

3. Wetland Protection

- National Wetlands Inventory Map



January 31, 2021

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

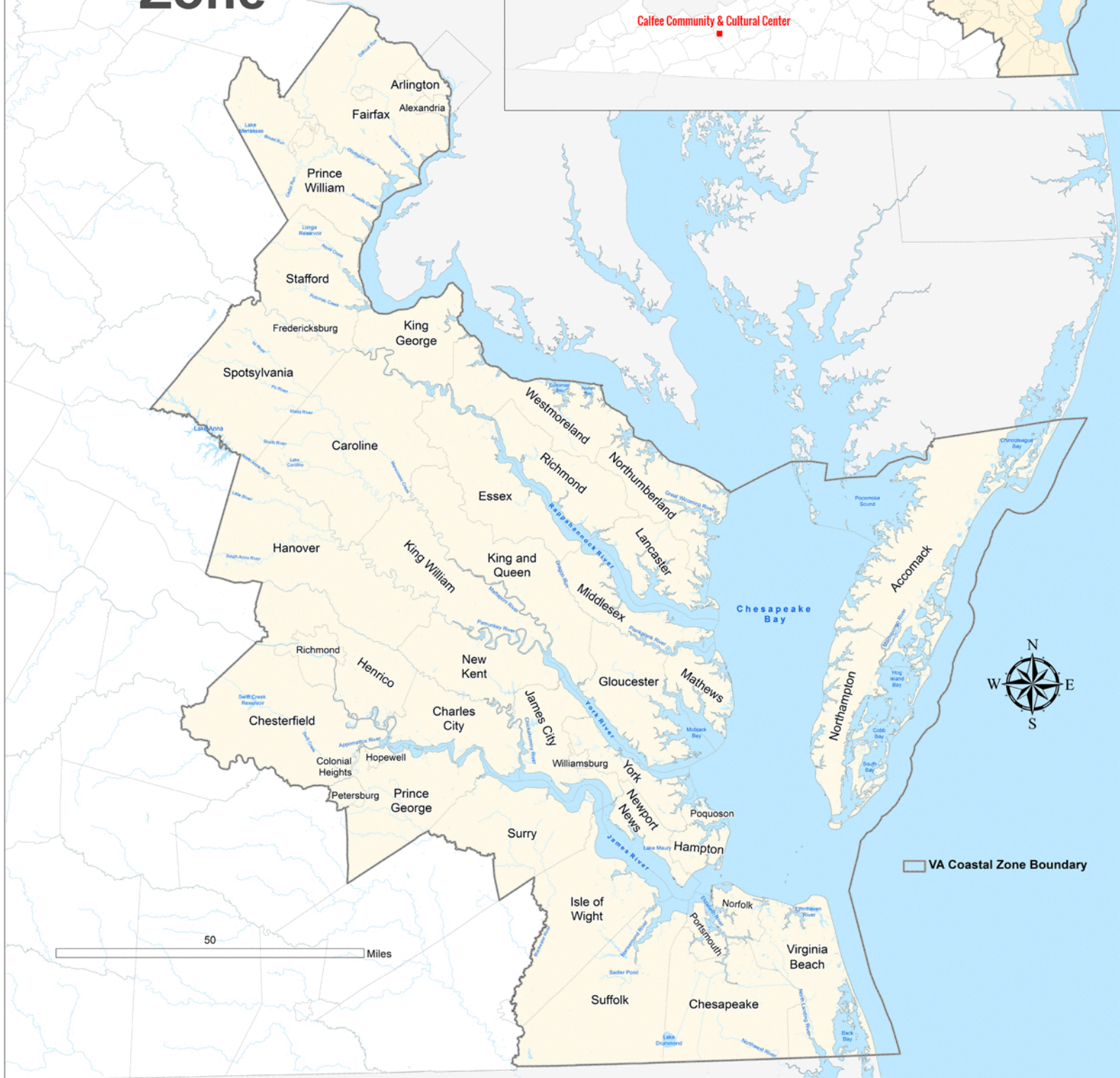
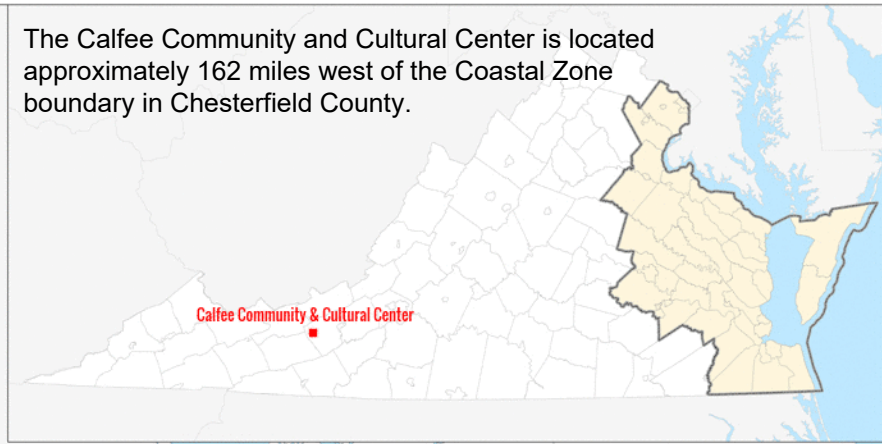
National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

4. Coastal Zone Management

- Virginia's Coastal Zone Map with Project Area Annotated
- NEPAassist Map with Distance to Coastal Zone
 - Distance from Calfee Training School to Nearest CZ Boundary
- Virginia's Coastal Counties, Cities, and Incorporated Towns
- Agency Letter
 - Virginia Marine Resources Commission [February 1, 2021]

Virginia's Coastal Zone

The Calfee Community and Cultural Center is located approximately 162 miles west of the Coastal Zone boundary in Chesterfield County.



Boundary Description
Virginia's coastal zone encompasses 29 counties, 15 cities, and 42 incorporated towns in the "Tidewater" region of the state.

Federal Consistency
Federal consistency is the CZMA requirement where Federal agency activities, Federal license or permit activities, and Federal financial assistance activities located inside or outside the state's coastal zone that have reasonably foreseeable effects on coastal uses or resources must be consistent with the enforceable policies of the state's coastal zone management program.

Virginia's coastal zone includes 5,000 miles of shoreline, four tidal rivers reaching as far as 100 miles inland - the Potomac, Rappahannock, York, and James Rivers and all of the waters therein, and out to, the three nautical mile Territorial Sea boundary, including all of Virginia's Atlantic coast watershed as well as the Albemarle - Pamlico Sound watersheds.

Find address or place



Basemap

Imagery

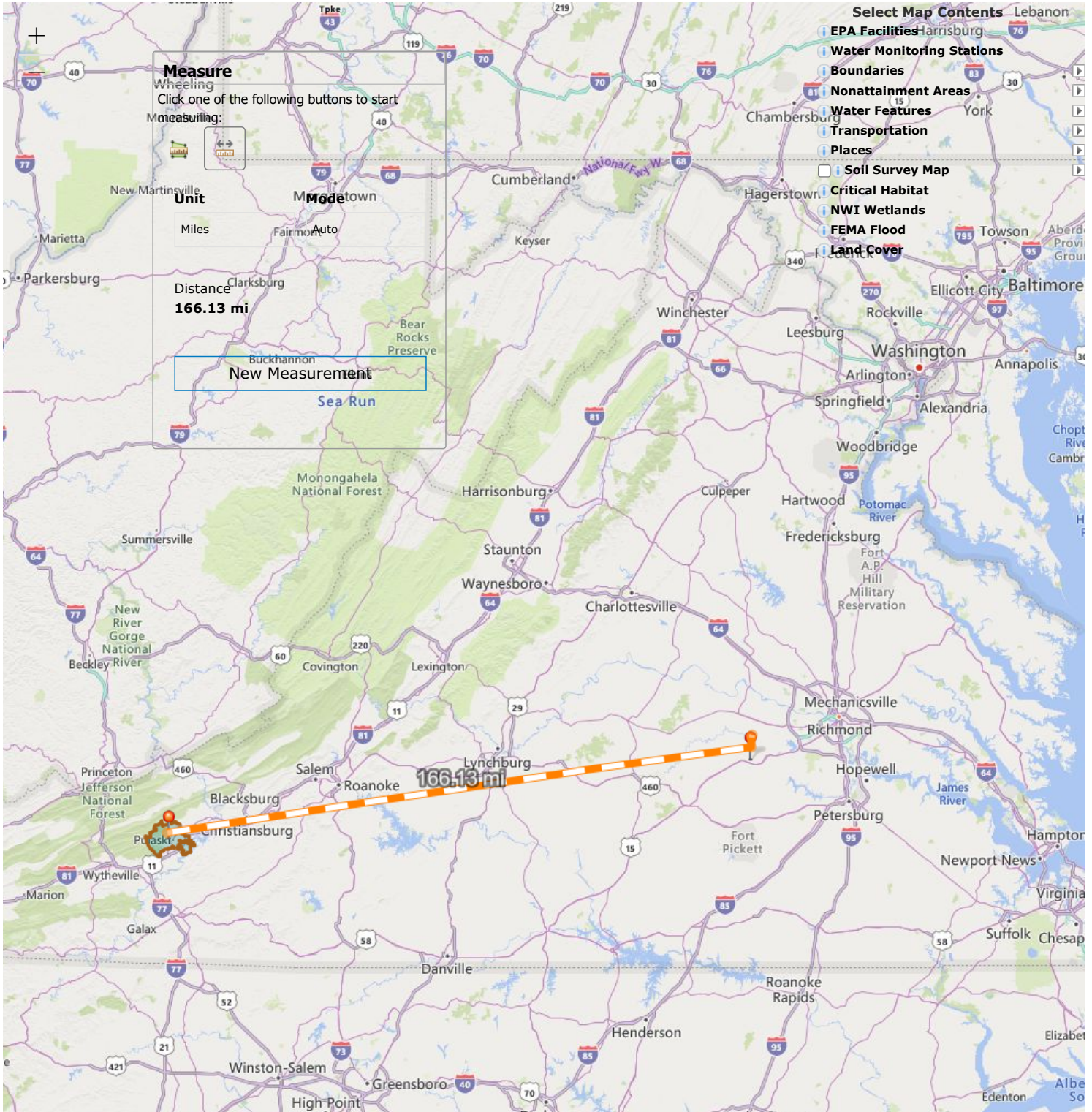
Draw

Erase

Save Session

Tools

More Data



Virginia's coastal counties

- Accomack
- Arlington
- Caroline
- Charles City
- Chesterfield
- Essex
- Fairfax
- Gloucester
- Hanover
- Henrico
- Isle of Wight
- James City
- King George
- King and Queen
- King William
- Lancaster
- Mathews
- Middlesex
- New Kent
- Northampton
- Northumberland
- Prince George
- Prince William
- Richmond
- Spotsylvania
- Stafford
- Surry
- Westmoreland
- York

Virginia's coastal cities

- Alexandria
- Chesapeake
- Colonial Heights
- Fairfax
- Falls Church
- Fredericksburg
- Hampton
- Hopewell
- Newport News
- Norfolk
- Petersburg
- Poquoson
- Portsmouth
- Richmond
- Suffolk
- Virginia Beach
- Williamsburg

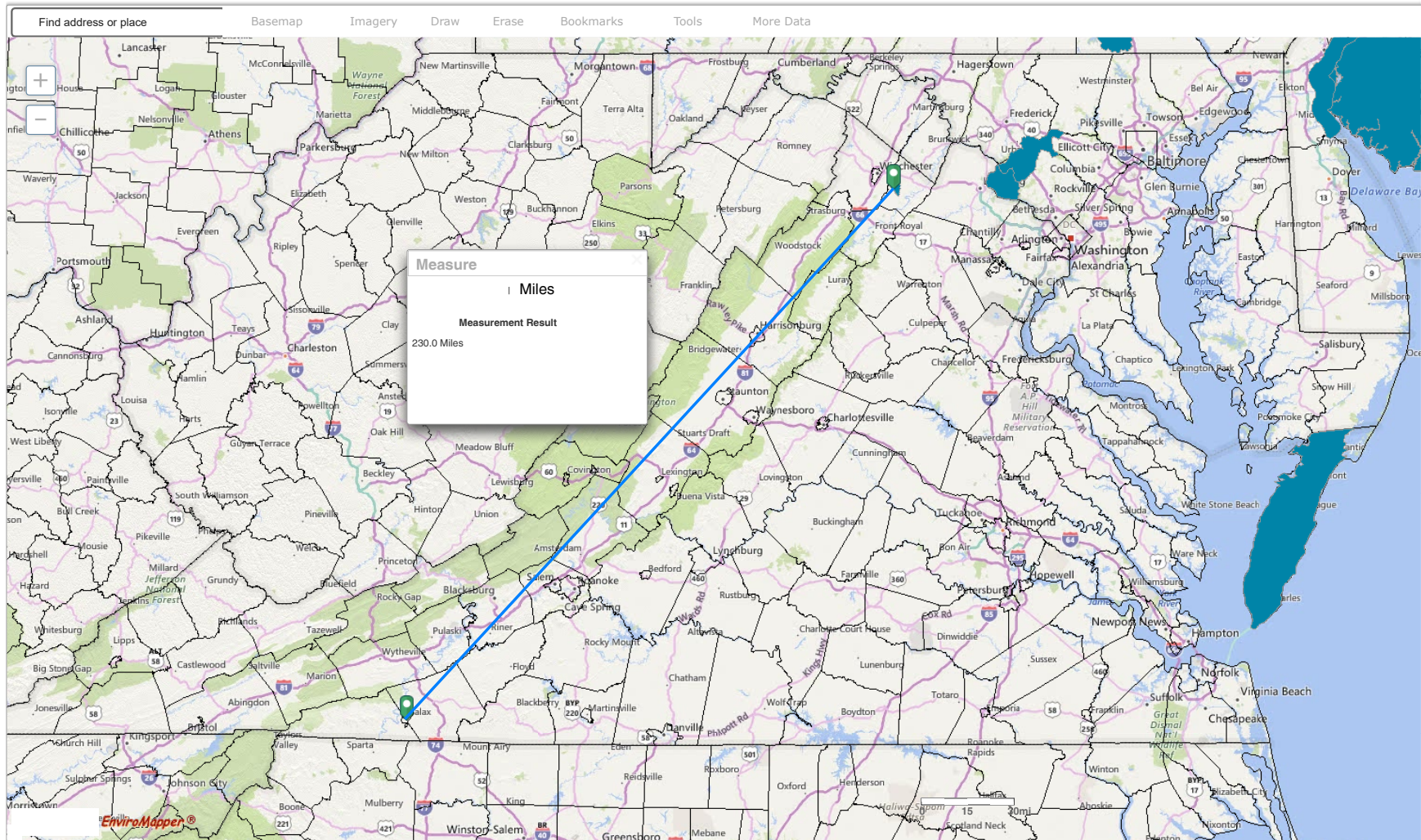
Virginia's coastal incorporated towns

- Accomack
- Ashland
- Belle Haven
- Bloxom
- Bowling Green
- Cape Charles
- Cheriton
- Chincoteague
- Claremont
- Colonial Beach
- Dendron
- Dumfries
- Eastville
- Exmore
- Hallword
- Haymarket
- Herndon
- Irvington
- Keller
- Kilmarnock
- Melfa
- Montross
- Nassawadox
- Occoquan
- Onancock
- Onley
- Painter
- Parksley
- Port Royal
- Quantico
- Saxis
- Smithfield
- Surry
- Tangier
- Tappahannock
- Urbanna
- Vienna
- Wachepreague
- Warsaw
- West Point
- White Stone
- Windsor

5. Sole Source Aquifers

- NEPAssist Map indicating distance to nearest SSA
 - Distance from Calfee Training School to Prospect Hill SSA

NEPAssist



The project area is approximately 230 miles from the nearest Sole Source Aquifer, Prospect Hill, near Winchester VA.

6. Endangered Species

- FWS Online Consultation Letter [1-31-2021]
- IPaC Resource List
- Species Conclusion Table
 - Project Summary
 - USFWS Critical Habitat Map
 - eBird Black Capped Chickadee Frequency Map
 - ArcGIS Bald Eagle Concentration Area Map
 - CCB Eagles Nest Buffer Map
- Additional Review Material
 - ECOS Species Profile – Virginia Big-Eared Bat
 - Final Rule of Critical Habitat for Virginia Big-Eared Bat ECOS Species Profile - Northern Long-Eared Bat
 - ECOS Species Profile - Indiana Bat
 - Indiana Bat Fact Sheet



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
<http://www.fws.gov/northeast/virginiafield/>

In Reply Refer To:

January 31, 2021

Consultation Code: 05E2VA00-2021-SLI-1813

Event Code: 05E2VA00-2021-E-05333

Project Name: Calfee Training School Adaptive Reuse Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

<http://>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

Project Summary

Consultation Code: 05E2VA00-2021-SLI-1813

Event Code: 05E2VA00-2021-E-05333

Project Name: Calfee Training School Adaptive Reuse Project

Project Type: Federal Grant / Loan Related

Project Description: The project area is a 2.66-acre property at 1 Magnox Drive in the Town of Pulaski which is geographically bounded by Magnox Drive on the South, Tract Fork on the West, and the property line on the East. It is the location of the historic African American Calfee Training School. Three structures stand on this property: the school building, a classical T-shape with the front of the structure facing Magnox Drive. Additional building include a pre-fab storage shed which sits to the east of the building and a small water pump station owned by the Pulaski County Public Service Authority on the eastern corner of the property. A paved parking lot currently abuts the building on the Tract Fork side. The property has an open-space easement agreement with Virginia Outdoors Foundation limiting impervious surfaces to 36,000 square feet. Current impervious surfaces total approximately 25,500 square feet.

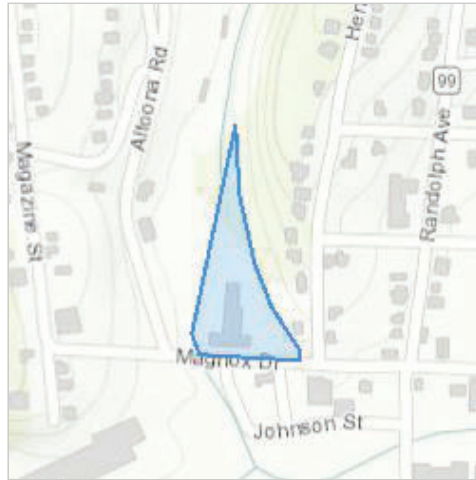
This project seeks to convert the main school building's interior to include spaces for a childcare program, a museum commemorating local African American history, a community kitchen, multiple event and offices, a computer lab, two natural outdoor play spaces and a half basketball court. Physical improvements to the property will include interior renovations, the construction of a small two-story addition on the back of building, a repositioned parking lot, external ramps for building accessibility, reclamation of two natural outdoor play spaces and construction of a half basketball court. The only new construction to the building will be a small two-story addition (400 SF total) to the back which will add space for storage and bathrooms on both floors and will include a passenger elevator to make the second floor accessible.

Project improvements to the building's exterior include (1) the addition of a wheelchair accessible ramp on the front of the building wrapping around to an entrance on the side of the building, (2) changes to the entryway on the creek side of the building to the childcare center and event space to accommodate a ramp and an outdoor space, and (3) external doors added to each of the six childcare classrooms for ease of access to the outdoor play spaces. No more than 10,500 square feet of property will be converted to impervious surfaces.

The project is anticipated to be funded for construction in FY2022.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.0490099,-80.78676594610265,14z>



Counties: Pulaski County, Virginia

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [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.

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Virginia Big-eared Bat <i>Corynorhinus (=Plecotus) townsendii virginianus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8369	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

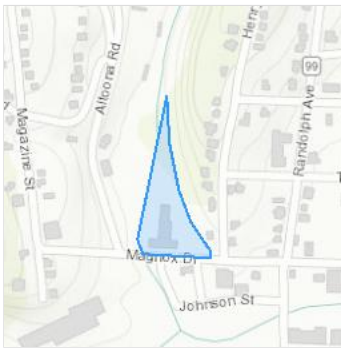
IPaC resource list

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

Pulaski County, Virginia



Local office

Virginia Ecological Services Field Office

☎ (804) 693-6694

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6669 Short Lane
Gloucester, VA 23061-4410

<http://www.fws.gov/northeast/virginiafield/>

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 species¹ 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 Fisheries²).

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
Indiana Bat <i>Myotis sodalis</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened
Virginia Big-eared Bat <i>Corynorhinus (=Plecotus) townsendii virginianus</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8369	Endangered

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 Act¹ and the Bald and Golden Eagle Protection Act².

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.)

Black-capped Chickadee *Poecile atricapillus praticus*
 This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Breeds Apr 10 to Jul 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 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](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

[R3UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

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.

Species Conclusions Table

Project Name: VA ARC Project 19-PG-19 Calfee Training School Adaptive Reuse Project

Date: 31 January 2021

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Bat, Indiana (Myotis sodalists) Critical Habitat	Species present No critical habitat present	No effect	<p>The project area is located in Pulaski County, which does not contain a federally-designated critical habitat. As the species is present, further evaluation of the potential impact was performed and determined to have no effect.</p> <p>The Habitat Requirements were reviewed:</p> <ul style="list-style-type: none"> • Winter – species hibernates in caves or mines; no mines, caves, nor cave entrances are present in the project area. • Summer – species roost under the peeling bark of dead or dying trees; while approximately .80 acres of undeveloped land will be cleared for construction of three new single-family homes, adequate undisturbed forest land is located adjacent to (17-acre parcel) and approximately one mile from (19,258-acre National Forest) the project area. Note that a fourth home is to be constructed on a vacant lot which was previously occupied by a single-family structure and will have no effect. <p>https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A000</p>
Bat, northern long-eared (Myotis septentrionalis) Critical Habitat	Species present No critical habitat present	No effect	<p>The project area is located in Pulaski County, which does not contain a federally-designated critical habitat. As the species is present, further evaluation of the potential impact was performed and determined to have no effect.</p> <p>The Habitat Requirements were reviewed:</p> <ul style="list-style-type: none"> • Winter – species hibernates in caves or mines; no mines, caves, nor cave entrances are present in the project area. • Summer – species roost underneath bark, in cavities, or crevices of both live and dead trees; while approximately .80 acres of undeveloped land will be cleared for construction of three new single-family homes, adequate undisturbed forest land is located adjacent to (17-acre parcel) and approximately one mile from (19,258-acre National Forest) the project area. Note that a fourth home is to be constructed on a vacant lot which was previously occupied by a single-family structure. <p>https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A0JE</p>

<p>Bat, Virginia big-eared (Corynorhinus (=plecotus) townsendii virginianus) Critical Habitat</p>	<p>Species present No critical habitat present</p>	<p>No effect</p>	<p>The project area is located in Pulaski County, which does not contain a federally-designated critical habitat. A final critical habitat has been designated for this species, but it consists of five caves in West Virginia, which is outside the project area.</p> <p>As the species is present, further evaluation of the potential impact was performed and determined to have no effect on the species.</p> <p>The Habitat Requirements were reviewed:</p> <ul style="list-style-type: none"> • Winter – species hibernates in caves or mines; no mines, caves, nor cave entrances are present in the project area. • Summer – species roost underneath bark, in cavities, or crevices of both live and dead trees; while approximately .80 acres of undeveloped land will be cleared for construction of three new single-family homes, adequate undisturbed forest land is located adjacent to (17-acre parcel) and approximately one mile from (19,258-acre National Forest) the project area. Note that a fourth home is to be constructed on a vacant lot which was previously occupied by a single-family structure. <p>https://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A080</p>
<p>Migratory Bird Black-Capped Chickadee</p>	<p>Species Present No critical habitat present</p>	<p>No Effect</p>	<p>The project area is located in Pulaski County, which does not contain a federally-designated critical habitat.</p> <p>As the species is present, further evaluation of the potential impact was performed and determined to have no effect on the species.</p> <p>The Habitat Requirements were reviewed:</p> <ul style="list-style-type: none"> • March, June – species is probably present in the project area. • April through July – species breeding season. • 0 – 2% frequency in the project area for the last 5 years per eBird map. <p>https://ecos.fws.gov/ServCat/DownloadFile/125141?Reference=81493</p>

NEPAssist

Home ([//www.epa.gov/nepa/nepassist](http://www.epa.gov/nepa/nepassist)) | Help (help/NEPAssistHelp.pdf)



Find address or place



Basemap

Imagery

Draw

Erase

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Tools

More Data

Measure
Click one of the following buttons to start measuring:

Unit
Miles

Mode
Auto

Distance
38.95 mi

New Measurement

Description:
Coordinates
37.048281, -80.786879
Buffer: 0 mi

Select Map Contents

- EPA Facilities
- Water Monitoring Stations
- Boundaries
- Nonattainment Areas
- Water Features
- Transportation
- Places
- Soil Survey Map
- Critical Habitat
- Critical Habitat - Linear Features - Final
- Critical Habitat - Polygon Features - Final
- Critical Habitat - Linear Features - Proposed
- Critical Habitat - Polygon Features - Proposed
- NWI Wetlands
- FEMA Flood
- Land Cover

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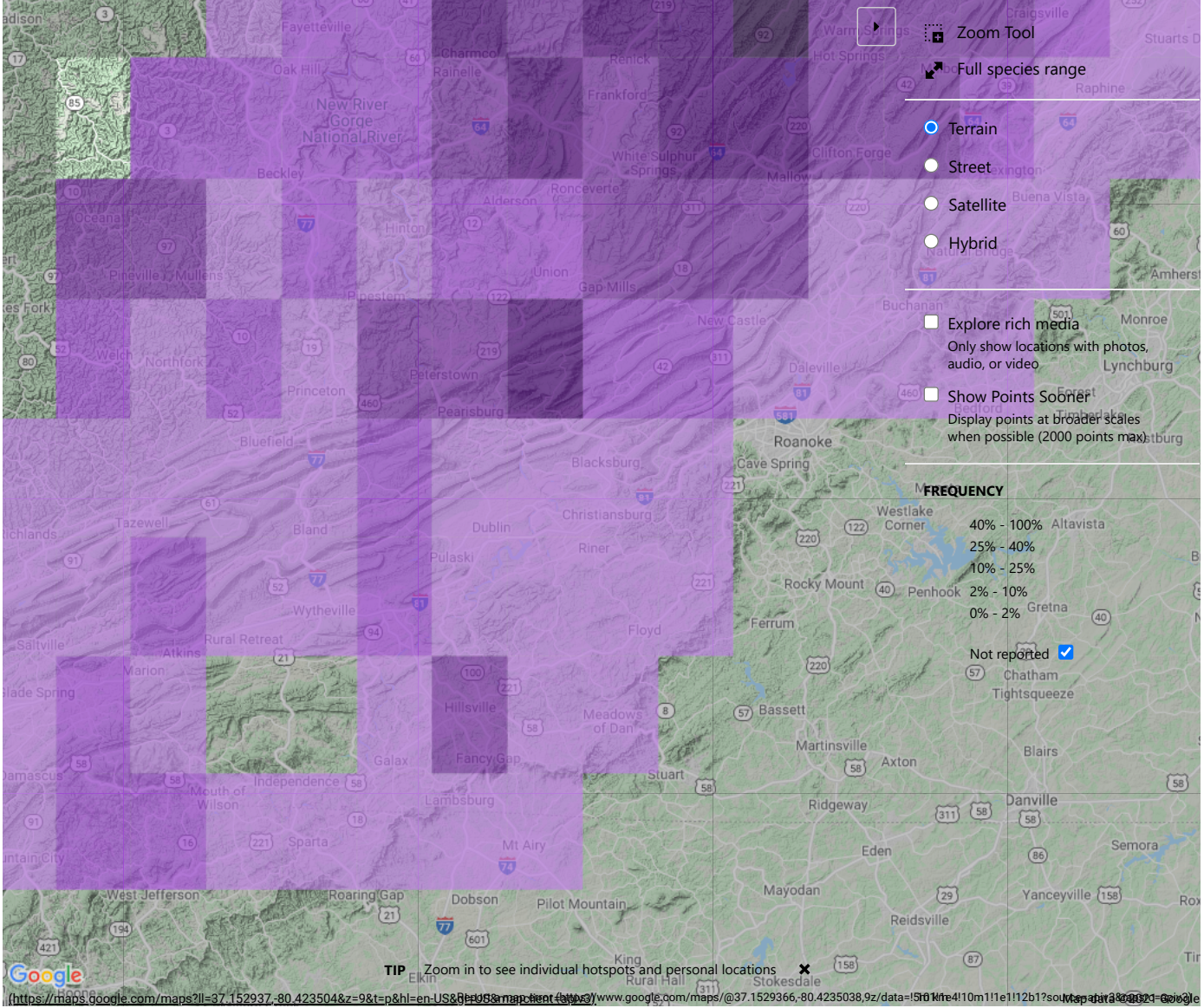
<https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=24301>

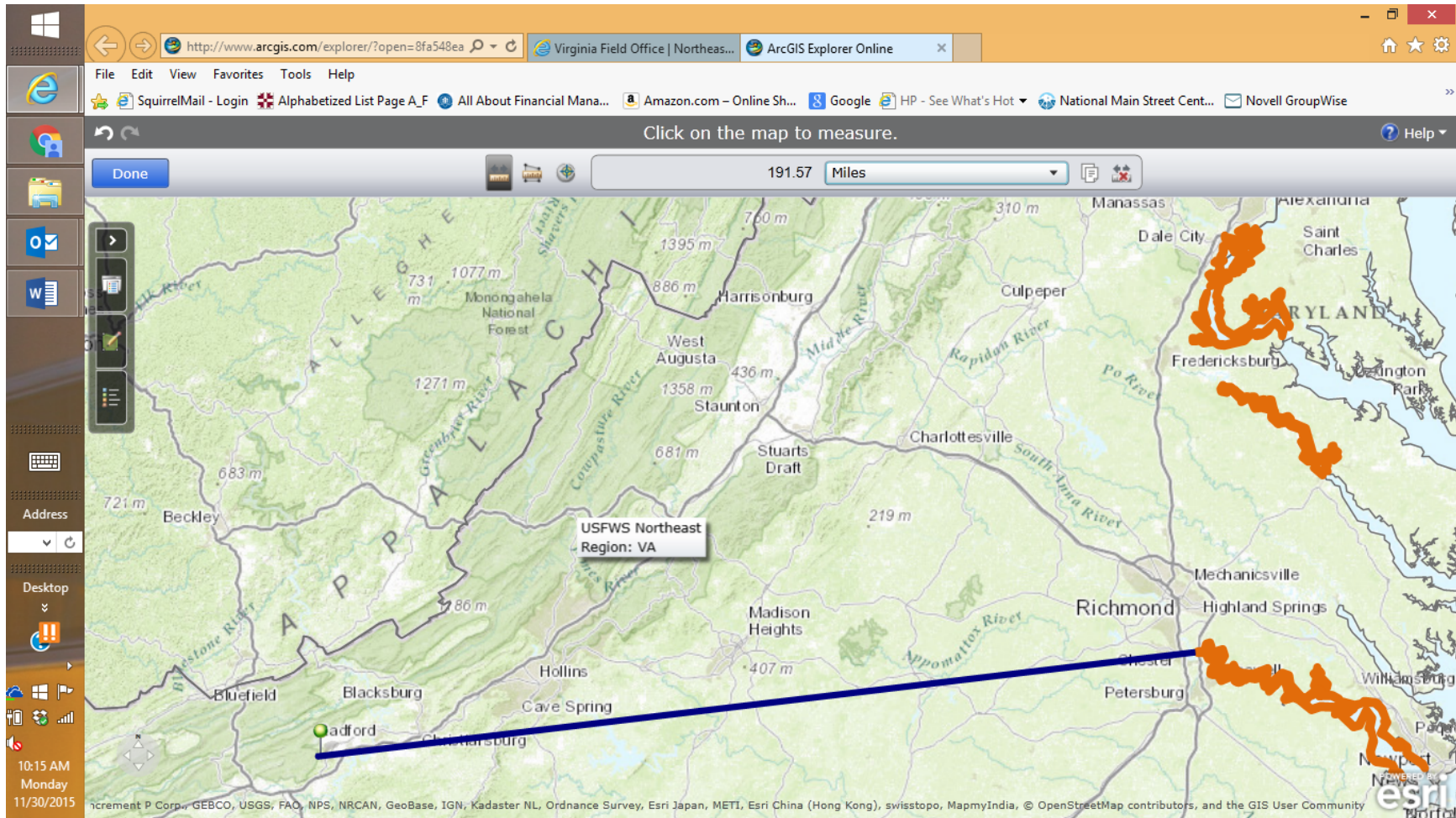
1/1

Black-capped Chickadee

Year-round, 2016-2021

Enter place name or address...





Project area is approximately 190 miles west of the nearest Bald Eagle Concentration Area.

The screenshot shows a web browser window displaying the CCB Mapping Portal. The browser's address bar shows the URL: www.ccbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=12&lat=37.08613173196115&lng=-80.72067260742188&legend=legend_tab_7. The page header includes the logo for The Center for Conservation Biology and navigation links: About Us, What We Do, Resources, News Room, and Give to CCB. A yellow button for Help / FAQ is also present.

The main content area features a map of a region in Virginia, including areas around Pulaski and Dublin. A red line is drawn on the map, representing a linear measurement. A pop-up window titled "Linear Measurement" displays the following data:

- 61,687 Feet
- 11.68 Miles
- Center on this Line
- Delete

The map interface includes a "Layers" panel on the left with the following categories:

- Bald Eagle
 - VA Eagle Nest Locator
 - Zoom to Extents
 - Most recent data CCB has on bald eagle nest locations in Virginia. Data is largely from two annual aerial flights conducted in winter and spring of all tributaries of the lower Chesapeake Bay and other prominent bodies of water. Reported ground survey data is also included. [More info](#)
 - VA Eagle Nest Buffers
 - Eagle Roosts
 - Eagle Roost Polygons
 - Eagle Roost Buffers
 - Eagle Roosts by Topoquad
- Waterbirds
 - Chesapeake Bay Herons 2013
 - Colonial Waterbirds 2013
 - Colonial Waterbirds 2008

The map also shows a scale bar (3 km / 1 mi), a search bar, and various map controls like zoom in (+) and zoom out (-) buttons. A legend in the bottom right corner identifies a yellow dot as "BALD EAGLE".

Project Area is approximately 11.7 miles from the nearest VA Eagle Nest Buffer (PU0701).

**U.S. Fish & Wildlife Service****ECOS**ECOS

/ Species Profile for Virginia Big-Eared bat (*Corynorhinus (=plecotus) townsendii virginianus*)

Virginia Big-Eared bat (*Corynorhinus* (=*plecotus*) *townsendii* *virginianus*)

*Search for images on
digitalmedia.fws.gov*

[Federal Register](#) | [Recovery](#) | [Critical Habitat](#) | [Conservation Plans](#) | [Petitions](#) | [Life History](#)

Taxonomy: [View taxonomy in ITIS](#)

Listing Status: Endangered

Where Listed: WHEREVER FOUND

General Information

Plecotus townsendii is a medium-sized bat with forearms measuring 39 to 48 millimeters (mm) long and weighing 7 to 12 grams. Total body length is 98 mm, the tail is 46 mm, and the hind foot is 11 mm long. This bat's long ears (over 2.5 centimeters) and facial glands on either side of the snout are quite distinctive. Fur is light to dark brown depending upon the age of the individual and the subspecies. The only other eastern bat that resembles the Ozark or the Virginia big-eared bat is *P. rafinesquii* (Rafinesque's big-eared bat). Rafinesque's big-eared bat has toe hairs that extend beyond the end of the toes and the dorsal fur is gray rather than brown. The belly fur of Rafinesque's big-eared bat is white or whitish rather than light brown or buff (Schmidly 1991, Barbour and Davis 1969). The Ozark and Virginia big-eared bats do not have overlapping ranges. Copulation occurs in the fall and winter and the females store the sperm until ovulation in late winter or spring. Gestation takes about 3 months and a

single pup is born in May or June. Development is fairly rapid and the young are on their own within 2 months (Barbour and Davis 1969, Schmidly 1991, Kunz and Martin 1982).

- **States/US Territories** in which the Virginia Big-Eared bat, Entire is known to or is believed to occur: [Kentucky](#) , [North Carolina](#) , [Tennessee](#) , [Virginia](#) , [West Virginia](#)
- **US Counties** in which the Virginia Big-Eared bat, Entire is known to or is believed to occur: [View All](#)


Current Listing Status Summary

Status	Date Listed	Lead Region	Where Listed
Endangered	12/31/1979	Northeast Region (Region 5)	Entire

Species Occurrence

Population(s)

Entire



» Federal Register Documents

Federal Register Documents

Show entries

Date	Citation Page	Title
03/06/2012	77 FR 13251 13253	Initiation of a 5-Year Review of Nine Northeastern
01/29/2007	72 FR 4018 4019	Initiation of a 5-Year Review of Ten Listed North
11/30/1979	44 FR 69206 69208	ETWP: Listing of Virginia and Ozark Big-eared E
08/30/1979	44 FR 51144 51145	ETWP: Reproposal of Critical Habitat for the Vir
03/06/1979	44 FR 12382 12384	Requirement to Withdraw or Supplement Propo: Endangered or Threatened or to Determine Crit
12/02/1977	42 FR 61290 61292	Proposed Endangered Listing and Critical Habit 61290 61292 (<i>Plecotus townsendii virginianus</i>, I

Showing 1 to 6 of 6 entries

< Previous 1 Next >

» Recovery

- [Recovery Plan Information Search](#)
- [Information Search FAQs](#)

Current Recovery Plan(s)

Show entries

Date	Title	Plan A
05/08/1984	Ozark/Virginia Big-eared Bats (2 spp.)	View

Showing 1 to 1 of 1 entries

< Previous 1 Next >

Other Recovery Documents

Show entries

Date	Citation Page	Title
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03/06/2012	77 FR 13251 13253	<u>Initiation of a 5-Year Review of Nine Northeast reviews; request for information.</u>
01/29/2007	72 FR 4018 4019	<u>Initiation of a 5-Year Review of Ten Listed North</u>

Showing 1 to 2 of 2 entries

Five Year Review

Show entries

Date ▼	Title
08/20/2008	<u>Virginia Big-eared Bat 5-Year Review</u>

Showing 1 to 1 of 1 entries

» Critical Habitat

Critical Habitat Spatial Extents

Population(s)

Entire



Show entries

Date	Citation Page	Title
11/30/1979	44 FR 69206 69208	ETWP: Listing of Virginia and Ozark Big-eared Bat Critical Habitat Determination
08/30/1979	44 FR 51144 51145	ETWP: Reproposal of Critical Habitat for the Virginia Big-eared Bat
12/02/1977	42 FR 61290 61292	Proposed Endangered Listing and Critical Habitat for the Virginia and Ozark Big-eared Bats; 42 FR 61290 61292 (Plecotus townsendii ingens)

Showing 1 to 3 of 3 entries

To learn more about critical habitat please see <http://ecos.fws.gov/crithab>

» Conservation Plans

Habitat Conservation Plans (HCP) ([learn more](#))Show entries**HCP Plan Summaries**[Beech Ridge Wind Power HCP](#)

Showing 1 to 1 of 1 entries

» Petitions

Show entries

Showing 1 to 1 of 1 entries

< Previous 1 Next >

» Life History

No Life History information has been entered into this system for this species.

» Other Resources

[NatureServe Explorer Species Reports](#) -- NatureServe Explorer is a source for authoritative conservation information on more than 50,000 plants, animals and ecological communities of the U.S and Canada. NatureServe Explorer provides in-depth information on rare and endangered species, but includes common plants and animals too. NatureServe Explorer is a product of NatureServe in collaboration with the Natural Heritage Network.

[ITIS Reports](#) -- ITIS (the Integrated Taxonomic Information System) is a source for authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world.

[FWS Digital Media Library](#) -- The U.S. Fish and Wildlife Service's National Digital Library is a searchable collection of selected images, historical artifacts, audio clips, publications, and video.

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Listing of Virginia and Ozark Big-Eared Bats as Endangered Species, and Critical Habitat Determination

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines the Virginia big-eared bat (*Plecotus townsendii virginianus*) and the Ozark big-eared bat (*Plecotus townsendii ingens*) to be Endangered species, and determines five caves in West Virginia to be Critical Habitat for the Virginia big-eared bat. These bats have declined seriously in recent years, mainly because of human disturbance of their caves. This rule will extend to these bats the protection provided by the Endangered Species Act of 1973, as amended.

EFFECTIVE DATE: December 31, 1979.

FOR FURTHER INFORMATION CONTACT: Mr. John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, U.S. Department of the Interior, Washington, D.C. 20240 (703/235-2771).

SUPPLEMENTARY INFORMATION:

Background

On October 15, 1976, the Service was petitioned by Dr. John S. Hall (Professor of Biology, Albright College, Reading, Pennsylvania 19603) and Dr. Michael J. Harvey (Professor of Biology, Ecological Research Center, Memphis State University, Memphis, Tennessee 38152) to list the Virginia and Ozark big-eared bats as Endangered.

On the basis of that petition, and information subsequently received from the petitioners, regional offices of the Service, and other sources, the Virginia and Ozark big-eared bats were proposed for listing as Endangered on December 2, 1977 (42 FR 61290-61292). That proposal included designation of five caves in West Virginia and one in Kentucky as Critical Habitat for the Virginia big-eared bat but none for the Ozark big-eared bat. Before final action could be taken on the proposal, however, Congress passed the Endangered Species Act Amendments of 1978, which substantially modified the procedures the Service must follow when designating Critical Habitat. In order to bring the Critical Habitat part

of the proposal into conformity with the Amendments, the Service repropoed Critical Habitat for the Virginia big-eared bat on August 30, 1979 (44 FR 51144-51145).

The reproposal of critical habitat provided for a public comment period extending until November 1, 1979. In addition, the Endangered Species Act requires that the Governor be allowed 90 days in which to respond to the proposal, unless he agrees to a shorter period. At the request of the Service, in order to facilitate issuance of the final rule prior to the deadline of December 2, 1979, now imposed by the Endangered Species Act, the Governor of West Virginia kindly agreed to waive the 90 day requirement, and provided a favorable response on October 23, 1979.

Summary of Comments and Recommendations

A total of 25 written comments was received in response to the original proposal of December 2, 1977. Of the responses, none flatly opposed the proposal, and 21 indicated support. The supporting respondents included the Governor of Oklahoma, Governor of Arkansas, Director of the Missouri Department of Conservation, Director of the Illinois Department of Conservation, Commissioner of the Kentucky Department of Natural Resources, Governor of West Virginia, Associate Deputy Chief of the U.S. Forest Service, Administrator of the U.S. Soil Conservation Service, and Chairman of the Chiroptera Group of the Survival Services Commission of the International Union for Conservation of Nature and Natural Resources.

Officials of the Departments of Natural Resources of Indiana, Ohio, and Maryland observed that the proposal of December 2, 1977, had included their States within the known distribution of the Virginia big-eared bat, when in fact there were no specific records of the species from these States. The Service was aware of the lack of records, but considered it advisable to mention the three States because of their proximity and the possibility that the species could occasionally appear therein. In this final rule the three States have been deleted from the known distribution, but the Service emphasizes that should a Virginia big-eared bat be found in Indiana, Ohio, or Maryland, it would be protected by the Endangered Species Act of 1973.

The Director of the Missouri Department of Conservation, and other respondents, suggested the designation of Critical Habitat for the Ozark as well as the Virginia big-eared bat. Although the Service did not subsequently

propose Critical Habitat for this species for the reasons set out below, it requests additional pertinent data and will designate Critical Habitat later if the evidence warrants. In a letter dated January 3, 1978, the Commissioner of the Kentucky Department of Fish and Wildlife Resources, while supporting the listing of the Virginia big-eared bat, suggested that it would be advisable not to designate Stillhouse Cave in Lee County, Kentucky as Critical Habitat. This suggestion was based on the view that designating that cave as Critical Habitat would call attention to it, resulting in increased public use and disturbances to the bats. The Commission also noted that the present owners of the cave were insuring protection of the bats. The Service agreed with this suggestion and did not include Stillhouse Cave in the reproposal of Critical Habitat.

In response to the reproposal of Critical Habitat of August 30, 1979, there were 13 written comments and one statement at a public hearing held by the Service in Elkins, West Virginia on October 11, 1979. The 12 supporting respondents included the Governor of West Virginia and several biologists and speleologists, some of whom provided valuable data and suggestions for additional Critical Habitat or protective measures. The Director of the Kentucky Nature Preserves Commission, and two other persons, advocated that Stillhouse Cave in Lee County, Kentucky, which had been dropped from the reproposal, be designated as Critical Habitat. The Kentucky Nature Preserves Commission also suggested that other caves within the Cave Hollow System in Lee County, Kentucky be designated as Critical Habitat. The Service will review the data and propose further Critical Habitat within the near future, if the evidence warrants. In the meantime, the Service is unaware of any impending activity that would be detrimental to Stillhouse Cave and there is no indication that there will be any disadvantage to the bats therein because a Critical Habitat designation is not now being made.

Mr. Fred C. Western, Vice President of the Germany Valley Limestone Company, which has a quarrying operation in the vicinity of Hellhole Cave in Pendleton County, West Virginia, expressed opposition to the designation of this cave as Critical Habitat. Mr. Western's reason was that such designation could have a long term effect on the quarrying operation, but he also stated that the operation was not detrimental to the bats and that future expansion of the quarry would occur

away from the cave. A subsequent meeting between Mr. Western and Service personnel indicated that there apparently had been a misunderstanding regarding the meaning of a Critical habitat designation, that there was no known conflict between the quarrying operation and the interests of the bats, and that any future problems could be easily resolved. The Service also notes that Hellhole Cave has already been designated Critical Habitat for the Indiana bat, another Endangered species, and the requirements of both species are equivalent.

Conclusion

After review and consideration of all available information, the Service has determined that the Virginia big-eared bat (*Plecotus townsendii virginianus*) and the Ozark big-eared bat (*Plecotus townsendii ingens*) are endangered species as defined by the Endangered Species Act of 1973. Section 4(a) of the Act states that the Secretary of the Interior shall determine a species to be Endangered or Threatened because of any of five factors. These factors, and their application to the Virginia and Ozark big-eared bats, are listed below.

1. *The present or threatened destruction, modification, or curtailment of its habitat or range.* Both of these bats long have been restricted to relatively small areas, and are dependent on a few specific kinds of caves for hibernation and reproductive activity. Both are highly intolerant of human presence, and will readily abandon their roosts when disturbed.

The Virginia big-eared bat still is found in three separate populations, centered in eastern Kentucky, southwestern Virginia, and eastern West Virginia, but many caves within this region have been abandoned. In the last 18 years at least five wintering colonies have disappeared in West Virginia. Only three nursery colony caves are known to remain in this State, and numbers therein have declined considerably because of repeated disturbance by spelunkers and vandals. There are still about 2,500 to 3,000 bats in West Virginia, but their dependence on the few remaining nursery caves makes the entire population subject to rapid extermination under the wrong conditions. A serious decline also has occurred in the single known nursery colony in Kentucky, which now contains fewer than 500 bats. In the Virginia population not more than a few hundred individuals survive.

The Ozark big-eared bat is in an even worse situation. It is now found in only a few caves in northwestern Arkansas,

southwestern Missouri, and eastern Oklahoma. Recent estimates indicate that the total surviving population numbers only about 100 to 200 individuals. The declining status of this bat has been recognized by State conservation biologists, Academicians, and spelunkers.

2. *Overutilization for commercial, sporting, scientific, or educational purposes.* Some of these bats have been killed for fun. In addition, well-meaning biologists and spelunkers, observing the bats for scientific or educational purposes, have caused disturbances and subsequent population reductions because of the high sensitivity of these species.

3. *Disease or predation.* Not known to be applicable.

4. *The inadequacy of existing regulatory mechanisms.* These bats and their habitat are not currently under protection of Federal laws. State protective laws have not been successful in preventing the decline of these species.

5. *Other natural or manmade factors affecting its continued existence.*

None in addition to those discussed above.

Critical Habitat

Subsection 4(a)(1) of the Act states:

At the time any such regulation (to determine a species to be Endangered or Threatened) is proposed, the Secretary shall by regulation, to the maximum extent prudent, specify any habitat of such species which is then considered to be critical habitat.

As explained above in the Summary of Comments, the Service is not now designating one of the originally proposed Critical Habitat sites for the Virginia big-eared bat. Designation of Stillhouse cave would call public attention to it, resulting in increased public use and disturbances of the bats. The present owners of this cave have also acted to protect the bats.

The Service also believes that it would not be prudent to specify any Critical Habitat for the Ozark big-eared bat at this time. Critical Habitat was not specified for this bat either in this original proposal of December 2, 1977 or the reproposal of August 30, 1979. This bat is exceptionally rare and the few survivors are not known to make periodic use of any particular cave for hibernation or maternity purposes, appearing at entirely different sites in subsequent years. As a result, designation of any particular area may not have been beneficial to this species. However, the Service will continue to review the scientific evidence and will

propose Critical Habitat in the future if warranted.

The Act defines Critical Habitat as:

(i) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of this Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and

(ii) Specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

The Service has concluded that five caves in West Virginia should be designated as Critical Habitat for the Virginia big-eared bat. Because of precise conditions of physical structure, temperature, and humidity, these caves are suitable for use by the species as sites for hibernation and reproduction. The species has a limited range and is highly susceptible to changes in its habitat. Even minor disturbance or physical changes in the caves occupied may result in extinction. Therefore, these caves are essential for its conservation. The physical and biological features of its habitat are such as to require special management considerations and protection.

Section 4(b)(4) of the Act requires the Service to consider economic and other impacts of specifying a particular area as Critical Habitat. The Service has prepared an impact analysis which has been used as the basis for a decision that economic and other impacts of this action are insignificant for the foreseeable future.

Effect of the Rulemaking

All prohibitions of 50 CFR 17.21 would apply to the Virginia and Ozark big-eared bats. These prohibitions, in part, would make it illegal for any person subject to the jurisdiction of the United States to take, import, or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale in interstate or foreign commerce these species. It also would be illegal to possess, sell, deliver, carry, transport, or ship any such wildlife which was illegally taken. Certain exceptions would apply to agents of the Service and State conservation agencies. Permits for scientific purposes or for the enhancement of propagation or survival would be available in accordance with 50 CFR 17.22. Economic hardship permits would be available under 50 CFR 17.23.

Section 7(a) of the Act provides:

The Secretary shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act. All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to section 4 of this Act. Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as "agency action") does not jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to subsection (h) of section 7 of the Endangered Species Act Amendments of 1978.

Provisions for Interagency Cooperation were published in the Federal Register on January 4, 1978 (43 FR 870-876), and codified at 50 CFR Part 402. These regulations are intended to assist Federal agencies in complying with Section 7 of the Act. The rule now being issued requires Federal agencies to satisfy these statutory and regulatory obligations with respect to the Virginia and Ozark big-eared bats. These agencies now are required not only to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of these species, but also to insure that their actions do not result in the destruction or adverse

§ 17.11 Endangered and threatened wildlife.

modification of the habitat that has been determined by the Secretary to be critical.

Section 4(f)(4) of the Act requires, to the maximum extent practicable, that any final regulation specifying Critical Habitat be accompanied by a brief description and evaluation of those activities which, in the opinion of the Director, may adversely modify such habitat if undertaken, or may be impacted by such designation. Such activities are identified below for the Virginia big-eared bat.

1. Any action which would substantially alter the physical structure, temperature, humidity, or air flow of the designated caves could adversely modify Critical Habitat, since the Virginia big-eared bat depends on the maintenance of precise conditions in these caves which it must use for hibernating sites in the winter and for nurseries in the summer.

2. Any action which would result in disturbance of the bats in their hibernating or nursery caves would adversely affect Critical Habitat since the species is highly intolerant of human disturbance. Such activity might include blasting or construction in or near the designated caves, or increasing human access to the caves.

Effect Internationally

The Service will review the status of the Virginia and Ozark big-eared bats to determine whether they should be proposed to the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and

Flora for placement upon the appropriate appendix to that Convention, and whether they should be considered under the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, or other appropriate international agreements.

National Environmental Policy Act

A final environmental assessment has been prepared and is on file in the Service's Office of Endangered Species. This assessment is the basis for a decision that this rule is not a major Federal action that significantly affects the quality of the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969.

The primary author of this rule is Ronald M. Nowak, Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240. (703/235-1975).

Note.—The Department of the Interior has determined that this is not a significant rule and does not require preparation of a regulatory analysis under Executive Act 12044 and 43 CFR Part 14.

Regulation Promulgation

Accordingly, Part 17, Subparts B and I, Title 50 of the Code of Federal Regulations are amended as set forth below:

1. Section 17.11 is amended by adding, in alphabetical order, the following to the List of Endangered and Threatened Wildlife:

Species	Range	Status	When listed	Special rules			
Common name	Scientific name	Population	Known distribution	Portion endangered			
Mammals:							
Bat, Ozark big-eared.....	<i>Plecotus town-sendii ingers</i>	NA	USA (Arkansas, Missouri, Oklahoma)	Entire.....	E	NA
Bat, Virginia big-eared.....	<i>Plecotus town-sendii virginianus</i>	NA	USA (Illinois, Kentucky, Virginia, Virginia)	West Entire.....	E	

2. Section 17.95(a) is amended by adding the following Critical Habitat description after the Indiana bat description for the Indiana bat:

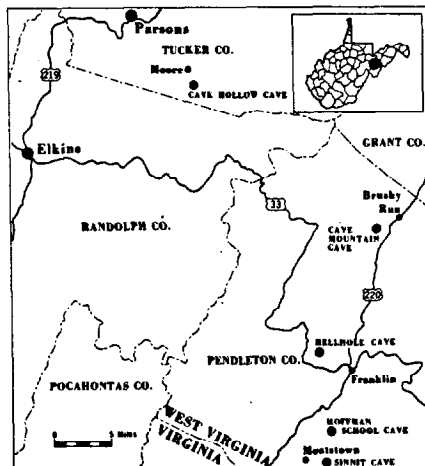
§ 17.95 Critical habitat—Fish and wildlife.

(a) *Mammals.*

* * * * *
Virginia Big-eared Bat
(*Plecotus townsendii virginianus*)

West Virginia. Cave Mountain Cave, Hellhole Cave, Hoffman School Cave, and Sinnit Cave, each in Pendleton County; Cave Hollow Cave, Tucker County.

VIRGINIA BIG-EARED BAT
Pendleton and Tucker Counties, WEST VIRGINIA



Dated: November 26, 1979.
Roberty E. Gilmore,
Acting Director, Fish and Wildlife Service.
[FR Doc. 79-38821 Filed 11-29-79; 8:45 am]
BILLING CODE 4310-55-M



U.S. Fish & Wildlife Service

ECOS

[ECOS](#) / Species Profile for Indiana bat (*Myotis sodalis*)

Indiana bat (*Myotis sodalis*)

[Federal Register](#) | [Recovery](#) | [Critical Habitat](#) | [Conservation Plans](#) | [Petitions](#) | [Life History](#)

Taxonomy: [View taxonomy in ITIS](#)

Listing Status: Endangered

Where Listed: WHEREVER FOUND



General Information

The Indiana bat is a medium-sized *Myotis*, closely resembling the little brown bat (*Myotis lucifugus*) but differing in coloration. Its fur is a dull grayish chestnut rather than bronze, with the basal portion of the hairs on the back a dull-lead color. This bat's underparts are pinkish to cinnamon, and its hind feet are smaller and more delicate than in *M. lucifugus*. The calcar (heel of the foot) is strongly keeled.

- **States/US Territories** in which the Indiana bat, Entire is known to or is believed to occur: [Alabama](#) , [Arkansas](#) , [Georgia](#) , [Illinois](#) , [Indiana](#) , [Iowa](#) , [Kentucky](#) , [Michigan](#) , [Mississippi](#) , [Missouri](#) , [New Jersey](#) , [New York](#) , [North Carolina](#) , [Ohio](#) , [Oklahoma](#) , [Pennsylvania](#) , [Tennessee](#) , [Vermont](#) , [Virginia](#) , [West Virginia](#)
- **US Counties** in which the Indiana bat, Entire is known to or is believed to occur: [View All](#)
- **USFWS Refuges** in which the Indiana bat, Entire is known to occur: Big Oaks National Wildlife Refuge, Canaan Valley National Wildlife Refuge, Clarks River National Wildlife Refuge, Cypress Creek National Wildlife Refuge, Fern Cave National Wildlife Refuge ... [Show All Refuges](#)
- [Additional species information](#)

Current Listing Status Summary

	Date	Where
Calfee Training School Adaptive Reuse Project	February 1, 2021	Attachment 6 - Endangered Species

Status	Listed	Lead Region	Listed
Endangered	03/11/1967	<u>Great Lakes-Big Rivers Region (Region 3)</u>	Entire

Species Occurrence

Population(s)

Entire

» Federal Register Documents

Federal Register Documents

Show entries

Date	Citation Page	Title
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07/08/2014	79 FR 38560 38562	Initiation of 5-Year Status Reviews of Nine Listed Species
04/19/2013	78 FR 23586 23587	Final Environmental Impact Statement, Habitat Conservation Programmatic Agreement, Buckeye Wind Power Project
06/29/2012	77 FR 38819 38821	Notice of availability draft EIS and HCP
07/26/2011	76 FR 44564 44566	5-Year Status Reviews of Seven Listed Species
04/16/2007	72 FR 19015 19016	Draft Indiana Bat Recovery Plan, First Revision
03/06/2007	72 FR 9913 9917	90-Day and 12-Month Findings on a Petition To
09/21/2006	71 FR 55212 55214	Endangered and Threatened Wildlife and Plants: Indiana Bat
09/22/1977	42 FR 47840 47845	Final Correction and Augumentation of Critical Habitat
09/24/1976	41 FR 41914	Determination of Critical Habitat for American Crocodile (<i>Crocodylus acutus</i>), Florida Manatee (<i>Trichechus manatus</i>), and West Indian Manatee (<i>Trichechus manatus manatus</i>)
12/16/1975	40 FR 58308 58312	Proposed Determination of Critical Habitat for Spotted Owl

Showing 1 to 10 of 11 entries

» Recovery

- [Recovery Plan Information Search](#)
- [Information Search FAQs](#)

Current Recovery Plan(s)

Show entries

Date	Title
04/16/2007	Indiana Bat (<i>Myotis sodalis</i>) Draft Recovery Plan: First Revision

Showing 1 to 1 of 1 entries

Other Recovery Documents

Show entries

Date	Citation Page	Title
07/08/2014	79 FR 38560 38562	<u>Initiation of 5-Year Status Reviews of Nine Listed Species</u>
07/26/2011	76 FR 44564 44566	<u>5-Year Status Reviews of Seven Listed Species for information</u>
04/16/2007	72 FR 19015 19016	<u>Draft Indiana Bat Recovery Plan, First Revision:</u>
09/21/2006	71 FR 55212 55214	<u>Endangered and Threatened Wildlife and Plants Curtis' Pearlymussel and Indiana Bat</u>

Showing 1 to 4 of 4 entries

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Five Year Review

Show entries

Date	Title
09/29/2009	<u>Indiana bat completed 5-yr review</u>

Showing 1 to 1 of 1 entries

< Previous 1 Next >

» **Critical Habitat**

Show entries

Date	Citation Page	Title
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09/22/1977	42 FR 47840 47845	Final Correction and Augumentation of Critical Habitat for Indiana Bat, 42 FR 47840-47845
09/24/1976	41 FR 41914	Determination of Critical Habitat for American C. Bat, and Florida Manatee; 41 FR 41914 (American California condor, <i>Gymnogyps californianus</i>; Inc manatee, <i>Trichechus manatus</i>)
12/16/1975	40 FR 58308 58312	Proposed Determination of Critical Habitat for S Whooping Crane, California Condor, Indiana Ba 58312 (<i>Percina (Imostoma) sp.</i>, <i>Crocodylus acu californicus</i>, <i>Myotis sodalis</i>, <i>Trichechus manatus</i>)

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To learn more about critical habitat please see <http://ecos.fws.gov/crithab>

» Conservation Plans

Habitat Conservation Plans (HCP) ([learn more](#))

Show entries

HCP Plan Summaries
Six Points Road Interchange
Pioneer Trail Wind Farm E.ON
NiSource MSHCP
NiSource MSHCP
NiSource MSHCP
Fowler Ridge Wind Farm
Criterion Wind Power
Buckeye Wind/EverPower HCP
Beech Ridge Wind Power HCP

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» Petitions

Show entries

Showing 1 to 2 of 2 entries

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» Life History

No Life History information has been entered into this system for this species.

» Other Resources

[NatureServe Explorer Species Reports](#) -- NatureServe Explorer is a source for authoritative conservation information on more than 50,000 plants, animals and ecological communities of the U.S and Canada. NatureServe Explorer provides in-

depth information on rare and endangered species, but includes common plants and animals too. NatureServe Explorer is a product of NatureServe in collaboration with the Natural Heritage Network.

ITIS Reports -- ITIS (the Integrated Taxonomic Information System) is a source for authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world.

FWS Digital Media Library -- The U.S. Fish and Wildlife Service's National Digital Library is a searchable collection of selected images, historical artifacts, audio clips, publications, and video.



U.S. Fish & Wildlife Service

ECOS

[ECOS](#) / Species Profile for Northern long-eared Bat (*Myotis septentrionalis*)

Northern long-eared Bat (*Myotis septentrionalis*)

*Search for images on
digitalmedia.fws.gov*

[Federal Register](#) | [Recovery](#) | [Critical Habitat](#) |
[Conservation Plans](#) | [Petitions](#) | [Life History](#)

Taxonomy: [View taxonomy in ITIS](#)

Listing Status: Threatened

Where Listed: WHEREVER FOUND

General Information

The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches in length but with a wingspan of 9 to 10 inches. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, *Myotis*, which are actually bats noted for their small ears (*Myotis* means mouse-eared). The northern long-eared bat is found across much of the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. The species' range includes 37 states. White-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the Northeast where the species has declined by up to 99 percent from pre-white-nose syndrome levels at many hibernation sites. Although the disease has not yet spread throughout the northern long-eared bat's entire range (white-nose syndrome is currently found in at least 25 of 37 states where the northern long-eared bat occurs), it continues to spread. Experts expect that where it spreads, it will have the same impact as seen in the Northeast.

- **States/US Territories** in which the Northern long-eared Bat, is known to or is believed to occur: [Alabama](#) , [Arkansas](#) , [Connecticut](#) , [Delaware](#) , [District of Columbia](#) , [Georgia](#) , [Illinois](#) , [Indiana](#) , [Iowa](#) , [Kansas](#) , [Kentucky](#) , [Louisiana](#) , [Maine](#) , [Maryland](#) , [Massachusetts](#) , [Michigan](#) , [Minnesota](#) , [Mississippi](#) , [Missouri](#) ,

Montana , Nebraska , New Hampshire , New Jersey , New York , North Carolina , North Dakota , Ohio , Oklahoma , Pennsylvania , Rhode Island , South Carolina , South Dakota , Tennessee , Vermont , Virginia , West Virginia , Wisconsin , Wyoming

- **US Counties** in which the Northern long-eared Bat, is known to or is believed to occur: [View All](#)
- [Additional species information](#)


Current Listing Status Summary

Status	Date Listed	Lead Region	Where Listed
Threatened	05/04/2015	<u>Great Lakes-Big Rivers Region (Region 3)</u>	

Species Occurrence

Population(s)

Entire



» Federal Register Documents

Federal Register Documents

Show entries

Date	Citation Page	Title
04/02/2015	80 FR 17973 18033	Threatened Species Status for the Northern Long-Eared Bat
01/30/2015	80 FR 5079	Listing the Northern Long-Eared Bat With a Rule
01/16/2015	80 FR 2371 2378	Listing the Northern Long-Eared Bat With a Rule
11/18/2014	79 FR 68657 68659	Endangered Species Status for the Northern Long-Eared Bat
06/30/2014	79 FR 36698 36699	6-Month Extension of Final Determination on the
12/02/2013	78 FR 72058 72059	Listing the Northern Long-Eared Bat as an Endangered
10/02/2013	78 FR 61045 61080	12-Month Finding on a Petition To List the Eastern Long-Eared Bat as an Endangered or Threatened Species; Listing the Rule
06/29/2011	76 FR 38095 38106	90-Day Finding on a Petition To List the Eastern Long-Eared Bat as Endangered

Showing 1 to 8 of 8 entries

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Special Rule Publications

Show entries

Date	Citation Page	Title
04/02/2015	80 FR 17973 18033	Threatened Species Status for the Northern Long-Eared Bat
01/16/2015	80 FR 2371 2378	Listing the Northern Long-Eared Bat With a Rule

Showing 1 to 2 of 2 entries

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» Recovery

- [Recovery Plan Information Search](#)
- [Information Search FAQs](#)

No recovery information is available for the Northern long-eared Bat.

» Critical Habitat

No critical habitat rules have been published for the Northern long-eared Bat.

» Conservation Plans

Habitat Conservation Plans (HCP) ([learn more](#))

Show entries

HCP Plan Summaries

[Pioneer Trail Wind Farm E.ON](#)

Showing 1 to 1 of 1 entries

» Petitions

Show entries

Showing 1 to 2 of 2 entries

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» Life History

Habitat Requirements

During summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on suitability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures like barns and sheds. Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. They typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur. Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible.

Food Habits

Northern long-eared bats emerge at dusk to fly through the understory of forested hillsides and ridges feeding on moths, flies, leafhoppers, caddisflies, and beetles, which they catch while in flight using echolocation. This bat also feeds by gleaning motionless insects from vegetation and water surfaces.

Reproductive Strategy

Breeding begins in late summer or early fall when males begin swarming near hibernacula. After copulation, females store sperm during hibernation until spring, when they emerge from their hibernacula, ovulate, and the stored sperm fertilizes an egg. This strategy is called delayed fertilization. After fertilization, pregnant females migrate to summer areas where they roost in small colonies and give birth to a single pup. Maternity colonies, with young, generally have 30 to 60 bats, although larger maternity colonies have been observed. Most females within a maternity colony give birth around the same time, which may occur from late May or early June to late July, depending where the colony is located within the species' range. Young bats start flying by 18 to 21 days after birth. Adult northern long-eared bats can live up to 19 years.

» Other Resources

[NatureServe Explorer Species Reports](#) -- NatureServe Explorer is a source for authoritative conservation information on more than 50,000 plants, animals and ecological communities of the U.S and Canada. NatureServe Explorer provides in-depth information on rare and endangered species, but includes common plants and animals too. NatureServe Explorer is a product of NatureServe in collaboration with the Natural Heritage Network.

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[FWS Digital Media Library](#) -- The U.S. Fish and Wildlife Service's National Digital Library is a searchable collection of selected images, historical artifacts, audio clips, publications, and video.



Indiana bat

Myotis sodalis

Indiana bats have long lived in the forests and caves of the Northeast and Southeast but primarily in the Midwest. Very gregarious animals, these little bats congregate in winter and summer colonies, migrating between the two in spring and fall. Although they once numbered in the millions, the Indiana bat population has declined 56 percent in the past 40 years, from 883,300 in the 1960s to 387,300 today. In 1967, Indiana bats were listed for protection under the Endangered Species Act.

Small, social sleepers

Indiana bats hibernate in limestone caves, called hibernacula, from mid-autumn to early spring. Hibernating bats form large, compact clusters with as many as 5,000 individuals but averaging 500 to 1,000 bats per cluster. Bats form clusters in the same area in a cave each year, with more than one cluster in some caves. Clustering may protect individual bats from temperature changes, reduce sensitivity to external disturbance, or enable rapid arousal and escape from predators.

Roosts usually are in the coldest part of the cave. This ensures a sufficiently low metabolic rate so the bats' fat reserves last through the six-month hibernation. Bats may move from a location deeper in the cave to a site nearer the entrance as the cold season progresses to move away from areas that go below freezing. Indiana bats tend to return to the same hibernacula each year.

Single mom, single pup

Having mated in autumn, a female becomes pregnant after the winter hibernation when she ovulates and an egg is fertilized by sperm stored from the autumn mating. Pregnant females migrate to trees that serve as maternity colonies throughout the summer. The female births a single pup, which she tends for about a month before taking it on its first flight in tandem with her. The weather affects the length of time for the



Indiana bats still live in Alabama, Arkansas, Georgia, Iowa, Illinois, Indiana, Kansas, Kentucky, Maryland, Michigan, Missouri, Mississippi, North Carolina, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Virginia, Vermont, and West Virginia.

pup to mature. Females sometimes relocate their pups to warmer spots on the tree. Dozens and up to hundreds of mothers and their young can inhabit maternity roost trees.

In the summer, bats live in wooded or semi-wooded areas. Groups of female Indiana bats form maternity colonies to bear their offspring in crevices of trees or under loose tree bark. Dead trees are preferred roost sites, and trees standing in sunny openings are attractive because the air spaces and crevices under the bark are warm. Typical roosts are beneath the bark and in crevices of dead trees and beneath loose bark of living trees. Roost trees are likely to be exposed to direct sunlight throughout the day, and are as likely to be in upland habitats as in floodplain forests. Indiana bats are also known to roost in human-made structures such as bridges, sheds, houses and abandoned churches.

Meals on the fly and migration, too

Indiana bats eat flying insects, and their diet reflects the available prey. Bats forage along river and lake shorelines, in the crowns of trees in floodplains and in upland forests. Reproductively active females generally forage within a mile of roost trees. Bats may attempt to capture flying insects as many as 17 times a minute.

Indiana bats show strong homing instincts to their hibernacula. When released to the west of a winter cave, over 68 percent of the bats returned to the cave from 12 miles away. Biologists released approximately 500 female bats up to 200 miles from their winter cave and found that more than two-thirds returned. These researchers noted much stronger homing tendencies along a north-south axis, the direction for migrating to and from summer roosts, than along the east-west direction. Winter and summer

habitats may be as much as 300 miles apart, but are probably much closer for the majority of bats.



Bats in trouble

While hibernating in large numbers is beneficial to bats, it also leaves them vulnerable to catastrophe. Human disturbance at winter caves arouses bats, depleting energy reserves. Vandalism and indiscriminate killing have destroyed much of the population. Some early attempts to keep people out of hibernacula by installing gates inadvertently made the caves unsuitable for bats. Improperly constructed gates can alter the air flow, trap debris and block the entrance by not allowing enough

flight space. Altering air exchange by opening additional entrances can also change cave temperature and humidity, rendering the cave unsuitable for bats. Since disruption during hibernation is detrimental, biologists schedule research to avoid harming the bats. To reduce disturbance during a census, the cave is mapped in the autumn before the bats arrive. Then a few, well-trained people carefully collect the minimum data needed for the census.

The rest of the problem

When first looking at the decline of Indiana bat populations, the problems of vandalism and human disturbance in the winter hibernacula were addressed first. When bat populations continued to decline, biologists looked at where bats spend their summers. Loss and degradation of summer habitat and roost sites due to water impoundment, stream channeling, forest clearing, housing development, and clear cutting for agricultural or other uses may be important factors in continuing Indiana bat population decline. Additional research is needed to verify the causes of decline.

Within the delineated summer range, activities planned in habitats occupied by Indiana bats may need to be changed to

accommodate the needs of the bats. Summer roosts and surrounding forest and foraging areas may need to be maintained in as natural a state as possible. In addition, while winter hibernacula themselves must be protected, the forests above and around hibernacula should not be dramatically altered. After all, Indiana bats are animals of the forest. Once as plentiful as the passenger pigeon, these little flying mammals are rapidly falling toward extinction. The Service, along with many partners, is working to conserve and protect Indiana bats for now and for the future.

**Northeast Region
U.S. Fish & Wildlife Service
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Hadley, MA 01035**

**Federal Relay Service
for the deaf and hard-of-hearing
1 800/877 8339**

**U.S. Fish and Wildlife Service
<http://www.fws.gov>
1 800/344 WILD**

July 2004