Water Birds on an Inland Reservoir

BY EARL L. POOLE

In 1928 the City of Reading, by damming the waters of the Maiden Creek at a point some seven miles north of the city, erected an impounding dam, which, at its present level, backs up the stream for a distance of about two miles, and presents a water surface of over 200 acres. This operation was the first step in a plan which will probably be carried out during the present year (1934), to raise the level of the water an additional 16 feet and thereby increase the area to more than 1000 acres.

In preparation for this a large area of the adjacent watershed has been cleared of trees and all sections above the ultimate water level replanted with pines.

This dam is in the heart of the Great Valley, a rolling agricultural belt of some 12 to 15 miles in width, and parts of the present shore line have now become marsh-land, other sections are almost level meadows covered with a few inches of water, while at several points steep quarry walls and limestone ledges drop sheer to a considerable depth of water.

At the head of the dam is a particularly interesting locality where several grassy or marshy islands, from mere ground patches to two acres in area, have been formed. At a few places the natural drainage has been disturbed, resulting in springy marshes.

It is seldom that one, in the course of a few years, has an opportunity to witness such a revolutionary change in the aspect of a limited area, as the appearance of this region is still changing rapidly from year to year with the growth of the infant forest, while the vegetation on the borders of the newly created lake constantly assumes a more appropriate character. Large areas of what were at first merely flooded meadow are now supporting a luxuriant growth of cat-tails (*Typha latifolia*), Rice Cut-Grass (*Leersia oryzoides*), and Burr Marigolds, (*Bidens sp.*), which have spread consistently from year to

year. This change has naturally resulted in a corresponding change in the avifauna of the region, as the birds seem quick to adapt themselves to the altered conditions. What was at first an ideal habitat for certain Sandpipers is now becoming the resort of Rails and other marsh birds.

Changes of a few inches in the water level may also have a decided influence on the possibilities of the occurrence of some species. The three dry summers following the erection of the dam resulted in mud flats that were acceptable to shore-birds, where the higher level of 1933 offered fewer feeding grounds for them, and there was a consequent dearth of these birds during that year, with the exception of those brought in by the tropical hurricane of August 24, and these left immediately after the storm passed on.

It is evident from the promptness with which transient species responded to such changes in local conditions, that there must be a rather extensive overland migration of water-birds over this region, and that they ordinarily pass by unnoticed, unless the conditions I have described induce them to stop and rest or feed.

Practically all of the species that have been observed on this artificial lake are to be found on the Great Lakes and on the Finger Lakes of New York, and it is evident that in flying from these lakes to the Delaware or Virginia Capes, for instance, they must pass over this locality. It seems unlikely that the Schuylkill River Valley is of any great importance as a migration highway, yet I have repeatedly seen flocks of Yellow-legs and other waders leave the dam and fly directly toward the river as though it were a recognized route.

The Schuylkill, itself, is now an unsightly stream, choked with culm from the anthracite regions, and supports little or no aquatic vegetation or life of any sort, so that Lake Ontelaunee at present is the largest available area of still water between the Delaware and the Susquehanna, each some sixty miles distant. Because of its size and shape (it is nowhere more than a sixth of a mile wide), it is usually possible, with sufficient light and a little care in stalking, to obtain a fairly close view of the birds, and make a satisfactory identification.

Only sight records are included in the present paper, and since shooting is prohibited in this area I have made no attempt to do any collecting.

On May 10, 1934,* preparatory to enlarging the capacity of the reservoir by raising its level an additional twenty feet, the dam was drawn off.

The natural result of this step was the complete drying up of the marshes during the ensuing summer. A few shore-birds returned late in May, finding a congenial feeding ground on the extensive mud-flats left by the receding waters, but most of the other birds left, only a couple of Blue-winged Teal remaining, evidently hoping to raise broods in their former nesting places.

As the water was lowered gradually, and the flood gates could only carry off a limited quantity, periods of high water still occurred after prolonged rains. This was sufficient inducement for the fresh water ducks, however, and they returned in force during the past fall, remaining in dwindling numbers until late in December, when the water-level had fallen to the former stream channel, and "old" Lake Ontelaunee had ceased to exist.

The new dam, to cover an area of 1080 acres, five times its previous surface, is expected to be filled in August 1935. It will be interesting to watch the development of this new body of water. At present, one can scarcely visualize the conditions that will exist when the new level is reached. Instead of the former broad meadows, where the Upland Plover, Bobolink and Savannah Sparrow were at home, the water will almost lap the roots of immense plantations of young pines. Probably new and more extensive marshes and shallows will continue to attract the waders, and the larger expanse of water will draw even greater numbers of water birds, but is hardly to be expected that conditions for observing the birds will be nearly as satisfactory as on the former lake.

The following annotated list covers only those species whose occurrence is due to the presence of the lake, or which

*Subsequent to the writing of this paper.

have increased materially in the five years since the dam was built.

Gavia immer immer. LOON.—Fairly common transient, spring and fall; April 7 (1933) to May 13 (1933) and November 3 (1929) to December 3 (1933). Maximum number seen at one time, 5, on April 27 (1930).

Gavia stellata. RED-THROATED LOON.—Rare transient; fall records only. November 16, 17, and 19, 1930, one; November 10, 1932, one.

Colymbus grisegena holboelli. HOLBOELL'S GREBE.—Rare transient, only observed in 1930. February 26–27, one; April 20, one; April 22, four.

Colymbus auritus. HORNED GREBE.—Rather common transient, wintering in 1931–32. Earliest fall record, October 26 (1930); last spring, May 12 (1929).

Podilymbus podiceps podiceps. PIED-BILLED GREBE.—Fairly common transient, spring and fall. March 12 (1930) to May 12 (1929); July 10 (1932) to November 23 (1930).

Oceanodroma leucorhoa leucorhoa. LEACH'S PETREL.—Casual. On August 24, 1933, following the severe storm of August 22–24, twelve were on the lake. The following morning they had all left.

Oceanites oceanicus. WILSON'S PETREL.—Casual. Following the storm of August 24, 1933, two of this species were seen, with the previous species on the lake. One of these flew within thirty feet of me at one time.

Phalacrocorax auritus auritus. DOUBLE-CRESTED CORMORANT.—A rather rare transient. April 21, 1929; November 8, 1932; one each time. (Pough reported one here on October 29, 1933.)

Ardea herodias herodias. GREAT BLUE HERON.—Common transient and summer visitant. Not recorded in January or February.

Casmerodus albus egretta. AMERICAN EGRET.—Common summer visitant; June 23 (1929) to October 22 (1933). Largest number seen at one time, 11 on August 14, 1932.

Florida caerulea caerulea. LITTLE BLUE HERON.—A common summer visitant, casual in spring. July 4 (1929 and 1930)

to September 17 (1930). Also one in mottled plumage, May 12, 1929.

Butorides virescens virescens. LITTLE GREEN HERON.—Common summer resident.

Nycticorax nycticorax hoactli. BLACK-CROWNED NIGHT HERON.—Apparently resident in mild winters.

Botaurus lentiginosus. AMERICAN BITTERN.—Fairly common transient.

Ixobrychus exilis. EASTERN LEAST BITTERN.—Rare transient, October 3, 1929; May 22, 1932.

Sthenelides olor. MUTE SWAN.—Probably casual. One May 12, 1929, another on April 9, 1932.

Cygnus columbianus. WHISTLING SWAN.—Rather rare transient. On March 26, 1930, a day of high northwest winds and heavy snow flurries, a pair alighted on the reservoir. Late in the afternoon they rose and flew *southeast,* with the wind. On March 31 of the same year, one, an immature bird was there.

On November 5, 1930, a flock of 26 circled over the dam for about half an hour, although I did not see them alight.

November 16, 6 came down, and one remained until the following day.

November 20, 1931, a flock of 26, about one-third young of the year, were on the water.

Branta canadensis canadensis. CANADA GOOSE.—Rather common transient; four wintered during 1931–1932. February 12 (1933) to April 23 (1931); November 9 (1929) to November 18 (1930).

Branta bernicla hrota. BRANT.—Casual; one seen after the severe storm of November 10, 1932.

Anas platyrhynchos platyrhynchos. MALLARD.—Common; possibly resident, although I have no records between May 30 and August 10th. Absent in winter when the dam is completely frozen over.*

Anas rubripes rubripes. RED-LEGGED BLACK DUCK.—

* (During 1933–34 Mallards, Black Ducks, Baldpates, and Green-Winged Teal remained, even though the dam was frozen tight throughout January and February. They spent the day sitting on the ice.

Common winter resident as long as there is any open water. Definite observation between November 12 (1933) and April 28 (1932).

Anas rubripes tristis. BLACK DUCK.—Abundant resident; only absent during extremely severe, cold spells. This outnumbers all other species put together. Sometimes 500 are seen together.

Chaulelasmus streperus. GADWALL.—Not common transient; occurring singly to flocks of 10. Thirteen observations, spring April 7 (1933) to April 30 (1933); fall, October 14 (1932) to December 3 (1933).

Mareca americana. BALDPATE.—Common transient and winter resident, remaining as long as water is open. I have no August records.

Dafila acuta tzitzihoa. AMERICAN PINTAIL.—Common transient and winter resident during open seasons. Arrives August 9 (1929); last seen April 23 (1931 and 1933).

Nettion carolinense. GREEN-WINGED TEAL.—Same status as previous species. Latest departure April 30 (1933); earliest arrival, August 28 (1930).

Querquedula discors. BLUE-WINGED TEAL.—Fairly common transient and regular summer resident. Two or three pairs breed each year. One seen January 8 (1933), otherwise none observed later than October 23 (1932), nor earlier than March 11 (1933).

On June 13, 1930, I saw a family of 12 downy young, evidently not more than a few days old, with their mother. On July 13 they were nearly full grown, and on July 27, in flight. Another family of 9 was raised the same year. At least 2 broods were raised in 1931, and three in 1932. On May 17, 1933, Dr. Berkheimer showed me a nest with 12 eggs, and on June 20 a game protector brought me 3 newly-hatched young that had been taken from a nest destroyed by a mowing machine.

Spatula clypeata. SHOVELLER.—An uncommon transient in fall, more common in spring. I have 38 spring records between January 30 (1932) and April 27 (1932). Eight fall records between October 22 (1933) and December 3 (1930).

Aix sponsa. WOOD DUCK.—The dam is not particularly suited to the needs of this species, since the trees have been cleared away for some distance in all directions. My only spring records are February 25, 1933, and April 1, 1933.

Nyroca americana. REDHEAD.—An uncommon transient, usually occurring singly or in pairs. Spring, February 28 (1932) to April 4 (1933). Fall, October 3 (1929) to November 30 (1929).

Nyroca collaris. RING-NECK DUCK.—Common transient. Curiously enough, this is almost as frequent as *affinis* on the dam, sometimes occurring in sizeable flocks. It invariably arrives much earlier than the other species of the genus. Spring, March 4 (1933) to April 12 (1931). (A single record January 30, 1932.) Fall, November 10 (1933) to November 30 (1933).

Nyroca valisineria. CANVASBACK.—An uncommon transient, more frequent in fall. Spring, March 12 (1932) to April 4 (1933), four records. Fall, October 18 (1932) to November 12 (1933), nine records.

Nyroca marila. GREATER SCAUP.—Evidently an uncommon transient. Opportunities of definitely identifying this species are comparatively rare. As in the case of *Anas rubripes rubripes*, I have supposed all Scaups to be *affinis* unless quite certain they were *marila.* Spring, March 26 (1933) to May 6 (1932) (9 records).

Nyroca affinis. LESSER SCAUP.—A common transient in spring, less frequent in fall. Spring, March 25 (1930 and 1933) to June 6 (1930). Fall, October 16 (1932) to November 10 (1932).

Glaucionetta clangula americana. AMERICAN GOLDENEYE.—Rather common transient. Spring, February 25 (1930) to April 29 (1929). Fall, November 6 (1932) to December 12 (1933).

Charitonetta albeola. BUFFLEHEAD.—Uncommon transient. Spring, March 11 (1933) to April 29 (1929). 9 records, never more than 15 at a time. Fall, November 5 (1930) to November 28 (1929).

Clangula hiemalis. OLD SQUAW.—Fairly common transient;

occasional winter visitant. Spring, April 2 (1930) to May 6 (1932). One winter record, February 12, 1933. Fall, November 3 (1929) to November 30 (1929).

Melanitta deglandi. WHITE-WINGED SCOTER.—Uncommon transient, stopping during storms, and passing on immediately afterward. Spring records, April 22, 1930 (5); April 7, 1933 (1) and May 13, 1933 (4). Fall, November 3, 1929 (4), November 5, 1930 (1); December 6, 1931 (1) and October 19, 1932 (1).

Melanitta perspicillata. SURF SCOTER.—Rare transient, possibly casual. Only one record, a pair seen on April 22, 1930. As with the former species, this pair came in on a storm and left within a few hours.

Erismatura jamaicensis rubida. RUDDY DUCK.—Rather common transient. Spring, April 5 (1931) to May 14 (1933). Fall, October 3 (1929) to November 27 (1930).

Lophodytes cucullatus. HOODED MERGANSER.—Common transient, scattering records throughout the year. Not yet recorded in February, July or October. Spring, March 4 (1930) to May 25 (1930). A young one was seen nearby on August 9 and 30 (1931). Fall, November 9 (1930) to December 13 (1931). A single record January 8 (1933).

Mergus merganser americanus. AMERICAN MERGANSER.—Abundant winter resident as long as open water is to be found. November 6 (1932) to May 26 (1932).

Mergus serrator. RED-BREASTED MERGANSER.—Common transient. Spring, March 25 (1930) to June 13 (1933). Fall, October 28 (1933) to December 6 (1931).

Falco peregrinus anatum. DUCK HAWK.—(Listed here because more frequent than elsewhere in the region, due to the presence of the ducks.) A fairly common transient and occasional winter visitant. Twelve records between September 18 (1932) and April 2 (1930).

Rallus elegans elegans. KING RAIL.—Rare summer resident. One was seen frequently in the marshes at the head of the lake between June 6 and October 4, 1930. During 1931, one was observed at the same place on August 9, and September 13. In 1932 two young of the year were seen almost weekly from

July 17 to September 11. Whether they were hatched on the marsh is, of course, doubtful, but highly probable.

Rallus limicola limicola. VIRGINIA RAIL.—Local summer resident. Several pairs undoubtedly nest in the marshes at the head of the lake each year. Downy young have been seen from time to time, but no nests found. Frequent records between May 3 (1933) and October 5 (1930). A dead specimen was picked up on the highway on November 27, 1930.

Porzana carolina. SORA.—Only known as a transient here, although it nests at Moselem, about three miles north. Uncommon in spring; common in fall. Spring records, May 15, 1932 and May 7, 1933. Fall, August 10 (1930) to October 19 (1932).

Gallinula chloropus cachinnans. FLORIDA GALLINULE.—An uncommon transient, never more than four on one day. Spring, May 7 (1932) to May 15 (1932). Fall, September 28 (1931) to October 23 (1932).

Fulica americana americana. AMERICAN COOT.—Common transient; summer resident in 1930. Spring, March 25 (1932) to May 7 (1929). Fall, September 15 (1929) to November 19 (1929).

Charadrius semipalmatus. SEMIPALMATED PLOVER.—Rather common transient, often coming down during fair weather. Spring, May 8 (1932) to June 6 (1930). Fall, August 11 (1929) to October 3 (1929).

Oxyechus vociferus vociferus. KILLDEER.—Abundant resident, especially in late summer and fall, remaining as long as the springs are unfrozen.

Pluvialis dominica dominica. GOLDEN PLOVER.—An uncommon transient in fall. All records given. 1929, one on October 1, two on October 12, three on October 23. 1930, three on October 12. 1932, one on September 11, one on September 28, one on October 18 (another was seen nearby on November 20).

Squatarola squatarola. BLACK-BELLIED PLOVER.—An uncommon transient, but more frequent than the last, and occurring both spring and fall, singly or in groups of not more than 6, and usually following storms. Spring, May 25 (1930)

to May 30 (1929), 3 records. Fall, August 18 (1929) to November 13 (1932), 9 records. A curious incident which may have some bearing on the occurrence of this species here, happened on the night of May 29, 1933. After a severe thunder shower which ended at about 10:30 on that night, the voices of scores of these birds could be heard over Reading, as they circled over the city, evidently lost and dazed. After a half hour or so they passed on.

Arenaria interpres morinella. RUDDY TURNSTONE.—Casual. One was seen on a small bare island at the head of the dam on May 22, 1930, and another which appeared to be a different individual, on May 31.

Capella delicata. WILSON'S SNIPE.—Common to abundant transient and frequent winter resident about springheads. Earliest arrival, August 9, 1929, latest departure, June 8, 1930.

Phaeopus hudsonicus. HUDSONIAN CURLEW.—Casual. On May 25, 1930, following a storm, a flock of ten, led by a Black-bellied Plover, circled twice over the marshes, but flew on toward the northwest without alighting.

Bartramia longicauda. UPLAND PLOVER.—A common summer resident in the open meadows about the dam. These will doubtless disappear as the young pines grow and the water reaches its ultimate level after the dam is completed. Existing conditions have been almost ideal for them, and several pairs have nested each season. Earliest arrival, April 6 (1929). Latest departure, September 8 (1929).

Actitis macularia. SPOTTED SANDPIPER.—An abundant summer resident.

Tringa solitaria solitaria. EASTERN SOLITARY SANDPIPER.—Abundant transient. Spring 29 (1932–33) to May 30 (1932). Fall, July 4 (1930) to October 3 (1929).

Catoptrophorus semipalmatus semipalmatus. EASTERN WILLET.—Casual. One seen under very favorable conditions after the severe storm of August 24, 1933.

Totanus melanoleucus. GREATER YELLOW-LEGS.—A common transient, often alighting in fair weather, and, in one instance remained through the summer (1930). Sometimes seen in flocks of 20 or 30. Spring, March 23 (1930 and 33) to

June 2 (1929). Fall, July 30 (1930 and 1933) to November 13 (1932).

Totanus flavipes. LESSER YELLOW-LEGS.—A common transient, more common than the last species in fall, when flocks of 100 or more are frequent. Spring, March 12 (1933) to May 28 (1930 and 1932). Fall, July 6 (1930) to November 16 (1930).

Pisobia melanota. PECTORAL SANDPIPER.—A common transient, although occasionally unaccountably scarce or absent in spring. After some fall storms they appear to have literally come down out of the clouds, and have been found all over the lower meadows, nearly a hundred being encountered in a few acres, as on August 15, 1929. Spring, March 25 (1933) to May 10 (1932). Fall, June 29 (1930) to November 10 (1929).

Pisobia fuscicollis. WHITE-RUMPED SANDPIPER.—A rather rare transient, usually seen singly or in pairs with flocks of the other species. After the severe tropical storm of October 3, 1929, however a flock of 30 was seen. The only spring record is May 20, 1930. Other fall records are October 13, 1929, August 22, 1930 (2) and October 15 and 22, 1933.

Pisobia bairdi. BAIRDS' SANDPIPER.—Casual. I had a very satisfactory view of a tame individual on September 28, 1932.

Pisobia minutilla. LEAST SANDPIPER.—A common transient. Spring, May 1 (1932) to June 1 (1930). Fall, July 6 (1930) to October 3 (1929). During low water these are often scattered over the flats in large numbers.

Pelidna alpina sakhalina. RED-BACKED SANDPIPER.—An uncommon transient, but no doubt occurs during each migration. Spring, May 4 (1933) to June 1 (1930) 11 records. Fall, August 28 (1932) to November 5 (1933) 7 records.

Limnodromus griseus griseus. EASTERN DOWITCHER.—A rather rare transient. Only one spring record, June 1, 1930. Fall records are, September 8, 1929, August 25, 1931 (3) September 20, 1931 (2), and October 5, 1932 (3).

Micropalama himantopus. STILT SANDPIPER.—A rather rare transient in fall. September 13, 1932 (2, D. Berkheimer),

September 18, 1932 (7), September 25 (1). October 9, 1932 (1). August 27 and September 3, 1933 (3).

Ereunetes pusillus. SEMIPALMATED SANDPIPER.—A common transient. Spring, May 11 (1930) to June 6 (1929 and 1930). Fall, July 17 (1932) to Oct. 15 (1933).

Ereunetes mauri. WESTERN SANDPIPER.—A rare transient. While I have several times seen specimens that were probably this species in fall, I have only one record of an individual in full plumage, May 28, 1933.

Crocethia alba. SANDERLING.—A rare transient, only occurring during or immediately after storms. September 24, 1932 (D. Berkheimer). After the severe northeaster of August 24, 1933, 5 were seen.

Phalaropus fulicarius. RED PHALAROPE.—Casual. During the storm of November 10, 1932, 3 Red Phalaropes came onto the dam. These flew directly past me several times, and finally alighted on the water within a few yards, giving me an excellent opportunity to note the distinctive form and markings of this species, which is a much "chunkier" bird than the following.

Lobipes lobatus. NORTHERN PHALAROPE.—A rather rare transient, in fall. I have four records: September 14, 1909 (1), October 3, 1923 (2), August 28, 1932, and August 24, 1933. These were all brought in by storms.

Larus argentatus smithsonianus. HERRING GULL.—Fairly common transient and winter visitant. All observations except one (August 24, 1933) are between December 13 (1931) and May 15 (1930).

Larus delawarensis. RING-BILLED GULL.—Fairly common transient. I have 14 observations between March 18 (1933) and May 22 (1930) and 5 between August 24 (1933) and November 6 (1932).

Larus atricilla. LAUGHING GULL.—Casual, only coming in on severe easterly storms. Two on November 10, 1932, and at least 10 on August 24, 1933.

Larus philadelphia. BONAPARTE'S GULL.—Transient, frequent in spring, but uncommon in fall. During and after April rains, sometimes as many as 20 may be seen at one time.

Spring, 21 records between April 6 (1930) and May 15 (1930). Fall, 5 observations between October 3 (1929) and November 29 (1931).

Sterna hirunda hirunda. COMMON TERN.—An uncommon transient. Seven spring records between May 6 (1932) and June 13 (1930). Seven fall records between August 7 (1932) and October 19 (1932).

Sterna antillarum antillarum. LEAST TERN.—Casual. One observed during the northeaster on August 24, 1933.

Hydroprogne caspia imperator. AMERICAN CASPIAN TERN.—A rare transient. Strangely enough, all my records are in spring, May 3, 1929, April 25, 1932, and May 10, 1933; (three seen on the last date). This may be one of the species that habitually fly overland on their journey from the southern Atlantic Coast to their nesting places on the Great Lakes.

Chlidonias nigra surinamensis. BLACK TERN.—A fairly common transient, spring and fall. Ten spring records between May 3 (1929) and June 1 (1930). Six fall observations between August 15 (1929) and September 14 (1929).

Telmatodytes palustris palustris. LONG-BILLED MARSH WREN.—Transient, rare in spring, but common in fall. Three spring records between May 7 (1933) and May 14 (1933). Many fall records between August 6 (1933) and October 23 (1932).

Cistothorus stellaris. SHORT-BILLED MARSH WREN.—Transient, rare in spring, rather common in late summer and fall. My only spring date is May 21, 1931, but there are many fall observations between July 23 (1933) and October 16 (1932). On August 6, 1933 Byron Nunemacher and I found a fresh nest of this species in a marsh. This was possibly one of the "dummy" nests that they so often build. It showed no evidence of being used for any other purpose than shelter for the adult.

Dolichonyse oryzivorus. BOBOLINK.—Common summer resident. The Bobolink, like the Upland Plover, has found the wide meadows bordering on the dam a congenial habitat, and is far more abundant in this area than elsewhere in the

region. Earliest arrival, May 1, (1932). Latest departure October 4 (1931).

Passerculus sandwichensis savanna. EASTERN SAVANNAH SPARROW.—Abundant transient, and local summer resident. Apparently absent only in January and February. On July 14, 1929 Byron Nunemacher and the writer, having seen adults carrying food on several occasions, set out to locate a nest. We were finally successful in finding a young bird that had apparently just left its nest, and was only able to flutter a few feet. Singing males were heard all through the breeding season during subsequent years, and they are presumed to have been nesting. Probably three or four pairs form the little colony, which will no doubt disappear when the young pines and rising water of the new dam replace their present habitat.

Ammospiza caudacuta nelsoni. NELSON'S SPARROW.—A rare transient, probably more frequent in fall than in spring. All observations follow. June 8, 1930, September 27, 1931, September 28, 1932, and October 14, 1932 (2 on the last date). All of these birds were seen on the low marshy islands at the head of the lake, and were in each case in typical rail habitat, which probably explains why they are so generally overlooked. The late spring record may also give a clue to the paucity of spring dates. All of this genus are known to be late migrants at that season.