

DISTINCT POPULATION SEGMENTS

DPS Overview and Discussion

May 19, 2015

Florida Panther Recovery Implementation Team

OUTLINE

- **DPS 101**
- Examples
- DPS policy and Florida panthers

DPS 101: What is a Distinct Population Segment?

- The smallest division of a taxonomic species that can be listed under the Endangered Species Act
- Vertebrates only

Species → Subspecies → Distinct Population Segment

DPS 101: Changes to Definition of Species

Older definition of species:

“any subspecies of fish or wildlife or plants and any other group of fish or wildlife of the same species or smaller taxa in common spatial arrangement that interbreed when mature.”

1978 ESA Amendments:

“...any subspecies of fish or wildlife or plants, **or any distinct population segment** of any species of **vertebrate** fish or wildlife which interbreeds when mature”

DPS 101: Intent of DPS

Services needed to be able to:

- Adopt different management practices for different populations, based on their need
- Conserve genetic resources
- Maintain natural systems and biodiversity over a representative portion of a “species” historical occurrence

DPS 101: Effects of DPS

(1) Listing, delisting, or reclassifying DPSs may allow the Services to protect and conserve species and the ecosystems upon which they depend before large-scale decline occurs that would necessitate listing a species or subspecies throughout its entire range.

DPS 101: Effects of DPS

(2) Allow [for] protection and recovery of declining organisms in a more timely and less costly manner, and on a smaller scale than the more costly and extensive efforts that might be needed to recover an entire species or subspecies.

DPS 101: Effects of DPS

(3) The Services' ability to address local issues (without the need to list, recover, and consult rangewide) will result in a more effective program.

DPS 101: "Sparingly"

Congressional guidance is to use DPS authority "sparingly and only when the biological evidence indicates that such action is warranted"

DPS 101: DPS Policy

DPS Joint (NMFS /FWS) Policy in 1996

DPS language is less than 2 columns in the Federal Register

The following principles will guide the Services' listing, delisting and reclassification of DPS's of vertebrate species. Any proposed or final rule affecting status determination for a DPS would clearly analyze the action in light of these guiding principles.

Policy

Three elements are considered in a decision regarding the status of a possible DPS as endangered or threatened under the Act. These are applied similarly for addition to the lists of endangered and threatened wildlife and plants, reclassification, and removal from the lists:

1. Discreteness of the population segment in relation to the remainder of the species to which it belongs;
2. The significance of the population segment to the species to which it belongs; and
3. The population segment's conservation status in relation to the Act's standards for listing (i.e., is the population segment, when treated as if it were a species, endangered or threatened?).

Discreteness: A population segment of a vertebrate species may be considered discrete if it satisfies either one of the following conditions:

1. It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors.
2. It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act.

Significance: If a population segment is considered discrete under one or more of the above conditions, its biological and ecological significance will then be considered in light of Congressional guidance (see Senate Report 151, 96th Congress, 1st Session) that the authority to list DPS's be used "... sparingly" while encouraging the conservation of genetic diversity. In carrying out this examination, the Services will consider available scientific evidence of the discrete population segment's importance to the taxon to which it belongs. This consideration may include, but is not limited to, the following:

1. Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon.
2. Evidence that loss of the discrete population segment would result in a significant gap in the range of a taxon.
3. Evidence that the discrete population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historic range, or
4. Evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

Because precise circumstances are likely to vary considerably from case to case, it is not possible to describe prospectively all the classes of information that might bear on the biological and ecological importance of a discrete population segment.

Status: If a population segment is discrete and significant (i.e., it is a distinct population segment) its evaluation for endangered or threatened status will be based on the Act's definitions of those terms and a review of the factors enumerated in section 4(a). It may be appropriate to assign different classifications to different DPS's of the same vertebrate taxon.

Relationship to Other Activities

The Fish and Wildlife Service's Listing and Recovery Priority Guidelines (48 FR 43098, September 21, 1983) generally afford DPS's the same consideration as subspecies, but when a subspecies and a DPS have the same numerical priority, the subspecies receives higher priority for listing. The Services will continue to generally accord subspecies higher priority than DPS's.

Any DPS of a vertebrate taxon that was listed prior to implementation of this policy will be reevaluated on a case-by-case basis as recommendations are made to change the listing status for that distinct population segment. The appropriate application of the policy will also be considered in the 5-year

DPS 101: DPS Policy

Clarifies interpretation of DPS for the purposes of listing, delisting, and reclassifying species

Identifies 3 Elements

A DPS must meet all 3

1. Discreteness
2. Significance
3. Conservation Status



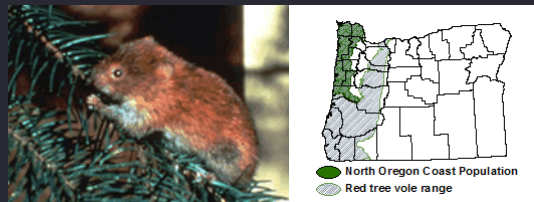
Contiguous U.S. DPS of Canada lynx; Photo: FWS

DPS 101: DPS Policy

1. Discreteness

A. Is the population “markedly separate from other populations of same taxon” based on any of the following factors?:

- Physical
- Physiological
- Ecological
- Behavioral



The North Oregon Coast DPS of the Red tree vole (a Candidate Species). Images: FWS

*Morphological or genetic or differences may be used

DPS 101: DPS Policy

1. Discreteness

B. Delimited by international governmental boundaries and differences in any of the following:

- control of exploitation
- management of habitat
- conservation status, or
- regulatory mechanisms



Washington, Oregon, and California DPS of the Marbled Murrelet
Status: Threatened Photo Credit: Thomas Hamer, Hamer Environmental LP

Marbled Murrelet: Part of the DPS analysis for *discreteness* was based on differences in regulatory mechanisms in Canada (i.e., Canada's Species at Risk Act) with any non-Endangered Species Act regulatory mechanisms that existed in the U.S.

DPS 101: DPS Policy

2. Significance

Consider biological and ecological significance to the taxon

- May include, but not limited to:
 - Persistence in an ecological setting unusual or unique for the taxon
 - Loss would result in a significant gap in the range
 - Only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historical range
 - Differs markedly from other populations of the species in its genetic characteristics



Southern DPS of the Spotted seal
Photo: NOAA

DPS 101: DPS Policy

Types of data relevant to Discreteness and Significance may Include:

- Genetics
- Morphology/morphometrics
- Biogeography
- Behavior
- Ecology

Each may be sufficient, and not all (including genetics) are required

DPS 101: DPS Policy

3. Conservation Status

Does the DPS Meet the Criteria for an Endangered or Threatened Species?

- **ENDANGERED** - any species that is **in danger of extinction** throughout all or a significant portion of its range
- **THREATENED** - any species that is **likely to become an endangered species** within the foreseeable future throughout all or a significant portion of its range

DPS 101: DPS Policy

Different DPSs can have different classifications (Endangered or Threatened)

Example: Atlantic sturgeon
5 DPSs

- *Endangered*
 - New York Bight DPS
 - Chesapeake Bay DPS
 - Carolina DPS
 - South Atlantic DPS
- *Threatened*
 - Gulf of Maine DPS

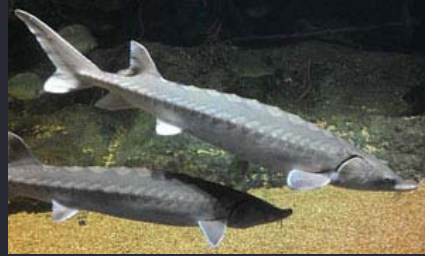


Photo: Edit Carson (NOAA Fisheries)

DPS 101: Application of DPS to Date

89 total DPSs (43 total animals, some with multiple DPSs)

Taxa	#	FWS	NMFS	Foreign
Mammals	15	7	7	1
Birds	6	5	-	1
Reptiles	5	4	-	2 (1)
Amphibians	2	2	-	-
Fishes	15	-	15	-
Totals	43	18	22	3

OUTLINE

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Examples: DPSs in Florida

Wood Stork
U.S. Breeding Population
Photo and map: Fish and Wildlife Service

Discrete

- Physical separation
- Wood stork dispersal behavior
 - "... not behaviorally predisposed to travel across open ocean."

Significant

- Loss of this population would result in a significant gap in the extent of the range (northern extent)

Status: Threatened

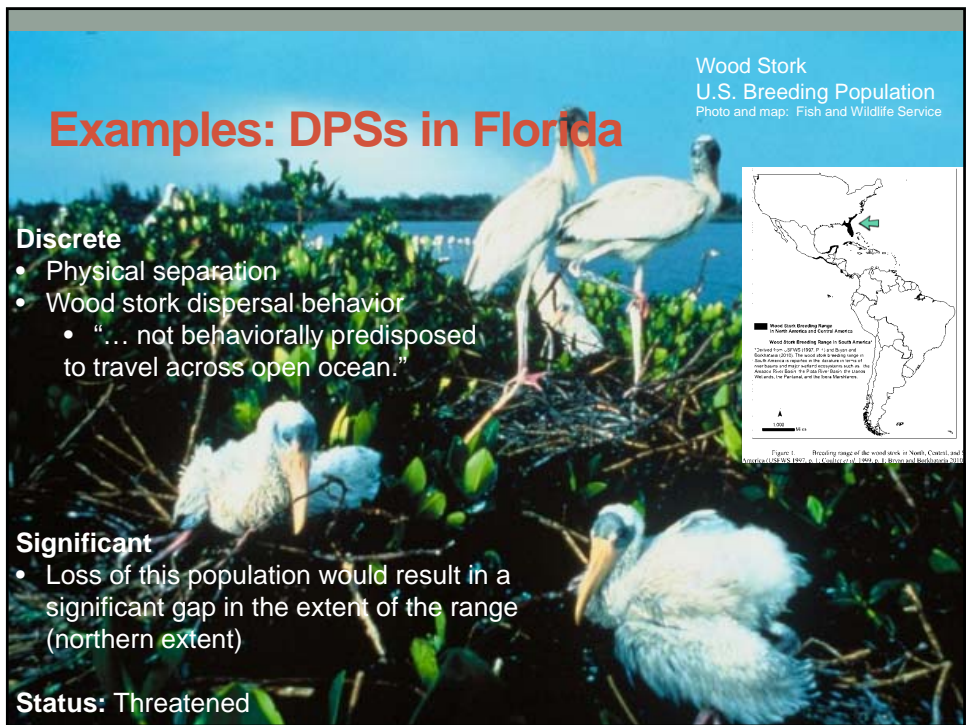


Figure 1. Breeding range of the wood stork in North, Central, and South America. The wood stork is a large wading bird with a long neck and long legs. It is found in the southeastern United States, Central America, and northern South America. The map shows the breeding range of the wood stork in North, Central, and South America. The wood stork is a large wading bird with a long neck and long legs. It is found in the southeastern United States, Central America, and northern South America. The map shows the breeding range of the wood stork in North, Central, and South America.

Examples: DPSs in Florida



American crocodile DPS
Photo: Univ. of FL. & USGS



Map Univ. of FL. & USGS

Discrete

"...separated from other populations as a consequence of physical or behavioral factors."

Delimited by international boundaries with differences in:

- Control of exploitation
- Management of habitat
- Conservation status
- Regulatory mechanisms

Significant

Loss of this population would result in a significant gap in the extent of the range (i.e., northern extent)

Status

- Threatened

Examples: Loggerhead Sea Turtle

Discrete

Markedly separate

Significance

- Occurs within unique ecosystem
- Loss of any individual population would result in significant gap in species' range
- Each population genetically distinct



Loggerhead hatchling Photo: M. Wozny from NOAA Website

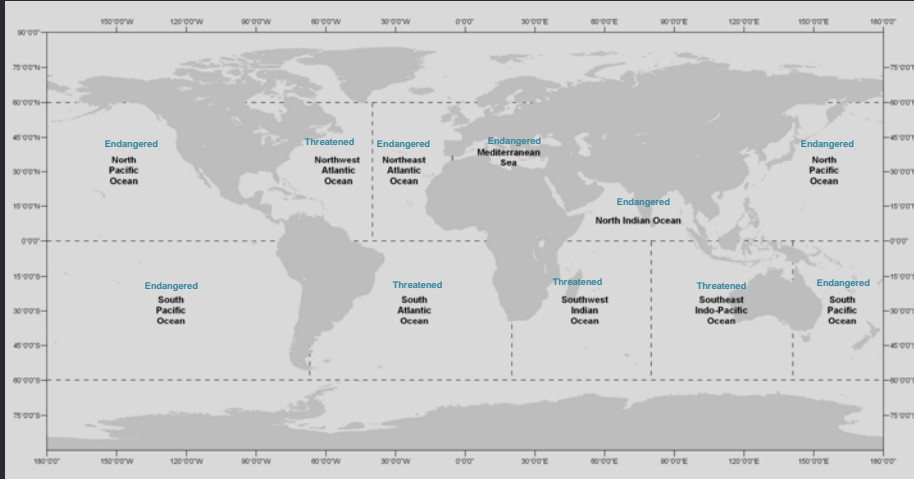


Loggerhead exiting a turtle excluder device
Photo: NOAA

Status

- Varies by DPS
- 11 DPSs
- Northwest Atlantic DPS = Threatened

Loggerhead Sea Turtle



Loggerhead - Listing Status by DPS
Final Rule Published September 22, 2011



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DPS and the Florida Panther*

1. Discreteness

A. Is the population “markedly separate from other populations of same taxon” based on any of the following factors?:

- Physical
- Physiological
- Ecological
- Behavioral

Morphological or genetic or differences may be used

*Note: This exercise is intended for informational and discussion purposes. Florida panther is listed as an endangered subspecies (Puma (=felis) concolor coryi).

DPS and the Florida Panther*

1. Discreteness

B. Is the population delimited by international boundaries and differences in any of the following?:

- control of exploitation
- management of habitat
- conservation status, or
- regulatory mechanisms

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DPS Policy and the Florida Panther*

2. Significance

Consider the **biological and ecological significance** to the taxon

- May include, but not limited to:
 - Persistence in an ecological setting unusual or unique for the taxon
 - Loss would result in a significant gap in the range
 - Only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside its historical range
 - Differs markedly from other populations of the species in its genetic characteristics

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DPS and the Florida Panther*

3. Conservation Status

Does the DPS Meet the Criteria for an Endangered or Threatened Species?

- **ENDANGERED** - any species that is **in danger of extinction** throughout all or a significant portion of its range
- **THREATENED** - any species that is **likely to become an endangered species** within the foreseeable future throughout all or a significant portion of its range

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DPS and the Florida Panther*

Endangered Species Act, Section 4(3)(A)(b)(i) says that "...concurrently with making a determination under paragraph (1) that such species [defined as species, subspecies, or DPS] is an endangered species or threatened species, designate any habitat of such species which is then considered to be critical habitat..."



*Note: This exercise is intended for informational and discussion purposes. Florida panther is listed as an endangered subspecies (*Puma (=felis) concolor coryi*).

Questions?



Sources

- Joint DPS Policy 61 CFR 4722
 - <http://1.usa.gov/1yuch3o>
 - <http://www.fws.gov/endangered/laws-policies/policy-distinct-vertebrate.html>
- U.S. Endangered Species Act
 - <http://www.nmfs.noaa.gov/pr/laws/esa/text.htm>
- FWS Training Material on "Distinct Population Segments," 2014
- FWS & NOAA websites for the species noted
- U. of Florida & USGS websites for American crocodile
 - <http://crocdoc.ifas.ufl.edu/publications/posters/crocodileindicator/>
 - <http://crocdoc.ifas.ufl.edu/>
- ECOS Species Profile webpages for the species noted and related links (published rules etc.)
 - <http://ecos.fws.gov/speciesProfile/>
- ECOS Species Reports
 - http://ecos.fws.gov/tess_public/