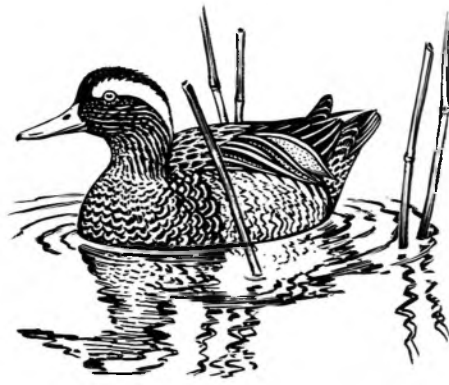


Status of Palearctic wildfowl in Northeast and East Africa

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The status of 28 species of Palearctic wildfowl in Northeast and East Africa during the Palearctic winter is reported. Species with large annual wintering populations include Northern Shoveler estimated at 150,000-340,000, Common Coot at 40,000-260,000, Garganey 95,500-181,000, Eurasian Wigeon 50,000-132,000 and Northern Pintail 32,000-113,000. Numbers of Garganey and Pintail may be as high as 500,000 and 300,000, respectively, in some years due to west-east movements in Sahel Africa that are associated with drought. The large numbers of Shoveler suggest that eastern Africa is a major wintering area for this species. The paper also reports on key wetlands, including Lake Burullus in the Nile Delta and the Omo River Delta and upper portion of Lake Turkana, where 100,000 or more wildfowl sometimes winter annually.

Population estimates, trends and distributions of swans, geese, ducks and coots wintering in West Africa and the Western Palearctic, including West and East Mediterranean regions, are well documented (Monval & Pirot 1989). Except for Egypt, few data, however, are available for Northeast and East Africa especially for the entire Nile basin where up to a million ducks may winter.

This paper reports the status of Palearctic wildfowl in Egypt, Sudan, Ethiopia, Somalia, Uganda, Kenya and Tanzania during the Palearctic winter, and lists key wetlands that harbour large concentrations of birds. There are no published data on wildfowl in Djibouti, so this nation is not cataloged. Data included were obtained from the literature and correspondents through September 1992, and from unpublished observations made by the author during his stay in Ethiopia from 1964 to 1975.

Results

Thirteen species of Palearctic wildfowl are known regularly to spend the Palearctic winter in Northeast and East Africa, while 15 additional Palearctic species are known to be uncommon or rare. The estimated numbers of individuals given below are based on known concentrations, but there are probably large flocks in Northeast and East Africa that remain to be recorded. Thus, the figures given are tentative, but are the best yet avail-

able. The sequence, and scientific and English-language names follow Sibley & Monroe (1990).

Oxyura leucocephala. In the early 20th century, the White-headed Duck was a rare winter visitor to Egypt with a few (over 40 in 1925) reported at the Nile Delta lakes every winter between early November and March (Meinertzhagen 1930). None has been reported since.

Cygnus olor. The Mute Swan occurs only in Egypt where it is a rare and irregular visitor between November and mid-May, occurring in small numbers mainly in the northern Nile Delta. In the 1980s, one to three have been reported every winter with a maximum of ten shot in the Nile Delta in the winter of 1985-86 (Goodman & Meininger 1989). A maximum number of 14 was recorded in May 1943 at Abu Qir Bay (Bodenham 1945).

Cygnus cygnus. Two records of the Whooper Swan have been reported in the last 50 years from Egypt, one in the autumn of 1948 at Lake Idku and the other in February 1976 along the Nile about 14 km north of Abu Tig (Goodman & Meininger 1989).

Anser fabalis. The Bean Goose is a vagrant to Egypt having been reported once in the last 50 years when two individuals were photographed in October 1982 near Sharm el Sheikh (Goodman & Meininger 1989).

Anser albifrons. The Greater White-fronted Goose is rare in Egypt and Sudan. **Egypt**. In the 19th and early 20th centuries, it was common and, as late as 1930, was seen

regularly in flocks (Goodman & Meininger 1989). Since then it has become rare, with a "few" noted at Dashur near Cairo in January 1976 (Meininger & Mullie 1981), eight near Asyut in February 1983, three at Abu Simbil in March 1982 and one at Sharm el Sheikh in January 1983 (Goodman & Meininger 1989). **Sudan.** The goose has been reported north of 14°N on three occasions, the most recent record being a flock of 12 at Port Sudan in December 1982 (Nikolaus 1984).

Anser erythropus. Lesser White-fronted Geese were reported in the late 19th and early 20th centuries in Egypt, the last record being six for sale in a Cairo market in February 1928 (Goodman & Meininger 1989).

Anser anser. Although bone remains and art representatives of the Greylag Goose are known from Dynastic Egypt, the only record in the 19th and 20th centuries was that of a flock of six at Lake Maryut in January 1942 (Goodman & Meininger 1989).

Branta leucopsis. The only record of a Barnacle Goose was of a single female collected near Helwan, Egypt, in April 1931 (Goodman & Meininger 1989).

Branta bernicla. Although Brent Geese were common in parts of Egypt in the late 19th and early 20th centuries (Goodman & Meininger 1989), they are now rare to vagrant. The last sightings were of a small flock near Cairo in March 1922 and two "domestic" individuals in a village between El Balyana and Nago Hammadi in December 1977 (Goodman & Meininger 1989).

Branta ruficollis. The Red-breasted Goose was last recorded in Egypt in the 1880s when single birds were collected near Alexandria and Damietta (Goodman & Meininger 1989).

Tadorna ferruginea. The Ruddy Shelduck was a fairly common winter visitor to Egypt and northern Sudan in the late 19th and early 20th centuries (Goodman & Meininger 1989). Since the 1950s, however, there has been a decrease in numbers of wintering birds there. It is now an uncommon to rare winter visitor in Egypt, vagrant to Sudan, and an uncommon resident in the mountains of southeastern Ethiopia. It is not known if the records away from the breeding area in Ethiopia (and the two vagrant records in Kenya) represent wintering birds from southeastern Europe and central Asia or wanderers from this resident population. The total population in Northeast and East Africa probably numbers 250-600 with 100-200 pairs resident

in Ethiopia (Table 1). **Egypt.** In the late 19th and early 20th centuries up to 1930, the Ruddy Shelduck was a common visitor to the Feiyum, Wadi el Natrun and upper Egypt. Since the 1970s and 1980s, it has become a rare passage migrant and winter visitor from late October to early May mainly in the Nile Delta and Valley south to about Aswan. Recent records include six between Beni Hassan and El Amarna in February 1976 (Short & Horne 1981), three at Ras Muhammad in April 1979 and three at Suez in March 1982 (Goodman & Meininger 1989). Probably 50-100 Ruddy Shelducks visit Egypt annually. **Sudan.** This shelduck was a fairly regular visitor to the Nile north of Khartoum and Red Sea coast before 1955, but has not been reported there since (Nikolaus & Hamed 1984). **Ethiopia.** The status of Ruddy Shelduck from the Palearctic region wintering in Ethiopia is unclear because of the recent discovery of a breeding population on the Saneti Plateau in Bale Province. Ash (1977) reported 52 individuals at Lake Deemtu on the Saneti Plateau on 6 April 1975, and 46 there on 22 June 1976, including single birds, in pairs or groups of three, and three broods with young one to four months old. Malcolm (1982) also found pairs in the same area in January 1976 and 1977. Ash (1977) estimated that 30-35 pairs breed there while Malcolm (1982) suggested the breeding population may be twice as large. Because of the extensive size and suitable habitat present in this area, the total breeding population may reach 100-200 pairs. The localities, dates of observation and numbers of Ruddy Shelducks seen elsewhere in Ethiopia are given in Ash (1977). These observations, of 1-2 individuals at a time, were made August to February (outside the apparent breeding season in the Bales) and at localities over a wide area and elevation from Asmara (2300 m) in the north, Dubte (380 m) and Bahadu (530 m) in the east, Akaki (3970 m) and Gaferssa (2585 m) in the central Western Highlands, and Abiata (1573 m) in the Rift Valley. It is not known if these records represent Palearctic migrants or wanderers from the breeding area in the Bales. **Kenya.** One individual was reported "north of Ferguson Gulf", Lake Turkana in the late 1950s (Backhurst *et al.* 1973) and another on a dammed lake on the Laikipia Plateau in 1986 (Short *et al.* 1990).

Tadorna tadorna. The Common Shelduck occurs mainly in northern Egypt in concentrations of several thousand in some winters.

Table 1. Estimated numbers of Ruddy Shelduck *Tadorna ferruginea*. Note: the numbers from Ethiopia include 100-200 pairs that breed there.

Egypt	50-100
Sudan	vagrant
Ethiopia	200-500
Kenya	vagrant
Total	250-600

Table 2. Estimated numbers of Eurasian Wigeon *Anas penelope*.

Egypt	40000-70000
Sudan	5000-20000
Ethiopia	10000-40000
Somalia	less than 100
Kenya	800-1000
Tanzania	less than 100
Uganda	vagrant
Total	50000-132000

Egypt. Shelduck winter mainly in salt and brackish lakes in the north in numbers that vary annually. Largest concentrations in recent years include 1350 at Lake Manzala in winter 1989-90 (P.L. Meininger & G.A.M. Atta pers. comm.), 2650 at El Malaha in January 1973 (Meininger *et al.* 1979) and 3000-5000 at Wadi el Natrun in February 1983 (Goodman & Meininger 1989). The southernmost record is that of two individuals seen between Kom Ombo and Aswan in March 1986. Total numbers probably vary annually between 1000 and 6000. **Sudan.** The Shelduck is a vagrant, with one record at Port Sudan in December 1958 and another from Khartoum in spring 1981 (Nikolaus 1987).

Anas penelope. The Eurasian Wigeon is common in Egypt, Sudan and Ethiopia, found in some numbers in Kenya, but is uncommon in northern Tanzania and rare in Somalia. As many as 50,000 to 132,000 individuals may occur in Northeast and East Africa during the Palearctic winter (Table 2). **Egypt.** Wigeon are common passage migrant and winter visitors to inland lakes from late September to late April. Large flocks of several hundred to several thousand have been recorded in the Nile Delta lakes, Lake Qarum, and the Nile Valley south to Aswan. For example, 35,000 individuals were recorded at Lake Burullus, a delta lake, in January 1980, 23,400 on 8 February 1979 (Meininger & Mullie 1979, 1981), and 24,997 in the winter of 1989-90 (P.L. Meininger & G.A.M. Atta pers. comm.). Over 1800 were counted at Lake Qarum in 1978-79, 350 along the Nile from Cairo to Aswan in 1978-79 (Meininger & Mullie 1981), and 2600 at Lake Nasser in the winter of 1989-90 (P.L.

Meininger & G.A.M. Atta pers. comm.). One to 50 have been reported from the oases in the Western Desert and along the Red Sea coast (Goodman & Meininger 1989). Total numbers counted in Egypt were 36,000 in 1979-80 and 34,000 in 1989-90 (Meininger 1990). Probably 40,000-70,000 winter annually. **Sudan.** This species is a common winter visitor October to May, especially along the Nile Valley south to Khartoum. In January 1983, 1500 were counted on the Nile at Khartoum and another 1500 along 20 km of the Nile from Khartoum southward (G. Nikolaus pers. comm.). Small parties of two to ten have been recorded from scattered localities along the Red Sea coast and from Darfur, Bahr el Ghazel and Equatorial provinces. Probably 5000-20,000 winter annually in Sudan (G. Nikolaus pers. comm.). **Ethiopia.** The Wigeon occurs in large numbers on lakes in the Western and South-eastern Highlands, mainly from November to early April. Maximum numbers recorded (EKU pers. obs.) include 8000 at Lake Arakil in January 1973, 1500 at Lake Haik in January 1969, 1500 at Hippo Pool (Jimma) in January 1969, 4000-4300 at Lake Adele in December 1969 and 1500 at Lake Alemeya in January 1973. S. Tyler & J.S. Ash (pers. comm.) reported 2000-2500 at Lake Arakit in November 1974, and Malcolm (1982) noted 600 on the Saneti Plateau in the Bale Mountains in January 1976 and January 1977. Large numbers have been reported at lower elevations along the Awash River, including 1000 at Dubte (Tendaho Plantation) in January 1969 (EKU pers. obs.). Smith (1957) reported this species as "regular" on Eritrean plateau lakes and along the Red Sea coast during the Palearctic winter. It is, however, uncommon to rare in the Rift Valley, where, for example, during more than 200 visits to Lake Abiata, only 1-17 individuals were recorded at any visit (EKU pers. obs.). Some occasionally also overwinter in Ethiopia, with Ash (1977) reporting two at Lake Deemtu in June 1976). The total population probably varies annually from 10,000 to 40,000. **Somalia.** This species is rare, with 1-3 seen at any time along the coast and inland at scattered localities south to 2°N and east to 50°E (Ash & Miskell 1983, 1988). Less than 100 probably winter annually in this nation. **Kenya.** Wigeon occur mainly at Lake Turkana but also above 1600 m in highlands of the central Rift Valley and adjacent areas west of 38°E. It usually is seen in flocks of 20 or less, mainly December to early March. Exceptional concentrations reported

were over 500 along the east side of Lake Turkana in February 1987 (Shekerman & van Wetten 1987), 150 at Lake Turkana's El Molo Bay in February 1976 (Steinbacher 1977) and 140 at Lake Naivasha in November 1978 (Britton 1980). The total wintering population in Kenya is about 800-1000 (D. Pearson pers. comm., Meadows 1984). **Tanzania.** Several flocks up to 20 have been noted (Britton 1980) as far south as Ngorongoro and Arusha National Park. Probably less than 100 wintering annually. **Uganda.** The Wigeon is a vagrant, with a single individual seen in February 1967 and another in December 1970 in Rwenzori National Park (M. Carswell pers. comm.).

Anas strepera. The Gadwall is a common winter visitor to Egypt but is uncommon to rare elsewhere. The total population in Northeast and East Africa is probably 1300-2500 (Table 3). **Egypt.** Gadwall are common in inland lakes south to Aswan mid-October to mid-April; largest counts include 235 at Lake Burullus in February 1979 (Meininger & Mullie 1981), 500 on the Nile between Cairo and Aswan in 1977 (Short & Horne 1981), and 1110 in "major" wetlands during a survey in January 1990 (Meininger 1990). Probably 1000-2200 winter annually in this nation. **Sudan.** Uncommon to rare, Gadwall occur mainly in the Nile River valley south to about 13°N but also the Red Sea coast. G. Nikolaus (pers. comm.) estimated numbers in 1980-1983 varied annually from 10-100. **Ethiopia.** The Gadwall is regular on passage along the Red Sea coast in October where up to 20 at a time have been recorded (Smith 1957). One to four at a time have been seen elsewhere at scattered localities including three at Metahara in September 1968, one at Lake Cheleleka in January 1967, two at Lake Arakit in November 1973 and one at Gaferssa in January 1965 (Urban 1991, P. Hay & S. Tyler pers. comm., Eku pers. obs.). One hundred to 200 winter annually in Ethiopia. **Somalia.** The Gadwall is a vagrant, with two "old" records from about 10°N, 45°E (Ash & Miskell 1983). **Kenya.** The Gadwall probably also is a vagrant, having been reported seven times with up to four together at any time, but none since 1974 (Pearson & Meadows 1992). Five records were in or west of the Rift Valley (Lewis & Pomeroy 1989). **Tanzania.** There is a record of three Gadwall noted in December 1964 at Ngorongoro Crater Lake (Backhurst *et al.* 1973).

Anas crecca. The Common Teal is a com-

Table 3. Estimated numbers of Gadwall *Anas strepera*, Northeast and East Africa.

Egypt	1000-2200
Sudan	less than 100
Ethiopia	100-200
Somalia	vagrant
Kenya	vagrant
Tanzania	vagrant
Total	1300-2500

Table 4. Estimated numbers of Common Teal *Anas crecca*.

Egypt	5000-15000
Sudan	20000-50000
Ethiopia	1000-5000
Somalia	less than 200
Kenya	50-300
Tanzania	less than 50
Uganda	less than 100
Total	26000-70000

mon passage migrant and winter visitor to Egypt and Sudan south to central Ethiopia. It is also found farther south in smaller numbers in Somalia, Kenya, Uganda and northern Tanzania. Largest numbers are in Egypt south to northern Sudan with the total population in Northeast and East Africa varying annually from 26,000 to 70,000 (Table 4). **Egypt.** The Teal is common in most inland lakes from early September to mid-April. Maximum numbers recorded were 4700 at Lake Manzala in December 1979 (Meininger & Mullie 1981), 4445 there in the winter of 1989-90 (P.L. Meininger & G.A.M. Atta pers. comm.), "thousands" on the Nile near Idfu in December 1982, 2100 between Tima at El Balyana in March 1983 and 1000 at Lake Qarun in January 1979 (Goodman & Meininger 1989), and 3004 there in the winter of 1989-90 (P.L. Meininger & G.A.M. Atta pers. comm.). Large numbers migrate along the north coast of Sinai in autumn, such as 3000 noted at Zaranikh between 16 August and 24 September 1981 and 335 on 15 September (Goodman & Meininger 1989). Small numbers are seen along the Mediterranean and Red Sea coasts mainly in autumn and spring migrations (Goodman & Meininger 1989). The maximum number of Teal counted in 1979-80 was 5500 and in 1989-90 11,400 (Meininger 1990). The total annual population is probably 5,000-15,000. **Sudan.** The Teal is a common to abundant winter visitor, mainly from October to February, on inland lakes and rivers and coastal waters especially south to about 10°N (G. Nikolaus pers. comm.). Estimates in 1980-1983 indicate the total population varies annually from 20,000 to 50,000 (G.

Nikolaus pers. comm.). **Ethiopia.** The Teal is a common winter visitor and autumn and spring passage migrant from early October to mid-March, mainly in the Western and South-east Highlands and northern coastal areas. Teal appear, however, to be uncommon to rare in the Rift Valley and southern Ethiopia. Counts include 300 at Dubte (Tendaho) in January 1969 (EKU pers. obs.), 200 at Lake Deemtu in the Bales in January 1976 and 1977 (Malcolm 1982), "vast numbers" at Lake Arakit (S. Tyler pers. comm.), 1500 at Lake Alemaya in January 1973 (Ethiopian Wildlife and Natural History Society notes) and one to 20 at a time during numerous visits to Lake Abiata December-March 1969-70 (EKU pers. obs.). The total population is probably 1000-5000. **Somalia.** Teal are rare to uncommon, with one to five, occasionally up to 55 reported from inland lakes and coastal areas scattered south to about 1°N (Ash & Miskell 1983, 1988). Total annual numbers are less than 200. **Kenya.** The Teal is found regularly in flocks of 10-20, occasionally up to 60, mainly west of 38°E in the central Rift Valley and adjacent highlands. Stragglers have been reported farther south but none have been seen in coastal areas. The total population is 50-300 (Pearson & Meadows 1992). **Tanzania.** This duck has been reported in small numbers from several localities in the northern Rift lakes south to Ngorogoro Crater Lake (Backhurst *et al.* 1973). The total population is less than 50. **Uganda.** Teal are rare, with one to eight reported at a time, mainly in the west including Toro Crater lakes, Rwenzori National Park and Murchison Falls National Park (Pearson & Turner 1986, M. Carswell pers. comm.).

Anas platyrhynchos. The Mallard is fairly common in Egypt mainly in the north, but uncommon to rare elsewhere in eastern Africa. The total population is 1000-6000 (Table 5). **Egypt.** The Mallard is a fairly common passage migrant and winter visitor from mid-September to late March. It is seen regularly on all Nile Delta lakes, Lake Qaran, along the Nile south to Aswan, and in Western Desert oases (Goodman & Meininger 1989). Maximum numbers are 1312 at Lake Burullus, 1364 at Lake Manzala, and 1500 at El Malaha in northern Sinai in the winter of 1989-90 (P.L. Meininger & G.A.M. Atta pers. comm.). Maximum total annual counts for Egypt were 420 in 1978-79 and 5400 in 1989-90 (Meininger 1990). Total numbers probably vary annually from 1000 to 6000. **Sudan.** The species has

been reported only occasionally in twos and threes and probably is rare to vagrant (G. Nikolaus pers. comm.). **Ethiopia.** Mallard are uncommon in the highlands of Eritrea and rare to vagrant elsewhere. Smith (1957) reported Mallard in "some" numbers in the 1940s with a maximum of 250 to 600 in the winter of 1946-47 which, according to him, was "far more than normal". The total population is probably less than 100. **Kenya.** There are no confirmed records of Mallard in Kenya although it may be vagrant in the north (Lewis & Pomeroy 1989).

Anas acuta. The Northern Pintail is an abundant passage migrant and winter visitor in Northeast and East Africa, wintering in large concentrations in Sudan, Ethiopia and Kenya. The total population is at least 32,000 and it may be as high as 113,000 (Table 6). **Egypt.** The Pintail is a fairly common passage migrant and winter visitor mid-September to late April. In autumn, large numbers migrate south in a broad front, especially along the coast of Sinai, and the Nile delta and valley. Short & Horne (1981) considered it one of the commonest ducks along the Nile with numbers varying from year to year. Largest counts recorded were 1148 in the Nile Delta (P.L. Meininger & G.A.M. Atta pers. comm.) and 700 at Lake Dahshur (Giza) and 400 at El Abbassa in January 1976 (Goodman & Meininger 1989). Maximum total annual numbers were 670 in 1978-79 and 2500 in 1989-90 (Meininger 1990). Some 1000-5000 winter in Egypt with many more passing through during autumn and spring. **Sudan.** The Pintail is common on inland lakes and rivers and along the coast October to April. In January 1983, G.

Table 5. Estimated numbers of Mallard *Anas platyrhynchos*.

Egypt	1000-6000
Sudan	vagrant
Ethiopia	less than 100
Kenya	vagrant?
Total	1000-6000

Table 6. Estimated numbers of Northern Pintail *Anas acuta*.

Egypt	1000-5000
Sudan	20000-50000
Ethiopia	5000-25000
Somalia	300-1000
Kenya	5000-30000
Tanzania	300-1000
Uganda	300-1000
Total	32000-113000

Nikolaus (pers. comm.) counted 3500 Pintail in the Nile at Khartoum, 500 along 20 km of the Nile south of Khartoum and 1000 at the Jebel Aulia Dam; and Kingdon (1984) reported "substantial" numbers in winter in the Sudd. The total population is 20,000-50,000.

Ethiopia. This species is widespread from October to mid-March, occurring commonly in the highlands and abundantly in the Omo River Delta of Lake Turkana where as many as 10,000 may winter (Stevenson 1982). It is found, but is not so common, in coastal areas, the Rift Valley and elsewhere in southern Ethiopia. Additional reports of large numbers include "vast" numbers at Lake Arakil in November 1973 (S. Tyler pers. comm.), 2500 at Bahadu in February 1975 (J.S. Ash pers. comm.), 1500 at Lake Alemeya in January 1973 (Ethiopian Wildlife and Natural History Society files), 600 at Lake Deemtu in Bale Mountains in January 1976 and 1977 (Malcolm 1982), 2000 at Lake Abiata and 750 at Lake Adele in December 1968 (EKU pers. obs.) and 600 at Tendaho in January 1969 (EKU pers. obs.). Some overwinter, with 13 at Lake Arakil on 27 June 1974 (S. Tyler pers. comm.). The total population is 5000-25,000.

Somalia. Typically this duck occurs in small numbers in scattered inland and coastal localities south to about 1°. It was, however, abundant in the winter of 1979-80 when 600 were seen in Webbi Shebelle and Juba valleys (Ash 1983). The total population is 300-1000.

Kenya. The Northern Pintail is a common to abundant winter visitor between mid-November to mid-March with thousands wintering on lakes and dams in the west and central highlands. Pintail also occur along the coast and below 1400 m, but in small numbers, 10-20 at a time. Largest concentrations include 10,000 at the Omo River Delta of Lake Turkana (Stevenson 1982), 461 at Loyengalani Bay and 2100 along 165 km of the east shore of Lake Turkana in the winter of 1987 (Shekerman & van Wetten 1987), 8000 at Kingangop Dam in January 1981 (Lewis & Pomeroy 1989), 5000 at Lake Ol Bolossat in December 1976 (Pearson & Meadows 1992), 4000 at Lake Naivasha in January 1984 (J.K. Eltringham pers. comm.), 1000 at Thika Oxidation ponds in November 1987 (Pearson 1989), 5000 at Lake Sergoit in January 1981 (D.L. Pearson pers. comm.), 3000 at Makuyu in February 1985 (Pearson & Meadows 1992), and 1860 at Lake Baringo in January 1980 (Meadows 1979, 1982). The total population varies annually from 5000 to 30,000 (Pearson & Meadows

1992). **Tanzania.** This duck is fairly common south to the Momela lakes in Arusha National Park and Ngorongora Crater Lake where 200 occasionally are reported. Individuals, however, have been recorded as far south as Usangu Flats (just north of Mbeya) and Lake Sundu in the Ufipa Highlands (N.E. Baker pers. comm.). Total population is 300-1000.

Uganda. The Pintail is common in the southwest where 250 have been seen at Rwenzori National Park and large flocks noted at Murchison Falls National Park (Pearson & Turner 1986). Elsewhere especially away from the western Rift it is uncommon with one to five seen at a time although 70 were once reported at Entebbe (Pearson & Turner 1986, Carswell 1986). Total wintering population is 300-1000.

Anas querquedula. The Garganey is an abundant passage migrant in Egypt where 10,000-20,000 in a day and over 225,000 during a period of 30-40 days have been counted along the north coast of Sinai (Petersen & Sorensen 1981). The Garganey does not, however, remain in Egypt but winters mainly in southern Sudan, Ethiopia, Somalia, Kenya and Uganda where it is one of the most common Palearctic ducks especially in East Africa. Although the status of the Garganey in several areas of Northeast and East Africa remains poorly known, the existing data indicate that the annual population there is between 95,000 and 181,000 (Table 7).

Egypt. The Garganey is a common passage migrant in autumn late July to late October and in spring late February to mid-May, with especially large numbers recorded from the north coast of Sinai. Counts made on this coast at Zaranikh include 96,000 birds between 13 August and 29 September 1973, 203,400 between 15 August and 5 October 1978, 85,000 between 7 and 30 September 1980, 222,000 between 16 August and 24 September 1981 (with a maximum of 22,150 on 9 September) 94,400 between 2 and 4 September 1982 and 113,000 between 22 August and 29 September 1986 (Meininger & Mullie 1981, Goodman & Meininger 1989). Sizeable flocks have also been noted on the Nile Delta lakes, Nile Valley, Suez Canal and Red Sea in passage migration, including 600 at Ras Shukheir in October 1984, 450 on the Nile between Isna and Aswan in October 1983, 1700 near Aswan between 29 September and 3 October 1981 (Goodman & Meininger 1989), 300 at Baltim and 400 at Suez in March 1981 (Goodman & Meininger 1989), 717 along the Nile between Cairo and Aswan

from 14-24 March 1985 (Goodman & Meininger 1989) and 14,000 that passed over Suez on a single day in March and April 1990 (Meininger 1990). The large flocks of Garganey apparently do not remain in Egypt, but probably winter to the south in subsaharan Africa. The latest autumn record in Egypt noted in recent years is 131 on Lake Nassar between 20-22 November 1981 (Goodman & Meininger 1989). **Sudan.** The Garganey is an abundant winter visitor to lakes, rivers and coastal areas from August to April. Large numbers have been reported south of 12° (Nikolaus 1987) but precise data are lacking. Mefit-Babtie (1983) reported "im-mense" numbers in the Sudd/Jonglei area; and Kingdon (1984) noted "substantial" numbers in the Sudd and "tens of thousands" near Nyany in the north of Bor during an aerial survey in February 1980. In January 1983, G. Nikolaus (pers. comm.) counted 500 at Khar-toum and, in February 1983, 11,000 at Lake Keilak and 5000 at Lake Abiad. According to Nikolaus, some 20,000 birds winter north of 10°N and 50,000-100,000 south of 10°N. Based on these figures, the total wintering population in Sudan is 70,000-120,000. **Ethiopia.** This duck is widespread and locally common to abundant October to April. In Eritrea it is common on highland lakes and coastal areas in autumn and spring but rare in winter (Smith 1957). In the Lake Tana and Tacazze Valley it is common to abundant from late August to early May. Farther south, 400 were reported at Sululta in September 1975 and 129 at Koka in March 1976 (J.S. Ash pers. comm.), 50 at a time in Awash National Park in September and October 1967-68 (P. Hays pers. comm.) and 50 at Abiata in October 1967 (EKU pers. obs.).

Especially large winter counts include 1500 at Lake Alemaya in January 1973 (Ethiopian Wildlife and Natural History Society files), 500 at Lake Boio in November 1974 (J.S. Ash pers. comm.), 500 at Hippo Pool in Jimma in February 1968 (W. Krug pers. comm.), 200 at Karakore Swamp in December 1969 (Ethiopian Wildlife and Natural History Society files) and "vast" numbers at Lake Arakit in November 1973 (S. Tyler pers. comm.). Some also oversummer, with three at Lake Arakit on 18 June 1973 (S. Tyler pers. comm.). The total population wintering probably varies annually from 5000 to 10,000. **Somalia.** Garganey are locally abundant in southern inland wetlands south of 6°N October to May, but rare along the coast and north of 6°N, with only four to

five records from scattered localities known from these areas. No estimate of numbers has been reported except that the Garganey is "common in large numbers" south of 6°N (Ash & Miskell 1983). It is possible that 10,000 winter there. **Kenya.** The Garganey is the most widespread Palearctic duck in Kenya, occurring as a passage migrant and winter visitor. The main flocks arrive between mid-October and November and depart between the end of March and mid-April. It is found from sea level to 3000 m (Britton 1980), sometimes in flocks of hundreds, up to a thousand (Lewis & Pomeroy 1989). Large numbers include 3000 at Ferguson's Gulf in December 1985 (Pearson & Meadows 1992), 2000 at Thika Oxidation ponds in November 1987 (Pearson 1989), 2500 at the Tana River bridge in February 1983 (S.K. Eltringham pers. comm.), 3000 at Ahero Rice Scheme, Nyanza, in February 1983 (S.K. Eltringham pers. comm.), 600 at Lake Naivasha in January 1980 (Meadows 1984) and 5000 at Makuyu in February 1985 and 3000 there in January 1984 (Pearson & Meadows 1992). Some oversummer but do so rarely with one female seen at the Thika Oxidation ponds on 9 August 1988 (Pearson 1990). Total population in Kenya probably varies annually from 10,000-30,000 (Pearson & Meadows 1992). **Tanzania.** A regular visitor to northern Tanzania south to Lake Manyara, in small numbers (Britton 1980), the Garganey has been recorded as far south as coastal salt pans at Dar es Salaam (less than 20), Lake Sundu in the Ufipa Highlands and Usangu Flats (just north of Mbeya) (N.E. Baker pers. comm.). The total population is probably 1000. **Uganda.** The Garganey is less numerous today than it was in the first half of the 20th century when "thousands" were reported (M. Carswell pers. comm.). Today it still is found in fairly large numbers in the southwest part of Uganda mainly in the Rwenzori National Park and in the southeast in the Kibimba Rice Scheme (Pearson & Turner 1986); but elsewhere it is apparently less common, occurring usually in flocks of one to five (M. Carswell pers. comm.). Largest numbers reported were 707 at Rwenzori National Park in February 1972 with 3684 actually sexed there in 1971 (Eltringham 1973). Probably 5000-10,000 winter annually in Uganda.

Anas clypeata. The Northern Shoveler is common in Egypt, Sudan, Ethiopia and Kenya, with some also occurring in Somalia, Tanzania and Uganda. The total population wintering in Northeast and East Africa varies annu-

Table 7. Estimated numbers of Garganey *Anas querquedula*. Note: In Egypt present only as passage migrant in autumn and spring when over 225000 reported in autumn on north coast of Sinai; none winter there.

Egypt	none
Sudan	70000-120000
Ethiopia	5000-10000
Somalia	10000 (?)
Kenya	10000-30000
Tanzania	1000
Uganda	5000-10000
Total	95000-181000

Table 8. Estimated numbers of Northern Shoveler *Anas clypeata*.

Egypt	50000-100000
Sudan	20000-50000
Ethiopia	70000-140000
Somalia	less than 100
Kenya	10000-50000
Tanzania	100-300
Uganda	100-300
Total	150000-340000

ally from 150,000 to 340,000 birds (Table 8). **Egypt.** The Shoveler is a common passage migrant and winter visitor late August to mid-May. Largest counts include 53,000 in January 1980 and 63,500 in January 1979 at Lake Burullus, 8800 at Lake Manzala and 11,700 at Lake Qarun in January and February 1979 (Meininger & Mullie 1979, 1981). Elsewhere in Egypt it has been reported along the Nile south to Aswan (19-22 individuals from Cairo to Aswan), the Red Sea coast (ones and twos in passage, a few winter records) and the Western Desert oases (small numbers) (Goodman & Meininger 1989). A decline in overall numbers may have taken place in the 1980s since Meininger (1990) reported a maximum of 75,500 in 1979-80 but 42,500 in 1989-90. The total wintering population is 50,000-100,000. **Sudan.** This duck appears to be a common to abundant winter visitor on inland lakes and rivers October to March. Only detailed counts available are 2000 at Khartoum, 1500 along 20 km of the Nile south of Khartoum and 200 at Jebel Aulia Dam in January 1983 (G. Nikolaus pers. comm.). The total population in 1980-83 was estimated at 20,000-50,000 birds (G. Nikolaus pers. comm.). **Ethiopia.** Shovelers are common to abundant winter visitors October to May. They are especially abundant below 2100 m in the Rift Valley where concentrations of tens of thousands have been reported. The largest concentration noted is in the Omo

River Delta where Stevenson (1982) estimated 50,000-90,000 may winter there. Other large concentrations include 2000-8000 at Lake Abiata on January 1965-70 (EKU pers. obs.), "vast" numbers at Lake Arakit in November 1973 (S. Tyler pers. comm.), 3000-3300 at Lake Adele in December 1968 (EKU pers. obs., S. Tyler pers. comm.), 6000 at Lake Langhu in December 1968 (EKU pers. obs.), 5000 at Lake Alemaya in January 1973 (Ethiopian Wildlife and Natural History Society files), and 1100 at Lake Cheleleka in January 1969 (EKU pers. obs.). This species has also been reported at Lake Tana (common, Olson 1976), highlands of Eritrea (fairly common, Smith 1957), Jimma (several hundred, W. Klug pers. comm.), Gaferssa (a maximum of 67 at one time, Urban 1991), Lake Ashangi (100, EKU pers. obs.), Kaliti Sewage Plant (450, Ethiopian Wildlife and Natural History Society files), and Akaki Pools (180, Ethiopian Wildlife and Natural History Society files). Large numbers winter in Ethiopia, probably 75,000-140,000 annually. Some also overwinter, with 16 seen on 16 July 1965 and one on 10 August 1965 at Lake Abiata (EKU pers. obs.). **Somalia.** Shovelers are rare to uncommon visitors, having been recorded only 12 times at scattered inland and coastal localities south to about 2°N. Most records are of single birds although two flocks of nine and 24 were noted (Ash & Miskell 1983, 1988). Probably less than 100 winter each year in Somalia. **Kenya.** The Shoveler is common to abundant in the Rift lakes and in the west and central highlands with the main flocks arriving late October and November and leaving late February and mid-March. In some years it occurs in the Rift in tens of thousands. It is uncommon below 1500 m except at Lake Turkana where 10,000 were reported at Ferguson's Gulf in 1980 (Lewis & Pomeroy 1989), 2450 along 165 km of the east shore of Lake Turkana in 1987 (Shekerman & van Wetten 1987) and 50,000 or more at the Omo River Delta in March 1982 (Stevenson 1982). Other large counts include 10,000 at Lake Ol Bolossat in December 1976 (Pearson & Meadows 1992), 2200 at Lake Naivasha in January 1980 (Meadows 1984), 5000-6000 at Lake Nakuru in 1980 (Meadows 1984), and 8000 at Lake Solai in February 1981 (Pearson & Meadows 1992). The total population probably varies from 10,000-50,000 with larger numbers probably present in dry years (Meadows 1984). Meadows (1980) has suggested that a decrease in overall numbers may have oc-

curred since the early 1970s. **Tanzania.** This duck occurs mainly in the north with flocks of up to five reported in Arusha National Park (Britton 1980). It has also been reported occasionally as far south as Lake Rukwa (Britton 1980) and the total number is probably 100-300. **Uganda.** Shoveler are uncommon in Uganda, with usually one to three reported at scattered localities. The maximum number reported is 20 in Rwenzori National Park and nine at the Kibimba Rice Scheme (Pearson & Turner 1986). The total population is probably 100-200.

Marmaronetta angustirostris. The Marbled Teal is a rare breeding resident on inland lakes in Egypt. It probably is also nomadic there since it is observed after the breeding season late August to mid-March in areas where it is not known to breed. There is no evidence to suggest that birds from Israel, Turkey, Iraq, Iran and Soviet Union winter in Egypt, or that it is found elsewhere in eastern Africa including Kenya where the old records from Kisumu and Nairobi are no longer accepted (Lewis & Pomeroy 1989). This Teal was known to breed in Egypt in the Western Desert at Wadi el Natrum early in the 20th century when Meinertzhagen (1930) reported one clutch of four and Nicol (1912) observed several young. It also probably bred in the Nile Valley in the late 19th and early 20th centuries (Goodman & Meininger 1989). There have, however, been no definite recent reports of breeding since then although some birds have been seen in the Western Desert recently including a pair at Wadi el Natrum in April 1986, three at Farafara in March 1984, and a "few" at Dakhala in September (Goodman & Meininger 1989). Other recent records include a single bird at Lake Manzala during the winter of 1978-79 (Meininger & Mullie 1981), "some" on the Nile in "Middle" Egypt as far south as Nag Hammadi during the winters of 1976-79 (Short & Horne 1981), several on the Nile at Isna in October 1982 (Davis 1982) and two near Aswan in December 1983 (Goodman & Meininger 1989). Total numbers are small, probably less than 50.

Netta rufina. The Red-crested Pochard is found in Northeast and East Africa only in Egypt where it is a regular but uncommon winter visitor (late October to mid-April) to the Nile Delta and Valley south to Idfu usually in numbers one to five. Occasionally it is seen in larger numbers including 80 on the Nile at Isna in January 1986 (Goodman & Meininger 1989), 70 at Lake Burullus in February 1979

(Meininger *et al.* 1979), 32 at Lake Maryut in January 1980 (Meininger & Mullie 1981) and 20 on the Nile between Isna and Idfu in February 1981 (Short & Horne 1981). It is vagrant in the Western Desert where a single individual was noted at Wadi el Natrum in January 1911 (Goodman & Meininger 1989), and unknown along the Red Sea coast. In their surveys Meininger & Mullie (1981) reported a total of 71 in 1978-79 and 45 in 1979-80; and seven were seen in the winter of 1989-90 only at Lake Burullus (P.L. Meininger & G.A.M. Atta pers. comm.). The total wintering population is small, probably no more than 100-200.

Aythya ferina. The Common Pochard is a common to abundant winter visitor in Egypt, common in Sudan and uncommon in Ethiopia. The total population in Northeast and East Africa varies from 11,000 to 23,000 (Table 9). **Egypt.** The Pochard may be an abundant passage migrant and winter visitor mainly in the Nile Delta but also along the Nile valley south to Aswan. It has been recorded several times in the Western Desert oases (Goodman & Meininger 1989) and occurs in small numbers along the Red Sea coast mainly in passage. This duck is in Egypt mainly late September to mid-April although some may overwinter since three were noted at "Sacred Lake, Karnak" 14 June 1954 (Goodman & Meininger 1989). Largest counts include 8300 on 1 February 1979, 8200 on 15-16 January 1980 and 7358 in the winter of 1989-90 at Lake Burullus, and 1257 at Lake Manzala and 321 at Lake Qarun in the winter of 1979-80 (Meininger & Mullie 1979, 1981, Meininger *et al.* 1979, P.L. Meininger & G.A.M. Atta pers. comm.). Short & Horne (1981) reported this species common on the Nile south to Aswan with its numbers varying annually. Maximum numbers counted in Meininger & Mullie's (1981) survey of 1979-80 were 9900 and of 1989-90, 16,000. The total population probably is 10,000-20,000. **Sudan.** The Common Pochard is a regular, fairly common passage migrant and winter visitor on inland lakes and rivers. Only specific counts are those of G. Nikolaus (pers. comm.) who recorded none at Khartoum, 100 along 20 km of the Nile south of Khartoum and none at Jebel Aulia Dam in January 1983; he estimated 500-2000 in Sudan from 1980-1983. **Ethiopia.** This duck is a regular, uncommon passage migrant on the plateau of Eritrea but does not winter there (Smith 1957). Elsewhere in Ethiopia, Pochard are rare to frequent winter visitors from October to April on the highlands and

Rift Valley usually in small numbers of one to 20. Numbers recorded include 48 in February 1965 at Gaferssa where it was regularly seen 1965-1970 (Urban 1991), 75 at Lake Adde in December 1968 and 20 at Lake Abiata in January 1965 (EKU pers. obs.). One was at Lake Arakit on 18 June 1974 (S. Tyler pers. comm.) so this species may oversummer occasionally in Ethiopia. The total population is small, probably 200-300 birds. **Kenya.** The Pochard is vagrant to rare, with one to two birds recorded six times in December, February and March at Lake Ol Bolossat, Lake Turkana (Allia Bay, Ferguson's Gulf) and Kisumu (Shekerman & van Wetten 1987, Pearson & Meadows 1992). **Tanzania.** One bird was seen at Lake Momela in Arusha National Park 2 January to 8 February 1971 (Beesley 1971). **Uganda.** This pochard is a vagrant, with records in 1925 and 1938 from Lakes Nakivale and Mogisha (Britton 1980) and a single bird in December 1969 and four individuals 4 December 1970 to 25 January 1971 from Rwenzori National Park (Eltringham 1973, Pearson & Turner 1986).

Aythya nyroca. The Ferruginous Duck is common in Egypt and uncommon to rare in Sudan, Ethiopia and Kenya. A total of 500 to 8000 winter annually in this part of Africa (Table 10). **Egypt.** The Ferruginous Duck is common in winter on the Nile Delta lakes and Nile Valley south to Aswan, mainly September to mid-April. Large counts include 6590 at Lake Burullus on 1 February 1979, 183 along the Nile from Cairo to Aswan and 48 at Lake Maryut in the winter of 1978-79 (Meininger & Mullie 1979, 1981, Meininger *et al.* 1979). Maximum numbers counted in Egypt were 6800 in

1978-79, and 1000 in 1979-80 but 340 in 1989-90 (Meininger 1990). Birds also have been recorded in small numbers on passage in the Northern Sinai coast in September and October (Goodman & Meininger 1989). The total population probably varies annually from 500 to 7500. **Sudan.** This duck is uncommon to rare on inland lakes and rivers and does not occur on the Red Sea coast. Only counts available are those of G. Nikolaus (pers. comm.) who in January 1983 counted five at Khartoum, ten along 20 km of the Nile south of Khartoum and five at Jebel Aulia Dam. He estimated the total population in 1980-83 varied annually from 10 to 500. **Ethiopia.** The Ferruginous Duck is uncommon to rare October to March, occurring singly or in flocks up to six. Numbers recorded include a "few" in winter on the highlands in Eritrea (Smith 1957), singles at Gaferssa in January 1966 and March 1968 (Urban 1991), one at Lake Abiata in March 1965 (EKU pers. obs.), two to six at Debra Zeit lakes in January 1967 and February 1979 (C. Clapham pers. comm., Ethiopian Wildlife and Natural History Society files), singles at Lake Adele in December 1969 and Lake Akalet in January 1973 (EKU pers. obs.) and "some" at Jimma in February and March 1968 (W. Klug pers. comm.). Probably less than 100 occur annually in Ethiopia. **Kenya.** This duck is rare, occurring in western and central Kenya south to Naivasha and Thika. It has been recorded some 20 times, usually in ones or twos, once in a group of four, at Lakes Naivasha, Nakuru, Endebess, Ol Joro Orok, Ol Bolosset, Turkana, and Paradise as well as Dandora Oxidation ponds, Thika, and Marsabit (Backhurst *et al.* 1973, Lewis & Pomeroy 1989, Pearson & Meadows 1992). Probably less than 50 occur annually in Kenya. **Uganda.** This pochard is vagrant, having been reported once at Butiaba, Lake Albert (Britton 1980, Pearson & Turner 1986).

Aythya fuligula. The Tufted Duck is sometimes an abundant winter visitor in Egypt, locally common to occasionally abundant in Sudan and Ethiopia, frequent to uncommon in Kenya, and rare in Tanzania and Uganda. The total population probably varies from 8500-21,000 (Table 11). **Egypt.** This diving duck is a common passage migrant and winter visitor late October to late April on the Nile Delta lakes, Nile Valley south to Aswan and Lake Qarun. Some are also found in the Western Desert oases, along the Red Sea coast and in passage in September and October along the northern Sinai coast. Largest

Table 9. Estimated numbers of Common Pochard *Aythya ferina.*

Egypt	10000-20000
Sudan	500-2000
Ethiopia	200-300
Kenya	vagrant
Tanzania	vagrant
Uganda	vagrant
Total	11000-23000

Table 10. Estimated numbers of Ferruginous Duck *Aythya nyroca.*

Egypt	500-7500
Sudan	10-500
Ethiopia	less than 100
Kenya	less than 50
Uganda	vagrant
Total	500-8000

numbers recorded were 13,400 at Lake Burulus in November 1981 (Goodman & Meininger 1989), 5650 at Lake Qarun in January 1980 (Meininger & Mullie 1981), 680 at Wadi Ruwayan in the winter of 1979-80 (Meininger & Mullie 1981), and 3323 there in the winter of 1989-90 (P.L. Meininger & G.A.M. Atta pers. comm.). Maximum counts in Egypt were 6500 in 1979-80 and 10,000 in 1989-90 (Meininger 1990). The total population wintering in Egypt varies annually from 7000 to 15,000. **Sudan.** The Tufted Duck is a regular, fairly common winter visitor to rivers, lakes and coastal areas south to 8°N, November to March. No precise counts have been published; G. Nikolaus (pers. comm.) estimated that the total population in the winters of 1980-83 varied from 500 to 2000. **Ethiopia.** The number of Tufted Duck in Ethiopia varies from year to year and locality to locality. It is an uncommon winter visitor in the highlands of Eritrea (Smith 1957) but fairly common to abundant elsewhere, mainly November to April. Counts include 100 in the Bale Mts. (Lake Deemtu) in January 1976 and 1977 (Malcolm 1982), usually two to six, once 21 in December 1965 at Gaferssa (Urban 1991), up to 1000 at Lake Abiata's Langano-Bulbula inlets with largest counts of 905 in 1964-65, 750 in 1965-66, 100 in 1968-69 and 25 in 1969-70 (EKU pers. obs.), 200 at Lake Adele in December 1968 (EKU pers. obs.), 14-115 at Debra Zeit lakes November to March 1966-67 (C. Clapham pers. comm., EKU pers. obs.), and 100 at Lake Chilotes in February 1984 (Ethiopian Wildlife and Natural History Society files), Jimma in March 1968 (W. Kiug pers. comm.) and Lake Haik in February 1969 (EKU pers. obs.). Some apparently overwinter in Ethiopia with one seen at Lake Arakit on 8 June 1974 (S. Tyler pers. comm.). Probably 500-3000 annually visit Ethiopia. **Somalia.** The Tufted Duck is vagrant with two old records along the north coast in December and January (Ash & Miskell 1983). **Kenya.** This duck is an uncommon winter visitor, occurring mainly in central Kenya Rift Valley and adjacent highlands November to March. It usually is seen singly or in pairs, but sometimes in flocks up to 30. Largest counts included 20 at Ferguson's Gulf in March 1974 (Lewis & Pomeroy 1989), 25 at Lake Naivasha, and 30 at Lake Nakuru in January 1972 (Pearson & Meadows 1992). The total population probably is less than 100. **Tanzania.** This species is rare with one to five reported at a time as far south as Ngorongoro Crater Lake

and Arusha National Park (Backhurst *et al.* 1973). Less than 10 probably visit Tanzania annually. **Uganda.** The Tufted Duck is rare with one to five birds having been observed five times in Rwenzori National Park since the mid 1960s (Pearson & Turner 1986). Probably less than 50 annually visit Uganda.

Melanitta fusca. The White-winged Scoter has been recorded only in Egypt, with most recent records being two birds at Fayid on 12 November 1952 and one in Suez Bay in February-March 1982 (Goodman & Meininger 1989).

Mergellus albellus. The Smew is a rare, irregular visitor only in Egypt. Goodman & Meininger (1989) mentioned that it was seen occasionally in the Nile Delta between 1947 and 1979 and once near Alexandria in December 1953.

Mergus serrator. The Red-breasted Merganser is vagrant in this part of Africa, the most recent sighting being that of five near El Kabrit in Egypt in February 1953 (Goodman & Meininger 1989) and four at El Bardawil in the winter of 1989-90 (P.L. Meininger & G.A.M. Atta pers. comm.).

Fulica atra. The Common Coot is an abundant winter visitor to Egypt, where it may also be a rare breeding resident. It is also a regular, sometimes common winter visitor to Sudan, and may winter in Ethiopia but its status there is uncertain. Total numbers vary annually from 40,000 to 260,000 (Table 12). **Egypt.** This Coot is an abundant winter visitor mid-September to early April, and probably a rare breeding resident. In the early part of the 20th century it was a common breeder in the Nile Delta, and also bred at Lake Qarun

Table 11. Estimated numbers of Tufted Duck *Aythya fuligula*.

Egypt	7000-15000
Sudan	500-2000
Ethiopia	500-3000
Somalia	vagrant
Kenya	less than 100
Tanzania	less than 10
Uganda	less than 50
Total	8500-21000

Table 12. Estimated numbers of Common Coot *Fulica atra*.

Egypt	35000-250000
Sudan	5000-10000
Ethiopia	status uncertain
Total	40000-260000

and probably Dakhla (Meinertzhagen 1930). This Coot has not been known definitely to breed in Egypt since then. Several recent observations, however, suggest breeding in the Nile Valley including pairs noted April to June 1978-1983 along the Nile between Beni Suef and El Minya, Beni Suef and Beni Mazar, and south of Giza (Goodman & Meininger 1989). There are also reports of coots in suitable nesting habitat at Dakhla in April 1981 and several were seen at Fayid in late June 1949 (Goodman & Meininger 1989). Large concentrations of wintering Common Coots are present on large bodies of open water, especially the Nile Delta, Nile Valley and lakes in the Western Desert mid-September to early April. Small numbers of wintering coots also occur along the Red Sea coast. Maximum counts in winters of 1978-79 and 1979-80 included 154,000 at Lake Burullus, 51,300 at Lake Manzala and 18,800 at Lake Qarun (Meininger & Mullie 1979, 1981). In most winters coots are common along the Nile, with flocks of 1000 noted south to Aswan, while in other winters few are seen (Goodman & Meininger 1989). This annual variation was also reported at Lake Manzala where 51,300 were noted in 1979-80 but 410 in 1989-90 (Atta & Meininger 1990). Maximum numbers recorded in Egypt were 185,000 in 1978-79 and 172,000 in 1979-80 but 32,000 in 1989-90 (Meininger 1990). Total numbers vary annually from 35,000 to 250,000. **Sudan.** The Coot is uncommon to locally common on open inland waters but unknown from the Red Sea coast. It occurs chiefly in the north but has been recorded south to about 10°N on the Nile. In Khartoum Province it occurs mainly in autumn and spring, suggesting this species may winter farther south (Macleay 1960). Although there are no detailed counts from Sudan, G. Nikolaus (pers. comm.) estimated 5000-10,000 were present annually in 1980-83. **Ethiopia.** Although Common Coots have been reported to be frequent to locally common in the Western Highlands and Rift Valley (Urban & Brown 1971), its status is uncertain because of the difficulty of distinguishing wintering Common Coots from non-breeding Red-knobbed Coots *F. cristata*. **Tanzania.** Dathe & Faust's (1965) record from Ngorongora has not been accepted by Backhurst *et al.* (1973) and Britton (1980) because of the difficulty of distinguishing wintering Common Coots from Red-knobbed Coots in the field.

Discussion

The most numerous Palearctic wildfowl species in Northeast and East Africa is the Northern Shoveler with a maximum population estimate of 150,000 to 340,000 (Table 13). The major concentrations are in the Nile Delta lakes and Nile Valley of Egypt, the Nile Valley of Sudan, the Rift Valley and Southeast Highland lakes of Ethiopia, and Lake Turkana and Rift Valley lakes of Kenya. Since this estimate of 150,000 to 340,000 is similar to or larger than published estimates of Northern Shoveler in West Africa (15,000), Northwest Europe (175,000), and Western Mediterranean (175,000) (Monval & Pirot 1989, Pirot *et al.* 1989, Rüger *et al.* 1986), it seems likely that one of this species' main wintering areas is in Africa from Egypt south to Kenya. The Garganey is also a numerous species especially in Sudan, Ethiopia and Kenya, where some 100,000 to 180,000 winter (Table 13). The major concentration of this species in Africa, however, is in West Africa south of the Sahara and as far east as the Lake Chad basin (Chad/Cameroon) (Perennou 1992) where 2,000,000 to 5,000,000 have been estimated to winter.

Surveys in the 1980s have shown that the strong fluctuation in numbers of birds wintering in the Senegal and Niger River basins and Lakes Chad and Fitriare due to highly variable rainfall and river flows which probably result in major movements of Garganey among them. These movements may also extend eastward into the Nile basin, and consequently numbers in Eastern Africa may reach 500,000 as suggested by Monval & Pirot (1989).

The population estimate of 32,000-113,000 Pintail in Northeast and East Africa (Table 13)

Table 13. The most numerous Palearctic species in Northeast and East Africa.

	Population estimate
Northern Shoveler	150000-340000
Eurasian Coot	40000-260000
Garganey	95500-181000
Eurasian Wigeon	50000-132000
Northern Pintail	32000-113000
Common Teal	26000-70000
Common Pochard	11000-23000
Tufted Duck	8500-21000
Ferruginous Duck	500-8000
Mallard	1000-6000
Common Shelduck	1000-6000
Gadwall	300-2500

is much smaller than the estimate for West Africa where 1,000,000 may winter annually in the Senegal and Niger basins, Nigeria and Chad. Surveys in West Africa indicate that Pintail annual numbers vary with rainfall. For example in the wet year of 1986, 247,500 were counted in the Senegal Delta while, in years of drought, Pintail in Senegal and Mali numbered less than 100,000 (Monval & Piro 1989). These figures suggest that climate and weather have a major effect on where Pintail winter in Africa and perhaps in years of drought in West Africa large numbers move eastward, and hence as many as 200,000-300,000 may winter in Eastern Africa.

The Common Coot winters in Northwest Africa with as many as 85,000 counted in Morocco, Algeria and Tunisia (Monval & Piro 1989). The 250,000 in Egypt (Table 12) provides strong evidence that this country contains some of the important wintering resorts for Coot in Africa.

Little is known about annual trends in numbers of Palearctic wildfowl in

Table 14. Key resorts/wetlands in Northeast and East Africa with large counts (and year).

Egypt	
Lake Burullus (31°30'N, 30°50'E)	
Eurasian Wigeon	35000 (1980)
Gadwall	235 (1977)
Mallard	400 (1979)
Northern Shoveler	63500 (1979)
Common Pochard	8300 (1979)
Ferruginous Duck	6590 (1979)
Tufted Duck	13400 (1981)
Common Coot	154000 (1980)
Lake Manzala (31°15'N, 32°05'E)	
Common Shelduck	1000 (1979)
Common Teal	4700 (1979)
Sudan	
Khartoum (Nile) (15°35'N, 32°30'E)	
Eurasian Wigeon	1500 (1983)
Northern Pintail	2000 (1983)
Northern Shoveler	2000 (1983)
Lake Keilak (10°53'E, 29°21'E)	
Garganey	11000 (1983)
Lake Abiad (10°17'N, 29°59'E)	
Garganey	5000 (1983)
Ethiopia	
Lake Abiata (7°35'N, 38°35'E)	
Northern Pintail	2000 (1968)
Northern Shoveler	8000 (1969)
Tufted Duck	1000 (1965)
Lake Arakil (7°52'N, 37°56'E)	
Eurasian Wigeon	8000 (1983)

Lake Adele (9°26'N, 41°58'E)	
Eurasian Wigeon	4000 (1969)
Northern Shoveler	3000 (1968)
Tufted Duck	200 (1968)
Lake Alemeya (9°25'N, 42°00'E)	
Common Teal	1500 (1973)
Northern Pintail	1500 (1973)
Garganey	1500 (1973)
Northern Shoveler	5000 (1973)
Omo River Delta (4°30'N, 36°00'E)	
Northern Pintail	10000 (1982)
Northern Shoveler	50000-90000 (1982)

Kenya

Ahero Rice Scheme (0°11'S, 34°55'E)	
Garganey	2000+ (1983)
Lake Turkana (3°30'N, 36°00'E)	
Northern Pintail	2100 along 165 km east shore (1987)
Northern Shoveler	10000 Ferguson's Gulf (1972-74)
Garganey	3000 Ferguson's Gulf (1985)
Lake Naivasha (0°46'S, 36°21'E)	
Northern Pintail	4000 (1984)
Northern Shoveler	2500 (1988)
Garganey	2000 (1988)
Kinagop Dam (0°42'S, 36°34'E)	
Northern Pintail	8000 (1989)
Lake Nakuru (0°22'S, 36°05'E)	
Northern Shoveler	6000 (1973)
Tana River Bridge (2°16'S, 40°10'E)	
Garganey	2500 (1983)
Lake Ol Bolossat (0°09'S, 36°26'E)	
Northern Pintail	15000 (1976)
Northern Shoveler	10000 (1976)
Thika/Makuyu dams (0°57'S, 37°17'E)	
Garganey	5500 (1985)

Northeast Africa. There are, however, indications that at least the Common Coot may be declining in numbers in recent years. For example, 51,300 Coot were counted at Lake Manzala in 1979-80 but only 410 in 1989-90 (Atta & Meininger 1990). This major drop in numbers indicates either that this Coot has undergone a major decline in the 1980s or it undergoes tremendous annual variation in where it spends the winter.

Several major resorts/wetlands in this part of Africa support major concentrations of Palearctic wildfowl (Table 14). Among the most important in Egypt are Lakes Burullus and Manzala where 200,000-300,000 birds sometimes winter. Although little has been published on wetlands in Sudan, initial surveys indicate that Lakes Keilak and Abiad are important as are parts of the Nile River such as at Khartoum. Key wetlands in Ethiopia include Lakes Abiata, Arakil, Adele and

Alemaya and especially the Omo River delta and upper part of Lake Turkana where more than 100,000 waterfowl winter annually. In Kenya Lakes Turkana, Ol Bolossat, Naivasha and Nakuru. Kinangop Dam, Thika/Makuyu dams, parts of Tana River and Ahero Rice Scheme are important for Palearctic wild

fowl. There are many gaps in the coverage of wildfowl in Northeast and East Africa, and the numbers of Palearctic wildfowl wintering there probably are greater than given in this paper. Additional surveys over several years are desirable.

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