

Wildlife Environmental Review Map Service (WERMS): Background, database descriptions, and disclaimers

The Wildlife Environmental Review Map Service (WERMS) allows users to download a collection of spatial datasets that highlight critical wildlife resources for the environmental review process.

Below are instructions for connecting and downloading the data followed by a description of each dataset.

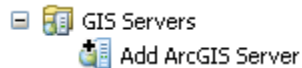
Connecting to WERMS via ArcGIS Desktop

To download WERMS data users need a copy of ArcGIS Desktop, a WERMS user account, and to follow the instructions below.

If an account is needed, contact GIS@dwr.virginia.gov to discuss subscription options.

Create a connection to WERMS ArcGIS Server (through ArcMap or ArcCatalog)

- 1) Open ArcMap or ArcCatalog
- 2) In the Catalog Tree expand GIS Servers and double-click “Add ArcGIS Server”



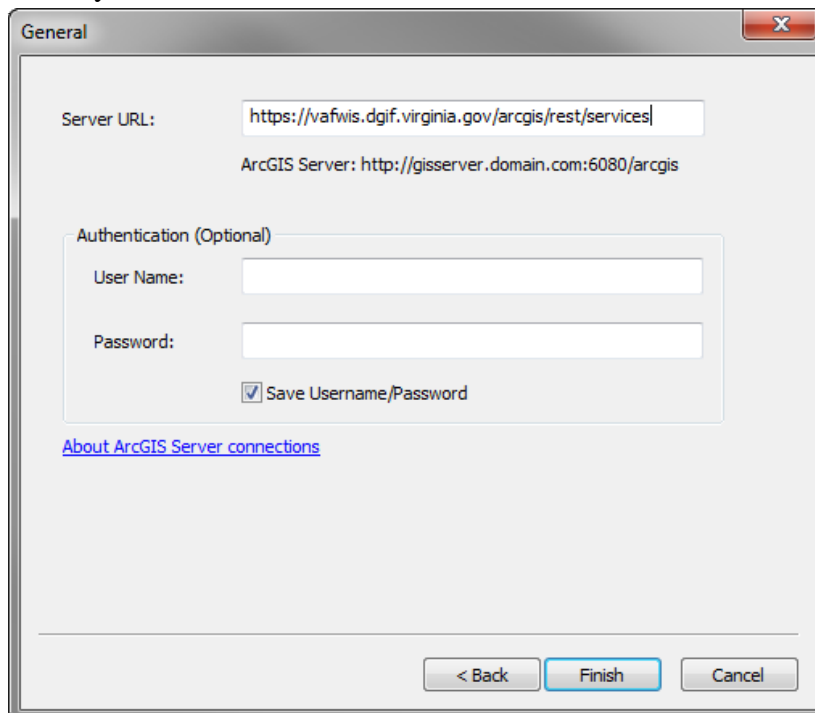
- 3) Make sure the “Use GIS services” option is selected.
- 4) Click Next.
- 5) Fill in the Server URL with the following:

<https://services.dwr.virginia.gov/arcgis/rest/services>

(Do not type what is in the box below)

- 6) Fill in your WERMS Account credentials in User Name and Password text

7)

A screenshot of the 'General' dialog box in ArcGIS. The 'Server URL' field contains the text 'https://vafwis.dgif.virginia.gov/arcgis/rest/services'. Below it, the 'ArcGIS Server' field shows 'http://gisserver.domain.com:6080/arcgis'. The 'Authentication (Optional)' section has 'User Name' and 'Password' fields, both empty. A checkbox labeled 'Save Username/Password' is checked. At the bottom, there are three buttons: '< Back', 'Finish', and 'Cancel'. A link for 'About ArcGIS Server connections' is visible at the bottom left of the dialog.

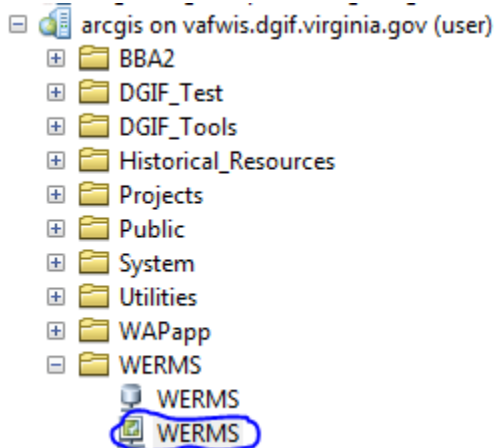
8) Click Finish.

To download data in ArcGIS Desktop:

The full WERMS database file size is a little under 300 Mb. The service timeout is set to 15 minutes of download time.

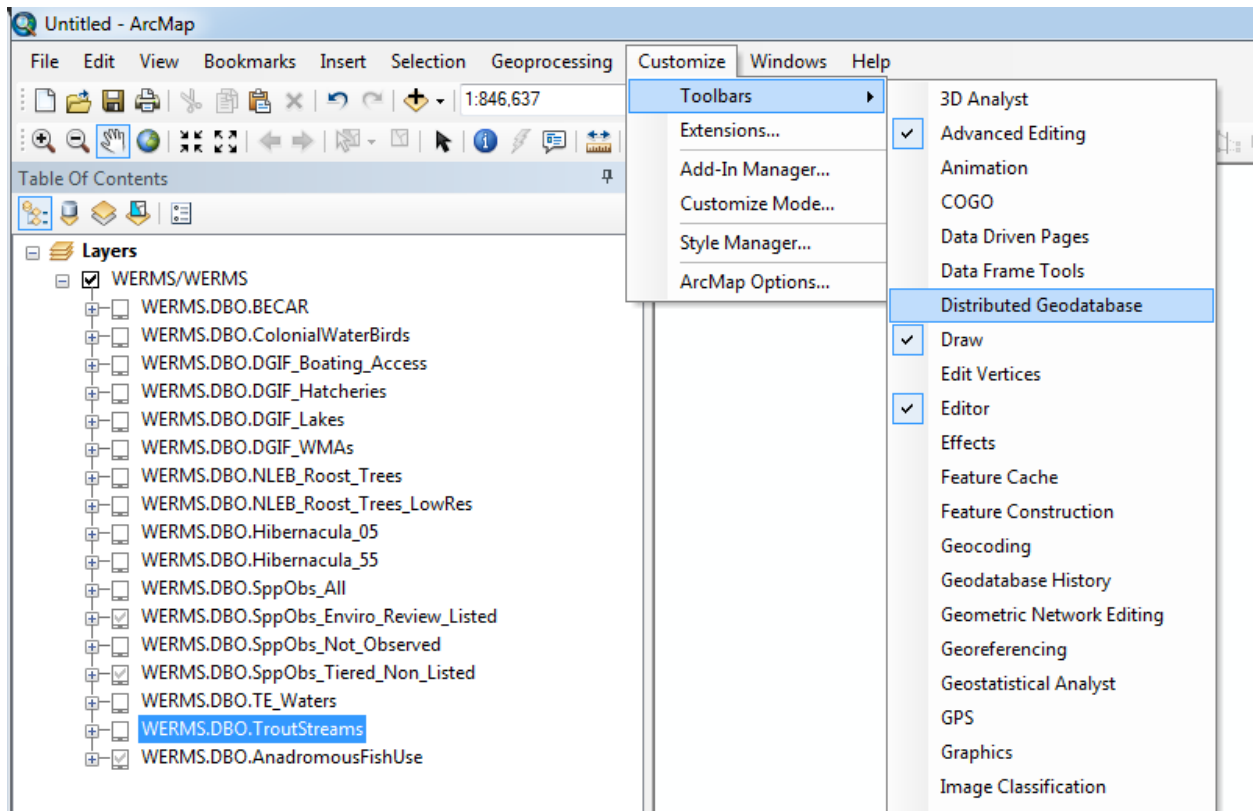
To download:

- 1) Open ArcMap.
- 2) Either open the catalog window or click the add data button.
- 3) Navigate to the WERMS ArcGIS Server connection you created earlier.
- 4) Add the WERMS MapService.



- 5) The service will be added, but layers will not appear if your scale is 1:100,000+. Zoom in to turn on the layers. **ArcMap must be at a scale of 1:100,000 or larger (ex: 1:80,000) to extract any or all features.**

- 6) Turn on the Distributed Geodatabase toolbar by navigating to Customize > Toolbars > Distributed Geodatabase.

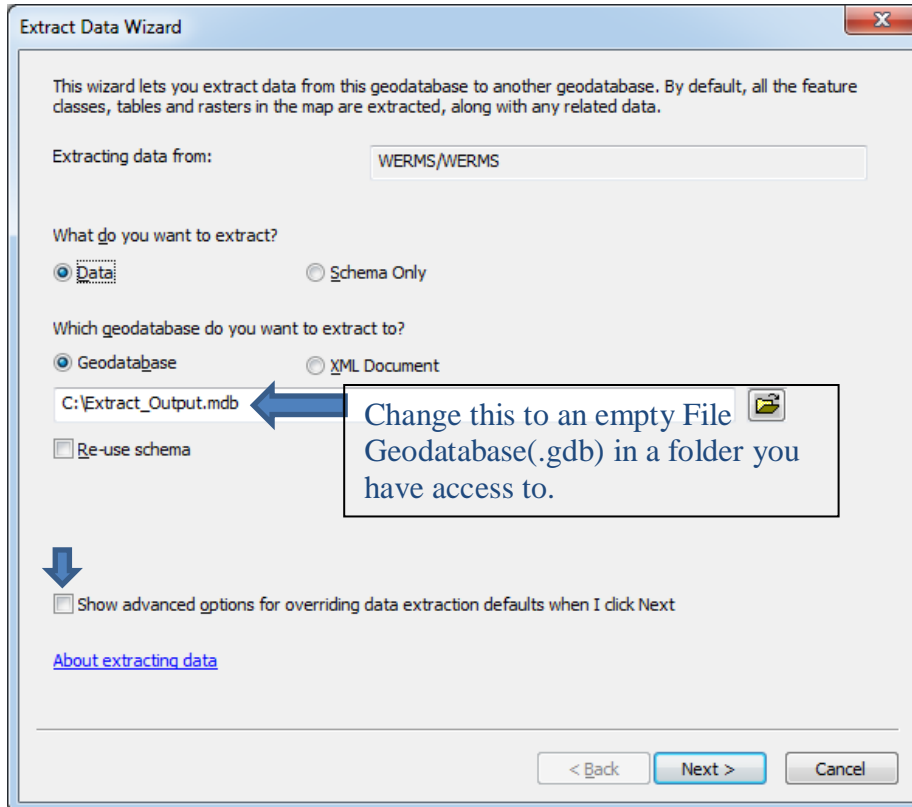


- 7) The toolbar will appear like the image below.

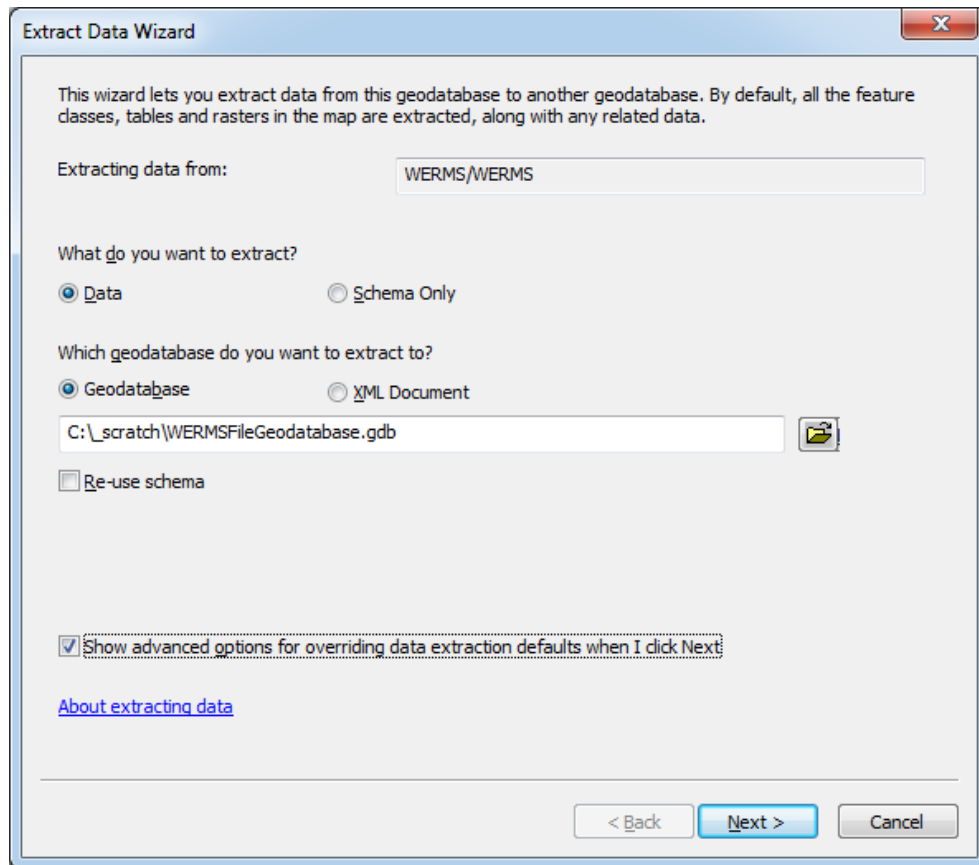


- 8) Click the Extract Data button (far right) to extract a copy of the data.

9) In the first screen of the Extract Data Wizard change the following settings.



- Change the “geodatabase you want to extract to” to a file Geodatabase (.gdb) in a easily accessible folder.
- Check “Show advanced options for overriding data extraction defaults when I click Next”.
- It will look like the following image but with a custom geodatabase location:



d. Click Next.

10) In the next screen, change the following options:

- a. To download all data, change “The current display extent” to “The full extent of the data”.
- b. Click the “Include All” button to select all the layers for download.
- c. Do not change the feature class names.
- d. Check “Extract related data”

Advanced Extract Data Options

What spatial extent do you want to extract data for?

The current display extent
 The full extent of the data
 The boundary of the currently selected graphic
 The following extent:

Left: Top:
 Bottom: Right:

Choose which items you want to extract

Include	Data	Target Name	Type	Check Out	Use Spa
<input checked="" type="checkbox"/>	WERMS.DBO.SppObs_N	WERMS.DBO.SppObs_N	Feature Class	All Features	<input type="checkbox"/>
<input checked="" type="checkbox"/>	WERMS.DBO.SppObs_T	WERMS.DBO.SppObs_T	Feature Class	All Features	<input type="checkbox"/>
<input checked="" type="checkbox"/>	WERMS.DBO.TE_Water	WERMS.DBO.TE_Water	Feature Class	All Features	<input type="checkbox"/>
<input checked="" type="checkbox"/>	WERMS.DBO.TroutStrea	WERMS.DBO.TroutStrea	Feature Class	All Features	<input type="checkbox"/>
<input checked="" type="checkbox"/>	WERMS.DBO.Anadromo	WERMS.DBO.Anadromo	Feature Class	All Features	<input type="checkbox"/>

Extract related data

e. Click Next.

11) On the last screen select “No further action”.

12) Click Finish.

13) The data will download to the selected File Geodatabase. This will take several minutes.

Connecting to WERMS through you web browser

View the service in a web browser by navigating to the URL below and logging in with WERMS credentials. This is generally less useful for the average user, but could be useful to some of you.

<https://services.dwr.virginia.gov/arcgis/rest/services/WERMS/WERMS/MapServer/>

WERMS Datasets

WERMS contains the following GIS Feature Classes (layers):

Feature Class Description

BECAR

ColonialWaterBirds

DGIF_Boating_Access

DGIF_Hatcheries

DGIF_Lakes

DGIF_WMAs

NLEB_Roost_Trees

NLEB_Roost_Trees_LowRes

Hibernacula_05

Hibernacula_55

SppObs_All

SppObs_Enviro_Review_Listed

SppObs_Not_Observed

SppObs_Tiered_Non_Listed

TE_Waters

TroutStreams

AnadromousFishUse

The layers are in the Virginia Lambert Conformal Conic projection. This is a standard projection used by many Virginia state agencies. Users should check for updates on a monthly basis. If new updates are available, they should be downloaded and used per the signed Data Use and Access Agreement.

Species Observation Database (SppObs)

To manage species occurrence information, DGIF maintains a database called Species Observation Database or SppObs. Within the Virginia Fish and Wildlife Information Service (<https://vafwis.dgif.virginia.gov/fwis/>), all Species Observation records are called “SppObs”.

WERMS contains a full copy of SppObs plus three filtered SppObs layers to help users navigate more quickly.

- *SppObs_All* is the full copy of all records in SppObs.
- *SppObs_Enviro_Review_Listed* is filtered to include only federal or state listed (TE) species (threatened, endangered, species of concern, proposed, candidate, or collection concern) observed within the last 30 years are included. With the exception of bald eagle nest records, all point records have been randomly offset and buffered 800m. Line and polygon records are buffered 800m. Eagle nest points are buffered 200m.
- *SppObs_Not_Observed* is a layer of observations in which the observer specifically noted an absence of a species at a location.
- *SppObs_Tiered_Non_Listed* is a companion to the *SppObs_Enviro_Review_Listed* layer. This contains records of species of greatest conservation need or Tiered species that are not state or federally listed. Species of greatest conservation need or Tiered species were prioritized in Virginia’s 2015 Wildlife Action Plan. This layer should be used in conjunction with the *SppObs_Enviro_Review_Listed* layer so that the species contained within will not need future state or federal protection. Records are not offset or buffered.

Sources of SppObs Data

While the predecessor of SppObs was a database of collections permit reports, the current SppObs contains more than two dozen independent and will add more in the future. Descriptions of the primary environmental review databases within SppObs are below:

Wildlife Management Area (WMA) Bird Surveys

From 2003 to 2007, DGIF biologists conducted bird surveys on a subset of DGIF's Wildlife Management Areas. Observations recorded during these standardized surveys are included in SppObs.

Rarebird

Bird observations are regularly listed by birders on various websites or email lists. These websites and email lists are monitored by DGIF biologists for information on rare, threatened or endangered species. Information on rare bird sightings are added when adequate information is available, including identification by a recognized expert and precise location description. Locations are digitized into points based on best available information.

Bald Eagle Nest Database

This is the results of an annual bald eagle nest survey conducted by the Center for Conservation Biology at the College of William and Mary/Virginia Commonwealth University (CCB) and others, along with other reported inland nests. Nests locations are marked on 1:24000 topographic maps during survey flights and later digitized as points. Unlike point locations for other listed species in *SppObs_Enviro_Review_Listed*, bald eagle nest locations are not offset and are only buffered 200 meters. This is to ensure compliance with the Bald Eagle Protection Guidelines.

For 2009 and into the future, eagle nest locations were created and owned by CCB and incorporated into VAFWIS. Due to the data license, the 2009 CCB survey and onward are not available through WERMS. *SppObs_Enviro_Review_Listed* continues to include older eagle nest locations as well as nests not within the CCB survey. All eagle nest locations are available in VDGIF's online Virginia Fish and Wildlife Information Service ([VAFWIS](#)). To obtain a GIS dataset of CCB's 2009+ bald eagle nest locations, contact the Center for Conservation Biology at: conbio@wm.edu or call 757-221-1645.

VDGIF staff incidental observations (ObsBook)

The Observation Book Program was started in 1995 for DGIF biologists to record incidental observations of wildlife. For instance, biologists driving to meetings or to field sites can record observations of wildlife that they see along the way. The information recorded includes point locations, habitats, time and date, whether breeding activity is observed, and the animal's current activity.

VDGIF Scientific Collections, TE, and Salvage permit data (Collections)

DGIFs' Collections Database was developed in 1991 to store annual reports by researchers with permits in Virginia Scientific Collection, Threatened and Endangered Species Collections, and Salvage Permit programs. Permits are issued to any person performing research activities whether the species is collected or not. In 1992, the database was expanded to include miscellaneous reports, staff field activities, and locations from a follow-up of the first VA Breeding Bird Atlas project. Records reported in peer-reviewed journals and museum records were also added.

Colonial Waterbird Locations (CWB), CWB2003, CWB2008, and CWB2013

Virginia's Colonial Waterbird Database contains records of Virginia's breeding waterbird species. First developed in 1989 to continue data compilation activities discontinued by the Cornell Lab of Ornithology, all Virginia-specific data compiled by Cornell were read into this application. Subsequent State-collected colonial waterbird records are entered as received.

The CWB2003 contains results of the 2003 survey conducted by CCB and partners. It included the eastern part of Virginia, generally east of I-95. The records were published in a 2004 report titled "Status and Distribution of Colonial Waterbirds in Coastal Virginia: 2003 Breeding Season".

The CWB2008 are the results of a 2008 survey conducted by CCB and partners. It only included the eastern part of Virginia, generally east of I-95 and did not include great blue heron colonies. These records were published in a 2009 report titled "Status and Distribution of Colonial Waterbirds in Coastal Virginia: 2008 Breeding Season".

PEFAnests

This database contains observations of peregrine falcon nests. These records are the results of collaboration between VDGIF and CCB. Many of the records are published in CCB's annual Virginia Peregrine Falcon Monitoring and Management Program: Year 20xx Report.

Caves

These are subterranean features that have been documented to be important to bats.

CAVES2017

These subterranean features have been documented to be important to bats. This is an updated version of the Caves database. Some of the observations in this database are duplicates of those in the Caves database and will be removed in the future. This dataset is also the basis of most of the records in the Hibernacula layers.

Incidentals

This database contains miscellaneous wildlife observations. All records in Incidentals have been reviewed and approved by a VDGIF biologist. Additionally, the FiesRareMammals source database is a compilation of incidental records compiled by VDGIF biologist Mike Fies related to a specific subset of mammals.

Survey Specific Databases

Several databases are the results of specific surveys. These include HotoppSnails, ThomaCrayfish, BogTurtle, BlackRail, and IBAsurveys (breeding birds). Many of these surveys were contracted or directed by VDGIF biologists.

Aquatics

Records from a database compiled by the VDGIF malacologist, Brian Watson. The records included in SppObs from this source database only include records which should not have come in from other sources, such as VDGIF biologist data. Data should not contain duplicates of collection report records.

Others

Databases such as WWSS, SNP, INSTAR, Golden-Winged Warblers, and Loggerhead Shrike datasets are large compilations of records from specific groups which did not come in via collections. WWSS is a VDGIF staff database for warmwater streams. SNP is current only fish data collected by Shenandoah National Park staff. INSTAR holds collections records for Virginia Commonwealth University. Golden-Winged Warblers, and Loggerhead Shrike datasets are compilation of records put together by our DGIF biologist from multiple survey sources.

Other WERMS Layers

BECAR - The Bald Eagle Concentration Areas and Roosts - is a feature class that delineates important features used by bald eagles. Concentration areas are shorelines that have been identified through surveys to support a high density of non-breeding bald eagles. Concentration areas can be separated by season (summer and winter). Roost sites are sites that have been documented as repeatedly used as night-time resting places for multiple bald eagles.

The *Colonial Water Birds* feature class comprises data from the CWB, CWB2003, CWB2008, and CWB2013 databases in SppObs. While *EnviroReview Listed SppObs* contains the listed species records from these databases, *Colonial Water Birds* includes all nest colony records. Records are not offset or buffered, except when containing a listed species.

NLEB_Roost_Trees are locations for the Northern long-eared bat roost trees identified by VDGIF biologists. They are buffered and offset in order to comply with the U.S Fish and Wildlife Service Endangered Species Act Rule 4(d).

NLEB_Roost_Trees_LowRes are the centroids of the feature class above. They are included in order to ease navigation of this dataset at low resolutions.

Hibernacula_05 and *Hibernacula_55* are locations of bat hibernacula identified by VDGIF biologists for the Northern long-eared bat, Tri-colored bat, Little-brown bat, Virginia big-eared bat, Gray bat, and Indiana bat. The locations have been offset and buffered in accordance with the U.S Fish and Wildlife Service Endangered Species Act Rule 4(d). While the tri-colored and little-brown bats do not fall under this rule, we have included them here in order to maintain consistency across similar species.

Almost every hibernaculum in these layers has corresponding observations in SppObs. Observations at these hibernacula can be identified by matching the txtFeatID with any SppObs layer.

Gray bat, Indiana bat, and Virginia big-eared bat hibernacula in this layer are not meant to be comprehensive.

Disclaimer of Liability

Neither the Virginia Department of Game & Inland Fisheries (VDGIF) nor the contributors to the Wildlife Environmental Review Map Service (WERMS) shall be held liable for any improper or incorrect use of the information contained herein and assume no responsibility for the use of the information. In no event shall the VDGIF or the contributors to the WERMS be liable for any direct, indirect, or incidental damages arising in any way out of the use of this service. This disclaimer of liability applies to any damages or injury, including but not limited to

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Disclaimer of Accuracy of Data

No warranty expressed or implied is made regarding the accuracy, adequacy, completeness, reliability, or usefulness of any information contained herein. The VDGIF provides these data on an "as is" basis. All warranties of any kind, express or implied, including but not limited to fitness for a particular use, freedom from computer viruses, and non-infringement of proprietary rights are disclaimed. Information is added and changed periodically, and data may become out-of-date quickly. It is recommended that the user not let a significant period of time elapse between obtaining and using the information.

Disclaimer of Applicability of Data

The WERMS is constantly being updated and expanded. Information contained in the WERMS does not constitute an official opinion by the VDGIF, nor will it, by itself, meet any regulatory requirements. The information in the WERMS does not replace the need for conducting field work. The information must be used in consultation with appropriate federal, state, and local officials. The absence of data confirming the occurrence of a species within a geographic area does not constitute a negative declaration.

Further Information

For further information about WERMS and/or the datasets distributed through WERMS, please contact: For troubleshooting connections to the WERMS services and other technical questions please contact:

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