

roost as the sumac that was not utilized at all. Furthermore, to get to the poison ivy required a flight of at least a few yards in the open and feeding in relatively unprotected territory. This was not the case with the planting of cultivated trees bordering on the north of the native timber area. These trees, at a flight distance from the night tree about equal with that to the poison ivy, were directly adjacent to the woods and formed relatively good cover. This planting was made up of 14 buckthorns (*Rhamnus* sp.) bearing very numerous fruits, and 16 junipers (*Juniperus* sp.) which bore a few fruits throughout the winter. Apparently neither of these possible food sources was utilized.

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RESULTS OF 1936 BIRD BANDING OPERATIONS AT AVERY ISLAND, LOUISIANA, WITH SPECIAL REFERENCES TO SEX RATIOS AND HYBRIDS

By E. A. McILHENNY

WHEN a large number of birds of any species are banded at one station, and such banding continued for many years, interesting features in the life history of the birds are discovered which could not be determined in any other manner, one of the most interesting of which is the sex-ratio.

During the more than twenty-five years I have been banding migratory wild-fowl and non-game birds at Avery Island, Louisiana, my records show that the yearly proportion of males to females taken in my traps has remained about the same, and there has been little variation from year to year of this proportion.

Reviewing my banding records for the year 1936, during which year I banded 17,991 migratory birds, 9,908 of which were wild-

fowl. I banded 961 male Ring-necked Ducks (*Nyroca collaris*), and only 286 females, or more than three times as many males as females.

Of American Pintails (*Dafila acuta tzitzihoo*), 2,780 were males, and 1,413 were females—just about two males to one female.

Of Lesser Scaup Ducks (*Nyroca affinis*), 280 males and 174 females were banded, or one and six-tenths males for each female.

Of Blue-winged Teal (*Querquedula Niscors*), I banded 1,318 males and 752 females—a ratio of almost two males to one female.

Of Wood Ducks (*Aix sponsa*), 145 males and 66 females were banded. Here the ratio is little more than two males to one female.

Such a predominance of males is undoubtedly a major factor in the decrease of our ducks, and may have been the governing factor in the extermination of the Labrador Duck (*Camptorhynchus labradorius*), as the known specimens of this species in our museums are almost all males.

In many of our non-game birds the sex ratio varies as greatly as in the wild fowl. I find in 1936 that I banded 968 male Red-wings (*Agelaius*) and only 239 females—a little more than four males for each female.

Of Cowbirds (*Molothrus ater ater*) banded, 1,902 were males and 769 were females, or almost two and a half males for each female.

There has been one exception to the rule, for out of 1,189 Boat-tailed Grackles (*Cassidix mexicanus*) banded, 419 were males and 770 females, or one and eight-tenths females for each male. This is the only species in which I have found the females outnumbering the males.

In banding a great number of birds of one species, many interesting plumage variations will be noted. I frequently get birds showing partial albinism and many that are much darker than the type. Partial albinism is of frequent occurrence in the Red-wings and Cowbirds, and not uncommon in the ducks.

On November 20th, a fine, full-plumaged albino Pintail male, and a full-plumaged partly albino Ring-neck male were captured, both of which I sent to the United States Biological Survey.

HYBRIDS

On February 8th, I captured and placed band 36-612319 on a very well-marked hybrid of the Coot (*Fulica a. americana*) and the Florida Gallinule (*Gallinula chloropus cachinnans*). This bird had the red beak of the Florida Gallinule with the white shield above the beak as in the Coot. The eyes were colored as in the Florida Gallinule. The legs were like those of the Florida Gallinule even to the color and the red bare space above the knee joint. The feet were semi-palmated like the Coot's and the entire body coloring and general body build were like that of the Coot, except the plum-

age of the back which had the coloring of the Florida Gallinule. The bird was much smaller than an adult Coot.

On December 26th, I placed band 37-702072 on a well-marked male hybrid between Canvasback Duck (*Nyroca Valisineria*) and a Redhead (*Nyroca americana*). The shape of the head of this bird was less round than that of a Redhead, but was not so sloping as that of a Canvasback. The shape and color of the beak were characteristic of the Redhead even to the band across it. The color of the plumage on the back was like that of the Canvas back, but the neck, breast and tail as well as the legs were like those of the Redhead. The colors of the wings were intermediate between the two species.

On December 19th, I placed band 36-689594 on a hybrid Lesser Scaup Duck—Ring-necked Duck, and on December 31, 1936, band 36-690095 was placed on a second hybrid of these two species. Both of these birds had the banded Ring-necked beak with the Lesser Scaup's head and eye coloration. The plumage of the neck and back was modified Lesser Scaup's plumage, showing considerable white in this plumage, while the feet, tail, and breast plumage was that of the Ring-necked Duck.

By far the commonest hybrid is Mallard (*Anas platyrhynchos*)—Pintail, although I have quite often had Mallard—Gadwalls (*Chaulelasmus streperus*) hybrids and Pintail—Gadwall hybrids.¹

One of the most unusual hybrids taken was a cross of a Black Vulture (*Coragyps a. atratus*) and Turkey Vulture (*Cathartes aura septentrionalis*). This bird was captured in the winter of 1937 in my Vulture trap, and was such a perfect, well-marked specimen that I sent it to the United States Biological Survey alive, and it is now in the flying cage of the Rock Creek Zoo at Washington, D. C.

Unusual climatic or water conditions often result in the capture of unusual species. For instance, due to low water around one of my duck banding traps, I was enabled to catch and band a number of shore birds in rather an interesting way: During August, the water in my big duck ponds was very low, in fact, only about two or three inches deep around the banding traps, and for a good many hundred feet in front of the traps. The man in charge of my wild life refuge reported great numbers of Black-necked Stilts (*Himantopus mexicanus*) and other waders in the ponds. On Friday, August 14th, I went to investigate, and found the Stilts feeding right in front of one of my large duck-banding traps. On walking slowly around them, two of them went into the trap's "V," and I succeeded in catching them. As a great many Stilts were near the trap, I conceived the idea of a Stilt drive, so on Saturday, August 15th, in the afternoon, I took four men with me, and we walked

¹ It is much to be regretted that these duck hybrids were not collected, thus permitting their study by others.—EDITOR.

through the shallow water towards the trap in the form of a bow, moving very slowly and driving the Stilts before us towards the wire "V" leading into the trap. We made two drives—one in the early afternoon, and one in the late afternoon. The result was that on the first drive, we got eighteen Stilts, and on the second drive we got nine more, two Pectoral Sandpipers (*Pisobia melanota*), and one Lesser Yellow Leg (*Totanus flavipes*), all of which I banded.

The traps I use for taking non-game birds are modified crow traps—large wire enclosures with a "V" opening downward from the top. During the past fall one of these traps in which I took large numbers of Cowbirds and Red-wings was visited daily by a male Cooper's Hawk, who each day for nine days returned to the trap, entered through the top, and gorged himself on the smaller birds the trap contained.

Interesting features of this year's banding operations are too numerous to mention. It is of interest, however, to note that Eastern Mockingbirds (*Mimus p. polyglottos*) during the period of from September 6th to October 17th showed a very marked migration. One non-game bird trap stands near a group of small hackberry trees on an open prairie at least a quarter of a mile from any other trees. In this trap, although baited with rice, I took almost daily three or four Mockingbirds, most of them juveniles; showing, I believe, that these birds were migrating in family units.

The following tabulation lists all species banded during the year and also the number of each. The totals of ducks and a few other species are listed by sexes:

Pied-billed Grebe (<i>Podilymbus podiceps podiceps</i>)	5
Louisiana Heron (<i>Hydranassa tricolor ruficollis</i>)	1
Lesser Snow Goose (<i>Chen hyperborea hyperborea</i>)	3
Blue Goose (<i>Chen caerulescens</i>)	44
Fulvous Tree-Duck (<i>Dendrocygna bicolor helva</i>)	7
Mallard (Drake) (<i>Anas p. platyrhynchos</i>)	129
Mallard (Hen) (<i>Anas p. platyrhynchos</i>)	123
Common Northern Black Duck (Drake) (<i>Anas rubripes tristis</i>)	2
Mottled Duck (Drake) (<i>Anas fulvigula maculosa</i>)	28
Mottled Duck (Hen) (<i>Anas fulvigula maculosa</i>)	16
Gadwall (Drake) (<i>Chaulelasmus streperus</i>)	6
Gadwall (Hen) (<i>Chaulelasmus streperus</i>)	3
Baldpate (Drake) (<i>Mareca americana</i>)	1
Baldpate (Hen) (<i>Mareca americana</i>)	1
American Pintail (Drake) (<i>Dafila acuta tzitzihoa</i>)	2,780
American Pintail (Hen) (<i>Dafila acuta tzitzihoa</i>)	1,413
Green-Winged Teal (Drake) (<i>Nettion carolinense</i>)	39
Green-Winged Teal (Hen) (<i>Nettion carolinense</i>)	29
Blue-Winged Teal (Drake) (<i>Querquedula discors</i>)	1,318
Blue-Winged Teal (Hen) (<i>Querquedula discors</i>)	752
Shoveller (Drake) (<i>Spatula clypeata</i>)	11
Shoveller (Hen) (<i>Spatula clypeata</i>)	1
Wood Duck (Drake) (<i>Aix Sponsa</i>)	145
Wood Duck (Hen) (<i>Aix Sponsa</i>)	66
Redhead (Drake) (<i>Nyroca Americana</i>)	17
Redhead (Hen) (<i>Nyroca Americana</i>)	19

Ring-necked Duck (Drake) (<i>Nyroca collaris</i>)	961
Ring-necked Duck (Hen) (<i>Nyroca collaris</i>)	286
Canvas-back (Drake) (<i>Nyroca Valisineria</i>)	12
Canvas-back (Hen) (<i>Nyroca Valisineria</i>)	8
Greater Scaup Duck (Drake) (<i>Nyroca marila</i>)	2
Lesser Scaup Duck (Drake) (<i>Nyroca affinis</i>)	280
Lesser Scaup Duck (Hen) (<i>Nyroca affinis</i>)	174
Buffle-Head (Drake) (<i>Charitonetta albeola</i>)	1
Ruddy Duck (Drake) (<i>Erismatura jamaicensis rubida</i>)	3
Ruddy Duck (Hen) (<i>Erismatura jamaicensis rubida</i>)	5
Hooded Merganser (Drake) (<i>Lophodytes cucullatus</i>)	6
Black Vulture (<i>Coragyps a. atratus</i>)	2,010
Sharp-Shinned Hawk (Male) (<i>Accipiter v. velox</i>)	1
Cooper's Hawk (Male) (<i>Accipiter cooperi</i>)	2
Cooper's Hawk (Female) (<i>Accipiter cooperi</i>)	1
Eastern Sparrow Hawk (<i>Falco s. sparverius</i>)	1
Eastern Bob-white (<i>Colinus v. virginianus</i>)	77
Virginia Rail (<i>Rallus l. limicola</i>)	1
Florida Gallinule (<i>Gallinula chloropus cachinnans</i>)	205
American Coot (<i>Fulica americana americana</i>)	833
Killdeer (<i>Oxyechus v. vociferus</i>)	5
Lesser Yellow-legs (<i>Totanus flavipes</i>)	1
Pectoral Sandpiper (<i>Pisobia melanotos</i>)	4
Least Sandpiper (<i>Pisobia minutilla</i>)	2
Black Necked Stilt (<i>Himantopus mexicanus</i>)	29
Eastern Mourning Dove (<i>Zenaidura macroura carolinensis</i>)	51
Black-billed Cuckoo (<i>Coccyzus erythrophthalmus</i>)	2
Barn Owl (<i>Tyto alba pratimcola</i>)	1
Great Horned Owl (Male) (<i>Bubo v. virginianus</i>)	1
Chimney Swift (<i>Chaetura pleagica</i>)	98
Eastern Belted Kingfisher (<i>Megaceryle a. alcyon</i>)	1
Southern Flicker (<i>Colaptes auratus auratus</i>)	8
Red-Bellied Woodpecker (<i>Centurus carolinus</i>)	3
Tree Swallow (<i>Iridoprocne bicolor</i>)	196
Barn Swallow (<i>Hirundo erythrogaster</i>)	6
Purple Martin (<i>Progne s. subis</i>)	1
Florida Blue Jay (<i>Cyanocitta cristata florincola</i>)	31
Carolina Wren (<i>Thryothorus ludovicianus ludovicianus</i>)	5
Eastern Mockingbird (<i>Mimus polyglottos polyglottos</i>)	95
Eastern Robin (<i>Turdus migratorius migratorius</i>)	7
Loggerhead Shrike (<i>Lanius l. ludovicianus</i>)	4
Starling (<i>Sturnus v. vulgaris</i>)	133
Myrtle Warbler (<i>Dendroica Coronata</i>)	4
Western Meadowlark (<i>Sturnella neglecta</i>)	117
Yellow-headed Blackbird (<i>Xanthocephalus xanthocephalus</i>)	2
Gulf Coast Red-wing (Male) (<i>Agelaius phoeniceus littoralis</i>)	968
Gulf Coast Red-wing (Female) (<i>Agelaius phoeniceus littoralis</i>)	239
Boat-Tailed Grackle (Male) (<i>Cassidix Mexicanus major</i>)	419
Boat-Tailed Grackle (Female) (<i>Cassidix Mexicanus major</i>)	770
Florida Grackle (<i>Quiscalus quiscula aglaeus</i>)	1
Cowbird (Male) (<i>Molothrus ater ater</i>)	1,902
Cowbird (Female) (<i>Molothrus ater ater</i>)	769
Louisiana Cardinal (Male) (<i>Richmondena cardinalis magnirostris</i>)	19
Louisiana Cardinal (Female) (<i>Richmondena cardinalis magnirostris</i>)	13
Eastern Savannah Sparrow (<i>Passerculus sandwichensis savanna</i>)	227
Swamp Sparrow (<i>Melospiza georgiana</i>)	15
American Hybrid Coot and Florida Gallinule (<i>Fulica Americana Americana and Gallinula choropus cachinnans</i>)	1
Hybrid Canvas-Back and Redhead Drake (<i>Nyroca valisineria and Nyroca americana</i>)	1
Hybrid Lesser Scaup Duck and Ring-necked Drake (<i>Nyroca affinis and Nyroca collaris</i>)	2
Total	17,981