



# Landscape Assessment Tool

NW Wind Energy and Wildlife Conference  
June 7-8, 2011

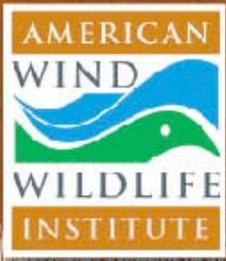


# AWWI Overview

A unique collaboration of wind industry, nonprofit, and state agency leaders, joined in a shared mission:

*To facilitate timely and responsible development of wind energy while protecting wildlife and wildlife habitat*





# AWWI Sustaining Partners and Friends



AES Wind Generation  
American Wind Energy  
Association  
Assoc. of Fish & Wildlife Agencies  
BP Wind Energy  
Clean Line Energy Partners  
Defenders of Wildlife  
Environmental Defense Fund  
enXco  
First Wind  
GE Energy  
Horizon Wind Energy  
Iberdrola Renewables  
National Audubon Society

National Wildlife Federation  
NRDC  
NextEra Energy Resources  
NRG Systems, Inc.  
Pacific Gas & Electric Co.  
RES Americas  
Ridgeline Energy  
Pattern Energy Group  
Shell Wind Energy Inc.  
Sierra Club  
The Nature Conservancy  
Union of Concerned Scientists  
Vestas Americas



# Landscape Assessment Tool (with TNC)

www.awwi.org

VISION VIDEOS

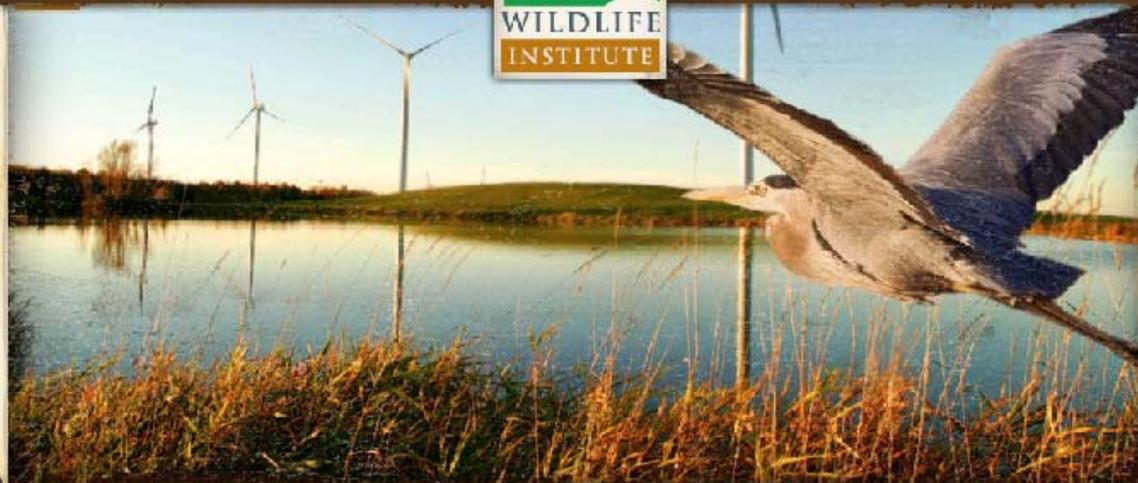
Collaboration

Get Involved

HOME ABOUT AWWI INITIATIVES PARTNERS



SUPPORT AWWI NEWS RESOURCES CONTACT



## AWWI's Mission and Methods

The American Wind Wildlife Institute has a two-part mission: *To facilitate timely and responsible development of wind energy, while protecting wildlife and wildlife habitat.*

AWWI was created and is sustained by a unique collaboration of environmentalists, conservationists, state wildlife agencies, and wind industry leaders. Our purpose is to help lay the scientific groundwork and best practices for wind farm siting and operations, through [targeted initiatives](#): wind-wildlife research, landscape assessment, mitigation, and education.

AWWI partner organizations are committed to these principles:

- Comprehensive, high-quality science will reduce uncertainty and guide informed decision-making about the most difficult siting issues

Partner Login:

Use name:

Remember Me | [Forgot Password?](#)

[Landscape Assessment Tool \(LAT\)](#)

AWWI announces so-far upgrade to Landscape Assessment Tool. Test drive our new look and faster speeds by clicking the button above.

**Wind-Wildlife Updates**



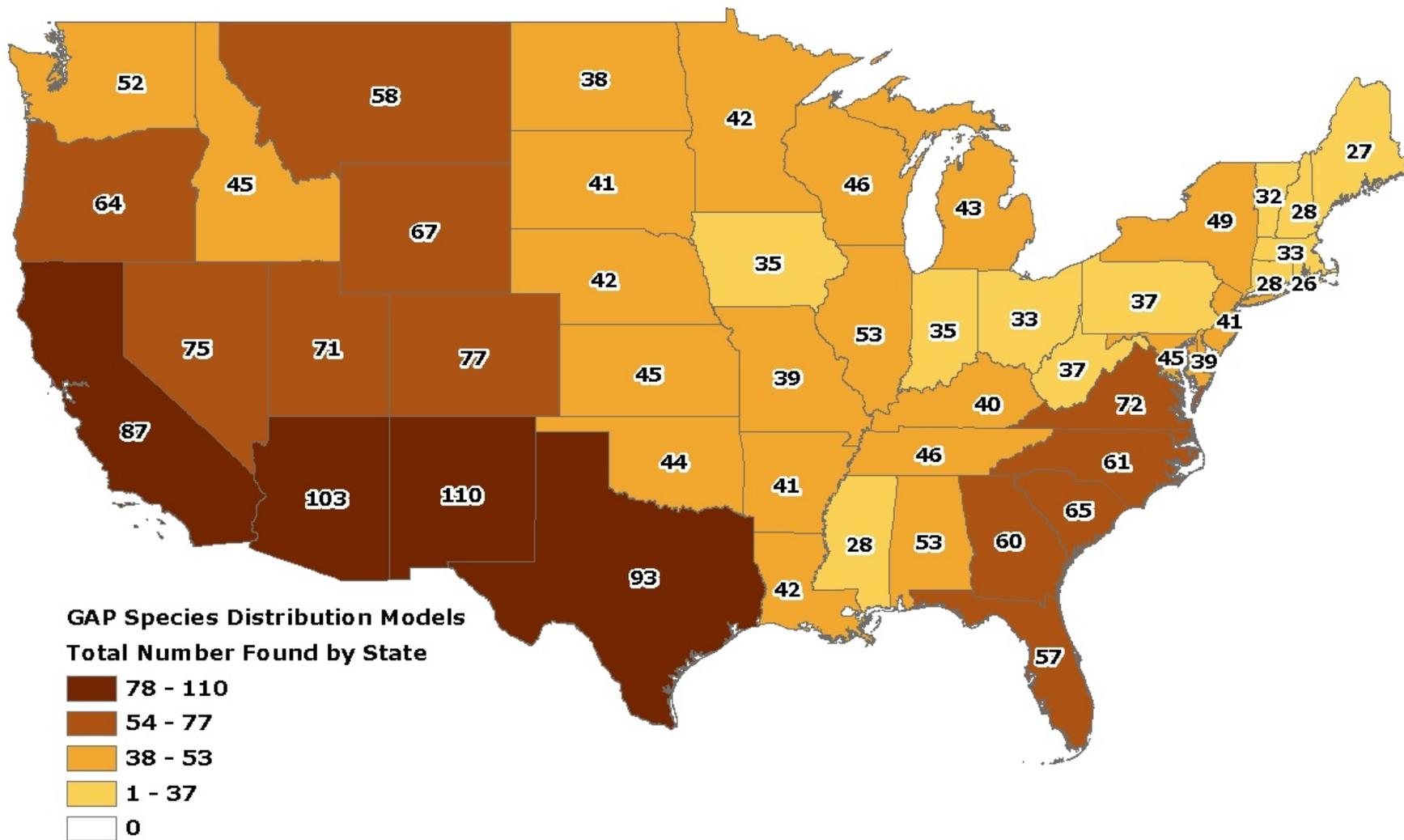
# Data Content



- Wildlife data (species distributions for 486 species)
- 3 base layers
  - Disturbed areas
  - Land ownership
  - Wind resource



# Number of species models acquired: 2,435





# Species Distribution Layers

Home | Map Page | Report

Table of Contents

- Gadwall
- Gilded Flicker
- Golden-cheeked Warbler
- Golden-winged Warbler
- Golden Eagle
- Grace's Warbler
- Gray Vireo
- Greater Prairie-Chicken
- Greater Sage-Grouse
- Greater Shearwater
- Green Parakeet
- Gull-billed Tern
- Gunnison Sage-Grouse

External State-Level Data

► Kansas Natural Resource Planner

Usage Tips

Golden Eagle

Species distribution models indicate where a species is likely to be present. Each species' data layer may be comprised of multiple models of varying quality.

- Species Distribution Model
- No Data But Present In State
- Data Validation Failed
- Species Range Map

[Metadata/Download Data](#) | [Species Information](#) | [Zoom To Layer](#)

Streets | Topo | Imagery

Identify Map Features

Visible Layers

Golden Eagle

Transparency

Clear  Opaque

Turn off all layers

Draw Project Area | Remove Project Area

Find By Name:  City County Clear





# Protected Areas



Home | Map Page | Report

Table of Contents

- Amphibians
- Bats
- Birds
- Mammals
- Reptiles
- ▼ Wind Power
  - Wind Power Class 50 Meters
- Disturbance
- Land Ownership

Map Navigation Tips | Take User Survey

Streets | Topo | Imagery

Identify Map Features

**Land Ownership**

U.S. Protected Areas - PAD-US 1.1 (CBI Edition)

- Bureau of Land Management
- Bureau of Reclamation
- Department of Defense and Department of Energy
- Fish and Wildlife Service
- Forest Service
- National Park Service
- Bureau of Indian Affairs
- Other Federal Land
- Native American Land
- Private Conservation Lands
- Private Land, Unprotected Land
- Local Government Land
- State Land

Visible Layers

- Land Ownership

Turn off all layers

Previous | Full Extent | Draw Project Area | Remove Project Area

Find By Name: | City | County | Clear

View Metadata | Download Data

POWERED BY esri



# Disturbance Layer



Home | Map Page | Report

Table of Contents

- Birds
- Mammals
- Reptiles
- Wind Power
- ▼ Disturbance
  - Disturbed Areas (All Types)
  - Impervious Surfaces
  - Development
  - Crop
  - Hay/Pasture
  - Oil and Gas Wells
  - Mines
- Land Ownership

External State-Level Data

- Kansas Natural Resource Planner

Usage Tips | Take User Survey

Streets | Topo | Imagery

Identify Map Features

Visible Layers

- Impervious Surfaces
- Crop

Transparency

Clear  Opaque

[Turn off all layers](#)

[Download Disturbance Data](#) | [View Metadata](#)

Find By Name:  City County Clear



# NREL Wind Data



Home | Map Page | Report

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- Amphibians
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External State-Level Data

- Kansas Natural Resource Planner

Usage Tips | Take User Survey

Streets | Topo | Imagery

Identify Map Features

Visible Layers

- Wind Power Class 50 Meters

Transparency

Clear  Opaque

Turn off all layers

Find By Name:  City County Clear

Remove Project Area

POWERED BY esri



# Different Views: Street Map

An interactive street map interface showing the Pacific Northwest region, including cities like Vancouver, Portland, and Gresham. The map is overlaid with a purple project area. The interface includes a navigation sidebar on the left with a compass, zoom controls, and a "Usage Tips" button. At the top, there are buttons for "Take User Survey", "Streets", "Topo", "Imagery", and "Identify Map Features". At the bottom, there are buttons for "Draw Project Area", "Remove Project Area", and a search bar labeled "Find By Name:" with "City", "County", and "Clear" options. The Bing logo is in the bottom left, and the Esri logo is in the bottom right.

Usage Tips

Take User Survey

Streets Topo Imagery

Identify Map Features

Usage Tips

Take User Survey

Streets Topo Imagery

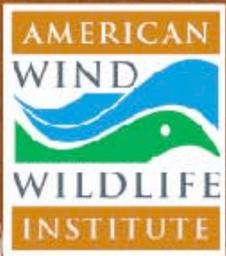
Identify Map Features

Draw Project Area Remove Project Area

Find By Name: City County Clear

bing

POWERED BY esri



# Different Views: Topographic

A screenshot of a web-based topographic map interface. The map shows a river system with a blue-shaded watershed area. The interface includes a compass and zoom controls on the left, a "Usage Tips" button in the top left, a "Take User Survey" button in the top center, and map style buttons for "Streets", "Topo", and "Imagery" in the top right. A checkbox for "Identify Map Features" is also present. At the bottom, there is a "Remove Project Area" button and a search bar with "Find By Name:" and dropdown menus for "City" and "County", along with a "Clear" button. The Esri logo is in the bottom right corner.

Usage Tips

Take User Survey

Streets Topo Imagery

Identify Map Features

Remove Project Area

Find By Name:   City County Clear

POWERED BY esri



# Different Views: Satellite



A satellite map interface showing the Portland, Oregon area. The map is overlaid with a purple line representing a project area. Various UI elements are present: a compass and zoom controls on the left; a "Usage Tips" button; a "Take User Survey" button; a "Streets Topo Imagery" menu; an "Identify Map Features" button; a search bar at the bottom with "Find By Name:" and buttons for "City", "County", and "Clear"; and a "powered by esri" logo in the bottom right corner. The map shows major roads like I-5, I-205, and I-84, and geographical features like Mount Hood National Forest and the Columbia River Gorge.



# LAT Functionality



- View data layers
- One-stop-shopping:
  - Download data/metadata
  - Provide links to other websites
- Identify tool – instantly get list of potential risks
- Draw custom project area
- Generate customized project area reports



# View Metadata/Download Data



Home | Map Page | Report

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- Gadwall
- Gilded Flicker
- Golden-cheeked Warbler
- Golden-winged Warbler
- Golden Eagle
- Grace's Warbler
- Gray Vireo
- Greater Prairie-Chicken
- ▼ Greater Sage-Grouse
  - Greater Sage-Grouse SDM
  - BLM 25% Core Areas
  - BLM 50% Core Areas
  - BLM 75% Core Areas

External State-Level Data

► Kansas Natural Resource Planner

Usage Tips | Take User Survey

Streets | Topo | Imagery

Identify Map Features

Visible Layers

Greater Sage-Grouse SDM

Transparency

Clear  Opaque

[Turn off all layers](#)

Greater Sage-Grouse

Species distribution models indicate where a species is likely to be present. Each species' data layer may be comprised of multiple models of varying quality.

- Species Distribution Model
- No Data But Present In State
- Data Validation Failed
- Species Range Map

[Metadata/Download Data](#) | [Species Information](#) | [Zoom To Layer](#)

Draw Project Area | Remove Project Area

Find By Name:

powered by **esri**

**Click here**



# View Metadata/Download Data



Home | Map Page | Report

[Site Navigation Tips](#)

## Wind and Wildlife Landscape Assessment Tool

Home | Background | Species Selection Criteria | Species List | Metadata and Downloads

Click Rows To Expand Folders and Access Metadata and Downloads

Species/Data Source
▼ Greater Sage-Grouse ( <i>Centrocercus urophasianus</i> )
Idaho Gap Analysis Project
Wyoming Gap Analysis
South Dakota Gap Analysis
North Dakota Gap Analysis
Montana Gap Analysis
Southwest Gap Analysis
Oregon Gap Analysis
Washington Gap Analysis
▼ Greater Sage-Grouse 100% Core Areas
Kevin E. Doherty, et al.
▼ Greater Sage-Grouse MT & WY Governor's Core Areas
Montana Fish, Wildlife, & Parks
Wyoming Governors Implementation Team

Group by:  Species  Data Source

Greater Sage-Grouse

Search

Reset





# Identify Tool



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- Greater Sage-Grouse
- Greater Shearwater
- Green Parakeet
- Gull-billed Tern
- Gunnison Sage-Grouse

External State-Level Data

► Kansas Natural Resource Planner

Usage Tips | Take User Survey

Streets | Topo | Imagery

Identify Map Features

### Identify Results

Lists species within quad (yellow rectangle). Land, Disturbance, and Wind are identified by map click location.

Species:  With Data  Without Data

View	Common Name
<input type="checkbox"/>	Hoary Bat
<input type="checkbox"/>	Little Brown Myotis
<input type="checkbox"/>	Silver-haired Bat
<input type="checkbox"/>	Horned Lark
<input type="checkbox"/>	Mallard
<input type="checkbox"/>	Short-eared Owl
<input type="checkbox"/>	Swainson's Hawk
<input type="checkbox"/>	Mule Deer
<input type="checkbox"/>	Townsend's Ground Squirrel

Land Ownership  
Carter Canyon  
State Agency Managing  
Natural Resources

**Disturbance Type**

Crop

Wind Power (50m)

- Superb
- Outstanding
- Excellent
- Good
- Fair
- Marginal
- Poor
- No Data

Draw Project Area | Remove Project Area

Find By Name:  City County Clear

20 km | 10 mi

bing | esri



# Draw Custom Project Area



Home | Map Page | **Report**

Create PDF | Species With Available Distribution Models | Report Page Tips

Species	Informal Tax	NatureServe Status	Endangered Species Act Status	Migratory Bird Treaty Act	Issue
Hoary Bat ( <i>Lasiurus cinereus</i> )	Bat	Secure	Endangered	No	Mortality Concern
Little Brown Myotis ( <i>Myotis lucifugus</i> )	Bat	Secure	Species of	No	Mortality Concern
Silver-haired Bat ( <i>Lasiorycteris noctivagans</i> )	Bat	Secure	Species of	No	Mortality Concern
Black Oystercatcher ( <i>Haematopus bachmani</i> )	Bird	Secure	None	Yes	Vulnerable
Blue-winged Teal ( <i>Anas discors</i> )	Bird	Secure	None	Yes	Avoidance/Management concern
Brewer's Sparrow ( <i>Spizella breweri</i> )	Bird	Secure	None	Yes	Vulnerable
Gadwall ( <i>Anas strepera</i> )	Bird	Secure	None	Yes	Avoidance/Management concern
Horned Lark ( <i>Eremophila alpestris</i> )	Bird	Secure	None	Yes	Vulnerable

## Generate Custom Report

Species	Informal Tax
Cascade Torrent Salamander ( <i>Rhyacotriton</i> )	Amphibian
Columbia Torrent Salamander ( <i>Rhyacotriton kezeri</i> )	Amphibian
Larch Mountain Salamander ( <i>Plethodon larselli</i> )	Amphibian
Southern Torrent Salamander	Amphibian



### Wind and Wildlife Landscape Assessment Tool Project Area Report

The intention of the Landscape Assessment Tool (LAT) is to aid in landscape-scale planning by characterizing risk to wildlife relative to potential wind energy development. The resolution of the species data used in the LAT precludes decisions at scales finer than 50 square miles. The LAT is not intended for micro-siting or site-specific project design, or to replace on-site surveys. The providers of the data make no warranty as to its suitability for any particular use and users agree, by using the data, to accept any liability associated with such use.

The LAT uses numerous data layers generated from public sources. These sources are limited by a high degree of variation in their accuracy and in the scales at which they function. This LAT is a general screening tool and may provide some guidance as to the environmental characteristics and important landscape-scale wildlife values of a geographic area. This initial screening can offer early guidance about possible sensitivity of a site within a larger landscape context and could be used by wind developers for preliminary landscape scale assessment. The LAT, however, cannot be relied upon for actual and individual siting decisions. Those decisions must be made on the basis of locally-developed data and analyses, taking into consideration numerous factors, including factors unrelated to wildlife.

Species Name	Informal Taxonomy	Issue	NatureServe Status	Endangered Species Act Status	Migratory Bird Treaty Act
Hoary Bat ( <i>Lasiurus cinereus</i> )	Bat	Mortality Concern	Secure	Endangered	No
Little Brown Myotis ( <i>Myotis lucifugus</i> )	Bat	Mortality Concern	Secure	Species of Concern	No
Silver-haired Bat ( <i>Lasionycteris noctivagans</i> )	Bat	Mortality Concern	Secure	Species of Concern	No
Black Oystercatcher ( <i>Haematopus bachmani</i> )	Bird	Vulnerable	Secure	None	Yes
Blue-winged Teal ( <i>Anas discors</i> )	Bird	Avoidance/Management concern	Secure	None	Yes
Brewer's Sparrow ( <i>Spizella breweri</i> )	Bird	Vulnerable	Secure	None	Yes
Gadwall ( <i>Anas strepera</i> )	Bird	Avoidance/Management concern	Secure	None	Yes
Horned Lark ( <i>Eremophila alpestris</i> )	Bird	Vulnerable	Secure	None	Yes
Mallard ( <i>Anas platyrhynchos</i> )	Bird	Avoidance/Management concern	Secure	None	Yes
Mountain Quail ( <i>Oreortyx pictus</i> )	Bird	Vulnerable	Secure	None	No
Northern Pintail ( <i>Anas acuta</i> )	Bird	Avoidance/Management concern	Secure	None	Yes
Northern Shoveler ( <i>Anas clypeata</i> )	Bird	Avoidance/Management concern	Secure	None	Yes
Sage Sparrow ( <i>Amphispiza belli</i> )	Bird	Vulnerable	Secure	None	Yes
Short-eared Owl ( <i>Asio flammeus</i> )	Bird	Vulnerable	Secure	None	Yes
Swainson's Hawk ( <i>Buteo swainsoni</i> )	Bird	Vulnerable	Secure	None	Yes
White-throated Swift ( <i>Aeronautes saxatalis</i> )	Bird	Vulnerable	Secure	None	Yes
Willow Flycatcher ( <i>Empidonax traillii</i> )	Bird	Vulnerable	Secure	Species of Concern	Yes
Antilocapra americana	Mammal	Avoidance/Management concern	Secure	None	No
Mule Deer ( <i>Odocoileus hemionus</i> )	Mammal	Avoidance/Management concern	Secure	None	No
Townsend's Ground Squirrel ( <i>Spermophilus townsendii</i> )	Mammal	Vulnerable	Vulnerable	None	No
Washington Ground Squirrel ( <i>Spermophilus washingtoni</i> )	Mammal	Vulnerable	Imperiled	Candidate	No

Custom pdf report is generated, with species, wind, protected area, & disturbance information



# Kansas Natural Resource Planner



Home | Map Page | Report

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Map Navigation Tips

Take User Survey

Streets | Topo | Imagery

Identify Map Features

**Amphibians**

**Bats**

**Birds**

**Mammals**

**Reptiles**

**Wind Power**

**Disturbance**

Land Ownership

External State-Level Data

Sensitive species

Protected areas

Prairie chicken range

LPC lek probability

Whooping crane corridors

Playa lakes

Playas area total

**Visible Layers**

LPC lek probability

Whooping crane corridors

Turn off all layers

Previous | Full Extent | Draw Project Area | Remove Project Area

Find By Name: \_\_\_\_\_ City County Clear

A map of Kansas showing various natural resource data layers. The map is centered on the central part of the state, with major cities like Lincoln, Topeka, and Wichita visible. The data layers include LPC lek probability (shown as green and yellow patches) and Whooping crane corridors (shown as red lines). The map also shows a grid of counties and major roads. The interface includes a navigation toolbar on the left, a table of contents, and a search bar at the bottom.



# LAT Next Steps



- Assess current state of mapping tools to evaluate strengths, challenges, and gaps
- Collaborate to improve species distribution models
- Add species of state conservation concern
- Add raptor count data
- Add National Wetland Inventory data



# Contacts

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