

# United States Department of the Interior Fish & Wildlife Service



## FWS Critical Habitat Spatial Data Specifications

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# FWS Critical Habitat Spatial Data Specifications

## 1. Introduction

### 1.1. Purpose

This document establishes specifications and procedures to standardize the creation, maintenance, and dissemination of critical habitat spatial data by the Service. It is intended to achieve the following objectives:

- **Confidence:** ECOS is an authoritative data source for critical habitat data. As such, it is crucial that those who use this data have confidence in its quality and accuracy. One way of fostering this confidence is by implementing standards by which quality and accuracy can be measured.
- **Efficiency:** Standards make it possible to create tools to automate the uploading, maintenance, and display processes.
- **Consistency:** Standards make it possible for us to commonly share critical habitat spatial data within the Service and to integrate it in other products.

### 1.2. Scope

The provisions in this document apply to all FWS personnel and contractors responsible for creating, maintaining, and disseminating critical habitat spatial data.

### 1.3. Responsibilities

- 1.3.1. Members of the FWS Critical Habitat Task Group are responsible for determining specifications and procedures for working with critical habitat spatial data.
- 1.3.2. Critical habitat spatial data creators are responsible for
  - Providing critical habitat shapefiles that are compliant with the specifications in this document (with exception of Federal Register volume number and first page) to ECOS personnel at least three working days prior to the Federal Register publication date.
  - Providing a complete critical habitat shapefile that is wholly compliant to the specifications in this document (i.e., includes federal Register Publication volume number and first page, as well as an updated publication date, if necessary) within three working days of the date of publication in the Federal Register.
- 1.3.3. ECOS personnel are responsible for
  - Maintaining the Critical Habitat portal in ECOS

- Posting initial critical habitat shapefiles that are compliant to the specifications in this document (with exception of Federal Register volume number and first page) so they are available on the ECOS portal on the date of publication in the Federal Register.
- Replacing the initial critical habitat shapefile with the complete critical habitat shapefile that is wholly compliant to the specifications in this document (i.e., includes federal Register Publication volume number and first page, as well as an updated publication date, if necessary) within three working days of receipt.

## **2. Spatial Data Content**

- 2.1. Submission of new final critical habitat shapefile(s) can be accomplished by submitting a zip file containing the shapefile(s) plus all associated files. Multiple shapefiles can be submitted for the same population if there is a compelling rationale to do so. These data will be merged into a seamless critical habitat description in the geodatabase. The original separate shapefiles will remain intact and available for download in their original form. Each shapefile must have an associated metadata record even if the shapefile represents critical habitat for the same population.
- 2.2. Critical habitat spatial data submissions must describe the critical habitat for that population exactly as described in the Federal Register documentation. Ancillary information or critical habitat not described in the Federal Register publication is not allowed for submission. For example, only include stream buffers in critical habitat data submission if the stream buffer area is described in the Federal Register publication for that population's critical habitat.
- 2.3. All final critical habitat data submissions must include only final critical habitat as described in the most recent Federal Register publication. Only the data covered in the applicable Federal Register notice should be included in the data submission. Do not include proposed critical habitat areas within a final critical habitat data submission.
- 2.4. Proposed critical habitat data submissions must include only proposed critical habitat as described in the most recent Federal Register publication. Only the data covered in the applicable Federal Register notice should be included in the data submission. Do not include final critical habitat areas within a proposed critical habitat data submission.

### 3. Spatial Data Update Procedure

Revisions to critical habitat can be accomplished by submitting a new zip file containing replacement shapefile(s) plus all associated files. Critical habitat data contained in the new shapefile will completely replace all critical habitat data previously submitted for those populations. The naming convention and all shapefile specifications stated for original submissions also apply for replacement files. All associated files, including updated metadata, must be submitted with each revision.

### 4. Spatial Data Submission Format

All critical habitat spatial data for a given office must be submitted as ESRI shapefiles contained in a zip file. A zip file can contain one or more shapefiles, where each shapefile contains information for a single listed population or multiple listed populations in a single shared area (i.e., all included species should completely share all of the area in the shapefile). The submitted zip file containing the shapefile(s) must have the “.zip” file extension suffix. There are no naming convention requirements for the zip file prefix.

### 5. Shapefile Component Requirements

5.1. These shapefile components must be provided for each critical habitat dataset that is submitted:

- .shp – Feature data binary
- .dbf – Attribute table
- .shx – Shape index file
- .prj – Projection file
- .xml – Metadata file (*see below for additional specifications*)

5.2. In addition, if a shapefile containing multiple species is being submitted, an additional Excel spreadsheet must be included (see Section 8 for more information about additional requirements for submission of shapefiles containing critical habitat for multiple species).

### 6. Shapefile Naming Conventions

6.1 All submitted shapefiles must comply with the following shapefile naming convention. This naming convention applies to the prefix of **all** components of the shapefile, including the metadata record. The total possible character length for the shapefile Name is 255 characters. All shapefile names should have no spaces in them. When separating different components of a shapefile name please use underscores as demonstrated below. All characters in the name should be capitalized.

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**Note:** ECOS no longer houses NMFS-only data. However, FWS/NMFS data are still housed. Please follow the correct procedures below and use the 'Joint' metadata templates in the 'CritHab\_Implementation\_Support\_Package'. The package can be found [here](#) and on the Confluence page 'Critical Habitat Data Imports'.

6.2 The naming convention for a shapefile containing single species is as follows:

### 6.2.1 <CH-STATUS>\_<SCIENTIFIC\_NAME>\_<PUB\_DATE>:

**CH-STATUS:** The critical habitat status of the data being submitted where: **FCH** = Final Critical Habitat, **PCH** = Proposed Critical Habitat.

**SCIENTIFIC\_NAME:** The first fifty (50) characters or of the scientific name of the species for which the critical habitat is being submitted, or the entire scientific name if it is less than fifty (50) characters long. If the name is greater than 50 characters long truncate the name instead of abbreviating. Denote variety as **\_VAR\_** and subspecies as **\_SSP\_** when needed.

**PUB\_DATE:** The publication date of the Federal Register document describing the Critical Habitat. Use the following date format: **YYYYMMDD**

**Note:** The initial submission of the critical habitat shapefile will use the anticipated publication date. If the actual publication date is different, this part of the shapefile name will need to be changed when the shapefile containing complete metadata is submitted.

### 6.2.2 <CH-STATUS>\_<SCIENTIFIC\_NAME>\_Multiple:

**CH-STATUS:** The critical habitat status of the data being submitted where: **FCH** = Final Critical Habitat, **PCH** = Proposed Critical Habitat.

**SCIENTIFIC\_NAME:** The first fifty (50) characters or of the scientific name of the species for which the critical habitat is being submitted, or the entire scientific name if it is less than fifty (50) characters long. If the name is greater than 50 characters long truncate the name instead of abbreviating. Denote variety as **\_var\_** and subspecies as **\_ssp\_** when needed.

**Multiple:** This part of the naming convention identifies species with **multiple, active rulings**. Units from different designations can be specified in the shapefile attribute table using the 'FEDREG', 'PUBDATE', and 'EFFECTDATE' columns. For example, a species that would fit this naming convention is *Adenophorus periens*. This species has active FCH designated on 20120918 **and** 20160330.

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**Note:** The initial submission of the critical habitat shapefile will use the anticipated publication date. If the actual publication date is different, this part of the shapefile name will need to be changed when the shapefile containing complete metadata is submitted.

- 6.3 Example of shapefile name for a shapefile containing a single species:  
**FCH\_BRACHYRAMPHUS\_MARMORATUS\_20110524**

Final critical habitat shapefile prefix for the Marbled murrelet where:

**CH-STATUS** = Final Critical Habitat (FCH)

**SCIENTIFIC\_NAME** = Brachyramphus marmoratus

**PUB\_DATE** = May 24, 2011

- 6.4 Example of shapefile name for a shapefile containing a single species with multiple, active rulings:

**FCH\_ADENOPHORUS\_PERIENS\_MULTIPLE**

Final critical habitat shapefile prefix for *Adenophorus periens* where:

**CH-STATUS** = Final Critical Habitat (FCH)

**SCIENTIFIC\_NAME** = Adenophorus periens

**MULTIPLE** = Multiple active rulings (20120918/20160330)

- 6.5 The naming convention for a shapefile containing multiple species is as follows:

**<CH-STATUS>\_MULTIPLE\_<GEOGRAPHIC\_AREA>\_<DESCRIPTION>\_<PUB\_DATE>**

**CH-STATUS:** The critical habitat status of the data being submitted where:

**FCH** = Final Critical Habitat

**PCH** = Proposed Critical Habitat

**GEOGRAPHIC\_AREA:** A fifty (50) character or less description of the area represented by the critical habitat shapefile; for example, a state (“Hawaii”), a county (“San\_Bernardino”), or a Region (“R8”). In cases of multiple regions or geographic areas being represented it is acceptable to list multiple. For instance if both Region 1 and Region 8 are represented the <GEOGRAPHIC\_AREA> may be R1\_R8.

**DESCRIPTION:** A fifty (50) character or less description of the species or set of species that may be contained in this shapefile. In cases where there are multiple species shapefiles for a single geographic area this section should be used to distinguish these shapefiles from each other. For instance the following descriptions would add clarity to a shapefile  
SIERRA\_AMPHIBIANS, KLAMATH\_SUCKERS, VP\_SPECIES.

**PUB\_DATE:** The publication date of the Federal Register document describing the Critical Habitat. Use the following date format: **YYYYMMDD**

**Note:** The initial submission of the critical habitat shapefile will use the anticipated publication date. If the actual publication date is different, this part of the shapefile name will need to be changed when the shapefile containing complete metadata is submitted.

6.5. Examples of shapefile name for a shapefile containing multiple species:

Example 1: **FCH\_MULTIPLE\_OREGON\_20110524**

Final critical habitat shapefile prefix for *multiple species* where:

**CH-STATUS** = Final Critical Habitat (FCH)  
**GEOGRAPHIC\_AREA** = Oregon state  
**DESCRIPTION** = <None>  
**PUB\_DATE** = May 24, 2011

Example 2: **FCH\_MULTIPLE\_R1\_20110524**

Final critical habitat shapefile prefix for *multiple species* where:

**CH-STATUS** = Final Critical Habitat (FCH)  
**GEOGRAPHIC\_AREA** = Region 1  
**DESCRIPTION** = <None>  
**PUB\_DATE** = May 24, 2011

Example 3: **FCH\_MULTIPLE\_HOOD\_RIVER\_20110524**

Final critical habitat shapefile prefix for *multiple species* where:

**CH-STATUS** = Final Critical Habitat (FCH)  
**GEOGRAPHIC\_AREA** = Hood River county  
**DESCRIPTION** = <None>  
**PUB\_DATE** = May 24, 2011

## 7. Spatial Data Attributes (Minimum Requirements)

### 7.1 Shapefiles Containing a Single Species

In addition to all ESRI mandatory shapefile attributes, Critical Habitat data submitted as a shapefile containing a single species must have the following attributes contained in the attribute table (.dbf) of the shapefile

**Name:** COMNAME  
**Description:** Legal common name of the species  
**Type:** Text (200)  
**Value Required:** Yes (for single species)  
**Values:** Open text  
**Note:** Enter "No common name" in the case that there is no legal common name for the species.

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**Name:** SCINAME  
**Description:** Binomial or trinomial scientific name  
**Type:** Text (200)  
**Value Required:** Yes (for single species)  
**Values:** Open text

**Name:** SPCODE  
**Description:** Unique Species Code referencing the species for the critical habitat being submitted  
**Type:** Text (4)  
**Value Required:** Yes (for single species)  
**Values:** Open text  
**Note:** SPCODE (Species Code) for all listed species and populations can be found at:  
[http://ecos.fws.gov/tess\\_public/pub/listedSpecies.jsp](http://ecos.fws.gov/tess_public/pub/listedSpecies.jsp)

**Name:** VIPCODE  
**Description:** Unique Population Code referencing the species for the critical habitat being submitted  
**Type:** Text (3)  
**Value Required:** Yes (for single species)  
**Values:** Open text  
**Note:** VIPCODE (Population Code) for all listed species and populations can be found at:  
[http://ecos.fws.gov/tess\\_public/pub/listedSpecies.jsp](http://ecos.fws.gov/tess_public/pub/listedSpecies.jsp)

**Name:** UNIT  
**Description:** Critical Habitat unit code  
**Type:** Text (20)  
**Value Required:** No  
**Values:** Open text

**Name:** SUBUNIT  
**Description:** Critical Habitat subunit code  
**Type:** Text(20)  
**Value Required:** No  
**Values:** Open text

**Name:** UNITNAME  
**Description:** Critical Habitat unit name  
**Type:** Text(50)  
**Value Required:** No  
**Values:** Open text

**Name:** SUBUNITNAM  
**Description:** Critical Habitat subunit name

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**Type:** Text(50)  
**Value Required:** No  
**Values:** Open text

**Name:** STATUS  
**Description:** Critical Habitat Status  
**Type:** Text(20)  
**Value Required:** Yes  
**Values:** Enter one of the following values  
**Value:** FINAL  
**Description:** Final Critical Habitat  
**Value:** PROPOSED  
**Description:** Proposed Critical Habitat  
**Value:** EXEMPT / EXCLUDED  
**Description:** Exempt (4a3) or Excluded (4b2)  
**Value:** VACATED  
**Description:** Vacated by Court Order

**Name:** LEADOFFICE  
**Description:** Lead Office Cost Center Code  
**Type:** Text(10)  
**Value Required:** Yes  
**Values:** Open text

**Name:** COOPOFFICE  
**Description:** Cooperating Office Cost Center Code  
**Type:** Text(25)  
**Value Required:** No  
**Values:** Open text  
**Note:** Enter "None" in the case that there is no cooperating office.

**Name:** COOPOFMORE  
**Description:** Additional Cooperating Office Cost Center Code  
**Type:** Text(254)  
**Value Required:** No  
**Values:** Open text  
**Note:** For additional cooperating offices list each office, separated by a comma.

**Name:** FEDREG  
**Description:** Federal Register ID  
**Type:** Text(10)  
**Value Required:** Yes  
**Values:** <Volume Number>FR<First Page Number>

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**Note:** FEDREG attribute refers to the volume number and first page of the federal register publication describing the critical habitat. This reference is in the following format: **<Volume Number>FR<First Page Number>**

For example, the FEDREG attribute value for the Marbled murrelet 1996 final critical habitat publication would be: **60FR26255**

**Note 2:** This attribute should be left blank for the initial submission of a critical habitat shapefile. As soon as possible after the date of publication in the Federal Register, an updated critical habitat shapefile should be provided that includes this attribute.

**Name:** PUBDATE  
**Description:** Federal Register publication date  
**Type:** Text(8)  
**Value Required:** Yes  
**Values:** Date in format YYYYMMDD

**Note:** The anticipated publication date should be used for the initial submission of a critical habitat shapefile. As soon as possible after the date of publication in the Federal Register, an updated critical habitat shapefile should be provided that includes that corrects this date if the actual publication date is different.

**Name:** EFFECTDATE  
**Description:** Effective date for critical habitat designation  
**Type:** Text(8)  
**Value Required:** Yes  
**Values:** Date in format YYYYMMDD

**Name:** VACATEDATE  
**Description:** Date critical habitat designation vacated  
**Type:** Text(8)  
**Value Required:** No  
**Values:** Date in format YYYYMMDD

**Name:** ACCURACY  
**Description:** Accuracy Items or Concerns  
**Type:** Text(50)  
**Value Required:** No  
**Values:** Enter one of the following values  
**Value:** Temporal Adjustment (see metadata)  
**Description:** Data is dependent on temporal factors  
**Value:** Seasonal Adjustment (see metadata)  
**Description:** Data is dependent on seasonal factors  
**Value:** Tidal Adjustment (see metadata)  
**Description:** Data is dependent on tidal fluctuations  
**Value:** Historical Adjustment (see metadata)  
**Description:** Reference feature missing, Streams change, Political Boundaries change, etc...  
**Value:** Source Adjustment (see metadata)

**Description:** Source data is inconsistent or coarse  
**Value:** Other (see metadata)  
**Description:** Other Accuracy concerns

7.2 These attributes represent the minimum requirements. Other data attributes (e.g. population codes or location information) can be provided with the shapefiles, but will not be included in the critical habitat geodatabase. All existing attributes will be maintained with the original shapefile submitted.

7.3 Z coordinates and M values are not supported in the Critical Habitat geodatabase and are not allowed in the shapefile data. For a complete description of Z and M values, consult the ESRI ArcGIS documentation at:

<http://help.arcgis.com/en/arcgisdesktop/10.0/help/index.html>

## 8. Additional Requirements for Submission of Shapefiles Containing Critical Habitat for Multiple Species

If a shapefile containing multiple species is submitted, a spreadsheet must also be included in the zip file containing the shapefile submission. The intention of multiple species submissions is only to support multiple species that all share the exact same geographic area. The naming convention is the same as that of the multiple species shapefile (with the spreadsheet extension). Each species included in the shapefile should have its own row, beginning with Row 2. Specific column headers (provided below) should be entered in Row 1, Columns A, B, C, and D. An entry is required in each column for each species. No additional information beyond what is outlined below should be entered in this spreadsheet.

### Column A

**Header:** COMNAME

**Description:** Legal common name of the species

**Note:** Enter "No common name" in the case that there is no legal common name for the species.

### Column B

**Header:** SCINAME

**Description:** Binomial or trinomial scientific name

### Column C

**Header:** SPCODE

**Description:** Unique Species Code referencing the species for the critical habitat being submitted

**Note:** SPCODE for all listed species and populations can be found at:

[http://ecos.fws.gov/tess\\_public/pub/listedSpecies.jsp](http://ecos.fws.gov/tess_public/pub/listedSpecies.jsp)

**Column D**

**Header:** VIPCODE

**Description:** Unique Population Code referencing the species for the critical habitat being submitted

**Note:** VIPCODE for all listed species and populations can be found at:

[http://ecos.fws.gov/tess\\_public/pub/listedSpecies.jsp](http://ecos.fws.gov/tess_public/pub/listedSpecies.jsp)

## 9. Spatial Dataset Projection

- 9.1 Critical habitat shapefiles need to be submitted in Geographic Coordinate System – WGS\_84 datum (GCS\_WGS\_1984). The Well-Known Text (WKT) description of this projection found in the shapefile projection file (.prj) component should contain the following:

```
GEOGCS["GCS_WGS_1984",DATUM["D_WGS_1984",SPHEROID["WGS_1984",6378137.0,298.257223563]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]]
```

(Note: When transforming to WGS\_1984 from NAD\_1983 using ArcGIS within the lower 48 states and Alaska, the NAD\_1983\_To\_WGS\_1984\_5 transformation is recommended. When transforming to WGS\_1984 from NAD\_1983 using ArcGIS in Hawaii, the NAD\_1983\_To\_WGS\_1984\_3 transformation is recommended.)

- 9.2 Custom projections are not supported. All submitted shapefiles must possess a projection file (.prj). All shapefiles not possessing a .prj file will be rejected and the user will be prompted to re-submit the dataset.

## 10. Feature Types

- 10.1 Polygonal and linear feature types are supported for critical habitat data. Feature resolution and geometry validation specifications are the same for both linear and polygonal data.
- 10.2 Submission of both linear and polygonal data for the same population will be supported as long as both a line and area description of the critical habitat is relevant to the official description found in the Federal Register publication. For example, critical habitat for a fish depicting both stream centerline miles (linear) and stream/riparian buffers (polygonal).
- 10.3 For cases where both line and polygon shapefiles are submitted, the naming convention is the same except that you must append the shapefile name with "LINE" or "POLY" as appropriate. The format for this is:

**For single species:**

<CH-STATUS>\_<SCIENTIFIC\_NAME>\_<PUB\_DATE>\_<"LINE"/"POLY"> OR  
<CH-STATUS>\_<SCIENTIFIC\_NAME>\_Multiple\_<"LINE"/"POLY">

**For multiple species:**

<CH-STATUS>\_MULTIPLE\_<GEOGRAPHIC\_AREA>\_<DESCRIPTION>\_<PUB\_DATE>\_<"LINE"/"POLY">

- 10.4 There is no need to append shapefile names with the feature type if only one feature type is submitted.

## 11. Multi-part Features

Features can be multi-part or single part or a combination of both in the same dataset. Multi-part features are allowed where appropriate if you wish to combine multiple critical habitat polygons into a single record. It is recommended that all critical habitat features belonging to the same unit (or sub-unit where defined) be aggregated to a single row multi-polygon. This is not a requirement, but is recommended as a way to clearly aggregate the critical habitat dataset to the smallest administrative unit.

## 12. Feature Resolution

- 12.1 The spatial resolution of critical habitat data cannot exceed one (1) meter. This is the finest resolution accepted but a coarser resolution may be submitted, depending on the situation. Data sets with a resolution greater than 1m will need to be generalized to 1m or coarser before submission. Shapefiles that exceed a 1m resolution may upload incompletely into the geodatabase layer or may be rejected entirely during the data submission process.
- 12.2 Shapefiles derived from base layers that are calculated rather than manually drawn are more likely to exceed the 1m resolution limit. If your shapefile is based on such a layer, we recommend you reduce the resolution by simplifying the shapefile before upload.
- 12.3 For example, with ESRI's ArcMap application, one can perform the simplification operation follow this toolbox path:

*Data Management Tools -> Generalization -> Simplify Polygon*

- 12.4 We recommend a simplification tolerance of at least 1m (the tolerance is the minimum distance allowed between vertices in the resulting polygon).

## 13. Geometry Validation

- 13.1 All shapefiles must have valid geometry before submission. In ArcGIS, run the “Check Geometry” or “Repair Geometry” tool as necessary on each shapefile before upload. If you are using another GIS application to develop your data sets, consult the documentation on geometry validation and geometry correction methods available for that GIS software.
- 13.2 Performing this validation ensures that all lines, polygons, and multi-polygons conform to the [OpenGIS Simple Features Specification](#). Specifically, it ensures that:
  - The shell and holes of polygons do not self-intersect.
  - Holes touch the shell or another hole at a single point only. This means that holes don’t intersect one another at multiple points or in a line segment.
  - Polygon interiors are connected (This is implied by the previous statement.)
  - The element Polygons in a multipart polygon touch at only a finite number of points (e.g. they do not touch in a line segment).
  - The interiors of the element Polygons in a multipart polygon are disjoint (e.g. they do not cross).

## 14. Metadata

- 14.1 Federal Geographic Data Committee (FGDC) or International Organization for Standardization (ISO) 19115 compliant metadata is required in all cases, including all minimum required attributes. For assistance in completing metadata please refer to the [FWS Critical Habitat Spatial Data Standards and Metadata Implementation Guide](#).
- 14.2 Any Critical Habitat datasets submitted without compliant metadata will not be accepted for distribution.
- 14.3 In particular, in the metadata every feature should contain information on accuracy and collection methodology. Accuracy information should include the data resolution and horizontal accuracy of the data and the methodology used to achieve this accuracy. The temporal validity of the data should also be included. Additionally, the specific field collection methodology for the features should be included.
- 14.4 The metadata should also include the following disclaimer language:

The GIS files and their associated coordinates are not the legal source for determining the critical habitat boundaries of species described in this dataset,

but are used to identify areas which contain the physical and biological features essential to the conservation of the species or areas otherwise determined to be essential. Inherent in any dataset used to develop graphical representations, are limitations of accuracy as determined, among others, the source, scale and resolution of the data. While the U.S. Fish and Wildlife Service makes every effort to represent the critical habitat shown with data as completely and accurately as possible (given existing time and resource constraints), the USFWS gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. In addition, the USFWS shall not be held liable for improper or incorrect use of the data described and/or contained herein. Graphical representations provided by the use of these data do not represent a legal description of the critical habitat boundary. The user is referred to the critical habitat textual description in the appropriate final rule for this species as published in the Federal Register. These data are to be used only in the context of the definition and purpose of critical habitat. This primarily relates to Section 7 consultation under the Endangered Species Act. These data may be used for planning and land management purposes.

### **15. Metadata References**

- 16.1 **ISO 19115 (NAP) Metadata Profile** - This document describes the ISO 19115 (NAP) metadata standard.

<http://www.fgdc.gov/standards/projects/incits-11-standards-projects/NAP-Metadata/napMetadataProfileV101.pdf/view>

- 16.2 **Content Standard for Digital Geospatial Metadata (CSDGM)** – This document describes in detail the FGDC metadata standards.

[http://www.fgdc.gov/metadata/documents/workbook\\_0501\\_bmk.pdf](http://www.fgdc.gov/metadata/documents/workbook_0501_bmk.pdf)

### **16. More Information about Shapefile Submission**

For more information about how to create and submit Critical Habitat data via shapefile, refer to the FWS Critical Habitat Spatial Data Standards and Metadata Implementation Guide or contact:

ECOS Help Desk  
ecos-support@fws.gov  
(970) 226-9468