

Electric Power Research Institute (EPRI)

Mission

Advancing *safe, reliable, affordable* and *environmentally responsible* electricity for society through global collaboration, thought leadership and science & technology innovation



Independent- Objective, scientifically based results address reliability, efficiency, affordability, health, safety, and the environment

Nonprofit- Chartered to serve the public benefit

Collaborative- Bring together scientists, engineers, academic researchers, and industry experts

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Sustainability and Ecosystem Stewardship

Ecosystem
Risk and
Resiliency



Cutting-edge scientific methods and economic analysis to help utilities achieve the twin goals of cost savings and sustainable stewardship.

Endangered
and Protected
Species



Innovative solutions to support industry species regulation compliance and effective species conservation.

Strategic
Sustainability
Science



Embedding a triple-bottom-line mindset to enable a more sustainable economy.

EPRI: Endangered and Protected Species Program

Program Mission: Advancing scientifically informed endangered & protected species decision making for electric power industry, stakeholders, and society



■ Informing Listing/Delisting

- Updates
- Risk Assessment
- Basic science

■ Permitting, Planning, & Conservation

- Voluntary Options
- Mitigation
- Siting
- BMPs

■ Tools, Technology, and Methods

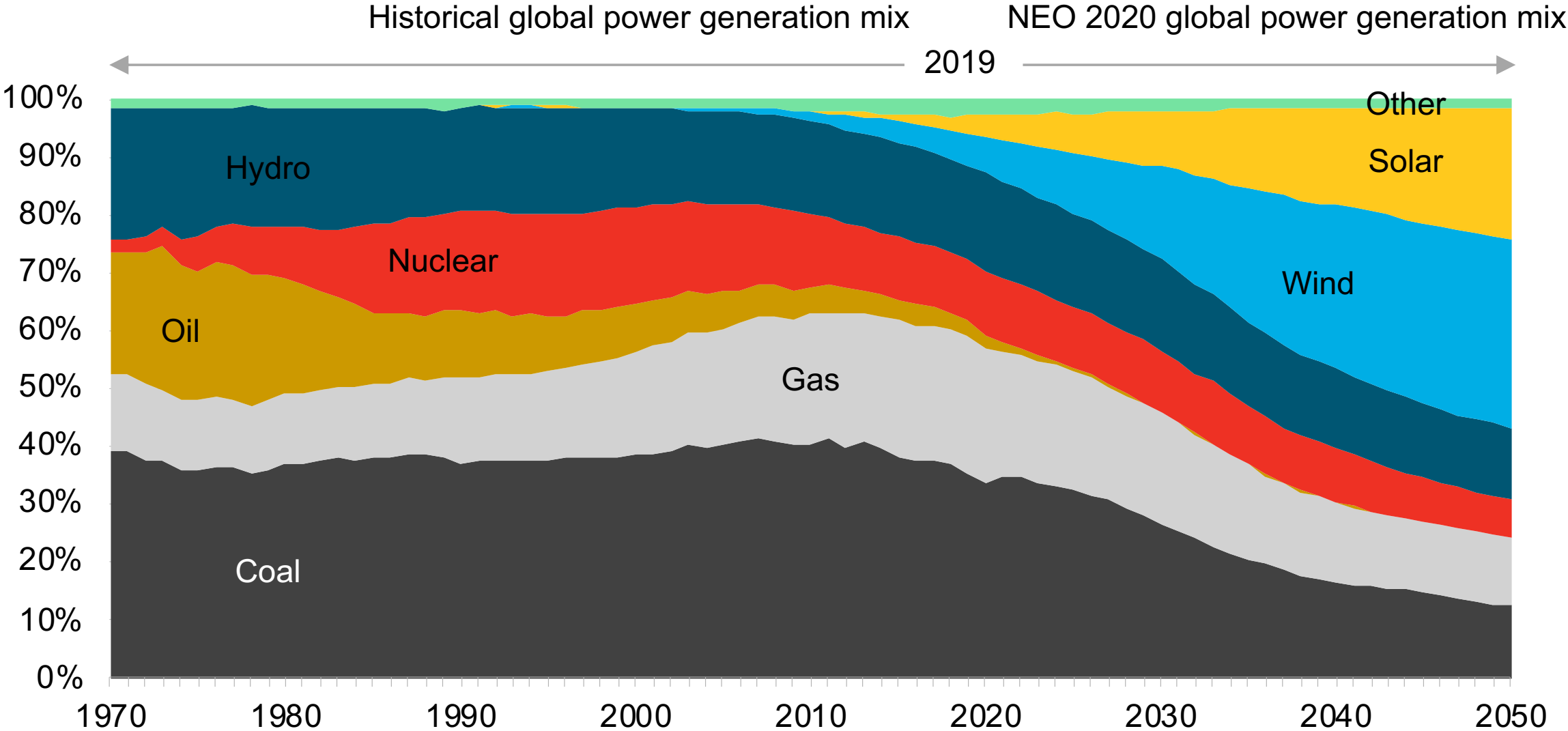
- Remote Sensing
- Machine Learning/AI
- Spatial Modeling
- Deterrents
- Detection

■ Collaboration & Outreach

- Members
- Regulators
- NGOs
- Academia/Research

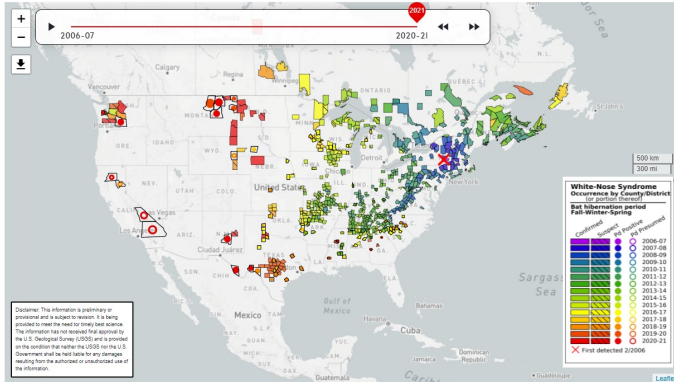
Changing Generation Mix

BNEF NEO 2020



Current and Future Listed Species at Risk because of

“Species” & Energy Current & Potential Future Listed Species Interacting with Energy



Potential Interactions

New Construction- “Changing” Habitat

- Wind
- T&D
- Solar
- Other infrastructure

Maintenance- Veg management

- T&D

Operations- Power generation

- Wind, Solar, NG, Hydro, Other



Potential Solutions

Voluntary Conservation

Avoidance & Minimization Solutions

Offsets/Mitigation

Habitat Management

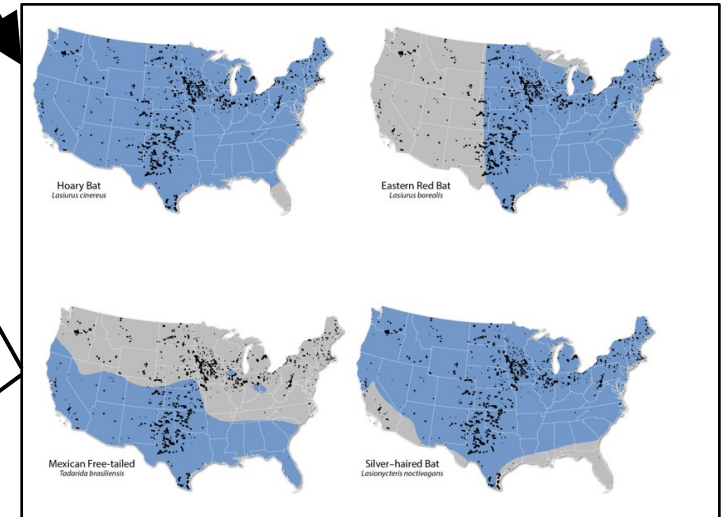
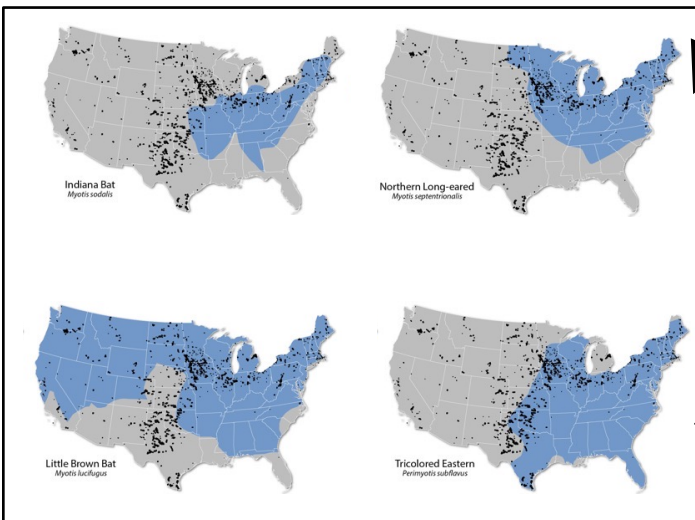
Needs

Data

Technology

Cross “Sector” Collaboration

Stakeholder/Regulatory Support

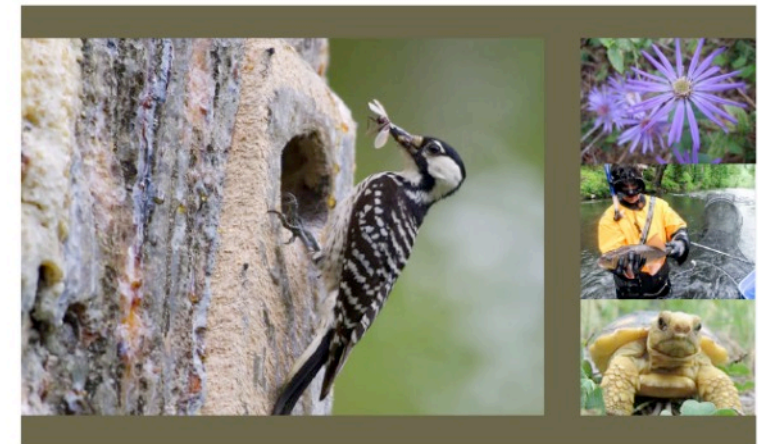


UNDERSTANDING BARRIERS AND INCENTIVES TO VOLUNTARY CONSERVATION OPPORTUNITIES UNDER THE U.S. ENDANGERED SPECIES ACT

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- What are the **incentives** for utilities to pursue voluntary conservation?
 - What are the **barriers** to pursuing voluntary conservation?
 - What are **options** to lower the barriers and expand incentives?
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- Principal Investigators/Authors
 - Ya-Wei (Jake) Li - *Environmental Policy Innovation Center*
 - Timothy Male- *Environmental Policy Innovation Center*

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September 2020

<https://www.epri.com/research/products/000000003002018979>

Key Findings: Incentives for Voluntary Conservation

The primary incentives for most companies are cost reduction and risk mitigation

- Reduce O&M costs and mitigate risk.
- Every company seemed willing to do conservation if direct “bottom-line” benefit.

| O&M cost reduction | Risk mitigation |
|--|--|
| Avoid listing = no ESA regulations | Regulatory predictability – determine upfront all future ESA obligations |
| Improve species status = less regulation | Easier path to ESA compliance |
| Delist species = no ESA regulations | Avoid ESA permitting entirely |

Key Findings: Incentives for Voluntary Conservation

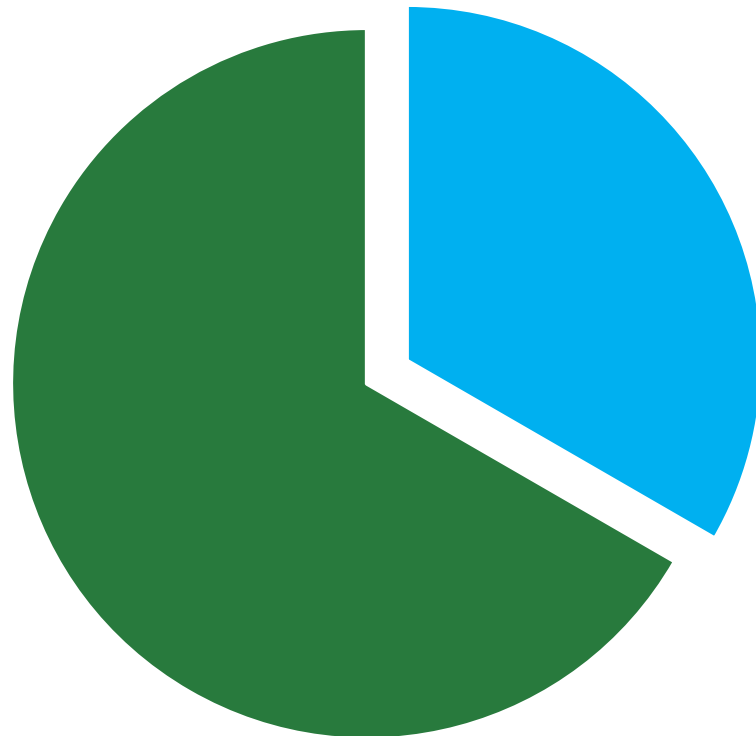
Indirect benefits can bolster case for voluntary conservation

Especially for utilities with strong stewardship programs

| Indirect benefit | Examples |
|--|--|
| Increase reputational value | Good news coverage, awards |
| Meet public, shareholder, staff expectations | Activist investors, customer expectations, staff morale |
| Improve relations with regulators | Build trust and working relations |
| Get data that helps permitting | Data to rule out species presence, streamline incidental take estimate |

Key Findings: Barriers to Voluntary Conservation

Is increase liability an issue?



■ Major issue ■ Minor or theoretical issue

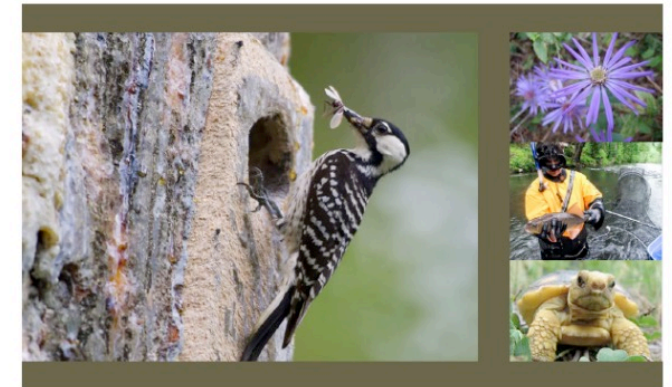
- **Increased legal liabilities**
- Time and complexity of ESA agreements
- Inadequate company resources
- Infeasible on ROW easement lands

Options to Lower Barriers & Expand Incentives

- Easier, faster methods of developing and enrolling in agreements
- Programmatic agreements
- Mitigation credit
- Invest in practical research
- Expand indirect benefits to utilities
- Paying private landowners
- Increase funding for USFWS
- Regulatory rewards for demonstrated recovery progress

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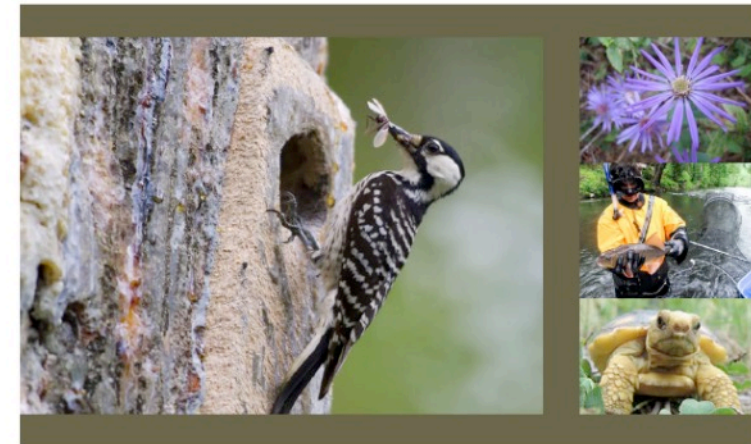
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