

**FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION  
WATERFOWL PERMIT PROGRAM  
2011-2012 ANNUAL REPORT**

**EXECUTIVE SUMMARY**

Florida is visited by more than 20 species of migratory waterfowl each year. Four species of ducks regularly nest in the State during spring and summer. Waterfowl provide significant economic and recreational benefits to the citizens of Florida. This report documents efforts by the Florida Fish and Wildlife Conservation Commission (FWC) to manage Florida's waterfowl during Fiscal Year 2010-2011.

Waterfowl management activities fall into two categories: population monitoring and habitat management. The Waterfowl Management Program (WMP) coordinated the banding of 382 mottled ducks and 437 wood ducks during 2011. Mottled ducks and wood ducks were captured at bait sites and by night-lighting. Reports of band encounters allow FWC to measure hunting pressure on these ducks. Hunters can dial 1-800-327-BAND (inscribed on the band) or visit [www.reportband.gov](http://www.reportband.gov) to report band information.

A main concern for mottled duck conservation is hybridization between introduced domestic mallards and mottled ducks. The mixing of mottled duck and mallard genes could lead to the loss of Florida's mottled duck as a distinct species. The WMP devoted substantial effort to this issue in Fiscal Year 2011-2012.

Providing appropriate waterfowl hunting opportunities for Florida's citizens is a primary mission of the WMP. Hunting seasons are established in Florida to maximize hunter opportunity within the constraints of sound resource stewardship and guidelines mandated by the U.S. Fish and Wildlife Service (USFWS). The WMP participated in the national process for setting waterfowl hunting regulations and developed recommendations for the FWC Commission concerning appropriate regulations in Florida.

Habitat management allows FWC to improve the habitat quality and quantity necessary to support Florida's waterfowl and other wetland wildlife. Waterfowl biologists provided technical assistance on wetland conservation and management issues around the State. FWC worked with many agencies, organizations, and private landowners to cooperatively manage wetlands.

**INTRODUCTION**

Waterfowl are among the most recognized and economically important wild animals in North America. In Florida, naturalists, bird watchers, and hunters spend countless hours enjoying these birds. As human impact on the environment has increased, negative impacts on waterfowl populations also have increased. The WMP is charged with ensuring the continued well-being of these popular birds.

The passage of the Florida Duck Stamp Act in 1979 created the WMP and provided a mechanism for funding. This act requires that all Florida waterfowl hunters purchase a waterfowl permit. Beginning July 1, 2010, the Florida Legislature increased the fee for a waterfowl permit from \$3.00 to \$5.00 for both resident and nonresident waterfowl hunters.

The law stipulates that revenue generated from the sale of waterfowl permits or that pro rata portion of any license that includes waterfowl hunting privileges, shall be used for the conservation, research and management of waterfowl or to promote the cultural heritage of hunting. The legislation also allows the FWC to expend up to ten percent of permit revenues to promote hunting and sport fishing activities with an emphasis on youth participation.

During Fiscal Year 2011-2012, 10,866 waterfowl permits (including 168 five-year permits) were sold. Sportsman's licenses also include a waterfowl permit, and 45,471 of these licenses were sold. Revenue from waterfowl permits and sportsman's licenses totaled \$185,124, of which \$5,619 was set aside to promote youth hunting programs in Florida (e.g. Beau Turner Youth Conservation Center, Florida Youth Hunting Program, Ocala Youth Conservation Camp, etc). The remaining permit revenue (\$179,505) and an additional revenue from the State Game Trust Fund (primarily from license fees) supported the \$510,145 that was expended on the conservation, research, and management of waterfowl during the Fiscal Year.

During Fiscal Year 2011-2012, the WMP continued its efforts to increase public awareness of Florida's waterfowl resource through a web site, Florida's Waterfowl ([www.MyFWC.com/duck](http://www.MyFWC.com/duck)). The web site provides information on Florida's resident and migrant waterfowl, habitat conservation, and waterfowl hunting, as well as links to other sites of interest to waterfowl enthusiasts.

The WMP worked cooperatively during the year with several important stakeholder groups, including Ducks Unlimited (DU), Delta Waterfowl (Delta) and United Waterfowlers of Florida (UW-F). WMP activities with these groups included coordinating cooperative projects and providing technical assistance on issues of mutual interest.

The Waterfowl Management Strategic Plan ([http://www.myfwc.com/media/2361049/duck\\_Strategic\\_Plan.pdf](http://www.myfwc.com/media/2361049/duck_Strategic_Plan.pdf)), approved for implementation by FWC Commissioners on February 6, 2008, continues to guide waterfowl management efforts. The plan has three goals: (1) conservation and enhancement of resident waterfowl populations and habitats, (2) leadership in the conservation and enhancement of continental waterfowl populations and habitats, and (3) recreational use and public support resulting in the enhancement and conservation of waterfowl populations and habitat.

The remaining waterfowl management programs are best understood if grouped biologically. Florida wetlands support breeding (i.e. resident) and migrant (i.e. wintering) waterfowl, and FWC management targets the populations and habitats of these birds.

## **POPULATION AND HABITAT MANAGEMENT**

Population monitoring allows the agency to track the number of ducks present in the State over time. Annual population estimates and other population parameters help in managing maximum hunting opportunity while sustaining healthy waterfowl populations. Moreover, accurate population information provides a basis for directing waterfowl conservation efforts where they are most needed and effective.

Habitat management helps to provide the greatest quantity and highest quality habitat possible to support Florida's waterfowl and other wetland-dependant wildlife. Without a large habitat base that includes breeding, migration, and wintering areas, waterfowl populations will decline. Habitat management and conservation have importance beyond their value to waterfowl because wetlands benefit many other plant and wildlife species.

Two external programs enhance FWC's ability to conserve and manage wetland habitat for both resident and migratory waterfowl. DU provides matching money to help states acquire and enhance wetland habitat. FWC's matching funds for these projects in Florida are budgeted through the Legislature. Since this program's inception, FWC's projects completed by partnering with DU have helped restore and enhance more than 16,000 acres of wetland habitat in Florida. Florida is part of the Atlantic Coast Joint Venture (ACJV) of the North American Waterfowl Management Plan. Joint ventures create partnerships to plan, fund, and implement habitat projects within their respective geographic areas. The ACJV is one of fourteen habitat joint venture partnerships in the United States. The ACJV brings together public and private agencies, conservation groups, and other partners focused on the conservation of habitat for native birds in the Atlantic Flyway of the United States from Maine south to Puerto Rico. The WMP provides input on ACJV activities in Florida, which provides substantial benefits to Florida's fish and wildlife resources.

## **RESIDENT SPECIES**

The four species of ducks that regularly breed in Florida are the mottled duck, wood duck, fulvous whistling duck, and black-bellied whistling duck. All four species nest during spring and summer. Mottled ducks remain in Florida throughout the year. Many wood ducks and fulvous whistling ducks remain year-round as well, but some of these birds migrate from Florida for part of the year. Black-bellied whistling ducks also occur in Florida year-round, but there is no information on seasonal movement patterns.

### **Florida's Mottled Duck**

Current management for mottled ducks is guided by FWC's, "A Conservation Plan for the Florida Mottled Duck" (Conservation Plan; <http://www.myfwc.com/wildlifehabitats/profiles/birds/waterfowl/mottled-ducks/>). The Conservation Plan was revised and approved in 2011 to focus on the long-term (20+ years) management of mottled ducks. A companion Action Plan guides short-term (5 years) management and prioritizes tasks based on the immediate conservation needs, funding for research and implementation, and importance relative to competing objectives of the Waterfowl Management Program. The Conservation Plan serves as a long-term, general roadmap to Florida mottled duck conservation, while the Action Plan will provide details of the routes taken to achieve the goal.

The Florida mottled duck is one of approximately 25 closely related, mallard-type species worldwide. This subspecies occurs only in Florida and does not migrate from the State; therefore, management and protection of Florida's mottled ducks are primarily the responsibilities of the State of Florida. Hunters favor this bird because of its large size and desirable flavor and texture. Florida hunters harvested an estimated 10,640 mottled ducks during the 2011-2012 hunting season, which accounted for approximately 4.4% of the statewide harvest of ducks. FWC remains concerned about the long-term status of Florida's

mottled duck population throughout its range because low reproduction and survival have been documented, important habitat in Florida continues to be altered or lost, and hybridization with feral mallards continues. Because of these concerns, the conservative daily bag limit for the harvest of this species remains at one.

Mottled Duck Population Monitoring and Management – Annual mottled duck population monitoring includes banding and a March aerial survey of the breeding population. During the summer of 2011, 382 mottled ducks were captured and marked with leg bands. Over the past ten years, 6,430 mottled ducks have been banded (Figure 1). Staff analyzes the band recovery data to estimate annual survival rates and the proportion of the population that is harvested, as well as to monitor movements.

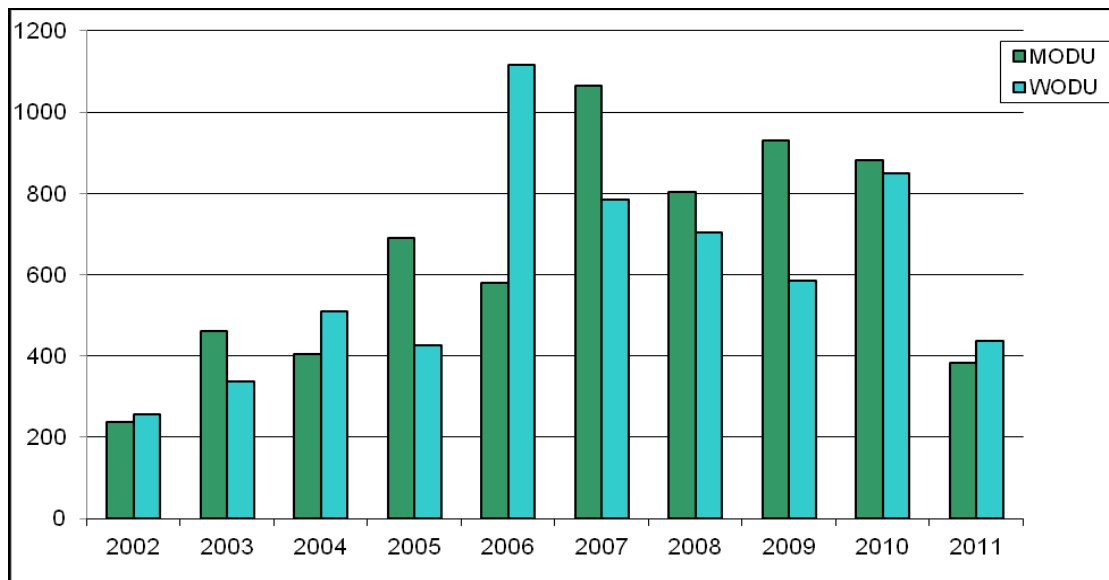


Figure 1. Numbers of Florida mottled ducks (MODU) and wood ducks (WODU) banded statewide by FWC staff, 2002-2011.

The March breeding population survey has been conducted since 1985; during 2003-2009 FWC waterfowl biologists evaluated a new survey method. Survey results indicate that the mottled duck population continues to be relatively stable; however, the proportion of mottled duck/mallard hybrids in the population is unknown. Without this key piece of information, population estimates will continue to be suspect, as changes in status or trends may be masked or even driven by hybrids. With current resources and partner funding from the United States Fish and Wildlife Service, FWC was able to fund the population survey, but unable to fund additional work to develop techniques to identify hybrids. A short-term (3-4 year) shift in priorities was needed so that staff could focus on and fund efforts to develop techniques to identify hybrids and to assess the proportion and distribution of hybrids in the population. Therefore, during 2010-2012, the annual survey was discontinued so that funds could be used for hybridization work. Staff is hopeful that the survey can be resumed in March 2013, after gaining a better understanding of the impact hybrids may be having on survey results.

Mottled Duck Conservation – During FY 2011-2012, FWC biologists completed field work for a research project examining habitat use, survival, and movements of Florida mottled duck females in the Everglades Agricultural Area and adjacent urban and suburban areas. The project began in August 2008 and staff is now finishing data analysis and preparing reports and manuscripts. One manuscript, *Nesting Ecology of Florida Mottled Ducks Using Altered Habitats*, is currently in review by the Journal of Wildlife Management. Two additional manuscripts, one regarding survival and movements and another dealing with habitat use, are being prepared for submission in FY 2012-2013.

Data from the study also will be used to characterize, in detail, the wetlands used by mottled ducks. This information is needed to improve wetland conservation and enhancement efforts within Florida. We have completed data collection from two periods of interest in 2012; the wet season (May-October) and the dry season (November-April) and plan on collecting additional wetland data during 2013-2014.

The FWC's plan for addressing the mallard/mottled duck hybridization problem has three objectives: (1) develop techniques to identify pure mottled ducks, (2) assess the proportion and distribution of hybrids in the mottled duck population, and (3) identify and implement mechanisms to reduce hybridization. Building on FY 2010-2011 efforts, researchers at FWC's Fish and Wildlife Research Institute (FWRI) lab in St. Petersburg identified 59 additional genetic markers to identify mottled ducks. Coupled with existing markers from previous research, FWC was able to use 94 markers to verify the genetic identity of 181 mottled duck, mallard, and potential hybrid specimens. In collaboration with researchers at the University of California Davis, these specimens were used to develop and test a feather (plumage) key to identify a bird as one of the two species or a hybrid, before obtaining genetic test results. Once validated, this will provide a reliable identification key based on readily discernible physical traits. The key will function as a cost-effective tool to help monitor progress toward the goal of reducing hybridization between mallards and mottled ducks.

The most important strategy for reducing hybridization is an education and communication program. The agency's efforts focus on maximizing public awareness of the issue. Strategies include reducing the sale and subsequent release of mallards and creating an awareness of the problem among stakeholders. In Fiscal Year 2011-2012, staff continued to develop and distribute informational material, make presentations and contacts to groups and organizations, and coordinate media coverage. Staff continued to work with FWC's Division of Law Enforcement to remind businesses selling ducks (e.g., feed stores, auctions) about mallard possession and sale regulations.

## **Wood Duck**

Wood ducks are perhaps the most colorful duck in North America and are admired by people throughout the State. The most abundant resident duck species in Florida, wood ducks also are highly valued by Florida hunters. Wood ducks ranked fourth in hunters' bags and made up approximately 4.8% of the total duck harvest in Florida in 2011-2012. The United States Fish and Wildlife Service estimated that 11,741 wood ducks were harvested in Florida during the 2011-2012 regular duck hunting season.

Wood Duck Population Management -- Wood ducks inhabit wooded, brushy, or other vegetated wetland areas. Therefore, unlike other duck species, wood ducks cannot be

counted reliably during aerial surveys. Consequently, populations have been monitored through banding, experimental monitoring of nest boxes, and harvest surveys. These efforts have been critical to continuing the special September duck season for Florida's hunters.

In 2011, WMP coordinated the banding of 437 wood ducks prior to the hunting season. Over the past 10 years, 6,005 wood ducks have been banded (Figure 1). Previous analysis of banding data indicated that a high proportion of wood ducks banded during the summer in Florida are harvested by hunters within the State. This information supports increased opportunity for hunting Florida's wood ducks.

Estimates of hunter effort and harvest are used to help determine whether the extra harvest allowed by the special September duck season in Florida is compatible with the well-being of Florida's wood duck population. Hunters harvested an estimated 1,590 wood ducks and 9,417 teal ducks in Florida during this special season in 2011. Previous work by the WMP provided no evidence to suggest that the September season negatively affected wood duck populations.

Wood Duck Habitat Management -- Wood ducks are cavity nesters. Many areas with adequate brood-rearing habitat do not contain trees large enough to have suitable nesting cavities. Fortunately, man-made nest boxes can provide nest sites. FWC staff maintained nest boxes existing on Wildlife Management Areas and other public water bodies. WMP personnel provided technical assistance to private citizens, government agencies, and groups such as local DU and Delta chapters and Boy Scout troops to erect and maintain nest boxes.

### **Fulvous and Black-bellied Whistling Ducks**

Whistling ducks are more closely related to geese than to ducks. Fulvous whistling ducks have separate populations in Asia, Africa, Madagascar, South America, and North America. Prior to about 40 years ago, neither species of whistling ducks nested in Florida. Today, nesting fulvous whistling ducks are abundant in South Florida, primarily in habitat provided by rice and other flooded agricultural areas, which provides desirable water and nesting cover (habitat). In winter, many fly south, probably to Cuba. Florida's black-bellied whistling duck population seems to have increased dramatically in recent years, with reports of successful breeding in many areas of the state.

### **MIGRATORY WATERFOWL**

This large group includes waterfowl that breed in northern North America and migrate to Florida during the fall and winter. Approximately 20 species of waterfowl regularly spend the winter in Florida, and migratory ducks constitute the majority of all waterfowl harvested by Florida hunters. The total estimated duck harvest in Florida during the 2011-2012 hunting season is 242,400 birds. This is a 5.5% increase from the estimated 2010-2011 season harvest of 229,000 ducks.

Habitat in wintering areas, such as Florida, is important in the annual cycle of migratory waterfowl. Habitat conditions during this non-breeding period influence survival and subsequent reproduction. Ducks must maintain or improve their body condition during

winter to avoid mortality during the spring migration and to meet the physiological demands of the nesting season (i.e., egg laying, incubation). The WMP devotes considerable resources to monitoring and managing these migrant birds and providing quality habitat.

### **Migrant Waterfowl Population Management**

Ring-necked ducks are particularly important in Florida because they constitute a large proportion of the State's annual waterfowl harvest. A majority of the ring-necked ducks in the Atlantic Flyway spend the winter in Florida, and, on average, approximately 66% of ring-necked ducks harvested in the Flyway are harvested here. The WMP provides funding for cooperative banding efforts in Canada and remains vigilant in encouraging Canadian waterfowl managers to continue banding ring-necked ducks on breeding grounds. These efforts are important for justifying continued harvest opportunities for this species.

The Ontario Airboat Duck Banding Program (OADBP) is part of the Eastern Canada Cooperative Banding Project. Since 1963, this project has banded waterfowl to aid in determining population dynamics of waterfowl species in order to formulate waterfowl harvest regulations for the Atlantic Flyway. The OADBP has banded more than 31,000 birds in 15 years, including large numbers of wood ducks, blue and green-winged teal and ring-necked ducks, all of which are common migrants to Florida. During Fiscal Year 2011-2012, the OADBP invited an FWC waterfowl biologist to participate in an exchange program. The OADBP provides funding for a biologist from a selected Atlantic Flyway state to travel to Ontario to assist with banding operations each summer. The biologist experiences new habitats and bands new species of ducks and exchanges operational procedures, banding techniques, safety tips, etc. While in Ontario, FWC's biologist helped capture and band 964 ducks. Unfortunately, the OADBP biologist was not able to travel to Florida to assist with FWC's banding operations and thereby complete the cooperative nature of the program.

Providing appropriate waterfowl hunting opportunities for Florida's citizens is a primary mission of the WMP. Hunting seasons are established in Florida to maximize hunter opportunity within the constraints of sound resource stewardship and guidelines mandated by the USFWS. The WMP develops recommendations for the FWC Commission concerning appropriate waterfowl hunting regulations in Florida.

### **Migratory Waterfowl Habitat Management**

Florida lost approximately 260,000 acres of freshwater, emergent wetlands between 1985 and 1996, and additional losses were observed between 2004 and 2009. This habitat type is essential for waterfowl, yet losses continue, primarily due to urbanization and agricultural expansion. Waterfowl management staff provides technical assistance for managing, restoring, and enhancing waterfowl habitat to various agencies, groups, and individuals (Table 1). Not all technical assistance produces a tangible increase in waterfowl habitat, but this input does cause the welfare of wetlands and associated wildlife to be considered when resource management decisions are made.

Staff continued to work with several entities and private landowners during Fiscal Year 2011-2012 to evaluate numerous wetland projects. Entities included DU, the Natural Resource Conservation Service Wetlands Reserve Program, the Atlantic Coast Joint Venture, Water Management Districts, the USFWS, and numerous local and county governmental entities. Approximately 40 projects, totaling over 150,000 acres were

evaluated throughout the State. The majority of the projects were located in the southern half of the State (primarily in Glades, Hardee, Hendry, Highlands, Martin, Okeechobee, Palm Beach and St. Lucie counties). Staff is also involved in several on-going planning efforts as they relate to restoring and enhancing aquatic habitats and restoring water level regulations for Lakes Istokpoga, Okeechobee, Tohopekaliga, Cypress, Hatchineha, and Kissimmee.

T. M. Goodwin Waterfowl Management Area -- This 6,270-acre area in the upper St. Johns River Basin continues to be intensively managed by staff for waterfowl and continues to provide important habitat for migrating, wintering, and resident waterfowl and other wetland-dependent wildlife, as a result of the intensive management. The area is composed of two management units: T. M. Goodwin (Goodwin) and Broadmoor Marsh (Broadmoor).

Prescribed fire, disking, roller chopping, and herbicide application are used within the impoundments on the area to maintain vegetation in an early succession stage (i.e., grasses and herbaceous plants), control noxious and exotic vegetation, or reduce the height of existing vegetation to create a greater mixture of open water and vegetative cover after flooding. During Fiscal Year 2011-2012, staff burned 725 acres (300 at Goodwin, 425 at Broadmoor), disked 105 acres (Goodwin), and roller chopped 1420 acres (390 at Goodwin, 1030 at Broadmoor) on the area. Staff also continued with the annual herbicide application program, treating 2038 acres of para grass and cattails (902 at Goodwin, 1136 at Broadmoor).

As a result of these management activities, waterfowl use of the impoundments is high and waterfowl hunting is in high demand at the area. A total of 1337 hunters bagged 3,041 ducks (average 2.3 ducks/hunter) during the 2011-2012 waterfowl season. In addition to the regular season, special Youth Waterfowl Hunts were held on February 4 and 5, 2012. The special youth hunt included a variety of events targeted for youth hunters including overnight camping, hunter safety instruction, and meals provided by United Waterfowlers of Florida, Inc and the Brevard County Airboat Club. Snipe hunting is also permitted on the area, and 44 hunters bagged 221 snipe (average 5.02 snipe/hunter) during the 2011-12 season. Other public use activities included observing waterfowl and other birds, biking, hiking, and fishing.

## **PROGRAM DIRECTION AND NEEDS**

Florida's WMP has been in existence for more than 30 years. During this time, substantial contributions have been made to the knowledge and habitat base needed to manage and sustain waterfowl in Florida and internationally. The population monitoring efforts yield information necessary for management. Informing the public and the scientific community is an important part of the efforts to ensure the well-being of the waterfowl resource (Table 2).

The challenge for the future is to continue population monitoring and management, while using up-to-date information to increase involvement in habitat issues. The biggest opportunity to reduce the hybridization threat to mottled ducks by feral mallards is through public education and communication about the issue. Efforts to conserve and manage mottled duck habitat are limited due to the need for additional scientific information on which to base sound recommendations. Coordinating activities between the



WMP and other entities involved in habitat and conservation issues will remain a challenge. Continued funding of cooperative habitat projects with Ducks Unlimited programs is still vital. FWC continues to seek funding from external grants and other sources in an attempt to meet unfunded needs.

Table 1. Entities that received technical assistance from waterfowl personnel during fiscal year 2010-11.

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**Florida State Agencies**

Florida Department of Environmental Protection  
South Florida Water Management District  
Suwannee River Water Management District  
Southwest Florida Water Management District  
St. Johns River Water Management District  
Florida Department of Health

**Other State or Provincial Agencies**

Ontario Ministry of Natural Resources  
South Carolina Department of Natural Resources

**Federal Agencies**

U.S. Department of Agriculture--Wildlife Services  
U.S. Fish and Wildlife Service  
Natural Resource Conservation Service  
U.S. Park Service--Gulf Island National Seashore  
U.S. Geological Survey

**State-Federal Cooperative Entities**

Southeastern Cooperative Wildlife Disease Study

**Local Government**

Highlands, Alachua, Indian River, Polk and Leon counties

**Universities**

University of Florida,  
    Institute of Food and Agricultural Services  
    Department of Wildlife Ecology and Conservation  
Auburn University, Department of Forestry and Wildlife  
University of California, Davis. Museum of Fish & Wildlife Biology

**Non-governmental Organizations**

Ducks Unlimited Inc., national, state chapter, and various local chapters  
United Waterfowlers – Florida, Inc.  
National Wildlife Federation  
Florida Wildlife Federation  
Boy Scouts of America  
North American Wetlands Conservation Council  
Atlantic Coast Joint Venture  
Black Duck Joint Venture  
Delta Waterfowl  
Kissimmee Valley Audubon Society

**Businesses**

Walt Disney World

**Citizens**

(numerous)

Table 2. List of selected waterfowl management reports and publications, through fiscal year 2010-11.

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- Bielefeld, R. R. 2012. Mottled ducks genetics update. Unpublished report. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida. USA.
- Chaudhari, S., Brent A. Sellers, Stephen V. Rockwood, Jason A. Ferrell, Gregory E. MacDonald, Kevin E. Kenworthy. 2012. Nonchemical Methods for Para grass (*Urochloa mutica*) Control. *Invasive Plant Science and Management*: January-March 2012, Vol. 5, No. 1, pp. 20-26.
- Chaudhari, S., B. A. Sellers, S. V. Rockwood, J. A. Ferrell, G. E. MacDonald, and K. E. Kenworthy. 2012. Integrating chemical and cultural practices to control para grass (*Urochloa mutica*). *J. Aquat. Plant. Manage.* In Press.
- Chaudhari, S., B. A. Sellers, G. E. MacDonald, and S. Rockwood. 2011. Cultural techniques to manage para grass in wetlands. *Proc. South. Weed Sci. Soc.* 64:333.
- Chaudhari, S., B. A. Sellers, G. E. MacDonald, and S. Rockwood. 2010. Control of para grass in Florida wetlands. *Proc. South. Weed Sci. Soc.* 63:112.
- Florida Fish and Wildlife Conservation Commission. 2011. A conservation plan for the Florida mottled duck. Florida Fish and Wildlife Conservation Commission. Tallahassee, Florida, USA.
- Roberts, D. and J. T. Olson. 2012. 2011 Annual Report for the T. M. Goodwin Waterfowl Management Area. Unpublished report. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida, USA.
- Rockwood, S. V., C. Mallison, and B. Thompson. 2012. Effects of Herbicide Application and Prolonged Flooding of Para Grass. *Abstract*. Florida Chapter of the Wildlife Society and Florida Exotic Pest Plant Council Joint 2012 Conference, Ocala, Florida, USA.
- Seyoum, S., M. D. Tringali, R. R. Bielefeld, J. C. Feddersen, R. J. Benedict, A. T. Fanning, B. L. Barthel, C. Curtis, C. Puchlutegui, A. C. M. Roberts, V. L. Villanova, E. C. Tucker. 2012. Fifty-nine microsatellite markers for hybrid classification studies involving endemic Florida Mottled Duck (*Anas fulvigula fulvigula*) and invasive Mallards (*A. platyrhynchos*). *Conservation Genetics Resources* DOI: 10.1007/s12686-012-9622-9.