

## AN ANALYSIS OF THE BIRD POPULATION IN THE VICINITY OF RUPERT, IDAHO

By WILLIAM B. DAVIS

Less than thirty years ago the area under consideration—the northern half of the Minidoka Irrigation Project, Minidoka County, Idaho—was virgin land, the haunt of the coyote, badger and Sage Hen, a land of drifting sand and sage. But great changes were initiated by that “life-giver of the desert,” water; and within a few years a thriving agricultural community had been established. The bird population, faced with these changing conditions, kept pace in its transition with that of the environment. New kinds appeared; others faded from the picture. Kenagy (*Condor*, 16, 1914, pp. 120-123) and Davis (*Murrelet*, 4, 1923, pp. 3-4) have pointed out some of the alterations that took place.

It is my plan to analyze the native bird population as it appeared to me during the years 1919-1921. The data for this study consist of sight records made during those years plus examination of certain specimens as indicated below. These data are not as complete as one might desire, but records were kept of dates of arrival, departure and nesting. I believe that they show the general trend of the population activities. For convenience, the population has been divided into five groups: Permanent residents; regular migrants (those species of which no individuals stopped to nest); summer visitants; winter residents; and those of erratic (irregular) occurrence. It is of importance to point out that the area is entirely within the Upper Sonoran Life-zone; that the area was, as it is now, given over to agriculture, hay and potatoes being the chief products; that no large *native* trees are in the area; and that the closest mountains are twenty-five miles to the south. The Snake River, with its native riparian growth of willow, bounds the area on the south. For a more extended account of the topography see Kenagy (*loc. cit.*). Names here employed are those of the A. O. U. Check-list, 4th ed., 1931.

### RESIDENT SPECIES

Since these birds were encountered during every month of the year, only data giving the earliest nesting date and the latest date when young were found in the nest are given (in the order mentioned). Specimens of all of these species were examined.

Species	Eggs	Young
Treganza Great Blue Heron.....	June 1	June 30
Common Mallard .....	May 2	July 7
Gadwall .....	May 19	.....
Marsh Hawk .....	May 19	.....
Sparrow Hawk .....	May 2	May 31
Killdeer .....	May 6	.....
Wilson Snipe .....	.....	.....
Long-eared Owl .....	April 17	June 10
Short-eared Owl .....	May 19	.....
Western Belted Kingfisher.....	May 27	.....
Red-shafted Flicker .....	May 20	.....
Desert Horned Lark.....	.....	May 2
Black-billed Magpie .....	April 11	June 6
Western Meadowlark .....	May 2	.....
Nevada Redwing .....	May 19	June 1
Brewer Blackbird .....	May 13	Aug. 1
Willow Goldfinch .....	.....	Aug. 12
House Finch .....	April 28	.....
Mountain Song Sparrow.....	May 19	.....

## REGULAR MIGRANTS

Only species observed during at least two of the three years are included in this class. Dates of first and last records for each species, for both spring and fall migrations, are given for each of the three years. The fall of 1921 is not included because I was not in the region. \*—specimens examined or taken.

Species	1919		1920		1921
	Spring	Fall	Spring	Fall	Spring
*Red-throated Loon	Apr. 20 May 7	.....	Apr. 14	.....	May 19 May 21
*Farallon Cormorant	May 6	Sept. 1 Nov. 4	.....	Aug. 1 Sept. 5	May 19
*Canada Goose	Mar. 23	Oct. 30 Nov. 4	Mar. 23 Apr. 6	.....	.....
Black Brant	Mar. 21 May 7	Oct. 27	.....	Oct. 13	.....
*Shoveller	Apr. 11 June 10	Sept. 1 Nov. 4	Mar. 21 May 31	Oct. 13	May 19
Redhead	Apr. 15	.....	Apr. 14 May 31	.....	May 19
Canvas-back	Mar. 20	.....	May 31	.....	Apr. 11
*Buffle-head	May 6	Oct. 30	.....	Nov. 15	May 19
Sandhill Crane	Mar. 3	.....	Mar. 13	.....	.....
Greater Yellow-legs	.....	Sept. 4	Apr. 11 Apr. 17	Sept. 4	.....
Lesser Yellow-legs	.....	Sept. 1 Sept. 4	.....	Aug. 25	.....
*Least Sandpiper	.....	July 7 Sept. 4	.....	Aug. 1	.....
Caspian Tern	May 6	.....	May 1	.....	Apr. 29
Rufous Hummingbird	.....	Aug. 20 Sept. 7	.....	Aug. 14 Sept. 5	.....
*Wright Flycatcher	May 5	.....	May 6 May 20	.....	May 19
Western Flycatcher	May 15	.....	May 27 May 31	.....	May 26
Western Wood Pewee	May 6 May 13	.....	May 9	.....	May 19
Red-breasted Nuthatch	.....	Aug. 12 Sept. 7	.....	Sept. 10	.....
Audubon Hermit Thrush	May 12	.....	May 7	.....	.....
Western Ruby-crowned Kinglet	Apr. 19	.....	Apr. 6	.....	Apr. 12
Red-eyed Vireo	May 17	Sept. 1	May 20	.....	May 6
Western Warbling Vireo	May 17	.....	May 20	.....	May 19
Audubon Warbler	May 6 May 13	.....	May 2 May 18	.....	May 19
Pileolated Warbler	May 13	Sept. 4 Sept. 11	May 16 June 4	Sept. 10	May 30
Lazuli Bunting	Apr. 21	.....	May 23	.....	May 6
Gambel Sparrow	Mar. 20 May 13	Sept. 16	Mar. 13 May 18	Sept. 20	Apr. 12

## SUMMER VISITANTS

Records for this class represent: (1) Earliest record of occurrence in the spring; (2) latest record in the fall; (3) "fresh egg" records.

Species	(1)	(2)	(3)
Horned Grebe	Apr. 11	Oct. 27	.....
Western Grebe	May 19	Sept. 30	June 7
White Pelican	May 19	Oct. 30	June 7
Black-crowned Night Heron	May 2	Sept. 4	May 30
American Bittern	Apr. 11	Sept. 4	.....
Baldpate	Mar. 20	Nov. 15	.....
American Pintail	Mar. 20	Nov. 30	May 19

Cinnamon Teal .....	Apr. 6	Oct. 30	May 19
Ruddy Duck .....	Apr. 11	Sept. 16	.....
Osprey .....	Apr. 11	Sept. 4	May 19
American Coot .....	Apr. 11	Nov. 4	May 31
Spotted Sandpiper .....	May 6	Sept. 4	June 7
Western Willet .....	May 1	Sept. 18	May 21
Avocet .....	Mar. 21	Sept. 20	June 7
Black-necked Stilt .....	Apr. 13	Sept. 28	May 31
California Gull .....	Mar. 28	Nov. 4	.....
Forster Tern .....	May 1	Sept. 9	June 7
Mourning Dove .....	May 1	Nov. 14	.....
Burrowing Owl .....	Mar. 21	Sept. 28	Apr. 20
Western Nighthawk .....	Apr. 29	Sept. 10	July 15
Eastern Kingbird .....	June 12	Sept. 7	.....
Arkansas Kingbird .....	May 9	Oct. 10	July 1
Say Phoebe .....	Mar. 23	Sept. 29	May 31
Trail Flycatcher .....	May 9	Oct. 1	.....
Bank Swallow .....	Apr. 6	Sept. 5	May 19
Barn Swallow .....	May 2	Sept. 8	June 6
Cliff Swallow .....	Apr. 20	Sept. 10	May 7
Western Marsh Wren.....	Mar. 13	Oct. 2	May 20
Sage Thrasher .....	Apr. 11	Sept. 20	June 4
Western Robin .....	Feb. 27	Nov. 1	May 6
Yellow Warbler .....	May 9	Sept. 3	June 17
Mountain Bluebird .....	Mar. 9	Oct. 3	May 6
Loggerhead Shrike .....	Feb. 18	Nov. 6	May 20
Yellow-headed Blackbird .....	Mar. 29	Sept. 18	June 28
Bullock Oriole .....	May 6	Sept. 4	June 1
Nevada Cowbird .....	May 13	.....	May 6
Savannah Sparrow .....	Apr. 11	Sept. 16	June 2
Western Vesper Sparrow.....	Apr. 6	Nov. 4	May 20
Western Lark Sparrow.....	May 7	Sept. 29	May 20
Brewer Sparrow .....	Apr. 11	Sept. 4	May 31
Western Chipping Sparrow.....	Apr. 11	Oct. 2	May 20

REGULAR WINTER VISITANTS

Records for this class represent: (1) Earliest fall record; (2) latest spring record. \*—specimens examined.

Species	(1)	(2)
*Green-winged Teal .....	Oct. 30	May 2
*Lesser Scaup .....	Oct. 30	May 31
*American Golden-eye .....	Oct. 30	May 19
*Barrow Golden-eye .....	Oct. 7	May 7
*Hooded Merganser .....	Nov. 6	May 19
*American Merganser .....	Oct. 12	Apr. 14
*Red-breasted Merganser .....	Sept. 4	May 27
Sharp-shinned Hawk .....	Oct. 30	Jan. 13
American Rough-legged Hawk.....	Nov. 7	May 11
*Saw-whet Owl .....	Dec. 18	Apr. 17
*Red-naped Sapsucker .....	Oct. 3	Apr. 10
American Raven .....	Oct. 27	May 19
Western Crow .....	Oct. 27	Apr. 7
*Piñon Jay .....	Aug. 12	May 20
*Long-tailed Chickadee .....	Jan. 1	Mar. 25
Mountain Chickadee .....	Jan. 13	Mar. 25
Junco (sp.?) .....	Sept. 7	May 13
*Western Tree Sparrow.....	Oct. 13	Apr. 11

All birds for which single or few records are available have been placed in a separate list. These are erratic (irregular) in occurrence. The size of this class is due to at least two factors: (1) The birds are truly erratic in their occurrence, and (2) the fact that a majority of the observations were made within a comparatively small area, about sixteen square miles. Thus, birds that may really belong to one or more of the other classes are, perhaps, not given proper recognition. For example:

The Nevada Sage Sparrow, a common summer visitant to the sage deserts north of Rupert, was recorded only once in the area studied. Because of this restriction of territory, one does not get a clear conception of the region in southern Idaho as a whole. Studies such as this have their value in that they show the nature of bird populations in definite areas and environments. In the light of conditions in the general region, these erratic records could be classified as applying to summer visitants, winter visitants, or migrants. However, they are here treated as one class.

#### BIRDS OF ERRATIC OCCURRENCE

Eared Grebe, August 1, 1920; Pied-billed Grebe, May 15, 1918; Brewster Egret, one specimen examined September 16, 1919; Hutchins Goose, common in the grain fields during the autumn and early winter of 1921, specimens examined; Cackling Goose, one specimen killed by a hunter in September, 1921, was examined and measured; Blue-winged Teal, June 10, 1919; Greater Scaup, one definite record, a dead bird found March 28, 1920; Swainson Hawk, October 30, 1919; Cooper Hawk, April 11, 1919; Golden Eagle, April 11, 1919; Prairie Falcon, October 31, 1919; Sage Hen, March 29, 1919; Long-billed Curlew, May 31, 1920; Western Solitary Sandpiper, April 9, 1920; Stilt Sandpiper, May 13, 1919; Marbled Godwit, August 1, 1920; Hudsonian Godwit, July 7, 1919; Sanderling, May 19, 1921; Wilson Phalarope, May 13, 1919; Northern Phalarope, May 13, 1919; Pomarine Jaeger, one specimen killed on the Snake River, September 4, 1919; Black Tern, May 19, 1921; California Cuckoo, May 16, 1918. (Nests of the last bird have been found by Dr. Fayre Kenagy in the near vicinity of Rupert; but even so, its occurrence is quite erratic.)

Broad-tailed Hummingbird, May 27, 1920; Rocky Mountain Hairy Woodpecker, April 17, 1920; Olive-sided Flycatcher, September 7, 1919; Violet-green Swallow, May 11, 1919; Tree Swallow, May 27, 1921; Western House Wren, April 29, 1920; Rock Wren, May 19 and 27, 1921; Western Bluebird, August 14, 1920; Townsend Solitaire, May 9, 1920; Cedar Waxwing, March 21, 1920; Townsend Warbler, September 4, 1919; Macgillivray Warbler, April 29, 1920; Long-tailed Chat, May 17 and 31, 1920; Western Tanager, September 7, 1919; Rocky Mountain Grosbeak, July 7, 1919, and May 27, 1921; Western Evening Grosbeak, February 29, 1920; White-winged Crossbill, specimen examined that was taken December 18, 1919; Lark Bunting, May 29, 1921; Nevada Sage Sparrow, specimen taken May 19, 1921; Slate-colored Fox Sparrow, April 9, 1920.

In glancing over the above list of erratic species, one is impressed by the large number of migrants (for the general area) of the passerine type. What explanations are there for this phenomenon? From a geographical point of view, it seems that the main migration routes to Idaho from the south, and *vice versa*, should be by way of the western slopes of the Rocky Mountains, through Utah, Arizona, and Mexico, and secondly by way of the belt from the Blue Mountains in Oregon to the Sierra Nevada in California. It is conceivable that the intervening territory between these two routes, that is, the Great Basin, may present factors favorable for a limited migration, but I believe that the above-mentioned routes will be found to be the ones most used. The fact that fewer species of regular migrants (those that appeared regularly but did not stop to nest) for this area were noted than species of migrants erratic in their appearance, seem to indicate, at least, that Rupert is removed from the main migration route.

The other birds of erratic occurrence are chiefly water-frequenting forms that were observed on or near the Snake River; a smaller number are winter visitants; and the others are regular summer visitants in adjacent areas.

In all, 147 species of birds are recorded for this area, segregated as follows: Permanent residents, 19; regular migrants, 26; summer visitants, 41; regular winter visitants, 18; erratic in occurrence, 43. It is of interest to compare the results of this study with one made by R. H. Palmer (Murrelet, 9, 1928, pp. 28-38) in Bannock County, Idaho, during the years 1912-1917. The following chart is adapted from Palmer (*op. cit.*, p. 37).

Classes	Bannock County		Rupert	
1. Permanent residents .....	35	22%	19	17.7%
2. Summer visitants .....	91	57	41	39.3
3. Winter visitants .....	11	7	18	16.8
4. Regular spring migrants.....	24	15	26	24.2
Total recorded .....	161	....	147 (including erratics)	

In making this comparison, four factors must be kept in mind: (1) The comparative size of the areas under consideration. Bannock County, at that time, comprised nearly all of the southeastern portion of Idaho. The area in the vicinity of Rupert is considerably smaller; (2) Bannock County offers a variety of habitats—mountain, meadow, farm land, streamside, marsh and lake. The area in the vicinity of Rupert is relatively flat, of sedimentary origin, and limited to such habitats as farm land, streamside, introduced deciduous trees, and marsh. (3) The climate in the two areas is somewhat different. Bannock County is more mountainous, therefore it has more snow in winter and a more severe climate in general; the elevation averages higher by at least one thousand feet. (4) The large class of "erratic occurrences" is excluded, but even so, the total number of birds recorded for the area is the only factor affected, and it does not enter largely into the comparison.

With these facts in mind, let us examine the above table, and discuss the probable causes for differences. The diversity of habitats in the two areas explains readily the differences in classes 1 and 2. The milder, more open winters in the vicinity of Rupert will explain the features of class 3. However, the apparent similarity between the two localities as regards class 4 is misleading. The twenty-four migrants through Bannock County are truly northern-nesting forms: geese, ducks, shorebirds, some sparrows and others, which do not stop to nest in the area. (Species that migrate regularly through the region, but individuals of which stop to nest while others pass on, are here classed as *summer visitants*.) On the other hand, those that migrate regularly through Rupert are of two classes: (1) Truly northern nesters, and (2) those that ordinarily nest in the mountains in southern Idaho. Such birds as Wright Flycatcher, Audubon Warbler, Audubon Hermit Thrush, Western Ruby-crowned Kinglet, Western Warbling Vireo, Lazuli Bunting and Western Wood Pewee are migrants in the strict sense through Rupert, but they would be classed as "summer visitants" in the Bannock area because some individuals of the species nest there. This interesting fact lends weight to the hypothesis that the western flank of the Rockies is more of a regular migration route than the Great Basin proper.

It seems worth while to diverge a bit from the main thesis and report a few recent (1934) changes in the fauna of the Rupert area. Due to intentional further drainage of marshy areas and the excessive drought of the past few years, accompanied by a similar decrease in the amount of water available for irrigation (less than 50 % of the 1930 supply was available this year), a great reduction in available breeding grounds for marsh-frequenting birds has resulted. The most conspicuous change was in the number of Yellow-headed Blackbirds. In areas where they were common in 1919, there were a few this year; also fewer Coots, Avocets, Red-winged Blackbirds, Cinnamon Teal and Marsh Wrens were observed. However, some increases have taken place despite these adverse conditions.

During the past three years, Brewster Egrets have moved in and established themselves on an island in the Snake River near Burley. A small colony of several breeding pairs was visited this last June. This bird was first noted there in 1919. Black and Caspian terns seem to have increased greatly in numbers. A White-

faced Glossy Ibis was observed June 14 one and a half miles south of Rupert. This, apparently, is a new record for this area.

#### SUMMARY

A review of the bird population of a restricted area in the vicinity of Rupert, Minidoka County, Idaho, based upon observations during the years 1919-1921, reveals the presence of 147 species of birds.

This population is segregated into five classes as follows: Permanent residents, 19; summer visitants, 41; winter visitants, 18; regular migrants, 26; erratic in occurrence, 43.

The large number of erratic occurrences is explained by the hypothesis that Rupert is between two major migration routes; hence the frequent appearance of stragglers. Also, the limited size of the area studied resulted in erratic presence of birds whose natural habitats were adjacent, but not strictly within the area.

Comparison of the avifauna of Bannock County, Idaho, with that of the Rupert area revealed certain differences. Contrasts in size, topography and climate of the two areas (plus geographical location) probably explain these.

Recent (1934) changes in the avifauna are noted. Some species have decreased in numbers due to the drought and to the intentional drainage of marshy areas; Black and Caspian terns have increased. Brewster Egrets, first observed in 1919, have established themselves during the past few years; the appearance of the White-faced Glossy Ibis is recorded.

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## NOTES ON BIRDS IN DEATH VALLEY

By M. FRENCH GILMAN

A residence of more than six months in Death Valley, from October 23, 1933, to May 9, 1934, gave me unusual opportunity to study the bird life of the below-sea-level area. Adopting sea level as a limit to the area of operations as done by Joseph Grinnell in his articles, was a most logical idea. This limit has been adhered to (except where otherwise stated) in this report. As Acting Custodian of Death Valley National Monument my duties called for a somewhat general supervision of the area and necessitated many trips, these giving extra opportunities.

A feeding station for attracting wild animals was established near the overflow ponds nearly half a mile below Furnace Creek Ranch. This proximity to the ponds afforded a good chance to observe migratory water birds, particularly as trips were made almost daily to replenish the food at the station. As an attraction for the wild animals, coyotes, foxes and wildcats in particular, the station brought little result other than tracks of these animals in the morning. Burros were the best customers until the station was moved inside a fenced field nearby in order to give the desired visitors a chance. Ravens became most numerous, forty being counted one morning and several being present regularly and becoming somewhat tamer. From October till along in February the Magpies were regular visitors at the "table," ten being the most counted at one time.

Besides watching these overflow ponds, trips were made to the ponds at Eagle Borax Works where water birds were usually seen. All notes in this paper are based on "sight identifications," which fact may detract from its highest scientific