

Florida's Introduced Birds: Purple Swamphen (*Porphyrio porphyrio*)¹

Steve A. Johnson and Monica McGarrity²

Many non-native birds have been introduced in Florida—perhaps as many as 200 species! Of these, at least 16 introduced species are considered established, according to various authorities, and some are now considered invasive and could have serious impacts in Florida. This fact sheet introduces the Purple Swamphen, and is one of a series of fact sheets about Florida's established non-native birds and their impacts on our native ecosystems, economy, and the quality of life of Floridians. For more information on Florida's introduced birds, how they got here, and the problems they cause, read "Florida's Introduced Birds: An Overview" (<http://edis.ifas.ufl.edu/UW297>) and the other fact sheets in this series, http://edis.ifas.ufl.edu/topic_series_floridas_introduced_birds.

Species Description

The Purple Swamphen (*Porphyrio porphyrio*) is a member of the rail, gallinule, and coot family (Rallidae). Birds in this family are shy wetland birds with short, stubby tails and wings. Adult Purple Swamphens are approximately 18 inches long

(45–50 cm) with a wingspan of 35–40 inches (90–100 cm) and weigh about 1.5 pounds (660 g). The coloration of these birds varies across their large native range—some subspecies are brilliant blue, whereas others are nearly black. Most of the Purple Swamphens in Florida are believed to belong to the gray-headed subspecies (*P. p. poliocephalus*), although some have brilliant blue heads and may belong to another race. In Florida, Purple Swamphens (Fig. 1) have grayish (or blue) heads, purple-blue necks and bodies, and blue-green wings; the undersides of their tails are white. The irises of their eyes, their bills, and their *frontal shields* (fleshy shield on the forehead) are reddish. Their legs and feet are pinkish; the heels and joints of their feet are dark. Juveniles are similar in appearance, but their coloration is much duller; their bills, frontal shields, chests, and bellies may be dusky gray. In their native range, Purple Swamphens are known to be very vocal birds, with a repertoire of calls that includes a common, trumpeting call with a nasal rattle—*quinkrrrrquinkrrrr*—and a wide variety of groans, wails, squawks, shrieks, and hums. However, observers in Florida have noted that

-
1. This document is WEC270, of the Department of Wildlife Ecology and Conservation, University of Florida/IFAS. This document is one of several documents in the series entitled "Florida's Introduced Birds," published by Dr. Steve A. Johnson. Visit the University of Florida's EDIS website at <http://edis.ifas.ufl.edu>. First published November 2009.
 2. Steve A. Johnson, assistant professor and Extension specialist, Department of Wildlife Ecology and Conservation and Gulf Coast Research and Education Center, University of Florida/IFAS, Plant City Center, 1200 North Park Road, Plant City, FL 33563; Monica McGarrity, biological scientist, Gulf Coast Research and Education Center, University of Florida/IFAS, Plant City Center, 1200 North Park Road, Plant City, FL 33563.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M. University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Millie Ferrer-Chancy, Interim Dean

the introduced birds are rather quiet, mostly giving soft calls.

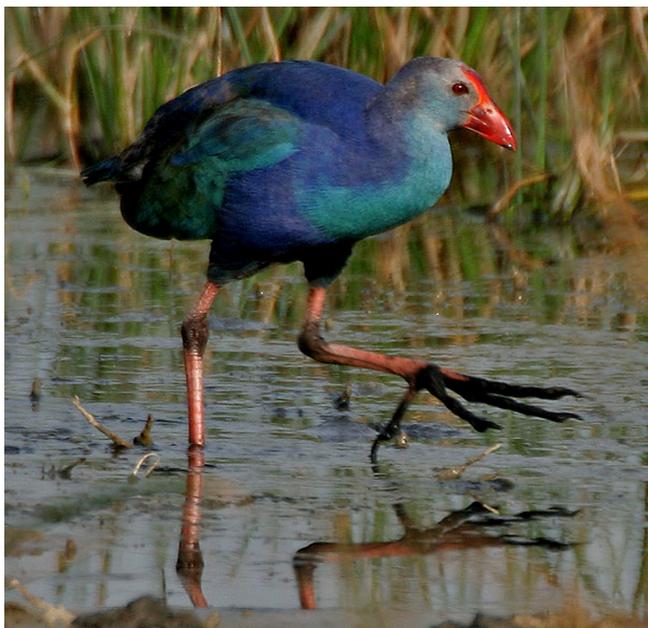


Figure 1. Purple Swamphens (*Porphyrio porphyrio*) are larger than native Purple Gallinules and can easily be identified by their solid red beaks and frontal shields, and by their reddish legs. Credit: J. M. Garg, Wikimedia Project, 2009 Credits:

Similar Species

Native Purple Gallinules (*Porphyrio martinica*) are very similar in appearance to the non-native Purple Swamphens, but are smaller. Adult Purple Gallinules (Fig. 2) are approximately 12–14 inches (30–36 cm) long, weigh about half a pound (200–290 g), and have a wingspan of only 20–22 inches (50–55 cm). Like Purple Swamphens, their necks, backs, and chests are a bright purple-blue, their wings are green-blue, and the undersides of their tails are white. Unlike Purple Swamphens, Purple Gallinules have bright purple-blue heads (not grayish), their red bills have yellow tips, their frontal shields are pale blue-white, and their legs are bright yellow.

Common Moorhens (*Gallinula chloropus*) are somewhat similar in appearance to Purple Swamphens and Purple Gallinules, but are much darker and are closer in size to the smaller Purple Gallinules. Adult Common Moorhens (Fig. 3) are approximately 12–14 inches (32–35 cm) long, weigh about 12 ounces (310–365 g), and have a

wingspan of 20–23 inches (51–58 cm). Their heads, necks, and bodies are a dark gray-black fading to gray on their sides and their rumps are brownish. The undersides of their tails are white, with a dark line down the middle. Their red bills have yellow tips, their frontal shields are red, and their legs are bright yellow with a red "garter" near the top (this may be hard to see).

The color(s) of the bills and frontal shields of these three similar species can be used to tell them apart from a distance easily; the beak color comparison shown below (Fig. 4) can be used as a handy field reference.



Figure 2. The native Purple Gallinule (*Porphyrio martinica*) is very similar in appearance to Purple Swamphens, but is smaller. Purple Gallinules can easily be identified by their bluish-white frontal shields, yellow-tipped beaks, and yellow legs. Credit: Steve A. Johnson, University of Florida, 2009 Credits:

Native Range and Habitats

The native range of the Purple Swamphen (*Porphyrio porphyrio*) is vast, stretching from southern Europe, the Mediterranean, and all of Africa across Asia and India to Australia, New Zealand, and the islands of the western Pacific. The gray-headed subspecies that has been most widely introduced in Florida (*P. p. poliocephalus*) is native to the area from Pakistan across India to southern China. The identity



Figure 3. The native Common Moorhen (*Gallinula chloropus*) is similar in appearance to Purple Swamphens but is a much darker blue-black. Common Moorhens can easily be identified by their yellow-tipped beaks, yellow legs, and white flank stripe. Credit: Steve A. Johnson, University of Florida, 2009 Credits:

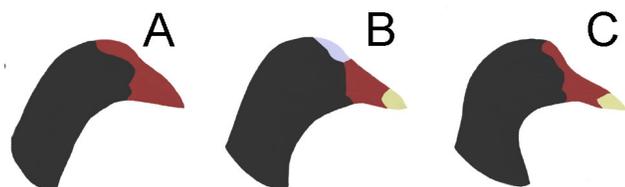


Figure 4. The introduced Purple Swamphen can be distinguished from similar native species by the color of its bill and frontal shield (a fleshy plate on the forehead). Purple Swamphens (A) have red frontal shields and bills; their bills are also thicker than those of similar native species. Native Purple Gallinules (B) have bluish-white frontal shields and red bills tipped with yellow. Native Common Moorhens (C) have red frontal shields and red bills tipped with yellow. Credit: Monica E. McGarrity, University of Florida, 2009 Credits:

and native range of the blue-headed subspecies that has also been seen in Florida is currently unknown.

Across their native range, Purple Swamphens inhabit a wide variety of wetland habitats, both permanent and temporary (i.e., seasonally flooded). They are found in ponds, lakes, marshes, swamps, rivers and their floodplains, rice fields, and retention or water treatment ponds. They are also often found on adjacent grasslands, agricultural fields, parks, golf courses, and road and forest edges. This species

usually inhabits lowlands, but has been found at altitudes more than 1.5 miles (3,000 m) above sea level.

Mode of introduction

The widespread destruction caused by Hurricane Andrew in 1992 resulted in the accidental release of many species of non-native wildlife in Florida, including Purple Swamphens. It is believed that most of the individuals found in Florida escaped from bird keepers in the Pembroke Pines area as a result of the hurricane; however 6–8 individuals also escaped from the Miami Metro Zoo around the same time. Purple Swamphens were first documented living in the wild in Florida in 1996, and by 1999 the population in Pembroke Pines had grown to at least 134 birds. Purple Swamphens were first reported in the Everglades Water Conservation Area in 2006.

Introduced Range and Habitats

The range of introduced Purple Swamphens is currently limited to southern Florida (Fig. 5), but these birds are known to move long distances and could spread rapidly to colonize other areas of the state. In Florida, Purple Swamphens have been found in the greatest numbers near Pembroke Pines and in the stormwater treatment areas (STAs) just north of the Everglades, but they have also been found in smaller numbers in Belle Glade, Wakodahatchee Wetlands, Everglades National Park, and Big Cypress National Preserve. There are also isolated reports of Purple Swamphens in Osceola, Brevard, and Lake Counties in central Florida.

In their introduced range, as in their native range, they inhabit a wide variety of wetlands, including artificial ponds and wetlands, canal edges, marshes, and wet prairie. It is extremely important to recognize Purple Swamphens and report their presence to the agencies that monitor and manage their spread. For more information on efforts to control Purple Swamphens in Florida, see the "Solutions" section below.

Ecology

Purple Swamphens are omnivorous but predominantly vegetarian. In Florida, they have been



Figure 5. Approximate United States range of the introduced Purple Swamphen (*Porphyrio porphyrio*). Credit: Monica McGarrity, University of Florida, 2009 (Data source: Everglades Cooperative Invasive Species Management Area) Credits:

seen eating the stalks and other parts of horsetail (*Equisetum* spp.), cattail (*Typha* spp.), spikerush (*Eleocharis* spp.), and sedges (*Rhynchospora* spp.), as well as native snails, earthworms, birdseed, and table scraps (or garbage). In their native range, they are known to eat the stalks, leaves, flowers, and seeds of a wide variety of plants, including agricultural species such as rice and sugar cane. They occasionally consume animal prey, including earthworms and leeches, mollusks, insects, fish and their eggs, frogs and their eggs, water snakes, birds and their eggs and nestlings, and small rodents.

Purple Swamphens usually live in communal flocks of up to 50 or more birds in their native range, but may form much smaller groups in Florida. The size of the communal groups is believed to be related to the quality of available habitat. Communal groups often consist of several breeding males and females and non-breeding "helpers," which are usually offspring from previous seasons. Females lay 3–7 eggs (one per day) in spring and summer; young, flightless chicks have been seen in Florida from March through September. The eggs are laid in platform nests made of vegetation; all of the females in a communal group may share a nest. Males, females, and helpers often share the duties of building the nest, incubating the eggs, and caring for the chicks. The chicks hatch in 23–27 days, and are usually capable of leaving the nest immediately, although they may remain at or near the nest for a while and beg for food from adults. Purple

Swamphens are prolific breeders and have been documented "double-brooding" (raising two or more groups of young in one season) in Florida. Although we know very little of their breeding habits in Florida, female Purple Swamphens in their native range may lay up to 3 replacement clutches of eggs if their nest is destroyed or their eggs are taken by predators.

Ecological Impacts

Little is known of the ecological impacts of Purple Swamphens in Florida. However, they are known to be highly territorial and aggressive, and often fight amongst themselves and with other species over food. In large numbers, these aggressive invaders could have negative impacts on native birds. Large flocks could also cause serious habitat disruption by feeding on native plants. Purple Swamphens especially like to eat spikerush plants (*Eleocharis* spp.), which are extremely important for creating habitat that supports fisheries in Lake Okechobee and other aquatic habitats in Florida.

Impacts to People and Pets

The direct impacts of introduced Purple Swamphens on humans would likely be minimal. Like all birds, they can carry a variety of disease-causing agents (bacteria, viruses, etc.) that can spread to humans, including the bird flu. Although none of the Purple Swamphens removed from the wild in Florida have been infected with the bird flu, the feces of infected birds can pose a health risk. Purple Swamphens are known to eat birdseed left for other species and may be aggressive around feeding stations, so they could become a nuisance if populations were allowed to become established. Although they have not been seen feeding on crops, these birds could potentially impact Florida's agricultural industry if their numbers were to increase. In their native range they are known to cause significant damage to crops, and they could become an agricultural pest, particularly to South Florida's rice farming industry.

Solutions

Biologists with the Florida Fish and Wildlife Conservation Commission (FWC) are working with other natural resource agencies to manage Purple Swamphens in Florida. To date, over 3,000 Purple Swamphens have been removed, mostly from Stormwater Treatment Areas and from Water Conservation Area 2B (areas south/southwest of the Arthur R. Marshall Loxahatchee National Wildlife Refuge). The FWC is currently studying the movements of Purple Swamphens in order to collect information that will help to develop a long-term management plan.

How You Can Help

You can help to manage invasive species by becoming part of Florida's invasive species detection and rapid response network. Use the tips in this fact sheet to learn to identify Purple Swamphens, and keep your eyes open—especially in southern Florida! If you think you have spotted a Purple Swamphen, try to take a photo so that wildlife biologists can use it to confirm your sighting, and report it immediately. It is especially important to report sightings in new locations (see Fig. 6). You should immediately report the number of birds and their exact location to the FWC by contacting Larry Connor (Email: ExoticReports@myfwc.com; Phone: (352) 357-2398). If possible, please email digital photos of the birds along with your report, or contact Larry Connor for a mailing address for non-digital photos. After the FWC verifies the sighting, the information will be shared with other agencies and groups working to deal with the growing problem of invasive wildlife in Florida.

In the coming years, Florida's scientists and government agencies plan to organize and train concerned citizens like you, to create an official network of volunteers that will help to rapidly detect, report, and respond to new wildlife invasions. The support of citizens who are concerned with protecting Florida's native wildlife and ecosystems will be critical to the development and success of this network.

You can also help to alleviate the growing numbers of non-native bird species in Florida by being a responsible and educated pet owner. Never set any pet free outside! Finally, you can help by learning more about invasive plants and animals and their impacts on Florida's natural environment, and by educating others. For more information on Florida's introduced birds and how you can help, read "Florida's Introduced Birds: An Overview" (<http://edis.ifas.ufl.edu/uw297>), and check out the Additional Resources listed below.

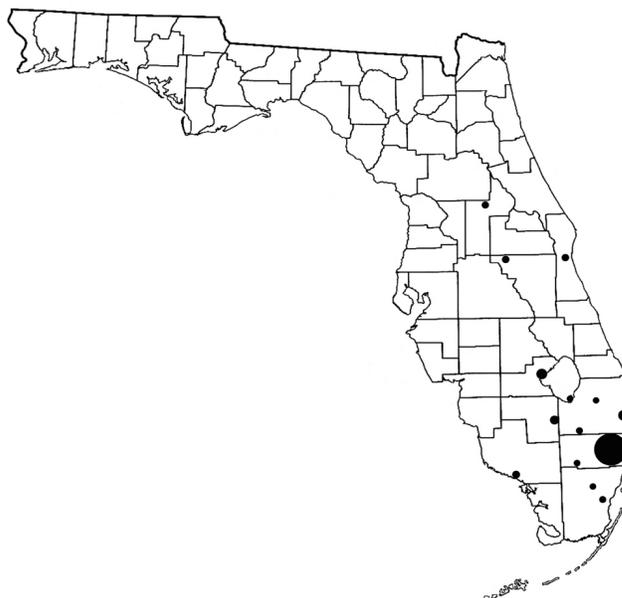


Figure 6. Sightings of the introduced Purple Swamphen (*Porphyrio porphyrio*) in Florida. Multiple sightings in nearby areas are shown by a single larger dot for ease of viewing. Check for new sightings of Purple Swamphens (and other introduced species) in your area by viewing the distribution maps on the Everglades Cooperative Invasive Species Management Area website at <http://www.evergladescisma.org/distribution>. Credit: Monica McGarrity, University of Florida, 2009 (Data source: Everglades Cooperative Invasive Species Management Area, Florida Fish and Wildlife Conservation Commission). Credits:

Additional Resources

There are a variety of online guides, books and other publications that we recommend for additional information on Florida's native and non-native birds.

Books and Scientific Publications

Alsop, Fred J., Smithsonian Handbooks: Birds of North America – Eastern Region. (New York: DK Publishing, Inc., 2001).

Bull, J., and J. Farrand, Jr., The Audubon Society Field Guide to North American Birds. (New York: Alfred A. Knopf, 1977).

Kale, H. W. II, and D. S. Maehr, Florida's Birds. (Sarasota: Pineapple Press, Inc., 1990).

Peterson, R. T., Peterson Field Guides, Eastern Birds. (Boston: Houghton Mifflin Co., 1980).

Pranty, B., A Birder's Guide to Florida. (Colorado Springs: American Birding Association, 1996).

Pranty, B., K. Schnitzius, K. Schnitzius, and H. W. Lovell, "Discovery, distribution, and origin of the Purple Swamphen (*Porphyrio porphyrio*) in Florida," Florida Field Naturalist 28 (2000): 1–11.

Robbins, C. S., B. Bruun, H. S. Zim, and A. Singer, A Golden Guide to Field Identification: Birds of North America. (New York: Golden Press, 1983).

Sibley, D. A., The Sibley Field Guide to Birds of Eastern North America. (New York: Knopf, 2003).

Everglades Cooperative Invasive Species Management Area (ECISMA)
<http://www.evergladescisma.org>

Pearlstine, E. V. and J. S. Ortiz. 2009. "A Natural History of the Purple Swamphen (*Porphyrio porphyrio*)," WEC272. Gainesville: Institute of Food and Agricultural Services.
<http://edis.ifas.ufl.edu/UW317>

Online

International Union for Conservation of Nature—2009 IUCN Red List of Threatened Species. *Porphyrio porphyrio*—species account.
<http://www.iucnredlist.org/apps/redlist/details/143910/0>

National Invasive Species Council
<http://www.invasivespecies.gov>

Florida Fish and Wildlife Conservation Commission Non-Native Wildlife
<http://myfwc.com/nonnatives/index.htm>—click on "Birds"