#### Project Background and New Construction since 2017

The Willow Island Hydroelectric Plant commenced operations in 2016. Since submittal of the original application to LIHI in 2017, conditions at the site have remained relatively static. A new warehouse was erected on site in 2020.

#### Mussel Monitoring Summary

The mussel-monitoring plan for the Willow Island Project was approved by FERC in 2010. AMP has contracted with EA Engineering, Science, and Technology Inc. and Lewis Environmental Consultants to perform:

- Pre-construction surveys,
- 2007 and 2008 mussel relocations at Willow Island,
- 2010 baseline monitoring,
- 2012 and 2014 construction phase surveys, and
- 2016 and 2018/2019 operational phase monitoring surveys.

Statistical analyses performed on 2018/2019 and prior survey data for the Willow Island Hydroelectric Project indicate that the mussel community downstream from the Project has remained generally comparable to previous years of monitoring.

For the quantitative total abundance, all survey years were statistically similar on both the Ohio and West Virginia shorelines. For the semi-quantitative total abundance on both shorelines, mean densities in the 2012 through 2018/2019 surveys were statistically similar but all were significantly higher than that of the 2010 baseline survey. The mean number of juveniles per sample for each study type in the 2018/2019 survey is statistically similar to all previous study years except the 2014 survey. Among the most common species collected in the 2018/2019 semi-quantitative and quantitative surveys, only one species (Pink Heelsplitter) exhibited a significant decrease from a previous survey year, however there was no significant decrease in the species from the 2010 baseline survey year. Results from the 2018/2019 mussel surveys did not vary beyond the range of values previously observed.

In regard to statistical analysis of mean grain size, the pebble count data exhibited significantly different (larger) grain size on the West Virginia shoreline compared to the Ohio shoreline in 2018/2019 as it had in nearly all previous survey years. However, 2018/2019 mean grain size was significantly different (larger) than the 2010 baseline survey along both the Ohio and West Virginia shorelines. Based on the mussel survey results, the size range and substrate composition available did not appear to have a negative effect on the downstream mussel community.

While some observed spatial or temporal differences are evident among survey years, these appear to be attributable to natural variability in density within the mussel community and/or a result of sustained high Ohio River flows observed in recent years in the vicinity of the Project. Analysis of the 2018/2019 survey data, alone or in comparison to previously collected data, provided no discernable or consistent trends that suggest the Willow Island Hydroelectric Project has adversely affected the downstream mussel community. Rather, the fact that 2018/2019 substrate and mussel survey results are within the previously observed range of values suggests that other factors such as inter-annual variability, method bias, and/or prevailing high flow conditions are more likely contributing to the observed differences.

## Willow Island Hydroelectric Plant - FERC Project No. 6902-WV

The 2020 Willow Island Mussel Survey was completed on July 31<sup>st</sup> and AMP's consultant, EA Engineering, submitted a draft mussel monitoring report to consulting agencies on September 25<sup>th</sup>. Comments were received from USFWS on October 23<sup>rd</sup> which were subsequently addressed by AMP and included in the November 12<sup>th</sup> final submittal to FERC. Per AMP's approved mussel monitoring plan, 2020 was the final year of mussel monitoring at the Project. Following submittal of the 2020 mussel monitoring report to FERC, AMP submitted a compendium report on April 29<sup>th</sup>, 2021 documenting completion of requirements under Article 412 of the Projects license. As of June 9<sup>th</sup>, no comments have been received from FERC or the consulting agencies on the compendium report.

#### Water Quality Report Summary

Dissolved oxygen (DO)is monitored at the Willow Island Hydro Plant per Article 402 of the projects FERC license. DO data is sampled on the upstream and downstream sides of the hydro plant between May 1<sup>st</sup> and October 31<sup>st</sup> of each year. Samples are recorded automatically every 15 minutes during the period. The raw data obtained from the WQ Data Live website is downloaded and processed to generate the annual report by averaging the raw data into daily data for the monitoring period. A summary of DO monitoring from 2016-2020 can be found below:

**2016** – DO measurements met or exceeded license requirements over the 2016 monitoring period. On 8/6/2016, an upstream probe briefly dropped below the 24 hour average requirement, however, it was determined that the probe was defective. Upon replacement, the new probe provided readings well within specified DO parameters.

**2017** – DO measurements met or exceeded license requirements over the 2017 monitoring period. Upstream probe failure and data communication failures led to intermittent data loss, however, daily averages were available for all days in the monitoring period. The missing data did not appear to have a significant impact as the days with missing data were consistent with surrounding daily averages. Throughout the monitoring period, the 24 hour and instantaneous DO readings were all within acceptable range and the 24-hour average downstream DO concentrations were consistently above 5 mg/L.

**2018** – DO measurements met or exceeded license requirements over the 2018 monitoring period. There was a probe failure on the downstream DO probe that caused some low/inaccurate readings. The probe was promptly replaced and the downstream DO returned to acceptable ranges. As a precaution both probes were replaced with upgraded models towards the end of the 2018 DO monitoring period. Outside of the issues experienced with the downstream DO probe, the DO during the 2018 monitoring period was within acceptable ranges and consistently above 5 mg/L over a 24-hour average.

**2019** – DO measurements met or exceeded license requirements over the 2019 monitoring period. Daily 24-hour averages were within acceptable limits for the duration of the monitoring period on the downstream DO probe. There was a roughly six-hour period of time when the upstream 24-hour average DO was below 5 mg/L on 9/22/2019. Although this was noted in the DO report submitted to FERC and consulting agencies, the Dissolved Oxygen monitoring plan prepared in accordance with Article 402 of the license specifies that the 5 mg/L 24-hour average limit applies only to downstream DO data.

## Willow Island Hydroelectric Plant - FERC Project No. 6902-WV

**2020** –DO measurements met or exceeded license requirements over the 2020 monitoring period. Following submittal of a draft report to consulting agencies on November 30, the 2020 DO report was submitted to FERC on December 31, 2020. No comments have been received on the report to date.

Following year five (2020) of annual DO monitoring at Willow Island, a comprehensive DO report was required for FERC submittal by 12/31/2020. Because this date fell on the same deadline as the annual report, AMP requested an extension of time to complete the five-year report. FERC granted an extension on December 18<sup>th</sup> that extended the deadline for report completion to March 31, 2021. The purpose of the report was to analyze the available monitoring data from 2016-2020 at the project and determine whether new trends in the DO concentrations had become apparent since the commencement of operations at Willow Island. EA Engineering was contracted to complete the report on AMP's behalf and the final report concluded that the project is not negatively impacting downstream DO concentrations on the Ohio River. AMP submitted the final comprehensive report to FERC and consulting agencies on Mar. 31, 2021. No comments have been received on the comprehensive DO report to date.

#### Fish Entrainment Studies

The Clean Water Act Section 401 Water Quality Certification issued by the State of West Virginia for the Willow Island Hydroelectric Project includes a condition to determine the effects of the project operation on fishery resources by assessing impingement and turbine entrainment. To meet the requirements of this condition, AMP contracted Alden Research Laboratory, Inc. to conduct a turbine entrainment and survival analysis, as well as to assess the potential for impingement on the intake trash racks. Estimates of total project survival for all fish passing downstream at the dam were also calculated. The desktop study methods that were used for the analysis produced estimates of the number of fish (by species and size group) entrained through and killed by the turbines each month and annually. Total project survival was also estimated with desktop modeling techniques to determine the survival rate of all fish passing downstream at the dam uses).

It was determined that impingement will not occur for any of the species evaluated due to the large trash rack bar spacing of 8.25 inches. Few (if any) fish in the vicinity of the project will reach a size that would physically exclude them from passing through the turbine intake trash racks and any fish of such size would have burst swimming capabilities greater than the maximum approach velocities calculated for the project (about 5 ft/s).

Gizzard Shad comprised most of the entrainment of smaller fish (<250 mm in length), accounting for 90.3% of the annual total. Freshwater Drum, Sauger, and Walleye collectively accounted for about 68% of total annual entrainment for the larger size group (>250 mm).

Excluding American Eel, turbine survival estimates of resident species ranged from 79.6% for 750-mm fish up to 100.0% for 25-mm fish. Fish less than 250 mm had an average survival of 98.0% and fish with lengths between 250 and 750 mm had an average survival of 86.8%. The turbine survival analysis for American Eel indicated survival rates for adults (average length of 750 mm) could be as high as 100%, which is in the range of field study estimates (about 90 to 100%) reported for turbines similar the units at Willow Island units. These high turbine survival estimates for all species at Willow Island are due to the small number of blades, low rotational speed, and large diameter of the two units, all of which contribute to low blade strike probabilities, even for larger fish.

## Willow Island Hydroelectric Plant - FERC Project No. 6902-WV

Across all river flows, total project survival (i.e., percentage of fish passing downstream of Willow Island through all available routes, except the lock system) was estimated to be 98.0% for non-diadromous fish less than 250 mm and 89.4% for fish greater than 250 mm in length. When adjusted for size group composition (97% for fish less than 250 mm and 3% for fish greater than 250mm), combined total project survival across all river flows was estimated to be 97.6% for all fish passing downstream at the project. Total project survival for American Eel was estimated to be 97.5% across all river flows.

The high turbine and total project survival rates for fish passing downstream at Willow Island indicate that any potential impacts of turbine entrainment on the fish community in the vicinity of the project are negligible and inconsequential. Gizzard Shad and the other species (e.g., Channel Catfish, Bluegill, Emerald Shiner, and Sauger) that had high entrainment estimates are relatively resilient and fecund species whose populations are not expected to be negatively affected by the operation of the Willow Island Project. The high downstream passage survival rates and low entrainment mortality estimates support this conclusion.

AMP has worked with WVDNR throughout the study and submitted several iterations of reports during that time. WVDNR provided comments on 7/3/2019, 6/1/2020 and 11/18/2020 which were subsequently considered and incorporated into the final report per the agency's request.

For clarification, you can find the timeline of reports listed below and WVDNR's comments summarized:

- 1.) Initial Willow Island Fish Entrainment Desktop Report prepared by EA Engineering and submitted to WVDNR on 6/3/2019
  - a. WVDNR requested a new report be conducted due to the lack of estimated entrainment and mortality for Willow Island
- 2.) 1<sup>st</sup> Alden Labs prepared Fish Entrainment Report submitted to WVDNR on 5/14/2020
  - a. On 6/1/2020 WVDNR requested certain fish species be included for further analysis and that winter data estimates be included. The report did not include the data initially due to lack of information at similar projects. To remedy this, Alden Labs needed to adjust the scope of the study to include non-representative facilities with less comparable design, operating parameters, and fish populations.
- 3.) 2<sup>nd</sup> Alden Labs Willow Island Fish Entrainment Report (Rev. 1) submitted to WVDNR on 8/13/2020
  - a. Fish entrainment was extrapolated from the smaller facilities to match the generating flow capacity of Willow Island which resulted in large increases for estimated entrainment and mortality at Willow Island. In particular, estimated entrainment of gizzard shad was skewed high following the data extrapolation. WVDNR and AMP agreed to take another look at the data and determine a better avenue for gizzard shad entrainment estimates at the project.
- 4.) 3<sup>rd</sup> (and final) Alden Labs Willow Island Fish Entrainment Report (Rev. 2) submitted to WVDNR on 10/27/2020
  - a. This report included a Gizzard shad addendum which attempted to correct Gizzard Shad entrainment estimates by discounting projected entrainment due to cold shock. WVDNR provided their own Gizzard Shad estimates based on rotenone surveys conducted at the Willow Island Locks.

## **IPaC** Information for Planning and Consultation U.S. Fish & Wildlife Service

# 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.



# Local offices

Ohio Ecological Services Field Office

**└** (614) 416-8993**i** (614) 416-8994

4625 Morse Road, Suite 104 Columbus, OH 43230-8355

West Virginia Ecological Services Field Office

▲ (304) 636-6586
▲ (304) 636-7824

90 Vance Drive Elkins, WV 26241-9475

http://www.fws.gov/westvirginiafieldoffice/ NOTFORCONSULTATION

# 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 <u>Ecological Services Program</u> 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 <u>NOAA Fisheries</u> for <u>species under their jurisdiction</u>.

- 1. Species listed under the <u>Endangered Species Act</u> are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the <u>listing status page</u> for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
- 2. <u>NOAA Fisheries</u>, 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
Indiana Bat Myotis sodalis Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. <u>https://ecos.fws.gov/ecp/species/5949</u>	Endangered
<ul> <li>Northern Long-eared Bat Myotis septentrionalis Wherever found</li> <li>This species only needs to be considered if any of the following conditions apply: <ul> <li>Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at https://www.fws.gov/midwest/endangered/mammals /nleb/s7.html</li> <li>No known hibernacula or maternity roost trees occur within the action area. Any 'take' that may occur incidental to this project is not prohibited under the final 4(d) rule. Please submit a Streamlined 4(d) Rule Consultation form to the WVFO.</li> </ul> </li> <li>No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045</li> </ul>	Threatened
Clubshell Pleurobema clava	Endangered
<ul> <li>This species only needs to be considered if any of the following conditions apply:</li> <li>This project occurs within a watershed known to support this species. Review the project design guidelines for more information about next steps and contacting the WVFO.</li> <li>This project is in close proximity of a stream known to support this species; all activities in this location should consider potential effects to the species. Review the project design guidelines for information about next steps and contacting the WVFO.</li> </ul>	

No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/3789</u>

Fanshell Cyprogenia stegaria	Endangered
Wherever found	
No critical habitat has been designated for this species.	
<u>Inteps//ecositws.gov/ecp/species/4022</u>	
<ul> <li>Northern Riffleshell Epioblasma torulosa rangiana</li> <li>Wherever found</li> <li>This species only needs to be considered if any of the following conditions apply:</li> <li>This project occurs within a watershed known to support this species. Review the project design guidelines for more information about next steps and contacting the WVFO.</li> <li>This project is in close proximity of a stream known to support this species; all activities in this location should consider potential effects to the species. Review the project design guidelines for information about next steps and contacting the WVFO.</li> </ul>	Endangered
No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/527</u>	ILTA
Pink Mucket (pearlymussel) Lampsilis abrupta Wherever found No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/7829</u>	Endangered
<ul> <li>Purple Cat's Paw (=purple Cat's Paw Pearlymussel) Epioblasma obliquata obliquata</li> <li>This species only needs to be considered if any of the following conditions apply:</li> <li>This project occurs within a watershed known to support this species. Review the project design guidelines for more information about next steps and contacting the WVFO.</li> <li>This project is in close proximity of a stream known to support this species; all activities in this location should consider potential effects to the species. Review the project design guidelines for information about next steps and contacting the WVFO.</li> </ul>	Endangered
No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/5602</u>	

Sheepnose Mussel Plethobasus cyphyus

Endangered

Wherever found No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/6903</u>

Snuffbox Mussel Epioblasma triquetra

Endangered

U

Wherever found No critical habitat has been designated for this species. <u>https://ecos.fws.gov/ecp/species/4135</u>

# 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 <u>below</u>.

- 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 <u>http://www.fws.gov/birds/management/managed-species/</u> <u>birds-of-conservation-concern.php</u>
- Measures for avoiding and minimizing impacts to birds <u>http://www.fws.gov/birds/management</u> /project-assessment-tools-and-guidance/ conservation-measures.php
- Nationwide conservation measures for birds <u>http://www.fws.gov/migratorybirds</u> /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 <u>E-bird data mapping</u> 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 <u>below</u>.

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.

CO

NAME

Bald Eagle Haliaeetus leucocephalus 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.

https://ecos.fws.gov/ecp/species/1626

Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/9399</u> 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.)

Breeds Sep 1 to Aug 31

Breeds May 15 to Oct 10

Cerulean Warbler Dendroica cerulea This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <u>https://ecos.fws.gov/ecp/species/2974</u>	Breeds Apr 27 to Jul 20
Eastern Whip-poor-will Antrostomus vociferus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Kentucky Warbler Oporornis formosus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
<b>Prairie Warbler</b> Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31
Yellow-bellied Sapsucker sphyrapicus varius This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8792	Breeds May 10 to Jul 15

# 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 (l)

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.

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Bald Eagle Non-BCC Vulnerable (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.)				++++	<b>*</b> +++	++++		* + * *	• + + •	+ + + +		
Black-billed Cuckoo BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)	++++		++++	++++	+++++	, (~) (~)	S	 \ر	·····		4	<u>)`</u>
Cerulean Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.) Eastern Whip- poor-will BCC Rangewide (CON) (This is a	5	<del>7</del> (	SP		J <b>J</b>	11						
Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)												

Kentucky Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)	++++ ++++ ++ <mark>+ 0 00 +0 +0 +0 +0 ++ + +++ 1</mark> ++-+
Prairie Warbler BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)	
Red-headed Woodpecker BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)	+ • + + + + + + + + + + + + + + + + + +
Rusty Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)	++++ +++ +++ +++ ++++++++ ++-+ ++++ ++++ ++++ ++++
Wood Thrush BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)	+++++ -+-+ +++++ ++ <b>11 1111111111111</b>



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

<u>Nationwide Conservation Measures</u> 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. <u>Additional measures</u> or <u>permits</u> 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 <u>Birds of Conservation Concern (BCC</u>) 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 <u>Avian Knowledge Network</u> (<u>AKN</u>). The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u> 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 (<u>Eagle Act</u> 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 <u>AKN Phenology Tool</u>.

# 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 <u>Avian Knowledge Network (AKN</u>). This data is derived from a growing collection of <u>survey, banding, and citizen</u> <u>science datasets</u>.

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 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: <u>The Cornell Lab of Ornithology All About Birds Bird Guide</u>, or (if you are unsuccessful in locating the bird of interest there), the <u>Cornell Lab of Ornithology Neotropical Birds</u> <u>guide</u>. 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 <u>Birds of Conservation Concern</u> (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 <u>Eagle Act</u> 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 <u>Northeast Ocean Data Portal</u>. 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 <u>NOAA NCCOS</u> <u>Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf</u> 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 <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam</u> <u>Loring</u>.

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

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> 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 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 <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

LAND	CU	ACRES
OHIO RIVER ISLANDS NATIONAL WI	ILDLIFE REFUGE	2,735.62 acres

# **Fish hatcheries**

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

Impacts to <u>NWI wetlands</u> 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>U.S. Army Corps of</u> <u>Engineers District</u>.

### 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 <u>NWI map</u> 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 tuberficid 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.

#### **Contacts Forms**

All applications for LIHI Certification must include complete contact information.

#### A. Applicant-related contacts

Facility Owner:				
Name and Title	Jolene Thompson, President/CEO			
Company	American Municipal Power, Inc.			
Phone	614-540-1111			
Email Address	jthompson@amppartners.org			
Mailing Address	1111 Schrock Rd, Suite 100 Columbus OH 43229			
<b>Facility Operator</b>	(if different from Owner):			
Name and Title	N/A			
Company	N/A			
Phone	N/A			
Email Address	N/A			
Mailing Address	N/A			
Consulting Firm	Agent for LIHI Program (if different from above):			
Name and Title				
Company				
Phone				
Email Address				
Mailing Address				
Compliance Cont	act (responsible for LIHI Program requirements):			
Name and Title	Adam Ward, Senior Vice President Member Services & External Affairs			
Company	American Municipal Power, Inc.			
Phone	614-540-1111			
Email Address	award@amppartners.org			
Mailing Address	1111 Schrock Rd, Suite 100 Columbus OH 43229			
Party responsible for accounts payable:				
Name and Title	Adam Ward, Senior Vice President Member Services & External Affairs			
Company	American Municipal Power, Inc.			
Phone	614-540-1111			
Email Address	award@amppartners.org			
Mailing Address	1111 Schrock Rd, Suite 100 Columbus OH 43229			

B. Current and relevant state, federal, and tribal resource agency contacts with knowledge of the facility (copy and repeat the following table as needed).

	Agency Contact	Area of Responsibility
Agency Name	Ohio River Valley Water Sanitation Commission (ORSANCO)	Flows Water Quality
Name and Title	Jason Heath Technical Programs Director	Fish/Wildlife
Phone	(513) 231-7719 (ext. 112)	
Email address	jheath@orsanco.org	Tal Species
Mailing Address	5735 Kellog Avenue Cincinnati, OH 45230	Cultural/Historic

	Agency Contact	Area of Responsibility	
Agency Name	West Virginia Department of Environmental Protection (WVDEP)	Flows Water Quality	
Name and Title	Brian Bridgewater, 401 WQC Program Manager	Fish/Wildlife Watershed	
Phone	304-205-2508 (Cell) 304-926-0499 ext. 43891 (Office)	T&E Species Cultural/Historic	
Email address	Brian.l.bridgewater@wv.gov	Recreation	
Mailing Address	601 57 <sup>th</sup> St SE Charleston, WV 25304		

	Agency Contact	Area of Responsibility
Agency Name	The U.S. Fish and Wildlife Service (FWS)	Flows
Name and Title	Richard McCorkle, Fish and Wildlife Biologist	Water Quality
		x Fish/Wildlife
Phone	814-206-7470 (Office)	Watershed
	302-382-0284 (Personal Cell while teleworking)	
Email address	Richard mccorkle@fws.gov	Tat species
Mailing Address	110 Radnor Road, Ste. 101	Cultural/Tistoric
	State College, PA 16801	

	Agency Contact	Area of Responsibility
Agency Name	The U.S. Fish and Wildlife Service (FWS)	Flows
Name and Title	WV Field Office	Water Quality
Phone	304-866-3858)	Watershed
Email address	FW5 WVFO@fws.gov	T&E Species
Mailing Address	6263 Appalachian Highway Davis, WV 26260	Cultural/Histori

	Agency Contact	Area of Responsibility
Agency Name	The Ohio Environmental Protection Agency (OEPA)	Flows
Name and Title	Rose McLean, Environmental Planner	Water Quality
	Water Resource Restoration Sponsor	Fish/Wildlife
	Program	Watershed
Phone	614-644-3664	T&F Species
Email address	Rose.McLean@epa.state.oh.us	Cultural/Historic
Mailing Address	P.O. Box 1049	Recreation
	Columbus, Ohio 43216-1049	

	Agency Contact	Area of Responsibility
Agency Name	The Ohio Department of Natural Resources (ODNR)	Flows
Name and Title	John Kessler, P.E.	Water Quality
	Chief of the Division of Real Estate and	Fish/Wildlife
	Land Management	Watershed
Phone	614-265-6621	T&E Species
Email address	john.kessler@dnr.state.oh.us	Cultural/Historic
Mailing Address	Office of Real Estate & Land Management	Recreation
	2045 Morse Rd., Bldg. E-2	
	Columbus, OH 43229	

	Agency Contact	Area of Responsibility
Agency Name	The West Virginia Department of Natural Resources (WVDNR)	Flows Water Quality
Name and Title	Mr. Danny Bennett Coordination Biologist WVDNR-Wildlife Resource Section	Fish/Wildlife Watershed T&E Species Cultural/Historic Recreation
Phone	304-825-6787, Ext. 416 Fax: 304-825-6270	
Email address	Danny.A.Bennett@wv.gov	
Mailing Address	P.O. Box 67 Elkins, WV 26241	

	Agency Contact	Area of Responsibility
Agency Name	The West Virginia Department of Natural Resources (WVDNR)	Flows Water Quality
Name and Title Phone	Mr. Kevin Eliason State Malacologist WVDNR-Wildlife Diversity Unit Office: 304-637-0245, Ext. 2031	Water Quality _x_ Fish/Wildlife Watershed T&E Species Cultural/Historic Recreation
Email address Mailing Address	Kevin.M.Eliason@wv.gov           P.O. Box 67	
	738 Ward Road Elkins, WV 26241	

Agency Contact		Area of Responsibility
Agency Name	The West Virginia Department of Natural Resources (WVDNR)	Flows Water Quality _x_Fish/Wildlife Watershed T&E Species Cultural/Historic
Name and Title	Jacob Harrell	
Phone	Office: (304) 989-0208	
Email address	Jacob.d.harrell@wv.gov	
Mailing Address	WVDNR – District 1 Office	
	1110 Railroad Street	
	Farmington, WV 26571	

Agency Contact		Area of Responsibility
Agency Name	West Virginia Department of Arts, Culture, and	Flows
Name and Title	Susan Pierce	Water Quality Fish/Wildlife Watershed T&E Species x_Cultural/Historic
	Deputy State Historic Preservation Officer	
Phone	(304) 558-0240, ext. 158	
Email address	Susan.m.pierce@wv.gov	
Mailing Address	1900 Kanawha Boulevard, East	
	Charleston, West Virginia 25305-0300	Recreation

	Agency Contact	Area of Responsibility
Agency Name	U.S. Army Corps of Engineers, Huntington District	Flows
Name and Title	Belinda M. Weikle, M.S.C.E, P.E.	Water Quality
	Hydraulic Engineer	Fish/Wildlife
Phone	304-399-5808	Watershed
	Fax: 304-399-5085	T&F Species
Email address	Belinda.M.Weikle@usace.army.mil	Cultural/Historic
Mailing Address	Water Resources Engineering Section	
	502 Eighth Street	
	Huntington, WV 25701	

	Agency Contact	Area of Responsibility
Agency Name	U.S. Army Corps of Engineers, Huntington District	Flows
Name and Title	Andrew Johnson	Water Quality
	Water Quality Team Lead	Fish/Wildlife
Phone	304-399-5189	Watershed
Email address	Andrew.N.Johnson@usace.army.mil	T&E Species
Mailing Address	Water Management Section	Cultural/Historic
	502 Eighth Street	Recreation
	Huntington, WV 25701	

	Agency Contact	Area of Responsibility
Agency Name	U.S. Army Corps of Engineers, Huntington District	Flows
Name and Title	Major Patrick Kelley	Water Quality
	Program Manager	Fish/Wildlife
Phone	304-399-5808	Watershed
	Fax: 304-399-5085	T&F Species
Email address	Patrick.J.Kelley@usace.army.mil	Cultural/Historic
Mailing Address	502 Eighth Street	
	Huntington, WV 25701	