

Biological Status Reviews of State Listed Species



Florida Fish and Wildlife
Conservation Commission
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Since September 2010, sixty-one state listed species underwent status reviews by scientific experts to determine if they meet state listing criteria. This presentation summarizes staff's recommendations for listing or removing the species under Florida's new Threatened Species Management System.

Background – Sept. 2010

- The Commission adopted a new Threatened Species Management System
- Directed staff to conduct status reviews of all existing state listed species that had not been reviewed in past decade
- Approved membership of biological review groups to conduct the reviews



In September 2010 the FWC adopted a new Threatened Species Management System to conserve species at high risk of extinction. The first implementation item was to conduct biological status reviews of existing state listed species under the new system to determine if they should be on Florida's Threatened Species list. Three species, the Miami blue butterfly, gopher tortoise, and Panama City crayfish have undergone a review in the past decade using FWC's listing criteria so they were not a part of this effort. The listing system is a scientific process which uses significant external expertise. The Commission appointed teams of 3 or 5 experts to review each species' status. The majority of the review group members were scientists from outside of FWC with an FWC expert appointed to lead the group.

Threatened species management system

- Goal: With broad public and partner support, conserve or improve the status of threatened species to effectively reduce the risk of extinction.



American
oystercatcher



Our new management system will be much more effective at conserving Florida's wildlife.

Highlights

- Florida's state-designated Threatened species are those species in Florida that have a high risk of extinction
- All species on the list or being removed from the list get a management plan to conserve those on the list and prevent those coming off from needing to be listed again



It is important to note that being listed as a threatened species in Florida means the species was determined through a scientific process to have a high risk of extinction. Another key feature of the new management system is that all species on the list or being removed from the list will have a management plan developed with significant input from the public and stakeholders. The management plans will identify the actions necessary to conserve the species and can include, among other things, on the ground management actions, incentives, and regulatory protections.

Key premises of system

- Conserve threatened species
- Use science based process
 - Species are defined as having a high risk of extinction based on a scientific process
- Eliminate duplication and redundancy
 - Federally listed species on Florida's list and don't also go through Florida's listing process



The system is designed to conserve species at risk of extinction. The listing process is science based with five measurable, objective criteria that indicate a species is at high risk of extinction. An efficiency gained in the system is that federally listed species have been through the federal status review process so they are placed on Florida's list as a federally designated species and don't go through the additional state status review.

Florida endangered and threatened species

Federally-designated

Florida species listed under the U.S. Endangered Species Act (ESA):

- Federally Threatened
- Federally Endangered

State-designated

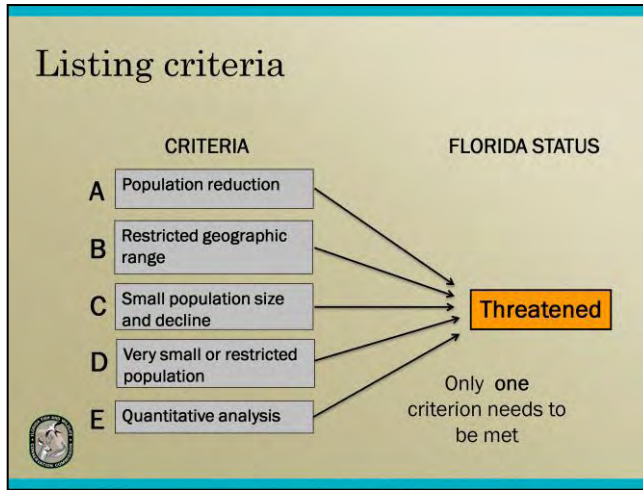
Florida species at risk of extinction but not listed under the federal ESA:

- State Threatened
- Species of Special Concern

- 64 state-designated species grandfathered on Florida's list



Although Florida's endangered and threatened species list contains federally designated species, only state-designated species are reviewed under the state listing process. Sixty-four species that are not federally listed were grandfathered onto Florida's list. Sixty-one of these had not been reviewed under the new listing process.



Florida's listing criteria are based on IUCN red list criteria. These criteria were developed by experts from around the world. The criteria have been tested worldwide on thousands of species. They are quantitative and consider scientific information on population size, range, rate of decline, and other related factors.

Only one criterion need be met to indicate the species is at a high risk of extinction.

Species evaluation - How it was done

- FWC staff collected and compiled information.
- Information was provided to the Biological Review Group (BRG) prior to a meeting of that group.
- BRG met, in person, to:
 - Assess species using the five listing criteria
 - Document their findings by filling out a findings table



Information about the species status was solicited from experts, through a Florida Administrative Weekly notice, a news release, and from staff conducting literature reviews. The information was provided to the BRG prior to an in-person meeting of that group. The BRG assessed their species using the five listing criteria. The product of the BRG was a findings table which documented their discussions and results.

Draft listing recommendation and report

- Staff reviewed and discussed findings to determine a draft listing recommendation.
- Staff developed a draft Biological Status Review report which included:
 - Summary of relevant information
 - BRG findings
 - Recommended listing



Tree snail

After the biological review group meetings, staff met, discussed the findings, and developed a draft listing recommendation. They then completed the draft biological status review report which included a brief summary of information about the species, the BRG findings table, and staff's draft listing recommendation.

Independent scientific review

- Draft Biological Status Review report sent to at least three, usually more, independent scientific reviewers (peer reviewers)
- Peer Reviewers had at least 45 days to comment
 - Role was to ensure scientific quality
 - Asked to comment on:
 - Completeness and accuracy of biological information and analyses
 - Assumptions, interpretations, and conclusions



To ensure scientific accuracy, the draft biological status review reports were sent out to a minimum of three external scientists who were asked to provide peer review of the reports. 174 external scientists participated in the biological review process serving as either a BRG member, a peer reviewer, or both (for different species).

Final biological status review report

- Staff reviewed, considered, and discussed comments from peer reviewers
- Final Biological Status Review reports incorporated peer review information
- Reports and supplemental information are posted on MyFWC.com



Stakeholders

- Met with stakeholders in mid-May to review reports
- Concern about protections for species recommended for de-listing
 - This will be covered in management plans if needed
- Concern about listing recommendations
 - gopher frog, limpkin, Pine snake



Staff met with stakeholders in mid-May to discuss the reports and answer questions. Several themes emerged from the discussion.

- Some stakeholders are concerned about species that are recommended for de-listing. They believe that protections are needed. Staff explained that conservation actions including any needed protections would be described in the management plans for the species. The management plans will be developed with extensive stakeholder and public input.
- Concerns were expressed about gopher tortoise commensal species such as the pine snake, Florida mouse, and gopher frog.
- Listing recommendations were questioned for three species: gopher frog, limpkin, and pine snake.

Results

- Changes to drafts based on peer review
- Keys' populations
- Recommendation differs from findings
- Summary of recommendations



Florida Bonneted Bat



In order to efficiently summarize the 61 status reviews, the results and staff's recommendations are described in the following slides by these topics:

- a) Changes made to staff's draft recommendations based on the peer review
- b) Keys' populations – why some are recommended for listing and some are not
- c) Summary of the species for which staff is recommending a different listing status than the BRG findings indicated
- d) Summary of species staff recommend removing from the list, remaining as species of special concern (SSC), and listing as threatened.

Changes to drafts based on peer review

- Two additional species recommended for SSC (chipmunk, Homosassa shrew)
- One species recommended for listing as Threatened (Florida pine snake)



Pine snake



Staff modified their listing recommendations for three of the 61 species after receiving peer reviews back and considering other factors. These species are Eastern chipmunk, Homosassa shrew, and Florida pine snake.

The reasons the recommendations changed after peer review:

- A precautionary approach was warranted because of lack of information to make an adequate review for the Eastern chipmunk and Homosassa shrew.
- For the chipmunk, a peer reviewer pointed out that lack of data regarding recent abundance and distribution of chipmunks warranted maintaining the current listing status. Staff agreed that data is old or absent and new information is needed.
- The reviewers of the Homosassa shrew report expressed concern that there was not enough data to conduct the review. Staff agreed with the suggestions of the peer reviewers regarding the need for additional research and analysis. All four reviewers agreed with the recommendation to retain the Homosassa shrew as a SSC.
- Only one of the seven external experts who served as either biological review group members or peer reviewers agreed with staff's recommendation to not list the pine snake. The remaining six cited the projection for future population declines of greater than 30 percent that resulted in the species meeting a listing criterion as reason to disagree with staff's recommendation to delist. Staff changed their recommendation and are now recommending the pine snake be listed as Threatened in Florida.

Keys' populations

- Several Keys' populations listed in the '70s due to concerns about habitat
- In the current evaluation, found some met definition of isolated population and are recommended for listing, some not



Florida Keys Mole Skink



Several species with populations in the Lower Keys are relatively common throughout Florida, but were originally listed by Florida in the 1970s because of concerns about their vulnerability in the Keys.

The FWC's new listing rules allow for listing isolated populations defined as significant and discrete populations.

Some populations of species that occur in the Keys are truly discrete, representing significant species diversity that would be lost if the Keys' population disappeared. These are the brown snake, Florida Keys mole skink, and the Key ringneck snake which staff are recommending to be listed as threatened in the Keys. Populations of other species are simply isolated from the mainland population by water and don't represent a significant discrete population. These Keys' populations recommended for de-listing are the red rat snake, striped mud turtle, and peninsula ribbon snake.

Recommendation differs from finding

- Alligator snapping turtle
 - mis-interpreted definition of severely fragmented
- Short-tailed snake
 - secretive, fossorial species that is uncommon and for which data are lacking
- Peninsula ribbon snake, Striped mud turtle
 - Keys populations determined not to be significant and discrete
- Five Species of Special Concern



Staff is making a different listing recommendation than what was indicated from the biological review group findings for two species in addition to the Keys' populations already discussed and those being recommended for Species of Special Concern.

The reasons the recommendations differed from the findings:

Alligator snapping turtle: Staff believes the definition of “severely fragmented” was misinterpreted by the alligator snapping turtle biological review group. The BSR report states the area of occupancy is 440 km², the population is severely fragmented because habitat occurs in isolated river drainage basins, and future habitat decline may occur with climate change and because of this the BRG initially found the species met listing Criterion B. Staff recommends delisting the alligator snapping turtle after evaluating the “severely fragmented” aspect of the criterion with reference to the FWC listing definition. Upon review of the definition of severely fragmented, staff determined and consulted with several members of the BRG who agreed it does not apply to this species. Since there are viable populations of alligator snapping turtles within most rivers that do not exist in “patches” far apart, staff believes the populations are not severely fragmented per the BSR definition and therefore, the species does not meet listing criterion B.

Short-tailed snake: A precautionary approach was warranted for this elusive species. Only 200 specimens of this species have been documented over the past few years. The biological review group found the short-tailed snake did not meet any criteria partly because of lack of data. Staff recommends the secretive short-tailed snake remain as threatened because it is a Florida native species with a restricted geographic range, and 57 percent of its potential habitat is privately owned. Habitat is also in great demand for development. Lack of data also supported the recommendation. The two peer reviewers disagreed with staff's recommendation.

Keys' populations (peninsula ribbon snake and striped mud turtle): Both the peninsula ribbon snake and the striped mud turtle met listing criteria when evaluating their occurrence only in the Keys (but both are common on the peninsula). Neither of these species have been found to be unique from those occurring on the Florida peninsula and therefore, staff are recommending these Keys' populations not be listed.

Species of Special Concern: There were questions about sufficient data for five of the species evaluated. There is not enough information on four of them (Sherman's fox squirrel, Eastern chipmunk, Homosassa shrew, and Harlequin darter) to make a listing determination and we need more information about the fifth (southern coastal osprey population, currently listed only in Monroe county) to determine whether it is a significant discrete population. Staff are recommending these five species be retained on the SSC list and are placing a high priority on collecting the necessary information to adequately review these species.

Listing recommendations

- Remove from list – 16 species
- Need additional information for 5 species: continue listing these as Species of Special Concern and put high priority on collecting information
- List as threatened – 40 Species



Harlequin darter



Staff is recommending removing 16 species from the threatened and species of special concern lists, leaving 5 species on the SSC list until adequate information can be collected to assess the species, and is recommending that 40 of the reviewed species be listed as threatened.

Recommend: remove from list

Lake Eustis pupfish	Peninsula ribbon snake*	Snowy egret
Rivulus	Red rat snake*	White ibis
Florida tree snail	Striped mud turtle*	Florida black bear
Gopher frog	Suwannee cooter	Florida mouse
Pine Barrens treefrog	Brown pelican	
Alligator snapping turtle	Limpkin	



* Keys' populations of these species are currently listed. None are "isolated" or unique from Peninsular populations which are common so staff proposes removal.

Florida black bear

- Current status: Threatened; Recommendation: Remove
- Florida range: Widespread across Florida but with a fragmented distribution.
- Biological review: The Florida black bear did not meet any of the listing criteria – not at high risk of extinction.
- Peer review: Five experts reviewed and concurred.
- Concern expressed about protecting it as an umbrella species.
- Management plan is being created, will have public and stakeholder input; will include any necessary protections.



There has been much discussion about the black bear in the media and on social media sites. The Black bear does not meet any of the listing criteria and its population continues to increase. A draft management plan is being finalized for stakeholder and public input. Protections that may be needed for the species will be included in the management plan.

Current status: threatened, except in Baker and Columbia counties and Apalachicola National Forest

Recommendation: delist

Distribution of species in Florida: five large Florida subpopulations (Ocala/St. Johns, Osceola, Eglin, Apalachicola and Big Cypress areas) and two small, remnant populations (Chassahowitzka and Glades/Highlands)

Unique characteristics

Florida black bears are mainly solitary.

Females average two cubs every other year.

Bears are omnivores, but approximately 80 percent of their diet is plant material. Most of the rest is insect-based.

Positive indicators

The species is widely distributed in Florida.

The population numbers are sustainable for a species with a large territory.

Bear numbers have been increasing over the past 24 years, with projections that this trend will continue.

Threats

Habitat loss

Negative interaction with humans

Gopher frog

- Current status: SSC; Recommendation: Remove
- Florida range: Panhandle and peninsula, but not into the Everglades
- Good news: habitat in conservation lands, adaptability of species, conservation of gopher tortoise
- Biological review: Determined species did not meet any listing criteria.
- Peer review: Six experts reviewed; three concurred, two couldn't disagree with findings but disagreed with recommendation, and one reanalyzed the data and stated species should be listed as threatened.



Gopher frog

Unique characteristics

Inhabits areas with well-drained, sandy soils that support gopher tortoise populations

Uses gopher tortoise burrows for underground retreats, but also uses other burrows, holes, logs and dead vegetation

Breeds in temporary or semi-permanent, fishless ponds, traveling up to 1.2 miles (2 km) to a breeding pond

Female deposits single egg mass containing 1,200 to 2,200 eggs once during breeding season

Threats to the species

Loss and alteration of xeric (low-moisture) upland habitats

Altered fire regimen, whereby fewer fires cause unsuitable habitat changes

Degradation and destruction of wetlands

Introduction of fish into normally fish-free wetlands

Reduction in gopher tortoise populations

Positive indicators

Large acreage of suitable habitat in conservation lands

The species' adaptability to some habitat alteration

Peer review: Six experts reviewed the draft BSR report. Three reviewers concurred with the BRG findings, two couldn't disagree with the findings but did not agree with the recommendation to remove the gopher frog from the list, citing a need for protection of the species. One of the reviewers felt the species should be listed as threatened and provided a re-analysis of the data to support her statement; however, the species still didn't meet a listing criterion.

The FWC has developed a gopher frog monitoring protocol for wildlife management areas. In addition, the management plan will contain strategies for alleviating threats to the gopher frog. Two reviewers questioned why the gopher frog is not listed as threatened like the gopher tortoise since the gopher frog depends upon the gopher tortoise as a host. The gopher tortoise is long-lived and as a result the time horizon for evaluation is much longer since three generations represent 60-93 years, whereas the evaluated timeframe of three generations for the gopher frog only represents about 12 years.

Limpkin

- Current status: SSC; Recommendation: Remove
- Florida range: Throughout state
- Good news: Benefitted from conservation measures and hunting regulations
- Biological review: Determined species did not meet listing criteria.
- Peer review: Three experts reviewed and concurred with recommendations. All expressed concerns about data limitations and that there is a need for future monitoring and research of the species.



Unique characteristics

Distinctive large, brown water birds with down-curved bills

They communicate with each other by means of loud, penetrating calls, often making them heard before seen.

They are good swimmers and have long toes that allow them to stand on floating water plants.

In the United States, limpkins occur only in Florida.

Positive indicators

Have benefitted from conservation measures and hunting regulations enacted since the early 1900s.

Population Status and Trend – Wetlands International (2006) estimated the global population of limpkins at >1,000,000 and relatively stable. Hunter et al. (2006) estimated the Florida population of limpkins to be between 4,000 – 6,000 pairs.

Geographic Range and Distribution – In the continental U.S., limpkins occur only in Florida, where they are resident breeders.

Threats –Limpkins are largely dependent on healthy populations of their staple prey item, apple snails in the genus *Pomacea*. Loss of wetland habitats due to drainage for agriculture and development, along with hydrologic alterations that impact prey availability, are primary threats to the limpkin population in Florida. Invasive exotic plants such as water hyacinth (*Eichhornia crassipes*) and hydrilla (*Hydrilla verticillata*) may adversely affect habitat quality for apple snails and therefore limpkins (Bryan 2002).

The Biological Review Group determined that the species did not meet any listing criteria but felt that the limpkin was “on the edge” of meeting several listing criteria. They also concurred that there are a number of areas where more information is needed regarding limpkins in Florida. A state-wide monitoring program would allow a more refined understanding of limpkin numbers and distribution and can be considered in the management plan.

Recommend: SSC

Eastern chipmunk	Harlequin darter
Homosassa shrew	Southern coastal osprey
Sherman's fox squirrel	

- These species did not have information available to conduct an adequate assessment.



There are questions as to whether the southern coastal osprey (Monroe, part of Collier counties) is a significant distinct population. It reproduces at a different time than the peninsular osprey and also looks different physically. Genetic studies are needed to determine if osprey in southern coastal Florida are unique.

Plans for data collection for these species are underway.

Recommend: Threatened

Atlantic sturgeon	Southern tessellated darter	Brown snake
Bluenose shiner	Black Creek crayfish	Keys mole skink
Blackmouth shiner	Pillar coral	Key ringneck snake
Crystal darter	Santa Fe crayfish	Rimrock crowned snake
Key silverside	Florida bog frog	Short-tailed snake
Saltmarsh topminnow	Georgia blind salamander	Pine snake
	Barbour's map turtle	

Recommend: Threatened

American oystercatcher	Reddish egret	White-crowned pigeon
Black skimmer	Roseatte spoonbill	Worthington's marsh wren
Burrowing owl	Snowy plover	Big Cypress fox squirrel
Florida sandhill crane	SE American kestrel	Everglades mink
Least tern	Tricolored heron	Mastiff bat
Little blue heron	Scott's seaside sparrow	Sanibel island rice rat
Marian's marsh wren	Wakulla seaside sparrow	Sherman's short tailed shrew



Next steps

- Develop management plans
 - Two draft plans being finalized
 - Staff are drafting goals and objectives for 60 species, will meet with stakeholders next month
- Begin data collection on recommended SSC
- Bring plans to Commission for approval over next 3 years along with rule for changing listing status when appropriate



Before a change in listing status can occur, management plans need to be developed for 62 of our 64 state listed species. The gopher tortoise and the Miami blue butterfly have approved management plans. Two species, the Panama City crayfish and the black bear, have draft plans that are being finalized and will likely be brought to the Commission for approval early next year. Staff have begun work on the remaining 60 by drafting goals and objectives for each of these species. Staff will be meeting with stakeholders in July to begin to develop the process for including them in management plan development. Staff plan to have most of the management plans completed and brought to the Commission for approval within three years.

Staff have been working with partners to develop study designs for several of the species recommended to remain SSC.

This effort would not have been possible without:

- The 174 scientists outside FWC who volunteered their expertise
- Staff
- A Conserve Wildlife Tag grant from the Wildlife Foundation of Florida!



This has been a tremendous effort. Staff are particularly grateful to the 174 external scientists who volunteered their time to participate in the status reviews of the 61 species. This work could not have been done in such a timely fashion without the support of the Conserve Wildlife Tag grant from the Wildlife Foundation of Florida which paid for a coordinator for the effort, to hire staff to conduct the literature reviews, and covered travel for all the scientists who volunteered to participate to meet in person to conduct the status reviews. Numerous staff also postponed work on their regular jobs to lead the reviews or to serve on the coordinating and review team.

What this means in a nutshell

- Identifies species at high risk of extinction through a scientific process
- Most comprehensive assessment ever of Florida's threatened wildlife
- Provides information to help us conserve and prevent extinction of Florida's wildlife
- No change in listing status will occur until after a management plan is approved for the species



Staff recommendation

- Approve staff's listing recommendations



Sherman's fox squirrel



Suwannee cooter



Staff recommend that the Commission approve the 61 listing recommendations.