American Oystercatcher Biological Status Review Report

March 31, 2011

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
620 South Meridian Street
Tallahassee, Florida 32399-1600

Biological Status Review Report for the American Oystercatcher

(*Haematopus palliatus*)

March 31, 2011

EXECUTIVE SUMMARY

The Florida Fish and Wildlife Conservation Commission (FWC) directed staff to evaluate species listed as Threatened or Species of Special Concern as of November 8, 2010 that had not undergone a status review in the past decade. Public information on the status of the American oystercatcher was sought from September 17 to November 1, 2010. The three-member Biological Review Group (BRG) met on November 3-4, 2010. Group members were Janell M. Brush (FWC lead), Elizabeth A. Forys (Eckerd College), and Gary L. Sprandel (Kentucky Department of Fish and Wildlife Resources). In accordance with rule 68A-27.0012, Florida Administrative Code (F.A.C.), the BRG was charged with evaluating the biological status of the American oystercatcher using criteria included in definitions in 68A-27.001, F.A.C., 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 (Version 8.1)*. Please visit http://myfwc.com/wildlifehabitats/imperiled/listing-action-petitions/ to view the listing process rule and the criteria found in the definitions.

In late 2010, staff developed the initial draft of this report which included BRG findings and a preliminary listing recommendation from staff. The draft was sent out for peer review and the reviewers' input has been incorporated to create this final report. The draft report, peer reviews, and information received from the public are available as supplemental materials at http://myfwc.com/wildlifehabitats/imperiled/biological-status/.

The American Oystercatcher BRG concluded from the biological assessment that the American oystercatcher met listing criteria. Based on the literature review, information received from the public, and the BRG findings, staff recommends listing the American oystercatcher as a Threatened species.

This work was supported by a Conserve Wildlife Tag grant from the Wildlife Foundation of Florida. FWC staff gratefully acknowledges the assistance of the biological review group members and peer reviewers. Staff would also like to thank Michelle Vandeventer who served as a data compiler on the species.

BIOLOGICAL INFORMATION

Life History References – Brown et al. 2001; FWC 2003; Nol and Humphrey 1994; Rodgers et al. 1996; Schulte et al. 2010.

Taxonomic Classification – Oystercatchers are members of the family Haematopidae. There are eleven recognized species of oystercatcher, although the taxonomy remains somewhat controversial (Nol and Humphrey 1994). Two subspecies of the American oystercatcher (*Haematopus palliatus*) are recognized in North America: *H. p. palliatus*, along the eastern and

Gulf of Mexico coasts, and the west coast subspecies of *H. p. frazari*. Florida has a resident breeding population of American oystercatchers (*H. p. palliates*) as well as one of the largest wintering populations (Schulte et al. 2010).

Population Status and Trend - A statewide survey conducted during the nesting season in 2001 documented a total of 1,014 individuals, including 391 pairs, and breeding was confirmed for 213 pairs (Douglass and Clayton 2004). The majority of the population (>90%) is concentrated on the Gulf coast of the state, with Hillsborough Bay estimated to support 15 - 20% of Florida's breeding population (Hodgson et al. 2008). Cox et al. (1994) identified three "population centers" for American oystercatchers along the Gulf coast, and a sparse but continuous distribution along the Atlantic coastline. This statewide analysis concluded that the habitat base required for long-term stability of American oystercatchers in Florida was insufficient (Cox et al. 1994).

Geographic Range and Distribution – The American oystercatcher is one of the few birds that feed primarily on marine bivalves, and therefore reside in coastal areas that support intertidal shellfish beds. Occupied habitats include undeveloped barrier beaches, sandbars, sand spits at inlets, shell rakes, salt marsh islands, and oyster reefs. Their breeding range extends from the northeast Atlantic coast to the Gulf coast of Florida, as well as the Caribbean and Central America (Nol and Humphrey 1994).

Quantitative Analyses - There has not been a population viability analysis carried out on the Florida population of American oystercatchers.

BIOLOGICAL STATUS ASSESSMENT

Threats – The major threats to American oystercatchers identified by Schulte et al. (2010) in the Conservation Action Plan for the American Oystercatcher for the Atlantic and Gulf Coast of the U.S. include low population size in the region (~11,000 individuals), widespread habitat loss, and increased pressure during the non-breeding and breeding season (increased recreational disturbance, increases in nest predators, potential contamination of food sources, and alteration of habitat due to coastal engineering projects). Hunter et al. (2006) identified the American oystercatcher as a vulnerable species which will continue to decline without conservation measures to protect nesting habitat however possible, and listed the North American population as "High Concern" on the list of High Priority Shorebird Species/Populations. Oystercatcher productivity can be impacted by disturbance from recreational boaters and fishermen, adverse weather conditions, pressure wakes from large ships and boats, and predation. Entanglement in fishing gear and exposure of adults or breeding areas to oil spills are also concerns, as is the threat of global climate change and sea level rise.

Population Assessment –Findings from the BRG are included in Biological Status Review Information Findings table. The BRG concluded from the biological assessment that the American oystercatcher met listing criteria as described in 68A-27.001, F.A.C.

LISTING RECOMMENDATION

Staff recommends that the American oystercatcher be listed as a Threatened species.

SUMMARY OF THE INDEPENDENT REVIEW

Comments were received from 3 peer reviewers. All reviewers concurred with the staff recommendation. Peer reviews are available at MyFWC.com. Appropriate editorial changes recommended by the reviewers were made to the report.

Ann B. Hodgson, Resource Design's Inc.: Additional information on the continuing decline in area of occupancy was provided by Ann B. Hodgson relating to regional declines of occupied nesting locations observed in the Tampa Bay Area. She added, "…where a few pairs clung to their historical territories, the increase in human disturbance and loose pets – dogs and wandering cats – caused pairs to fail. At some sites, habitat quality is diminishing…wake overwash from cargo/cruise ships at the west side to Tampa Port Authority 2D…". Hodgson also commented on the extreme fluctuations in number of mature individuals citing a publication she has in preparation which compares FWC 2001 data with 2010 data within the sanctuaries. Hodgson stated, "…Audubon's Florida Coastal Islands Sanctuaries found 136 pairs (decline - 9.33%) in the similar survey area in 2010…" This information was included in the BSR process and does not change the recommendation, however it will need to be considered in the development of the management plan for the species. Dr. Hodgson stated, "I concur with the recommendation to list American oystercatcher in Florida as a threatened species."

Raya Pruner, Florida Park Service: Pruner conducted an independent assessment using available literature on the American oystercatcher and concluded, "…the biological information presented in this review is complete and accurate given the available data on the American oystercatcher in Florida and throughout their range….it is evident that the reviewers' interpretations of the data are accurate and justified…"

Ted Simons, US Geological Survey Cooperative Research Unit, North Carolina State University: Simons stated, "… the trend data presented by Hodgson makes a good case for greater protection for these birds and the need for additional research and monitoring to understand the status and trends of current populations." Additional comments by Simons related to the wintering population of American oystercatchers, "…members of the AMOY working group over the past decade have documented the importance of coastal areas from Tampa to Cedar Key as providing important wintering habitat for birds that breed as far north as Massachusetts..." The panel recognizes this area is the second most important wintering area for the species within its range, however the BSR process only focuses on the resident nesting population of this species within Florida. Simons stated, "…I concur with your recommendation for state threatened status."

LITERATURE CITED

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Biological Status Review Information
Findings

Species/taxon: American Oystercatcher (*Haematopus palliatus*)
Date: November 4, 2010
Assessors: Janell Brush, Gary Sprandel, Elizabeth Forys

Generation length: 10 years (Nol & Humphrey 1994)

Criterion/Listing Measure	Data/Information	Data Type*	Sub-Criterion Met?	References
*Data Types - observed (O), estimated (E), inferred (I), suspected (S), or projected (P). Sub-Criterion met - yes (Y) or no (N).				
(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]	Data do not support	Estimated	NO	Douglass and Clayton 2004; Hodgson et al. 2008; A. Hodgson, personal communication
(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]	Data do not support	Estimated	NO	Douglass and Clayton 2004; Hodgson et al. 2008; A. Hodgson, personal communication
(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]	Data do not support	Estimated	NO	Douglass and Clayton 2004; Hodgson et al. 2008; A. Hodgson, personal communication
(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]	Data do not support	Estimated	NO	Douglass and Clayton 2004; Hodgson et al. 2008; A. Hodgson, personal communication
[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	Linear miles of coastline = 2,276 miles x 1 mile width (beach range) = 2,276 sq miles. Generous overestimate which includes unsuitable habitat.	Estimated	YES	Fernald and Purdum 1992.
(b)2. Area of occupancy < 2,000 km^2 (772 mi^2)	From CWCI, combining total beach/surf zone and coastal strand habitats = 73.7 sq miles. Actual area of occupancy is less and rooftop nesting is negligible; this represents potential occupancy. If total estimated area is doubled to account for spoil islands it still meets criterion.	Estimated	YES	FWC 2005

AND at least 2 of the following:				
a. Severely fragmented or exist in ≤ 10 locations	Breeding sites exist in approximately 7 locations susceptible to hurricanes, storm surge, oil spills, erosion and other adverse events.	Estimated	YES	Burney 2009
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	Declines suspected in Florida and reported rangewide.	Suspected	NO	Douglass and Clayton 2004; Hodgson et al. 2008; Brush 2010; Shulte et al. 2010; A. Hodgson personal communication
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	No data to support.	Estimated	NO	Douglass and Clayton 2004; Hodgson et al. 2008; A. Hodgson personal communication
(C) Population Size and Trend				
Population size estimate to number fewer than 10,000 mature individuals AND EITHER	Population estimated fewer than 500 breeding adults.	Estimated	YES	Douglass and Clayton 2004; Forys 2010; Brush 2010.
(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	Cannot determine from current data.	Estimated	NO	Douglass and Clayton 2004; Hodgson et al. 2008; A. Hodgson personal communication
(c)2. A continuing decline, observed, projected, or inferred in numbers of mature individuals AND at least one of the following:	A continued decline is projected based on current known statewide productivity rates and assumption of 85% annual survival rate of breeding adults. Note there was one BSG member dissenting from this conclusion.	Suspected/ Projected	YES	Nol and Humphrey 1994; Forys 2010
a. Population structure in the form of EITHER	Population estimated fewer than 500 breeding adults.	Estimated	YES	Douglass and Clayton 2004; Forys 2010; Brush 2010.
(i) No subpopulation estimated to contain more than 1000 mature individuals; OR				
(ii) All mature individuals are in one subpopulation		Estimated	YES	Douglass and Clayton 2004
b. Extreme fluctuations in number of mature individuals	No data to support.	Estimated	NO	Douglass and Clayton 2004; Forys 2010; Brush 2010.
(D) Population Very Small or Restricted, EITHER				
(d)1. Population estimated to number fewer than 1,000 mature individuals; OR	Population estimated fewer than 500 breeding adults.	Estimated	YES	Douglass and Clayton 2004; Forys 2010; Brush 2010.
(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	From FWC 2005, combining total beach/surf zone and coastal strand habitats = 73.7 sq miles. Actual area of occupancy is less; this represents potential occupancy. If total estimated area is doubled to account for spoil islands it still meets criterion.	Estimated	NO	FWC 2005

(E) Quantitative Analyses				
e1. Showing the probability of extinction in the wild is at least 10% within 100 years	None conducted due to lack of sufficient data.		NO	Schulte et al. 2010

Initial Finding (Meets at least one of the criteria OR Does not meet any of the criteria)	Reason (which criteria/sub-criteria are met)
Yes, meets the criteria	C2a(i,ii); D1
Is species/taxon endemic to Florida? (Y/N)	NO
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/sub-criteria are met)
Yes, meets the criteria	C2a(i,ii); D1

1	Species/taxon:	American Oystercatchers (Haematopus palliatus)
2	Date:	11/3-4/10
3	Biological Status Review Information Regional Assessment Assessors:	Janell Brush, Gary Sprandel, Elizabeth Forys
4		
5		
6		
7		
8	Initial finding	Supporting Information
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; large # of birds outside FL are banded and only one band recovery in FL during breeding season
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 Florida 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	NO CHANGE

APPENDIX 1. Brief biographies of the American oystercatcher Biological Review Group members.

Janell M. Brush received her M.S. in Wildlife Ecology and Conservation from the University of Florida. Janell has managed avian research projects in Florida for over 10 years and joined the FWC in 2006. She is the project leader for two State Wildlife Grant funded coastal waterbird projects in Florida. Janell has experience working on research projects involving many different species of shorebirds and seabirds.

Elizabeth A. Forys received a M.S. in Environmental Science/Ecology from the University of Virginia and a Ph.D. in Wildlife Ecology and Conservation from the University of Florida. She is currently a professor at Eckerd College in St. Petersburg, Florida. She has over 30 publications on endangered species theory and management and 8 specifically on shorebirds and seabirds including American oystercatchers, black skimmer, least terns, and snowy plovers in Florida. For the past 10 years Beth has helped coordinate a project that monitors, maps, and protects beach and roof-top nesting birds throughout west-central Florida.

Gary L. Sprandel has a B.S. degree in Computer Science from Colorado State University with coursework in wildlife biology. He has worked as a geoprocessor for the Kentucky Department of Fish and Wildlife Resources since 2005 on a variety of projects including the State Wildlife Action Plan, public hunting area mapping, survey databases, habitat mapping, and species distribution mapping. From 1992-2005 Gary worked for the FWC as a database manager on many projects including data collection and analysis for wintering shorebird surveys, support of breeding shorebird and seabird surveys, and species and site ranking databases. Gary has over a dozen published papers on Florida's bird life.

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.

Email from Ann Hodgson, Gulf Coast Ecosystem Science Coordinator, Audubon of Florida, Florida Coastal Islands Sanctuaries, Tampa, Florida dated October 29, 2010. Dr. Hodgson provided a copy of the following report:

Hodgson, A. and A. Paul. 2010. Twenty-Five Years after Basis I: An Update on the Current Status and Recent Trends in Bird Colonial Waterbird Populations of Tampa Bay, in: Cooper, S.T. (ed.). 2010. Proceedings, Tampa Bay Area Scientific Information Symposium, BASIS 5: 20-23 October 2009. St. Petersburg, FL. 538 pp.

The average number of American oystercatcher nesting pairs in the Tampa Bay Region from 2000-2009 was 91 (77.42 – 104.58). The population was reported as stable. About 72 pairs nest in Hillsborough Bay and were counted on spoil island shorelines. Approximately 21% of the state's population nests in Tampa Bay. An additional e-mail from Dr. Hodgson (below) describes a regional decline of about 19.3%.

Email from Ann Hodgson, Gulf Coast Ecosystem Science Coordinator, Audubon of Florida, Florida Coastal Islands Sanctuaries, Tampa, Florida, dated October 29, 2010. Dr. Hodgson included two maps of the nesting distribution of AMOY (2001 and 2010) and provided the following information:

The FSA website reported 8 rooftop nesting records, of which 1 appears to be repeated, so probably 7 pairs attempted to nest. Rooftop nesters are not included in the 2010 worksheet summary. Adjusting the totals to include the 2010 rooftop nesters (assuming 7 pairs), and excluding Charlotte (2) and Lee (1) counties data, which were not included in the 2001 survey, the regional American Oystercatcher population has declined approximately 29 pairs or 19.3% since 2001.

The decline can be attributed to several factors including habitat loss (several of the dredged spoil material islands submerged in the past 10 years), sites that became unsuitable for various reasons (habitat modification, disturbance, predators, etc.), human disturbance (recreational boating and fishing, or commercial fishing), overwash from ship wakes, others.

	FWC survey	FCIS survey	
County	2001	2010	DIFF 2010-2001
Charlotte		2	2
Citrus	33	21	-12
Hernando	3	3	0
Pasco	0	1	1
Hillsborough	77	66	-11
Levy	5	7	2
Lee		1	1
Manatee	1	1	0
Pinellas	26	13	-13
Sarasota	5	2	-3
Total Pairs	**150**	**117**	**33**