

Biological Status Review Findings

How to read the BSR Findings Table

April 2011



Purpose and Materials Needed

- The purpose of this slide show is to walk people step-by-step through the biological status review (BSR) findings process used by the biological review groups in evaluating 61 state listed species in fall and spring of 2010-2011.
- It is assumed that as you step through these slides, you have a blank copy of the BSR findings sheet and at least one final biological status review report that includes a filled out findings table.



Biological status review report overview

- First step in the listing process is for the Biological Review Group to assess the species. The group's work product is the findings table explained in this presentation.
- FWC staff then draft a biological status review report, consider the findings table, and include a listing recommendation in the report.
- The draft report is sent out for peer review and then finalized and presented to the Commission who determines listing status.



Process

- “Biological Review Groups (BRG) were typically comprised of 3 or 5 experts, one of which was an FWC staff who led the group. The BRGs were appointed by the Commission.
- Staff conducted a literature search and sent the information to the BRG prior to the BRG meeting.
- The BRG met and filled out the findings table by considering the available information and comparing it against the five listing criteria as described in the following slides.



Process

- A species needed to meet only one of the five criterion in order to be considered for listing.

Listing criteria evaluate risk of extinction through the following criteria:

- Rapidly declining population in past, present or future
- Restricted geographic range and critical habitat
- Small population size
- Model indicating risk of extinction >10 percent in 100 years
- Fluctuations in population or fragmentation



The BRGs start at the top of the findings table and fill in the relevant information

Biological Status Review
Information
Findings

Species/taxon:

Date:

Assessors:

Generation
length:



Generation length is important because it establishes a timeframe for assessment. Species that are slow to reproduce will take longer for negative effects to show. Process uses 3 generations or 10 years whichever is longer.

Biological Status Review
Information
Findings

Species/taxon:

Date:

Assessors:

Generation length: Average age of parents
in population



Sample

First steps in filling out a status review findings table by a BRG

Biological Status Review
Information
Findings

Species/taxon:	Unicorn
Date:	31 March 2011
Assessors:	Science guy, Science gal
Generation length:	24 years



Criterion A

- 1. Population decline of 50 percent or greater in the past where causes of the decline have stopped, **OR**
- 2, 3, 4. Declines of 30 percent in past, present or future three generations or 10 years, whichever is longer.



Blank Findings Sheet for Criterion A (1)

Criterion/Listing Measure	Data/Information	Data Type*	Criterion Met?	References
<p>*Data Types - observed (O), estimated (E), inferred (I), suspected (S), or projected (P). Criterion met - yes (Y) or no (N).</p>				
<p>(A) Population Size Reduction, ANY of</p>				
<p>(a)1. An observed, estimated, inferred or suspected population size reduction of at least 50% over the last 10 years or 3 generations, whichever is longer, where the causes of the reduction are clearly reversible and understood and ceased¹</p>				



Information inserted into the table by the biological review group

Criterion/Listing Measure	Data/Information	Data Type*	Criterion Met?	References
<p>*Data Types - observed (O), estimated (E), inferred (I), suspected (S), or projected (P). Criterion met - yes (Y) or no (N).</p>				
<p>(A) Population Size Reduction, ANY of</p>				
<p>(a)1. An observed, estimated, inferred or suspected population size reduction of at least 50% over the last 10 years or 3 generations, whichever is longer, where the causes of the reduction are clearly reversible and understood and ceased¹</p>	<p>Facts that support or refute (a)1.</p>	<p>O, E, I, S, or P (see Key above these are defined)</p>	<p>Y or N</p>	<p>Literature used inserted here and summarized in the Literature cited portion of the biological status review report</p>



Criterion A Summary

- Biological review groups then review Criterion A2, A3, and A4 as they did A1.
- If the species meets A1, A2, A3, or A4 then the group would conclude that the species meets Criterion A.
- The species does not need to meet all four sub-criteria – it only needs to meet one to be considered for listing.



Criterion B

1. Range is less than 7,722 square miles, **OR**
2. The critical habitat (area of occupancy) is less than 772 square miles,

AND

Two of the following:

- Population severely fragmented
- Continuing decline in habitat
- Numbers of populations or mature individuals
- Extreme fluctuations in habitat, numbers of populations or mature individuals



Blank Findings Sheet Criterion B1 and B2. If B1 or B2 is met, there must also be two of three sub-criteria met. The sub-criteria are listed on the next slide.

Criterion/Listing Measure	Data/Information	Data Type*	Criterion Met?	References
*Data Types - observed (O), estimated (E), inferred (I), suspected (S), or projected (P). Criterion met - yes (Y) or no (N).				
(B) Geographic Range, EITHER				
(b)1. Extent of occurrence < 20,000 km ² (7,722 mi ²) OR				
(b)2. Area of occupancy < 2,000 km ² (772 mi ²)				
AND at least 2 of the following:				



Blank Findings Sheet sub-criteria for Criterion B. If B1 or B2 is met, two of these three sub-criteria must also be met.

Criterion/Listing Measure	Data/Information	Data Type*	Criterion Met?	References
*Data Types - observed (O), estimated (E), inferred (I), suspected (S), or projected (P). Criterion met - yes (Y) or no (N).				
a. Severely fragmented or exist in ≤ 10 locations				
b. Continuing decline, observed, inferred or projected in any of the following: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent, and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals				
c. Extreme fluctuations in any of the following: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals				



Criterion C

- Population estimated to number fewer than 10,000 mature individuals, **AND**
- Either a continuing decline of 10 percent of the population; or
- Continuing decline and at least one of:
 - small subpopulations (<1,000) or all individuals in one location; or
 - extreme fluctuations in number of individuals



Must meet 10,000 or fewer individuals, and if it does, then it must meet one of two sub-criteria (c1 described here or c2 on next slide).

Criterion/Listing Measure	Data/Information	Data Type *	Met ?	References
(C) Population Size and Trend				
Population size estimate to number fewer than 10,000 mature individuals AND EITHER				
(c)1. An estimated continuing decline of at least 10% in 10 years or 3 generations, whichever is longer (up to a maximum of 100 years in the future) OR				

For Criterion C, Species must have 10,000 or fewer individuals, and if it does then, it must meet one of two sub-criteria (c1 on previous slide or c2 here). C2 is a continuing decline AND either a(i) OR a(ii) OR b.

Criterion/Listing Measure	Data/Information	Data Type*	Crit Met?	References
(c)2. A continuing decline, observed, projected, or inferred in numbers of mature individuals AND at least one of the following:				
a. Population structure in the form of EITHER				
(i) No subpopulation estimated to contain more than 1000 mature individuals; OR				
(ii) All mature individuals are in one subpopulation				
b. Extreme fluctuations in number of mature individuals				

Criterion D

- Population estimated to contain fewer than 1,000 individuals, **OR**
- Occupies less than 8 square miles or contains 5 or fewer locations (both of these are approximate)



For criterion D to be met species must meet either D1 or D2

Criterion/Listing Measure	Data/Information	Data Type *	Met ?	References
*Data Types - observed (O), estimated (E), inferred (I), suspected (S), or projected (P). Criterion met - yes (Y) or no (N).				
(D) Population Very Small or Restricted, EITHER				
(d)1. Population estimated to number fewer than 1,000 mature individuals; OR				
(d)2. Population with a very restricted area of occupancy (typically less than 20 km ² [8 mi ²]) or number of locations (typically 5 or fewer) such that it is prone to the effects of human activities or stochastic events within a short time period in an uncertain future				

Criterion E

- Criterion E relies on a quantitative analysis such as a model projecting the probability of extinction in the future.
- It is rare for species to meet Criterion E and not meet any other criteria.



Criterion E

Criterion/Listing Measure	Data/Information Data Type * Met ? References			
*Data Types - observed (O), estimated (E), inferred (I), suspected (S), or projected (P). Criterion met - yes (Y) or no (N).				
(E) Quantitative Analyses				
e1. Showing the probability of extinction in the wild is at least 10% within 100 years				



Finalizing BSR

- Group fills out bottom section of findings sheet listing the criteria that the species met.
- If the species is endemic to Florida (doesn't occur outside Florida), then the review is done.
- If the species also occurs outside of Florida then Florida's population could benefit (be rescued from extinction). In these cases, the regional assessment form is filled out to evaluate whether a change to the findings should be made.



Summary of findings results

Initial Finding (Meets at least one of the criteria OR Does not meet any of the criteria)	Reason (which criteria are met)
Is species/taxon endemic to Florida? (Y/N)	
If Yes, your initial finding is your final finding. Copy the initial finding and reason to the final finding space below. If No, complete the regional assessment sheet and copy the final finding from that sheet to the space below.	
Final Finding (Meets at least one of the criteria OR Does not meet any of the criteria)	Reason (which criteria are met)



Regional Assessment

- The findings table for the regional assessment is in the form of a dichotomous key – if the answer is yes you go to one line and if no, go to another until you work all the way through to the result.
- Of the 61 species recently evaluated, none of the findings were changed through the regional assessment process



Regional Assessment form header

Biological Status Review Information
Regional Assessment

Species/taxon:

Date:

Assessors:



Regional Assessment

	Initial finding	
Line 10	2a. Is the species/taxon a non-breeding visitor? (Y/N/DK). If 2a is YES, go to line 18. If 2a is NO or DO NOT KNOW, go to line 11.	
11	2b. Does the Florida population experience any significant immigration of propagules capable of reproducing in Florida? (Y/N/DK). If 2b is YES, go to line 12. If 2b is NO or DO NOT KNOW, go to line 17.	
12	2c. Is the immigration expected to decrease? (Y/N/DK). If 2c is YES or DO NOT KNOW, go to line 13. If 2c is NO go to line 16.	



Regional Assessment (continued)

Line 13	2d. Is the regional population a sink? (Y/N/DK). If 2d is YES, go to line 14. If 2d is NO or DO NOT KNOW, go to line 15.
14	If 2d is YES - Upgrade from initial finding (more imperiled)
15	If 2d is NO or DO NOT KNOW - No change from initial finding
16	If 2c is NO or DO NOT KNOW- Downgrade from initial finding (less imperiled)
17	If 2b is NO or DO NOT KNOW - No change from initial finding



Completing BSRs

- Results of regional assessment, if conducted are recorded at bottom of findings table.
- Staff then took the findings, discussed the results and made a listing recommendation for the species
- Staff drafted a status review report that included a summary of relevant information about the species, the biological review group findings table and staff's recommendation



Final steps for BSRs

- The draft report was sent to external experts for peer review.
- The peer reviews were incorporated into the biological status review report to create the final report.
- All reports are now available at [MyFWC.com](https://www.myfwc.com), along with supplemental materials including the draft BSR, peer reviewers comments, and information received from the public.

