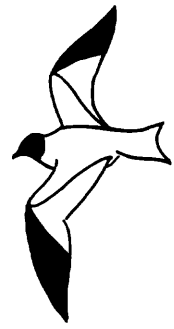


WESTERN BIRDS



Volume 23, Number 2, 1992

ABUNDANCE AND CHRONOLOGY OF MIGRANT SHOREBIRDS IN IDAHO

DANIEL M. TAYLOR, CHARLES H. TROST, and BRYAN JAMISON, Department of Biological Sciences, Idaho State University, Pocatello, Idaho 83209 (present address of Taylor, 2903 Greenvale Place, Nampa, Idaho 83686; present address of Jamison, 121 South 6th E., Grangeville, Idaho 83530)

The timing and abundance of shorebirds migrating through Idaho are inadequately known. Prior studies have been limited to anecdotal observations and annotated checklists with an emphasis on northern Idaho (Larrison et al. 1967, Burleigh 1972). This study revises and improves our knowledge of migrating shorebirds in the state. It also provides quantitative data on fall shorebird migration from two sites along the northern edge of the Great Basin, an area in North America where shorebird movement is poorly known (Morrison and Myers 1987). We show here that many species are much more abundant in Idaho than recorded by Larrison et al. (1967) or Burleigh (1972). For a few species this is also true for the Intermountain West as a whole.

STUDY AREAS AND METHODS

We counted shorebirds at American Falls Reservoir (hereafter Res.) from late June or early July to October on at least a weekly basis from 1986 to 1989. American Falls Res. is formed by the damming of the Snake River at American Falls. It is about 35 km long and 10 km wide at its widest point, lies at an elevation of 1320 m, and covers parts of Power, Bannock, and Bingham counties in southeastern Idaho (Figure 1). The reservoir's water begins receding in early to mid-summer, exposing a large mudflat where the Snake River enters the reservoir. This mudflat expands from 1 to about 8 km wide and 2 to 15 km long depending on the amount of water withdrawn. The amount and location of mudflats sometimes changed dramatically from week to week and year to year. We always censused completely the section of mudflat north of the mouth of the Snake River, a consistently large mudflat once water withdrawal had begun, except for

MIGRANT SHOREBIRDS IN IDAHO

some sections missed on a few counts in 1989. We counted shorebirds weekly in 1986 and 1987 along 1- to 2-km transects of several other habitats around the reservoir, including, bedrock, clay beach, boulders, sandy-pebbly beach, and small mudflats. The huge majority of individual shorebirds were concentrated on mudflats. We estimated that we covered about 40 to 80% of the best habitat (mudflats and muddy seeps) during our counts. We did not census the entire reservoir because of its large size and inaccessibility of some areas.

The total number of counts for each weekly period is given in Table 1. From all of these counts we figured the maximum, mean, and minimum of each species for each weekly period. The graphs we created from these figures thus do not reflect each year's passage of migration but rather the average and extremes during a given week over a 4-year period.

Lake Lowell is a reservoir in Canyon County in southwestern Idaho at an elevation of 757 m. It is about 15 km long and 5 km wide at its widest point (Figure 1). Large mudflats were exposed there by summer withdrawal of water, and the extent and location of these mudflats varied from week to week. We censused Lake Lowell weekly from mid-July until late September in 1989. Five transects covering a linear distance of 4600 m were covered each week, but the largest concentration of birds was usually at the extensive mudflat where the New York Canal enters the reservoir. Most or all of this mudflat was counted each visit. We felt we covered from 30 to 80% of the best habitat (mudflats) on each visit to this reservoir. We visited Lake Lowell sporadically in other years.

Table 1 Number of Shorebird Counts at American Falls Reservoir by Week

Week	1986	1987	1988	1989	Total
24-30 Jun	1	1	1	0	3
1-7 Jul	1	2	1	0	4
8-14 Jul	1	2	1	1	5
15-21 Jul	2	2	1	1	6
22-28 Jul	3	2	1	1	7
29 Jul-5 Aug	3	3	2	1	9
6-12 Aug	2	2	1	1	6
13-19 Aug	3	2	1	1	7
20-26 Aug	2	1	1	1	5
27 Aug-3 Sep	3	2	1	1	7
4-10 Sep	2	2	1	1	6
11-17 Sep	2	2	1	1	6
18-24 Sep	2	2	1	1	6
25 Sep-1 Oct	2	2	1	1	6
2-8 Oct	2	2	1	0	5
9-15 Oct	2	2	0	0	4
16-22 Oct	2	2	0	0	4
23-29 Oct	1	2	1	0	4
30 Oct-5 Nov	2	0	0	0	2

MIGRANT SHOREBIRDS IN IDAHO

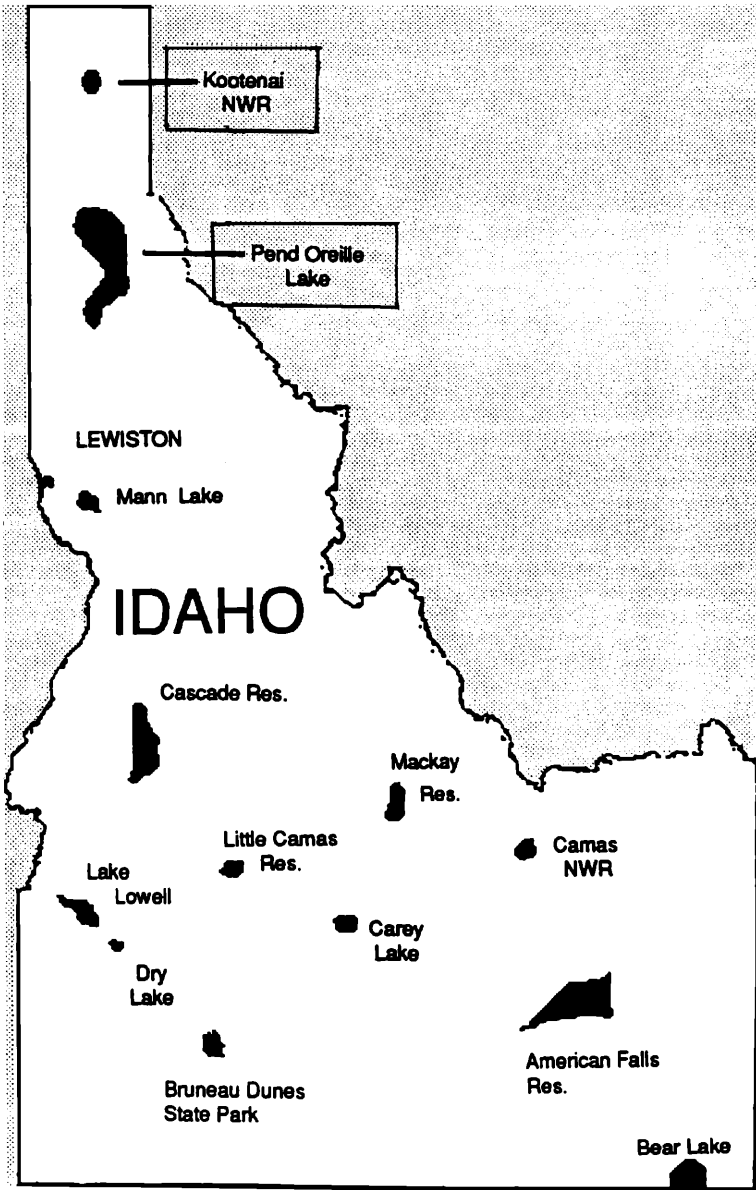


Figure 1. Localities mentioned frequently in the text.

MIGRANT SHOREBIRDS IN IDAHO

All of Carey Lake, Blaine County, was censused six times in 1989 (Figure 1). A 2-km section of Lake Walcott, Snake River, Power Co., was censused nine times in 1989 from July into early September. The large mudflat deltas of Little Camas Res., Camas Co., and Mackay Res., Custer Co., were each censused two to four times in 1989. All of Dry Lake, Canyon Co., was censused three times in 1989.

Shorebirds were counted with binoculars and 25x spotting scopes. Birds were counted individually, unless they numbered in the thousands, and then they were counted by tens. Care was taken not to disturb birds, and complete counts were usually obtained of all species at each site. All individual shorebirds were identified to species, except that large numbers of small shorebirds were lumped as "peeps" on some counts in 1987 and 1988 at American Falls Res.

We have also used records from our own field notes and the recent literature to describe abundance and occurrence patterns further. Observations by the authors are cited DT and CT for Taylor and Trost, respectively. We used the most specific dates we had for individual records. Records from Idaho Fish and Game's Idaho Natural Heritage Program are cited with INHP. In the species accounts below we have omitted the Mountain Plover (*Charadrius montanus*), White-rumped Sandpiper (*Calidris fuscicollis*), Buff-breasted Sandpiper (*Tryngites subruficollis*), and Red Phalarope (*Phalaropus fulicaria*) because their status has not changed from that reported by Taylor and Trost (1987).

SPECIES ACCOUNTS

Black-bellied Plover (*Pluvialis squatarola*). This plover was formerly considered an uncommon fall migrant in Idaho with a maximum of nine recorded (Larrison et al. 1967, Burleigh 1972). These sources listed only two spring records. At American Falls Res. we sometimes observed a small mid-August peak and then a larger peak in late September or October (Figure 2). We counted the maxima of 125 on 25 September 1983 and 115 on 2 October 1988. At Lake Lowell only one bird was recorded in 1989, a year when mudflats were covered by rising water by mid-September. In contrast, 40 birds were there on 28 September 1990, when extensive mudflats were exposed, and one lingered until 20 November, the latest state record (DT). Other fall concentrations included 17 at Hubbard Res., Ada Co., on 3 November 1983 (*American Birds* [AB] 38:224-227), 10 at Rathdrum, Kootenai Co., in 1984 (AB 39:78-81), and 20 in 1978 and 27 on 12 October 1984 at Mann Lake, Nez Perce Co. (AB 33:196-199, 39:78-81). New spring records include the earliest state record of one at Minidoka National Wildlife Refuge (hereafter NWR) on 9 April 1964 (Wilbur 1976), two at Fort Boise Wildlife Management Area, Canyon Co., on 29 April 1978 (AB 32:1033-1036), one at Rupert, Minidoka Co., in 1981 (AB 35:843-846), one at Indian Creek Res., Ada Co., on 14 May 1989 (AB 43:511-513), and 18 at American Falls Res. in April 1987 (CT).

Lesser Golden-Plover (*Pluvialis dominica*). Burleigh (1972) and Larrison et al. (1967) considered this species a rare migrant, with no specific records for southern Idaho. Their only record of greater than seven was a "large flight" in September 1896 at what is now Coeur d'Alene (Merrill 1897). At American Falls Res. we recorded the state's earliest fall sighting on 30 July 1986, then a few individuals in August and infrequent flocks of 5 to 15 in September and October (Figure 3). Two birds lingered until 6 November 1986, the latest record for Idaho. At this same

MIGRANT SHOREBIRDS IN IDAHO

reservoir we had higher counts of about 30 birds in the first two weeks of October in 1983 and 1985. Another flock of 26 was at Mann Lake on 7 October 1984 (AB 39:78-81). Four were at Lake Lowell on 17 October 1990 (DT). A third, and earliest, spring record is of one at Mann Lake on 22 and 24 April 1978 (AB 32:1033-1036). Both *P. d. dominica* and *P. d. fulva* have been collected in Idaho (Burleigh 1972), and there is evidence these forms are distinct species (Connors 1983).

Snowy Plover (*Charadrius alexandrinus*). By 1985 there were 12 spring and summer records of this plover in Idaho (Taylor and Trost 1987). At American Falls Res. two pairs were found from May through July in 1988 on extensive dried mudflats. They were suspected of nesting (showing broken-wing displays), which has not been documented for the state. Three birds were there on 3 May 1987 (AB 41:464-466). One was at Mud Lake, Jefferson Co., on 8 June 1986, and two were at Dry Lake on 22 May 1986 (AB 40:1229-1232).

Semipalmated Plover (*Charadrius semipalmatus*). This plover was considered a common to uncommon migrant in small numbers by Larrison et al. (1967) and Burleigh (1972), but they listed only one specific southern Idaho record, from Jerome Co. (Levy 1950). At American Falls Res. we often observed a peak in late July or early August and sometimes a smaller peak in late August or early September (Figure 4A). Lake Lowell showed a pattern similar to that at American Falls Res. in both

BLACK-BELLIED PLOVER

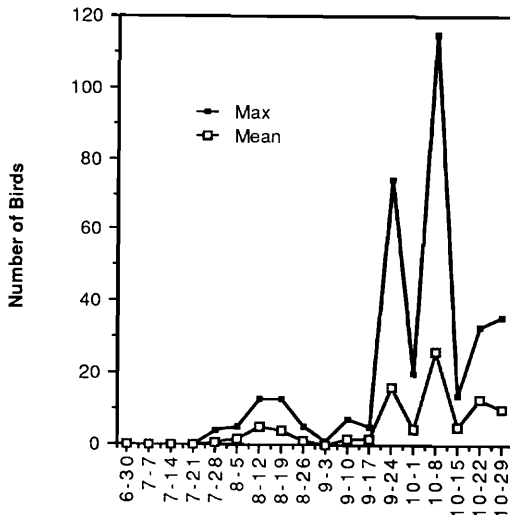


Figure 2. Abundance of the Black-bellied Plover at American Falls Reservoir during fall migration, 1986-1989. White squares, mean of all counts during the week starting six days before and including the specified date. Black squares, maximum count during the week starting six days before and including the specified date. The minimum count each week was always zero.

MIGRANT SHOREBIRDS IN IDAHO

timing and numbers of this plover (Figure 4B). In 1989, we recorded single birds on 26 August at Carey Lake and on 5 August at Dry Lake. Sites of recent fall records of one to eight birds in southern Idaho include Little Camas Res. (AB 38:224-227), Spangler Res., Payette Co. (AB 39:78-81), Salmon, Lemhi Co. (AB 37:202-204), and Weiser, Washington Co. Fifteen were at Kootenai NWR on 15 September 1986 (AB 41:118-121).

Sites of spring records of one to ten birds in southern Idaho include Rupert, Minidoka Co. (AB 30:865-869), Fort Boise WMA, Canyon Co. (AB 32:1033-1036), Grandview, Owyhee Co. (AB 32:1033-1036), American Falls Res. (INHP), Oxford Slough, Franklin Co. (AB 40:498-502), Black's Creek Res., Ada Co. (AB 36:998-1000), and Emmett, Gem Co (AB 43:511-513). The earliest spring record was one on 26 April 1985 at the Idaho National Engineering Laboratory, Butte Co. (AB 39:327-329).

Killdeer (*Charadrius vociferus*). This shorebird, widespread and resident in Idaho (Larrison et al. 1967, Burleigh 1972), was a migrant at all lakes and reservoirs we visited in 1989 except high alpine lakes. Migrating Killdeers at American Falls Res. occurred in the mid hundreds to over 1000 from late July to late October (Figure 5A). A maximum of 1345 was counted here on 4 September 1987. Killdeers at Lake Lowell peaked in 1989 at 619 on 16 August (Figure 5B); 1200 were present there on 11 October 1990. We had 164 birds at Carey Lake on 27 July 1989.

American Oystercatcher (*Haematopus palliatus*). The only record for the state is of a bird carefully observed and described near Fruitland, Payette Co., on 18 April 1981 (Stephens and Stephens 1987).

LESSER GOLDEN-PLOVER

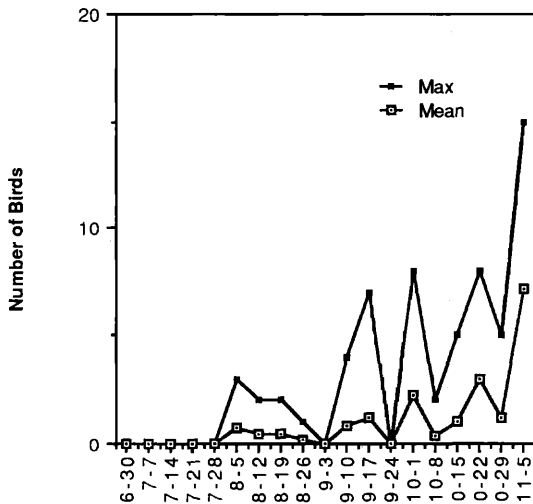


Figure 3. Abundance of the Lesser Golden-Plover at American Falls Reservoir during fall migration, 1986-1989. See Figure 2 for details.

MIGRANT SHOREBIRDS IN IDAHO

SEMPALMATED PLOVER

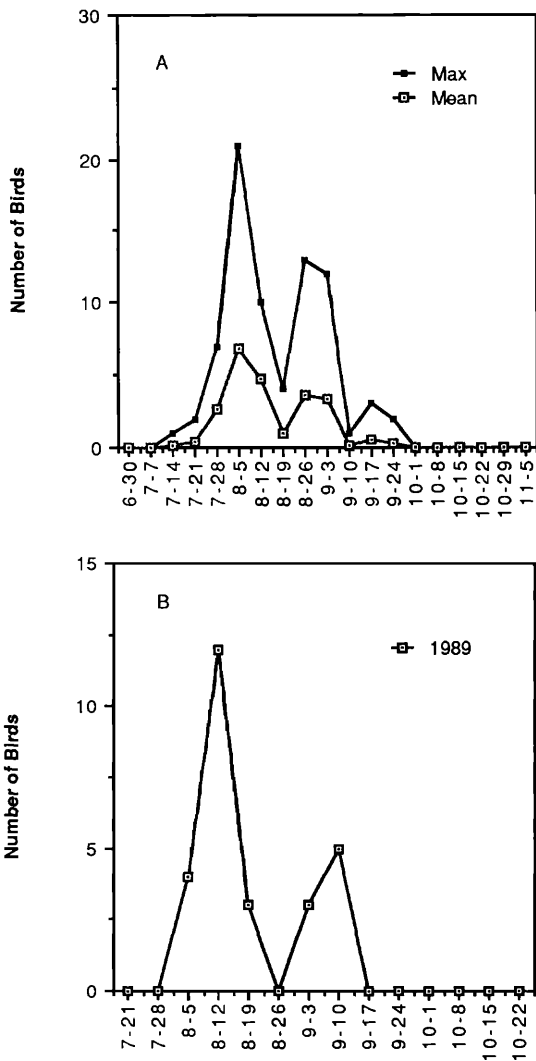


Figure 4. A, abundance of the Semipalmated Plover at American Falls Reservoir during fall migration, 1986–1989. See Figure 2 for details. B, abundance of the Semipalmated Plover at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

KILLDEER

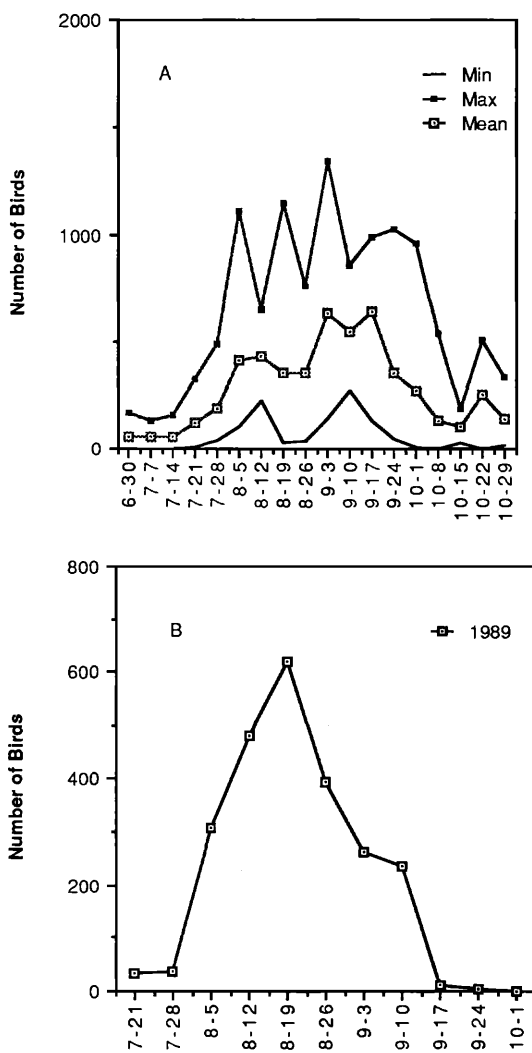


Figure 5. A, abundance of the Killdeer at American Falls Reservoir during fall migration, 1986–1989. White squares, mean of all counts during the week starting six days before and including the specified date. Black squares, maximum counted during the week starting six days before and including the specified date. Unmarked points, minimum counted during the week starting six days before and including the specified date. B, abundance of the Killdeer at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

Black-necked Stilt (*Himantopus mexicanus*). Both Burleigh (1972) and Larrison et al. (1967) considered this stilt to be a very local and uncommon breeder occurring only in the southern part of the state. At American Falls Res. it was a common migrant in July and August, with nearly all birds gone by the beginning of September (Figure 6). We found from 6 to 15 birds in 1989 at Lake Lowell, Bruneau Sand Dunes Lake, and Dry Lake. There were 24 at Mud Lake, Jefferson Co., on 24 July 1981 (INHP). Recent northern Idaho records include 20 at Kootenai NWR on 19 April 1987 (AB 41:464-466), one at Mann Lake in spring 1984 (AB 38:936-939), and six near Lewiston on 26 April 1987 (AB 41:464-466). Six stilts seen at Rupert, Minidoka Co., on 16 April 1975 constitute the earliest spring record.

American Avocet (*Recurvirostra americana*). Burleigh (1972) stated this species was a local resident, especially in the southern part of the state, with a maximum of 50 seen near Hazelton, Jerome Co. (Levy 1950). We often found over 1000 avocets at American Falls Res. from early July through September (Figure 7A), with a maximum of 2592 on 18 August 1987. Avocets lingered into mid-November at American Falls Res. Lake Lowell had much smaller numbers of avocets in 1989 (Figure 7B). Between 11 and 43 avocets were found at Bruneau Sand Dunes State Park, Carey Lake, and Dry Lake between 17 July and 27 August 1989. An unusual record was of 30 flying around Lake Merriam, elevation 2720 m, Custer Co., on 28 July 1971 (AB 25:882-888). Thirty were at Mud Lake, Jefferson Co., on 12 July 1981 (INHP).

Greater Yellowlegs (*Tringa melanoleuca*). The Greater Yellowlegs has been considered a regular migrant throughout the state in spring and fall with a maximum of

BLACK-NECKED STILT

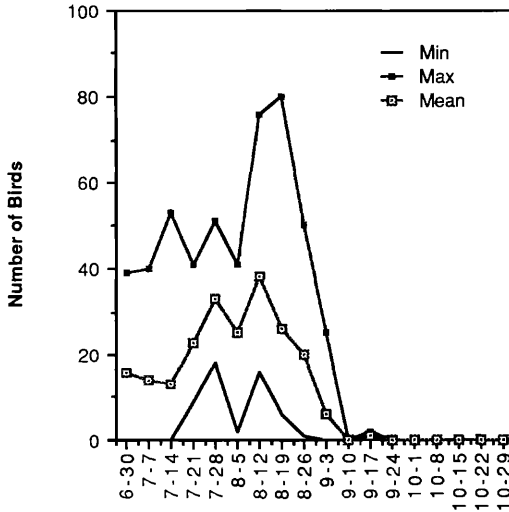


Figure 6. Abundance of the Black-necked Stilt at American Falls Reservoir during fall migration, 1986-1989. See Figure 5A for details.

MIGRANT SHOREBIRDS IN IDAHO

AMERICAN AVOCET

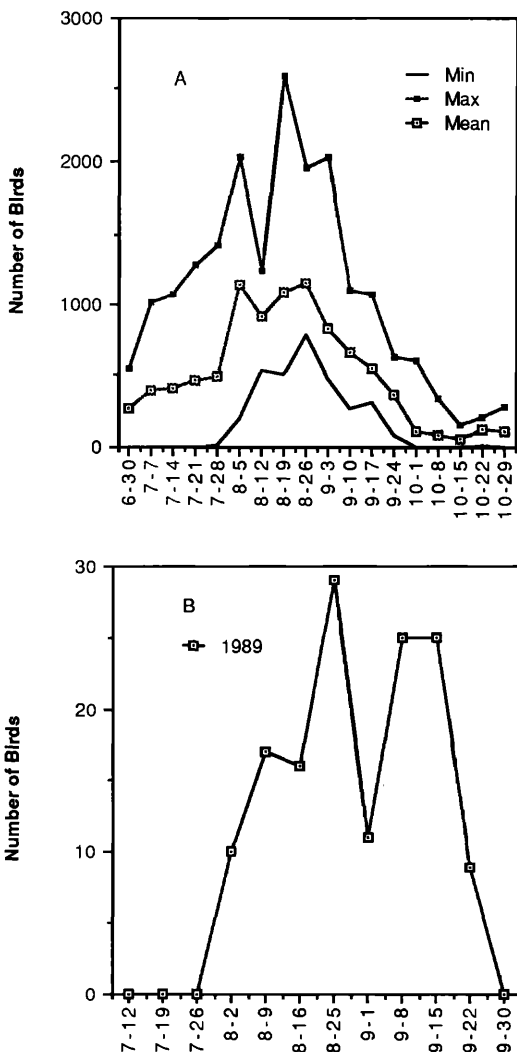


Figure 7. A, abundance of the American Avocet at American Falls Reservoir during fall migration, 1986–1989. See Figure 5A for details. B, abundance of the American Avocet at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

25 found at St. Maries, Benewah Co., on 4 August 1938 (Larrison et al. 1967, Burleigh 1972). Numbers at American Falls Res. averaged about ten from mid-July to mid-September, with a maximum of 95 on 4 September 1987 (Figure 8A). We found small numbers in 1989 at numerous lakes and reservoirs in southern Idaho, with a peak of 14 at Lake Lowell on 25 August (Figure 8B). There have been January and December records from near Lewiston (Burleigh 1972, AB 36:313-315, 40:304-306, 41:305-307, 43:342-345), Lake Lowell (AB 31:352-355), and American Falls Res. (AB 31:352-355).

Lesser Yellowlegs (*Tringa flavipes*). Larrison et al. (1967) and Burleigh (1972) stated that this species is a fall migrant in small numbers in Idaho with a maximum of 12 recorded. At American Falls Res. hundreds of individuals passed through with usually a peak in September (Figure 9A) and one lingering to 21 October 1987, the state's latest date. Our maximum count was 801 on 4 September 1987. In 1989 this yellowlegs occurred in small numbers at several lakes and reservoirs in southern Idaho, peaking at 22 on 30 August at Lake Lowell (Figure 9B) and 26 on 23 August at Lake Walcott. Burleigh's (1972) six spring records were all from northern Idaho, but Wilbur (1976) observed 30 birds at Acequia, Minidoka Co., on 30 April 1963. One was at Indian Creek Res., Elmore Co., on 5 May 1990 (DT), another was at American Falls Res. the last week of April 1982 (DT, CT), one was at Mann Lake on 17 April, year not reported (Weber and Larrison 1977), and eight were at Black Lake, Kootenai Co., on 25 April 1982 (AB 36:875-878).

Solitary Sandpiper (*Tringa solitaria*). This sandpiper has been a regular spring and fall migrant throughout the state as individuals or in groups of less than ten (Larrison et al. 1967, Burleigh 1972). We found this species singly or in small groups each year at American Falls Res. (Figure 10), with the state's latest on 16 September 1987. A few single birds also occurred at Lake Lowell and Carey Lake in 1989. This is one of the few shorebird species consistently found by Hand (1932) in several years observation at subalpine Fish Lake, Idaho Co.

Willet (*Catoptrophorus semipalmatus*). The Willet is a common summer resident in southern Idaho (Larrison et al. 1967, Burleigh 1972). At American Falls Res. Willets occurred mostly in July and August, but with a maximum of 110 on 24 June 1988 (Figure 11). In 1989 we recorded only one or two Willets at various other lakes or reservoirs, except for 13 at Mackay Res. on 15 July.

Spotted Sandpiper (*Actitis macularia*). The Spotted Sandpiper is a widespread summer resident along lakes and rivers throughout the state (Larrison et al. 1967, Burleigh 1972). We often found this species in the low tens until late September at American Falls Res. (Figure 12). We found it in numbers of less than ten at a wide variety of other lakes and reservoirs, including subalpine lakes, in the summer of 1989. In recent years there have been some December and January sightings at the Malad River mouth, Gooding Co. (AB 32:298-300), American Falls Res. (DT), the Lake Lowell area (AB 30:742-745), and Salmon, Lemhi Co. (AB 30:742-745, 31:352-355).

Upland Sandpiper (*Bartramia longicauda*). This sandpiper is a very local breeder in Idaho (Larrison et al. 1967, Burleigh 1972). We did not find any on our shorebird surveys. One was at Robinson Lake, Latah Co., on 30 April 1977 (Weber and Larrison 1977).

Whimbrel (*Numenius phaeopus*). Until 1986 there were only two records for Idaho (Redmond 1982, Taylor and Trost 1987). At American Falls Res. we found two to three Whimbrels from 2 August to 23 September 1987 and one during the first two weeks of July 1988. Two were found here on 18 August 1990 (D. Burrup pers. comm.).

MIGRANT SHOREBIRDS IN IDAHO

GREATER YELLOWLEGS

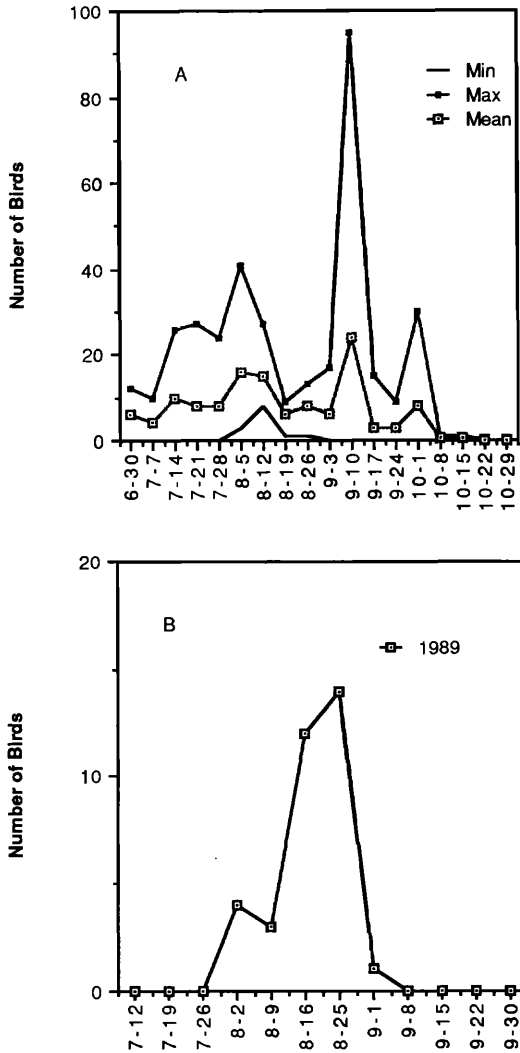


Figure 8. A, abundance of the Greater Yellowlegs at American Falls Reservoir during fall migration, 1986–1989. See Figure 5A for details. B, abundance of the Greater Yellowlegs at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

LESSER YELLOWLEGS

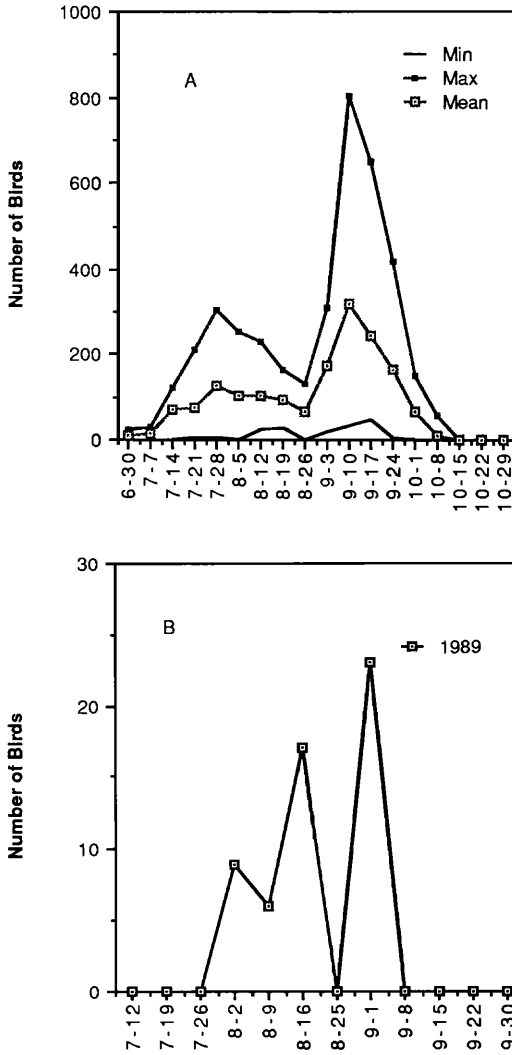


Figure 9. A, abundance of the Lesser Yellowlegs at American Falls Reservoir during fall migration, 1986–1989. See Figure 5A for details. B, abundance of the Lesser Yellowlegs at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

SOLITARY SANDPIPER

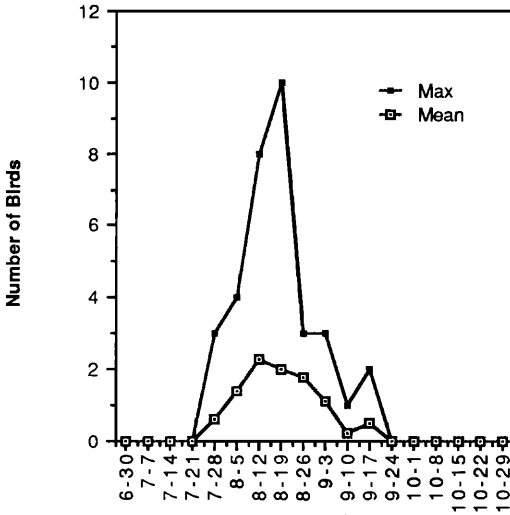


Figure 10. Abundance of the Solitary Sandpiper at American Falls Reservoir during fall migration, 1986–1989. See Figure 2 for details.

WILLET

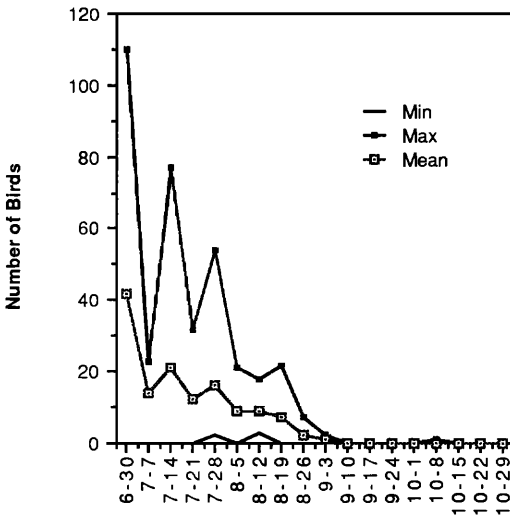


Figure 11. Abundance of the Willet at American Falls Reservoir during fall migration, 1986–1989. See Figure 5A for details.

MIGRANT SHOREBIRDS IN IDAHO

Long-billed Curlew (*Numenius americanus*). This curlew has been a fairly common breeder in Idaho (Larrison et al. 1967, Burleigh 1972). At American Falls Res. it was a rare migrant, with only a few individuals each summer in July and August, except for 14 on 19 July 1989. We saw only a few of these curlews at other lakes and reservoirs in 1989, so apparently this grassland-breeding species rarely uses reservoirs and lakes in southern Idaho during migration.

Hudsonian Godwit (*Limosa haemastica*). A report from Minidoka Co. on 7 July 1919 (Davis 1935) was the only state record through 1985 (Taylor and Trost 1987). The second state record was of two birds seen by CT and two other observers at American Falls Res. on 25 August 1990.

Marbled Godwit (*Limosa fedoa*). This godwit has been considered an uncommon migrant in the state, with large flocks very rarely seen (Larrison et al. 1967, Burleigh 1972). At American Falls Res., this species passed through mostly in July and August, with a peak of 628 on 15 July 1988 (Figure 13). The only godwits we found away from American Falls Res. in 1989 were two to five at Lake Walcott and Carey Lake. Other important fall records are of 30 birds at Bear River NWR on 25 June 1976 (AB 30:978-982) and 300 at American Falls Res. on 10 August 1976 (AB 31:199-203), with possibly another "2000 to 3000" there on 27 July 1973 (AB 27:897-902). Important spring records are the state's earliest of 70 near Salmon, Custer Co., on 24 April 1988 (AB 42:464-466), 450 at Lake Lowell the last two weeks of May 1963 (AFN 17:422-423), 25 at C. J. Strike Res., Owyhee Co., on 27 April 1980 (AB 34:797-800), and 30 at Montour WMA, Gem Co., on 25 April 1980 (AB 34:797-800).

SPOTTED SANDPIPER

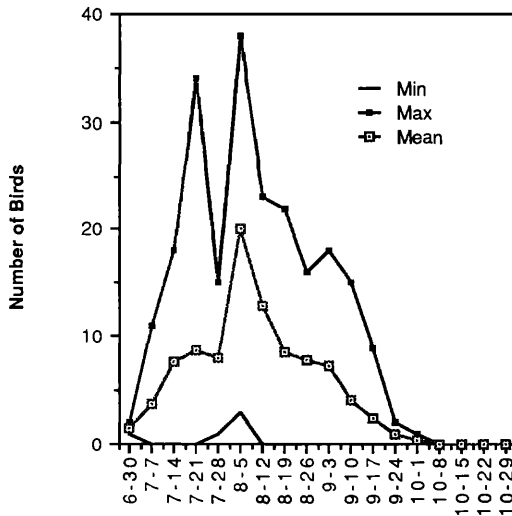


Figure 12. Abundance of the Spotted Sandpiper at American Falls Reservoir during fall migration, 1986-1989. See Figure 5A for details.

MIGRANT SHOREBIRDS IN IDAHO

Ruddy Turnstone (*Arenaria interpres*). Through 1985 there were only five Idaho records, including one from American Falls Res. (Taylor and Trost 1987). We found single birds on 16 May and 27 July 1987 at American Falls Res. Another was photographed on 11 May 1986 at Bear River NWR (AB 40:498-502), and two were at Blackfoot Res., Caribou Co., on 16 August 1988 (AB 43:136-139).

Red Knot (*Calidris canutus*). There were eight records of this knot in Idaho by 1986, including two from American Falls Res. (Taylor and Trost 1987). We saw one Knot on 1 August and two more on 19 August 1986, one on 12 July 1987, and one was at this reservoir during early August 1988 (AB 43:136-139). All records fall between 12 July and 19 September.

Sanderling (*Calidris alba*). Sanderlings have been considered uncommon migrants, with a maximum of three recorded, only two southern Idaho records, and two spring sightings (Larrison et al. 1967, Burleigh 1972). At American Falls Res. we found only a few Sanderlings annually except in 1986, when up to 23 occurred on 18 September, 25 occurred on 23 October (Figure 14), and one stayed until 13 November, the latest date for Idaho. We counted 40 during the second week of September 1983 and 18 on 25 August 1990 at this reservoir. Other notable fall records include eight birds on 17 September 1988 at Lewiston (AB 43:136-139), three on 13 September 1989 at Lake Lowell (DT), and one on 16 September 1984 at the Snake River near the mouth of the Bruneau River, Owyhee Co. (AB 39:78-81). Southern Idaho records in spring include one each at Grandview Ponds, Owyhee Co., on 22 May 1978 (AB 32:1033-1036), and at Mountain Home Res., Elmore Co., on 9 May 1984 (AB 38:936-939). Four were at Mann Lake on 5 May 1984 (AB 38:936-939).

MARBLED GODWIT

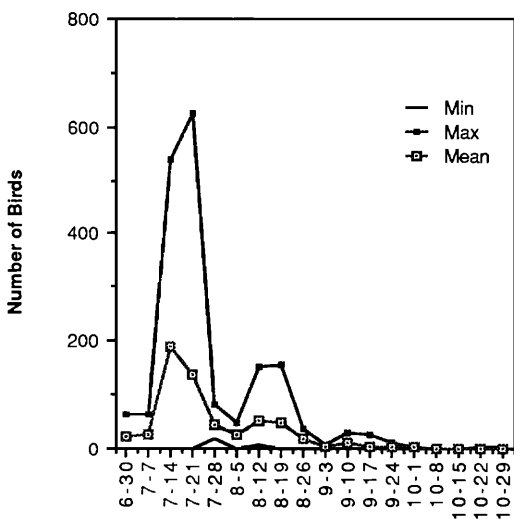


Figure 13. Abundance of the Marbled Godwit at American Falls Reservoir during fall migration, 1986-1989. See Figure 5A for details.

MIGRANT SHOREBIRDS IN IDAHO

Semipalmated Sandpiper (*Calidris pusilla*). Burleigh (1972) considered this species an uncommon migrant in northern Idaho with a maximum of six, and he collected 29 specimens; the only southern Idaho record was of one at Camas NWR, Jefferson Co. (Oring 1962). At American Falls Res. in 1986 numbers built to a peak of 149 on 25 August, with individuals trickling through until 16 October, the latest state record (Figure 15A). In other years our peak individual counts were of 73 on 1 September 1987, 15 on 8 July 1988, and 2 on 12 July 1989—years we did not consistently scrutinize “peep” flocks. There was a report of a “few hundred” here 15–25 July 1973 (AB 27:897–907). High counts at Lake Lowell in 1989 were 13 on 1 and 8 September (Figure 15B). We observed one to two birds there in 1986, 1987, and 1990, and 12 occurred there on 9 September 1979 (AB 34:182–184). We found four birds at Carey Lake and one at Lake Walcott in 1989. A count of nine birds on 3 May 1981 at Indian Creek Res., Ada Co. (AB 35:843-846), is the second Idaho spring record.

Western Sandpiper (*Calidris mauri*). This common migrant in Idaho (Larrison et al. 1967, Burleigh 1972) was the most abundant shorebird at American Falls Res. and Lake Lowell (Figure 16). Adults predominated in July or early August, juvenile birds after mid-August. Individuals lingered until 30 October in 1986. American Falls Res. had a minimum of 5000 Western Sandpipers stopping from 1986 to 1988, with perhaps 15,000 in 1987 (Figure 16B). The “15,000 to 20,000 Baird’s Sandpipers” reported in July 1973 from there (AB 27:897–903) we suspect were this species. Fewer Western Sandpipers occurred in 1989, with a peak of about 1100 in July and late August. At Lake Lowell numbers peaked at about 5500 birds in 1989 (Figure 16), and at least 10,500 were there the next year on 25 August when

SANDERLING

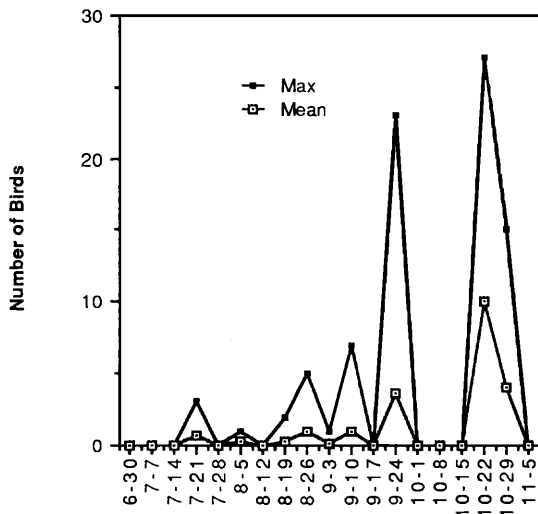


Figure 14. Abundance of the Sanderling at American Falls Reservoir during fall migration, 1986–1989. See Figure 2 for details.

MIGRANT SHOREBIRDS IN IDAHO

SEMPALMATED SANDPIPER

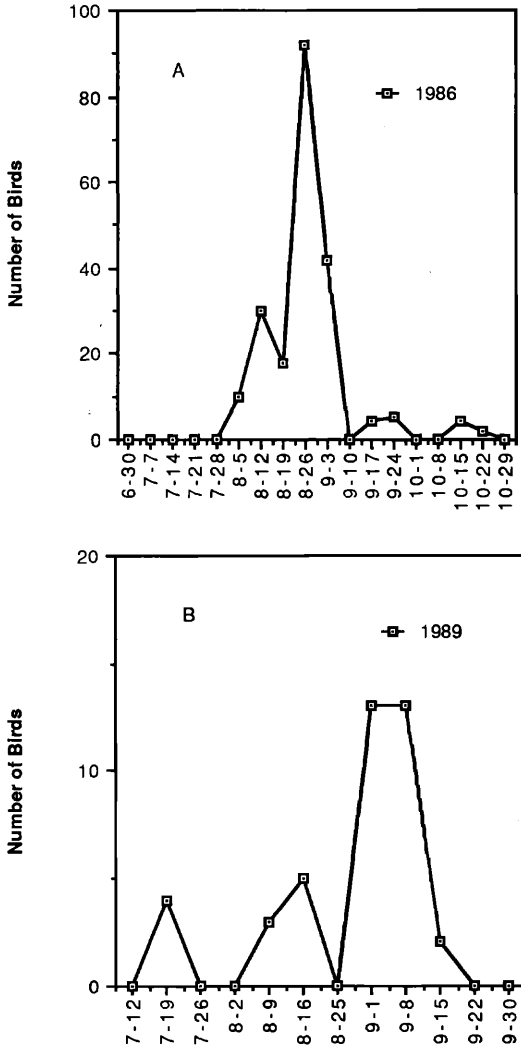


Figure 15. A, abundance of the Semipalmated Sandpiper at American Falls Reservoir during fall migration, 1986. Some points are the average of two counts starting six days before and including the specified date. B, abundance of the Semipalmated Sandpiper at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

WESTERN SANDPIPER

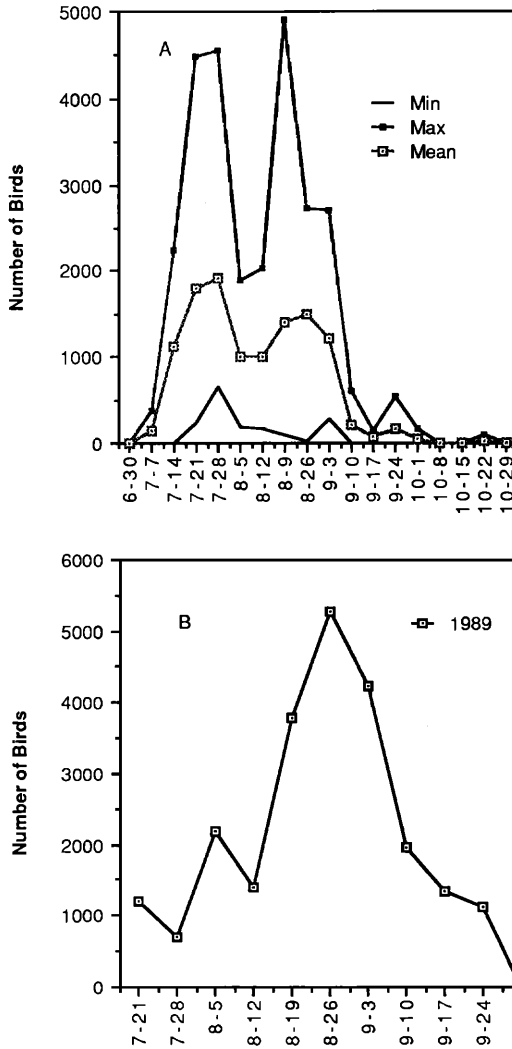


Figure 16. A, abundance of the Western Sandpiper at American Falls Reservoir during fall migration, 1986–1989. See Figure 5A for details. B, abundance of the Western Sandpiper at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

extremely low water levels exposed extensive mudflats. In 1989 flocks in the low hundreds were at Mackay Res., Carey Lake, and Little Camas Res. There is a single winter record of one at Eagle Rock, Snake River, Power Co., from 14 to 16 January 1989 (CT). Burleigh's (1972) only spring record was of one bird at Potlatch, Latah Co., on 18 May 1954, but Larrison et al. (1967) stated the species occurred in mid May. A single bird was at Dry Lake on 10 May 1990 (DT), and 20 were at American Falls Res. on 30 April 1982 (DT, CT).

Least Sandpiper (*Calidris minutilla*). This sandpiper has been considered a fairly common migrant in Idaho during spring and fall with a maximum of 20 recorded (Larrison et al. 1967, Burleigh 1972). At American Falls Res. in 1986 peak numbers were 27 on 1 August and 28 on 16 August (Figure 17). The next three years we found small numbers of this sandpiper from late July to early October with high counts of 46 on 4 September 1987 and 54 on 30 September 1989. At Lake Lowell we counted two to four most weeks from mid-July to mid-September 1989, except for 35 on 16 August; one to six were found at Carey Lake, Mackay Res., and Lake Walcott. The largest flock known in Idaho was 107 at Lake Lowell on 20 November 1990, and up to 30 birds lingered there until 12 December. One was at Eagle Rock, Snake River, Power Co., on 14 and 16 January 1989 (AB 43:342-345). About 20 of these sandpipers were at American Falls Res. on 30 April 1982 (DT, CT). Hand (1932) found one at subalpine Fish Lake, Idaho Co.

Baird's Sandpiper (*Calidris bairdii*). Larrison et al. (1967) and Burleigh (1972) listed this species as a migrant in small numbers, although Oring (1962) found it "abundant" in fall at Camas NWR, Jefferson Co. At American Falls Res. Baird's Sandpipers occurred from mid-July to 6 November 1986, the latest state record,

LEAST SANDPIPER

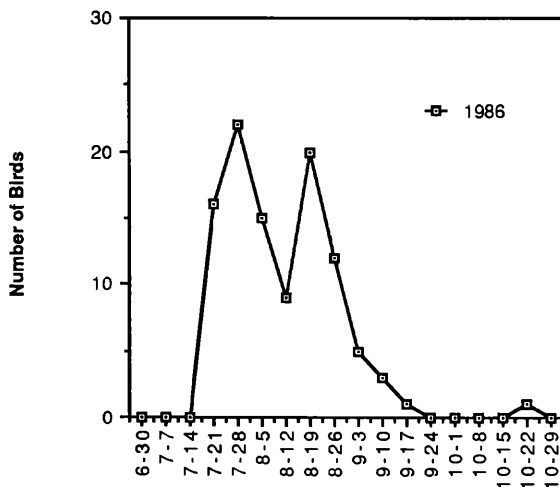


Figure 17. Abundance of the Least Sandpiper at American Falls Reservoir during fall migration, 1986. See Figure 15A for details.

MIGRANT SHOREBIRDS IN IDAHO

with a high count of 1236 birds on 18 August 1987 (Figure 18A). The "15,000 to 20,000 Baird's Sandpipers" reported there in late July 1973 (AB 27:897-902) we suspect were primarily Western Sandpipers. In 1989 the maximum we saw at Lake Lowell was 271 on 1 September (Figure 18B). There were 138 at Carey Lake on 26 August 1989, and less than ten were recorded at Dry Lake, Mackay Res., and Little Camas Res. that year. A flock of 220 was at Lake Lowell on 17 August 1990. Burleigh (1972) had three spring records in early May from northern Idaho, and a fourth spring record is of one at Mann Lake on 10 May 1977 (Weber and Larrison 1977). In late July the vast majority of Baird's Sandpipers in the U.S. are adults that stage on the high plains, from which they fly non-stop to northern South America (Jehl 1979). Numbers of juveniles peak in mid to late August in the U.S., and they migrate over a broad front. Baird's Sandpipers collected in Idaho have been juveniles almost exclusively (Jehl 1979), and all birds we identified to age were juveniles.

Pectoral Sandpiper (*Calidris melanotos*). Larrison et al. (1967) described this species as a fairly common fall migrant, and Burleigh (1972) recorded a maximum of 40. Most previous records have been from mid-August to late October. At American Falls Res. a few individuals arrived in August, but most occurred from mid-September to 30 October (Figure 19). Our maximum count was 237 on 14 September 1986. Lake Lowell had only two birds in 1989, when water began covering mudflats in early September, but in 1990, with large mudflats exposed throughout the fall, small flocks were seen beginning in early September with a peak of 23 on 11 October. Burleigh (1972) reported no spring records, but Larrison et al. (1967) stated the Pectoral Sandpiper occurred in mid-May. The only specific spring record for Idaho is of five birds at a pond in Gennese, Latah Co., on 28 April 1971 (Weber and Larrison 1977).

Dunlin (*Calidris alpina*). There were 20 Dunlin records by 1986, including 14 for spring (Taylor and Trost 1987). At American Falls Res. we had nine on 28 October and 11 on 11 November 1987, and one on 19 August and three 16 October 1988. None was recorded in 1989. In 1990 Dunlins began arriving at Lake Lowell on 29 October, with a peak of 66 on 7 November, and two lingered until 12 December, the latest state record. One was photographed at Fort Boise WMA, Canyon Co., 12 May 1989 (AB 43:511-513), and two were at Indian Creek Res., Elmore Co., on 6 May 1990 (DT). The Dunlin is perhaps the only migrant shorebird recorded more frequently in Idaho in spring than in fall. This may be due to its distinct breeding plumage allowing easier identification in spring, but Strauch (1967) found the Dunlin consistently migrating in spring but not fall through the Willamette Valley, Oregon, and it is more frequent in spring at Malheur NWR, Oregon (Littlefield 1990). Alternatively, the lack of fall records may be due to this species' migrating in fall primarily in late October and November (Shuford et al. 1990), a time when little field work has been done in Idaho.

Stilt Sandpiper (*Calidris himantopus*). This sandpiper is a rare spring and fall migrant in Idaho with a total of 14 records by 1985 (Taylor and Trost 1987). At American Falls Res. we recorded two 26 July 1986, one 20 July 1987, one on 8 July 1988, and one on 1 September and eight on 15 September 1989. Another recent record is of one or a few at Kootenai NWR on 4 September 1986 (AB 41:118-121). Extreme fall dates for this species are 8 July and 19 September.

Short-billed Dowitcher (*Limnodromus griseus*). Larrison et al. (1967) considered this dowitcher a regular migrant, particularly in southern Idaho, but Burleigh (1972) had only eight specimen records, all from northern Idaho. Prior to our study there were 16 definite records for Idaho, including six from American Falls Res. (Taylor and Trost 1987). At American Falls Res. we recorded one on 5 and 18 September 1986, and one and six respectively on 12 and 26 July 1989. We saw two birds at Carey

MIGRANT SHOREBIRDS IN IDAHO

BAIRD'S SANDPIPER

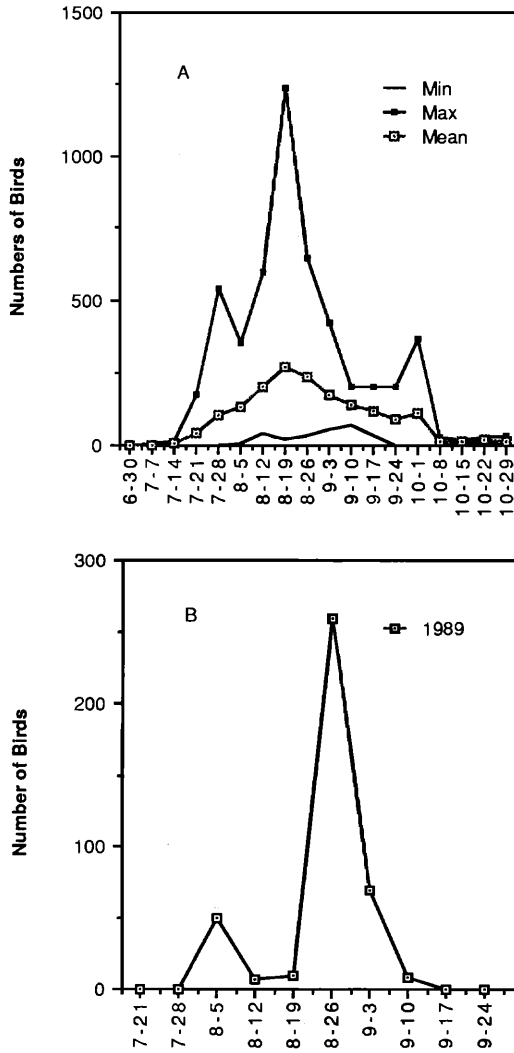


Figure 18. A, abundance of the Baird's Sandpiper at American Falls Reservoir during fall migration, 1986-1989. See Figure 5A for details. B, abundance of the Baird's Sandpiper at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

Lake on 23 July 1989. Because we were unable to identify most dowitchers to species, it is likely that the Short-billed Dowitcher is a more numerous migrant than the few records suggest. All or nearly all specimens collected in Idaho are *L. g. caurinus* (Weber 1985).

Long-billed Dowitcher (*Limnodromus scolopaceus*). This dowitcher has been considered a fairly common spring and fall migrant in Idaho, with a high count of 25 (Larrison et al. 1967, Burleigh 1972). At American Falls Res. the dowitchers we identified to species, on the basis of call notes and sometimes plumage, were mostly this species. We found hundreds of dowitchers there from mid-July to late October (Figure 20A), with the latest state record on 30 October 1986. Our high count was 1026 on 11 August 1987. There were 140 dowitchers there on 10 May 1982 (DT, CT). At Lake Lowell in 1989 our high count was of 50 on 16 August, with birds present from 11 July to 29 September (Figure 20B). In 1989 we found 24 to 35 dowitchers at Little Camas Res. and Carey and Dry lakes, and fewer than ten at three other reservoirs. There were 282 dowitchers at Lake Lowell on 27 Sep 1990, and 200 at Camas NWR, Jefferson Co., on 12 July 1981 (INHP). In Oregon the early migration peak in July and August consists primarily of adults, the later peak of juveniles (Nehls 1989), and presumably this is also true for Idaho.

Common Snipe (*Gallinago gallinago*). This is a common breeder and rare wintering bird in Idaho (Larrison et al. 1967, Burleigh 1972). We found snipe in numbers of less than ten at American Falls Res. in all survey years and also at Lake Lowell and Carey Lake in 1989.

Wilson's Phalarope (*Phalaropus tricolor*). This phalarope has been considered a common migrant and local summer resident in Idaho with a high count of 30

PECTORAL SANDPIPER

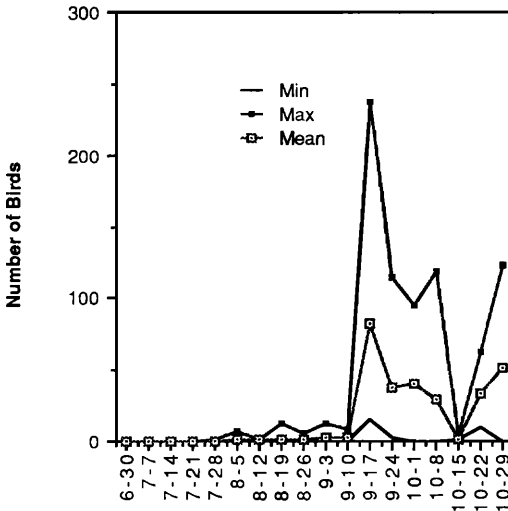


Figure 19. Abundance of the Pectoral Sandpiper at American Falls Reservoir during fall migration, 1986-1989. See Figure 5A for details.

MIGRANT SHOREBIRDS IN IDAHO

DOWITCHER

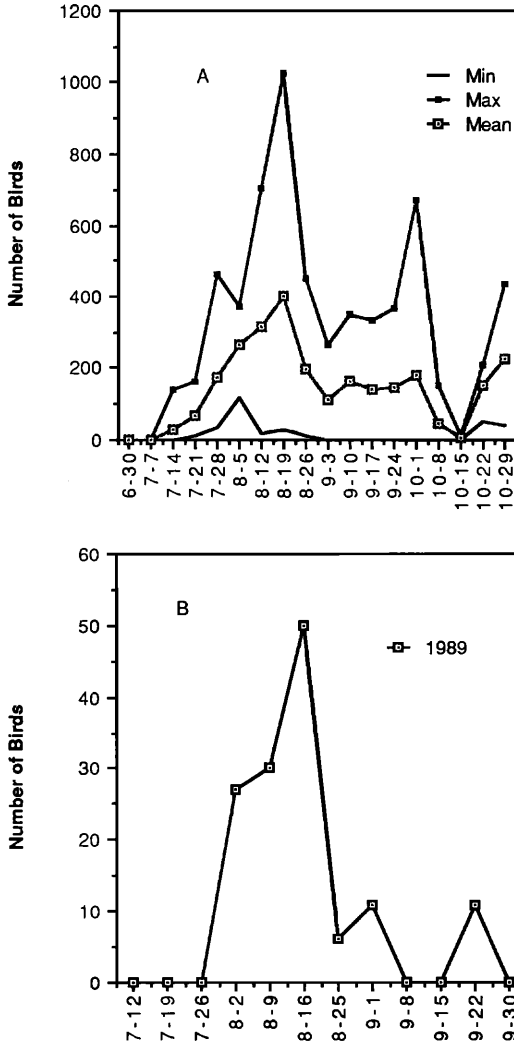


Figure 20. A, abundance of dowitchers at American Falls Reservoir during fall migration, 1986–1989. See Figure 5A for details. B, abundance of dowitchers at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

WILSON'S PHALAROPE

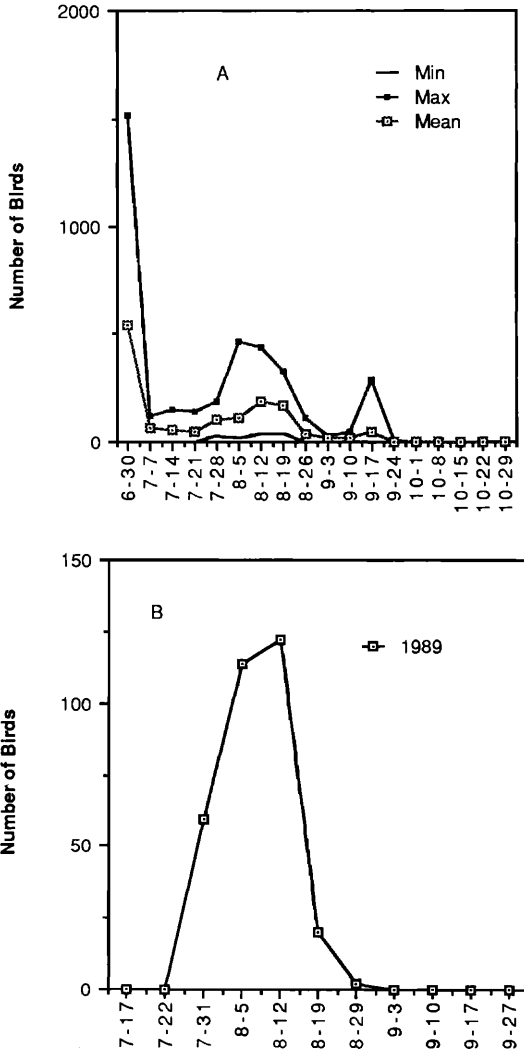


Figure 21. A, abundance of the Wilson's Phalarope at American Falls Reservoir during fall migration, 1986-1989. See Figure 5A for details. B, abundance of the Wilson's Phalarope at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

RED-NECKED PHALAROPE

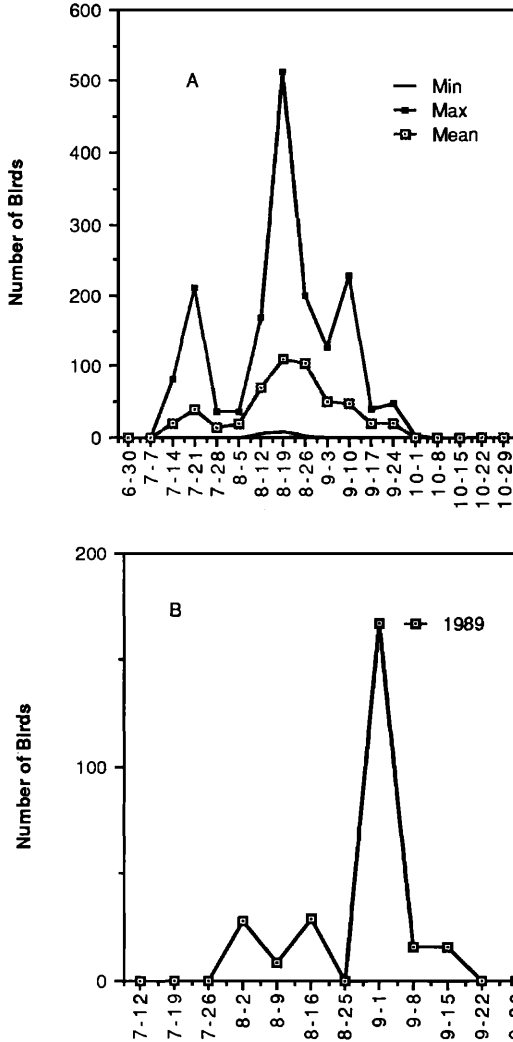


Figure 22. A, abundance of the Red-necked Phalarope at American Falls Reservoir during fall migration, 1986–1989. See Figure 5A for details. B, abundance of the Red-necked Phalarope at Lake Lowell during fall migration, 1989.

MIGRANT SHOREBIRDS IN IDAHO

(Larrison et al. 1967, Burleigh 1972). At American Falls Res. it often occurred in the hundreds in July and August with a high count of 1524 on 24 June 1988 (Figure 21A). The latest fall record was of one there on 20 September 1987. "Thousands" were reported from American Falls Res. in late June 1979 (AB 33:881-883), and 300 were reported there on 27 July 1973 (AB 27:897-902). In 1989, Lake Lowell had a peak of 114 to 115 on 16 and 25 August (Figure 21B); there were 132 at Carey Lake on 12 August, and 35 to 49 were at Little Camas Res. and Dry and Bruneau Sand Dune lakes in July and August.

Red-necked Phalarope (*Phalaropus lobatus*). Larrison et al. (1967) and Burleigh (1972) stated that this phalarope was an uncommon to common migrant in Idaho, with a high count of 300 birds. Flocks of this species occurred erratically at American Falls Res. anytime from July to mid-September (Figure 22A), and one on 2 October 1988 is the latest seen in Idaho. We found one to 52 birds at several reservoirs and lakes below 5000 feet elevation in 1989, and had a high counts of 173 and 190, respectively, at Lake Lowell (Figure 22B) and Little Camas Res. in the last week of August. About 50 of these phalaropes were found foraging on open water in the middle of the Bruneau arm of C. J. Strike Res., Owyhee Co., several days in mid-September 1989 (DT). A notable spring record from southern Idaho is of 25 at Rupert in 1976 (AB 30:865-869).

DISCUSSION

We found most species of shorebirds in numbers much higher than previously known in Idaho (Larrison et al. 1967, Burleigh 1972). This probably indicates that migrating shorebirds have been largely overlooked and unquantified in Idaho, especially in the southern part (but see Davis 1935, Oring 1962), rather than that their numbers have increased recently. This report gives a more realistic picture of current numbers of migrant shorebirds at some staging sites in Idaho, but there are likely other important undiscovered or under-studied stopover sites at some of the state's hundreds of lakes and reservoirs. Particularly needed are systematic counts in Idaho during spring migration, which has been described only by anecdotal records. Extensive fall counts on natural wetlands in the southern part of the state and reservoirs and natural wetlands in northern Idaho are also needed.

Our counts of shorebirds in Idaho revealed several species in numbers unusually high for the Intermountain West. The Lesser Golden-Plover has been considered rare, with one to three individuals sporadically reported from Nevada (Hainline 1974, Alcorn 1988), Mono Lake, California (Gaines 1988), Malheur NWR, Oregon (Littlefield 1990), and Utah (Sordahl 1981), except for two "sizeable flocks" seen in May 1937 (Hayward et al. 1976). Killdeers have been considered common to abundant in Utah (Hayward et al. 1976), Nevada (Alcorn 1988), and eastern Oregon (Littlefield 1990), but the largest previous specific intermountain records, of 400+ at Bridgeport Lake Reservoir, California (Gaines 1988), 314 at Mono Lake, California (Winkler et al. 1977), and 150 at the Barrens, Utah (Sordahl 1981), are much lower than our maximum numbers. The Lesser Yellowlegs has been considered an uncommon transient in Nevada (Hainline 1974, Alcorn 1988), eastern California (Gaines 1988), eastern Oregon (Littlefield 1990), and Utah (Hayward et al. 1976), with a maximum of 90 found in northern

MIGRANT SHOREBIRDS IN IDAHO

Utah (Sordahl 1981). The Semipalmated Sandpiper has been a rare but generally increasingly recorded migrant in Nevada (Hainline 1974, Alcorn 1988), eastern California (Gaines 1988), Washington (Jewett et al. 1953, Weber 1981), Oregon (Evanich 1989), and Utah (Behle 1958, Hayward et al. 1976, Sordahl 1981), although Nelson (1875) noted "large flocks" of shorebirds at the Great Salt Lake that he considered this species. The only reported concentrations of Baird's Sandpipers similar to those at American Falls Res. were 3000 at Bear River, Utah, in September 1950 (Hayward et al. 1976) and about 200 in September 1972 in western Nevada (Hainline 1974). The Pectoral Sandpiper has generally occurred in numbers of less than ten in the Intermountain West (Hainline 1974, Hayward et al. 1976, Winkler et al. 1977, Alcorn 1988, Gaines 1988). Large concentrations have been of 67 at The Barrens, Utah (Sordahl 1981), and 250 and 350 in September at Malheur NWR, eastern Oregon (Littlefield 1990).

Most of the species that we found in numbers unusually high for the Intermountain West—the Lesser Golden-Plover, Lesser Yellowlegs, Baird's Sandpiper, Semipalmated Sandpiper, and Pectoral Sandpiper—migrate primarily east of the Rocky Mountains (Harrington and Morrison 1979, Jehl 1979, Hayman et al. 1986). The largest numbers of these species were found in eastern Idaho. The Killdeer numbers may be the highest recorded simply because no one has bothered to count this numerous species. On the other hand, the Idaho counts could represent unusual concentrations for this species.

Although we were unable to census the large reservoirs of American Falls and Lake Lowell completely, the tens of thousands of shorebirds we sometimes recorded there document their importance as stopover sites. There was great variation in numbers of shorebirds at these reservoirs from week to week and from year to year, and at least some of this variation is caused by water-level fluctuations and timing of mudflat exposure. Most research on migrating shorebirds in the Intermountain West has focused on natural freshwater or alkaline lakes and marshes (Behle 1958, Hainline 1974, Winkler et al. 1977, Sordahl 1981, Mahony and Jehl 1985, Jehl 1988). While it is essential to continue studying and identifying important natural migratory staging areas for shorebirds, research should also be directed at man-made reservoirs. This is particularly true of reservoirs that have shallow slopes and extensive mudflats that are or could be exposed during periods of shorebird migration.

SUMMARY

We counted shorebirds at least weekly during fall migration at American Falls Reservoir from 1986 to 1989 and at Lake Lowell in 1989. Numerous other lakes and reservoirs in southern Idaho were covered infrequently in 1989. Our data and other recent records show that most shorebird species are much more abundant in Idaho than previously recorded. The most abundant species was the Western Sandpiper, with over 10,000 sometimes recorded at Lake Lowell. Species found in the thousands included the Killdeer, American Avocet, Baird's Sandpiper, Long-billed Dowitcher, and

MIGRANT SHOREBIRDS IN IDAHO

Wilson's Phalarope. Species found in the hundreds were the Black-bellied Plover, Lesser Yellowlegs, Marbled Godwit, Willet, Semipalmated Sandpiper, Least Sandpiper, Pectoral Sandpiper, and Red-necked Phalarope. Twenty-three other species have been found in lesser numbers. The numbers recorded for the Killdeer, Lesser Golden-Plover, Lesser Yellowlegs, Semipalmated Sandpiper, Baird's Sandpiper, and Pectoral Sandpiper are among the largest known for the Intermountain West. Except for the Killdeer, these species migrate mostly east of the Rocky Mountains.

ACKNOWLEDGMENTS

We thank J. W. Weber, D. Stephens, J. H. Doremus, J. Marks, and the Idaho Natural Heritage Program of the Idaho Fish and Game Non-game Program for contributing records. This study was funded in part by the U.S. Fish and Wildlife Service and the non-game program of the Idaho Fish and Game Department. W. D. Shuford, D. R. Paulson, and P. G. Connors provided helpful reviews of early drafts of this paper.

LITERATURE CITED

- Alcorn, J. R. 1988. The Birds of Nevada. Fairview West, Fallon, NV.
- Behle, W. H. 1958. The Bird Life of the Great Salt Lake. Univ. of Utah Press, Salt Lake City.
- Burleigh, T. D. 1972. Birds of Idaho. Caxton, Caldwell, ID.
- Connors, P. G. 1983. Taxonomy, distribution, and evolution of the Golden Plovers (*Pluvialis dominica* and *Pluvialis fulva*). Auk 100:607-620.
- Davis, W. B. 1935. An analysis of the bird population in the vicinity of Rupert, Idaho. Condor 37:233-238.
- Evanich, J. 1989. A review of the Semipalmated Sandpiper in Oregon. Ore. Birds 15:109-111.
- Gaines, D. 1988. Birds of Yosemite and the East Slope. Artemisia Press, Lee Vining, CA.
- Hainline, J. L. 1974. The distribution, migration, and breeding of shorebirds in western Nevada. M.S. Thesis, Univ. of Nev., Reno.
- Hand, R. L. 1932. Notes on the occurrence of water and shore birds in the Lochsa region of Idaho. Condor 34:23-25.
- Harrington, B. A., and Morrison, R. I. G. 1979. Semipalmated Sandpiper migration in North America. Studies Avian Biol. 2:83-100.
- Hayman, P., Marchant, J. and Prater, T. 1986. Shorebirds: An Identification Guide. Houghton Mifflin, Boston.
- Hayward, C. L., Cottam, C., Woodbury, A. M., and Frost, H. H. 1976. Birds of Utah. Great Basin Nat. Mem. 1:1-299.
- Jehl, J. R., Jr. 1979. The autumnal migration of Baird's Sandpiper. Studies Avian Biol. 2:55-68.
- Jehl, J. R., Jr. 1988. Biology of the Eared Grebe and Wilson's Phalarope in the nonbreeding season: A study of adaptations to saline lakes. Studies Avian Biol. 12:1-74.
- Jewett, S. G., Taylor, W. P., Shaw, W. T., and Aldrich, J. W. 1953. Birds of Washington State. Univ. of Wash. Press, Seattle.

MIGRANT SHOREBIRDS IN IDAHO

- Larrison, E. J., Tucker, J. L., and Jollie, M. T. 1967. Guide to Idaho birds. *J. Ida. Acad. Sci.* 5:1-220.
- Levy, S. H. 1950. Summer birds in southern Idaho. *Murrelet* 31:2-8.
- Littlefield, C. D. 1990. Birds of Malheur National Wildlife Refuge. Oregon State Univ. Press, Corvallis.
- Mahoney, S. A., and Jehl, J. R., Jr. 1985. Adaptations of migratory shorebirds to highly saline and alkaline lakes: Wilson's Phalarope and American Avocet. *Condor* 87:520-527.
- Merrill, J. C. 1897. Notes on the birds of Fort Sherman, Idaho. *Auk* 14:347-357.
- Morrison, R. I. G., and Myers, J. P. 1987. Wader migration systems in the new world. *Wader Study Group Bull.* 11:57-69.
- Nehls, H. 1989. A review of the status and distribution of dowitchers in Oregon. *Ore. Birds* 15:97-102.
- Nelson, E. W. 1875. Notes on birds observed in portions of Utah, Nevada, and California. *Proc. Boston Soc. Nat. Hist.* 17:338-365.
- Oring, L. W. 1962. Observations on the birds of southeastern Idaho. *Murrelet* 43:40-50.
- Redmond, R. L. 1982. Photographic record of a Whimbrel in Idaho. *Murrelet* 63:68.
- Shuford, W. D., Page, G. W., Evans, J. G., and Stenzel, L. E. 1989. Seasonal abundance of waterbirds at Point Reyes: A coastal California perspective. *W. Birds* 20:137-265.
- Sordahl, T. A. 1981. Phenology and status of the shorebirds in northern Utah. *W. Birds* 12:173-180.
- Strauch, J. G. Jr. 1967. Spring migration of Dunlin in interior western Oregon. *Condor* 53:186-189.
- Stephens, D. A., and Stephens, J. E. 1987. An American Oystercatcher in Idaho. *W. Birds* 18:215-216.
- Taylor, D. M., and Trost, C. H. 1987. The status of rare birds in Idaho. *Murrelet* 68:69-93.
- Weber, J. W. 1981. Status of Semipalmated Sandpiper in Washington and northern Idaho. *Continental Birdlife* 2:150-153.
- Weber, J. W. 1985. First specimen record of the Short-billed Dowitcher from eastern Washington; subspecific identification of Idaho specimens. *Murrelet* 66:31-34.
- Weber, J. W., and Larrison, E. J. 1977. Birds of southeastern Washington. Univ. of Ida. Press, Moscow.
- Wilbur, S. R. 1976. New seasonal and distributional records of Idaho birds. *Murrelet* 57:32-34.
- Winkler, D. W., Weigen, C. P., Engstrom, F. B., and Burch, S. E. 1977. Ornithology, in *An ecological study of Mono Lake, California* (D. W. Winkler, ed.), pp. 88-113. *Inst. Ecol. Publ.* 12, Univ. of Calif., Davis.

Accepted 25 August 1991