Supplemental Information for the Southeastern American

Kestrel Biological Status Review Report

The following pages contain peer reviews received from selected peer reviewers, comments received during the public comment period, and the draft report that was reviewed before the final report was completed

March 31, 2011

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Peer review #1 Dr. John Parrish

From: john parrish
To: Imperiled
Subject: Re: Southeastern American kestrel BSR Report
Date: Tuesday, January 11, 2011 10:11:20 AM
Attachments: Southeastern American Kestrel Final Draft BSR 12-10-10JWP.docx
Importance: High

Elsa,

Sorry, thought I had sent this to you earlier, but here it is. Do what you want with my suggestions.

john

Biological Status Review
for the
Southeastern American Kestrel
(*Falco sparverius paulus)*

EXECUTIVE SUMMARY

The Florida Fish and Wildlife Conservation Commission (FWC) directed staff to evaluate all species listed as Threatened or Species of Special Concern as of September 1, 2010. Public information on the status of the southeastern American kestrel was sought from September 17, 2010 to November 1, 2010. A three member Southeastern American Kestrel Biological Review Group (hereafter BRG) met on November 9th, 2010. Group members were Karl Miller (FWC lead), James Cox, and Nathan Klaus. In accordance with rule 68A-27.0012 F.A.C, the BRG was charged with evaluating the biological status of the southeastern American kestrel using criteria included in definitions in 68A-1.004 and following the protocols in the *Guidelines for Application of the IUCN Red List Criteria at Regional Levels Version 3.0* and *Guidelines for Using the IUCN Red List Categories and Criteria (2004)*. Please visit http://www.myfwc.com/WILDLIFEHABITATS/imperiledSpp_listingprocess.htm to view the listing process rule and the criteria found in the definitions.

The BRG concluded in their biological assessment that the southeastern American kestrel met criteria for listing. Based on a literature review, information received from the public, and the BRG findings, staff recommends retaining the species on the FWC state list of Threatened species.

This work was supported by a Conserve Wildlife Tag grant from the Wildlife Foundation of Florida.

BIOLOGICAL INFORMATION

Life History References – Bohall-Wood and Collopy (1986), Hoffman and Collopy (1988), Collopy (1996), Miller and Smallwood (1997), Smallwood and Smallwood (1998), Snyder (2001), Smallwood and Bird (2002), Florida Fish and Wildlife Conservation Commission (2003), Blanc and Walters (2007), Miller and Smallwood (2009), Smallwood and Collopy (2009), Parrish and Schneider (2010).

Taxonomic Classification – Two subspecies of American kestrel (*Falco sparverius*) occur in Florida: the nominate subspecies (*F. s. sparverius*), which occurs in Florida only as a migrant and winter resident; and the southeastern American kestrel (*F. s. paulus*), which is a nonmigratory year-round resident in the state. The southeastern American kestrel is the only subspecies of kestrel that breeds in Florida.

Geographic Range and Distribution – American kestrels occur throughout most of the United States, with preferred habitat consisting of open fields or grasslands with widely scattered trees or similar perches. The southeastern American kestrel (*F. s. paulus*) is a non-migratory subspecies closely tied to sandhills in the southeastern U.S. (Collopy 1996, Smallwood and Bird

2002, Florida Fish and Wildlife Conservation Commission 2005). Consequently, it has undergone a marked range contraction and population decline in recent decades. Once widely distributed throughout 7 southeastern states, the subspecies today occurs primarily in Florida and is patchily distributed elsewhere in the coastal plain of South Carolina, Georgia (Parrish et al. 2006), and Louisiana. Within Florida, the southeastern American kestrel was once distributed as far south as Dade County (Holt and Sutton 1926) but now breeds no farther south than Highlands and Lee counties (Robertson and Woolfenden 1992, Florida Fish and Wildlife Conservation Commission 2003).

Southeastern American kestrels are slightly smaller than their northern counterparts (Layne and Smith 1992, Smallwood and Bird 2002) but cannot be reliably distinguished visually in the field. If a kestrel is seen in Florida from May through July, it is almost certainly a southeastern American kestrel because the northern subspecies is not present during this time.

Population Status and Trend – American kestrels throughout the eastern U.S. have been experiencing significant population declines since the mid-1980s (Bednarz et al. 1990, Bird 2009, Farmer and Smith 2009, Smallwood et al. 2009, Hinnebusch et al. 2010).

The southeastern American kestrel has experienced the greatest population declines. Estimates of population decline for *F. s. paulus* during the last half century range from 82% in north central Florida (Hoffman and Collopy 1988) to 95% for the Floridian physiographic region (Sauer et al. 2007).

Evidence points to substantial ongoing population declines for southeastern American kestrels in Florida within the past decade. During 1998-2007, nest box occupancy rates in a long-term study site in Levy and Marion counties (one of the two largest subpopulations in Florida) declined steadily from 68% to 33%, a decline of >51% (Smallwood et al. 2009). Nest box occupancy rates have been shown to track kestrel population size and trend in Florida and elsewhere (e.g., Smallwood and Collopy 2009, Smallwood et al. 2009). Conclusive data for kestrels elsewhere in Florida during the same timeframe are unavailable. For example, Breeding Bird Survey data for kestrels in Florida are considered "data deficient" (Sauer et al. 2007) within this narrow timeframe because of low sample sizes and annual variability. However, the quantity and quality of kestrel habitat throughout the state are declining (Kautz et al. 2007; K. Miller, *personal observation*) and expected to continue to decline. In addition, recent bird surveys in upland pine forests throughout Florida demonstrate that most sandhills on public lands are unsuitable for southeastern American kestrels (J. Rodgers, *unpublished data*; K. Miller, *unpublished data*).

The southeastern American kestrel is considered a Species of Greatest Conservation Need (SGCN) by the Florida Fish and Wildlife Conservation Commission (2005) and is one of only 3 sandhill SGCN that has both "Low" status and "Declining" trend.

Cox et al. (1994) created a comprehensive habitat distribution map for the southeastern American kestrel using occurrence records from the Florida Natural Areas Inventory and from Florida's Breeding Bird Atlas (Florida Fish and Wildlife Conservation Commission 2003). This habitat model estimated that conservation lands in the state could support three insecure breeding

populations (each 50 – 200 individuals) and approximately 52 imperiled breeding populations (each <50 individuals). This yields an approximate total of 3,000 individuals. However, Cox et al. (1994) noted that they could not assess the suitability of ground cover using the FWC land-cover map and many of those areas actually may have been unsuitable for kestrels. Based on Breeding Bird Atlas records (Florida Fish and Wildlife Conservation Commission 2003), recent FWC statewide surveys in sandhills (J. Rodgers, *unpublished data*; K. Miller, *unpublished data*), and data on estimated kestrel territory size (Stys 1993), the statewide kestrel population was recently estimated at 1,350-1,500 breeding pairs (J. Cox and K. Miller, *unpublished data*).

An FWC-coordinated nest-box monitoring program in north central Florida was established during 2008, but kestrels have been slow to colonize and occupy new sites. Similarly, in Georgia, biologists have found kestrel populations are too small, and too widely fragmented in Georgia to rapidly expand into areas with new nest boxes (Breen and Parrish 1997; N. Klaus, *personal communication*; J. Parrish, *personal communication*).

Quantitative Analyses – We are not aware of a population viability analysis using demographic data for the southeastern American kestrel in Florida.

BIOLOGICAL STATUS ASSESSMENT

Threats – Population declines of American kestrels in Florida have been largely attributed to clearing of older pine forests and conversion of sandhill and other upland habitats for agriculture and urban development. Kestrels are secondary cavity nesters, and suitable nest sites can be a limiting factor for kestrel populations (e.g., Smallwood and Collopy 2009). Nest-site limitation occurs from the removal of longleaf pine snags (Hoffman and Collopy 1988, Gault et al. 2004) and from declines in the populations of woodpeckers that excavate most of the cavities subsequently used by kestrels, especially the Northern Flicker (*Colaptes auratus*) and Red-cockaded Woodpecker (*Picoides borealis*) (Gault et al. 2004, Blanc and Walters 2007). Nest-site competition with non-native species, particularly the European starling (*Sturnus vulgaris*), is also a threat to southeastern American kestrels, although kestrels are known to displace starlings from competitive nest sites (Parrish 2000, Bird 2009).

Nest boxes can provide suitable nesting habitat for kestrels. In many areas, southeastern American kestrels are partially dependent on these or other (Maney and Parrish 2007, Beasley and Parrish 2009) such artificial structures, and it is vital that they be retained. However, nest boxes placed near roadways may be avoided (N. Klaus, *personal communication*), or if they are not avoided, may potentially put birds at risk of mortality from motor vehicles. More research is needed in Florida on the impact of roadways on kestrel productivity and survival.

Comment [GSU1]: I would have to say that kestrels have regularly used nestboxes that I have placed along roadways during my 20 yr studies in GA. However, none of the nestboxes placed behind signs along I-16 from Statesboro north to GA 96 have been used by kestrels since they were put up in 1994. One box on a side road near the intersection of US 1 and I-16 was used, but unsuccessfully, about 10 years ago (there is a nestbox behind a sign on I-16 at that intersection). This box was likely used because there was at that time a small population of kestrels (~4 pairs) nesting farther down US 1 near its intersection with GA 130 (~12 mi due south). This latter population subsequently moved about 2 mi E along GA 152, where ~4 pairs still regularly nest.

Habitat loss and fire suppression are the primary threats to kestrel foraging habitat in Florida. Inadequate resources for prescribed burning and the tendency of many land managers to prefer low-intensity cool-season burning (Cox and Widener 2008) are ongoing threats to kestrel populations.

In addition to a lack of natural nesting sites and loss of suitable foraging habitat, environmental contaminants pose a threat to the species. American kestrels, like other raptors,

are vulnerable to pesticides and chemical pollutants such as DDT, PCBs, and heavy metals. Recent studies have shown the species to be sensitive to endocrine disruptors, with exposure to flame retardants resulting in thinner eggshells and lower productivity (Fernie et al. 2009). Other potential threats to American kestrel populations are the spread of West Nile Virus, increased predation pressure, and collisions with aircraft, vehicles or stationary objects (Deem et al. 1998, Smallwood and Bird 2002, Bird 2009).

Population Assessment – Please refer to the Biological Status Review Information Sheet for the findings of the BRG. The southeastern American kestrel met 2 criteria for listing, including Geographic Range (B) and Population Size and Trend (C).

Regional Assessment of Subpopulations – Please refer to the Biological Status Review Information Sheet for the regional assessment of the BRG. There was no change from the initial finding.

Southeastern American kestrel populations in neighboring states are tiny and highly fragmented, and there appears to be little to no opportunity for mixing of these subpopulations with those in Florida. In Georgia, the subspecies is restricted primarily to two military bases and utility line corridors; the statewide population is estimated at approximately 300 pairs (Breen and Parrish 1997; N. Klaus, *unpublished data*; J.W. Parrish, Jr. 2007). The nearest known subpopulation in Georgia is >90 km north of the kestrel subpopulation in north central Florida (Parrish et al. 2006, Schneider et al. 2010). The subspecies is non-migratory and demonstrates limited dispersal ability (Miller and Smallwood 1997).

Comment [GSU2]: We have shown that there are about 250-300 pairs breeding along the transmission towers in south-central GA. I would estimate another 50-100 pairs are breeding along the transmission towers in west-central GA (from Warner-Robins west to Butler; if those towers are still intact – have not checked in 2 yrs and they were replacing many of those towers then!). About 20-25 pairs continue to breed at Fort Gordon, and there are about 2-several pairs at Fort Stewart. There appeared to be a small population at Fort Benning, but these have not been checked for a dozen years. There appears to be a small population in the Atlanta-Kennesaw area, and a small population breeding in the Gainesville area. There are "old" reports for Rome; I never confirmed those. I have banded kestrels in Murray Co., near Carters Lake, where a small population of what I have tentatively identified as F.s. sparverius are nesting.
So, there maybe about 600-1000 pairs nesting throughout GA; my best guess.

Comment [GSU3]: It's been my experience that they seem to exhibit a small dispersal distance, typically less than 5-8 mi from previous nest locations to possibly up to 15-20 mi max, based on likely dispersal of all our nearby small populations from Ft. Stewart. All of the three small populations near Statesboro are separated by about 15-20 mi (Evans Co, Tattnall Co, and Bulloch Co). Unfortunately, except for NW Ft. Stewart (Camp Oliver cantonment area), the other small population in Evans Co seems to have disappeared in the last three years.

LISTING RECOMMENDATION

In accordance with rule 68A-27.0012 F.A.C., staff recommends listing the Southeastern American kestrel as a Threatened species because the species met criteria for listing as described in 68A-27.001(3), F. A. C. The southeastern American kestrel met two criteria for listing, including Geographic Range (B) and Population Size and Trend (C).

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Peer review #2 from Dr. Katie Sieving

I guess my judgment is that the recent trends do seem alarming , warranting protection (agreement with findings) - but the document does not inspire confidence that there is any understanding of the causes. Therefore - how can protection be designed?
Sorry I can't be more vigorous in agreement - but that may be due to my lack of understanding of the process.

k

Kathryn E Sieving, Ph.D.
Department of Wildlife Ecology and Conservation University of Florida, Gainesville
www.wec.ufl.edu/faculty/sievingk

From: Miller, Karl [Karl.Miller@MyFWC.com]
Sent: Friday, February 04, 2011 5:29 PM
To: Sieving, Katie
Subject: RE: Kestrel BSR

Hi Katie,

Thanks for your review of the Southeastern American Kestrel BSR.

Regarding your concerns about consistency in habitat descriptions, I think you were confusing references in the text to "American kestrels" and "southeastern American kestrels" which have different habitat affinities. I will review and attempt to make this clearer.

I didn't see an indication whether you agreed with or disagreed with the findings of the Biological Review Group that the Southeastern American Kestrels meets criteria to remain listed as a Threatened species. Can you comment on the team's assessment?

Thanks,
-Karl

Karl E. Miller, Ph.D.
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Florida Fish & Wildlife Conservation Commission
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-----Original Message-----
From: Sieving, Katie [mailto:chucao@ufl.edu]
Sent: Thursday, February 03, 2011 7:11 AM
To: Miller, Karl
Subject: RE: Kestrel BSR

You're right! It was really easy to make comments (well-written). Comments are really first reactions - might make you think about highlighting, clarifying some things.

Cheers!
Katie
Kathryn E Sieving, Ph.D.
Department of Wildlife Ecology and Conservation University of Florida, Gainesville
www.wec.ufl.edu/faculty/sievingk _____

Copy of the Southeastern American kestrel BSR draft report that was sent out for peer review

Biological Status Review
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Nest boxes can provide suitable nesting habitat for kestrels. In many areas, southeastern American kestrels are partially dependent on these or other (Maney and Parrish 2007) such artificial structures, and it is vital that they be retained. However, nest boxes placed near roadways may be avoided (N. Klaus, *personal communication*), or if they are not avoided, may potentially put birds at risk of mortality from motor vehicles. More research is needed in Florida on the impact of roadways on kestrel productivity and survival.

Habitat loss and fire suppression are the primary threats to kestrel foraging habitat in Florida. Inadequate resources for prescribed burning and the tendency of many land managers to prefer low-intensity cool-season burning (Cox and Widener 2008) are ongoing threats to kestrel populations.

In addition to a lack of natural nesting sites and loss of suitable foraging habitat, environmental contaminants pose a threat to the species. American kestrels, like other raptors, are vulnerable to pesticides and chemical pollutants such as DDT, PCBs, and heavy metals. Recent studies have shown the species to be sensitive to endocrine disruptors, with exposure to flame retardants resulting in thinner eggshells and lower productivity (Fernie et al. 2009). Other potential threats to American kestrel populations are the spread of West Nile Virus, increased predation pressure, and collisions with aircraft, vehicles or stationary objects (Deem et al. 1998, Smallwood and Bird 2002, Bird 2009).

Population Assessment – Please refer to the Biological Status Review Information Sheet for the findings of the BRG. The southeastern American kestrel met 2 criteria for listing, including Geographic Range (B) and Population Size and Trend (C).

Regional Assessment of Subpopulations – Please refer to the Biological Status Review Information Sheet for the regional assessment of the BRG. There was no change from the initial finding.

Southeastern American kestrel populations in neighboring states are tiny and highly fragmented, and there appears to be little to no opportunity for mixing of these subpopulations with those in Florida. In Georgia, the subspecies is restricted primarily to two military bases and utility line corridors; the statewide population is estimated at approximately 300 pairs (Breen and Parrish 1997; N. Klaus, *unpublished data*). The nearest known subpopulation in Georgia is >90 km north of the kestrel subpopulation in north central Florida (Schneider et al. 2010). The subspecies is non-migratory and demonstrates limited dispersal ability (Miller and Smallwood 1997).

LISTING RECOMMENDATION

In accordance with rule 68A-27.0012 F.A.C., staff recommends listing the Southeastern American kestrel as a Threatened species because the species met criteria for listing as described in 68A-27.001(3), F. A. C. The southeastern American kestrel met two criteria for listing, including Geographic Range (B) and Population Size and Trend (C).

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Biological Status Review Information
Findings

Species/taxon: Southeastern American Kestrel
Date: 11/09/10
Assessors: Karl Miller, Jim Cox, Nathan Klaus

Generation length: 2.5-3.0 yrs

Criterion/Listing Measure	Data/Information	Data Type*	Criterion Met?*	References
(A)Population Size Reduction, ANY of				
(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 ceased[1]	No evidence that reduction has ceased.		N	
(a)2. An observed, estimated, inferred or suspected population size reduction of at least 30% over the last 10 years or 3 generations, whichever is longer, where the reduction or its causes may not have ceased or may not be understood or may not be reversible[1]	Conclusive data that kestrel numbers statewide have declined >50% in previous decades. Kestrel numbers statewide have continued to decline but data within last decade does not conclusively meet 30% threshold because of small sample sizes. Nest box occupancy rates in north central Florida (one of the two largest subpopulations in the state) declined >51% during 1998-2007 (from 68% to 33%).		N	Hoffman and Collopy (1988); Sauer et al. (2007); Smallwood et al. (2009); K. Miller, unpublished data.
(a)3. A population size reduction of at least 30% projected or suspected to be met within the next 10 years or 3 generations, whichever is longer (up to a maximum of 100 years) [1]	See A2 above.		N	
(a)4. An observed, estimated, inferred, projected or suspected population size reduction of at least 30% over any 10 year or 3 generation period, whichever is longer (up to a maximum of 100 years in the future), where the time period must include both the past and the future, and where the reduction or its causes may not have ceased or may not be understood or may not be reversible.[1]	See A2 above.		N	
[1] based on (and specifying) any of the following: (a) direct observation; (b) an index of abundance appropriate to the taxon; (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat; (d) actual or potential levels of exploitation; (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites.				
(B)Geographic Range, EITHER				
(b)1. Extent of occurrence < 20,000 km^2 (7,722 mi^2) OR			N	

(b)2. Area of occupancy < 2,000 km^2 (772 mi^2)	Based on Breeding Bird Atlas records, recent statewide surveys in sandhills, and data on estimated kestrel territory size, the statewide kestrel population is estimated at 1,350-1,500 breeding pairs, which is equivalent to an area of occupancy of 1,350-1,875 km^2.	O, E, I	Y	Stys (1993); Cox et al. (1994); Florida Fish & Wildlife Conservation Commission (2003); J. Rodgers, unpublished data; K. Miller, unpublished data; J. Cox, unpublished data; N. Klaus, unpublished data.
AND at least 2 of the following:				
a. Severely fragmented or exist in ≤ 10 locations	Exist in 4-8 regional subpopulations; fragmented; most habitat patches are too small to support viable populations and are isolated from other habitat patches. Subspecies known to have limited dispersal ability to re-colonize vacant habitats outside these areas.	O, E, I	Y	Cox et al. (1994); Miller and Smallwood (1997); Florida Fish & Wildlife Conservation Commission (2003); K. Miller, unpublished data; J. Cox, unpublished data.
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	Continuing decline in several of these subcriteria (ii, iii, v); see A2 above and C1 below; extent of sandhill habitat declining at rapid rate throughout state; funding inadequate to restore habitat on public and private lands.	O, I, P	Y	Hoffman and Collopy (1988); D. Hardin (unpublished report 2004); Smallwood et al. (2009); K. Miller, unpublished data; Kautz et al. analysis of statewide habitat loss; Florida Fish & Wildlife Conservation Commission 2060 report.
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			N	
(C)Population Size and Trend				
Population size estimate to number fewer than 10,000 mature individuals AND EITHER	Habitat model estimated potential for ca. 3,000 individuals on public lands during 1980s; however, habitat conditions were unsuitable in many of these areas. Recent surveys throughout Florida show kestrels absent, or very rare, on most sandhills in public ownership. The only large contiguous patches of private lands with long-term kestrel nest-box programs are in Marion/Levy/Alachua/Gilchrist/ southern Suwannee counties, supporting at least 175 active kestrel territories. Based on Breeding Bird Atlas records, recent statewide surveys in sandhills, and data on estimated kestrel territory size, the statewide kestrel population estimated at 1,350-1,500 breeding pairs or 2,700-3,000 mature individuals.	O, E, I	Y	Cox et al. (1994); Smallwood and Collopy (2009); J. Rodgers, unpublished data; K. Miller, unpublished data.

(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	No evidence that these declines have ceased. Nest box occupancy rates in a long-term study site in north central Florida declined >51% during 1998-2007 (from 68% to 33%). Extent of habitat expected to continue to decline and funding inadequate to restore existing habitat quickly over large scale. Kestrels have been slow to colonize new nest boxes in appropriate habitat throughout north central Florida.	P	N?	Cox et al. (1994); Miller and Smallwood (1997); Florida Fish & Wildlife Conservation Commission (2003); Smallwood et al. (2009); K. Miller, unpublished data; J. Cox, unpublished data;.D. Hardin (unpublished report 2004); Kautz et al. analysis of statewide habitat loss; Florida Fish & Wildlife Conservation Commission 2060 report.
(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	See B2 above; only a few subpopulations >100 breeding pairs.	O, E, I	Y	See B2 and B2a above.
(i) No subpopulation estimated to contain more than 1000 mature individuals; OR				
(ii) All mature individuals are in one subpopulation			N	
b. Extreme fluctuations in number of mature individuals			N	
(D)Population Very Small or Restricted, EITHER				
(d)1. Population estimated to number fewer than 1,000 mature individuals; OR			N	
(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			N	
(E)Quantitative Analyses				
e1. Showing the probability of extinction in the wild is at least 10% within 100 years			N	

Initial Finding (Meets at least one of the criteria OR Does not meet any of the criteria)	Reason (which criteria are met)
Meets multiple criteria	B2a, bii, iii, v; C2ai
Is species/taxon endemic to Florida? (Y/N)	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)
Meets multiple criteria	B2a, bii, iii, v; C2ai

1	Species/taxon:	Southeastern American Kestrel
2	Biological Status Review Information	11/09/10
3	Regional Assessment	Karl Miller, Jim Cox, and
4	Assessors:	Nathan Klaus
5		
6		
7		
8	Initial finding	Meets multiple criteria
9		
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.	No
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.	No because (a) Subspecies is non-migratory and demonstrates limited dispersal, and b) nearest subpopulation in Georgia is 90 km away and extremely small)
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.	
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	No change
18	2e. Are the conditions outside Florida deteriorating? (Y/N/DK). If 2e is YES or DO NOT KNOW, go to line 24. If 2e is NO go to line 19.	
19	2f. Are the conditions within Florida deteriorating? (Y/N/DK). If 2f is YES or DO NOT KNOW, go to line 23. If 2f is NO, go to line 20.	
20	2g. Can the breeding population rescue the Florida population should it decline? (Y/N/DK). If 2g is YES, go to line 21. If 2g is NO or DO NOT KNOW, go to line 22.	
21	If 2g is YES - Downgrade from initial finding (less imperiled)	
22	If 2g is NO or DO NOT KNOW - No change from initial finding	
23	If 2f is YES or DO NOT KNOW - No change from initial finding	
24	If 2e is YES or DO NOT KNOW - No change from initial finding	
25		
26	Final finding	Meets multiple criteria

Appendix 1: Biological Review Group Members' Biographies

Karl E. Miller received his Ph.D. from the University of Florida and is currently the Upland Nongame Bird Leader for FWC's Fish and Wildlife Research Institute. Miller has more than 15 years experience implementing research and monitoring projects for imperiled birds and mammals in Florida, with more than 50 articles or book chapters published in scientific journals or popular magazines. Miller's expertise is focused on the population ecology and community ecology of raptors, woodpeckers, and songbirds.

James Cox received his M.S. degree from Florida State University. He is Director of the Vertebrate Ecology program at Tall Timbers Research Station in northwest Florida. Cox has more than 25 years experience conducting and supervising conservation research programs for upland birds, especially birds of the longleaf pine ecosystem. Cox was Bird Conservation Coordinator for the Florida Game and Fresh Water Fish Commission during the 1990s.

Nathan A. Klaus is a Senior Wildlife Biologist with Georgia's Department of Natural Resources, Nongame Conservation Section. Klaus supervises upland bird monitoring projects throughout Georgia, including a recovery program for the southeastern American kestrel. Klaus also supervises longleaf and grassland restoration efforts on state lands.

Appendix 2. Summary of letters and emails received during the solicitation of information from the public period of September 17, 2010 through November 1, 2010.

No information about this species was received during the public information request period.

APPENDIX 3. Information and Comments Received from Independent Reviewers.

To be completed later.