

Digital Distribution Maps of the Freshwater Fishes of the Conterminous United States

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Identification Information

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Citation:

Citation Information:

Title: Digital Distribution Maps of the Freshwater Fishes of the Conterminous United States

Description:

Abstract:

This data set contains current and historic distribution by small watershed (8-digit cataloging unit), as defined by the U.S. Geological Survey, of all native freshwater fishes of the United States, exclusive of Alaska and Hawaii. The goal of this project is to make this distributional information freely available to the public to inform conservation and other land-use decisions. The digital distribution maps are the result of a 12-year effort to produce, review, and revise a highly accurate database of fish distributions in the U.S. There are 2,064 small watersheds in the 48 states. To learn how these watersheds are defined, see the USGS's Science in Your Watershed website: <http://water.usgs.gov/wsc/>.

Purpose:

The United States is a world center of freshwater species diversity. Although most of the world's freshwater fish species are tropical, the United States ranks seventh among countries in the world in recorded fish species. This diversity is threatened by the destruction and degradation of aquatic habitats, invasive species, climate change, and other factors. We compiled these distribution

data to provide a scientific basis for prioritizing conservation actions to protect this tremendous array of freshwater biodiversity

Time Period of Content:

Currentness Reference: publication date

Status:

Progress: In Work

Maintenance and Update Frequency: As needed

Spatial_Domain:

Bounding_Coordinates:

West_Bounding_Coordinate: -180.000000

East_Bounding_Coordinate: 180.000000

North_Bounding_Coordinate: 85.252791

South_Bounding_Coordinate: 5.566600

Keywords:

Theme:

Theme Keyword Thesaurus: none

Theme Keyword: watershed

Theme Keyword: NatureServe

Theme Keyword: freshwater fishes

Theme:

Theme Keyword Thesaurus: ISO 19115 Topic Category

Theme Keyword: biota, 002

Theme Keyword: environment, 007

Place:

Place Keyword Thesaurus: none

Place Keyword: United States (conterminous)

Taxonomy:

Keywords/Taxon:

Taxonomic Keyword Thesaurus: none

Taxonomic Keywords: freshwater fishes

Taxonomic System:

Classification System/Authority:

Classification System Citation:

Citation Information:

Originator: Nelson, J. S., E. J. Crossman, H. Espinosa-Perez, L. T. Findley, C. R. Gilbert, R. N. Lea, and J. D. Williams

Publication Date: 2004

Title: Common and scientific names of fishes from the United States, Canada, and Mexico

Geospatial Data Presentation Form: document

Series Information:

Series Name: Special Publication 29

Publication Information:

Publication Place: Bethesda,
Maryland
Publisher: American Fisheries
Society

Taxonomic Procedures:

Taxonomy of fishes follows Nelson et al. 2004; amended by more recent published literature.
Nelson, J. S., E. J. Crossman, H. Espinosa-Perez, L. T. Findley, C. R. Gilbert, R. N. Lea, and J. D. Williams. 2004. Common and scientific names of fishes from the United States, Canada, and Mexico. American Fisheries Society, Special Publication 29, Bethesda, Maryland. 386 pp.

Taxonomic Classification:

Taxon Rank Name: Kingdom

Taxon Rank Value: Animalia

Taxonomic Classification:

Taxon Rank Name: Phylum

Taxon Rank Value: Craniata

Taxonomic Classification:

Taxon Rank Name: Class

Taxon Rank Value: Actinopterygii

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Acipenseriformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Amiiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Anguilliformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Atheriniformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Beloniformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Characiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Clupeiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Cypriniformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Cyprinodontiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Esociformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Gadiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Gasterosteiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Hiodontiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Lepisosteiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Mugiliformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Perciformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Percopsiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Pleuronectiformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Salmoniformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Scorpaeniformes

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Siluriformes

Taxonomic Classification:

Taxon Rank Name: Class

Taxon Rank Value: Cephalaspidomorpha

Taxonomic Classification:

Taxon Rank Name: Order

Taxon Rank Value: Petromyzontiformes

Access Constraints: None

Use Constraints:

NatureServe grants to the public a non-exclusive, royalty-free license to use these data for non-commercial, educational purposes. These data may not be reposted on any website without prior written permission from NatureServe. All such uses should provide appropriate attribution.

The datasets should be cited as follows:

NatureServe. 2010. Digital Distribution Maps of the Freshwater Fishes in the Conterminous United States. Version 3.0. Arlington, VA. U.S.A.

Point of Contact:

Contact Information:

Contact Organization Primary:

Contact Organization: NatureServe

Contact Person: Products and Services

Contact Position: Information Products and Services

Contact Address:

Address Type: mailing and physical address

Address: 1101 Wilson Boulevard, 15th floor

City: Arlington

State or Province: VA

Postal Code: 22209

Country: USA

Contact Voice Telephone: (703) 908-1824

Contact Facsimile Telephone: (703) 908-1917

Contact Electronic Mail Address:

ProductsandServices@natureserve.org

Data Set Credit:

For their generous financial support, we thank: Regina Bauer Frankenberg Foundation for Animal Welfare, The Nature Conservancy, the Central Administrative Office of the USDA Forest Service (Fort Collins, CO), and the U.S. Geological Survey.

Native Data Set Environment:

Data currently available as an Access database (or excel or text), a personal geodatabase, and individual shapefiles. In the Access database, the location field (USGS-defined 8-digit HUC) may be joined to the USGS "hucs00p020.shp" shapefile.

Data Quality Information

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Logical Consistency Report:

Although we feel we did the best job possible to produce an accurate database, some errors surely remain in the data. Our knowledge of freshwater fish distributions continues to improve, so some of these maps

may be out of date by the time you see them. Please alert Margaret Ormes (margaret_ormes@natureserve.org) of any errors you detect in the data or of newly published information that would serve to update the maps. We will be constantly reviewing the scientific literature to keep abreast of taxonomic and distributional changes.

Completeness Report:

These data are dynamic with new records frequently being added and old records being revised as new information is received. As a result, the information on this website should not be considered a definitive statement on the presence or absence of freshwater fishes in any given watershed, nor should be used as a substitute for on-site surveys required for environmental assessments.

The native vs. exotic column (ORIGINSTAT) refers to whether the species is native or non-indigenous (exotic) in a particular watershed. These exotic rows are primarily derived from expert review of published records thought (falsely) to represent native occurrence. We have made no attempt at developing comprehensive exotic distribution and recommend that this data be excluded from analyses. For complete information about exotic distribution, please see the Nonindigenous Aquatic Species Program website (<http://nas.er.usgs.gov>).

Lineage:

Process Step:

Process Description:

Version 1.0

The initial watershed distribution maps were derived from the precise location data (element occurrences) compiled by state natural heritage programs for 307 vulnerable or imperiled fish species. The natural heritage-derived locational data were supplemented with information from all available "Fishes of" books (e.g., Cooper, E. L., *Fishes of Pennsylvania and the northeastern United States*, Pennsylvania, Pennsylvania State University Press, University Park, 243 pp.) and from the scientific literature to compile the most complete current and historic distribution information possible for these species at the level of USGS 8-digit cataloging unit. The resulting maps were then reviewed by regional and state experts. Funding for this work was provided by Regina Bauer Frankenberg Foundation for Animal Welfare.

Process Date: 1998

Process Step:

Process Description:

Version 2.0

The first major revision of the original database expanded the database to include all native freshwater fishes of the conterminous United States. Funding for completing this

expansion came from the Regina Bauer Frankenberg Foundation for Animal Welfare and from The Nature Conservancy.

Process Date: 2003

Process Step:

Process Description:

Version 2.1

LandScape provided funding to reconcile the taxonomy between NatureServe's Central databases and the maps. It also enabled us to update the maps with updates based on the precise location data (element occurrences) compiled by state natural heritage programs. The Central Administrative Office of the USDA Forest Service (Fort Collins, CO) provided funding to complete the stand-alone metadata and standardize the source information.

Process Date: 2007-2009

Process Step:

Process Description:

Version 3.0

The USGS provided extensive revisions to the distributions of fishes in the southeastern U.S. and funding to incorporate the data into the database and produce a personal geodatabase and shapefiles to facilitate use of the data by other scientists.

Process Date: 2009-2010

Spatial Data Organization Information

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Direct_Spatial_Reference_Method: Vector

Point_and_Vector_Object_Information:

SDTS_Terms_Description:

SDTS_Point_and_Vector_Object_Type: G-polygon

Point_and_Vector_Object_Count: 865

Spatial Reference Information

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Spatial_Reference_Information:

Horizontal_Coordinate_System_Definition:

Geographic:

Latitude_Resolution: 0.000000

Longitude_Resolution: 0.000000

Geographic_Coordinate_Units: Decimal degrees

Geodetic_Model:

Horizontal_Datum_Name: North American Datum of 1983

Ellipsoid_Name: Geodetic Reference System 80

Semi-major_Axis: 6378137.000000

Denominator_of_Flattening_Ratio: 298.257222

Entity and Attribute Information

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Detailed Description:

Attribute:

Attribute Label: CLASSIFICATION_STATUS

Attribute Definition: This is used to indicate whether the concept has been formally recognized, described, and accepted by the standard classification as determined by NatureServe Central Sciences.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Standard

Enumerated Domain Value Definition: The concept has been formally recognized, described, and accepted by the standard classification.

Enumerated Domain Value Definition Source: NatureServe

Enumerated Domain Value: Provisional

Enumerated Domain Value Definition: The concept has not yet been formally addressed and accommodated (by acceptance or rejection) in the standard classification.

Enumerated Domain Value Definition Source: NatureServe

Attribute:

Attribute Label: COMMENTS

Attribute Definition: Additional comments about native/introduced status.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: text

Attribute:

Attribute Label: ELCODE_BCD

Attribute Definition:

Unique identifier for a species previously used in the Biological and Conservation Data system (BCD). This code is no longer the primary unique identifier in the Biotics 4.0 system. No record is kept of past use of species codes.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: record code

Attribute:

Attribute Label: ELEMENT_GLOBAL_ID

Attribute Definition: The primary unique system generated identifier used in NatureServe's Biotics 4.0 system.

Attribute Definition Source: NatureServe

Attribute:

Attribute Label: EO_ID

Attribute Definition: NatureServe code for the precise location data (element occurrence) maintained by state natural heritage programs).

Attribute Definition Source: NatureServe - Heritage Methodology

Attribute Domain Values:

Unrepresentable Domain: record ID

Attribute:

Attribute Label: FULL_CITATION

Attribute Definition: Full citation of the reference.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: text - bibliographic information

Attribute:

Attribute Label: G_PRIMARY_COMMON_NAME

Attribute Definition:

The common name of a species adopted for use by NatureServe. Common names have not been tracked for all plants. Names for other groups may be incomplete. Many species have several common names. Spellings of plant common names follow no standard conventions and are not systematically edited.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: species names

Attribute:

Attribute Label: GRANK

Attribute Definition:

The conservation status rank, developed by NatureServe and our network of member programs, of a species from a global (i.e., rangewide) perspective, characterizing the relative imperilment of the species.

For more detailed definitions and additional information, please see:

<http://www.natureserve.org/explorer/ranking.htm>

Attribute Definition Source: NatureServe

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: GX

Enumerated Domain Value Definition:

Presumed Extinct (species) - Believed to be extinct throughout its range. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: GH

Enumerated Domain Value Definition: Possibly

Extinct (species) - Known from only historical occurrences, but may nevertheless still be extant; further searching needed.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: G1

Enumerated Domain Value Definition:

Critically Imperiled - Critically imperiled globally because of extreme rarity or because of some factor(s) making it especially vulnerable to extinction. Typically 5 or fewer occurrences or very few remaining individuals (<1,000) or acres (<2,000) or linear miles (<10).

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: G2

Enumerated Domain Value Definition:

Imperiled - Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction or elimination. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000) or acres (2,000 to 10,000) or linear miles (10 to 50).

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: G3

Enumerated Domain Value Definition:

Vulnerable - Vulnerable globally either because very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction or elimination. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: G4

Enumerated Domain Value Definition:

Apparently Secure - Uncommon but not rare (although it may be rare in parts of its range, particularly on the periphery), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: G5

Enumerated Domain Value Definition:

Secure - Common, widespread, and abundant (although it may be rare in parts of its range, particularly on the periphery). Not vulnerable in most of its range. Typically with considerably more than 100 occurrences and more than 10,000 individuals.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: G#G#

Enumerated Domain Value Definition:

Numeric range rank (with range no greater than 2); greater uncertainty about a rank is expressed by indicating the full range of ranks which may be appropriate (for example, a G1G3 rank indicates the rank could be G1, G2, or G3).

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: GNR

Enumerated Domain Value Definition: Not yet ranked; status has not yet been assessed.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: GNA

Enumerated Domain Value Definition: Rank not applicable.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: GU

Enumerated Domain Value Definition:

Unrankable; status cannot be determined at this time.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: ?

Enumerated Domain Value Definition:

Inexact numeric rank; a question mark added to a rank expresses an uncertainty about the rank in the range of 1 (i.e., +/- 1 rank either way on the 1-5 scale); for example, a G2? rank indicates that the rank is thought to be G2, but could be G1 or G3.

Enumerated Domain Value Definition Source:

NatureServe

Enumerated Domain Value: Q

Enumerated Domain Value Definition:

Questionable taxonomic classification; a "Q" added to a rank denotes questionable taxonomy; it modifies the degree of imperilment and is only used in cases where the species would have a less imperiled rank if it were not recognized as a valid species i.e., if it were combined with a more common species); a GUQ rank often indicates that the species is unrankable because of daunting taxonomic questions.

Enumerated Domain Value Definition Source:

NatureServe

Attribute:

Attribute Label: HIGHER_TAX

Attribute Definition: Higher taxonomic / classification code - Proper code for the species (specified in the Global Element ID

field) according to the taxonomic hierarchy for species

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: record codes

Attribute:

Attribute Label: LOCATION

Attribute Definition: USGS-defined 8-digit Hydrologic Cataloging Unit (HUC). For more information about the HUC codes and map, please see: <http://water.usgs.gov/GIS/huc.html>

Attribute Definition Source: USGS;

<http://water.usgs.gov/GIS/huc.html>

Attribute Domain Values:

Codeset Domain:

Codeset Name: Hydrologic Unit Codes

Codeset Source: USGS;

<http://water.usgs.gov/GIS/huc.html>

Attribute:

Attribute Label: OCCSTAT

Attribute Definition: Occurrence Status - historical or current in the watershed

Attribute Definition Source: NatureServe

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: H

Enumerated Domain Value Definition: denotes historical presence in the watershed

Enumerated Domain Value Definition Source: NatureServe

Enumerated Domain Value: C

Enumerated Domain Value Definition: denotes current presence in the watershed

Enumerated Domain Value Definition Source: NatureServe

Attribute:

Attribute Label: ORIGINSTAT

Attribute Definition: Origin status - indicates whether the species is native, exotic, or cryptogenic in the watershed

Attribute Definition Source: NatureServe

Attribute Domain Values:

Enumerated Domain:

Enumerated Domain Value: Introduced

Enumerated Domain Value Definition: Introduced or non native in the watershed

Enumerated Domain Value Definition Source: NatureServe

Enumerated Domain Value: Native

Enumerated Domain Value Definition: Native in the watershed

Enumerated Domain Value Definition Source: NatureServe

Enumerated Domain Value: Uncertain

Enumerated Domain Value Definition: Uncertain origin status in the watershed

Enumerated Domain Value Definition Source: NatureServe

Attribute:

Attribute Label: REFERENCE_ID

Attribute Definition: NatureServe numerical code used for this reference.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: record ID

Attribute:

Attribute Label: ROUNDED_G_RANK

Attribute Definition:

This value uses an algorithm to evaluate global conservation status ranks and systematically produces easier to analyze values without qualifiers or ranges (e.g. G2G4 becomes G3, G4T1? becomes T1, G4G5 becomes G4).

Attribute Definition Source: NatureServe

Attribute Domain Values:

Codeset Domain:

Codeset Name: See codes and definitions for Global Status

Codeset Source: NatureServe

Attribute:

Attribute Label: S_CODE

Attribute Definition: Source Code - the NatureServe code for the full citation of published or unpublished source, agency, and/or expert reviewer.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: record code

Attribute:

Attribute Label: SCIENTIFIC_NAME

Attribute Definition:

The standard global (i.e., rangewide) scientific name (genus and species) adopted for use by NatureServe based on selected standard taxonomic references. For more information see:

<http://www.natureserve.org/explorer/class.htm>

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: Scientific names - see Section 1.7 "Taxonomy Information" for details.

Attribute:

Attribute Label: SHORT_CITATION_AUTHOR

Attribute Definition: Author for making short citation, to be combined with SHORT_CITATION_YEAR.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: text - names

Attribute:

Attribute Label: SHORT_CITATION_YEAR

Attribute Definition: Year for making short citation, to be combined with SHORT_CITATION_AUTHOR.

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: number - year

Attribute:

Attribute Label: SOURCE

Attribute Definition: Source of the information - Literature or expert reviewer. Format [name], [date]

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: text - names and citations

Attribute:

Attribute Label: SPECIES

Attribute Definition:

The standard global (i.e., rangewide) scientific name (genus and species) adopted for use by NatureServe based on selected standard taxonomic references. For more information see:

<http://www.natureserve.org/explorer/class.htm>

Attribute Definition Source: NatureServe - Heritage methodology

Attribute Domain Values:

Unrepresentable Domain: Scientific names - see Section 1.7 "Taxonomy Information" for details.

Attribute:

Attribute Label: STATE

Attribute Definition: State where watershed occurs

Attribute Definition Source: NatureServe

Attribute Domain Values:

Codeset Domain:

Codeset Name: Official US Postal Service State Abbreviations

Codeset Source:

http://www.usps.com/ncsc/lookups/usps_abbreviations.htm

Attribute:

Attribute Label: TAXONOMIC_GROUP

Attribute Definition: Informal Taxonomy - Informal taxonomic classification using common names for familiar groupings such as birds (Aves) or flowering plants (Anthophyta).

Attribute Definition Source: NatureServe

Attribute Domain Values:

Unrepresentable Domain: taxonomic groups

Overview Description:

Entity and Attribute Overview:

Detailed information about the Heritage methodology and data development methods are available online. These materials include detailed explanations and documentation of:

Classification - Classification standards, methods, and references for plants, ecological communities, vertebrates, and invertebrates.

NatureServe Conservation Status - Conservation status ranks related relative imperilment on global, national, and subnational scales.

Entity and Attribute Detail Citation:

<http://www.natureserve.org/explorer/methods.htm>

Distribution Information

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Distributor:

Contact Information:

Contact Organization Primary:

Contact Organization: NatureServe

Contact Address:

Address Type: mailing and physical address

Address: 1101 Wilson Boulevard, 15th Floor

City: Arlington

State or Province: VA

Postal Code: 22209

Country: USA

Contact Voice Telephone: (703) 908-1800

Contact Facsimile Telephone: (703) 908-1917

Resource Description: freshwater fish watershed data

Distribution Liability:

All data and any other documents that are contained in this dataset are provided "as is" without warranty as to the currentness, completeness, or accuracy of any specific data. NatureServe hereby disclaims all warranties and conditions with regard to any documents provided on this compact disk, including but not limited to all implied warranties and conditions of merchantability, fitness for a particular purpose, and non-infringement. NatureServe makes no representations about the suitability of the information contained on this compact disk. In no event shall NatureServe be liable for any special, indirect, incidental, consequential damages, or for damages of any kind arising out of or in connection with the use or performance of information contained in any documents provided on this compact disk, under any theory of liability used. NatureServe may update or make changes to the documents provided on this compact disk at any time without notice; however, NatureServe makes no commitment to update the information contained herein. Because the data in NatureServe's central databases are continually being updated, it is advisable to check NatureServe's website (www.natureserve.org) for updated information. The data provided are for planning, assessment, and informational purposes.

Standard Order Process:

Digital Form:

Digital Transfer Information:

Format Name: ArcView 3.x / ArcGIS

Format Version Number: 3.x

Digital Transfer Option:

Fees: none

Ordering Instructions:

<http://www.natureserve.org/getData/animalData.jsp>

Metadata Reference Information

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Metadata Date: 09/15/2010

Metadata Review Date:

Metadata Future Review Date:

Metadata Contact:

Contact Information:

Contact Person Primary:

Contact Person: Lynn Kutner

Contact Organization: NatureServe

Contact Position: Conservation Data Analyst

Contact Address:

Address Type: mailing and physical address

Address: 4001 Discovery Drive, Suite 2110

City: Boulder

State or Province: CO

Postal Code: 80303

Country: USA

Contact Voice Telephone: (703) 797-4804

Contact Facsimile Telephone: (720) 565-0262

Contact Electronic Mail Address: lynn_kutner@naturereserve.org

Metadata Standard Name: FGDC Biological Data Profile of the Content
Standard for Digital Geospatial Metadata

Metadata Standard Version: FGDC-STD-001.1-1999