

# Environmental Overview

Western Kentucky Parkway Upgrade Study

*Butler, Grayson, Hardin, and Ohio Counties*  
January 24, 2022

## Environmental Overview – Natural and Human Environmental Resources

The Western Kentucky Parkway planning study will assess what upgrades are needed to bring the Western Kentucky Parkway to interstate standards. This Environmental Overview (EO) documents the environmental features known to exist within the study area. At present, upgrades are anticipated to occur within existing right-of-way. The study area for the EO considers a 250-foot buffer of the existing parkway and extends approximately 61 miles along the Western Kentucky Parkway from Beaver Dam to Elizabethtown and includes the seven interchanges along the corridor. The study area spans portions of Ohio, Grayson and Hardin counties and crosses a small, northern tip of Butler County.

Data collected for the EO is based on a review of existing GIS datasets, state and federal agency databases, literature research, and archival data. Desktop research was performed to identify and locate areas of importance or concern that lie within the study area. The EO considers resources in the following categories: ecological resources (i.e., streams, wetlands, and floodplains); threatened and endangered species and important habitats; air quality and noise issues; Environmental Justice / socioeconomic data; land use; hazardous materials; and historic and archaeological resources. Further, for ease of consideration the EO considered these resources within the study areas within four smaller segments. Segments comprise the following:

1. Western terminus at Beaver Dam / I-165 / William H Natcher Parkway to KY 79 Caneyville / Morgantown interchange (Milepoint [MP] 76.7 to MP 94.3)
2. KY 79 Caneyville / Morgantown interchange to KY 259 Leitchfield interchange (MP 94.3 to MP 107.0)
3. KY 259 Leitchfield / Brownsville interchange to KY 84 White Mills / Eastview interchange (MP 107.0 to MP 123.4)
4. KY 84 White Mills / Eastview Interchange to eastern terminus at I-65 (MP 123.4 to MP 136.6)

A few areas of environmental consideration apply to all segments corridor wide and are briefly discussed immediately below. If an environmental constraint is specific to a particular segment, that information is presented in tabular format by segment number, following the overall discussions.

**Air quality** - Areas of the state that have had levels of criteria air pollutants that have exceeded the threshold levels set by the Environmental Protection Agency (EPA) are considered in nonattainment or maintenance for that pollutant and must demonstrate how future transportation improvements are not going to worsen the air quality conditions. The study area is in attainment for all criteria pollutants and as such, a project in the study area will not require any comprehensive air quality review.

A project in the study area would also be considered “Lower Potential for Meaningful MSAT (Mobile Source Air Toxics) Effects” since the design year traffic would be less than 140,000 to

150,000 AADT. As such, a qualitative assessment of the emissions projections should be included in any future NEPA document.

**Traffic Noise** - The Federal Highway Administration (FHWA) Noise Standard requires that noise abatement measures be considered when traffic noise impacts are identified for Type I federal projects. As the Kentucky Transportation Cabinet's 2020 *Noise Analysis and Abatement Policy* directs, Type I projects are identified as "The construction of a highway on new location; or the physical alteration of an existing highway where there is either: i. Substantial Horizontal Alteration; or ii. Substantial Vertical Alteration." Unless significant alterations are proposed at an interchange or interchanges, the project will not meet Type I criteria. Significant alterations, however, could include the addition or relocation of ramp lanes such that the distance between a noise receptor and the traffic noise source is halved or the shielding between a receptor and the traffic noise source is removed exposing the line of sight between the two. In such cases, the entire project corridor would be considered a Type I project and noise analysis would be required for the entire project corridor.

**Environmental Justice** – The U.S. EPA Office of Environmental Justice defines Environmental Justice (EJ) as "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies." The Green River Area Development District (GRADD) and Lincoln Trail Area Development District (LTADD) jointly prepared the *Western Kentucky Parkway Interstate Upgrade Study Socioeconomic Report (2/1/2021)* to assess the potential to encounter EJ populations within the study corridor. The report used 2018 U.S. Census Bureau American Community Survey (ACS) data; numbers for the LTADD were used as the reference thresholds. As a result of this comparative analysis, the report identified 38 block groups with minority status and 30 block groups with poverty status.

Block groups with minority populations are located throughout the project corridor; block groups with the highest minority populations extend from the following MP locations: MP 76.7 to MP 82.10; MP 87.6 to MP 87.8 (tip of Butler County); MP 95.2 to MP 104.0; and MP 123.4 to MP 136.6. Block groups with low-income populations extend nearly along the entire corridor; only the section from the Grayson / Hardin County line at approximate MP 119.7 up to MP 131.8 has a relatively low percent of its population (under 10 percent) in poverty. Any future NEPA document must consider a project's potential to disproportionately impact these populations. The full *Socioeconomic Report* is attached.

**Farmland** – The Farmland Protection Policy Act (FPPA) of 1981 (7 U.S.C. 4201 and 7 CFR Ch. VI Part 658) is intended to minimize conversion of farmland through consideration of impacts and alternative actions. The FPPA applies to activities where federal funds are involved and an irreversible conversion of prime, unique, or state and locally important farmland to non-agricultural use occurs. Some lands are exempt. Those lands may include lands not considered farmland such as land that has been previously developed (e.g. US Census urban areas or existing rights-of-way) or is committed to urban development or water storage.

Prime farmland soils do exist throughout the entire project corridor, but the prevalence of prime farmland soils increases as the project moves toward the east. Prime farmland soils are limited

near the western terminus and are most evident between MP 111.3 and MP 114.8; MP 116.0 and MP 121.0; and MP 126.8 and MP 132.7. These prime farmland soils are interspersed however with farmland soils of statewide importance throughout the entire project corridor. As the project is currently proposed, i.e., within existing right-of-way, no concerns related to farmland are anticipated for the project. Any future NEPA document will need to consider potential impacts to farmland, and particularly so if any improvements are proposed outside of existing right-of-way.

**1. Western Terminus to KY 79 (MP 76.7 to MP 94.3)**

Environmental Category	Environmental Constraint
<b>Natural Environment</b>	
<b>Streams</b>	34 stream crossings; Sixes Creek at MP 83.15 is an Outstanding State Resource Water (OSRW)
<b>Wetlands</b>	Large wetland at MP 89.0 (PF01A & PSS1A)
<b>Floodplains</b>	7 floodplains crossed
<b>Threatened &amp; Endangered Species</b>	Within Indiana bat and northern long-eared bat Potential habitat; 3 bats and 11 mussels listed by the USFWS for the study corridor (see attached USFWS IPaC)
<b>Important Habitats</b>	Crosses Sixes Creek, an Outstanding State Resource Water (OSRW) near MP 83.15
<b>Human Environment</b>	
<b>Archaeology</b>	Sites may occur within existing right-of-way – to be analyzed during future design phase

No neighborhoods, community facilities and services, Section 4(f) properties, Section 6 (f) properties, hazardous materials / USTs, or currently listed historic structures are known from within the 250-foot buffer of the parkway.

**2. KY 79 to KY 259 (MP 94.3 to MP 107.0)**

Environmental Category	Environmental Constraint
<b>Natural Environment</b>	
<b>Streams</b>	21 stream crossings
<b>Wetlands</b>	Large wetland (PF01A) just east of KY 79 (MP 95.8)
<b>Floodplains</b>	11 floodplains crossed
<b>Threatened &amp; Endangered Species</b>	Within Indiana bat and northern long-eared bat Potential habitat; 3 bats and 11 mussels listed by the USFWS for the study corridor (see attached USFWS IPaC)
<b>Human Environment</b>	
<b>Land Use - Neighborhoods</b>	2 neighborhood areas west of KY 187, 1 of which appears to contain several mobile homes
<b>Hazardous Materials/USTs</b>	Gas Station at KY 79 (NE quadrant); Gas station at KY 259 Interchange (NW quadrant)
<b>Archaeology</b>	Sites may occur within existing right-of-way – to be analyzed during future design phase

No community facilities and services, Section 4(f) properties, Section 6(f), or currently listed historic structures are known from within the 250-foot buffer of the parkway.

### 3. KY 259 to KY 84 (MP 107.0 to MP 123.4)

Environmental Category	Environmental Constraint
<b>Natural Environment</b>	
Streams	18 stream crossings
Floodplains	6 floodplains crossed
Threatened & Endangered Species	Within Indiana bat Potential habitat; 1 northern long-eared bat Known Swarming 2 habitat location; 3 bats and 11 mussels listed by the USFWS for the study corridor (see attached USFWS IPaC)
Important Habitats	Clifty Creek at MP 115.6 is an OSRW; 1 wellhead protection area (MP 122.7 to MP 124.5)
<b>Human Environment</b>	
Land Use	
Section 4(f) Properties	James D. Beville Park* at Leitchfield
Section 6 (f) Properties	James D. Beville Park* received Land and Water Conservation Fund Act monies in 2016
Hazardous Materials/USTs	Gas Station at KY 224 Interchange (SE quadrant)
Archaeology	Sites may occur within existing right-of-way – to be analyzed during future design phase

\*At its closest point, James D. Beville Park is approximately 300 feet from the centerline of westbound Western Kentucky Parkway.

No wetlands, neighborhoods, community facilities and services, Section 4(f) properties, Section 6(f), or currently listed historic structures are known from within the 250-foot buffer of the parkway. However, James D. Beville Park, which is a community facility and both a Section 4(f) and Section 6(f) property, is approximately 300 feet from the Western Kentucky Parkway.

### 4. KY 84 to I-65 (MP 123.4 to MP 136.6)

Environmental Category	Environmental Constraint
<b>Natural Environment</b>	
Streams	12 stream crossings
Floodplains	3 floodplains crossed
Threatened & Endangered Species	Within Indiana bat Potential habitat; 2 northern long-eared bat Known Swarming 2 habitat locations; 3 bats and 11 mussels listed by the USFWS for the study corridor (see attached USFWS IPaC)
Important Habitats	3 wellhead protection areas (MP 122.7 to MP 124.5; MP 132.55 to MP 134.2; and MP 135.0 to MP 136.7)
<b>Human Environment</b>	
Land Use - Neighborhoods	3 small neighborhood clusters near interchange with Elizabethtown / US 31 W Bypass
Hazardous Materials/USTs	Gas Station at KY 3005 Interchange (SE quadrant)
Archaeology	Sites may occur within existing right-of-way – to be analyzed during future design phase

No wetlands, community facilities and services, Section 4(f) properties, Section 6(f), or currently listed historic structures are known from within the 250-foot buffer of the parkway.

A key consideration for all improvements will be whether they occur outside of existing right-of-way. Those occurring outside of existing right-of-way have greater potential to impact natural and environmental resources. For archaeological considerations, in some cases, impacts within existing right-of-way may be an environmental constraint; any future design will need to consider archaeological resources in particular where ground disturbance occurs. The table

below summarizes potential impacts or considerations that may be anticipated for future design of the conceptual improvements.

Conceptual Improvement	Anticipated Environmental Impact
<b>Mainline</b>	
Shoulder Widening	No Anticipated Impact
Superelevation Adjustment	
Vertical Grade Decrease	
Headlight Sight Distance Increase	
Replace / Raise / Add Guardrail	
<b>Interchanges</b>	
Ramp Accel / Decel Lengthening	Possible Tree Removal (Bat Habitat) at Exit 94 (Morgantown Road), Exit 107 (KY 259), and Exit 124 (Sonora Hardin Springs Road)
	Well-head Protection Areas and Northern Long-eared Bat Swarming 2 Areas at Exit 124 (Sonora Hardin Springs Road) and Exit 136 (US 31W Bypass)
Lane Width Increase	No Anticipated Impact
Ramp Grade Decrease	
Control of Access Spacing Increase	Potential Right-of-Way Needed, Potential Archaeological Impacts, Potential Impact to Gas Station Entrance at Exit 94 (Morgantown Road)
	Potential Right-of-Way Needed, Potential Right-of-Way Take of 1 Residence, Potential Archaeological Impacts, Potential Cultural Historic Impacts (3 Homes >50 Years), Well-head Protection Area, Possible Tree Removal (Bat Habitat), Northern Long-eared Bat Swarming 2 Area at Exit 124 (Sonora Hardin Springs Road)
Interchange Ramp Realignment – Western Kentucky Parkway at I-65 / US 31W Bypass (Plan 1)	Potential for Noise Analysis to be Required, Floodplain Considerations, Northern Long-eared Bat Swarming 2 Area, Well-head Protection Area
Interchange Ramp Realignment - Western Kentucky Parkway at I-65 / US 31W Bypass (CL Ultimate)	Potential for Noise Analysis to be Required, Floodplain Considerations, Northern Long-eared Bat Swarming 2 Area, Possible Tree Removal (Bat Habitat), Well-head Protection Area
Interchange Ramp Realignment – Western Kentucky Parkway at I-65 / US 31W Bypass (CL Ultimate Braided)	Potential for Noise Analysis to be Required, Floodplain Considerations, Northern Long-eared Bat Swarming 2 Area, Possible Tree Removal (Bat Habitat), Well-head Protection Area
<b>Bridges</b>	
Bridge Railing Replacement	Potential Bat Usage of Bridges and Potential for Bridge Railing Asbestos at Bridges over I-165 (Natcher Parkway) (MP 76.7) and at Bridges over KY 2713 (MP 85.7)
	Potential Bat Usage of Bridge, Potential for Bridge Railing Asbestos, and Floodplain Considerations at Bridges over W Rhudes Creek (MP 130.9)
	Potential Bat Usage of Bridge, Potential for Bridge Railing Concrete, and Floodplain Considerations at Bridges over Valley Creek (MP 132.4)

Conceptual Improvement	Anticipated Environmental Impact
Bridge Widening	Potential Bat Usage of Bridge and Potential for Bridge Railing Concrete at Bridges over KY 187 (MP 104.0)
	Potential Bat Usage of Bridge and Potential for Bridge Railing Concrete, and Well-head Protection Area at Bridges over CSX Rail and Gaither Street Road (MP 132.6)
Bridge Vertical Clearance (Bridge Overpasses on WK PKY)	Potential Bat Usage of Bridges
	Potential for Bridge Railing Asbestos – All Bridges Except for US 31W Bypass Bridge over Western Kentucky Parkway (WK PKY) which has Potential for Bridge Railing Concrete
	Potential Right-of-Way Needed and Potential Archaeological Impacts at the Following Bridges over WK PKY: KY 2712 (MP 77.4), KY 340 (MP 87.8), KY 79 (MP 94.3), McDonald Road (MP 105.9), KY 1214 (MP103.2), KY 224 (MP 111.8), KY 720 (MP 117.4), KY 84 (MP 123.4), KY 222 (MP 129.0), and KY 1904 (MP 131.8)
	Possible Tree Removal (Bat Habitat) at the Following Bridges over WK PKY: KY 2712 (MP 77.4), KY 340 (MP 87.8), McDonald Road (MP 105.9), KY 1214 (MP 103.2), KY 720 (MP 117.4), KY 222 (MP 129.0), and KY 1904 (MP 131.8)
	Northern Long-eared Bat Swarming 2 Areas at Bridges over KY 720 (MP 117.4), KY 84 (MP 123.4), KY 222 (MP 129.0), and US 31W Bypass (MP 135.6)
<b>Additional Safety and Operational Improvements</b>	
Shoulder Widening with Cable Median Barrier Addition	No Anticipated Impact
Median Turnaround Removal	
Interchange Ramp Improvements	

# Attachment – Information for Planning and Consultation / Endangered Species List

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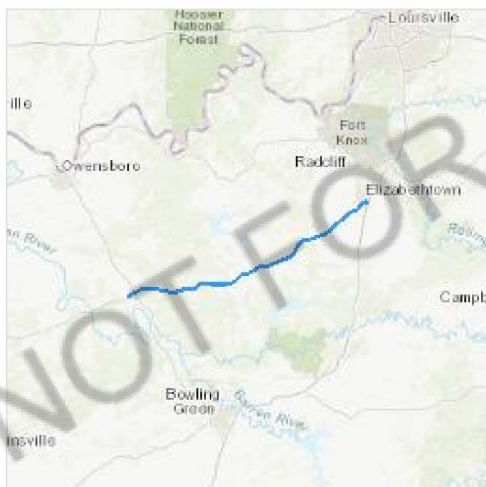
# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Kentucky



## Local office

Kentucky Ecological Services Field Office

☎ (502) 695-0468

📅 (502) 695-1024

J C Watts Federal Building, Room 265  
330 West Broadway  
Frankfort, KY 40601-8670

<http://www.fws.gov/frankfort/>

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

**Gray Bat** *Myotis grisescens*

Endangered

Wherever found

This species only needs to be considered if the following condition applies:

- The project area includes potential gray bat habitat.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6329>

**Indiana Bat** *Myotis sodalis*

Endangered

Wherever found

This species only needs to be considered if the following condition applies:

- The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species.

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/5949>

**Northern Long-eared Bat** *Myotis septentrionalis*

Threatened

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species.
- Contact the KFO to discuss possible impacts to the species. The specified area includes or is in the vicinity of a known hibernaculum and/or maternity roost tree.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

**Clams**

NAME

STATUS

**Clubshell** *Pleurobema clava*

Endangered

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/3789>

**Fanshell** *Cyprogenia stegaria* Endangered  
 Wherever found  
 This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/4822>

**Northern Riffleshell** *Epioblasma torulosa rangiana* Endangered  
 Wherever found  
 This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Green, Licking, or Ohio.

No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/527>

**Pink Mucket (pearlymussel)** *Lampsilis abrupta* Endangered  
 Wherever found  
 This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/7829>

**Purple Cat's Paw (=purple Cat's Paw Pearlymussel)** *Epioblasma obliquata obliquata* Endangered  
 This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/5602>

**Rabbitsfoot** *Quadrula cylindrica cylindrica* **Threatened**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/5165>

**Ring Pink (mussel)** *Obovaria retusa* **Endangered**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4128>

**Rough Pigtoe** *Pleurobema plenum* **Endangered**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6894>

**Sheepnose Mussel** *Plethobasus cyphus* **Endangered**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6903>

**Snuffbox Mussel** *Epioblasma triquetra* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4135>**Spectaclecase (mussel)** *Cumberlandia monodonta* **Endangered**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7867>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>            This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.  <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	Breeds Sep 1 to Jul 31
<p><b>Blue-winged Warbler</b> <i>Vermivora pinus</i>            This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds May 1 to Jun 30
<p><b>Henslow's Sparrow</b> <i>Ammodramus henslowii</i>            This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/3941">https://ecos.fws.gov/ecp/species/3941</a></p>	Breeds May 1 to Aug 31

<b>Kentucky Warbler</b> <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
<b>Lesser Yellowlegs</b> <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
<b>Prairie Warbler</b> <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
<b>Red-headed Woodpecker</b> <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
<b>Rusty Blackbird</b> <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Semipalmated Sandpiper</b> <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Wood Thrush</b> <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:



1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

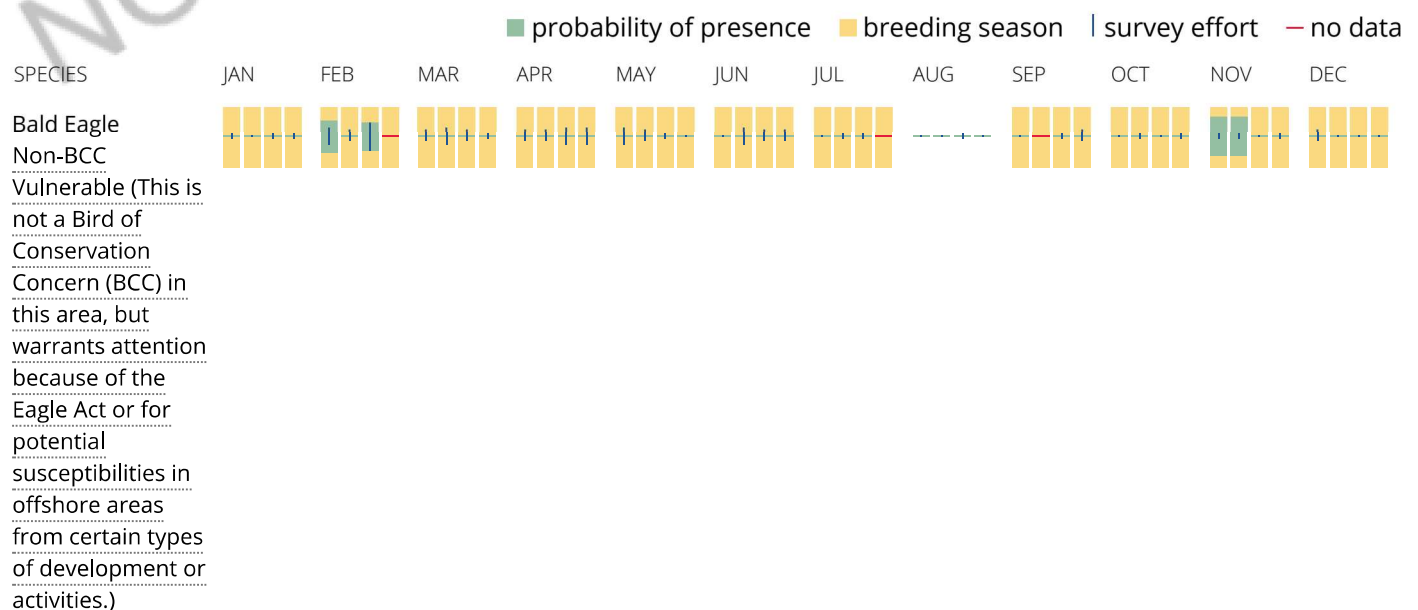
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

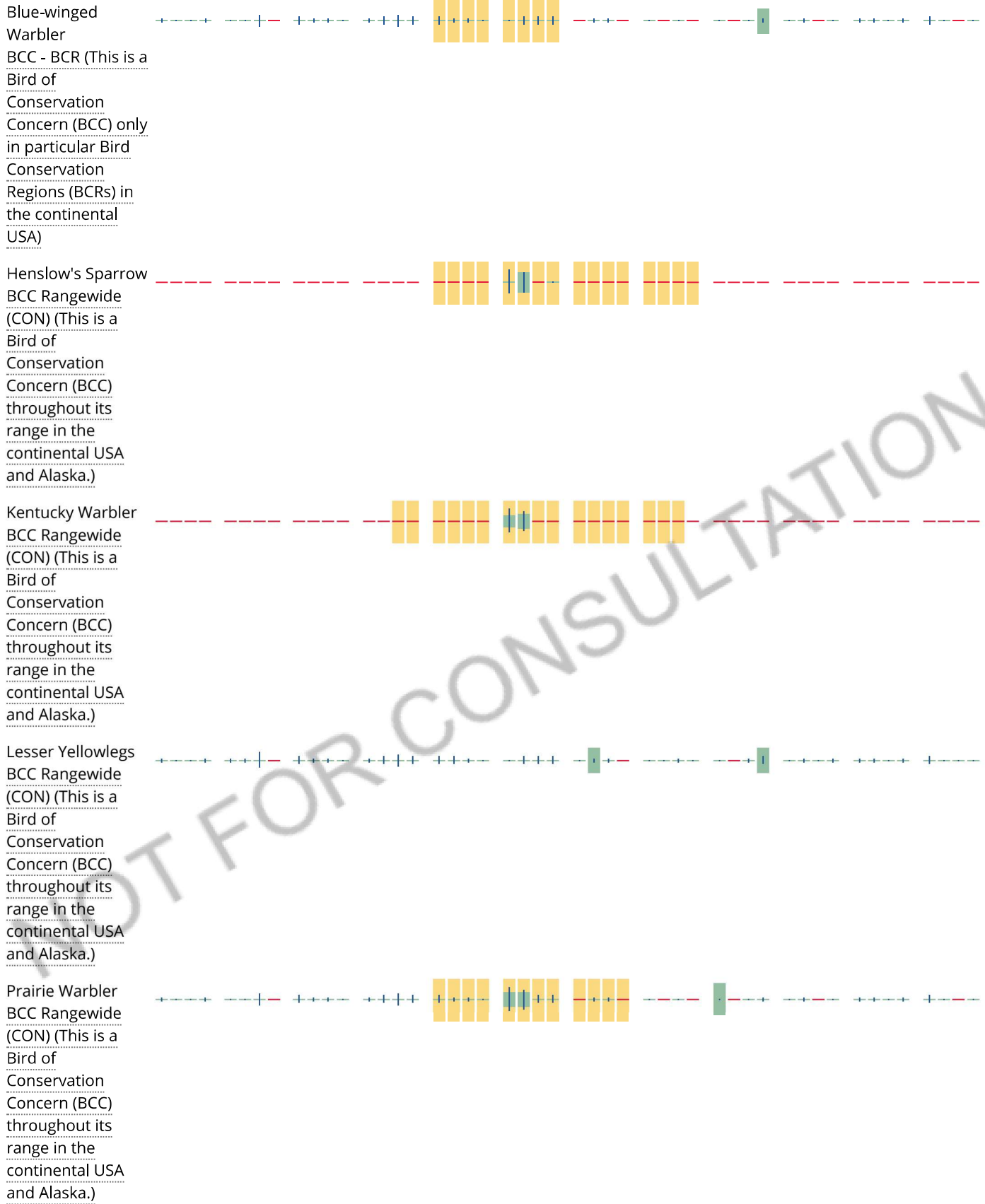
### No Data (—)

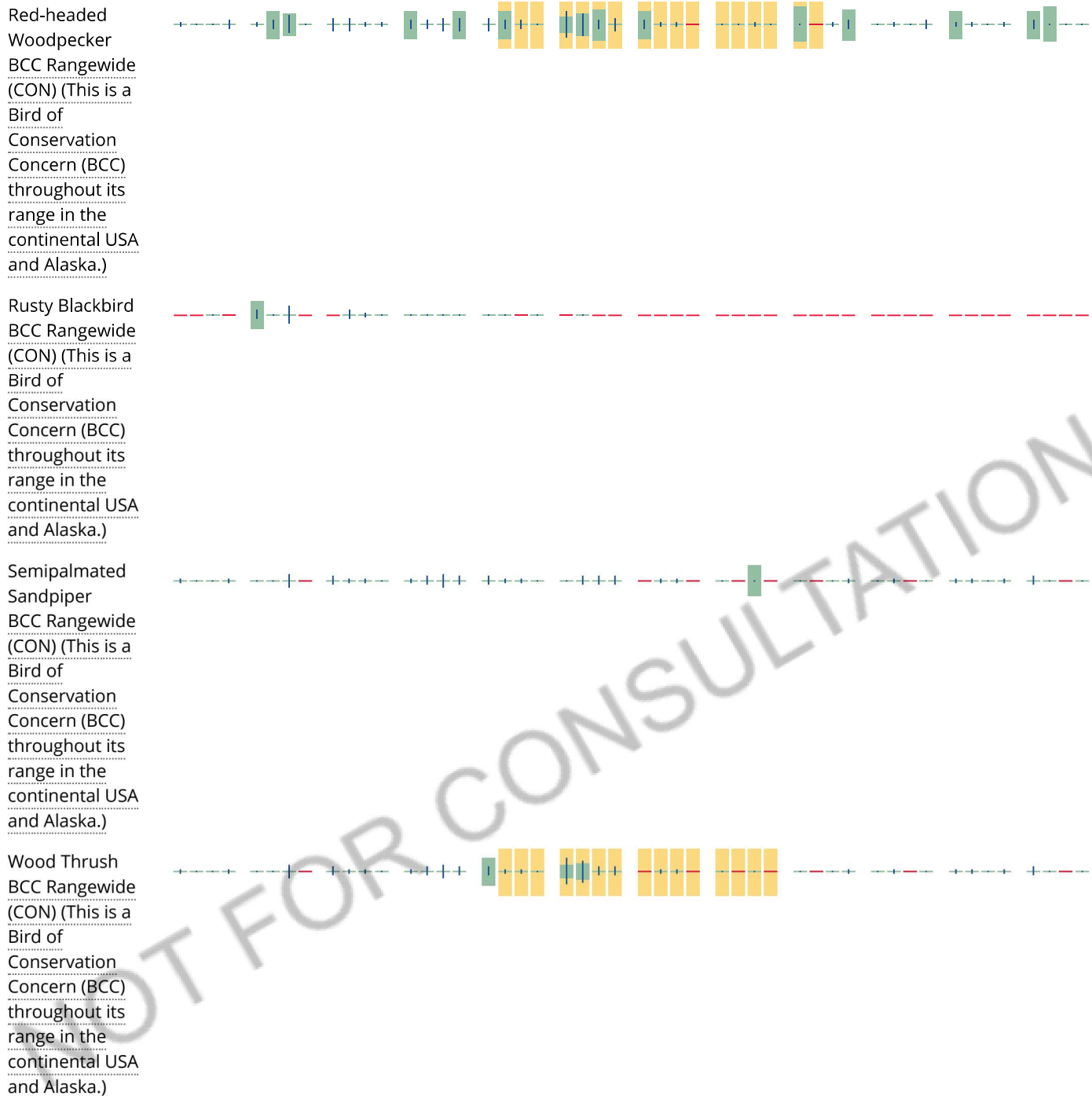
A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.







**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

#### **Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

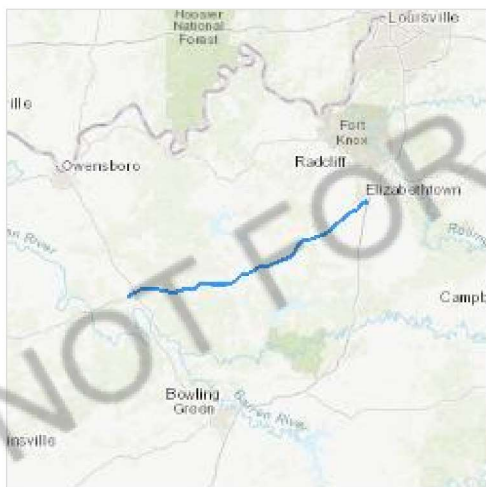
# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Kentucky



## Local office

Kentucky Ecological Services Field Office

☎ (502) 695-0468

📅 (502) 695-1024

J C Watts Federal Building, Room 265  
330 West Broadway  
Frankfort, KY 40601-8670

<http://www.fws.gov/frankfort/>

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS



**Gray Bat** *Myotis grisescens*

Endangered

Wherever found

This species only needs to be considered if the following condition applies:

- The project area includes potential gray bat habitat.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6329>

**Indiana Bat** *Myotis sodalis*

Endangered

Wherever found

This species only needs to be considered if the following condition applies:

- The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species.

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/5949>

**Northern Long-eared Bat** *Myotis septentrionalis*

Threatened

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The specified area includes areas in which incidental take would not be prohibited under the 4(d) rule. For reporting purposes, please use the "streamlined consultation form," linked to in the "general project design guidelines" for the species.
- Contact the KFO to discuss possible impacts to the species. The specified area includes or is in the vicinity of a known hibernaculum and/or maternity roost tree.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/9045>

**Clams**

NAME

STATUS

**Clubshell** *Pleurobema clava*

Endangered

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/3789>

<p>Fanshell <i>Cyprogenia stegaria</i></p> <p>Wherever found</p> <p>This species only needs to be considered if any of the following conditions apply:</p> <ul style="list-style-type: none"><li>• The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.</li><li>• The species may be affected by projects that significantly impact the Green River and/or the Barren River.</li></ul> <p>No critical habitat has been designated for this species.</p> <p><a href="https://ecos.fws.gov/ecp/species/4822">https://ecos.fws.gov/ecp/species/4822</a></p>	Endangered
<p>Northern Riffleshell <i>Epioblasma torulosa rangiana</i></p> <p>Wherever found</p> <p>This species only needs to be considered if any of the following conditions apply:</p> <ul style="list-style-type: none"><li>• The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.</li><li>• The species may be affected by projects that significantly impact, directly or indirectly, the following rivers: Green, Licking, or Ohio.</li></ul> <p>No critical habitat has been designated for this species.</p> <p><a href="https://ecos.fws.gov/ecp/species/527">https://ecos.fws.gov/ecp/species/527</a></p>	Endangered
<p>Pink Mucket (pearlymussel) <i>Lampsilis abrupta</i></p> <p>Wherever found</p> <p>This species only needs to be considered if any of the following conditions apply:</p> <ul style="list-style-type: none"><li>• The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.</li><li>• The species may be affected by projects that significantly impact the Green River and/or the Barren River.</li></ul> <p>No critical habitat has been designated for this species.</p> <p><a href="https://ecos.fws.gov/ecp/species/7829">https://ecos.fws.gov/ecp/species/7829</a></p>	Endangered
<p>Purple Cat's Paw (=purple Cat's Paw Pearlymussel) <i>Epioblasma obliquata obliquata</i></p> <p>This species only needs to be considered if any of the following conditions apply:</p> <ul style="list-style-type: none"><li>• The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.</li><li>• The species may be affected by projects that significantly impact the Green River and/or the Barren River.</li></ul> <p>No critical habitat has been designated for this species.</p> <p><a href="https://ecos.fws.gov/ecp/species/5602">https://ecos.fws.gov/ecp/species/5602</a></p>	Endangered

**Rabbitsfoot** *Quadrula cylindrica cylindrica* **Threatened**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/5165>

**Ring Pink (mussel)** *Obovaria retusa* **Endangered**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4128>

**Rough Pigtoe** *Pleurobema plenum* **Endangered**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6894>

**Sheepnose Mussel** *Plethobasus cyphus* **Endangered**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6903>

**Snuffbox Mussel** *Epioblasma triquetra* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4135>**Spectaclecase (mussel)** *Cumberlandia monodonta* **Endangered**

Wherever found

This species only needs to be considered if any of the following conditions apply:

- The species may potentially occur in suitable habitat within the following rivers: Little, Pond, Rough, and Tradewater; and their larger tributaries.
- The species may be affected by projects that significantly impact the Green River and/or the Barren River.

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/7867>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>            This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.  <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	Breeds Sep 1 to Jul 31
<p><b>Blue-winged Warbler</b> <i>Vermivora pinus</i>            This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds May 1 to Jun 30
<p><b>Henslow's Sparrow</b> <i>Ammodramus henslowii</i>            This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/3941">https://ecos.fws.gov/ecp/species/3941</a></p>	Breeds May 1 to Aug 31

<b>Kentucky Warbler</b> <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
<b>Lesser Yellowlegs</b> <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
<b>Prairie Warbler</b> <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
<b>Red-headed Woodpecker</b> <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
<b>Rusty Blackbird</b> <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Semipalmated Sandpiper</b> <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
<b>Wood Thrush</b> <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

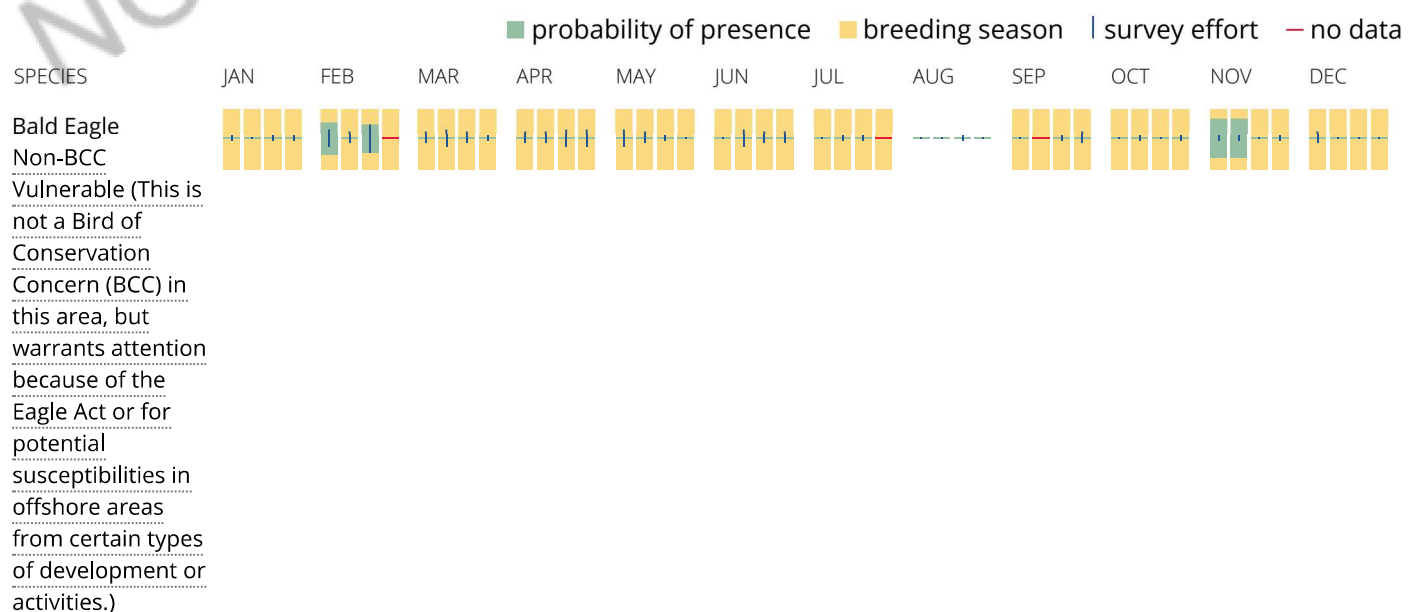
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

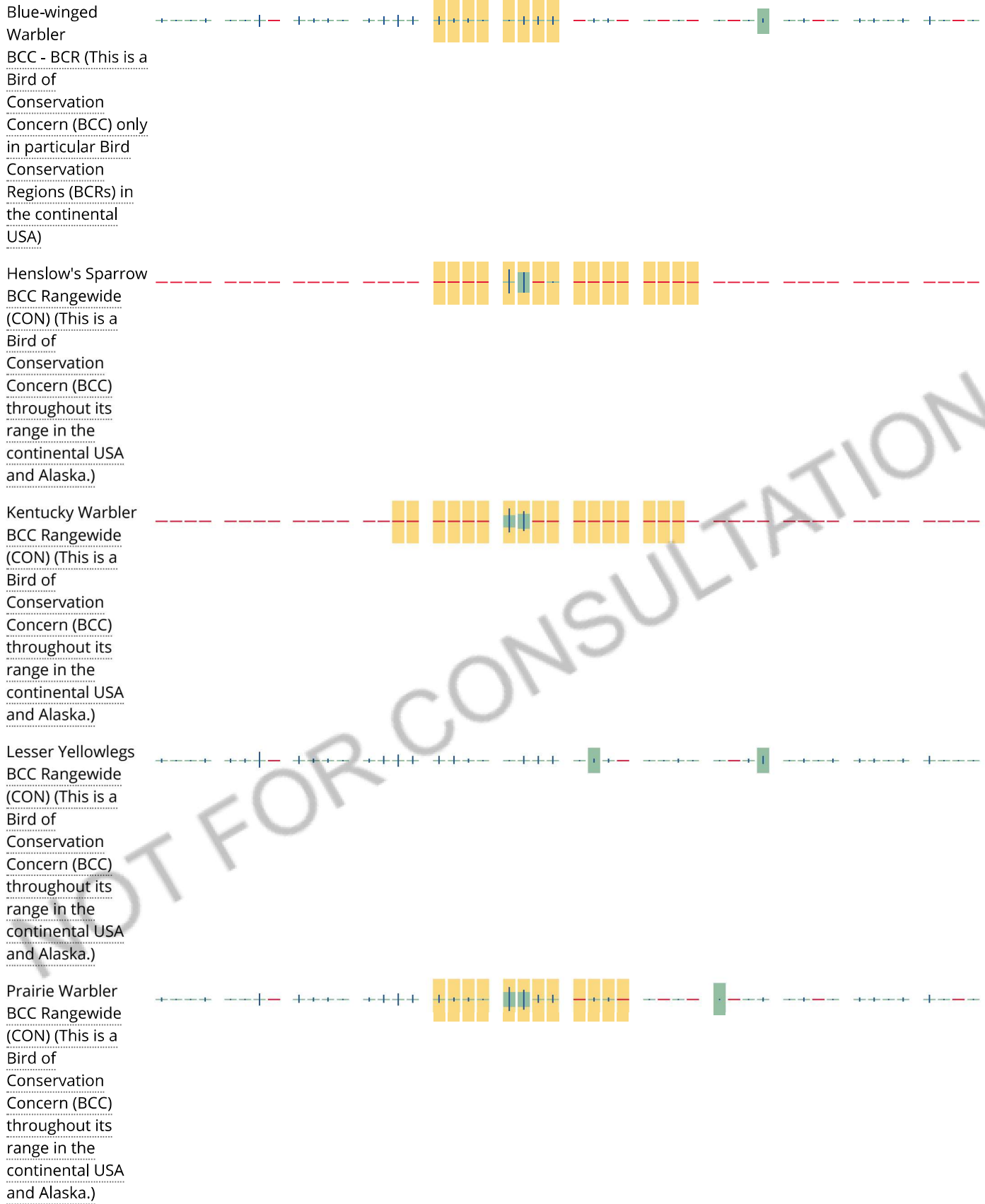
### No Data (—)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

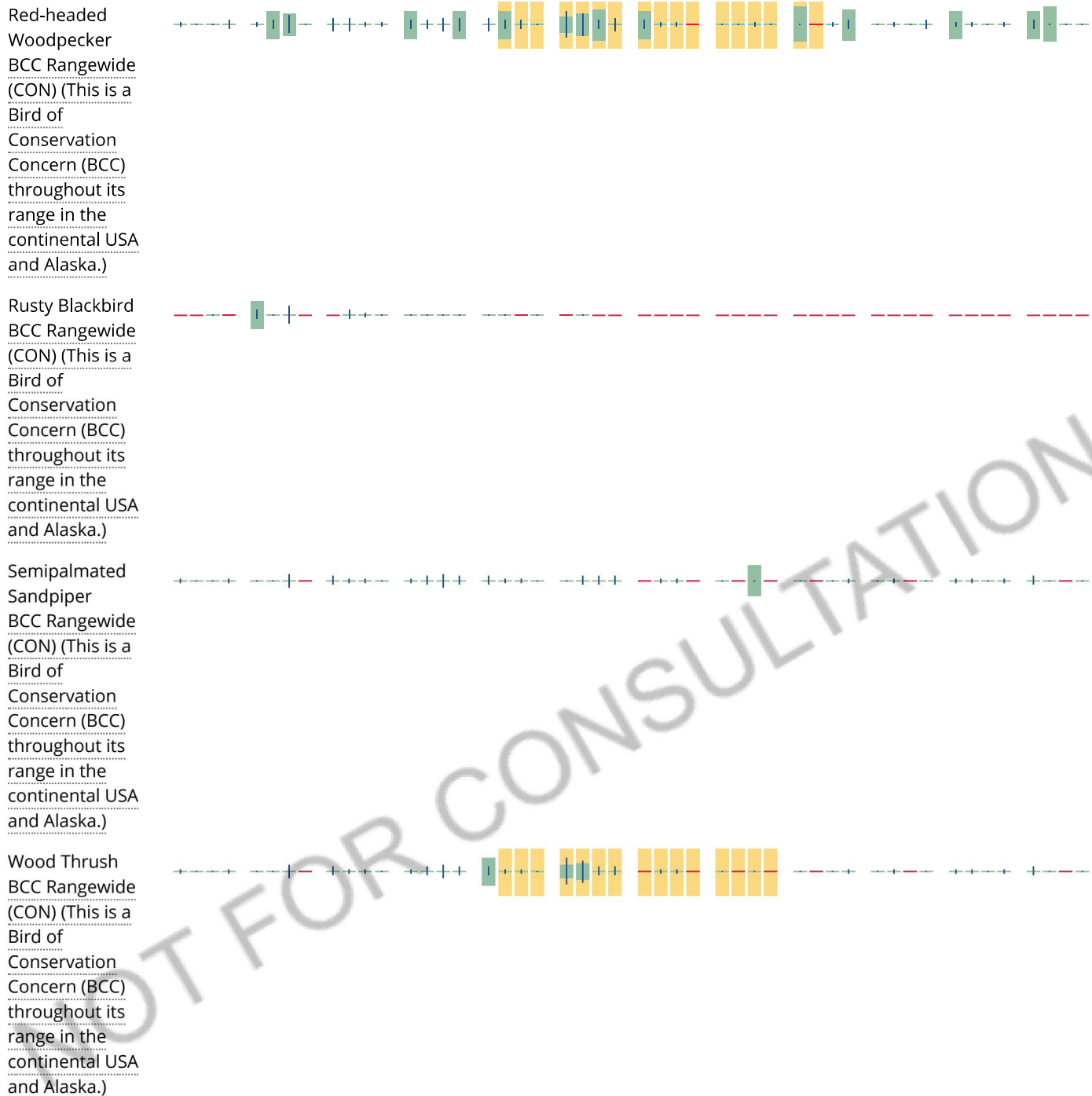
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





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**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

#### **Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### **Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### **Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.