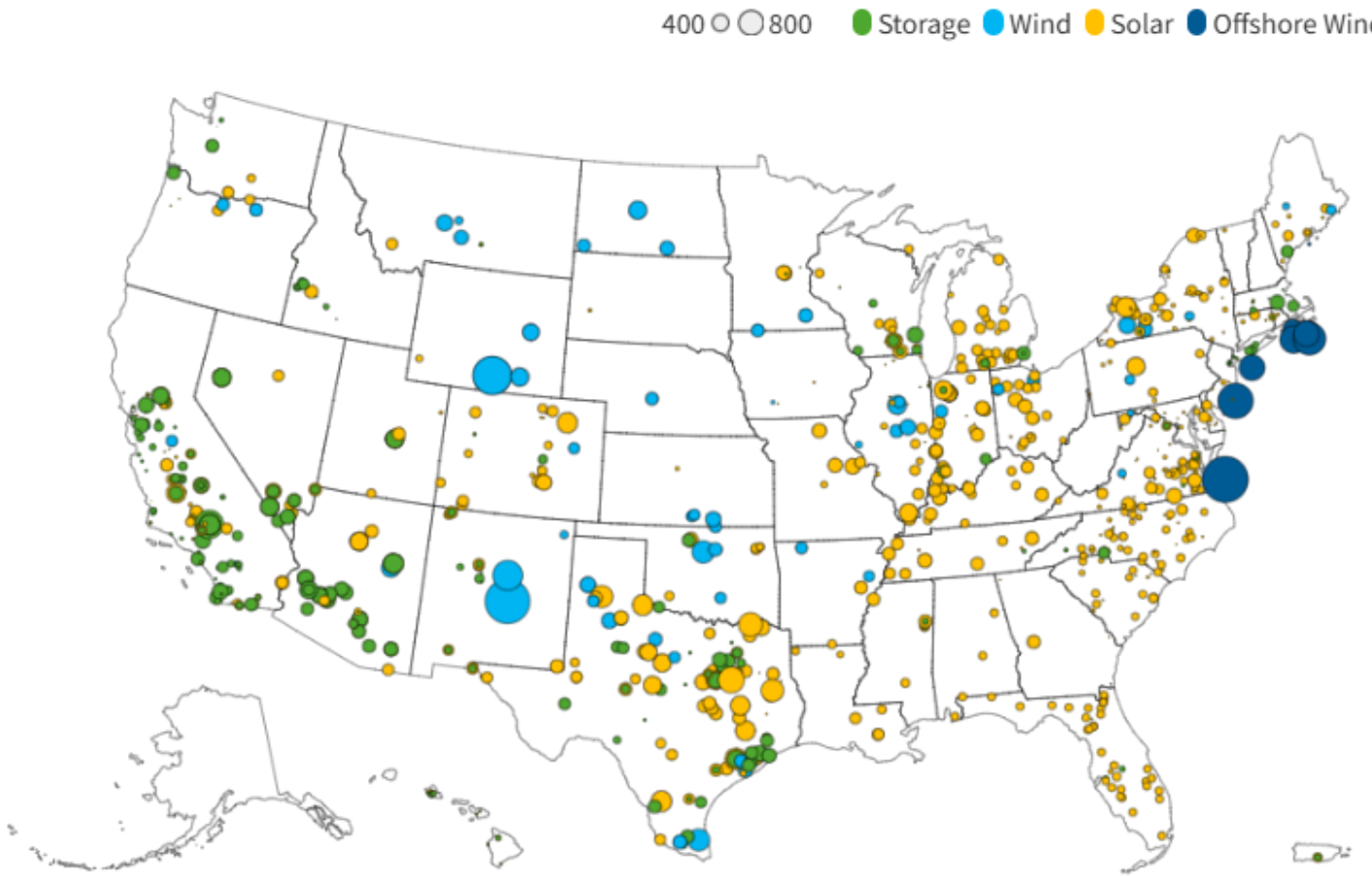
Source: ACP, EIA

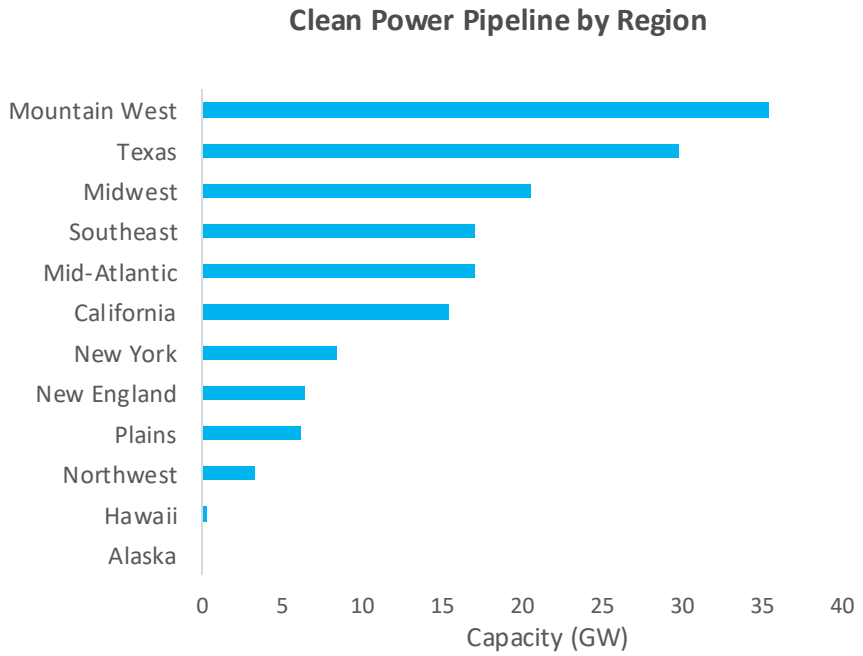
Geography of U.S. Clean Power



Geography of U.S. Clean Power Pipeline

The U.S. has 176 GW of utility-scale solar, wind, and storage in advanced development or under construction.





Clean Power Pipeline by Technology

Land-Based Wind

25,218 MW
as of Q4 2024
across **79 projects**

1% growth
year-over-year

15,929 MW under construction
9,289 MW in advanced development

Battery Storage

45,139 MW
as of Q4 2024
across **363 projects**

49% growth
year-over-year

17,549 MW under construction
27,590 MW in advanced development

Utility-Scale Solar

17,549 MW
as of Q4 2024
across **883 projects**

5% decrease
year-over-year

36,743 MW under construction
52,629 MW in advanced development

Offshore Wind

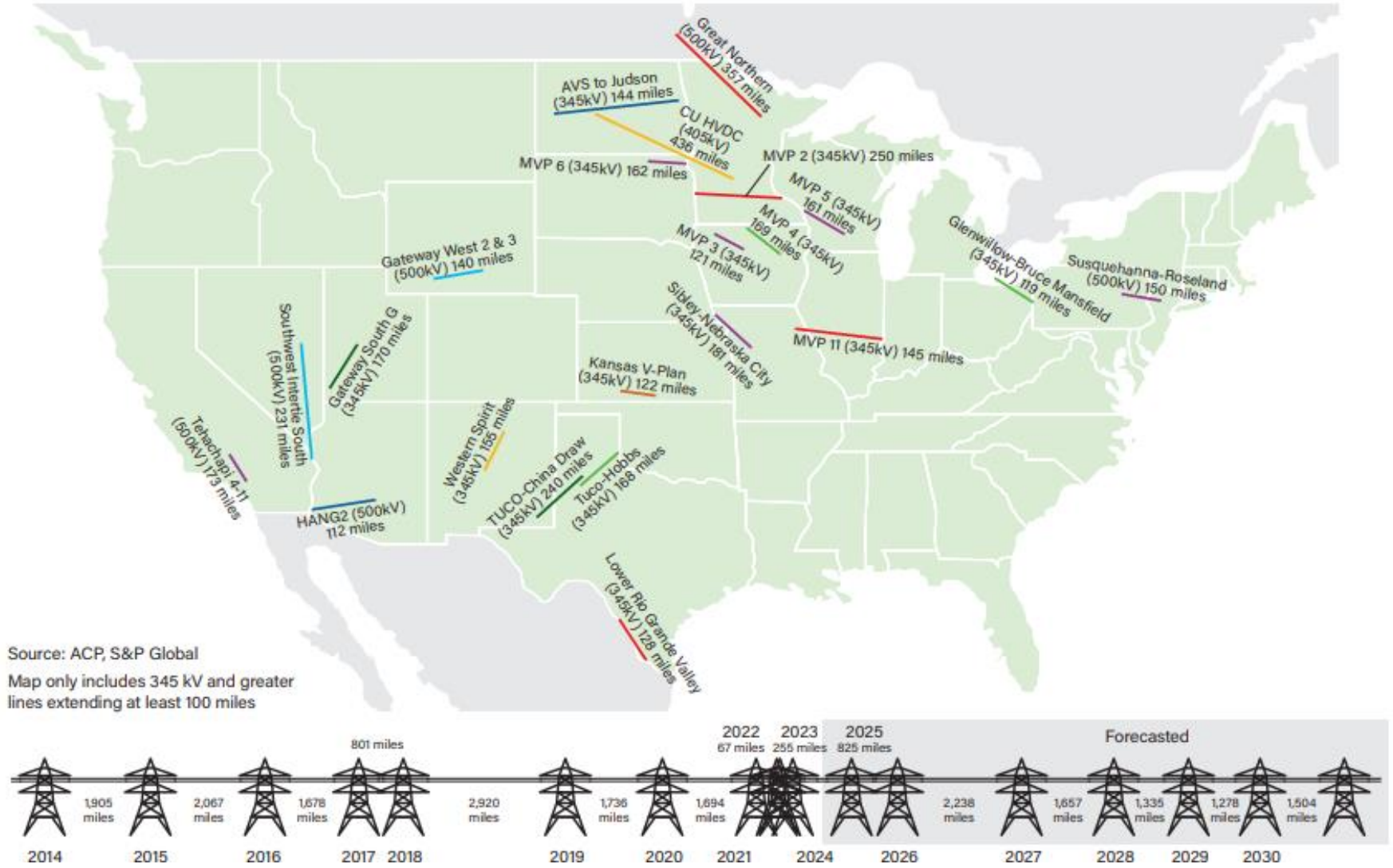
15,507 MW
as of Q4 2024
across **14 projects**

4% decrease
year-over-year

4,097 MW under construction
11,410 MW in advanced development

Transmission: Vital to Future Clean Power Buildout

High-Voltage Transmission Lines Built 2014-2023



ENERGY & WILDLIFE POLICY COMMITTEE
Chair: Clay Crowder (AZ)
Vice-Chair: Bob Sargent (GA)

March 12, 2025
3:30 pm – 5:30 pm

90th North American Wildlife and Natural Resources Conference
Louisville, KY
Room: See Whova App

Committee Charge: The energy and wildlife policy committee is focused on understanding and ameliorating the effects of energy development and generation in North America and its impacts on fish and wildlife resources and their landscape habitats at the state, province, territory, region, and international levels.

Agenda

3:30 pm Call to Order / Approval of Minutes from September 2024 Annual Meeting / Recap of Virtual Meeting
Clay Crowder, AZGF

Moved by Melissa Marinovich NE, Garry George Audubon Second, Approved
Virtual meeting recap federal updates;

3:35 KY Energy and Wildlife Spotlight
Kenya Stump, Executive Director, Office of Energy Policy Kentucky Energy and Environment Cabinet and Zach Couch, Executive Director, Kentucky Nature Preserves

- ***Key Points:***
  - *Introduction to the Office of Energy Policy within the Energy and Environment Cabinet.*
  - *Focus areas: energy affordability, security, planning, education, and emergency response.*
  - *Management of approximately $200 million in federal funding for energy projects.*
  - *Development and use of a solar site suitability assessment tool leveraging GIS data.*
  - *Highlighted projects:*
    - *50 MW solar project in Garrett County integrating regenerative agriculture.*
    - *Bright Nights project on a reclaimed mine site with TNC and Rivian partnership.*
    - *Natural gas pipeline projects with strong utility relationships.*
  - *Discussion of the KYBAT tool for environmental due diligence:*
    - *Interactive tool for assessing rare species and protected lands impacts.*
    - *Pricing structure: $120 per project run or subscription models for high-volume users.*

- *Future enhancements planned in collaboration with state energy offices.*

3:50 Bureau of Land Management Update
Brad Jost, BLM

- *Overview of BLM's management of 245 million acres of public lands and 700 million subsurface acres.*
- *There are a number of secretarial orders currently out and we are working to understand how they implement.*
- *Fiscal Year 2024 accomplishments:*
  - *Over 8 million acres of habitat inventoried.*
  - *Monitoring of over 77,000 species populations.*
  - *Application of 775,000 acres of habitat treatments.*
- *Focus Areas:*
  - *Aquatics: Conservation and restoration of water resources and habitats.*
  - *Threatened and Endangered Species: Proactive conservation and habitat improvement.*
  - *Wildlife Program: Coordination with state agencies, habitat connectivity, and data collection.*
- *Sagebrush Program and Greater Sage Grouse Planning:*
  - *Final EIS released for Colorado and Oregon.*
  - *Supplemental draft EIS in progress for remaining Western states.*
- *Oil and Gas Lease Sales:*
  - *Generated nearly $165 million for the American treasury in FY24.*
  - *Update on Western Solar Plan with Record of Decision signed on December 19, 2024.*

4:05 Transmission and Birds
Garry George, Audubon

- *Introduction to Audubon's 2050 commitment to stop bird loss "bend the bird curve".*
- *Transmission lines and bird collisions:*
  - *Less than 3% of all collision mortalities are from transmission lines.*
  - *High-risk species: cranes, pelicans, herons, egrets, shorebirds, falcons, and perching birds.*
  - *Bird-friendly solutions: UV lights on lines reduced Crane mortality by over 90%.*
- *Policy Advocacy:*
  - *Support for bird-friendly transmission designs.*
  - *Collaboration with federal agencies to expedite transmission permitting.*
  - *Case study on transmission line project from New Mexico to Arizona involving Pattern Energy.*
- *Recommendations for early consultation with wildlife agencies and state partners.*

4:20 Solar Site Assessment Framework Discussion
Clay Crowder, AZFG, Quintana Hayden, ACP, AI

- *Development of a national solar site assessment framework in collaboration with industry and states.*
- *Objectives:*
    - *Define industry best practices.*
    - *Establish standard processes for solar site assessment and development.*
    - *"A successful outcome for this framework would include a clear, science-based, widely applicable document that has buy-in from both SFWAs and solar developers, provides actionable practices, facilitates responsible solar development, and fosters long-term collaboration between energy and conservation sectors"*
- *Use Cases:*
    - *For developers: Guidebook for responsible wildlife consideration and working with states.*
    - *For states: Tool to evaluate project impacts and be a step down for collaborate on regional efforts.*
- *Progress:*
    - *Consensus on objectives, goals, and use cases.*
    - *Incorporation of stages of site assessment from the Comms Framework into the framework.*
    - *Terminology standardized to "species of interest."*
    - *Target completion by end of summer 2025 with ongoing stakeholder engagement.*

What does having the state perspective reflected in the framework mean to SFWA members?

- *Something we struggle with in MN is set backs so is that something that will be included in the document. We don't necessarily have the science to back up recommendations, and we can't do research necessarily.*
- *Arkansas – there are not a lot of official avenues for us to review projects, so we have thrown around the idea of a certification program to give us a voice in the conversation, and a document like this could be very helpful.*
- *Reclamation is important; there's concern that some of the sites, like in arid environments cannot effectively be restored.*
- *Lifecycle of the infrastructure*
- *NV – avoidance and minimization conversation is KEY*
- *Runoff management, redirection of runoff of streams and rivers*
- *MN: avoiding existing wetlands,; encourage the restoration potential. Water storage on the landscape are now under development.*

How do SFWA envision how this document would help inform work at a state or regional level?

- *NV: I would look towards APLIC standards which is national, but we all look at to see how it applies to a given project, it introduces some consistency and a starting point, might not be super specific to a certain state, but gets the ball rolling of what to think about to tailor to individual projects*
- *MI: could be an umbrella and then categories of things to look at. A starting point.*
- *OR: we have set this up to be high level so there can be step downs for other things. Other convos happening to think about the regional side of things (e.g. WAFWA energy subgroup)*
- *From Industry, we want these efforts to be complimentary, a mutual goal is that umbrella approach*

- *OH: the convo that has been there has brought a lot of understanding from the states to the industry and vice versa which has helped to better shape the document.*
- *MN: some case studies could be helpful, success stories of mitigation at solar facilities.*

4:45 State and Provincial Roundtable

One representative per state agency highlights a couple of legislative and policy initiatives, issues, or success stories. Non-state participants, please introduce self.

MI: end of 2024, had renewable siting law that came into effect that took away local rule, all counties were doing it their own way and mostly denying, so now it gives all authority at state level from PUC. Non-brownfield sites require permanent groundcover that must meet or exceed standards for pollinator habitat; applicant has to consider environmental impacts including wildlife corridors and standard T&E. we like the law. Developing Michigan BMPs to help developers site projects, currently in review. MI DNR is leasing state lands since 2020, headwinds encountered that paused solar consideration on state lands until we develop a more transparent process.

OR: legislative body is trying to take away energy siting from the state. General push to take project out of state siting and put into county where permitting is cheaper and faster. We want ODFW to have a role to discuss mitigation. Push to take any state authority away if its on federal permit arguing that it is duplicative- this is working through legislative body; seeing conflict as most projects want to site on Ag but seeing a push back from Ag community, trying to identify least conflict sites that mitigate Ag and critical wildlife areas. Statewide solar guidelines released last year and with the Comms framework, we are seeing much more communication with industry. We have 5GW in queue, none of which meet state solar goals, Most of our solar sites are on arid sites and locals are concerned about fire, instead of just mowing, push to include domestic sheep which are adjacent to bighorn sheep habitat, so we need to deal with that.

GA: lots of legislation one that includes requiring reclamation of land after leases are up; we have solar guidelines, wind is a recent RFP from GA power, we did see those projects at a very early stage which was different. Interest in expansion of utility ROW and proposed buildout is extensive, GA Transmission Corps has big plans and we have done DOT programmatic agreement for tree removal and considering that with transmission. Working on possible wind energy projects along the coast and trying to get more information on migratory species that might pass through those proposed areas. Working with wind guidance from AFWA bat and wind group.

MN: this session is quiet, divided legislature, last year we had renewable clean energy standard carbon free by 2032, which drove a lot of development; environmental review projects only have a 30-day review period so while early coordination looks like, there is a clock. Worked for 30 years of PCMM, and 1.6M bats over 30 years was alarming and we weren't doing a ton. 1.6M acres of potential wind easements in the state and if there is a wind easement, we can't do conservation … "Conservation in the Dark". We are trying to address this and build a policy and mitigation, no money is going to bird or bat conservation

NV: in leg session now and have several energy related bills, renewables, transmission, focused on funding projects and tax abatements, we are 86% public land and we are getting hammered by all kinds of development. Our rural areas are pushing back and we are struggling between fed/state/local authority with no rules in place. We are trying to build up our coordination between our counties and local governments.

OH: solar guidance published for 3 years, so there are some projects over the next few years where we can see habitat and restoration implementation and research done—already coordinating the research.

NE: not a lot going on. Leg session is in session but not a lot about energy. Carbon capture pipeline interest, commercial solar is prospecting more, commercial wind is quiet, a big transmission line is in NEPA but we haven't seen a draft EIS

WY: guidelines posted on website, they are proactive focused on establishing relationships; large solar projects go through siting council and we get good input but if its on private lands it is more tough; golden eagle analysis: detected 20k, 1.8% / year decline in GOEA; one bill to clarify sage grouse mitigation in service area so landowners collectively mitigate for projects; bill proposed for mitigation for any big solar but that failed. FERC project that proposes a pump storage facility, we feel there are impacts that we are not okay with, but conversations are happening- it is proposed to be 900MW capacity $2.5-3B potential project, a lot of local govt are opposed

UT: one bill that passed this session adds a tax to wind and solar and nuclear waste and will ***provide $10M to native species conservation and ESA prevention****, supported by oil and gas who already get that tax so it levels the playing field.*

AZ: Failed bill- AZFG gets permit, concurrence within 6 and 25 miles, but this got attention of reps, AZFG had concerns because reviewing a project at initial stages is tough; $100B project for computer chip manufacturing; our commission is interested in department's role what we provide for minimizing, offsetting or BMP and want us to report every six months our successes of relationships with industry

AR: no triggers that bring agency into wind review process, duck hunters got a bill introduced, they asked for our input on it and we want a better bill that includes state level review; it failed in committee; a lot of lithium development in the state.

TX: some legislation was introduced that gives TPWD a chance to review renewable projects; Permian basin transmission project apparently it will be HUGE;

USGS Hydrogen map – MI has a lot of hydrogen identified, but not yet dealing with anything else.

Steve Holmer- ABC – we are looking at energy buildout and asking congress to support tax breaks for distributed solar, as well as power line retrofits tax breaks to help celebrate that.

REWI – we have a proposal into DOE with AFWA and ACP to develop trainings and identify regional research priorities.

5:30 Wrap-up and Adjourn

We should consider how this committee continues to share information, what that looks like for future. How can we best serve this committee, do we need to identify and create new work groups, etc. to meet the needs of what the committee

Energy and Wildlife Conservation Nexus

KENTUCKY ENERGY AND ENVIRONMENT CABINET

About Us

Mission: To support the utilization of all of Kentucky's energy resources for the betterment of the Commonwealth while protecting and improving our environment.

Program Focus Areas:

- Energy Affordability
- Energy Education
- Energy Security

https://eec.ky.gov/Energy/Pages/default.aspx

Funding Impact Dashboard
https://experience.arcgis.com/experience/cf5c38b388da4c40a9cc8a1994fc8efa/page/OEP-Impact-Dashboard-/

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Topics for Today

Site Suitability Tools

Example Projects

KONP and KOEP collaboration on KY BAT

What comes next?

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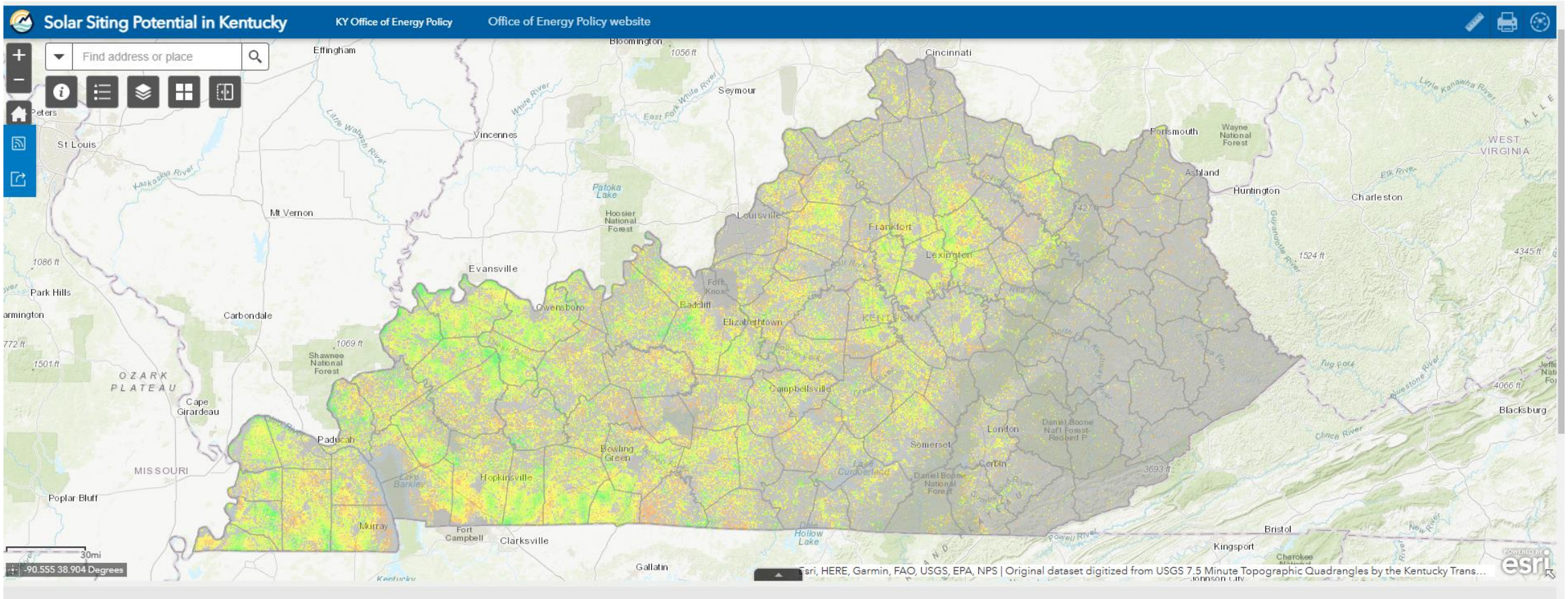

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GEM About the Project News Launch GEM

Geospatial Energy Mapper (GEM)

A comprehensive online mapping tool that helps to identify areas that are suitable for low- or no-carbon power generation and other energy-related projects

Launch GEM

GEM provides mapping data and analysis tools for planning energy infrastructure in a geographic context

GEM is an interactive web-based decision support system that allows users to locate areas with high suitability for clean power generation and potential energy transmission corridors in the United States. Browse and download data layers, or create a custom suitability model to identify areas for energy development.

Watch an intro video

Subscribe

Subscribe to the GEM mailing list for webinar invitations, newsletters, and announcements

Enter email Subscribe

Videos

See our **YouTube Channel** for an archive of GEM webinars and training videos.

News

Updated Mapping Layers 2025-02-06

These mapping layers were updated:Tight Oil/Shale Gas PlayNatural Gas Processing PlantNortheast Petroleum Reserve SitesPipeline - Crude OilPipeline - H ...

More

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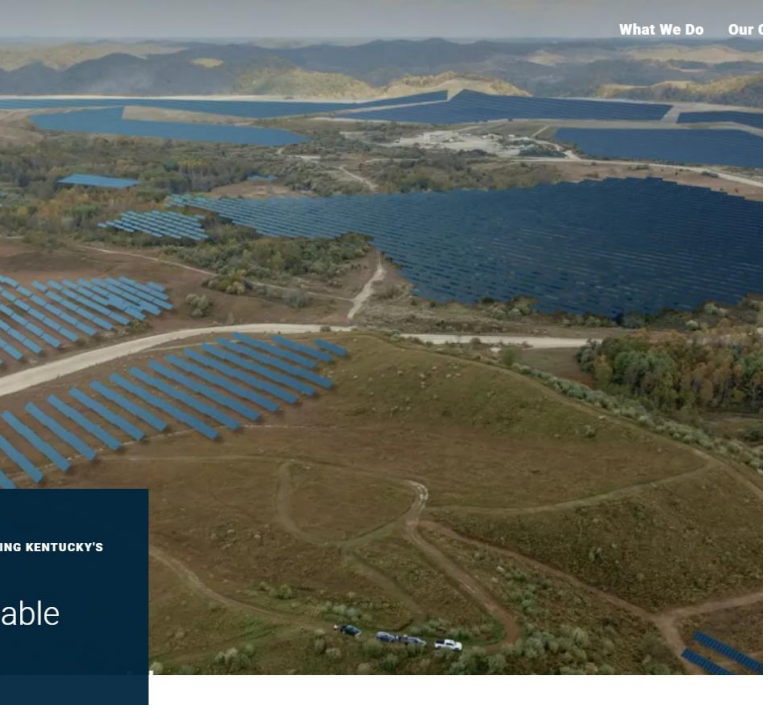


https://www.columbiagasky.com/services/work-in-your-neighborhood/vegetation-management

Examples

Duties of the Office of Kentucky Nature Preserves

To secure a system of State Nature Preserves for present and future generations.
KRS 146.440

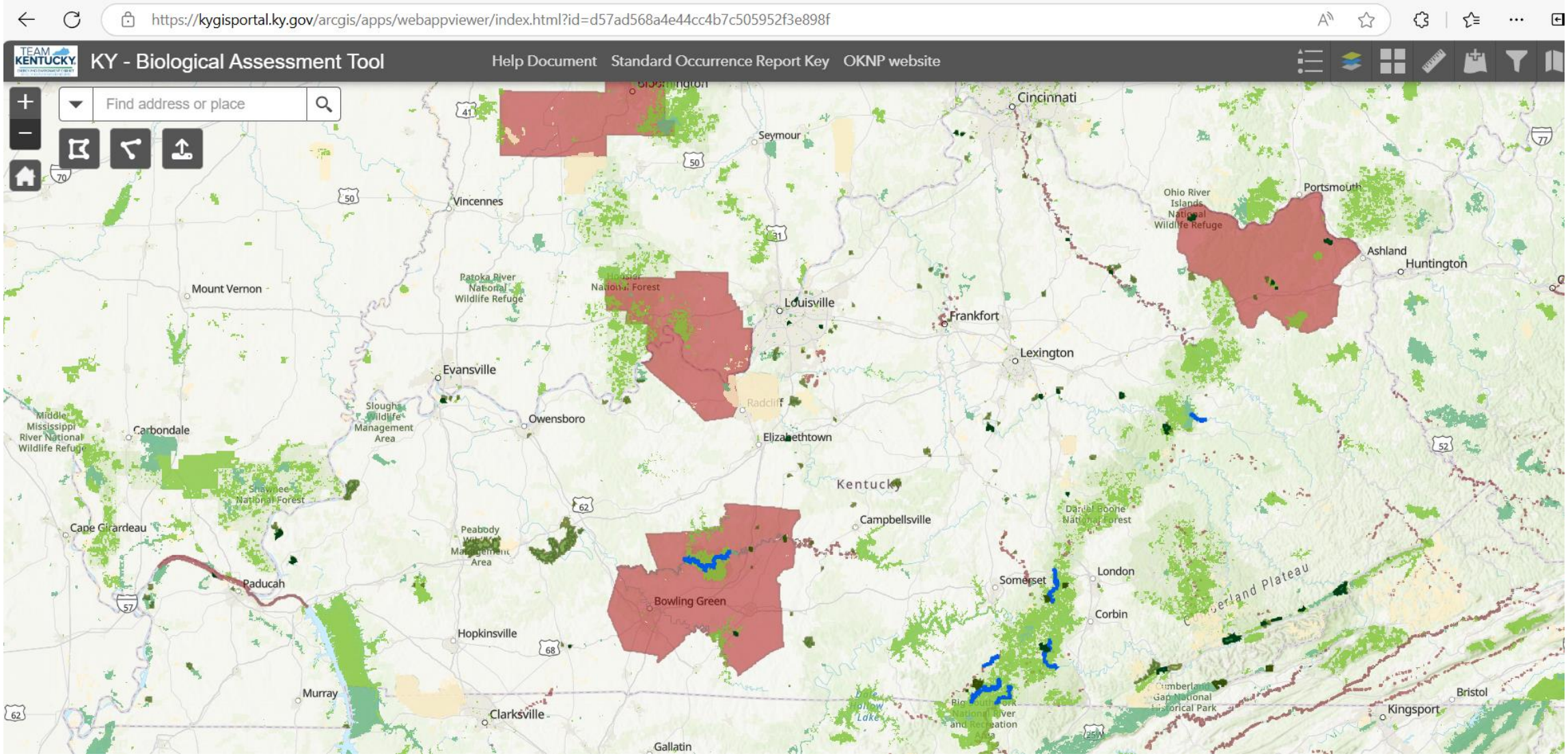
To promote scientific and spiritual values of an unspoiled natural environment.
KRS 146.410

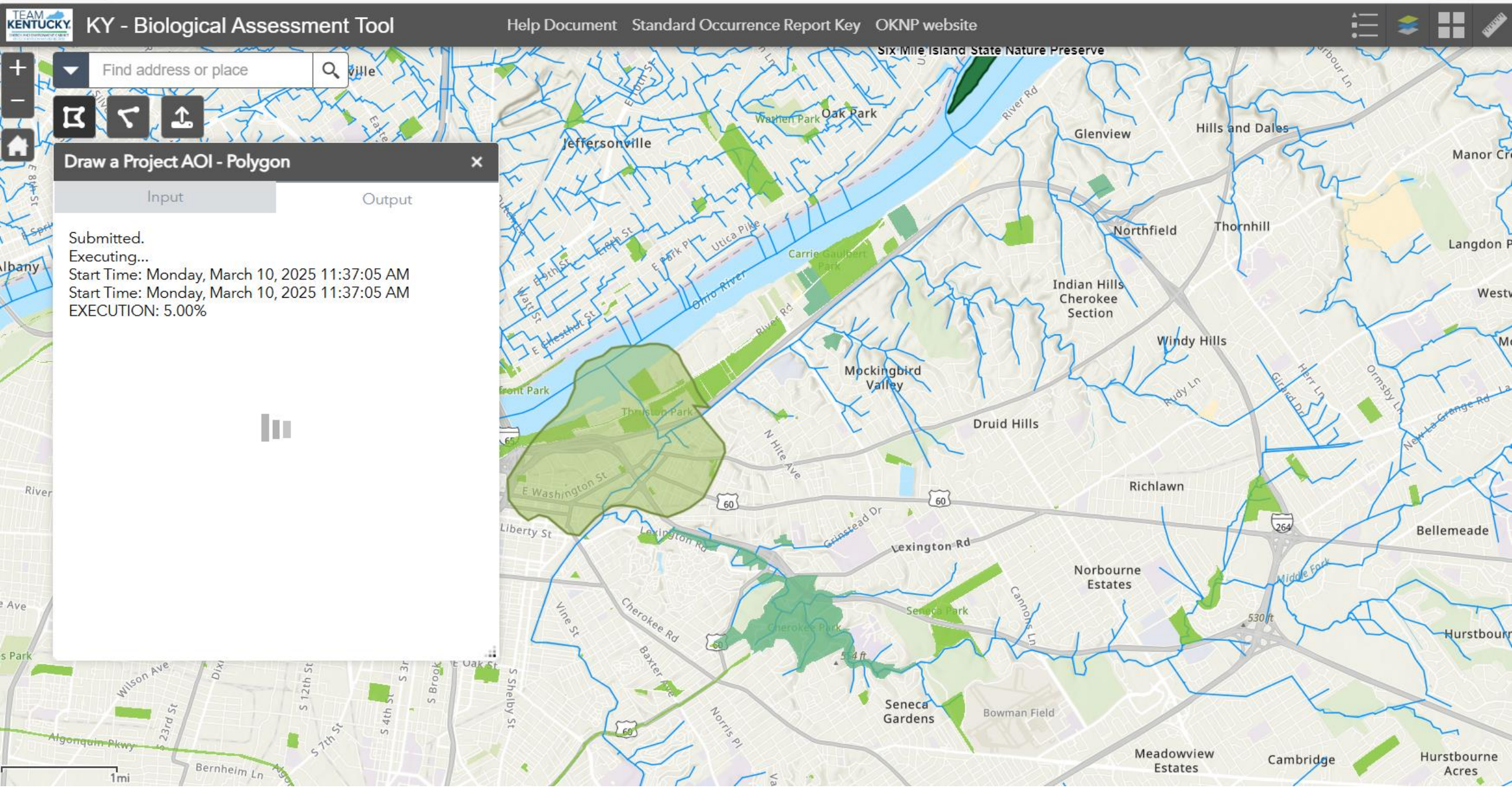
To recognize, conserve, and restore rare and endangered plants.
KRS 146.600

To provide a clearinghouse of information on the environment, plants, and animals.
KRS 146.485

To conserve Kentucky's Wild Rivers System for ecological and recreational purposes.
KRS 146.200-360

To administrate the Kentucky Heritage Land Conservation Fund's natural areas land acquisition and management program. KRS 146.550-570


https://kygisportal.ky.gov/arcgis/apps/webappviewer/index.html?id=d57ad568a4e44cc4b7c505952f3e898f
KY - Biological Assessment Tool
Help Document
Standard Occurrence Report Key
OKNP website
Find address or place
Cincinnati
Seymour
Vincennes
Mount Vernon
Patoka River National Wildlife Refuge
Louisville
Frankfort
Lexington
Ohio River Islands National Wildlife Refuge
Portsmouth
Ashland
Huntington
Evansville
Owensboro
Radcliff
Elizabethtown
Middle Mississippi River National Wildlife Refuge
Carbondale
Sloughs Wildlife Management Area
Kentucky
Shawnee National Forest
Cape Girardeau
Peabody Wildlife Management Area
Campbellsville
Daniel Boone National Forest
Paducah
Bowling Green
Somerset
London
Corbin
Cumberland Plateau
Hopkinsville
Murray
Clarksville
Gallatin
Kingsport
Bristol


KY - Biological Assessment Tool
Help Document
Standard Occurrence Report Key
OKNP website
Find address or place
Draw a Project AOI - Polygon
Input
Output
Submitted.
Executing...
Start Time: Monday, March 10, 2025 11:37:05 AM
Start Time: Monday, March 10, 2025 11:37:05 AM
EXECUTION: 5.00%
Six Mile Island State Nature Preserve
Jeffersonville
Oak Park
Glenview
Hills and Dales
Northfield
Thornhill
Indian Hills Cherokee Section
Windy Hills
Mockingbird Valley
Druid Hills
Richlawn
Bellemeade
Norbourne Estates
Seneca Gardens
Bowman Field
Meadowview Estates
Cambridge
Hurstbourne Acres
Ohio River
Lexington Rd
Cherokee Rd
E Washington St
Liberty St
Utica Pike
River Rd
N Hite Ave
Grinstead Dr
Baxter Ave
Norris Pl
Cannons Ln
Ormsby Ln
Rudy Ln
Wilson Ave
Algonquin Pkwy
Bernheim Ln
1mi

Andy Beshear
Governor

Energy and Environment Cabinet
Office of Kentucky Nature Preserves
300 Sower Boulevard
Frankfort, Kentucky 40601
Telephone: 502-782-7828
EEC.KYBAT@ky.gov

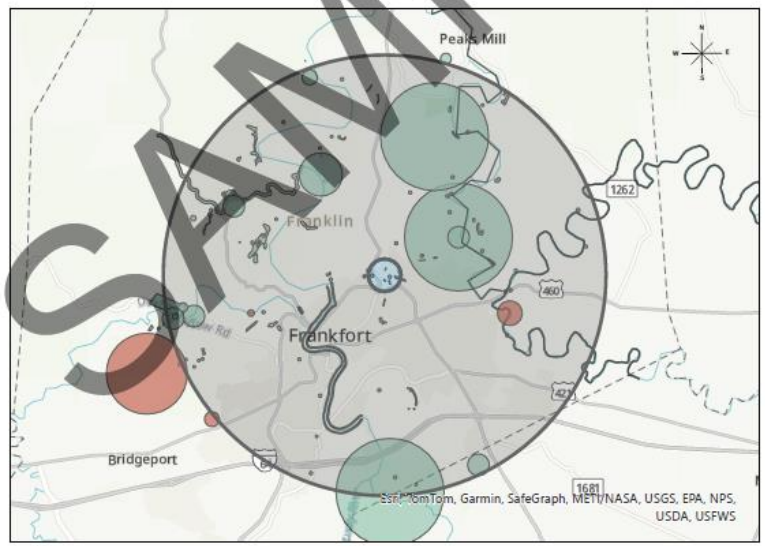
Rebecca W. Goodman
Secretary

Sunni Carr
Executive Director

Requested on Tuesday, January 30, 2024 by *Alexis R. Schoenlaub, OKNP*

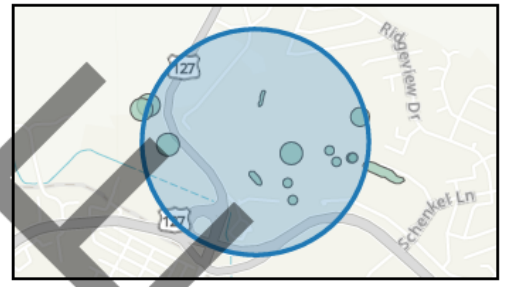
Re: Kentucky Biological Assessment Data Request 240130A01
OKNP - TEST
Other, 6 mile buffer.
FRANKLIN County, Kentucky

This letter is in response to your data request for the project referenced above. We have reviewed our Natural Heritage Program Database to determine if any of the endangered, threatened, or special concern plants, animals, features or exemplary natural communities monitored by the Office of Kentucky Nature Preserves are noted within your submitted project area.



A.2. Project Area – Occurrence Habitat and Location

The following table provides supplemental occurrence information found within your project footprint (if any). You can find more information about global and state rank status definitions on our Standard Occurrence Report Key . Please note that certain sensitive occurrences found within the buffer area may be listed in this table but are not represented on the map. Please contact the appropriate source as outlined in the "Directions" column should you have further questions related to sensitive occurrences found within the



Botanical
Ecological
Zoological

Map Credits: Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

EOID	Scientific Name	Habitat	Location
7884	*Dryobius sexnotatus*	*Appears to be dependent on climax hardwood forest habitat, where it pr incipally lives on sugar maple and, to a lesser extent, beech and elm (Perry et al. 1974, Schweitzer 1989). Mid June to mid July is when adu lts are typically found (Mike Bratton, pers c*	*FRANKFORT KY*
25207	*Myotis grisescens*	*Primarily use caves throughout the year, although they move from one c ave to another seasonally. Males and young of the year use different c aves in summer than females. Smaller colonies also occasionally roost under bridge structures.*	*Sensitive Element - Contact KDFWR at kdfwr.kfwis@ky.gov*
7953	*Lithospermum parviflorum*	*Dry calcareous rocky or gravelly prairies, banks, glades. dry hills, w oods, fields.*	*Franklin County.*
4502	*Elymus svensonii*	*Limestone bluffs with shallow rocky soils, especially on rocky slopes and ledges; often found along stream and river corridors. *	*North of Frankfort, along Penitentiary Branch (016A, 016B) a*
14227	*Physaria globosa*	*Calcareous rocks and barrens, wooded cliff edges.*	*Cove Spring Park, on Blackberry Ridge 0.3 mi W of Schenkel L*
23979	*Trifolium kentuckiense*	*Limestone based soils.*	*Cove Spring Park, on Blackberry Ridge 0.3 mi W of Schenkel L*
16953	*Lonicera reticulata*	*Rocky woods and banks.*	*Cove Spring Park: just north (upper slopes) of Spring Spur t*
23288	*Melanthium woodii*	*Rich dry or mesic woods.*	*Franklin County*
24043	*Phlox amplifolia*		*Cove Spring Park, wooded slopes along Penitentiary Branch (0*
24441	*Clinopodium glabellum*		*Cove Springs Park in Frankfort, KY, on slopes north of Penti*
9765	*Borodinia perstellata*	*Rocky, wooded slopes on blackish clay loams over limestone or acid lim estone cobble.*	*NE of Frankfort,Cove Spring Nature Preserve, on slopes above*

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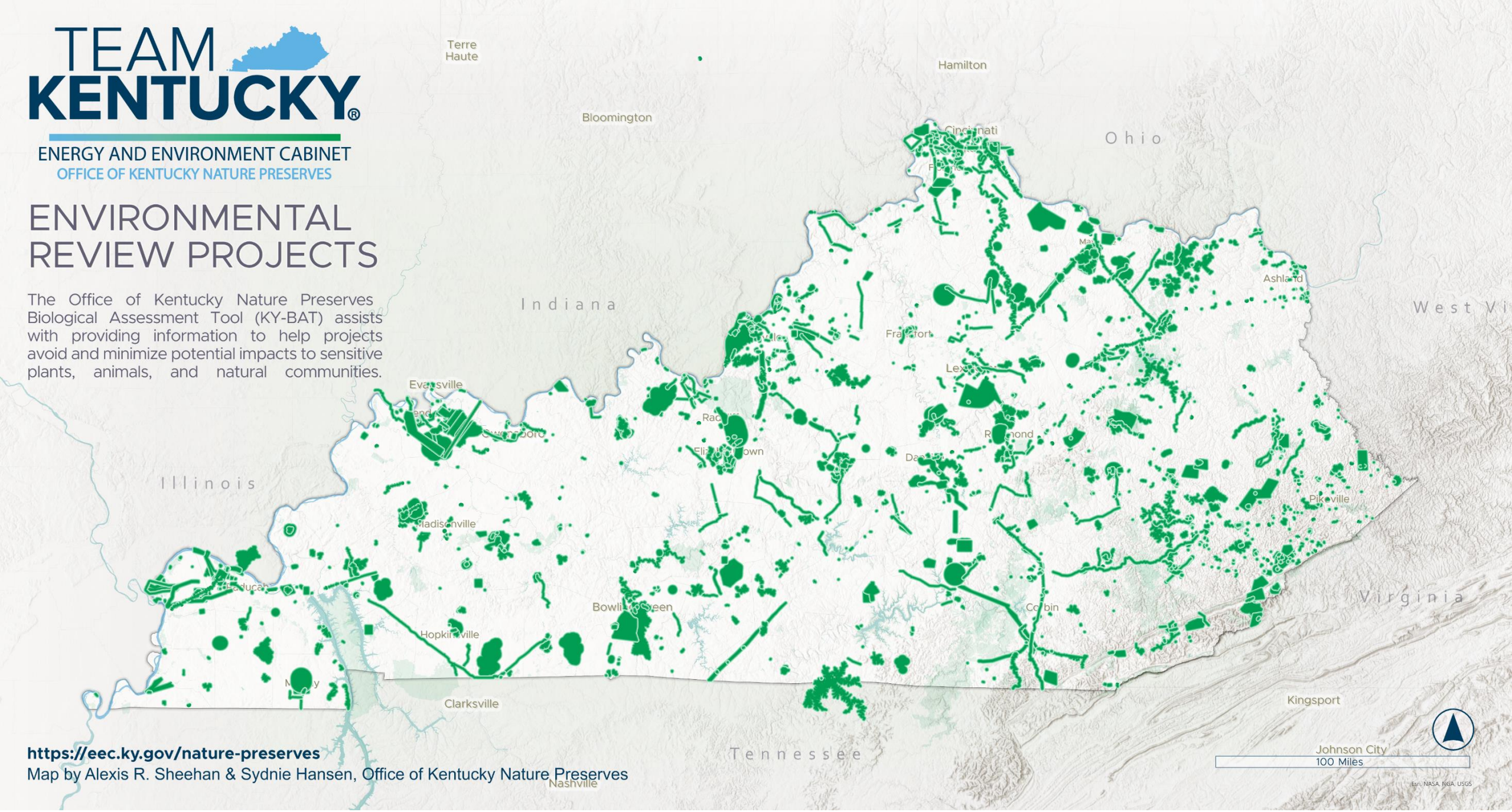
OFFICE OF KENTUCKY NATURE PRESERVES

ENVIRONMENTAL REVIEW PROJECTS

The Office of Kentucky Nature Preserves Biological Assessment Tool (KY-BAT) assists with providing information to help projects avoid and minimize potential impacts to sensitive plants, animals, and natural communities.



https://eec.ky.gov/nature-preserves

Map by Alexis R. Sheehan & Sydnie Hansen, Office of Kentucky Nature Preserves

Review Projects - All

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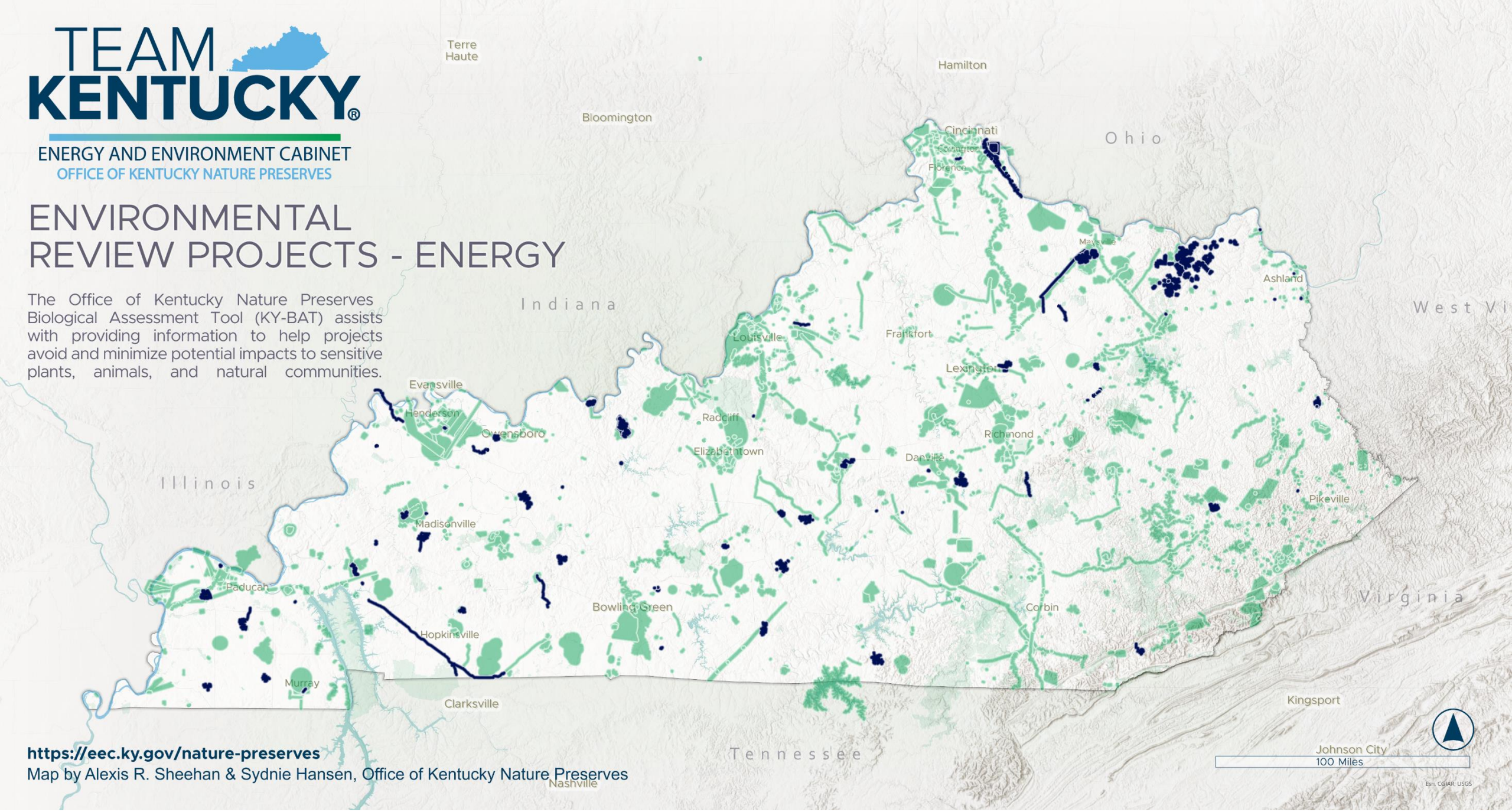
OFFICE OF KENTUCKY NATURE PRESERVES

ENVIRONMENTAL REVIEW PROJECTS - ENERGY

The Office of Kentucky Nature Preserves Biological Assessment Tool (KY-BAT) assists with providing information to help projects avoid and minimize potential impacts to sensitive plants, animals, and natural communities.

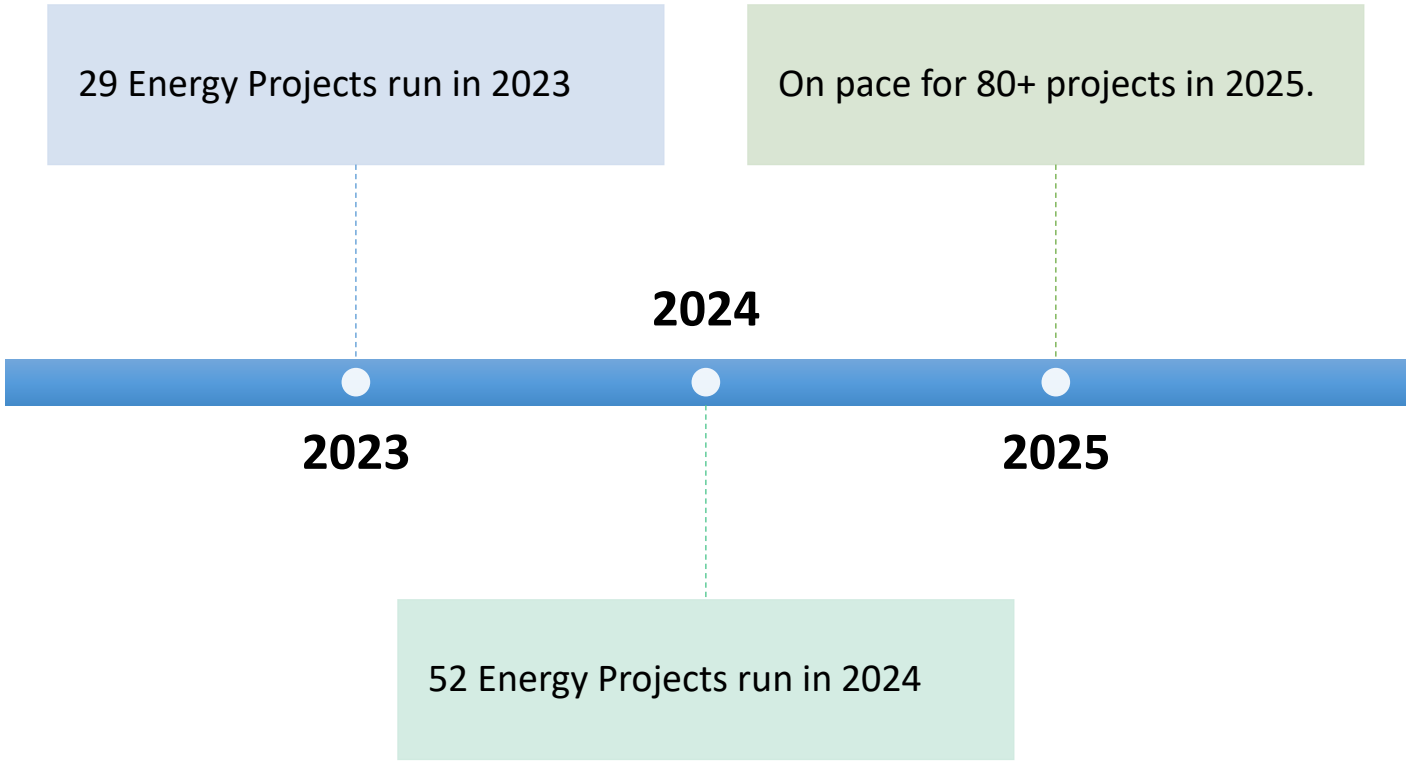


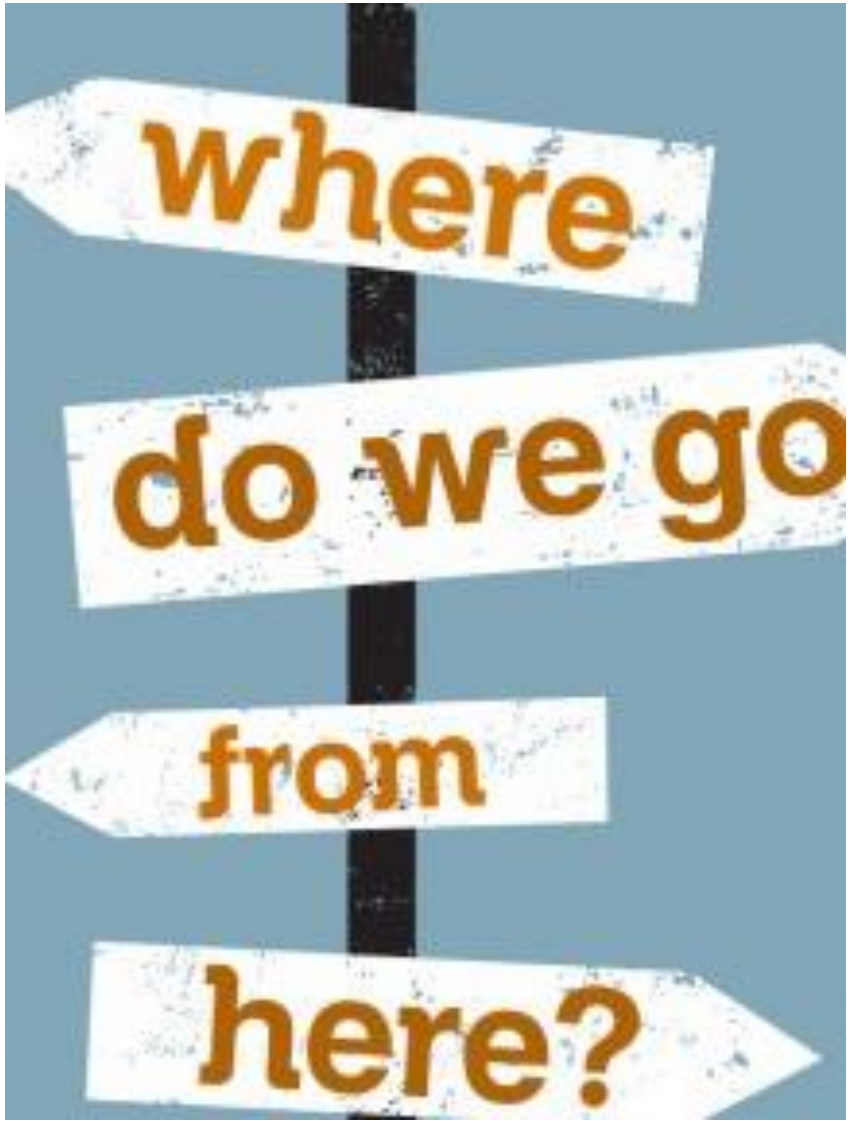
https://eec.ky.gov/nature-preserves

Map by Alexis R. Sheehan & Sydnie Hansen, Office of Kentucky Nature Preserves

Review Projects - Energy

Energy Project Engagement with KY-BAT





Collaborations with utilities, government agencies, and academic institutions on best practices and data collection specific to Kentucky's energy infrastructure.

Work with state energy offices on partnership projects and potential funding

Community engagement around energy infrastructure and dual benefit projects for the community and for wildlife conservation

Redesign KY-BAT to incorporated more beneficial datasets and increase user-friendliness of reports.

More social media awareness on successes

Contacts

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Zack Couch

Zack.couch@ky.gov

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ENERGY AND ENVIRONMENT CABINET

U.S. Department of the Interior
Bureau of Land Management

U.S. Bureau of Land Management Updates

AFWA Energy and Wildlife Policy Committee – 2025 North American Wildlife and Natural Resources Conference

BLM Priorities (2nd Trump Administration)

SO 3417: Addressing the National Energy Emergency

SO 3418: Unleashing American Energy

SO 3419: Delivering Emergency Price Relief for American Families and Defeating the Cost-of-Living Crisis

SO 3421: Achieving Prosperity through Deregulation

SO 3322: Unleashing Alaska's Extraordinary Resource Potential

EO: Immediate Expansion of American Timber Production

BLM Priorities (1st Trump Administration)

SO 3347: Conservation Stewardship and Outdoor Recreation

SO 3353: Sage Grouse Conservation and Cooperation with Western States

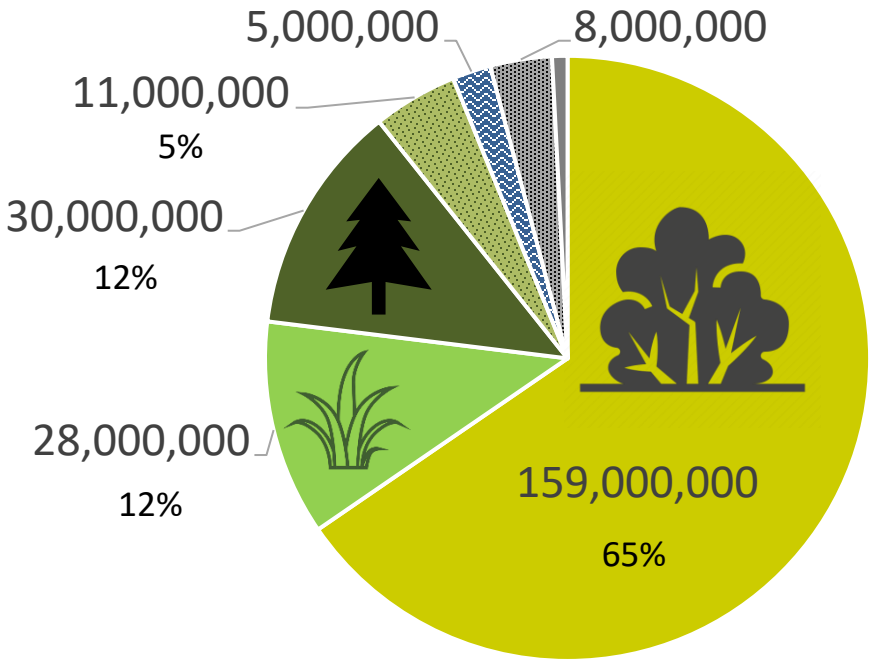
SO 3356: Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories

SO 3362: Improving Habitat Quality in Western Big-Game Winter Range and Migration Corridors

SO 3366: Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior

SO 3374: Implementation of the John D. Dingell, Jr. Conservation, Management, and Recreation Act

Habitat Types on BLM-managed Lands



Annual Wildlife, T&E Species, & Aquatics Accomplishments

Inventoried:

>8,200,000 acres of habitat

>3,600 miles streams/rivers

Monitored:

>77,700 species populations

>8,250,000 acres of habitat

>4,600 miles streams/rivers

Applied Habitat Treatments to:

>775,000 acres of habitat

>300 miles streams/rivers

Maintained:

>2,400 existing projects

Developed:

60 T&E species recovery plans

Aquatic Resources Program

- **Focuses on conserving and restoring water resources, riparian and wetlands, and aquatic habitats and the species that depend upon them.**

- **Emphasis Areas**
  - Protect, restore, and connect aquatic resources
  - Ensure water availability for multiple use and sustained yield
  - Prevent and control aquatic invasive species
  - Foster a watershed approach to improve water quality and quantity

T&E Species Program

- 489 Federally-listed Species, 16 Federal Candidate Species
- 2,800+ BLM Sensitive Species
- *Emphasis Areas*
  - Proactive, partner-focused conservation (ESA section 7(a)(1))
    - Implement Manual Section 6840 (Special Status Species) - proactive conservation.
      - Assisting with delisting T&E species and precluding the need to list BLM sensitive species.
      - Help streamline 7(a)(2) consultations.
  - Prioritize efficiencies in regulatory processes.
  - Identify priority species and geographic areas to increase success.
  - Prioritize funding for on-the-ground conservation.
  - Increase focus on sensitive pollinators and bats.



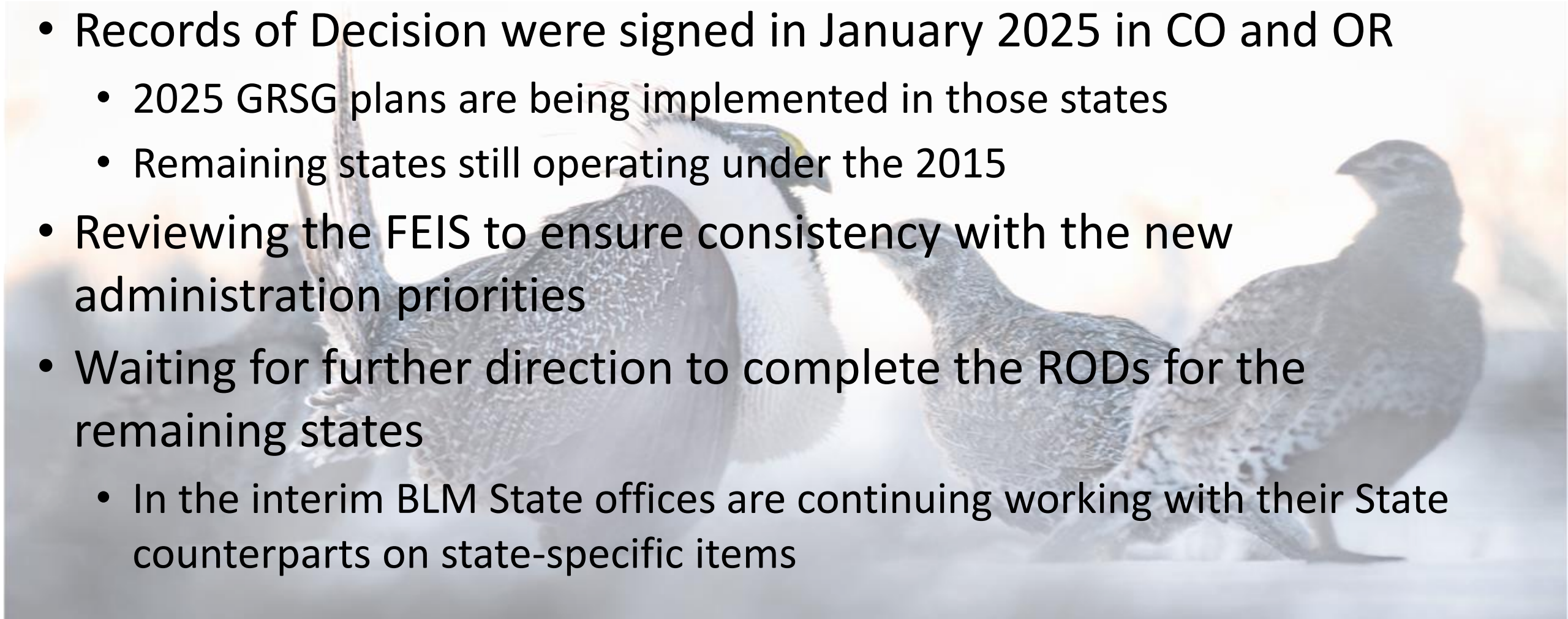


Wildlife Program

- **Emphasis Areas**
  - Continued coordination with State Fish and Wildlife Agencies and other conservation partners to:
    - Recover and augment species included in State Wildlife Action Plans to reduce the need to list under the ESA.
    - Implement habitat improvement projects to achieve shared wildlife objectives.
    - Collect data on priority wildlife species to inform status and trends.
  - Prioritize efficiencies in regulatory processes.
  - Improve wildlife viewing, hunting opportunities, and access to public lands.
  - Maintain habitat connectivity and migration corridors on public lands.

Greater Sage-Grouse (GRSG) Planning

- Final Environmental Impact Statement (FEIS) released Nov. 15, 2024
- Records of Decision were signed in January 2025 in CO and OR
  - 2025 GRSG plans are being implemented in those states
  - Remaining states still operating under the 2015
- Reviewing the FEIS to ensure consistency with the new administration priorities
- Waiting for further direction to complete the RODs for the remaining states
  - In the interim BLM State offices are continuing working with their State counterparts on state-specific items



SFA Withdrawal EIS

- Consistent with the 2021 Court Order a supplemental Draft EIS is being completed considering the potential withdrawal of the 2015 Sagebrush Focal Areas (SFAs) from mineral location and entry under the Mining Act of 1872.
  - We are working to re-engage cooperators and Tribal governments
  - Publication of a supplemental Draft EIS is anticipated this summer

BLM Regional Oil and Gas Lease Sales

Calendar Year 2024 —

BLM State Office	Sale Date	Total Receipts
WY	3/5/24	$9,003,285
MT	3/12/24	$2,418,606
ES	3/26/24	$234
MT	4/30/24	$681,533
NM	6/20/24	$34,414,251
NV	6/25/24	$0
WY	6/17/24	$5,084,616
MT	8/6/24	$24,020,547
NM	8/15/24	$61,044,916
CO	9/24/24	$303,580
WY	9/25/24	$34,040
MT	10/22/24	$16,796,572
NM	11/21/24	$0
WY	12/10/24	$11,127,041

Western Solar Plan

Approved Record of Decision for Utility-Scale Solar Energy Development

- Protest Resolution Report
- Endangered Species Act Sec. 7 Consultation
- National Historic Preservation Act - Sec. 106 Consultation
- BLM Record of Decision – signed 12/19/24

Contact: Scott Whitesides, Project Manager, SWhitesides@blm.gov

Questions and Discussion

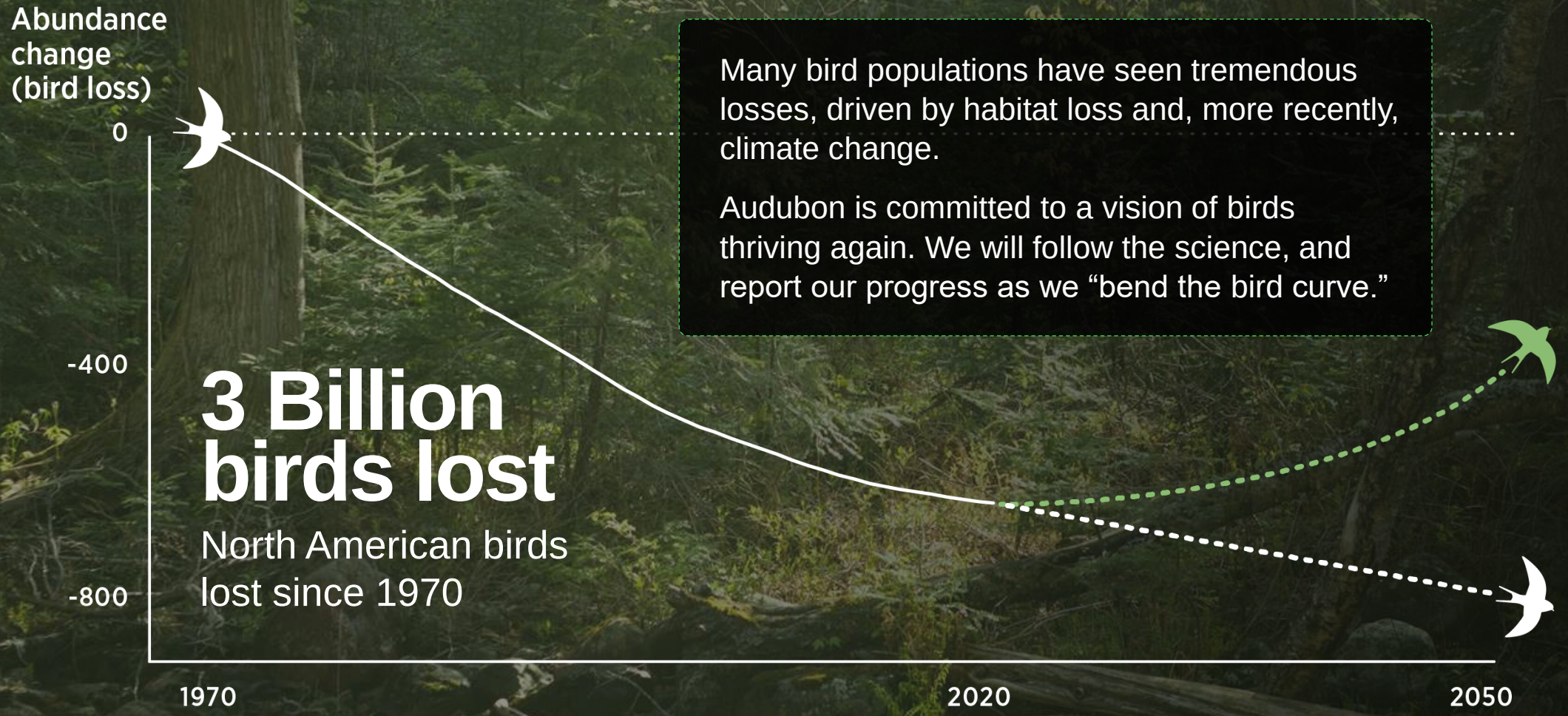
Audubon

Advancing Clean Energy Infrastructure

Building the Power & Grid Birds Need

- *Double-crested Cormorant. Photo: Jill Clardy/Flickr (CC BY-NC-SA 2.0)*

We will Bend the Curve



Many bird populations have seen tremendous losses, driven by habitat loss and, more recently, climate change.

Audubon is committed to a vision of birds thriving again. We will follow the science, and report our progress as we “bend the bird curve.”

3 Billion birds lost

North American birds lost since 1970

Cedar Forest. Photo: Justin Meissen/Flickr CC BY-SA

SURVIVAL BY DEGREES:

389 Bird Species on the Brink

Great Gray Owl. Photo: Connor Stefanison

Conservation Milestones

	2028 MILESTONES	METRIC
Habitat Conservation	Connected network of climate resilient lands and waters across the Americas	300 million acres (121M ha) of quality, connected, and climate-resilient bird habitat conserved
Climate Action	Swift and responsible deployment of renewable energy	100 gigawatts of new renewable generation and transmission sited
Climate Action	Natural climate solutions as a win-win for birds and climate	30 billion tons of carbon in forests, wetlands, and grasslands sequestered
Policy	Government action and funding for birds and the planet	The Healthy Birds, Healthy Planet Policy Agenda passed
Community Building	Bird lovers working together to advance our shared vision	Audubon membership doubled Influential coalitions activated

Climate Action Renewables

**SPEAKING FOR BIRDS.
SOLVING FOR CLIMATE.**

RENEWABLE ENERGY 2028 MILESTONE

Swift and responsible deployment of renewable energy accelerates decarbonization—curbing the long-term impacts of climate change and minimizing the short-term impacts on birds through well-sited and operated solar and wind facilities.

METRIC

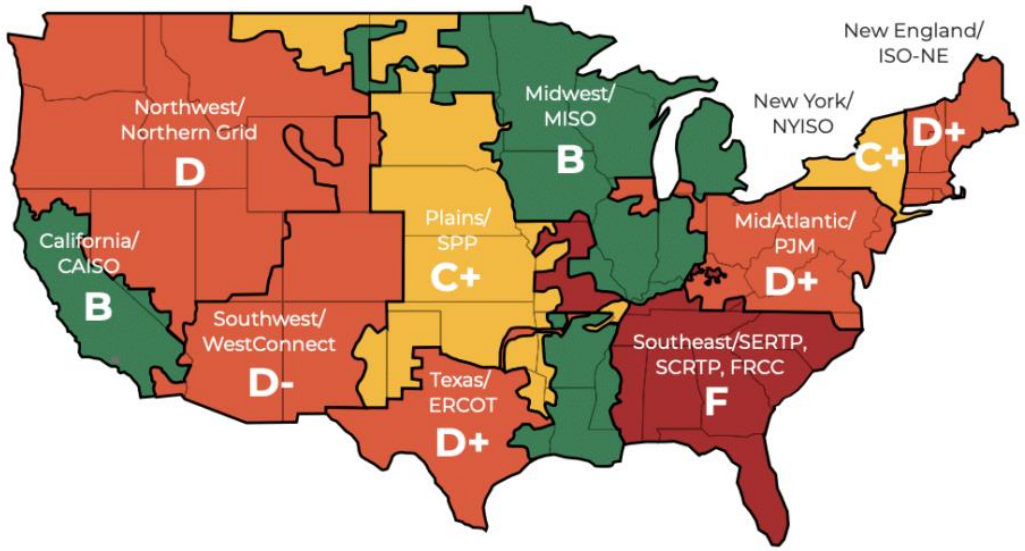
100 gigawatts

of renewable energy generation and transmission responsibly sited for deployment by 2028

RELATED CHALLENGES

- ***Old & Balkanized:*** Average age 40 years; ¼ >50 years; three grids,12 planning regions.
- ***Obsolete:*** Designed for centralized power resources e.g. coal plants near urban areas; not for more widely distributed resources e.g. utility scale wind & solar.
- ***Slow:*** Permitting / constructing takes ~seven years (mostly low voltage & intrastate).
- ***Piecemeal Planning:*** There are few incentives to promote long-term interregional planning to support resources sharing, thereby improving reliability & reducing cost to rate payers. This is exacerbated in the Intermountain West in the absence of an RTO or unified market.

12 Planning regions



Americans for a Clean Energy Grid planning rankings

*To shorten the interconnection queue & successfully onboard the clean energy & storage needed to meet future demand growth, ensure reliability & stabilize the climate – we need to modernize our grid, create interregional connections, & expand capacity by *two – three X by 2050.*

*See DOE's 2024 National Transmission Planning Study

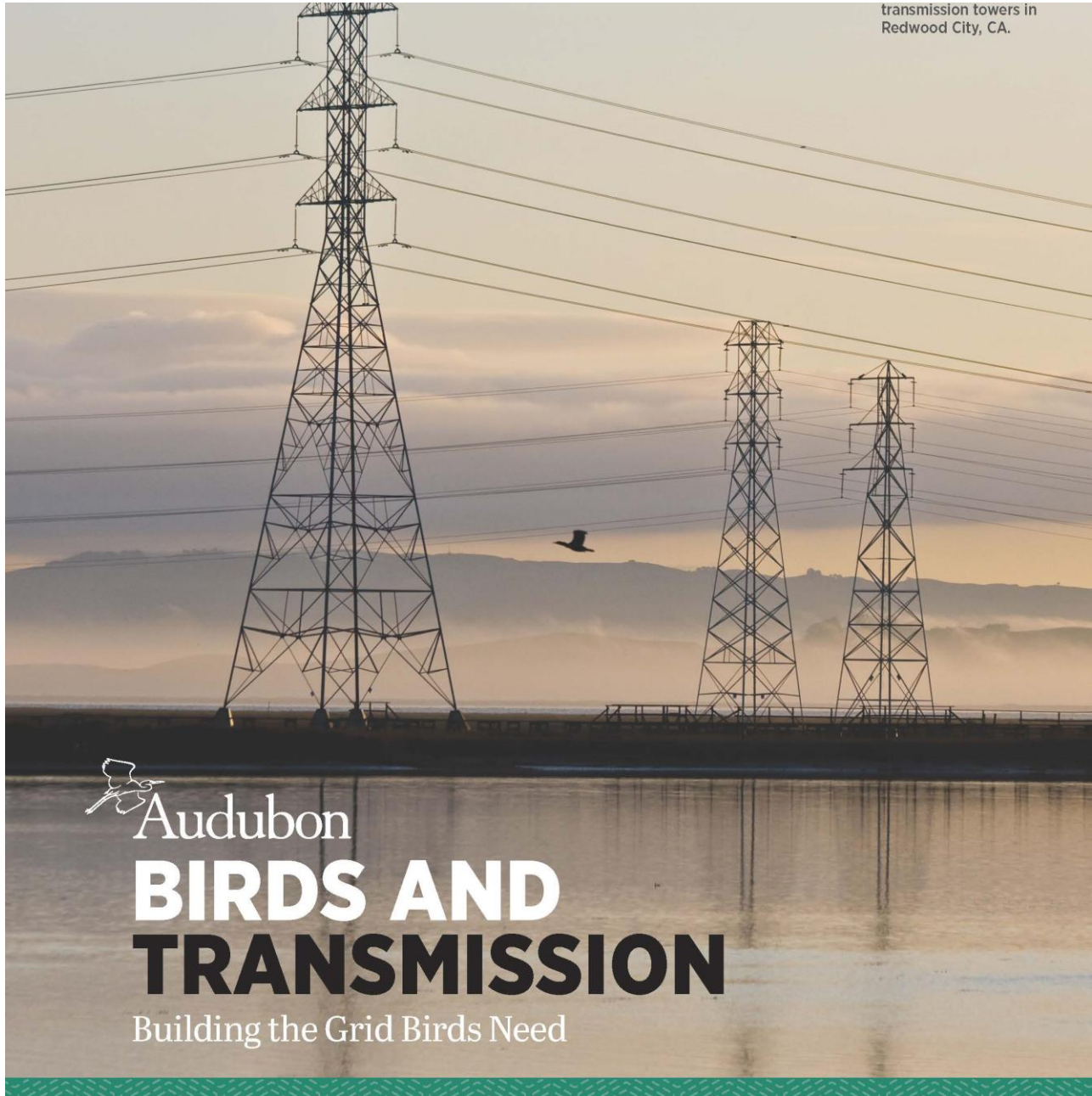
HOW WE SUPPORT RAPID & RESPONSIBLE DEVELOPMENT

- **Work with Developers & Decision Makers to Ensure Optimal Siting, Design & Operation for Birds**
  - **Utilize data-informed mapping to avoid, minimize & mitigate impacts**
- **Help facilitate broad outreach to affected constituencies/communities & early Tribal consultation (when applicable)**
- **Educate & Activate Our Members to Support Our Priorities**

UV Lights on towers at Audubon's Rowe Sanctuary, Photo: James Dwyer

Theory of change

- By engaging early in transmission planning processes and advocating for responsibly-sited projects that reduce harm to birds, we will ensure projects move forward rapidly, shift bird-lovers and other conservation-minded stakeholders from opponents to informed supporters of well-planned projects, and accelerate the clean energy transition required to avoid the extinction of two-thirds of North American bird species.



SCIENCE

Our Current Understanding of Birds and Transmission

Photo: Nicole Mittman

At Rowe Sanctuary in Nebraska, a research technician peers outside of a blind towards the power line span crossing the river to count cranes traversing the lines.

Bald Eagle. Photo: Michellle Blake/Flickr (CC BY 2.0)

Distribution and transmission pose different risks

Photo: Amanda Nichols/Flickr (CC BY-NC-ND 2.0)

Collision

- 1.8–5.4 billion bird deaths in the U.S. are attributed to human activities or infrastructure
- Collisions with transmission lines are estimated to account for between 8 and 57 million deaths per year
    - Less than 3% of all collision mortalities

Bald Eagle. Photo: Reva G/Flickr (CC BY-NC-ND 2.0)

Photo: Daniel Wolf/Flickr (CC BY-NC 2.0)

- Double-crested Cormorant. Photo: Jill Clardy/Flickr (CC BY-NC-SA 2.0)

Characteristics that make birds vulnerable to collisions

- **Behavior**
  Migrant
  Nocturnal Migrant
  Feeding/Roosting trips
  Flocking
  Hunting

Canada Geese. Photo: Sujata Roy/Great Backyard Bird Count

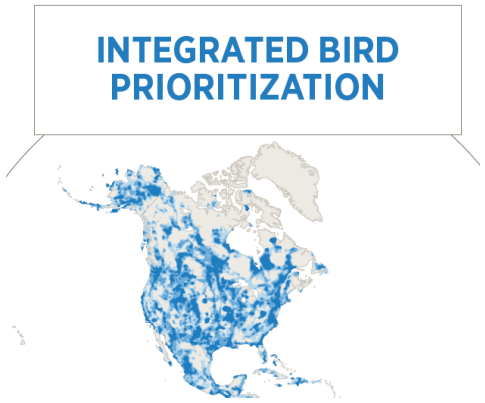
HOW DO TRANSMISSION LINES IMPACT BIRDS?

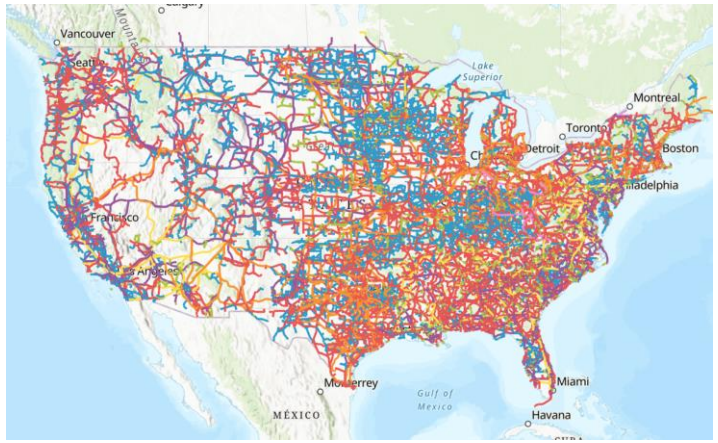
- Characteristics that make birds vulnerable to collisions
- Morphology
  Vision
  Flight

Sandhill Cranes. Photo: Madeline Poster/Audubon Photography Awards

Co-occurrence of bird priority areas with transmission

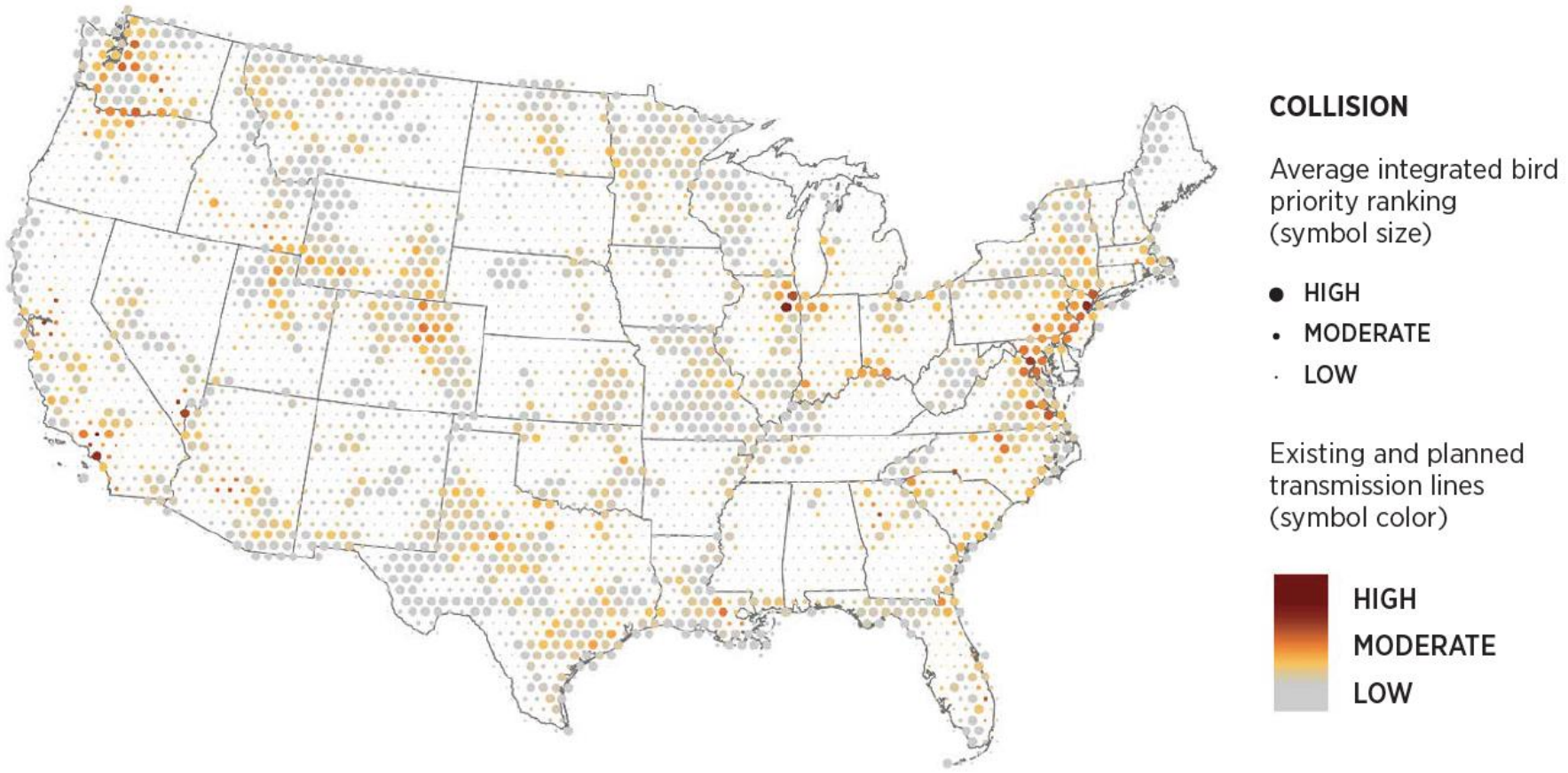
- Assessed within 50-km hexagon cells
- Identified the top 25th percentile of priority rank for birds AND in the top 25th percentile for transmission
- Collision
  - Total existing and planned transmission
  - Line density
- Habitat Degradation and Disturbance
  - Planned and potential transmission
  - Corridor area
  - Within existing ROWs or not





Collision

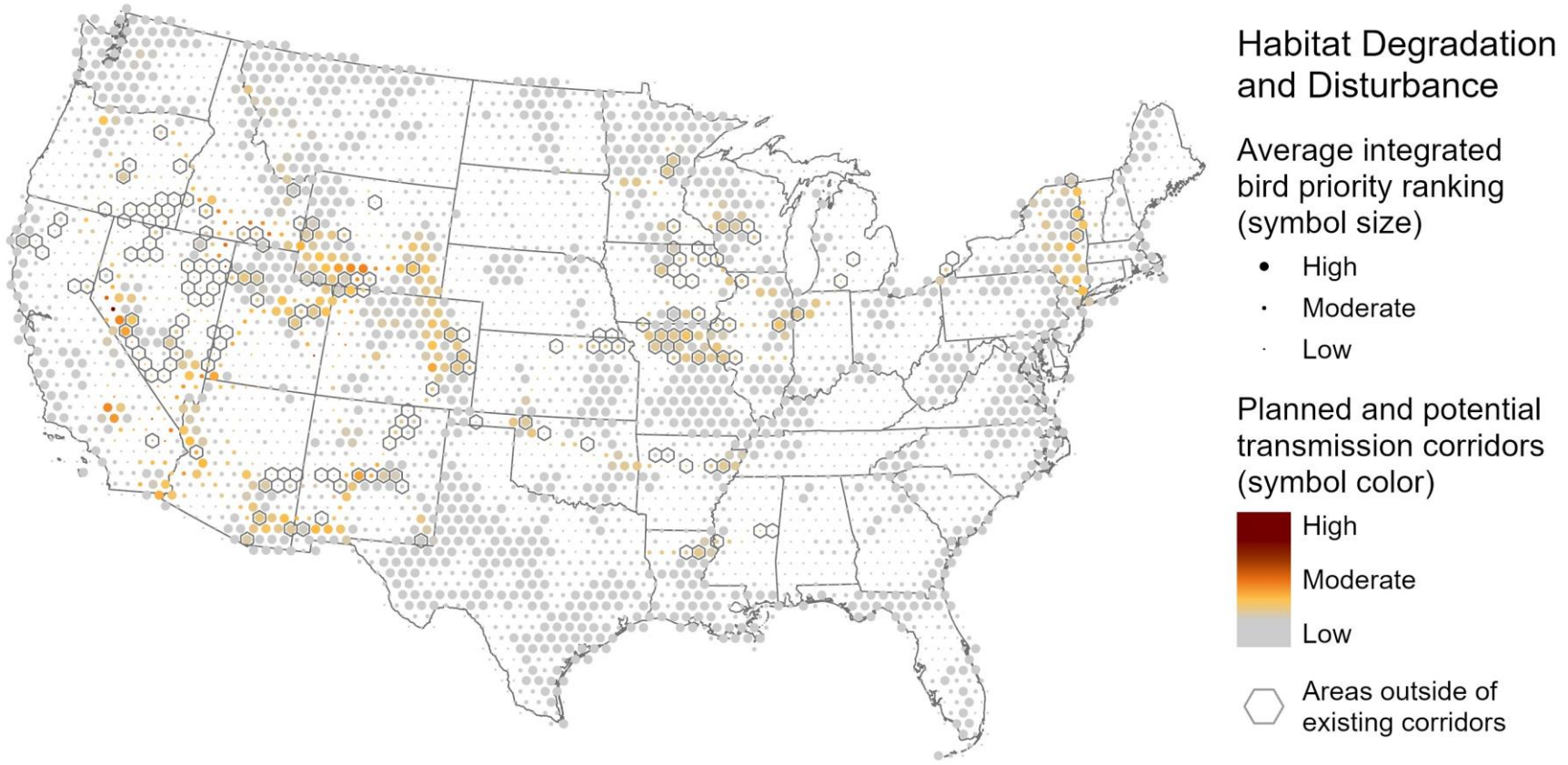
Of the existing and planned transmission lines, 33% fall within high priority areas for bird collisions



Map: Lotem Taylor/Auduon

Habitat Degradation and Disturbance

Of the planned and potential transmission lines, 27% could lead to habitat degradation or disturbance. However, most of these priority areas are likely to occur within existing ROWs



Map: Lotem Taylor/Auduon

Promote Bird-Friendly Design and Operation

Whooping cranes. Photo: Heather Roskelley/Audubon Photography Awards

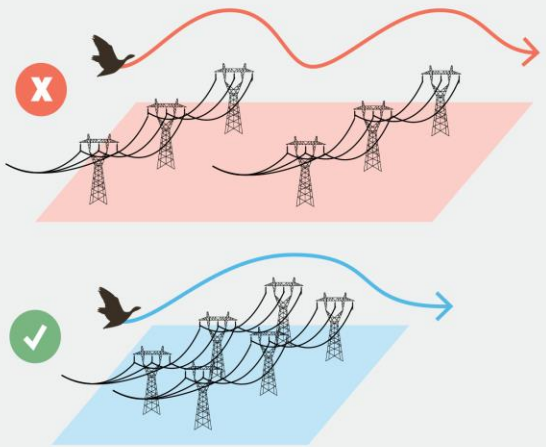
UV Lights on towers at Audubon's Rowe Sanctuary, Photo: James Dwyer

BIRD-FRIENDLY SOLUTIONS

Here are just a few examples of how we can make transmission lines safer for birds.

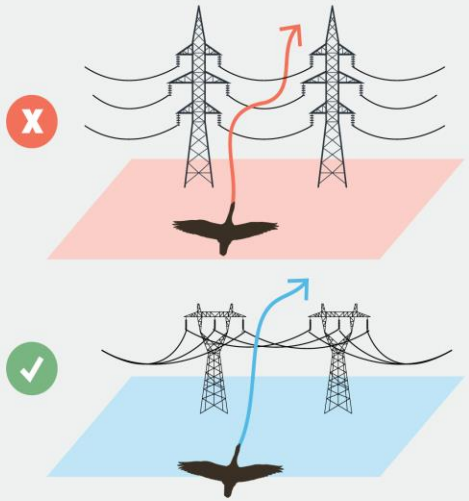
PROACTIVE: BEFORE YOU BUILD

ROUTE PLANNING



Building new transmissions lines on the same rights-of-way as existing lines minimizes the overall transmission footprint—leaving more habitat intact and reducing the chances of transmission line collisions.

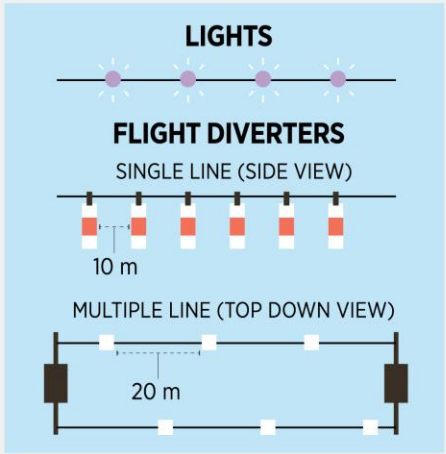
LINE CONFIGURATION



Orienting multiple transmission lines horizontally rather than vertically decreases the amount of space the lines take up—minimizing the potential for bird collisions.

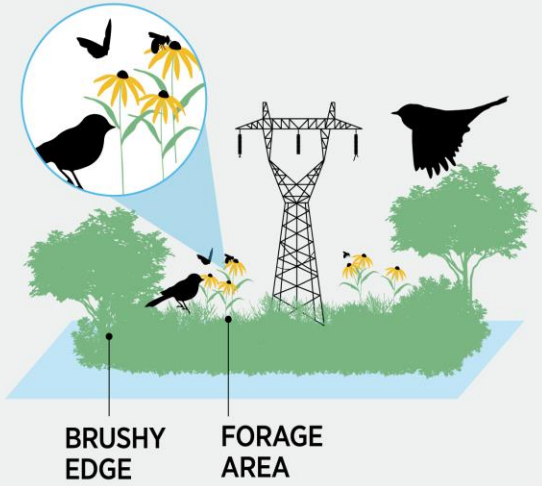
REACTIVE: AFTER YOU BUILD

LINE MARKING



Birds can avoid only what they see. By adding markings or using infared, ultraviolet, or LED lighting that make transmission lines more visible, collision risk can be lowered by as much as 90 percent.

HABITAT MANAGEMENT

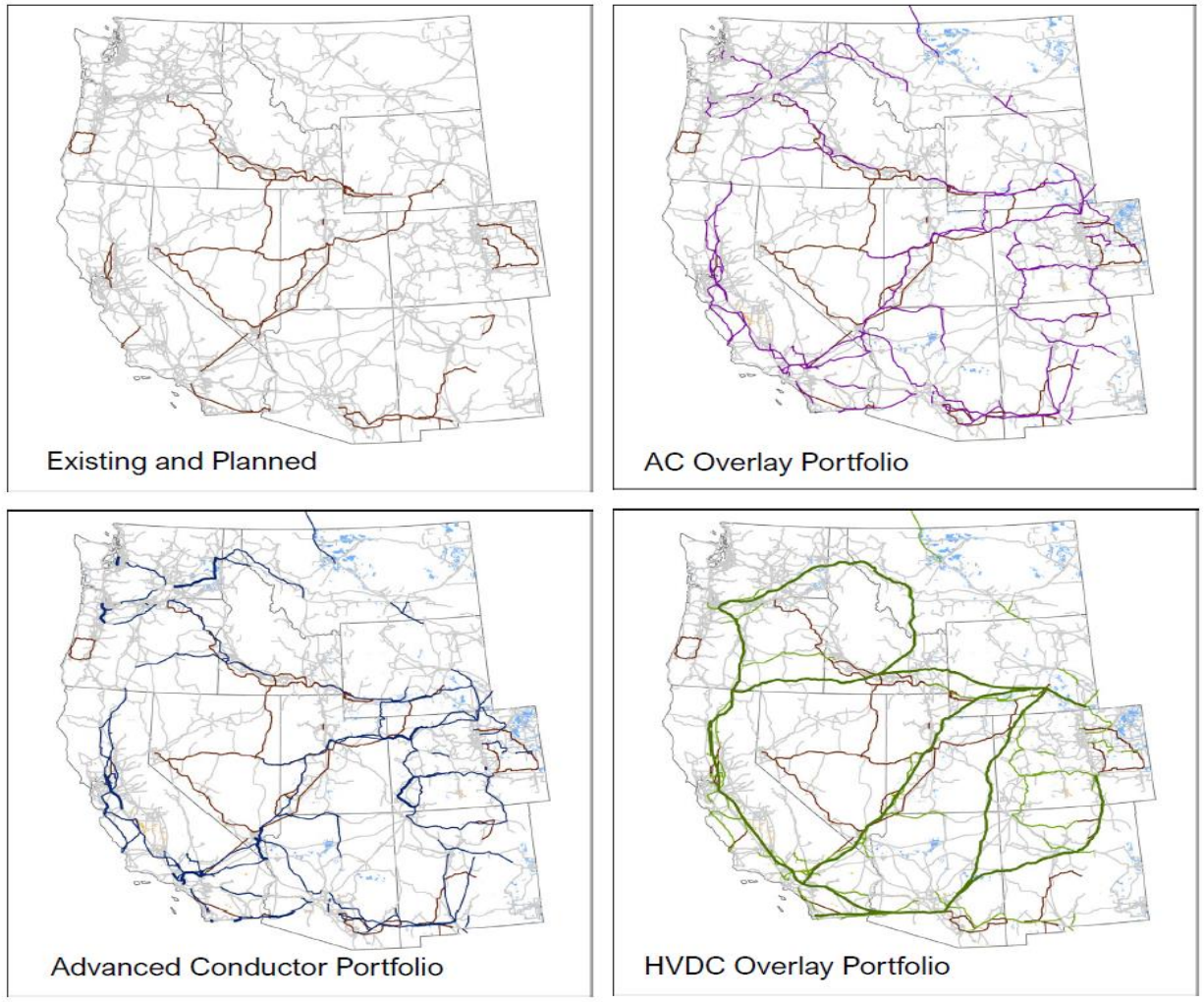


Transmission line cutouts are narrow, but they're long—providing a prime opportunity to manage *a lot* of habitat in ways that benefit birds, such as filling these presently bare areas with the native vegetation birds need.

Graphics: Julie Rossman/Audubon

AUDUBON TRANSMISSION POLICY PRIORITIES

Support Interregional Planning & Resource Sharing



Connected West

Defend Against Federal Rollbacks

e.g. monitor permitting "reform" & submit comments on all relevant proposed rules

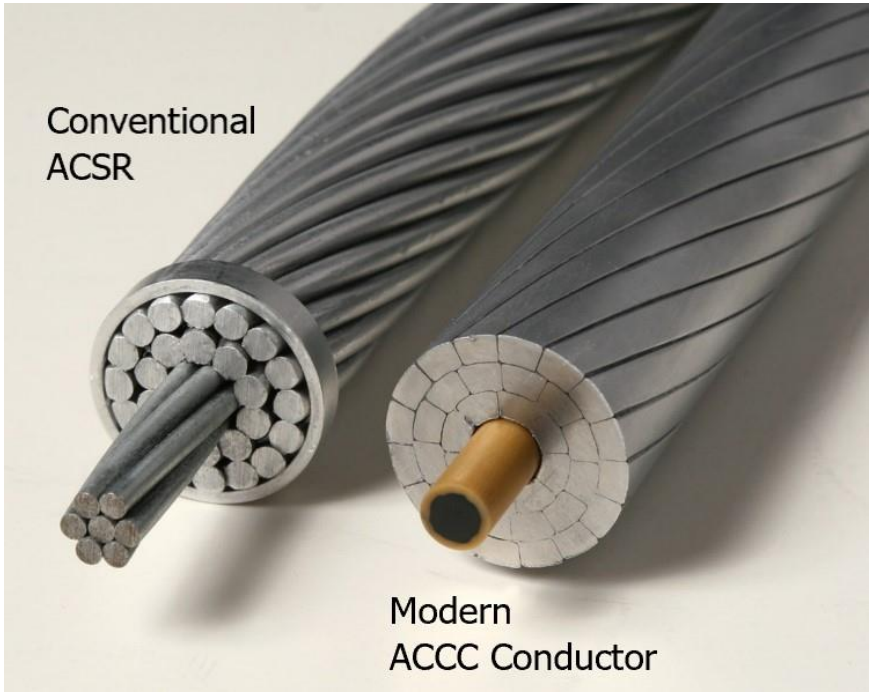
Support a Strong FERC

e.g. implementation Rule 1920 & 1920a

Graphic: Julie Rossman/Audubon

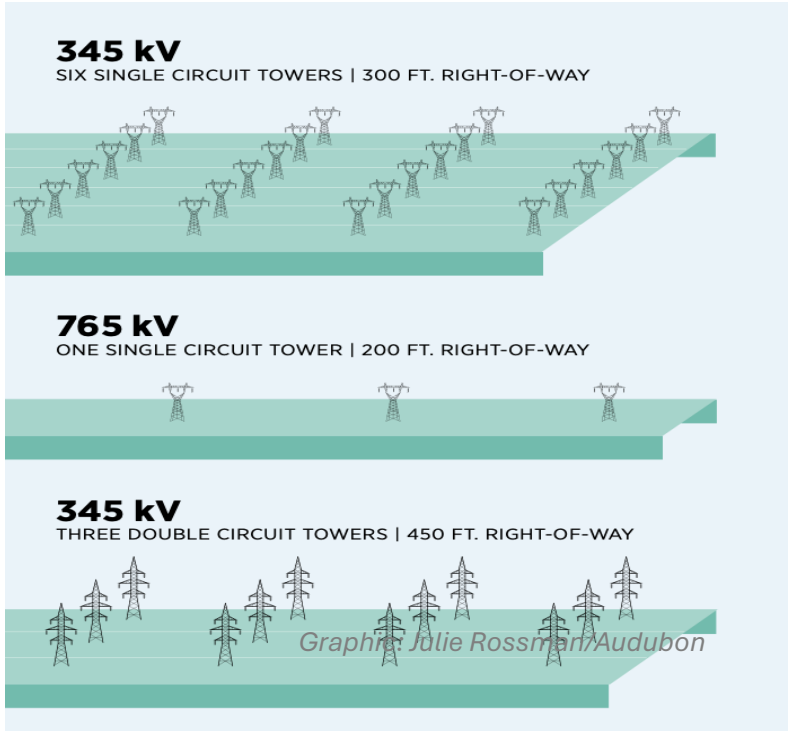
Modernize & Maximize Grid Efficiency via GETs

e.g. dynamic line ratings, power flow controllers, storage, reconductoring

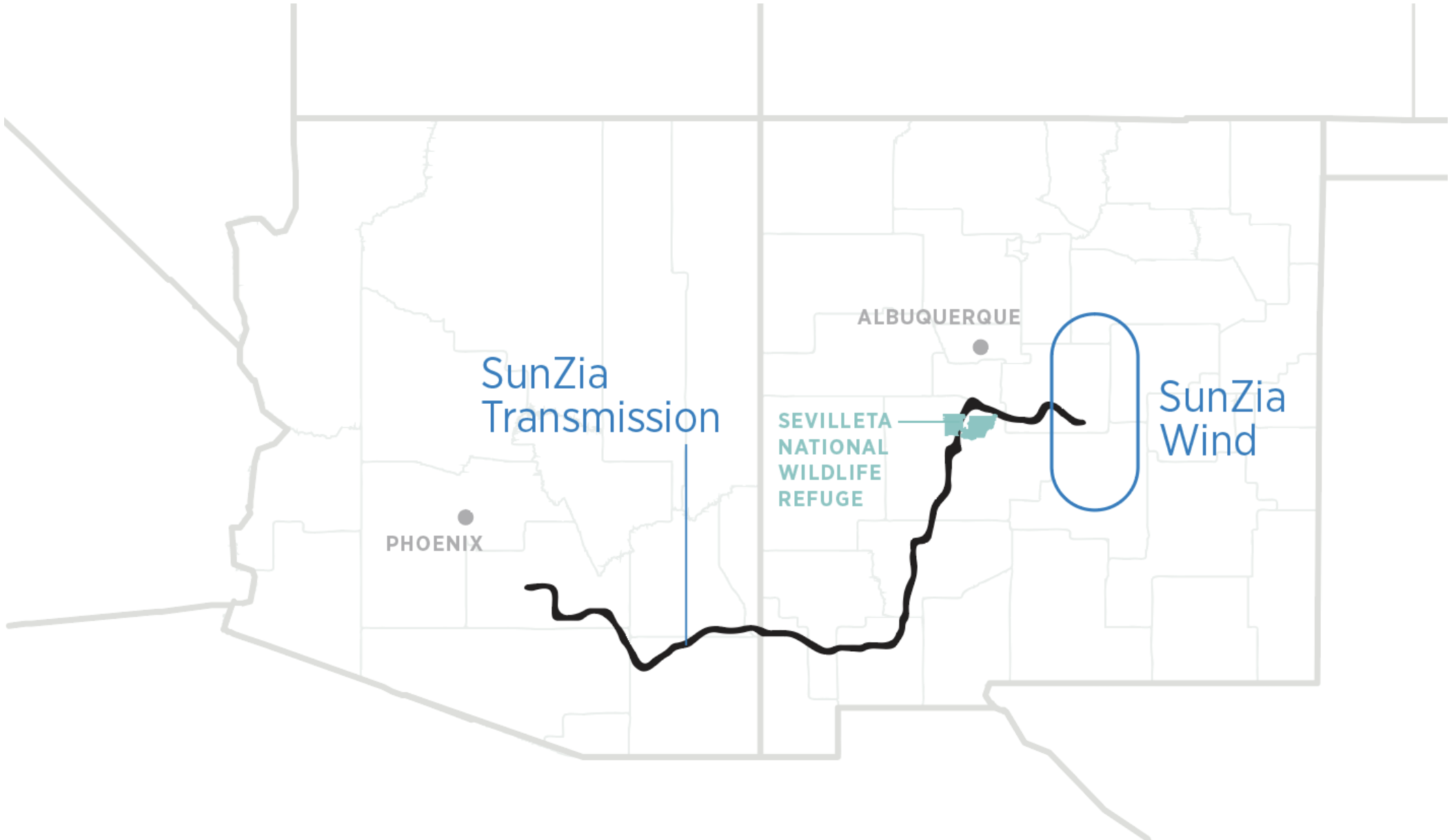


Maximize Co-Location & the Use of Existing RoW

e.g. NextGen Highways



CASE STUDY – HOW AUDUBON CAN ENGAGE



Sandhill Cranes. Photo: Vaughn Cott/Audubon Photography Awards

Western Yellow-billed Cuckoo.
Photo: Bill Gorum/Alamy

Southwest Willow Flycatcher.
Photo: Becky Matsubara/ Flickr (CC BY 2.0)

A CASE STUDY

The original developer of SunZia faced multiple stages of regulatory review, financial restructuring & litigation. When Pattern Energy took over the project however, it openly sought input from conservation organizations.
And after 18 years, construction began.

- Audubon provided guidance on best practices related to routing, siting of towers, installation practices & tower design. We served as a convener & liaison for other environmental NGOs.
- We briefed leadership at Interior & the BLM on the impacts of different route alternatives that were considered, which helped advance the NEPA permitting process.
- Pattern Energy made several commitments as part of the project, including:
  - Using bird-diverting technology on portions of the line that posed collision risk
  - Working to co-locate the line along existing RoW
  - Changing some crossings along the Rio Grande River to protect nesting species of birds
  - Funding research related to Sandhill Cranes, Pinyon Jay, bats & other species
  - Testing ultra-violet light developed at Audubon's Rowe Sanctuary in NE on power lines that have considerably reduced collisions of Sandhill cranes

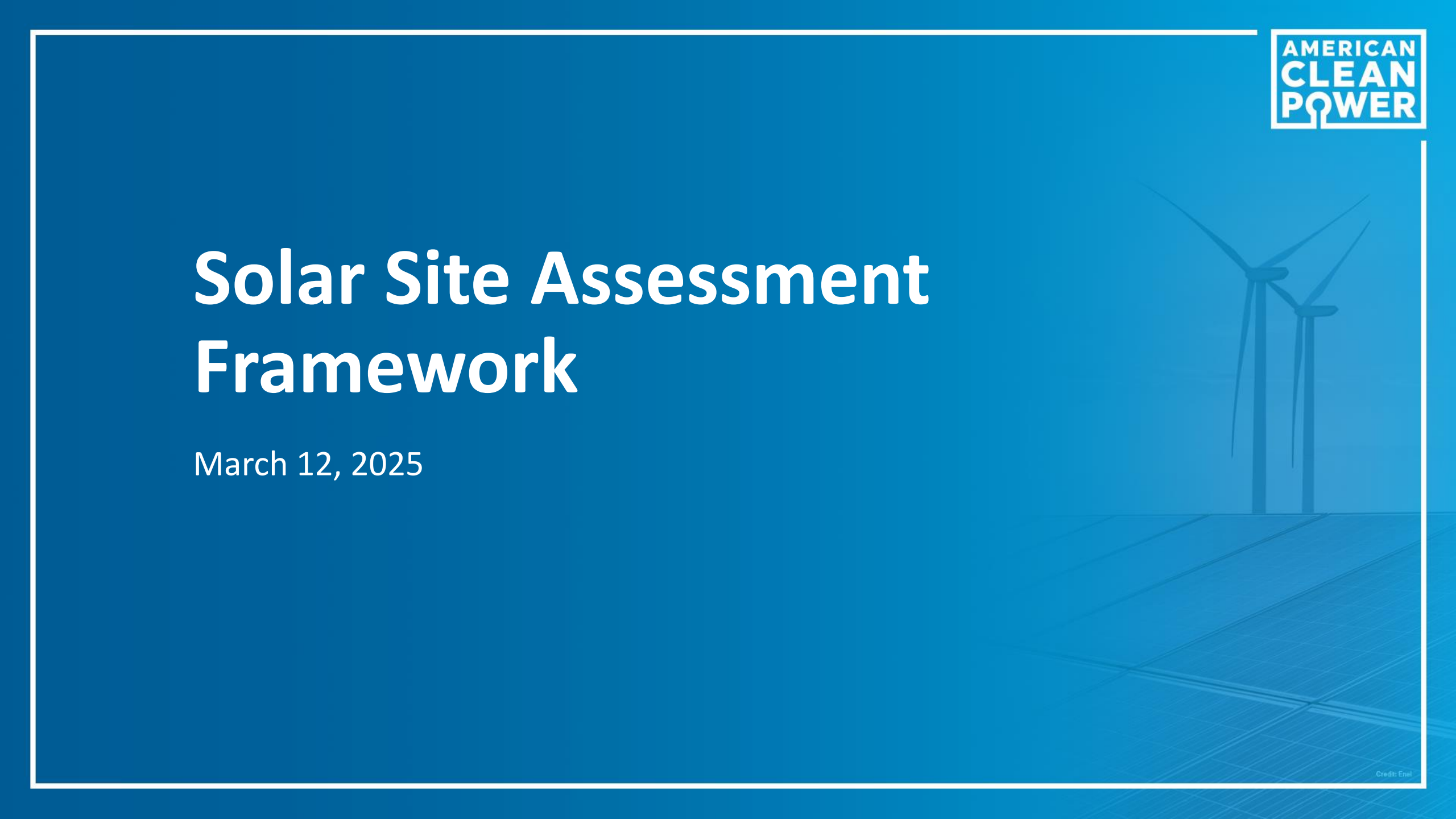
Thank you!

Common Loons. Photo: Margaret Gompper/Audubon Photography Awards

Sandhill Crane. Photo: Stan Bysshe/Audubon Photography Awards

Solar Site Assessment Framework

March 12, 2025



Solar Site Assessment Framework

- The Solar Site Assessment Framework working group met in person in October 2024 and is holding biweekly virtual meetings
- Achieved consensus on the objective statement, goals, and use case for the framework
  - Industry best practice; establish standard and consistent process and expectations for site assessment and development
  - "A successful outcome for this framework would include a clear, science-based, widely applicable document that has buy-in from both SFWAs and solar developers, provides actionable practices, facilitates responsible solar development, and fosters long-term collaboration between energy and conservation sectors"

Solar Site Assessment Framework

- Use case for solar developers:
  - Guidebook for responsible consideration of wildlife while siting a project
  - Expectations in working with SFWAs
- Use case for SFWAs:
  - Serve to identify when and how SFWA resources, data, and technical advice may inform project siting
  - Provide a way of evaluating whether a project is being sited with responsible consideration of wildlife
  - Vehicle for step-down regional/state-specific efforts to address specific species/regional-local landscape needs where they do not exist already

AMERICAN CLEAN POWER

Solar Site Assessment Framework

- Resolved discussion topics:
  - Background and effects document section -> moved content to an appendix
  - Inclusion of operations as additional stage -> address this stage in the document with acknowledgement that specific issues will often be decided between SFWA/operator and keep section focused on the process
  - Inclusion of decommissioning as an additional stage -> use language from the communications framework to encourage operators to check in with SFWA re: wildlife issues when decommissioning is being considered/planned; acknowledge the impact of landowner agreements, etc.
  - Species of concern/interest -> use "species of interest"; define using an appendix of SFWA-provided species categories and acknowledge not all species of interest have the same standards or authorities, many are voluntary

AMERICAN CLEAN POWER

Solar Site Assessment Framework

- Next steps:
  - Second in-person working group meeting in March 2025
  - Working group will use biweekly meetings to complete a joint document
    - Target – end of summer 2025
  - Status updates and briefings as needed during Solar Wildlife Working Group calls
  - Once AFWA and industry have a joint document, we'll consider next steps and additional stakeholder discussions