

## Bay Ducks Guild

**Canvasback** *Aythya valisineria*  
**Greater Scaup** *Aythya marila*  
**Lesser Scaup** *Aythya affinis*  
**Redhead** *Aythya americana*  
**Ring-necked Duck** *Aythya collaris*

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### DESCRIPTION

#### Taxonomy and Basic Description

Members of this group of ducks are classified as in the family Anatidae, subfamily Anatinae, and tribe Aythyini. Members of the tribe Aythyini are referred to as bay ducks or pochards. These 5 species are the members commonly found in North America and belong to one genus, *Aythya* (Bellrose 1980). The bay ducks are very similar in size and, in some species, plumage. Canvasbacks are the largest species, weighing about 0.99 kg (2.7 lbs.). Greater Scaup and redheads each weigh about 0.83 kg (2.3 pounds), while Lesser Scaup and Ring-necked Ducks each average about 0.40 kg (1.5 pounds).

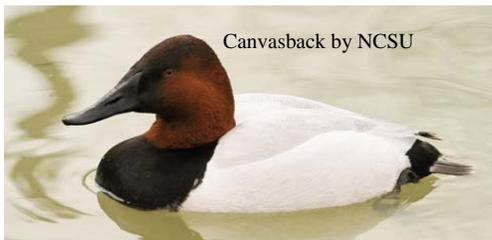


Greater Scaup photo by D. Dewhurst, USFWS



Photo by Chan Robbins

Lesser Scaup



Canvasback by NCSU

In addition to being the largest of the bay ducks, Canvasbacks are probably the easiest to recognize. Males feature a chestnut-red head, charcoal black breast and rump, a white body, and a smooth, sloping black bill. Females feature the same distinctive head profile but have a buff-brown head and neck and pale brown body. Immatures of both sexes have plumage similar to adults by their first winter. The species gets its name from the fine vermiculations on its scapulars (Mowbray 2002).

Although having a somewhat similar plumage to Canvasbacks, Redheads differ by profile and smaller body size. Redheads have a rounder head. Males have a brighter red head, and both sexes have a grayish-blue bill that is tipped with black. Males feature a black breast and rump, similar to canvasbacks, but their gray body contrasts greatly with a canvasback's white body. Females appear tawnier than female Canvasbacks (Woodin and Michot 2002).

Greater and Lesser Scaup are two of the more difficult species to separate. The Greater Scaup has a more rounded, larger, green-tinted head that contrasts with the blacker, more purplish, smaller head of the Lesser Scaup. In hand, both sexes of Greater Scaup have a broader bill with a wider nail and white coloration that extends out onto the primaries (Kessel et al. 2002). On the

Lesser Scaup, this same white coloration normally remains only on the secondaries. Females of both species are brownish and feature a distinct white patch behind the base of the bill (Austin et al. 1998).



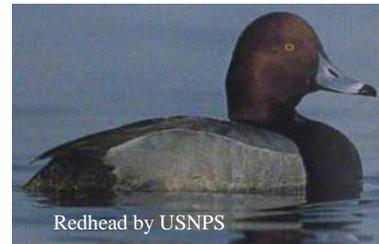
Ring-necked Duck by USFWS

Ring-necked Ducks are often confused with scaup. However, both sexes of the Ring-neck feature a distinctive, compact, peaked head profile. Further, there is a white triangle or “spur” on the breast sides that is plainly visible in males and faint in females. Both sexes of ring-necks also feature grayer wing bars, and the blacker backs of males and darker backs of females contrast to the grayer backs of scaup. Male Ring-necked Ducks feature a colorful bill of contrasting blue that is outlined in white with a black nail. Female Ring-

necked Ducks resemble female Redheads but are much smaller. Ring-necked Ducks are named for the faint chestnut-brown ring around a male’s neck (Hohman and Eberhardt 1998).

## Status

All 5 species of bay ducks occur throughout South Carolina. In most cases, their numbers place a degree of responsibility on this state for conservation efforts during wintering. The North American Waterfowl Management Plan (NAWMP) ranks canvasbacks as of moderate continental priority with high priority placed on nonbreeding populations in the Coastal Zone. Ring-necked Ducks are described as increasing and of moderate continental priority with conservation need moderately high in the Coastal Plain and Piedmont Ecoregions. As of the 2004 NAWMP, the Redhead is considered to be stable and of moderately high continental priority with populations in the Coastal Plain and Zone needing moderately high conservation priority. Greater Scaup are considered to be stable and of moderate continental priority with populations in the Piedmont and Coastal Plain of moderately high to high conservation need. Lesser Scaup are considered to be a high continental priority with populations decreasing. Across the State, conservation need for Lesser Scaup in the Upstate, Piedmont, and Coastal Plain are of moderate, high, and highest priorities, respectively (NAWMP 2004). Bay ducks are not listed species but are protected under the Migratory Bird Treaty Act.



Redhead by USNPS

## POPULATION SIZE AND DISTRIBUTION

Continentially, the bay duck group is doing well. Most species that are monitored by the Waterfowl Breeding Population and Habitat Survey are near or above their long-term averages (1955 to 2011) with the exception of the scaup species. Lesser and Greater Scaup are not differentiated during the breeding survey since it is difficult to identify the species from fixed-winged aircraft. However, it is known that Lesser Scaup are the more abundant species (Austin et al. 1999). The scaup species are currently 15% below their long-term average, and at 4.3

million birds, remain well below the North American Waterfowl Management Plan (NAWMP 2004) goal of 6.3 million.

With an average breeding population of slightly more than 500,000 individuals, Canvasbacks are historically the least numerous of the bay ducks in North America. Canvasback populations have shown no major trend over the long term, and the 2011 breeding population estimate of 700,000 puts the species 21% over its long-term average (Zimpfer et al. 2011).

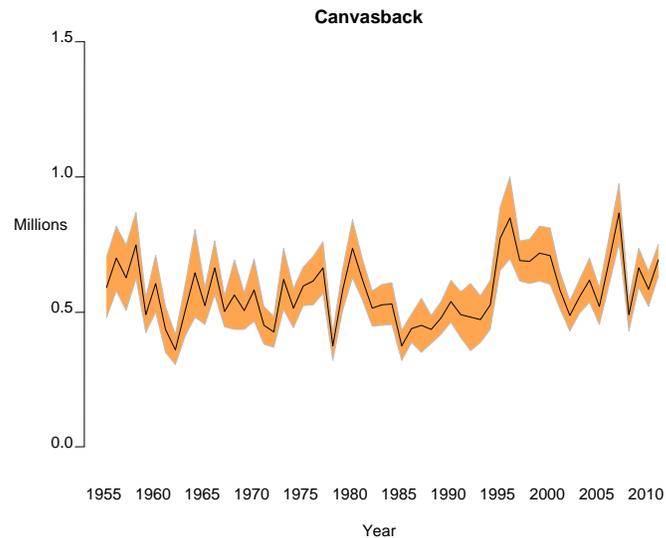


Figure 1. Breeding population estimates, 95% confidence intervals, and North American Waterfowl Management Plan population goal (dashed line) for canvasback in the traditional survey area. (Taken from Zimpfer et al. 2011).

Redhead populations have nearly doubled in the last decade. Their current breeding population (2011) is 106% above the long term average and above NAWMP goals.

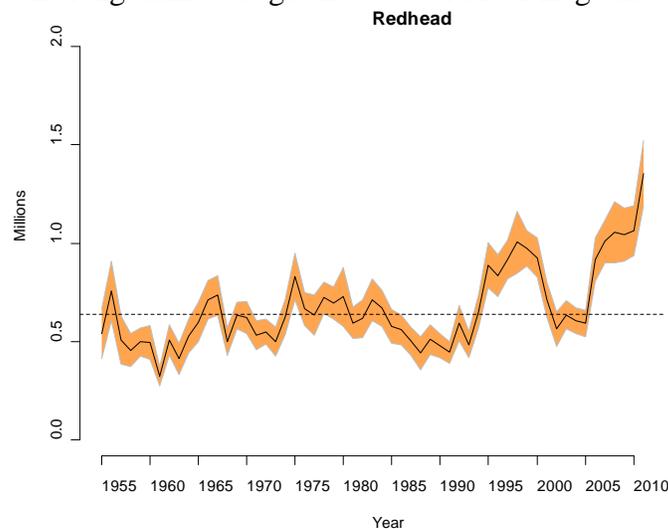


Figure 2. Breeding population estimates, 95% confidence intervals, and North American Waterfowl Management Plan population goal (dashed line) for redhead in the traditional survey area. (Taken from Zimpfer et al. 2011).

The breeding population of ring-necked ducks was estimated at 484,000 birds in 2011 in the Eastern Survey area.

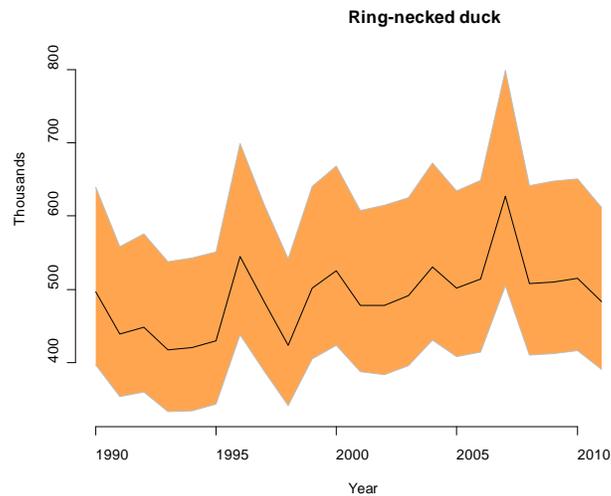


Figure 3. Breeding population estimates and 90% credibility intervals for the ring-necked duck in the eastern survey area. (Taken from Zimpfer et al. 2011).

Ring-necked Ducks are the most common species found wintering in South Carolina, but substantial numbers of scaup, and nearly all Lesser Scaup, have been sighted in Charleston Harbor, on Bull Island, and in the nearshore waters of the Atlantic Ocean. Post and Gauthreaux (1989) listed Ring-necked Ducks and lesser scaup as very common, Redheads and Canvasbacks as fairly common, and Greater Scaup as a rare winter visitor.

Mid-winter Waterfowl Survey (MWS) data for the 1999-2011 period estimated the number of wintering Ring-necked Ducks in South Carolina to average 21,318 for the 10-year period. The number of scaup species observed during the MWS is highly variable, but averages about 5,400 ducks for the same 10 year period. Although never very high relative to wintering populations found elsewhere in the Atlantic flyway, Canvasback populations wintering in South Carolina have declined and number less than 1,000 ducks. The wintering Redhead population in South Carolina was never large either, but this species has declined as well; less than 100 birds are observed annually. Christmas Bird Count data indicates similar trends as the MWS.

## HABITAT AND NATURAL COMMUNITY REQUIREMENTS

All 5 bay duck species occur primarily in fresh or brackish water habitats across the State. Most species are associated with large inland reservoirs, such as Lake Murray, the Santee Cooper lakes, and the Savannah River lakes, and managed wetlands along the coast. Lesser Scaup are known to use tidal, estuarine, and nearshore ocean habitats. Ring-necked Ducks have the widest distribution across the State, occurring in reservoirs, Carolina bays, and coastal managed wetlands. Historically, rafts of Canvasbacks were known to use the lower reaches of Winyah Bay, which was probably part of the large flock that utilized Middleton Pond, a diked tidal creek located east of Georgetown (Cely 1979). Currently, Canvasbacks do not use Winyah Bay, very

few are observed on Middleton Pond, and the birds that formerly wintered in Charleston Harbor no longer do so. The largest known concentration that occurs with any regularity is on Bull Island, located within Cape Romain National Wildlife Refuge. Because Greater Scaup and redhead numbers are so low in the State, little is known about them. However, both species are found in brackish to saline habitats elsewhere in the Atlantic flyway. Greater Scaup feed on benthic organisms while redheads are primarily vegetarian (Stewart 1962; Quay and Critcher 1962; Perry and Uhler 1982).

Some research has been conducted on food habits of bay ducks in South Carolina. Working in various fresh to brackish water coastal habitats, Kerwin and Webb (1971) found that watershield (*Brasenia schreberi*) was the most important food item by volume for 78 Ring-necked Ducks followed by saltmarsh bulrush (*Scirpus robustus*). Panicgrasses (*Panicum* spp.), smartweeds (*Polygonum* spp.), and spikerushes (*Eleocharis* spp.) were the most important food items for 15 scaup collected. Landers and others (1976) collected ducks from managed wetlands in the ACE Basin and reported smartweed, panicgrass, and saltmarsh bulrush were favored by Ring-necked Ducks, while saltmarsh bulrush and widgeongrass (*Ruppia maritima*) were common in Lesser Scaup. Perry and Uhler (1982) found that widgeongrass was the predominant food in 17 Lesser Scaup from South Carolina, but animal food accounted for 56% of the total volume consumed. Animal food consisted of lobed moon shell (*Polinices duplicatus*), dwarf surf clam (*Mulina lateralis*), and recurved mussel (*Brachidontes recurvus*). One Ring-necked Duck was reported to feed mainly on widgeongrass seeds. Perry and Uhler (1982) found plants formed 100% of the food items from 3 Canvasbacks collected on Andersonville Pond in South Carolina. Sago pondweed (*Potamogeton pectinatus*), slender pondweed (*Potamogeton pusillus*), and banana waterlily (*Nymphaea mexicana*) were the major plants. Cely (1979) estimated that 37% of the estimated 2,000 Canvasbacks wintering in South Carolina in 1977 were feeding on banana waterlily. R. A. Kennamer (unpublished data) stated that Lesser Scaup wintering at Savannah River Site fed dominantly on an animal diet composed mainly of mollusks with Asiatic clams (*Corbicula fluminea*) the preferred species. He found that Ring-necked Ducks were generalists, feeding on waterlily (*Nyphaea* spp.), spikerush seeds, freshwater snails, Asiatic clams, and dragonfly nymphs. Working on the same area, Bergan and Smith (1989) found that Ring-necked Ducks used more shallow habitats (emergent and floating-leaved vegetation), while Lesser Scaup preferred submergent vegetation and open water sites. Emergent and floating-leaved habitats were characterized by waterlily, watershield, spikerush, and bulrush while submergent habitats consisted of American wild celery (*Vallisneria americana*), spiked watermilfoil (*Myriophyllum spicatum*), and floating bladderwort (*Utricularia inflata*).

## CHALLENGES

Like other migratory birds wintering in South Carolina, the bay ducks are subject to problems outside of the state that can affect their numbers locally. Within South Carolina, they face additional challenges, mostly habitat-related. The majority of the bay ducks wintering in South Carolina use coastal managed wetlands. These are dynamic systems that require a substantial amount of financial resources to maintain and manage for the benefit of waterfowl. Several thousand acres are protected on state and federal properties, but private holdings could be subject to habitat degradation. Many birds also winter in Carolina bays or similar sized depressional wetlands, which are especially susceptible to altered hydrology.

Disturbance and habitat degradation associated with shipping traffic and offshore sand mining activities (for beach renourishment) may negatively affect Lesser Scaup. Since South Carolina supports one of the highest numbers of registered boats in the country, all bay duck species wintering on tidal waters or inland reservoirs could be subject to substantial disturbance from recreational boat traffic.

Hunting pressure does not currently appear to negatively affect these bay ducks. Very few Greater Scaup, Canvasbacks, and Redheads (less than 1,000 annually for each species) are reported in the State's harvest. Seasons for Canvasbacks and Redheads are typically restrictive, given the birds' historically low populations continentally. Lesser Scaup harvests have been low in the State as well. However, the birds have recently started using coastal managed wetlands more frequently. This could predispose them to higher harvest. Ring-necked Duck harvest in South Carolina has been increasing as the wintering population size increases. Currently, the harvest level (greater than 15,000 annually) has not appeared to affect wintering numbers.

#### CONSERVATION ACCOMPLISHMENTS

Aerial and ground surveys conducted as part of the Atlantic Flyway Mid-winter Waterfowl Survey have recorded the presence of bay ducks wintering in South Carolina. However, the surveys do not allow sufficient monitoring of Greater Scaup since these birds cannot be differentiated from fixed-winged aircraft. Land-based Christmas Bird Counts have documented the occurrence of bay ducks in the state. Past research has provided some insight into food habits, and thus, habitat associations of some species of bay ducks.

#### CONSERVATION RECOMMENDATIONS

- Implement more comprehensive surveys to monitor bay duck population numbers.
- Participate in research to determine the cause of continental declines in bay duck numbers. If causes of decline are associated with South Carolina wintering grounds, implement conservation actions to mitigate impacts.
- Establish more frequent winter surveys to document bay duck numbers and distribution.
- Monitor water quality and benthic organisms in offshore habitats used by scaup species.
- Maintain a rapid response procedure to oil spills.
- Ensure adequate safeguards and regulations are in place to protect offshore habitats utilized by bay duck species.
- Maintain winter banding of bay duck species to document timing and location of migration, harvest areas, and survival rates.

#### MEASURES OF SUCCESS

An increase in the number of bay ducks that winter in South Carolina is an appropriate measure of success of conservation actions implemented for these species.

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