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**BIRDS OF THE CEDAR POINT BIOLOGICAL STATION AREA, KEITH AND GARDEN
COUNTIES, NEBRASKA: SEASONAL OCCURRENCE AND BREEDING DATA**

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ABSTRACT

The North Platte River valley (elev. ca 3300 ft/990 m) in Garden and Keith counties, Nebraska, has an avifauna of 305 species, the richest known north of Texas in the Great Plains. More than 25 years of observations, mist-netting, banding, and breeding-bird surveys by the authors and others have revealed 104 breeding, 17 probably breeding, and 184 transient, casual, and accidental species. Hybridization of eastern with western species is evidenced by intermediates between Rose-breasted and Black-headed grosbeaks, Indigo and Lazuli buntings, Eastern and Spotted towhees, Baltimore and Bullock's orioles, and yellow- and red-shafted morphs of Northern Flicker; Eastern and Western wood-pewees potentially hybridize because both breed in the area.

† † †

The following annotated list of 305 species is based on the collective observations of the ornithologists listed above as well as those of many other observers. The area around Cedar Point Biological Station (CPBS), Keith County, Nebraska (Fig. 1), is one of the richest ornithological attractions in the Great Plains with a species list that is unmatched by any area north of Texas. This remarkable assemblage of birds is due in part to the great habitat diversity in the vicinity of CPBS and particularly the presence of Lake McConaughy, the largest lake in Nebraska, with over one hundred miles of shoreline and associated wetlands. Below Kingsley Dam the shallow waters of Lakes Ogallala and Keystone and the original riparian forest of the North Platte River are especially valuable habitats for both waterbirds and arboreal species. Breeding-bird surveys done in many of those habitats by ornithology students and other

researchers have been supplemented by extensive mist-netting since 1992 at and near the field station. Mist-netting has revealed a number of eastern species to occur in the area in much greater numbers and frequency than previously thought.

The area around CPBS is near the middle of the east-west faunal transition zone in the Great Plains. A number of closely related and hybridizing species-pairs (buntings, grosbeaks, towhees, orioles) are represented. The following list is limited mostly to the North Platte River Valley from Oshkosh east to the vicinity of Keystone and Ogallala. Our major emphasis is on summer avifauna; the report by Rosche (1994) provides a complete documentation of non-summer records. We have also included Ogallala within the limits of our coverage, which otherwise corresponds to that of Rosche.

Cedar Point Biological Station was established in 1975 at a site approximately one mile below Kingsley Dam. Summer ornithology classes have been offered since 1977, when the course was taught by Stephen Fretwell. Many ornithologists have since kept records

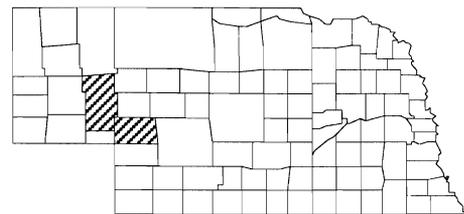


Figure 1. Outline map of Nebraska showing location of Garden and Keith counties.

of the birds of the area. Charles and Mary Brown have worked at CPBS since 1982 and collected many observations incidental to their primary research on Cliff Swallows. Paul Johnsgard taught ornithology at CPBS on a nearly annual basis from 1978 to 1996. Josef Kren was a teaching assistant for the ornithology class in 1992 and 1993 and did research on Red-winged Blackbirds and Brown-headed Cowbirds through 1996. William Scharf was Associate Director of CPBS from 1991 to 1994, and with Josef Kren initiated a banding program in 1992 that continued through 1996. This joint program has resulted in the capture and recapture of more than 11,000 birds of 84 species. Unless specified, birds reported to be banded in this paper were done so in 1992–1996. In addition, some information was contributed by C. Fred Zeillemaker from late 1977 to early 1982, when he was manager at Crescent Lake National Wildlife Refuge. Beginning in 1970, Richard Rosche accumulated a large amount of data from throughout the year, which form a significant basis for the seasonal information in this paper. Rosche (1994) has since privately published an extensive account of birds of this area. Rosche and Johnsgard (1984) and Johnsgard (1990a) also published a preliminary bird list.

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LIST OF SPECIES

GAVIIDAE

- Pacific Loon** (*Gavia pacifica*). Accidental. One record on 14 Jun 1995, when 2 individuals (one in breeding plumage) were seen at Lake McConaughy (Silcock 1995). A second sight record was considered by Rosche (1994) to be hypothetical. This species may occur more often than these records indicate, but its similarity with the Common Loon makes identification in the field difficult.
- Common Loon** (*Gavia immer*). Primarily a spring and

autumn transient, 12 Apr–10 Jul and 15 Oct–1 Jan (Rosche 1994). There are many summer records of nonbreeding individuals, including immature plumaged birds from Jun–Aug. No nesting is known for the area.

PODICIPEDIDAE

- Pied-billed Grebe** (*Podilymbus podiceps*). Primarily a spring and autumn transient and winter visitant, 10 Sep–6 May (Rosche 1994). Reported as a common breeder on Keystone Lake in 1977 (Fretwell), but it has been rare since water levels were altered in 1982 to increase the hydrocapability of the Kingsley power plant. Adults with 3 just-hatched chicks were seen at Keystone Lake on 17 Jul 1992. Rosche (1994) considers this species a permanent resident but rare in winter.
- Horned Grebe** (*Podiceps auritus*). Spring and autumn transient, 28 Feb–14 May and 15 Oct–19 Dec (Rosche 1994).
- Eared Grebe** (*Podiceps nigricollis*). Spring and autumn transient, 19 Mar–14 Jun and 15 Sep–16 Oct (Rosche 1994). Reported as a rare breeder on Keystone Lake in 1977 (Fretwell pers. comm.), but nesting should be considered hypothetical as there are no recent records.
- Western Grebe** (*Aechmophorus occidentalis*). Primarily a spring and autumn transient, 5 Apr–11 Jan (Rosche 1994). Rosche observed broods on Keystone Lake in late Jul 1993. Breeding by 20 to 25 adults was also reported from the west end of Lake McConaughy in 1995 (Silcock and Rosche 1995). Large numbers of apparent nonbreeders are often seen on Lake McConaughy during summer; for example, over 700 were counted on 1 Jul 1996. Flocks up to several thousand sometimes migrate through the area in spring and fall.
- Clark's Grebe** (*Aechmophorus clarkii*). Apparently a casual spring and fall transient and occasional breeder, 29 May–20 Sep (Rosche 1994). One specimen record, an adult, was found dead on Keystone Lake during Jun 1986 (Labeledz 1987). Rosche (1994) observed a brood attended by adults at the west end of Lake McConaughy in late Jul 1993.

PELICANIDAE

- American White Pelican** (*Pelecanus occidentalis*). Spring and autumn transient and a nonbreeding summer visitant, 16 Mar–24 Nov (Rosche 1994). Hundreds of individuals can be observed at the west end of Lake McConaughy during summer, and smaller numbers reside on Keystone Lake and the adjacent North Platte River.
- Double-crested Cormorant** (*Phalacrocorax auritus*). Spring and autumn transient and a nonbreeding summer visitant, 28 Mar–24 Nov. Formerly nested on Lake McConaughy during the period of its filling in the early 1940s (Collister 1948). Summering nonbreeders are common now on Lakes McConaughy and Keystone. Large numbers of juveniles and adults may be seen in Jul at the west end of Lake McConaughy.

ARDEIDAE

- American Bittern** (*Botaurus lentiginosus*). A spring and autumn transient and summer resident, 16 May–8 Oct (Rosche 1994). An egg belonging to this species was found at Ackley Valley Marsh in Jun 1994. The nest was not located.

Least Bittern (*Ixobrychus exilis*). A rare spring and autumn transient and summer resident. There are only 4 records, 19–26 May and 14–30 Aug at Ash Hollow, Keystone Lake and near Oshkosh (Rosche 1994). A secretive species, it is probably more common than these few records suggest.

Great Blue Heron (*Ardea herodias*). Permanent resident, nesting locally. Several colonies have been found, primarily in the Keystone area, some up to 29 nests in size. One colony of about 25 nests was destroyed by Great Horned Owls in early Jun 1995. Present every winter but most individuals tend to leave during severe weather.

Great Egret (*Ardea alba*). A spring and autumn transient, 18 Apr–30 May and 24 Jul–31 Oct (Rosche 1994).

Snowy Egret (*Egretta thula*). A rare spring and autumn transient, 21 Apr–31 May, and 25 Jul–1 Sep (Rosche 1994).

Cattle Egret (*Bubulcus ibis*). Irregular breeder and transient, recorded 30 Apr–20 Oct (Rosche 1994). Wandering flocks of up to 24 birds have been seen in late spring. In 1994, 5 nests and 11 adults were present at the west end of Lake McConaughy (Dinsmore and Silcock 1995a). A colony of 3 nests was reported from the west end of Lake McConaughy in 1995 (Silcock and Rosche 1995).

Green Heron (*Butorides striatus*). Primarily a spring transient and a late summer visitant, 6 May–13 Sep (F. Zeillemaker pers. comm.). Probably breeds locally, judging from the numerous observations in Jun and Jul.

Little Blue Heron (*Egretta caerulea*). Rare spring and autumn visitant with records 5 May (Otter Creek) and 13 May (Lake Ogallala) and 9 Aug–5 Sep (Clear Creek) (Rosche 1994).

Black-crowned Night Heron (*Nycticorax nycticorax*). Spring and autumn transient and former breeder, 12 Apr–21 Oct (Rosche 1994). Nested on Keystone Lake in 1977 (Fretwell, pers. comm.).

THRESKIORNITHIDAE

White-faced Ibis (*Plegadis chihi*). Spring and autumn transient, 19 Apr–28 Sep (Rosche 1994). Rosche reports an increase in sightings from 1986 through 1991. Occurred at Ackley Valley Marsh and Keystone Lake in May and Jun 1994–1996. The largest flock seen was 17 birds at Ackley Valley Marsh on 31 May 1995.

ANATIDAE

Trumpeter Swan (*Cygnus buccinator*). Rare spring and autumn visitant, 8 Dec–3 Apr (Rosche 1994). The nearest known nesting occurs in marshes of Arthur and McPherson counties.

Greater White-fronted Goose (*Anser albifrons*). Rare spring and autumn transient, 8 Oct–13 Mar (Rosche 1994).

Snow Goose (*Chen caerulescens*). Spring transient, 17 Feb–12 May (Rosche 1994). Three winter records from the Clear Creek marshes and near Oshkosh in early Jan. Major western shift in spring migration routes has occurred recently, and migrating populations are likely to increase in this area. The blue morph represents less than one percent of the birds seen in the North Platte valley (Rosche 1994).

Ross' Goose (*Chen rossii*). Irregular spring and autumn transient with 4 records, 21 Mar–23 Apr and 6 Dec–6 Jan (Rosche 1994). This species is increasing in the Great

Plains and is likely to be found in many large flocks of Snow Geese. Hybridization with Snow Geese also occurs.

Brant (*Branta bernicla*). Rare autumn transient with five records of mostly unspecified dates from Nov and Dec (Rosche 1994).

Canada Goose (*Branta canadensis*). Permanent resident. Breeding is now widespread on Keystone Lake and many other wetlands of the region.

Wood Duck (*Aix sponsa*). Local summer resident, 15 Mar–10 Nov (Rosche 1994). Nests commonly along North Platte River, especially east of Keystone diversion dam. Often seen on open water along Sutherland Canal and in small tree-lined ditches.

Green-winged Teal (*Anas crecca*). Primarily a spring and autumn transient and winter visitant, 20 Aug–6 Jun (Rosche 1994).

Mallard (*Anas platyrhynchos*). Permanent resident, nesting commonly throughout the area. Thousands winter in the marshes at the western end of Lake McConaughy (Rosche 1994).

Northern Pintail (*Anas acuta*). Primarily a spring and autumn transient and winter visitant, 20 Aug–14 Jun (Rosche 1994).

Blue-winged Teal (*Anas discors*). Spring and autumn transient and local summer resident, 15 Mar–25 Oct (Rosche 1994). Breeding has been seen yearly near Oshkosh by Rosche (1994).

Cinnamon Teal (*Anas cyanoptera*). Spring transient, 19 Mar–23 Jun. Possibly an autumn transient but there are no definite records, probably because of confusion with the preceding species. Pairs have been seen at CPBS in late May, but breeding was not observed.

Northern Shoveler (*Anas clypeata*). Spring and autumn transient, 27 Feb–20 Jun and 24 Jul–19 Dec (Rosche 1994).

Gadwall (*Anas strepera*). Primarily a spring and autumn transient and winter visitant, 27 Jul–3 Jun. It was reported during summer 1977 at Keystone Lake (Fretwell), but there is no evidence of breeding.

American Wigeon (*Anas americana*). Spring and autumn transient and winter visitant, 28 Jul–15 Jun (Rosche 1994).

Canvasback (*Aythya valisineria*). Primarily a spring and autumn transient, occasionally wintering and summering (as nonbreeders). There are records for all months except Jul.

Redhead (*Aythya americana*). Permanent resident but primarily a spring and autumn transient. Rosche (1994) regards this species as the most abundant of the diving ducks, with up to 20,000 seen at the western end of Lake McConaughy.

Ring-necked Duck (*Aythya collaris*). Spring and autumn transient and winter visitant, 3 Oct–31 May (Rosche 1994).

Greater Scaup (*Aythya marila*). Winter visitant at Keystone Lake and along the Sutherland Canal, 19 Nov–24 Mar (Rosche 1994).

Lesser Scaup (*Aythya affinis*). Primarily a spring and autumn transient and winter visitant, 13 Sep–20 Jun (Rosche 1994). Single males have been observed during the summer at Keystone Lake.

Oldsquaw (*Clangula hyemalis*). Spring and autumn transient and winter visitant, 11 Nov–25 Apr (Rosche 1994).

Most records were at or near the Kingsley Dam spillway.

Black Scoter (*Melanitta nigra*). Rare autumn transient with 3 records between 6 Nov and 16 Dec (Rosche 1994).

White-winged Scoter (*Melanitta fusca*). Spring and autumn transient and winter visitant with seven records, 1 Nov–28 May (Rosche 1994). The most recent was 2 adult males and a female at Keystone Lake on 15–20 May 1993.

Surf Scoter (*Melanitta perspicillata*). Spring and autumn transient and winter visitant with 8 records, 27 Apr–30 Apr and 8 Oct–18 Dec (Rosche 1994). The most recent was at Lake Ogallala on 30 Apr 1993 (Cortelyou 1993).

Barrow's Goldeneye (*Bucephala islandica*). Spring and autumn transient and winter visitant with 7 records, 21 Dec–19 Apr (Rosche 1994).

Common Goldeneye (*Bucephala clangula*). Spring and autumn transient and winter visitant, 31 Oct–3 Jun (Rosche 1994). There are also several summer records of nonbreeders on Keystone Lake and Lake McConaughy.

Bufflehead (*Bucephala albeola*). Spring and autumn transient and winter visitant, 8 Oct–25 May (Rosche 1994).

Hooded Merganser (*Lophodytes cucullatus*). Spring and autumn transient and winter visitant, 24 Oct–21 May (Rosche 1994). There are a few summer records of nonbreeding females in Jun.

Common Merganser (*Mergus merganser*). Primarily a spring and autumn transient and winter visitant but recorded in all months. Summering birds are not known to nest. Rosche (1994) reports concentrations of up to 30,000 birds during Dec.

Red-breasted Merganser (*Mergus serrator*). Spring and autumn transient and winter visitant, 6 Nov–28 May (Rosche 1994).

Ruddy Duck (*Oxyura jamaicensis*). Spring and autumn transient and summer visitant, 16 Mar–28 Nov. Present on Lakes Ogallala and Keystone most summers, and Fretwell thought it bred on the latter during summer 1977. Reported to breed near Oshkosh in 1984 by Rosche (1994).

CATHARTIDAE

Turkey Vulture (*Cathartes aura*). Spring and autumn transient, and summer resident, 31 Mar–3 Oct. Breeds locally. A nest was found in a cliff crevice near CPBS in 1991 and a nest with two young was found on a bluff along the south shore of Lake McConaughy by Hoffman (1985). Another potential nest hole attended by adults was found in a cut bank along the Sutherland Canal south of Paxton in early Jun 1996.

ACCIPITRIDAE

Mississippi Kite (*Ictinia mississippiensis*) First reported on 27 Jul 1991 in Ogallala and has been seen in the same place there each summer since, probably nesting. 11 individuals were observed on 6 Aug 1994, and 2 nests with juveniles were also found (Dinsmore and Silcock 1995b). In 1995 at least 9 adults were present with an active nest (Silcock 1995).

Osprey (*Pandion haliaetus*). Spring and autumn transient and summer visitant, 13 Apr–25 Oct (Rosche 1994). Seemingly suitable breeding habitat exists in the area, but no nesting has been found.

Bald Eagle (*Haliaeetus leucocephalus*). Spring and autumn

transient and winter visitant, 9 Oct–17 May (Rosche 1994). Peak counts in Jan from the Lake Ogallala area approach 200 birds. Birds are best viewed from the Kingsley Dam area (Peyton and Knaggs 1995). Nesting attempts were made near Clear Creek in the late 1980s and early 1990s, but no successful breeding has been observed (Rosche 1994).

Northern Harrier (*Circus cyaneus*). Permanent resident but primarily a spring and autumn transient. Nests were found in Ackley Valley Marsh during the summers of 1983, 1992, and 1994–96. 9 of these birds were banded.

Sharp-shinned Hawk (*Accipiter striatus*). Spring and autumn transient and winter visitant, 10 Sep–11 May. 2 second-year males at CPBS were banded.

Cooper's Hawk (*Accipiter cooperii*). Primarily a spring and autumn transient, 3 Sep–4 Jun. Occasional early-winter records, mostly prior to mid-Jan (Rosche 1994).

Northern Goshawk (*Accipiter gentilis*). Rare winter visitant and spring transient, with five records 23 Dec–10 May (Silcock 1995).

Broad-winged Hawk (*Buteo platypterus*). Spring transient with five records 22 Apr–18 May, mostly from the CPBS and Keystone area.

Swainson's Hawk (*Buteo swainsoni*). Spring and autumn transient and summer resident, 12 Apr–23 Sep. A nest near Keystone was active annually 1983–1991. Nesting was seen along a highway near Ogallala in 1990, 1991, and 1996. More common in the area than Red-tailed Hawk in summer, Swainson's occupies more open grassland habitats. Local population seems stable to date, but numbers are declining continent-wide.

Red-tailed Hawk (*Buteo jamaicensis*). Permanent resident. Breeds throughout. Rosche (1994) reports that winter population consists of more dark morphs, sometimes outnumbering lighter birds. Dark morphs feed predominantly in wet meadows and marshes. Breeders consist exclusively of light morphs.

Ferruginous Hawk (*Buteo regalis*). Primarily a spring and autumn transient, 10 Mar–18 May and 2 Oct–12 Jan (Rosche 1994). One summer record on 27 Jul 1981 near CPBS. No nesting is known.

Rough-legged Hawk (*Buteo lagopus*). Fall and spring transient and winter visitant, 9 Oct–18 Apr (Rosche 1994).

Golden Eagle (*Aquila chrysaetos*). Currently probably only a winter visitant, 24 Sep–3 Jun (Rosche 1994). Nested at Ash Hollow in 1976, along the North Platte River west of Lewellen in 1982, at Swede Canyon in 1982, and near Clear Creek in 1979 and 1982 (Rosche 1994).

FALCONIDAE

American Kestrel (*Falco sparverius*). Permanent resident. Breeds throughout. Nest sites include cavities in dead trees and crevices in cliffs.

Merlin (*Falco columbarius*). A spring and autumn transient and winter visitant, 23 Oct–11 Mar. One bird was observed in early Aug 1993 at CPBS.

Peregrine Falcon (*Falco peregrinus*). Spring and fall transient 24 Sep–28 Nov and 25 Apr–19 May. Most likely to be seen near lakes and rivers, while the Prairie Falcon is more likely in canyons and drier areas.

Prairie Falcon (*Falco mexicanus*). Permanent resident but primarily a spring and autumn transient and winter visitant. There are several summer records from through-

out the area, but breeding is not known.

Gyr Falcon (*Falco rusticolus*). Accidental. One record on 3 Jan 1978, at Clear Creek (Rosche 1994). Supposedly occurs regularly in winter north of the study area in the Sandhills.

PHASIANIDAE

Ring-necked Pheasant (*Phasianus colchicus*). Introduced permanent resident. Breeds throughout.

Greater Prairie-chicken (*Tympanuchus cupido*). Permanent resident. Previously rather widespread all along the north shore of Lake McConaughy, but declining in recent years coincident with local introductions of Ring-necked Pheasants. At least 2 display grounds have been present near the north end of Kingsley Dam for many years.

Sharp-tailed Grouse (*Tympanuchus phasianellus*). Permanent resident, nesting in grassland habitats. More common in the Sandhills just north of the study area.

Wild Turkey (*Meleagris gallopavo*). Reintroduced permanent resident. Broods were first observed in 1977 at CPBS and birds were initially seen the same year at Ash Hollow. The species has increased since that time throughout the Platte River valley, and nesting is common at CPBS. Population may fluctuate yearly.

Northern Bobwhite (*Colinus virginianus*). Permanent resident. Breeds locally. Numbers vary from year to year.

RALLIDAE

King Rail (*Rallus elegans*). Spring and autumn transient and summer resident with five records, 23 Apr–17 Dec, all in the Clear Creek and Lewellen marshes (Rosche 1994).

Virginia Rail (*Rallus limicola*). Spring and autumn transient and summer resident, 17 Apr–22 Dec (Rosche 1994, Silcock 1995). Until 1982 territorial calling was frequent at Keystone Lake, but birds vanished when water levels were altered. Up to 8 nests were recorded at Ackley Valley Marsh in 1994 and 1995 and at a small marsh near the Highways 61-92 junction in 1995. 2 winter records in Jan 1984 and Feb 1992 near Lewellen (Rosche 1994). 6 birds were banded near CPBS and at the Ackley Valley Marsh.

Sora (*Porzana porzana*). Spring and autumn transient and summer resident, 23 Apr–22 Nov. Until 1982 territorial calling was frequent at Keystone Lake, but birds vanished when water levels were altered. Nested in 1994–95 at Ackley Valley Marsh and at the marsh near Highways 61-92 junction.

American Coot (*Fulica americana*). Permanent resident, but primarily a spring and fall transient and winter visitant. At times abundant on Keystone Lake, mainly in fall and early winter, with concentrations up to 5,000 birds. Observed nestings have only been near Oshkosh in 1984 (Rosche 1994) and at the small marsh near the Highways 61-92 junction in 1995. A nest with an incubating adult was seen at Ackley Valley Marsh at the end of May, 1994.

GRUIDAE

Sandhill Crane (*Grus canadensis*). Spring and autumn transient, 16 Feb (F. Zeillemaker pers. comm.)–17 May and 12 Oct–21 Dec (Rosche 1994). Spring stragglers

have been seen as late as early Jun along the north side of Keystone Lake. Clear Creek marshes have become a major spring staging area with up to 14,000 birds in 1990 (Rosche 1994). The North and South Platte Rivers in the study area are currently not used for roosting by spring migrants.

Whooping Crane (*Grus americana*). Rare spring and autumn transient with 2 spring records on 9 Apr and 24 May, and 3 fall records, 13 Oct–14 Nov (Rosche 1994). Most sightings are from the west end of Lake McConaughy.

CHARADRIIDAE

Mountain Plover (*Charadrius montanus*). Accidental. One record on 21 Apr 1989, at Clear Creek (Rosche 1994).

Black-bellied Plover (*Pluvialis squatarola*). Spring and autumn transient, 8 May–14 Jun and 28 Jul–7 Nov (Rosche 1994). Frequently uses exposed sandbars in Keystone Lake, and its occurrence there depends on water levels.

American Golden-plover (*Pluvialis dominica*). Accidental. One record on 22 Apr 1989 at Keystone Lake (Rosche 1994).

Snowy Plover (*Charadrius alexandrius*). Rare summer visitant, with 3 records, 1 Jun–7 Aug (Rosche 1994), all on sandy beaches of Lake McConaughy.

Semipalmated Plover (*Charadrius semipalmatus*). Spring and autumn transient, 14 Apr–20 May and 30 Jul–12 Oct (Rosche 1994).

Piping Plover (*Charadrius melodus*). Spring and autumn transient and summer resident, 15 Apr–19 Aug, primarily along the shores of Lake McConaughy. Several pairs have nested annually at Arthur Bay and Martin Bay, but often without success because of human traffic on beaches. As many as 63 birds have been found along the southern shore of Lake McConaughy (Sidle et al. 1991) where nesting success is usually greater with less human disturbance. A hailstorm destroyed over 20 eggs and killed 3 adults at Martin Bay in 1996. Efforts to protect breeding areas from human interference have led to higher nesting success in recent years.

Killdeer (*Charadrius vociferus*). Permanent resident, but primarily a spring and fall transient and winter visitant. Breeds throughout.

American Avocet (*Recurvirostra americana*). Spring and autumn transient, 12 Apr–22 Jun and 27 Jul–25 Oct.

Black-necked Stilt (*Himantopus mexicanus*). Accidental. One record on 17 May 1986, at Clear Creek (Rosche 1994). Increasingly common as a breeder in the western Sandhills north of the study area.

SCOLOPACIDAE

Greater Yellowlegs (*Tringa melanoleuca*). Spring and autumn transient, 24 Mar–17 May and 4 Jul–10 Nov. One winter record on 17 Dec 1993 near Keystone (Rosche 1994). More common in spring than fall.

Lesser Yellowlegs (*Tringa flavipes*). Spring and autumn transient, 12 Apr (F. Zeillemaker pers. comm.)–4 Jun and 4 Jul–21 Oct. Unlike previous species, more common in fall than in spring (Rosche 1994). Up to 400 reported from the west end of Lake McConaughy by Rosche.

Solitary Sandpiper (*Tringa solitaria*). Spring and autumn

- transient, 25 Apr (F. Zeillemaker pers. comm.)–20 May and 24 Jul–16 Sep.
- Willet** (*Catoptrophorus semipalmatus*). Spring and autumn transient, 17 Apr–20 Jun and 4 Jul–25 Aug.
- Spotted Sandpiper** (*Actitis macularia*). Spring and autumn transient and local summer resident, 22 Apr–3 Oct (Rosche 1994). Presumably breeds in the study area, but no nests have been found. 12 birds were banded in a small marsh along the north side of Keystone Lake between 20 Jul and 5 Aug 1994, 8 of which were juveniles fledged that season.
- Upland Sandpiper** (*Bartramia longicauda*). Spring and autumn transient and summer resident, 22 Apr–26 Aug (Rosche 1994). Nests with eggs and chicks were found north of Keystone in wet hay meadows in 1995, but nests were destroyed by mowing (Melissa Hayes pers. comm.). Populations along the southern edge of the Sandhills in wet meadows are quite large but decline in drier regions of the Sandhills.
- Whimbrel** (*Numenius phaeopus*). Rare spring transient. There are 2 records, 11 May 1985 at Lake McConaughy, and 17 May 1986 at Clear Creek (Rosche 1994).
- Long-billed Curlew** (*Numenius americanus*). Spring and autumn transient and local summer resident, 28 Mar–2 Sep (Rosche 1994). Nesting occurs in relatively dry grassland. Eggs have hatched in late May or early Jun. Premigratory flocking begins in late Jun. Territorial pairs regularly occur in meadows just north of Keystone Lake.
- Hudsonian Godwit** (*Limosa haemastica*). Rare spring transient with 3 records, 24 Apr–14 May (Rosche 1994) at Clear Creek and near Kingsley Dam. Most migration occurs to the east of the study area.
- Marbled Godwit** (*Limosa fedoa*). Spring and autumn transient and summer visitant, 18 Apr–3 Oct. Its occurrence depends often on the availability of sandbars in Keystone Lake. Up to 48 birds have been seen along the shores of Lake McConaughy (Rosche 1994).
- Ruddy Turnstone** (*Arenaria interpres*). Rare spring transient, with records 11–19 May, usually seen at Clear Creek and Keystone Lake (Rosche 1994).
- Red Knot** (*Calidris canutus*). Rare spring and autumn transient. 2 records. 3 birds were at the west end of Lake McConaughy on 25 and 27 Aug 1989, and 3 birds were at Martin Bay on 23 May 1993.
- Sanderling** (*Calidris alba*). Spring and autumn transient, 6 May–3 Jun and 27 Jul–7 Nov (Rosche 1994). Rosche regards this species as the most common shorebird on the sandy beaches of Lake McConaughy.
- Semipalmated Sandpiper** (*Calidris pusilla*). Spring and autumn transient, 18 Apr–30 May and 3 Aug–1 Nov (Rosche 1994). Maximum spring count by Rosche was 65, and fall maximum count was 35.
- Western Sandpiper** (*Calidris mauri*). Primarily an autumn transient, 27 Jul–11 Sep. Spring dates are 22–23 Apr (Rosche 1994). Maximum spring count by Rosche was about 50, and fall maximum count was 60.
- Least Sandpiper** (*Calidris minutilla*). Spring and autumn transient, 14 Apr–19 May and 4 Jul–6 Nov (Rosche 1994). Maximum spring count by Rosche was 175, and fall maximum count was 250.
- White-rumped Sandpiper** (*Calidris fuscicola*). Spring transient, 6 May–14 Jun (Rosche 1994). No records for autumn. Maximum count by Rosche was 55.
- Baird's Sandpiper** (*Calidris bairdii*). Spring and autumn transient, 24 Mar–4 Jun and 4 Jul–6 Nov (Rosche 1994). Maximum spring count by Rosche was 75 and maximum fall count was 4,000–5,000 in late Jul at the west end of Lake McConaughy. This is apparently the most common peep species in the area, although inhabiting drier habitats than the others.
- Pectoral Sandpiper** (*Calidris melanotos*). Primarily an autumn transient, 25 Jul–15 Oct. There are a few spring records, 22 Apr–30 May (Rosche 1994).
- Dunlin** (*Calidris alpina*). Rare spring transient, with 2 records from Clear Creek on 19 Apr 1987 and Keystone Lake on 18 May 1986 (Rosche 1994).
- Stilt Sandpiper** (*Calidris himantopus*). Spring and autumn transient, 6 May–31 May and 15 Jul–8 Oct (Rosche 1994). Maximum spring count by Rosche was 220 and maximum fall count was 275. Concentrated primarily at Clear Creek and the west end of Lake McConaughy.
- Buff-breasted Sandpiper** (*Tringites subruficollis*). Rare autumn transient with 3 fall records, 2 Aug–22 Sep (Rosche 1994). Most migration occurs in central Nebraska to the east of the study area.
- Short-billed Dowitcher** (*Limnodromus griseus*). Rare autumn transient with 2 records on 27 Aug 1989 and 2 Sep 1993 (Rosche 1994). Species may be overlooked owing to its similarity with the Long-billed Dowitcher.
- Long-billed Dowitcher** (*Limnodromus scolopaceus*). Spring and autumn transient, 22 Mar–25 May and 25 Jul–1 Nov (Rosche 1994). Maximum spring count by Rosche was 30, and maximum fall count was 125. Birds concentrated at the west end of Lake McConaughy and at Keystone Lake. May often be observed at the North Platte River bridge near Keystone.
- Common Snipe** (*Gallinago gallinago*). Primarily a spring and autumn transient but a local summer resident and uncommon in winter. Birds winter mostly in Lewellen marshes and at Lake Ogallala (Rosche 1994). Probably breeds regularly in the Clear Creek marshes, but nests or young have not been observed.
- Wilson's Phalarope** (*Phalaropus tricolor*). Spring and autumn transient, 20 Apr–4 Jun and 4 Jul–27 Aug (Rosche 1994). Maximum spring count by Rosche was about 400, and maximum fall count was 75. Closest known breeding is at Crescent Lake National Wildlife Refuge, north of Oshkosh, but may also nest on Sandhills lakes in Arthur County. Nesting habitat for birds in the nearby Sandhills was described by Bomberger (1984).
- Red-necked Phalarope** (*Phalaropus lobatus*). A rare transient, with spring records on 17–18 May 1986 and a fall record on 11 Sep 1988 (Rosche 1994). Rosche believes this species to be more common in the area than these records indicate.

LARIDAE

- Iceland Gull** (*Larus glaucooides*). Accidental. Several immature individuals were seen on Lake McConaughy and Lake Ogallala 11 Feb–5 Mar 1994 (Rosche 1994). An adult was observed at Lake McConaughy 27 Jan–5 Feb 1995 (Silcock 1995).
- Franklin's Gull** (*Larus pipixcan*). Spring and autumn transient and summer visitant, 24 Mar–7 Nov (Rosche 1994). Small numbers of apparent nonbreeders summer on Key-

stone Lake. A single bird in breeding plumage was below Kingsley Dam on 14–17 Dec 1993 (Silcock and Rosche 1994a). Maximum spring count by Rosche was 300 and maximum fall count was 6,000.

Laughing Gull (*Larus atricilla*). Accidental. One record for the area, 30 Jun 1992, at Lake McConaughy (Dinsmore and Silcock 1995c). Another was observed just east of the area at Sutherland Reservoir on 22 Dec 1994 by Dinsmore and Silcock.

Bonaparte's Gull (*Larus philadelphia*). Spring and autumn transient, 30 Mar–18 May and 15 Oct–19 Dec (Rosche 1994). A straggler was observed in early Jun 1996 at Keystone Lake. Maximum spring count by Rosche was 200, and fall count was about 675.

Ring-billed Gull (*Larus delawarensis*). Permanent nonbreeding resident. Maximum fall count was 6,000–8,000 on 1 Dec 1974 (Rosche 1994b), and 19,000 were present below Kingsley Dam in late Feb–mid Mar 1994 (Silcock and Rosche 1994b). Winter populations vary with severity of weather (Rosche 1994). Closest known nesting is in south-central Wyoming (Johnsgard 1979).

Herring Gull (*Larus argentatus*). Spring and autumn transient and winter visitant, 25 Jul–14 Jun (Rosche 1994). Up to 500 have been seen by Rosche in Mar at the west end of Lake McConaughy, and 1,000 were present below Kingsley Dam on 21 Feb 1994 (Silcock and Rosche 1994a).

Glaucous-winged Gull (*Larus glaucescens*). Accidental. One record on 12 and 15 Apr 1995 at Lake McConaughy (Roberson and Carratello 1996, Silcock 1995).

Glaucous Gull (*Larus hyperboreus*). Irregular winter visitant and spring transient, 11 Jan–22 Apr at Lake McConaughy (Rosche 1994, Silcock 1995). A large invasion of this species occurred throughout Nebraska during winter 1993–94, with at least 6 and possibly up to 10 present below Kingsley Dam on 16–28 Feb 1994. Most were first- and second-winter birds, but at least one adult was observed (Silcock and Rosche 1994a).

California Gull (*Larus californicus*). Largely permanent resident, now increasing each year during all seasons. Found mostly on Lake McConaughy. Rosche (1994) documents its history from the first sightings in 1984 through 1993 and reported a maximum count of 72 in Dec 1993. Silcock (1995) reported 82 on 22 Apr 1995. No breeding is known for the area, although birds are regularly observed during summer.

Thayer's Gull (*Larus thayeri*). Rare winter visitant and spring transient, 18 Dec–23 Apr at Lake McConaughy (Rosche 1994, Silcock 1995).

Lesser Black-backed Gull (*Larus fuscus*). Accidental. One record of 2 birds at Lake Ogallala and Lake McConaughy from 21 Feb–5 Mar 1994 (Rosche 1994, Silcock and Rosche 1994b).

Great Black-backed Gull (*Larus marinus*). Accidental. One record, a first-year and a second-winter bird 21–26 Feb 1994 below Kingsley Dam (Silcock and Rosche 1994a). The only other Nebraska record is from Sutherland Reservoir just to the east of the study area.

Black-legged Kittiwake (*Rissa tridactyla*). Accidental. One record, an adult male in breeding plumage was found dead on Keystone Lake in late May 1990 (Johnsgard 1990b).

Common Tern (*Sterna hirundo*). Accidental. There are 2 records, 27 Jul 1991 and 16–18 May 1995 at Lake

McConaughy (Rosche 1994, Silcock 1995).

Caspian Tern (*Sterna caspica*). Spring transient and summer visitant, 23 Apr–2 Aug, often at Keystone Lake and on the North Platte River below the Keystone diversion dam. Recently increasing in Jun and Jul on Keystone Lake, with maximum count of 12 on 24 Jun 1996.

Forster's Tern (*Sterna forsteri*). Spring and autumn transient and summer visitant, 17 Apr–3 Oct (Rosche 1994). No nesting by summer birds is known; closest breeding colonies are at Crescent Lake National Wildlife Refuge and the Sandhills marshes of Arthur County.

Least Tern (*Sterna antillarum*). Summer resident and spring and autumn transient, 20 May–15 Aug (Rosche 1994). Nesting colonies have been observed on the South Platte River near Roscoe, from Martin Bay to Arthur Bay, and at Lakeview on the south shore of Lake McConaughy. Local nesting status was summarized by Sidle et al. (1991). Nesting probably occurs almost annually on other sandy shorelines of bays and islands at Lake McConaughy.

Black Tern (*Chlidonias niger*). Spring and autumn transient and summer visitant, 20 Apr–21 Jun and 17 Jul–27 Sep (Rosche 1994). Jun sightings may represent stragglers, as no nesting has been reported for the area. Numbers have probably declined in recent years, coincident with altered water levels of Keystone Lake where migrants often forage.

COLUMBIDAE

Rock Dove (*Columba livia*). Permanent resident, breeding around human habitations and occasionally on cliffledges.

Mourning Dove (*Zenaidura macroura*). Spring and autumn transient and summer resident, 24 Mar–1 Nov. Casual winter visitant, with 4 records, 25 Nov–15 Jan (Rosche 1994). Species commonly nests on the ground in the study area even when trees are available. 6 were banded at CPBS.

CUCULIDAE

Black-billed Cuckoo (*Coccyzus erythrophthalmus*). Spring and autumn transient and summer resident, 13 Jun–25 Aug (F. Zeillemaker pers. comm.). 5 were banded at CPBS. Local breeding was indicated by presence of brood patches on all birds caught. Cuckoos of either species may be found in most of the riparian forest of the area.

Yellow-billed Cuckoo (*Coccyzus americanus*). Spring and autumn transient and summer resident, 14 May–11 Sep (Rosche 1994). 7 were banded at CPBS. Local breeding was indicated by presence of brood patches on all birds caught. Population size seems to vary annually.

TYTONIDAE

Common Barn Owl (*Tyto alba*). Spring and autumn transient and widespread summer resident, 19 Mar–7 Sep (Rosche 1994). Nests occur in roadside cuts and exposed rock outcroppings having deep recesses. Birds have nested at CPBS since 1983. Some nests may be found in tall cliffs on the south shore of Lake McConaughy. Great Horned Owls commonly prey on this species in the study area. Food pellet analysis suggests that *Dipodomys ordii* is a primary food item locally.

STRIGIDAE

Eastern Screech Owl (*Otus asio*). Permanent resident,

apparently uncommon. Gray-morph birds are typical in the study area. 2 were banded at CPBS.

Great Horned Owl (*Bubo virginianus*). Permanent resident. Breeds throughout. Nests have been found in canyons near CPBS and in old hawk and heron nests in the North Platte River floodplain nearly every year; newly fledged young have been observed from late Apr–late May. Often feeds on ducks and coots in fall and winter; recorded taking some small birds such as Cliff Swallows occasionally.

Northern Saw-whet Owl (*Aegolius acadicus*). Accidental. One record of a bird heard at Ash Hollow on 16–17 May 1986 (Rosche 1994).

Burrowing Owl (*Athene cunicularia*). Spring and fall transient and summer resident, 21 Apr–9 Oct (Rosche 1994). Nests locally in the abandoned holes of various mammals. A nest near Keystone in 1987 was destroyed by badgers. Extermination of prairie dogs in many areas by ranchers has led to a decline in population size of this species. Some birds nest solitarily, and colonies range from 2 to 10 pairs in the vicinity of the study area. A colony of 6 pairs active in 1996 was located about four miles northeast of Kingsley Dam.

Long-eared Owl (*Asio otus*). Rare and irregular throughout the year, probably limited to riparian forests. Rosche (1994) reports a record for 23 Feb 1980 at Cedar View Recreation Area, Lake McConaughy. Two fledglings that had recently left the nest were observed on 24 May 1994 at CPBS. No nesting has been seen since.

CAPRIMULGIDAE

Common Nighthawk (*Chordeiles minor*). Spring and autumn transient and summer resident, 5 May–11 Sep (Rosche 1994). Nests with incubated eggs were found near Keystone in early Aug 1981 and near CPBS in Jul 1991. Apparent nesting habitat seems to overlap that of Common Poorwill in canyons near CPBS; study is needed of these 2 species' ecological requirements and potential competition.

Common Poorwill (*Phalaenoptilus nuttallii*). Spring and autumn transient and summer resident, 12 Apr–mid Oct (Rosche 1994). Likely breeds in canyons near CPBS and in Ash Hollow area but no nests have been found. At least 3 calling birds were regularly heard in a single canyon near CPBS throughout the summer of 1995, but fewer birds were present in 1994 and 1996.

Chimney Swift (*Chaetura pelagica*). Spring and autumn transient and local summer resident, 26 Apr–11 Sep (Rosche 1994). Usually seen in towns such as Ogallala and Oshkosh where nesting likely occurs. One bird was banded east of Keystone.

TROCHILIDAE

Ruby-throated Hummingbird (*Archilochus colubris*). Accidental. One adult male was mist-netted on 23 May 1996 at CPBS.

ALCEDINIDAE

Belted Kingfisher (*Ceryle alcyon*). Permanent resident, breeding along the North Platte River, Sutherland Canal, and the south shoreline of Keystone Lake near CPBS. 26 were banded mostly near CPBS.

PICIDAE

Red-headed Woodpecker (*Melanerpes erythrocephalus*). Spring and autumn transient and summer resident, 28 Apr–21 Oct (Rosche 1994). Extremely common in woodlands along North Platte River near Keystone and below Kingsley Dam, where nesting occurs. Population size varies somewhat annually. 14 were banded near CPBS, with one recaptured the year after banding.

Red-bellied Woodpecker (*Melanerpes carolinus*). Rare autumn, winter, and spring visitant, 27 Sep–30 Apr (Rosche 1994). Rosche regards Lake McConaughy as a significant barrier to western movement of this species. One summer record, a bird heard during Jun 1989 at CPBS (B. Nickol pers. comm.).

Downy Woodpecker (*Picoides pubescens*). Permanent resident. Nests have been seen below Kingsley Dam and near CPBS in large deciduous trees. 40 birds were banded near CPBS, with one recaptured a year after banding and 2 recaptured 2 years after banding.

Hairy Woodpecker (*Picoides villosus*). Uncommon permanent resident. Nests have been seen below Kingsley Dam. Confined to woods with larger trees than Downy in the study area. 9 birds were banded near CPBS, with one recaptured the year after banding. Relative ratio of Downies to Hairies observed in the field is about 5:1 in the study area.

Northern Flicker (*Colaptes auratus*). Permanent resident. Nests have been seen in woods near Keystone and below Kingsley Dam. Occupies much more open habitats than other woodpeckers, often extending to the border of the Sandhills. Rosche (1994) reports that most breeding birds of the area are the yellow-shafted morph, but many migratory transients and winter residents are red-shafted. Hybridization among yellow-shafted and red-shafted morphs is common in the study area. Among birds banded, various intermediate phenotypes occurred, including some matching the gilded phenotype of the southwestern U. S. Some individuals with a black moustache on one side and a red on the other have been found. Others have shown both colors within a moustache. Red moustaches have been seen on birds with yellow wing linings, and black moustaches on ones with pink wing linings (Short 1965).

TYRANNIDAE

Olive-sided Flycatcher (*Contopus borealis*). Casual spring and fall transient, 14–26 May and 12 Aug–4 Sep (Rosche 1994). One was banded near CPBS.

Eastern Wood-pewee (*Contopus virens*). Spring and fall transient and summer resident, 28 May–12 Aug. 4 were banded near CPBS. Singing males were often heard below the Keystone diversion dam in 1993. Bird caught on 12 Aug was a juvenile, although it could have hatched outside the study area.

Western Wood-pewee (*Contopus sordidulus*). Spring and fall transient and summer resident, 16 May–27 Aug. Adults feeding young have been seen at Clear Creek in mid and late Jul. Single birds were banded near CPBS on 16 and 30 May and 5 Jun, including one female with a brood patch, suggesting nesting in the area. The study area is the only known region of contact between the 2 species of pewees in the Platte Valley. Since hybridiza-

tion between these 2 species is possible, study of pewees in the area is needed.

Yellow-bellied Flycatcher (*Empidonax flaviventris*). Rare spring transient. 2 records, of single birds banded on 3 Jun 1992 and 18 May 1996 at CPBS.

Acadian Flycatcher (*Empidonax virescens*). Rare spring transient. Although not generally known to occur in west Nebraska, 4 *Empidonax* with wing measuring 79, 80, 80, and 80 mm and conforming by wing formula (Pyle et al. 1987) to this species were banded at CPBS on 21, 26, and 29 May 1996.

Alder Flycatcher (*Empidonax alnorum*). Common spring and fall transient, with a restricted time of spring passage, 22 May–2 Jun. Fall records are 21 Jul–17 Aug. 62 birds were banded near CPBS, with one banded on 28 May 1993, and recovered at Fairbanks, Alaska on 7 Aug 1993, about 3500 km northwest of banding site (Dunning 1995).

Willow Flycatcher (*Empidonax traillii*). Spring and fall transient and summer resident, 9 May–15 Aug. Nests commonly in willow thickets below Keystone diversion dam, at Clear Creek, and at the Lewellen marshes. 58 birds were banded near CPBS.

Least Flycatcher (*Empidonax minimus*). Spring and autumn transient, 10 May–3 Jun and 22 Jul–17 Aug. 94 individuals were banded at CPBS. Most widespread of *Empidonax* in study area, occurring in greatest range of habitats.

Eastern Phoebe (*Sayornis phoebe*). Spring and autumn transient and summer resident, 28 Mar–21 Aug (Rosche 1994). Nesting seen at CPBS in 1982 and occurs regularly along Sutherland Canal. 3 birds were banded at CPBS.

Say's Phoebe (*Sayornis saya*). Spring transient and summer resident, 25 Mar–27 Sep (Rosche 1994). Bred at Ash Hollow in 1950s (Rosche 1994). A single pair nested in an abandoned Cliff Swallow nest at Whitetail Creek each summer from 1982–1987. Cliff Swallows usurped the nest in 1987 and killed the young phoebes, and nesting has not occurred there since. Say's Phoebes breed frequently under concrete and wooden bridges along Sutherland Canal, often using the same bridge from year to year. This species tends to use bridges whereas Eastern Phoebe uses mostly small concrete irrigation culverts along the canal. Rosche (1994) observed that dead and exhausted Say's Phoebes can be found along the sandy beaches of Lake McConaughy after severe spring storms. These birds apparently attempt to cross the lake during adverse weather. 24 birds were banded at various sites throughout study area.

Great Crested Flycatcher (*Myiarchus crinitus*). Spring and autumn transient and local summer resident, 6 May–11 Sep (Rosche 1994). Found primarily in deciduous floodplain woodlands, often below Keystone diversion dam and at Oshkosh. 11 birds were banded at CPBS, and one was recaptured the next year. 7 females had brood patches, suggesting nesting in the area.

Western Kingbird (*Tyrannus verticalis*). Spring and autumn transient and summer resident, 22 Apr–10 Sep (Rosche 1994). Nests throughout area in both deciduous and juniper trees. Some nest site characteristics in the study area were described by Bergin (1992). 105 were banded at CPBS, but only one was recaptured the next year. A nest attended by one Western and one Eastern Kingbird was discovered at Keystone Lake in 1994, but

grackles destroyed the young before their plumage affinities could be determined. Some Western Kingbirds succumbed to cold and rainy weather in late May 1996; severe spring weather may regulate the population in the study area. Not known to be parasitized by cowbirds, and field experiments at CPBS reveal that kingbirds of both species reject cowbird eggs added to their nests.

Cassin's Kingbird (*Tyrannus vociferans*). Accidental but perhaps a rare summer visitant. 2 records, on 11 May 1985 at Oshkosh (Rosche, 1994) and 3 Jul 1996 near Omaha Beach on the north side of Lake McConaughy. Few people carefully scrutinize kingbirds in the field, and thus this species may occur more frequently than these 2 records indicate. Rosche (1994) believes that most yellow-breasted kingbirds seen after 10 Sep may be Cassin's.

Eastern Kingbird (*Tyrannus tyrannus*). Spring and autumn transient and summer resident, 27 Apr–16 Sep (Rosche 1994). Nests throughout study area. Occupies wetter and more open habitat than Western, but nests of both species are often very close together. 76 birds were banded near CPBS, with one recaptured the next year. Ratio of Western to Eastern observed in the field is 3–4 to 1. Large flocks may be seen during fall migration, beginning in early to mid Aug.

Scissor-tailed Flycatcher (*Tyrannus forficatus*). Rare vagrant, with 6 records from sometime in May until 14 Oct (Rosche 1994).

ALAUDIDAE

Horned Lark (*Eremophila alpestris*). Permanent resident. Strong influx of birds appears in winter. One of the most common breeding birds of the Sandhills just to the north of the study area, although it also nests in tableland prairies near Ogallala.

HIRUNDINIDAE

Purple Martin (*Progne subis*). Spring and autumn transient and summer resident, 12 Apr (F. Zeillemaker, pers. comm.)–6 Aug. Nested westward to Lewellen in 1977–79, the westernmost regular nesting site in Nebraska. Has nested at Martin Bay (Rosche 1994). Several small colonies exist in Ogallala. Martin houses in Keystone and Roscoe have not been occupied, although transients often pass through CPBS. Birds frequently feed in downtown Ogallala amid moving cars during cold spring weather. One in 1996 entered a broken-out Cliff Swallow nest at Kingsley hydroplant to escape cold weather.

Tree Swallow (*Tachycineta bicolor*). Spring and fall transient and summer resident, 29 Mar–13 Sep (Rosche 1994). Nesting has been observed at Clear Creek-Lewellen area and Keystone Lake. Up to 5 pairs have nested at Keystone Lake, although population dropped after the severe cold weather in late May 1996. 12 birds were banded at CPBS.

Violet-green Swallow (*Tachycineta thalassina*). Rare vagrant. 3 records, 8 Jul 1987 and 29 Apr 1989 at Keystone Lake, and 29 Aug 1986 at Oshkosh (Rosche 1994). Closest known breeding occurs in the Black Hills of South Dakota.

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*). Spring and autumn transient and summer resident, 12 Apr–2 Sep (Rosche 1994). Nests locally in

road cuts and cliff crevices, usually solitarily, although small groups of 4 to 6 adults are often seen during the summer on wires near CPBS. 244 birds were banded, mostly at CPBS, with 5 recaptured the year after banding. Some mortality of this species occurred during cold weather of late May 1996.

Bank Swallow (*Riparia riparia*). Spring and autumn transient and local summer resident, 19 Apr–15 Sep (Rosche 1994). Colonies have been seen in road cuts along Sutherland and Korty canals, at the Oshkosh Sewage Lagoons, and along the south shore of Lake McConaughy. Colonies range from 5 nests to approximately 1,000, with the largest occurring on the Lake McConaughy cliffs. Occasionally nests with Cliff Swallows, and has its nests usurped by latter species which builds mud front onto burrow. 31 birds were banded, mostly near CPBS. Some mortality occurred during severe weather in late May 1996.

Cliff Swallow (*Hirundo pyrrhonota*). Spring and autumn transient and summer resident, 13 Apr–20 Sep. The most abundant passerine nesting in the area, breeding under bridges, in culverts, under the eaves of buildings (rarely), on irrigation structures, and on cliff faces. Cliff nesting sites are confined to southern shore of Lake McConaughy and along North Platte River west of Lewellen, but birds use artificial sites throughout the study area. Eggs have been laid from 4 May–28 Jul. Colonies range in size from 2 to 3,700 nests, and some birds nest solitarily. This species has been studied extensively in the area since 1982 (Brown and Brown 1996). Approximately 87,000 birds have been banded throughout the study area. Thousands have been recaptured in subsequent seasons; oldest birds are 11 years old (5 individuals). Banded birds from the study area have been recovered in southern Brazil, El Salvador, Colorado, Alberta, and Missouri. Heavy mortality occurred during a 4-day period of cold and rainy weather, 26–29 May 1996, with the local population reduced by about 50 percent. Cliff Swallows were affected by this weather to a greater extent than most other insectivores.

Cave Swallow (*Hirundo fulva*). Rare vagrant. 2 records, both of juveniles probably reared in Texas and migrating north with Cliff Swallows, near Ash Hollow on 31 May 1991 (Brown and Brown 1992) and about 6.5 miles east of CPBS along Sutherland Canal on 26 Jun 1995 (Grzybowski 1995). Expanding its range northward and may begin appearing more frequently among flocks of Cliff Swallows.

Barn Swallow (*Hirundo rustica*). Spring and autumn transient and common summer resident, 12 Apr–15 Oct. Nests commonly on buildings, under bridges, and in culverts throughout study area. Often solitary but colonies of up to 50 nests have been recorded at a culvert along Interstate 80 east of Roscoe. A nest on a natural cliff was found along the south shore of Lake McConaughy in 1982 (probably active in 1981), which is one of the few natural nesting locations in the Great Plains in modern times (see Speich et al. 1986). Some mortality occurred during cold weather in late May 1996. 710 birds were banded throughout the study area, with 28 birds recaptured in years subsequent to their banding. Longest-lived bird to date is 5 years old.

CORVIDAE

Blue Jay (*Cyanocitta cristata*). Permanent resident. 2 nests were found at CPBS in 1996. Uses both deciduous and juniper woodlands. Appears to be increasing, especially in summer, in recent years coincident with possible decline of magpies. 51 birds were banded at CPBS, and 5 were recaptured in subsequent years.

Steller's Jay (*Cyanocitta stelleri*). Accidental. One record on 28 Apr 1947 at the South Platte River near Ogallala (Benckesen 1947).

Pinyon Jay (*Gymnorhinus cyanocephalus*). Accidental. One record on 6 Nov 1976 of 6 birds near Oshkosh (Rosche 1994).

Black-billed Magpie (*Pica pica*). Permanent resident. More common in autumn when influx of birds from farther north and west occurs. Nests mostly in large juniper trees. Young have often fledged by mid-Jun. Summer population may have declined in recent years. 2 birds were banded at CPBS. Certain individuals often repeatedly hunt Cliff Swallows at the larger colonies, catching them by flying into swarms of flying swallows.

American Crow (*Corvus brachyrhynchos*). Permanent resident. Although often seen in summer, no nesting records are known. Common at the west end of Lake McConaughy and westward (Rosche 1994), but also increasing in the Keystone area in recent years.

PARIDAE

Black-capped Chickadee (*Parus atricapillus*). Permanent resident. Nesting is regular in riparian woodlands along North Platte River, and nests have been found near CPBS. Rosche (1994) believes the species to be more numerous in fall and winter when more northerly birds join the local population, although all 6 birds mist-netted at CPBS on 25–26 Oct were local birds banded earlier that summer and all others observed at a feeder wore bands. 161 birds were banded at CPBS, with 15 birds recaptured the next year after banding, 5 recaptured two years after banding, and one recaptured 4 years after banding. 78 percent of all chickadees banded were juvenile birds only a few months old.

SITTIDAE

Red-breasted Nuthatch (*Sitta canadensis*). Spring and autumn transient and winter visitant, 2 Sep–18 May. Calling nuthatches believed to be this species were heard at CPBS in early Jun 1994. Apparently this species is confined to junipers in canyons near CPBS and perhaps Ash Hollow area. One female caught on 18 May had a brood patch, but nesting is unknown for the area. 5 birds were banded at CPBS.

White-breasted Nuthatch (*Sitta carolinensis*). A spring and autumn transient, winter visitant, and rare summer visitant. Rosche (1994) regards the species as most likely from 15 Oct–24 Mar. However, several summer records exist (Rosche 1994), including 4 Jun 1992 at Eagle Canyon, 18 Jun 1994 (bird banded) at CPBS, 15 Jul 1987 at Oshkosh, and 14 Aug 1994 (bird banded) at CPBS. No evidence of nesting despite these summer records. Birds most likely to occur in deciduous forest along the North Platte River.

CERTHIIDAE

Brown Creeper (*Certhia americana*). A spring and autumn transient and winter visitant, with eight records, 9–27 Nov and 14 Feb–11 Mar (Rosche 1994). Species usually observed in Keystone Lake area in deciduous riparian forest. Rosche (1994) believes severity of winters may limit its winter occurrence.

TROGLODYTIDAE

Rock Wren (*Salpinctes obsoletus*). A spring and autumn transient and common summer resident, 14 Apr–28 Sep (Rosche 1994). Up to 12 singing males per day have been found in canyons near CPBS. Nests are regularly found in rock crevices near CPBS and along the south shore of Lake McConaughy, some as late as 14 Aug. Population may vary from year to year. 24 birds were banded at CPBS.

Bewick's Wren (*Thryomanes bewickii*). Accidental. A specimen was collected near Oshkosh on 21 Apr 1915 (Rosche 1994). The only modern record was one reported during May 1978 at CPBS with no documentation (Mahoney pers. comm.).

House Wren (*Troglodytes aedon*). Spring and autumn transient and summer resident, 22 Apr–12 Oct (Rosche 1994). One of the most common nesting species of the area in floodplain forest, breeding in natural tree cavities, crevices, and bird boxes. Frequently occupies unused Cliff Swallow nests at many of the larger swallow colonies on bridges. Some nesting sites are used annually; one at CPBS has been used virtually every year since the field station was established. Quickly occupies bird boxes intended for bluebirds and may limit nesting opportunities for bluebirds and other small cavity nesters. 251 were banded near CPBS, with 11 recaptured the next year after banding and one recaptured 2 years after banding.

Winter Wren (*Troglodytes troglodytes*). Rare autumn transient and winter visitant, with 4 records from 23 Nov–5 Feb, all from the Kingsley Dam and CPBS area (Rosche 1994, Silcock 1995).

Marsh Wren (*Cistothorus palustris*). Permanent resident but occurs mostly 24 Mar–8 Nov (Rosche 1994). Commonly nests in Lewellen marshes and at the west end of Lake McConaughy. Formerly nested abundantly at Keystone Lake, but breeding population was greatly reduced when water levels were altered beginning in 1982. Requires very dense stands of cattails for nesting. Winter records are mostly from the Lewellen marshes and the warm-water springs along the north side of Keystone Lake (Rosche 1994). 9 were banded at Keystone Lake.

MUSCICAPIDAE

Golden-crowned Kinglet (*Regulus satrapa*). A spring and autumn transient and winter visitant, 27 Oct–13 Apr (Rosche 1994). Although preferring coniferous forest in much of its range, it sometimes occurs in the study area in deciduous woods, often in the Kingsley Dam area. Rosche (1994) believes that some birds try, unsuccessfully, to spend the winter in the area.

Ruby-crowned Kinglet (*Regulus calendula*). A spring and autumn transient from 8 Oct–1 Nov and 18 Apr–14 May (Rosche 1994). Less likely than Golden-crowned Kinglet to occur among junipers in canyons.

Blue-gray Gnatcatcher (*Poliophtila caerulea*). Accidental. A female was captured and banded on 3 Jun 1993 below

the Keystone diversion dam. The bird had a brood patch and was in apparent breeding condition.

Eastern Bluebird (*Sialia sialis*). Spring and autumn transient and summer resident, 22 Mar–25 Dec (Rosche 1994). Nests regularly in stands of dead cottonwoods and willows along the North Platte River near Keystone and in areas bordering the Sandhills northeast of Keystone. Prefers broken woodland and forest edge where dead trees provide nesting sites. Overwintering apparently does not occur (Rosche 1994).

Mountain Bluebird (*Sialia currucoides*). Spring and autumn transient and winter visitant, 31 Oct–11 Mar (Rosche 1994). Most often seen in Lewellen and Keystone areas, and has occurred in the study area in winter each year since 1990 (Rosche 1994).

Townsend's Solitaire (*Myadestes townsendi*). Spring and autumn transient and winter visitant, 16 Sep–6 May. Prefers juniper-clad northerly slopes in the Ash Hollow and CPBS areas. In early spring, small groups can be seen feeding from the bridges over the Sutherland Canal below the Keystone diversion dam. Also may occur in towns in its search for juniper fruits (Rosche 1994). One summer record for Jul 1948 along the South Platte River (Benckesen 1947), and Rosche suggests that nesting may occur in the Lake McConaughy area in the future.

Veery (*Catharus fuscescens*). Rare spring transient, with 4 records from 18 May–3 Jun (Rosche 1994). May occur in fall migration but not observed to date.

Gray-cheeked Thrush (*Catharus minimus*). Accidental. One record on 7 May 1978 at Lewellen (Rosche 1994).

Swainson's Thrush (*Catharus ustulatus*). A spring and fall transient, 6 May–7 Jun and 3–11 Sep (Rosche 1994). Common in spring, but there are only 2 autumn records. Occurs mostly in deciduous floodplain forest. 221 birds were banded at CPBS in spring, suggesting that this is a more common spring migrant than Rosche (1994) indicated. 41 of those banded had brood patches. Migrants must often be in breeding condition, as no nesting is known for the study area.

Wood Thrush (*Hylocichla mustelina*). Rare spring transient, with 4 records, 17 May–16 Jun. A female banded on 16 Jun at Lake Ogallala had a brood patch, but nesting is not known for the study area.

American Robin (*Turdus migratorius*). Permanent resident. Common virtually throughout the year, nesting in many habitats and on a variety of structures. Rosche (1994) lists a maximum winter count of about 1,000 on 18 Feb 1980. No cowbird parasitism was detected in approximately 25 nests in the CPBS area, even though this species often nests early in the spring when no other potential hosts are breeding. 149 were banded at CPBS, with 6 recaptured one year after banding and 2 recaptured 2 years after banding.

MIMIDAE

Gray Catbird (*Dumetella carolinensis*). A spring and autumn transient and summer resident, 11 May–9 Nov (Rosche 1994). Nesting was first observed in 1984 at CPBS, and this species bred commonly there from 1994–1996. This probably reflects a recent increase in the breeding population locally. No cowbird parasitism occurred among 4 nests in the CPBS area. 93 birds were banded, 45 of these in 1996 alone, near CPBS. As many as

15 birds were captured on a single day. All nests found were in willow thickets along the north side of Keystone Lake.

Northern Mockingbird (*Mimus polyglottos*). Regular permanent resident (Rosche 1994) in the vicinity of CPBS. The region near the Keystone bridge over the North Platte River typically supports several territories, and other birds have been seen at the Roscoe bridge over the South Platte River. Young incapable of sustained flight have been observed near Keystone, indicating occasional local nesting.

Brown Thrasher (*Toxostoma rufum*). Spring and autumn transient and summer resident, 26 Apr–1 Nov (Rosche 1994). Nesting occurs throughout the study area but is especially common in shrubby areas around Keystone Lake where these birds nest in dense bushes. 2 of 5 nests were parasitized by cowbirds. The cowbird egg was rejected within 24 hours from one of the nests. 92 birds were banded at CPBS with 6 recaptured after one year and 5 recaptured after 2 years.

MOTACILLIDAE

American Pipit (*Anthus rubescens*). Spring and autumn transient, 30 Mar–17 May and 14 Aug–1 Nov (Rosche 1994). Maximum autumn counts by Rosche reached 17 birds during Oct (Rosche 1994).

BOMBYCILLIDAE

Bohemian Waxwing (*Bombycilla garrulus*). Winter visitant, 9 Nov–11 Mar. Rosche (1994) reports maximum daily counts of up to 50 birds. Can be found at places with fruit-bearing trees such as Russian olive (*Elaeagnus angustifolia*) and junipers. An irruptive species, numbers vary annually.

Cedar Waxwing (*Bombycilla cedrorum*). Permanent resident, although more common in winter. Rosche (1994) has reported up to 500 birds in late Dec. In summer, more often seen in Jun than Jul or Aug, but birds were banded at CPBS as late as 10 Aug. A nesting pair was observed near Kingsley Dam in May, 1994 and a nest was later located. 54 birds were banded near CPBS, with one recaptured after one year. 13 of the birds banded were juveniles. Summer populations may vary; very few were present in the CPBS area in 1992–93, with numbers increasing in 1994–96.

LANIIDAE

Northern Shrike (*Lanius excubitor*). Winter visitant, 23 Sep–29 Mar (Rosche 1994). Apparently an ecological replacement for the Loggerhead Shrike during the coldest months of the year.

Loggerhead Shrike (*Lanius ludovicianus*). Spring and autumn transient and summer resident, 28 Mar–20 Sep (Rosche 1994). Probably more common in the Sandhills than in the study area proper. Numbers have declined nationally in the last 10–15 years, and the same trend is apparent in this area. Shrikes were noticeably more common in the study area in 1982–84, almost vanishing in summer until 1993 when more appeared. A nest with eggs was observed at CPBS in late May 1983, and young fledged from a nest on 5 Jul 1996. Shrikes often prey on small birds and have attacked Cliff Swallows in this area. One bird was banded at CPBS in 1994.

STURNIDAE

European Starling (*Sturnus vulgaris*). Introduced permanent resident. Up to 8,000 have been observed near Keystone in Nov (Rosche 1994). Nests throughout the area, in cavities, bird boxes, and crevices in buildings. More common around towns and human habitations. Usurped an Eastern Bluebird nest in a large cottonwood tree below Kingsley Dam, and the Starling's presence may exclude bluebirds, Tree Swallows, and other cavity-nesting species from many areas. 16, mostly juveniles, were banded at CPBS.

VIREONIDAE

White-eyed Vireo (*Vireo griseus*). Accidental. An adult was mist-netted and banded at CPBS on 9 May 1994. There is apparently only one record for western Nebraska from Chadron (Rosche 1982).

Bell's Vireo (*Vireo bellii*). Spring and fall transient and summer resident, 10 May–2 Sep (Rosche 1994). A common breeder in brushy regions of riparian forest and willow thickets. Number of breeding pairs near CPBS has increased in the last 3 years. Nests are difficult to find; only 2 nests were found although as many as 15 singing males were heard along the north side of Keystone Lake. 92 birds were banded near CPBS, with 6 recaptured after one year and 5 recaptured after 2 years.

Solitary Vireo (*Vireo solitarius*). Accidental to rare spring and autumn transient. 2 records on 18 May 1986 and 12 Oct 1990 at Kingsley Dam (Rosche 1994).

Yellow-throated Vireo (*Vireo flavirostris*). Accidental. One was found 24 May 1983 below the Keystone Lake diversion dam.

Warbling Vireo (*Vireo gilvus*). Spring and fall transient and summer resident, 9 May–2 Sep (Rosche 1994). Common in riparian forest in summer and presumably breeds throughout the North Platte River floodplain. Habitat often includes intermediate sized trees and developing forest, trees smaller than those used by Red-eyed Vireos. Juvenile birds have been captured in late Jul and early Aug at CPBS. 83 birds were banded at CPBS, and 2 were recaptured after one year.

Red-eyed Vireo (*Vireo olivaceus*). Spring and fall transient and summer resident with records 14 May–10 Sep (Rosche 1994). Although Rosche (1994) listed only one summer record, this species is regular throughout the summer in the vicinity of CPBS, especially in the woods below the Keystone diversion dam. Prefers tall deciduous trees. Probably nests in this area, as 3 females with brood patches were captured at CPBS 30 May–18 Jun, and 2 juveniles were mist-netted there. 22 birds were banded near CPBS, with 2 recaptured after one year. One partially albinistic juvenile was banded on 17 Jul 1992; it returned and was recaptured 3 times the following summer. The bird was whiter and had a red eye the second year.

EMBERIZIDAE

Prothonotary Warbler (*Protonotaria citrea*). Rare and apparently often overlooked spring transient. 2 males and one female were mist-netted and banded on 17–18 May 1996 at CPBS, with one of the males recaptured 2 days later. No apparently suitable nesting habitat exists in the study area.

- Golden-winged Warbler** (*Vermivora chrysoptera*). Rare spring transient. One was observed on 11 May 1991, and another was banded on 6 Jun 1992, both at CPBS. This, and many other warbler species probably pass through the area more commonly than is assumed. Few of these birds sing during spring passage, and observers seldom scrutinize the tree canopy during this time of year.
- Tennessee Warbler** (*Vermivora peregrina*). Rare spring transient, with 5 records, 13–29 May, all at CPBS. 4 of the birds were banded.
- Blue-winged Warbler** (*Vermivora pinus*). Accidental. An adult female was mist-netted and banded on 19 May 1993 at CPBS.
- Orange-crowned Warbler** (*Vermivora celata*). Spring and autumn transient, 22 Apr–22 May and 11 Sep–17 Oct. Rosche (1994) regards this species as more common in spring than in fall. Widespread during migration. 33 birds were banded at CPBS.
- Nashville Warbler** (*Vermivora ruficapilla*). Rare spring and autumn transient. 2 records on 3 Oct 1976 at Lewellen (Rosche 1994) and 18 May 1991 at CPBS.
- Yellow Warbler** (*Dendroica petechia*). Spring and autumn transient and summer resident, 1 May–30 Aug (Rosche 1994). The most common breeding warbler in the study area. Nests can be found in shrubs, especially wild rose (*Rosa arkansana*), willows, and indigo bush (*Amorpha fruticosa*), usually within 2 meters of the ground. Often parasitized by cowbirds in this area, but parasitized nests are abandoned or a new nest is built on top of the old, and this species seldom if ever raises cowbirds. Breeds in high density on the north and west side of Keystone Lake in willow thickets. 675 birds were banded near CPBS, with 29 recaptured after one year and 18 recaptured after 2 years.
- Chestnut-sided Warbler** (*Dendroica pensylvanica*). Rare spring transient with 6 records, 18 May–17 Jun, and accidental fall transient with one record on 30 Aug 1986 (Rosche 1994). 2 birds were banded on 18 and 19 May 1996 at CPBS.
- Magnolia Warbler** (*Dendroica magnolia*). Accidental. One record on 14 May 1977 at Ash Hollow (Rosche 1994).
- Yellow-rumped Warbler** (*Dendroica coronata*). Spring and autumn transient, 15 Apr–31 May and 10 Sep–6 Nov. Both white-throated “Myrtle” and yellow-throated “Audubon’s” forms occur in the area, with 31 mist-net captures at CPBS showing “Myrtles” being 5 times as common as “Audubon’s” in spring. Numbers in spring vary somewhat from year to year, with a massive invasion observed in early May 1996.
- Townsend’s Warbler** (*Dendroica townsendi*). Accidental. One record on 16 May 1964 near Kingsley Dam (Anonymous 1964).
- Prairie Warbler** (*Dendroica discolor*). Accidental. One record on 25 May 1978 at Oshkosh (Rosche 1994).
- Bay-breasted Warbler** (*Dendroica castanea*). Accidental. One record on 25 May 1978 at Lewellen (Rosche 1994).
- Blackpoll Warbler** (*Dendroica striata*). Spring transient, 12 May–1 Jun. No fall records for the area. 8 birds were banded, and 2 more were mist-netted but not banded, at CPBS, all in 1993 and 1996. Migrants apparently occur in various habitats, having been mist-netted in junipers, willow thickets, and deciduous woods in the study area.
- Northern Parula** (*Parula americana*). Accidental. One record on 30 May 1993 at Ash Hollow (Rosche, 1994).
- Black-and-white Warbler** (*Dendroica varia*). Spring transient, 19 May–15 Jun. A very early record exists for 24 Mar 1978 at Keystone Lake (Rosche 1994). No fall records for the area. 4 birds were banded at CPBS in 1993 and 1996.
- Black-throated Blue Warbler** (*Dendroica caerulescens*). Accidental. An adult male was mist-netted and banded on 5 May 1995 at CPBS.
- American Redstart** (*Setophaga ruticilla*). Spring and autumn transient, 14 May–15 Jun and 12 Aug (Fretwell, pers. comm.)–10 Sep (Rosche 1994). One summer record for 11 Jul 1992 when one bird was banded at CPBS. 8 total birds were banded.
- Ovenbird** (*Seiurus aurocapillus*). Spring and autumn transient, 7 May–26 May and 29 Jun–27 Sep. Breeding has not been documented for the area, although 12 birds captured at CPBS between 2 Jul and 7 Aug showed brood patches. 66 individuals were banded at CPBS, with one recaptured after one year.
- Northern Waterthrush** (*Seiurus noveboracensis*). Spring transient. 7 records, 13–23 May. Found along warm-water springs on the north side of Keystone Lake. Has been seen foraging just below gates of Keystone diversion dam. 4 birds were banded near CPBS.
- Connecticut Warbler** (*Oporornis agilis*). Accidental. One record on 2 Jun 1990 when a male was banded at CPBS.
- MacGillivray’s Warbler** (*Oporornis tolmiei*). Spring and fall transient, but more common in spring, 16 May–4 Jun. 2 fall records on 2 and 19 Sep (Rosche 1994). Birds mist-netted in the area showed obviously incomplete, rather thick white eye rings. 9 were banded near CPBS.
- Mourning Warbler** (*Oporornis philadelphia*). Rare spring transient with 3 records of birds banded on 16 May 1996 and 17 and 25 May 1993 at CPBS. All 3 were males in breeding plumage with no hint of an eye ring.
- Common Yellowthroat** (*Geothlypis trichas*). Spring and autumn transient and summer resident, 23 Apr–3 Oct (Rosche 1994). Breeds locally in marshes and wet willow thickets, with nests found on the north side of Keystone Lake and near toe drains below Kingsley Dam. Nests are on the ground and very difficult to find. 2 of 6 nests in the study area were successfully parasitized by cowbirds; this species apparently accepts cowbird eggs. 241 birds were banded near CPBS, with 10 recaptured after one year and 4 recaptured after 2 years.
- Canada Warbler** (*Wilsonia canadensis*). Accidental. An adult male was mist-netted and banded at CPBS on 19 May 1996.
- Hooded Warbler** (*Wilsonia citrina*). Rare spring transient, with 3 records on 18 May 1983, 16 May 1994, and 20 May 1996, all near CPBS. The latter 2 birds were banded.
- Wilson’s Warbler** (*Wilsonia pusilla*). Spring and autumn transient, 7 May–27 May and 1 Sep–28 Sep. The only warbler in the area that is more common in fall than in spring (Rosche 1994). 3 birds were banded at CPBS from 7–19 May.
- Worm-eating Warbler** (*Helmitheros vermivorus*). Accidental. One was mist-netted and banded on 4 Jul 1992 at CPBS.
- Yellow-breasted Chat** (*Icteria virens*). Spring and fall transient and summer resident, 11 May–10 Sep (Rosche 1994). Nests locally in wet willow thickets on the north

side of Keystone Lake, along toe drains below Kingsley Dam, in junipers at CPBS, and at Ash Hollow. A male residing in junipers at CPBS sang virtually all night long throughout the summer of 1995. 2 of 6 nests were successfully parasitized by cowbirds in 1994; one nest received 2 cowbird eggs. 130 birds were banded near CPBS, with 17 birds recaptured after one year and 8 after 2 years. Chats apparently suffered high mortality during the cold and wet weather in late May 1996.

Scarlet Tanager (*Piranga olivacea*). Rare spring (and possibly fall) transient with 3 records on 19 May 1983, 11 Jul 1992, and 18 May 1996, all near CPBS. The latter 2, an adult male and female respectively, were banded.

Western Tanager (*Piranga ludoviciana*). Rare spring and fall transient, with 3 records on 2 Sep 1979 at Oshkosh, 19 May 1985, and 10 Sep 1988, the latter 2 at Lewellen (Rosche 1994). This species occurs regularly in the Nebraska Pine Ridge, and occasional vagrants are to be expected in the study area.

Northern Cardinal (*Cardinalis cardinalis*). Permanent resident. Although relatively common around Keystone, it is seldom observed even as far west as Oshkosh. Breeds at CPBS in junipers and commonly uses bird feeders at the field station. The species is expanding its range westward and may soon become more common in the study area. 48 were banded at CPBS, with 4 birds recaptured after one year and one recaptured after 2 years.

Rose-breasted Grosbeak (*Pheucticus ludovicianus*). Spring and fall transient and summer resident, 2 May–15 Sep. Presumably breeds in the area. No nests have been found, but one bird with a brood patch was captured on 16 May. Hybridization with Black-headed Grosbeak (West 1962) apparently occurs in or near the study area. 2 of five birds mist-netted and designated as mostly Rose-breasted showed some plumage characteristic of Black-headed Grosbeak. Sometimes occurs in May in large migratory flocks; up to 15 birds were seen feeding in a single tree at CPBS on 2 May.

Black-headed Grosbeak (*Pheucticus melanocephalus*). Spring and autumn transient and summer resident, 11 May–11 Sep (Rosche 1994). Breeds in the area, with a nest found at Eagle Canyon in 1979 (C. Faanes pers. comm.), and 2 birds with brood patches captured at CPBS on 18 and 25 Jul. Among 35 birds banded at CPBS and designated as mostly Black-headed, 5 showed evidence of hybridization with Rose-breasted Grosbeak.

Blue Grosbeak (*Guiraca caerulea*). Spring and autumn transient and summer resident, 3 May–10 Sep. Likely breeds locally, but the rarest nesting species of the grosbeaks. No nests have been found, but Rosche observed a female carrying nesting material at Clear Creek on 30 May 1987 and a territorial male sang daily from a telephone wire (always in the shade of a pole!) at Whitetail Creek in 1987 and 1988. One juvenile was mist-netted at CPBS on 10 Aug 1994. May have been more common around CPBS in the 1980s than at present. Can also be seen at Ash Hollow on the brushier, drier slopes. 22 birds were banded at CPBS.

Lazuli Bunting (*Passerina amoena*). Spring and fall transient and summer resident, 9 May–10 Sep. Territorial males have been heard singing (Rosche 1994), but no nests have been found. Hybridization with the Indigo Bunting (Sibley and Short 1959) apparently occurs in or

near the study area. Among 27 birds mist-netted at CPBS and designated as mostly Lazuli, 6 had some hybrid plumage characteristics. One "pure" Lazuli was recaptured after one year.

Indigo Bunting (*Passerina cyanea*). Spring and fall transient and summer resident, 15 May–16 Sep (Rosche 1994). Found along edges of riparian woodlands along the North Platte River, in juniper-clad canyons near CPBS, and at the west end of Lake McConaughy. Hybridization with Lazuli Bunting in the study area was reported in 1977 by Fretwell (pers. comm.) and probably had been occurring before then. Of 28 birds banded near CPBS and designated as mostly Indigo, 4 had some hybrid plumage characteristics. 2 "pure" Indigo Buntings were recaptured after one year.

[**Painted Bunting** (*Passerina ciris*). Considered accidental by Rosche (1994) based on a 1982 observation by C. R. Brown. However, Brown himself no longer believes that the record is valid, and therefore it is excluded from this list.]

Dickcissel (*Spiza americana*). Spring and autumn transient and local summer resident, 17 May–19 Aug. Nests have been found along the warm-water stream on the north side of Keystone Lake, and breeding undoubtedly also occurs in wet meadows and waste hayfields near Keystone and in other parts of the study area. Rosche (1994) notes that they commonly nest in irrigated alfalfa fields such as at Clear Creek. Highly variable in numbers annually, some years abundant and other years rarely seen. This species was seldom recorded in the area in the early 1980s, and has shown an overall increase since then. At times nesting in high density, 14 nests were found in an 800-meter strip along the north side of Keystone Lake. 4 of 11 nests were successfully parasitized by cowbirds in 1994; later breeding birds (after 7 Jul) escape cowbird parasitism (Kren 1994). 53 birds were banded near CPBS.

Eastern Towhee (*Pipilo erythrophthalmus*). Spring and autumn transient and summer resident, 22 Apr–9 Nov (Rosche 1994). Nests have been found below Kingsley Dam and near CPBS, and adults have been seen carrying food and feeding recently fledged young in that area as late as 18 Jul. Of 61 towhees mist-netted and banded near CPBS, 32 were designated Eastern and 29 Spotted. Hybridization in the rufous-sided towhee superspecies (Sibley and West 1959) probably occurs in the study area, as many birds mist-netted showed intermediate characteristics.

Spotted Towhee (*Pipilo maculatus*). Spring and autumn transient and summer resident with dates of occurrence similar to those of Eastern Towhee. Often difficult to separate Spotted and Eastern in the field, even with birds in the hand, because many individuals in this area show plumage features of both species.

American Tree Sparrow (*Spizella arborea*). Spring and autumn transient and winter visitant, 9 Oct–12 Apr (Rosche 1994). Very common at times, with Rosche reporting a daily count of 304 birds on 19 Dec.

Chipping Sparrow (*Spizella passerina*). Spring and autumn transient, 25 Apr–26 May and 15 Jul–14 Oct (Rosche 1994). Large flocks are often seen during spring migration along roadsides and in weedy fields, feeding on dandelions (*Taraxacum officinale*) in mixed flocks with

- American Goldfinches. Not known to nest in the area, although 3 birds with brood patches were captured on 3–6 Aug. 225 birds were banded near CPBS.
- Clay-colored Sparrow** (*Spizella pallida*). Spring and autumn transient, 25 Apr (F. Zeillemaker pers. comm.)–5 Jun and 8 Jul–3 Oct. No nesting is known for the area, although a bird with a brood patch was mist-netted on 8 Jul at CPBS. Breeding may occur near the northern edge of the study area, as Ducey (1988) reported nesting records for Cherry and Sheridan counties to the north. 92 birds were banded near CPBS.
- Brewer's Sparrow** (*Spizella breweri*). Accidental. One record on 27 Apr 1986 at Lake Ogallala (Rosche 1994).
- Field Sparrow** (*Spizella pusilla*). Spring and autumn transient and summer resident, 17 Apr–31 Oct (Rosche 1994). Breeds regularly at CPBS and below the Keystone Lake diversion dam. Preferred nesting habitat seems to be juniper-clad canyons and floodplain forest containing junipers. One winter record on 18 Dec 1982 at Lewellen (Rosche 1994). 111 birds were banded at CPBS, with 4 birds recaptured after one year and 3 recaptured after 2 years.
- Vesper Sparrow** (*Poocetes gramineus*). Spring and autumn transient, 12 Apr–6 May (F. Zeillemaker pers. comm.) and 9 Aug–15 Oct (Rosche 1994). May nest on the far northern side of the study area along its border with the Sandhills. An early spring migrant, most migration is over before 1 May.
- Lark Sparrow** (*Chondestes grammacus*). Spring and autumn transient and summer resident, 22 Apr–16 Sep (Rosche 1994). Breeds commonly in juniper-clad canyons under rock overhangs and in tall grass prairie along the base of yuccas. 14 nests were monitored for cowbird parasitism in 1996. Only one nest was parasitized by cowbirds and the egg was successfully hatched. The most abundantly nesting sparrow of the area. 222 birds were banded at CPBS, with 15 recaptured after one year, 5 after 2 years, and 4 after 3 years.
- Cassin's Sparrow** (*Aimophila cassini*). Rare summer vagrant, occasionally breeding. 3 nests and 6 displaying males were found in 1993, 3 miles northwest of Kingsley Dam (Bock and Scharf 1994). No birds were found at this site in 1994–96, perhaps owing to habitat deterioration through grazing. No other nesting records known for the area, although Labeledz (1986) reported a singing male on 21 May 1986 near Lisco, about 15 km west of Oshkosh. This species is sensitive to grazing and does not occupy areas with heavy livestock use; those found in 1993 used an ungrazed, abandoned road right-of-way.
- Black-throated Sparrow** (*Amphispiza bilineata*). Accidental. One record on 26 May 1984 near Keystone.
- Lark Bunting** (*Calamospiza melanocorys*). Spring and autumn transient and summer resident, 24 Apr–2 Sep (Rosche 1994). Presumably breeds in the area, although no nests have been found. A bird of the Sandhills/sandsage (*Artemisia filifolia*) transition zone, it usually occurs in small flocks. Numbers vary from year to year, and fewer seem to have been present in recent years. 2 birds were banded at Ackley Valley Marsh.
- Savannah Sparrow** (*Passerculus sandwichensis*). Spring and autumn transient, 14 Apr–29 May and 9 Aug–21 Oct (Rosche 1994). No summer records, although Rosche reports small numbers to occur in the wet meadows of the Sandhills to the north and farther to the west in the Platte Valley.
- Grasshopper Sparrow** (*Ammodramus savannarum*). Spring and autumn transient and summer resident, 30 Apr–20 Sep (Rosche 1994). Abundant breeding bird of the adjacent Sandhills, but within the study area it has been found nesting only in the wet meadows just north of Keystone Lake. Migrants may occur widely in a variety of open habitats. 11 birds were banded at CPBS.
- Nelson's Sharp-tailed Sparrow** (*Ammodramus nelsoni*). Hypothetical rare summer vagrant. Several sparrows thought to be this species were mist-netted during the summer of 1994 in the marsh along the warm-water stream on the north side of Keystone Lake. There are no breeding records for Nebraska (Ducey 1988), and photographs of the 1994 birds were identified as Savannah Sparrows by others.
- Fox Sparrow** (*Passerella iliaca*). Accidental. One record on 12 Oct 1990 at Keystone Lake (Rosche 1994).
- Song Sparrow** (*Melospiza melodia*). Spring and autumn transient and winter visitant, 27 Jul–3 Jun. Usually scarce and found in brushy areas near Keystone Lake. 14 birds were banded near CPBS.
- Lincoln's Sparrow** (*Melospiza lincolni*). Spring and autumn transient, 13 Apr–19 May and 10 Sep–17 Oct. Migrants can be seen in mixed flocks of Chipping and Clay-colored sparrows along roadsides. 11 were banded at CPBS.
- Swamp Sparrow** (*Melospiza georgiana*). Spring and autumn transient and summer resident, principally 7 May–31 Oct (Rosche 1994). A highly local breeder, it nests only in the Clear Creek marshes and Lewellen area (Rosche 1994). This is one of the few nesting areas known for Nebraska. 2 winter records on 18–19 Dec (Rosche 1994).
- White-throated Sparrow** (*Zonotrichia albicollis*). Rare spring and autumn transient, with 4 spring records from 7–15 May. More common in fall, 3 Oct–9 Nov (Rosche 1994). 4 birds were banded at CPBS.
- White-crowned Sparrow** (*Zonotrichia leucophrys*). Spring and autumn transient and winter visitant, 11 Sep–24 May (Rosche 1994). More common as a migrant than during winter. Subspecies *gambelli* found in the study area. 51 birds were banded at CPBS.
- Harris' Sparrow** (*Zonotrichia querula*). Spring and autumn transient and winter visitant, 3 Oct–6 May (Rosche 1994). Bulk of spring passage seems to be over before 1 May.
- Dark-eyed Junco** (*Junco hyemalis*). Spring and autumn transient and winter visitant, 27 Sep–6 May (Rosche 1994). A common bird of towns, often using bird feeders. Most juncos of the area seem to be the "Oregon" race. The "white-winged" race occurs in small numbers, primarily in winter, and there is one record of a "gray-headed" junco (F. Zeillemaker pers. comm.). Five birds, four "Oregon" and one "slate-colored", were banded at CPBS.
- McCown's Longspur** (*Calcarius mccownii*). Accidental. One record on 3 Oct 1976 near Lewellen (Rosche 1994).
- Lapland Longspur** (*Calcarius lapponicus*). Spring and autumn transient and winter visitant, 9 Oct–11 Mar (Rosche 1994). Maximum daily count by Rosche was about 300 in late Dec. Most often seen in relatively bare fields, and flocks with Horned Larks.

- Chestnut-collared Longspur** (*Calcarius ornatus*). Rare spring transient, with 3 records on 28 Mar 1974 (Faanes) near Kingsley Dam, 8 Apr 1981 at Lake McConaughy, and one collected on 5 May 1919 near Oshkosh (Rosche 1994).
- Snow Bunting** (*Plectrophenax nivalis*). Casual winter visitant. The only records are on 5 Feb 1956 at Eagle Canyon (Huntley 1957) and 18–20 Feb 1978 when it was abundant and widely scattered in Keith County. Apparently an irruptive species that moves this far south only occasionally.
- Bobolink** (*Dolichonyx oryzivorus*). Spring and autumn transient and summer resident, from 24 Apr–28 Aug (Rosche 1994). Often found in wet meadows at Clear Creek, near Keystone, and along Sutherland Canal. Nests were found at Clear Creek in May 1992.
- Red-winged Blackbird** (*Agelaius phoeniceus*). Permanent resident. Highest densities occur during spring and autumn when flocks of thousands of migrating birds can be seen (Rosche 1994). Nests in many different habitats, including marshes, roadside ditches, near streams, and in agricultural fields. Colonial with colony size from 2 to 38 nests in the study area (Kren 1996). Some one-year old males have been observed to nest solitarily. Dynamics of cowbird parasitism of Red-wings in the study area was studied extensively by Kren (1996), who found that over 30% of nests were parasitized in 1994–95. Maximum winter count by Rosche was about 1,500 birds on 9 Jan near Lewellen. 658 birds were banded near CPBS and at Ackley Valley Marsh, with 7 birds recaptured after one year and 3 recaptured after 2 years.
- Eastern Meadowlark** (*Sturnella magna*). Spring and autumn transient and summer resident, 28 Mar–15 Aug (Rosche 1994). Occupies wet meadows near Keystone. Breeding is probable but no nests have been found. One bird was banded near CPBS.
- Western Meadowlark** (*Sturnella neglecta*). Permanent resident. Nests abundantly in grasslands of most types. Most numerous in spring and fall migration, but can be locally common even in winter. 5 were banded at CPBS.
- Yellow-headed Blackbird** (*Xanthocephalus xanthocephalus*). Spring and autumn transient and irregular summer resident, 29 Mar (F. Zeillemaker pers. comm.)–24 Nov (Rosche 1994). Suspected to breed or have bred in various marshes throughout the area, but no nests have been found. Territorial males formerly sang in the marshes of Keystone Lake, but these birds disappeared with the alteration of water levels. In 1989–90, large flocks of molting birds appeared at CPBS in Jul and early Aug. 15 birds were banded in late Jul near CPBS.
- Rusty Blackbird** (*Euphagus carolinus*). Autumn transient and winter visitant, 14 Oct–20 Jan (Rosche 1994). Records are mostly from Lewellen and the North Platte River below the Keystone diversion dam.
- Brewer's Blackbird** (*Euphagus cyanocephalus*). Spring and autumn transient 28 Mar–21 May and from 2 Oct–24 Nov (Rosche 1994). A single summer record on 28 Jul 1979 near Keystone. There are at least 2 winter records, on 20 Dec 1991 and 17 Dec 1992 (Rosche 1994).
- Common Grackle** (*Quiscalus quiscula*). Permanent resident. Nests commonly throughout the area, often in small colonies. Less numerous in winter, but increasing overall in recent years. Preferred nesting habitat is stands of mature cottonwoods such as those in campgrounds below Kingsley Dam and in the Keystone area. A major predator on small birds and their nests, it destroys eggs and young of Red-winged Blackbirds, kingbirds, Orchard Orioles, and probably many other species. One grackle killed at least 70 Cliff Swallows at one swallow colony near Keystone in 1989, often eating only the brains of its victims (Brown and Brown 1996). Other grackles attack the larger Cliff Swallow colonies, killing fledglings and sometimes pulling nestlings out of nests. Juvenile grackles often begin flocking in early Jul. 15 birds were banded near CPBS.
- Great-tailed Grackle** (*Quiscalus mexicanus*). Rare spring transient, with 5 records, 21 Apr–17 May. Reported by Rosche (1994) to have nested at the Ogallala airport in 1993. This species is rapidly expanding its range northward and might be expected to reach the study area on a regular basis in the near future. Thrives in cities and park-like environments. Like the Common Grackle, often preys on small birds and their nests.
- Brown-headed Cowbird** (*Molothrus ater*). Spring and autumn transient and summer resident, 30 Mar–2 Sep (Rosche 1994). Common and widely distributed in edge habitats throughout the study area. Recorded as parasitizing 12 species in the study area, with most common hosts being Red-winged Blackbirds, Yellow Warblers, and Dickcissels. Flocking to roost observed as early as 18 Jun. Eggs laid from 10 May–6 Jul. Impact on host species in study area does not seem extreme. Sex ratio seems male biased, with multiple males typically escorting single females. 89 birds were banded at CPBS, with 6 recaptured after one year and 2 recaptured after 2 years.
- Orchard Oriole** (*Icterus spurius*). Spring and autumn transient and summer resident, 4 May–30 Aug. A common breeder in cottonwoods, willow thickets, juniper-clad canyons, and riparian floodplain forest. In prime habitat, as many as 8 nests can be found in a single tree, suggesting some degree of coloniality. In cottonwood-ash woodlands, many nests are situated in the same tree as those of kingbirds, suggesting orioles benefit from protection of the aggressive kingbirds (Clawson 1980). Diet and demography in the study area were studied by Scharf and Kren (1996, in press) and nest site selection and vocalizations by Clawson (1980). 1,052 birds were banded near CPBS, with 59 birds recaptured after one year, 16 after 2 years, and 5 after 3 years. Oldest birds (8 individuals) so far recorded in the study area are 4 years old.
- Baltimore Oriole** (*Icterus galbula*). Spring and autumn transient and summer resident, 1 May–11 Sep (Rosche 1994). Nests commonly in tall cottonwoods throughout most of study area. Hybridization with Bullock's Oriole and varied taxonomic treatment of the *galbula-bullocki* complex has deterred collection of precise field data with which to determine the status of these 2 orioles. Intermediates occur or have occurred in the study area, with some of the original specimens used to document hybridization collected at Sutherland, just to the east of the study area, and at Big Springs, just to the west of the study area (Corbin and Sibley 1977, Rising 1970, Sibley and Short 1964). Most breeding individuals in the study area are hybrids or pure Baltimore types. 116 birds of Baltimore phenotype were banded at CPBS, and another 11 showed evidence of hybridization toward Bullock's but

were predominantly Baltimore phenotype. 5 birds were recaptured after one year. In western Kansas substantial numbers of non-hybrid phenotypes were reported by Rising (1996) over a 30-year period.

Bullock's Oriole (*Icterus bullockii*). Spring and autumn transient and summer resident, with dates of occurrence approximating those of Baltimore Oriole. No pure Bullock's phenotypes have been observed nesting in the study area, and Bullock's may have decreased in the area in recent years. Corbin and Sibley (1977) found Baltimore phenotypes moving westward along the Platte Valley as Bullock's retreated, although in western Kansas the hybrid zone appears stable. 15 birds of Bullock's phenotype were banded at CPBS, while another 30 birds banded showed evidence of hybridization toward Baltimore but were predominantly Bullock's phenotype.

FRINGILLIDAE

Gray-crowned Rosy Finch (*Leucosticte arctoa*). Accidental. One record on 11 Feb 1922 at Oshkosh, when a male was collected.

Purple Finch (*Carpodacus purpureus*). Winter visitant, 7 Nov–26 Apr (Rosche 1994). May be decreasing as House Finches invade the area.

House Finch (*Carpodacus mexicanus*). Permanent resident. A relatively recent arrival in the study area, it was present in Oshkosh as early as 1977. It first appeared in Ogallala also in 1977, and it has been regular there ever since. Population virtually exploded in mid to late 1980s. Rosche (1994) documents species' arrival and spread in the study area. Breeding occurs, with nests found on or around buildings in the Kingsley Dam area and probably elsewhere near human habitations. Had never been seen at CPBS until 1992, but since then 1,293 birds have been banded. Some of these have been recovered in Kansas and South Dakota. A hailstorm in Aug 1993 in Ogallala killed over 70 birds, including some juveniles first banded at CPBS earlier that same summer. 14 birds were recaptured after one year and 4 were recaptured after 2 years.

Common Redpoll (*Carduelis flammea*). Sporadic winter visitant, 19 Dec–28 Feb (Rosche 1994). Irruptive, sometimes occurring in large numbers and at other times absent.

Pine Siskin (*Carduelis spinus*). Permanent resident. Probably nests around CPBS, as juveniles were mist-netted and banded, 17–21 Jul 1994. 17 birds with brood patches were banded, 9 Jun–4 Jul. A total of 35 birds were banded. See Scharf et al. (1993) for details on evidence for local nesting.

American Goldfinch (*Carduelis tristis*). Permanent resident. Nests commonly along warm-water stream on the north side of Keystone Lake and below Kingsley Dam, often quite low in indigo bushes and wild roses. Breeds late and avoids cowbird parasitism since cowbirds in the study area have completed laying by early Jul. One of 4 nests were parasitized by cowbirds. Flocks in large numbers into early Jun. Although frequently a solitary breeder, a small group of goldfinches seemed to be nesting semicolonially north of Keystone in 1996. 552 birds were banded near CPBS, with 12 birds recaptured after one year and 2 recaptured after 2 years.

Red Crossbill (*Loxia curvirostra*). Accidental. One record of an adult pair captured and banded on 20 May 1994 at

CPBS. The pair was repeatedly caught in mist nets and observed at a feeder until 31 May. These birds were often seen in junipers.

Evening Grosbeak (*Coccothraustes vespertinus*). An erratic winter visitant, 23 Nov–13 May (Rosche 1994). Feeds on Russian olives and juniper fruits. An irruptive species, it is very scarce or completely absent in some years. Maximum count by Rosche was 15 birds on 26 Apr.

PASSERIDAE

House Sparrow (*Passer domesticus*). Introduced permanent resident. Breeds commonly throughout the area around human habitations. Frequently usurps Cliff Swallow and Purple Martin nests, destroying these swallows' eggs and young, and large numbers can be found in most Cliff Swallow colonies near towns. Although common in many areas, only one has ever been seen at CPBS, and this bird was mist-netted and banded.

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