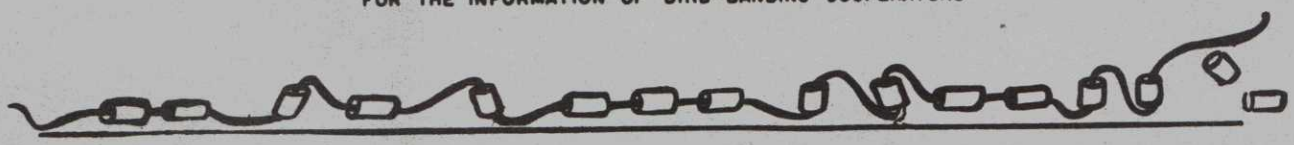
BIRD BANDING NOTES

ISSUED BY THE FISH AND WILDLIFE SERVICE, UNITED STATES DEPARTMENT OF THE INTERIOR
FOR THE INFORMATION OF BIRD-BANDING COOPERATORS



Vol. 4, No. 3 Patuxent Research Refuge, Laurel, Md. August 1950

By: Seth H. Low, Biologist
Section of Distribution and Migration of Birds
Branch of Wildlife Research

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THE BANDING PROGRAM

A year has elapsed since the last issue of BIRD BANDING NOTES was published. The year was a full one and a difficult one for the Banding Office. Approximately 17,000 reports of recoveries were received during the fiscal year. Most of these came in during the hunting seasons.

In the field the program continued to expand rapidly. The number of new permits issued was 153, some of which were master permits covering several sub-permits each. A total of 753,303 bands were issued as compared with 448,957 for the preceding fiscal year. The bandings so far reported for the banding year ending April 30, 1950, total close to 350,000. This is an increase of some 50,000 over the preceding banding year and the increase is almost entirely in waterfowl and mourning doves. Of the 350,000 almost an even 100,000 were banded by State Game Departments operating Federal Aid projects.

From the standpoint of research through banding and publication of the results the outstanding event during the year was the appearance of "Migration of Some North American Waterfowl" (Special Scientific Report-Wildlife - No. 1, August 1949). This was a progress report on the analysis of banding records by a number of Fish and Wildlife Service biologists, and consisted of maps showing, in different colors, organized grouping of recoveries of the various species of waterfowl. It is regretted that such a small edition had to be published that the supply is already exhausted.

Research with the banding data was continued on the same species through the year by these same biologists. In addition, Low reviewed the records of species of geese not previously studied, together with the Roseate Tern, Franklin's Gull, and American Coot. Further use of the banding files were made by a number of visiting investigators including: Charles E. Huntington of Yale University, who worked on the Purple Grackle; Leroy Wilcox of Speonk, N. Y., who is investigating Piping Plovers; Paul Stewart of Columbus, Ohio, who checked the recoveries of the Barn Owl; Dr. Oliver L. Austin, Jr., who is assembling data on the Arctic Tern; and Dr. Abelardo Moreno of the University of Havana, Cuba, who is gathering information from all sources on the birds of Cuba.

The reports of recoveries of banded birds swelled to a point severely taxing the Service's banding office to handle the load when the full impact of the unprecedented amount of waterfowl banding during the past year was felt after the opening of the hunting season. The great increase in volume of bird banding has resulted from the realization of the need for more information on the migratory movements of game birds, particularly waterfowl, and the shooting pressure sustained by them, which may be learned most effectively by analyzing the recoveries of banded birds. The rapidly growing participation by the states in the banding program through Federal Aid projects has been a primary factor in the current sudden increase in the work load that the Service is experiencing in connection with banding phase of studying migratory birds.

The curve of the work load follows the curve of the waterfowl banding. During banding year 1949 the number of waterfowl banded reached 100,000 for the first time in the history of the program. For the year which just ended it has exceeded 154,000. These birds, which are already banded and on the wing, will produce this year's work in the form of some 25,000 recoveries to be processed.

We regret that it is necessary to give first concern to keeping the program functioning smoothly and effectively and that, as a consequence, this issue must again be devoted mostly to administrative matters. We know that many of you desire a more newsy issue with more information on what your fellow bander is doing and more material on traps, baits, and techniques. Material is available for such an issue and it will be published eventually.

PUBLICATION RIGHTS TO BANDING DATA IN CENTRAL FILES

The Service wishes to encourage bird-banding cooperators to utilize the banding data which have accumulated in the files at the Patuxent Research Refuge for research and publication purposes. Individuals are invited to come to the Banding Office for the purpose of extracting and working up the data for a paper or in connection with a particular research problem as well as to work up for publication the results of their own bandings. If a cooperator does work up the banding material on a particular species, the Service feels that it would not be fair to allow another to use the same material for similar research until the first individual has had an opportunity to publish his findings.

If, after all the material has been extracted and examined to date, a continuation of the study appears warranted, the Service will furnish the research worker with a carbon copy of the report (3-624) for each recovery which is subsequently received. This is currently being done in connection with a few studies.

As the Service is responsible for the management of migratory species which are hunted, the Service considers it necessary to reserve the priority to the data on geese, ducks, coot, rails, snipe, woodcock, doves, and wild pigeons. The Service has assigned these species to individual Service biologists and collaborators to keep the data currently worked up and available for administrative and management purposes. However, there are some 400 other species on which the banding data need to be studied. At present, comprehensive studies are being made on a number of species by individuals other than Service biologists.

A FEW REMINDERS

The bird-banding year ended on April 30, 1950. Schedules for all birds banded during the year (May 1, 1949 through April 30, 1950) were due in the Banding Office at Laurel, Maryland on or before June 30, 1950. We hope that every cooperator has by now reported every bird that he or she banded up through April 30, 1950. If not, please get your schedules (3-860) in immediately.

We had expected that when the end of the banding year was changed to April 30, allowing two full months between then and June 30 for reporting the year's banding, there would be very few, if any, who could not meet the deadline. However, cooperation with respect to preparing and submitting schedules was poorer than a year ago. All did not note and follow the instructions in the August 1949 issue of BIRD BANDING NOTES. A year ago about 10% of the schedules were late in arriving. An even larger percentage have already come in late for this past year. Schedules for some species are due as soon as convenient after completion of banding but not later than September 1st; some are due monthly, and all the rest must actually be received (not in the mail) by June 30 (cf., BIRD BANDING NOTES, 4(2), p. 9).

The instructions specifically request cooperators not to list banding made after April 30 on the schedules for the preceding year. Nevertheless, innumerable schedules have come in listing birds banded in May and June 1950 on the same sheets with birds banded prior to May 1, 1950. This creates a great deal of extra and needless work for the Banding Office.

A few cooperators are still omitting the A.O.U. species numbers on schedules (3-860) and return cards (3-137). The numbers were published in the August 1949 issue of BIRD BANDING NOTES. All cooperators, except Canadians, should show the U. S. Permit number on all schedules and return cards.

More attention needs to be given to using the age terminology which will be found on page 7 of the August 1949 issue. Many cooperators are not distinguishing between and making proper use of the upper right hand block of the schedule and the substation block. The former is for file reference purposes only; the actual location of banding should always be given under substation. If the location is the same as the file reference, it is sufficient to insert just the word "same" (cf., instructions in this and prior issue).

A vast improvement has been noted in the listing of bands in numerical order irrespective of chronological order of use. Schedules which are not in order are now being returned.

Cooperators are also taking much better care of the IBM return cards but some still come in with staples, paper fasteners, rubber bands, etc., on them. All such cards have to be remade in this office as do any cards which become creased or wrinkled in the mail.

Cooperators in Canada should, of course, follow the instructions which are issued by the office of the Canadian Wildlife Service, Department of Resources and Development, Ottawa, Ontario, Canada.

IF ENTERING MILITARY SERVICE, TURN IN BANDS, RECORDS, AND PERMIT

There is a possibility that some of our cooperators will be entering military service. Even though it may appear that service is to be of short duration, it is requested that the cooperator make a special effort to send in his or her unused bands, permit, and all unreported records. If time is not available to prepare schedules, please send in your records of bandings in whatever shape and form that you have them. We will put them on schedules and take care of your personal records until you return. Permits will not be cancelled but held on file in this office. When advised of your return, the permit and a new assortment of bands will be sent immediately to you.

CARELESSNESS IS COSTING US MANY GOOD RECORDS

This past year many actual records of returns and foreign retraps have had to be consigned to the waste basket due to the failure of a bander to read and report correctly the number of a band. A frequent type is the reporting of a band which has not yet been used or issued. A good strong magnifying glass is a piece of equipment that every bander should have and use.

If the band number is marred, scratched, defaced, or otherwise illegible, remove the band and replace it with a new band. If you can't read the band number, no one else can, so why release a bird with such a band on its leg? Not only isthere no chance of obtaining another record on such a bird but you are probably tossing away your own record. Flatten out the illegible band, scotch tape it to the return card, and send it in. Be sure the new band number is also recorded, together with all pertinent data, both on the card and schedule.

Another type of error should immediately be obvious to all banders. This past year, Evening Grosbeak retraps were reported with size 0 and size 1 bands and juncos were reported with sizes 2 and 3 bands. As bands of these sizes would not be used on these species, a mistake in reading the numbers is clearly indicated. Every bander should be able to tell the size of any band by its number. If you do not know how to do this, refer to the section on this subject in this issue.

An excellent rule is to double check the band number of all returns and foreign retraps before releasing the bird. If possible, have someone else read the number. Be sure the number of digits is correct and the numbers are correct for the appropriate size of band for that species. If there is any doubt about the number, replace the old band with a new band, and send in the old band flattened out and scotch taped to your report.

ARE ALL RETURNS BEING REPORTED TO THE BANDING OFFICE?

Some cooperators are apparently lax in sending in return records while others do not fully understand what records should be prepared and submitted on return cards.

A return is very arbitrarily defined as a bird retaken after an interval of three months (90 days) has elapsed since its last capture. It does not

matter whether the interval wasdue to the bird migrating and then coming back or whether the bird may have been there all the time but the traps not operated. In either case, a card (3-137) should be prepared.

On the other hand, a resident species may repeat oftener than every three months over a period of a year or more, perhaps for several years. By the definition it has never returned. However, its continued presence is significant and important. Therefore, such a regular repeater should have its history reported on a return card once a year. Show original data and last repeat on the front of card; intervening data on the back. All repeats need not be listed; just enough to show status or a brief statement that bird "repeated regularly from _____ to _____."

A return card should be submitted for each return record that is obtained. For example, if a junco returns each December for eight years, a total of eight cards would be sent in. The latest card should always show the complete history to date -- that is, all intervening returns and significant repeats should be listed on the back side on the unpunched half of the card (3-137).

It is well to remember one point: If any doubt exists as to whether a record has been or should be reported on a return card, make up a card and send it in. We don't care how many duplicates appear in the files; they will eventually be noted and weeded out. But there is no way to detect and obtain the return that is never reported!

Have all your returns for all prior years been reported? If not, it is not too late! Get them in!

SIGNIFICANT REPEAT RECORDS

The Service has never requested cooperators to report all their repeat records to the Banding Office and does not propose to do so now. However, it is expected that every bander will keep a record of all the repeats at his or her station. Repeat records are of importance and significance and have definite value in banding studies. Too much clerical work, however, would be involved for both the bander and the office, if all the repeats were to be reported to the Banding Office. However, it is very important and desirable that all banders be on the watch for significant repeats and that they report these to the Banding Office. These significant repeats will usually turn up in connection with a return or recovery. In many cases the bander will have to exercise his own judgment as to what is and what is not a significant repeat. An example of one very common type will illustrate what is meant by a significant repeat. Let us assume that the bird was banded in Chicago on October 1 and was shot near New Orleans on November 1. This would be a rather routine fall migration record. However, this particular bird last repeated October 30. This then is a very significant repeat because it means that instead of taking 30 days to fly to New Orleans, the bird made the flight in two days.

The best way to report a significant repeat or repeats is to make a new return card (3-137) giving the full original banding data and the return data and listing the significant repeat (or repeats) on the back side of the card on the half that is not punched.

RETRAPS OF BIRDS FROM NEARBY STATIONS

Some of the banding cooperators live farily close together and as a result take each other's birds. The question then arises as to when these recaptures should be classified as repeats, returns, recoveries, and foreign retraps. The definitions of these terms and the instructions relative to such cases will be found on pages 101 and 102 of the Manual. It will be noted that an arbitrary distance of five (5) miles is set up for determining whether a recapture is a "repeat" or a "recovery." Inasmuch as we do not have sufficient information on the ranging of permanent residents, such as chickadees and nuthatches, and on the daily wanderings of finches, grosbeaks, and other species, it is suggested that it would be desirable to reduce the five miles to one mile and to report on return cards (3-137) any recaptures at distances over one mile.

RETURN CARDS (FORM 3-137)

A new supply of the IBM cards has been printed and is already in use. However, the former cards are still good and should be used up before obtaining more cards. These new cards have been revised and will be found to differ slightly from the old card. A few points are noted for your information.

Band Number: The space provided is not adequate. Therefore, it is suggested that the band number be written in two lines - the prefix and dash above, the serial number below - thus: 497-
04567

Permit No.: Show only the U. S. permit number; Canadians and others will not fill in this space.

Permittee: Two lines are provided so that in the case of units the unit name may be shown first, followed by the name of the master permittee. Examples are:

New York Conservation Department
Robert W. Darrow

Seney National Wildlife Refuge
C. J. Henry

Colorado Cooperative Wildlife Research Unit
Lee E. Yeager

University of Wisconsin
John Emlen

Where banded: More space is provided to allow more specific information including the county.

Schedule No.: This space is for the use of the Banding Office.

Hand-reared: This classification applies to any bird not entirely reared in a fully wild state. Examples: pet birds, incubated eggs, pen-reared birds; off-spring of clipped, pinioned or caged wild birds, etc.

Sick and Injured: Any birds obtained and banded as a result of sickness or injury; particularly botulism and lead-poisoned birds.

Experimental: Any bird not immediately released at the trapping site but excluding birds held temporarily overnight or to dry out. Applies to birds used in homing experiments, lead-poisoning studies, blood tests, etc.

In the above cases, circle the appropriate number (i.e., 4, 5, or 6) and give appropriate details on back side of card on the half that is not punched.

How Obtained: When more space is needed, use back side of card on the half that is not punched. The following code numbers may be used in this space:

00 found dead (provide specific details on back)
01 shot
99 trapped and released

REPORT OF RECOVERY OF BIRD BAND (FORM 3-1807)

This is a new form that has been in use this past year. Considerable confusion has arisen as to who should use this form and under what circumstances. This form is primarily for the convenience of game wardens, state game departments, field offices, sportsmen's organizations, hunting clubs, trading posts, bird clubs, and others who are likely to have bands turned in to them for forwarding to the Banding Office. The ordinary bander will have very little use for this form. It in no way replaces or supplements the regular IBM return cards (form 3-137) which are used for reporting all returns, foreign retraps, trap casualties, and significant repeats. This new form is not to be used to report any birds taken in connection with regular trapping and banding activities.

New form (3-1807) is for reporting recoveries (i.e., dead or injured birds) which you find or which someone else finds and reports to you. If the bird was not banded by you, fill out and send in only form 3-1807. If it was banded by you, fill out completely both forms, 3-1807 and 3-137.

The purpose of furnishing these forms is to insure receiving band reports which contain all the essential data, and avoid further correspondence to complete the data.

PIGEON BANDS - GEORGE C. BAILEY - RADIO'S TRACER OF LOST PIGEONS

Each year the Bird-Banding Office receives a few hundred letters reporting domestic pigeon bands. We do not supply the bands or keep any records of the bands used on racing and homing pigeons. As the pigeon associations do not maintain files such as we do and are not interested in returns and recoveries, for many years we had no satisfactory way of handling reports of pigeon bands. Now we forward all the reports of pigeon bands to P.O. Box 499, Huntington, Long Island, New York, to Mr. George C. Bailey, Radio's Tracer of Lost Pigeons. Mr. Bailey makes a hobby of tracing pigeon bands and in so doing is incidentally rendering an important service to this office and our banding program. He acknowledges all letters with a very appropriate form report.

Mr. Bailey supports his hobby, which is virtually a public service, by giving illustrated lectures before bird clubs, churches, schools, Rotary Clubs, scout meetings, etc.

REQUEST FOR BIRD-BANDING SUPPLIES (FORM 3-644)

The request card (form 3-644) has been revised and a new supply is now being printed. The new card will list all the sizes of bands in order from the smallest to the largest. It provides for a choice of sizes in requesting envelopes and provides space for ordering schedules (3-860); return cards (3-137); recovery reports (3-1807) and posters (3-1155).

The recovery reports (3-1807) will not normally be used by most cooperators. Do not order them unless you have occasion to use them. (cf., p. 7). The same applies to posters (3-1155). (cf., see below).

The minimum multiple for ordering the small sizes of bands is still 100. From sizes 3A up, bands will be issued in multiples of 25.

Canadian banders do not use form 3-644 but should use Canadian Wildlife Service form C.W.S.-10 and send it through Ottawa.

POSTERS FOR BANDING STATION (FORM 3-1155)

A very limited supply of new posters (form 3-1155) is available for posting banding stations in the United States. Please do not request more than you absolutely need. Requests should be limited to those cooperators whose traps are exposed to public view or subject to interference by the public. The posters read as follows:

> NOTICE!
>
> These traps are operated by licensed cooperators of the U. S. Department of the Interior, Fish and Wildlife Service. The birds are caught alive, marked with serially numbered aluminum bands, and released unharmed. Interference with the equipment and operation of this station is unlawful.
>
> Operator: U. S. DEPARTMENT OF THE INTERIOR
> FISH AND WILDLIFE SERVICE
>
> .....

The lower left corner contains a space for the operator's name, address, and permit number.

These posters are printed on semi-weatherproof cardboard. It is recommended that they be tacked to a solid back with moulding and that the surface be shellacked to preserve the poster as long as possible.

BANDS

Missing Bands - Who Used or has these Bands? Issue slips are missing in the Banding Office for the following bands. All cooperators are requested to check their records to see if they ever received or ever used any of these. We have recoveries on these bands which cannot be processed.

Size 1 -	42-93001 thru 42-93500	Size 6 -	40-667901 thru 40-668000
Size 2 -	45-201126 thru 45-201150		42-630716 thru 42-630740
	48-286801 thru 48-286900	Size 9 -	39-804501 thru 39-804600
Size 3 -	42-355321 thru 42-355340	Size X -	A-715501 thru A-715600
	48-344701 thru 48-344800		

Sizes: The sequence of sizes of bands from smallest to largest is: 0, 1, 1B, 1A, 2, 3, 3A, 4, 5, 6, 7A, 7B, 8, and 9.

Note that the size 1B is smaller than size 1A. The 7A is smaller than the 7B which is the old 7 of former years. The size 9 is the old size 8 of former years and the new size 8 is an intermediate size.

New, Heavy Size 1A: The size 1A band is now being manufactured with the same gauge and temper as the size 2 bands. It still has the same inside diameter as before but is heavier and stiffer. These new 1A bands have the following serial numbers: 50-100001 thru 50-200000.

It is now recommended that the new size 1A bands be used rather than size 2 on the following species: Cowbird, Evening and Pine Grosbeaks, Towhees, Cardinal, Pyrrhuloxia, Rose-breasted Grosbeak, and Black-headed Grosbeak. If you band the above species and have not received a supply of the new type 1A, send in a request for a string. The old size 1A bands should be continued to be used on species which do not have strong bills.

Corrections in Recommended Sizes for Species: The following changes should be made in the list on pages 17-21 of the August 1949 issue of BIRD BANDING NOTES:

146	Redhead Duck	6	588	Arctic Towhee	1A
167	Ruddy Duck	6	591	Brown Towhee	1A
289	Bob-white	3A	592	Abert's Towhee	1A
312	Band-tailed Pigeon	5	592.1	Green-tailed Towhee	1A
364	Osprey	8	593	Cardinal	1A
373.3	Aiken's Screech Owl	4	594	Pyrrhuloxia	1A
423	Chimney Swift	1	595	Rose-breasted Grosbeak	1A
514	Evening Grosbeak	1A	596	Black-headed Grosbeak	1A
542	Savannah Sparrow	1	616	Bank Swallow	0
587	Red-eyed Towhee	1A			

The above changes are based on the recommendations of veteran banders. The Banding Office does not dictate the sizes but merely follows your recommendations. With three new sizes of bands now in use, there must be other changes which should be made to provide more appropriate fits.

Series Prefix Designations: All new issues of bands from size 2 on up are now stamped with a three-digit prefix and a five-digit serial number. As all zeros are stamped, all bands of these sizes will always have three digits in the prefix and five in the serial number. Examples are: 495-00001, 527-10001, 512-02313.

Prefixes such as 20, 21, 22, etc., are in use on size 0 and size 1B bands and prefixes such as 50, 51, 52, etc., are being used on sizes 1 and 1A. On all four sizes the prefix is stamped above the serial number.

There is a wide-spread misassumption that the prefix indicates the year of banding. It does not and is not correlated with the year of banding in any way. Cooperators should guard against creating this impression and correct it when it comes to their attention. It costs us and you many recovery records each year as persons omit the prefix when reporting the band number.

Identification of Band Size and Band Numbers: Some of the cooperators are apparently not aware that the size of a band may be determined from its number. Every bander should be able to tell at a glance the size of a band. The key to sizes follows:

Sizes 0 & 1: In both sizes, the serial number may contain from 1 to 6 digits and the numbers run from 1 to 100000. On former issues these sizes cannot be distinguished from each other by the numbers; on new issues they may be by the series prefixes:

Sizes 0 have prefixes such as 20, 21, 22, etc.
Sizes 1 have prefixes such as 50, 51, 52, etc.

Sizes 1B & 1A: In both old and new issues the serial number always has 6 digits and are numbered from 100001 to 200000. Old issues cannot be distinguished from each other but in new issues the size is readily identified by the prefix as follows:

Size 1B have prefixes such as 20, 21, 22, etc.
Size 1A have prefixes such as 50, 51, 52, etc.

Sizes 2 to 9: Old issues have a 6-digit serial number and a 2-digit prefix. The clue to the size is the first digit of the serial number, thus: 40-200001; 40-300001; 40-467890; 40-523456.

In the new issues all the bands have a 3-digit prefix and a 5-digit serial number. The third digit of the prefix identifies the size, thus: 502-03456; 503-16785; 504-56789; 505-00003.

It is not possible to distinguish the size 3 from the 3A or 7A from 7B except by knowing the full numbers. The sequence so far used or being used are:

Size 3: 49-300001 thru 49-310000
50-300001 thru 50-350000
503-50001 thru 503-99999
523-00001 thru 523-99999

Size 3A: 49-310001 thru 49-370000
513-00001 thru 513-99999

Size 7A: none with 2-digit prefix
497-00001 thru 497-99999
507-00001 thru 507-99999
517-00001 thru 517-99999
537-00001 thru 537-99999

Size 7B: all 2-digit prefix except
527-00001 thru 527-99999

Discontinue Use of Certain Old Issues of Bands: All old issues of bands which lack a series prefix number or letter of the alphabet for a prefix are no longer to be used. Cooperators are requested to return all such bands to the Banding Office and request (if needed) newer bands of the same size. Bands with prefixes such as "A", "B", etc., and "36", "37" are still to be used and all such bands should be used up prior to using more recent issues.

Colored Bands: The Banding Office is now not in a position to distribute colored bands. However, arrangements have been completed with the Massachusetts Audubon Society to stock and sell colored aluminum bands. These bands are identical in size and specifications to our regular numbered bands except that they are colored and do not bear any numbers or return address. It is understood that initial supplies are available in red, green, blue, and gold for sizes 1, 1A (heavy), 2, 3, and 6. Other colors and sizes will be stocked if the demand warrants. Make your needs known well in advance. Orders for purchases of colored bands and requests for information should be made direct to Mr. C. Russell Mason, Executive Director, Massachusetts Audubon Society, 155 Newbury Street, Boston 16, Massachusetts. The minimum order for each size and color is 100. Sizes 1, 1A, 2, and 3 cost $1.50 per hundred and size 6, $2.00 per hundred.

As many complaints of injuries to birds have resulted from the use of celluloid and plastic bands and as aluminum bands are now available, the further use of celluloid and plastic bands should be discouraged.

PERMITS

The Bird-Banding Permit: Information in the last issue of BIRD BANDING NOTES (p. 14) relative to current permits needs to be corrected. Permits were formerly issued on a small, billfold-size card (form 3-475a), but all banding permits are now issued on a letter-size sheet (form 3-475 - Sept. 1949).

Permit Terminology - What Species May and What Species May not be Banded:

Some confusion seems to exist regarding the terminology used on the Federal banding permits and more specifically with regard to which species may and which may not be banded with FWS official bands.

The Federal Government has jurisdiction only over migratory species and the Federal permits, therefore, cover all migratory species. These are divided into two groups: game and non-game. The game species are those on which there are open hunting seasons. Mourning Dove, White-winged Dove, Band-tailed Pigeon, etc., are all wild migratory game species irrespective of the status accorded it by your particular state. A Federal permit is required to band these species and it does not authorize the use of other than official FWS bands on these species.

Quail, pheasant, partridge, grouse, wild turkeys, etc., are not migratory species and are not covered by Federal permits. However, if not contrary to your state permit, individuals of these species may be banded with FWS bands. This applies primarily to individuals taken incidental to regular trapping of migratory species. Large quantities of FWS bands should not be used on these species, especially on hand-reared birds, without prior clearance from the Banding Office.

Shorebirds including Wilson's Snipe and American Woodcock should not be regularly trapped and banded in numbers unless the Federal permit covers "all species" or specifies "shorebirds" in addition to non-game species. The same applies to "the rails and their allies" including coot and gallinules.

Waterfowl includes all ducks and geese but does not include non-game families such as grebes, loons, cormorants, herons, etc. Waterfowl may not be regularly and intentionally trapped unless the permit covers "all species" or otherwise specifies "waterfowl."

It is not the intent in classifying the types of permits to prohibit completely the banding of migratory species not specifically covered by the permit. This would require all such individuals to be turned loose without a band. This would be a waste of effort and opportunity. Such individuals, taken incidental to regular authorized banding, can and should be banded; for example, the Sora taken in a grain trap or the duck which strays into an unbaited shorebird trap. Nor is it necessary to pass up accidental opportunities to band game species, such as a duck taken in a muskrat trap. The main consideration is that you do not intentionally and deliberately try to trap and band species not covered by your permit.

Hawks and owls are not covered by Federal law. A Federal permit is not required to band these species but the use of FWS bands for such banding is urged and encouraged.

Domestic species and caged birds, such as canaries and parrots, and introduced species are not to be banded. However, the banding of Starlings is desired and, under special circumstances, the banding of English Sparrows will be permitted. European Tree Sparrows may also be banded.

Domestic, racing, and homing pigeons and rock doves do not come under the Federal law and may not be banded with FWS bands.

TABULATIONS OF BANDINGS REPORTED EACH BANDING YEAR 1942 to 1949

The following pages contain a tabulation of the new bandings reported to the banding office each banding year and the total number of each species which has been banded to date through banding year 1949. It should be pointed out that the figures do not represent the number of birds actually banded in a given year. The figures are tabulated under the year that the schedules were received, which is not necessarily the year or years of actual banding. All previously published tables have been on the same basis.

An example will clarify what is meant. A cooperator banded a small number of a given species each year from 1939 to 1947. The reports of all these bandings, let us say a total of 216, appear on schedules which he sent in during 1948. All 216 were entered on the tally under 1948 although not a single one of the birds was banded that year. The 1948 figures reflect far more banding than was actually the case that year. During the war years many did not send in their schedules. Many of these schedules came in during 1948 when a special campaign was made to bring the records up to date.

EIGHT-YEAR SUMMARY OF NEW BANDINGS REPORTED EACH YEAR

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Western Grebe	3	0	0	2	0	0	0	0	68
Holboell's Grebe	1	15	3	0	0	1	3	1	86
Horned Grebe	1	1	1	24	12	5	39	21	298
Eared Grebe	26	0	13	35	2	19	64	7	428
Pied-billed Grebe	5	18	18	4	6	19	19	27	406
Common Loon	2	1	1	2	0	0	4	0	204
Pacific Loon	0	0	0	0	0	0	0	0	2
Red-throated Loon	0	1	0	0	0	1	0	0	20
Tufted Puffin	0	0	0	0	0	1	0	2	7
Atlantic Puffin	2	1	0	0	0	0	38	6	427
Horned Puffin	0	0	0	0	0	0	0	7	7
Rhinoceros Auklet	0	0	0	0	0	0	0	0	2
Cassin's Auklet	0	0	0	0	1	0	0	0	18
Paroquet Auklet	0	0	0	0	0	0	0	1	5
Crested Auklet	0	0	0	0	0	0	0	0	1
Marbled Murrelet	0	0	0	0	0	0	0	0	2
Xantus's Murrelet	0	0	0	0	0	0	0	0	2
Black Guillemot	47	45	0	0	0	29	33	48	1,469
Pigeon Guillemot	0	1	0	0	2	0	0	0	70
Common Murre	47	15	38	1	2	0	1	10	5,217
Brünnich's Murre	0	0	0	0	0	0	0	0	91
Razor-billed Auk	10	77	0	0	2	0	39	0	1,066
Dovekie	0	1	0	0	2	0	4	2	99
Parasitic Jaeger	0	0	0	0	0	0	0	0	1
Long-tailed Jaeger	0	0	0	0	0	0	0	5	8
Kittiwake	0	0	0	0	0	0	0	0	4
Glaucous Gull	0	0	0	0	0	0	0	0	272
Glaucous-winged Gull	110	0	47	0	0	22	848	1226	6,227
Gr. Black-back Gull	513	89	22	96	137	45	402	333	3,462
Western Gull	1	0	0	113	273	92	0	0	5,945
Herring Gull	9128	4115	4154	3340	2368	7307	15147	7794	199,765
California Gull	2900	303	433	1	1000	1201	1	2500	28,123
Ring-billed Gull	5174	1569	1227	1816	2210	4243	7272	6728	70,363
Short-billed Gull	0	0	1	0	2	0	0	1	10
Laughing Gull	1026	1203	1884	1620	1710	972	1704	1406	24,324
Franklin's Gull	66	0	34	7	0	0	1	15	33,366
Bonaparte's Gull	0	0	0	0	0	0	0	4	15
Sabine's Gull	0	1	0	0	0	0	0	3	7
Gull-billed Tern	21	1	0	0	0	4	17	12	95
Caspian Tern	1350	185	600	89	677	671	375	91	17,387
Royal Tern	595	1512	0	531	0	0	922	489	18,255
Cabot's Tern	0	0	0	0	0	0	0	8	81
Forster's Tern	39	21	7	4	60	53	49	95	857
Common Tern	18721	9096	6823	6136	6785	20255	17091	18827	368,319
Arctic Tern	149	54	38	37	28	37	1336	1637	7,848
Roseate Tern	2757	2380	1755	2845	1357	4067	6089	4173	63,667
Least Tern	612	345	19	49	17	80	262	162	7,311
Sooty Tern	2291	0	0	0	0	0	7	0	19,559

Tabulations showing the actual number of individuals of each species actually banded each year would be far more desirable and useful than the tabulations published here and previously. This was the reason for changing the banding year from the period of July 1 to June 30 to the period of May 1 to April 30. However, until all the cooperators report all their bandings for the year by June 30, it will never be possible to compile such tables.

Incidentally, the order used in the tabulation does not follow the most recent A. O. U. Check-List but is in the numerical order of the number assigned to each species which is the basis of the files and records in the Banding Office. The IBM return cards have been punches and filed on this basis for years and it would be out of the question to assign new species numbers and remake 500,000 cards each time that a new Check-List is published.

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Spectacled Tern	104	0	0	0	0	0	0	0	480
Bridled Tern	0	0	0	0	0	0	0	0	1
Black Tern	60	22	6	1	49	63	108	68	1,997
Noddy Tern	140	0	0	1	0	0	786	0	2,841
Fairy Tern	300	0	0	0	1	0	0	0	434
Little Gray Tern	0	0	0	0	0	0	0	0	1
Black Skimmer	677	124	87	262	351	447	853	995	13,285
Black-foot Albatross	400	0	14	100	3	0	256	0	773
Laysan Albatross	200	0	44	100	0	0	284	53	1,194
Fulmar	0	0	0	0	0	0	0	0	1
Christmas Is.Shearwtr.	150	0	0	0	0	0	0	0	253
Audubon's Shearwater	0	0	0	0	0	0	0	0	73
Allied Shearwater	0	0	0	0	0	0	0	0	1
Sooty Shearwater	0	0	0	0	0	0	1	1	2
Wedge-tailed Shearwtr	1854	0	0	0	0	70	373	14	7,790
Bonin Is. Shearwater	600	0	0	0	0	0	0	0	600
Phoenix Is. Petrel	0	0	0	0	0	0	0	0	127
Bulwer's Petrel	55	0	0	0	0	0	4	0	232
Forked-tailed Petrel	0	0	0	1	1	0	0	0	6
Leach's Petrel	17	99	6	27	50	425	245	50	4,414
Black Petrel	0	0	0	0	0	0	0	0	3
Ashy Petrel	0	0	0	0	0	0	0	0	38
Socorro Petrel	0	0	0	0	0	0	0	0	11
Wilson's Petrel	0	0	0	0	0	0	0	0	14
Yel.-bill Tropic-bird	0	0	0	0	0	0	0	0	2
Red-tail Tropic-bird	244	0	0	0	0	0	0	0	1,756
Blue-faced Booby	100	0	0	0	0	0	0	0	984
White-bellied Booby	100	0	1	2	0	0	0	0	795
Brewster's Booby	0	0	0	0	0	0	0	0	1
Red-footed Booby	100	0	58	0	0	0	400	198	2,118
Gannet	72	5	6	0	63	55	115	37	1,245
Water-turkey	1	4	0	0	0	553	432	0	1,611
European Cormorant	50	20	0	0	1	0	1	0	1,802
Double-cr.Cormorant	939	2139	35	210	50	26	1314	1256	14,872
Mexican Cormorant	1	0	0	0	0	0	0	0	126
Brandt's Cormorant	11	0	0	0	15	0	0	0	208
Pelagic Cormorant	0	0	0	0	0	0	19	0	66
White Pelican	56	232	62	89	0	712	660	1291	8,859
Brown Pelican	483	1	0	0	0	290	50	2	8,654
Man-o'-war-bird	0	0	0	0	0	0	0	0	1,131
Am. Merganser	87	0	21	29	1	4	0	8	346
Red-breasted Merganser	6	3	0	1	1	16	2	1	90
Hooded Merganser	8	4	0	0	1	2	1	3	98
Mallard	17648	12588	13416	15066	10856	15033	21398	54247	350,664
(hand-reared)	1427	1130	597	254	429	1209	0	3110	17,338
Mallard-Black hybrid	91	33	23	31	16	17	14	3	312
Mallard-Pintail	0	0	2	0	0	0	0	6	8
Black Duck	6304	4595	3298	2719	5391	4480	6034	9658	116,526
(hand-reared)	0	0	0	0	57	0	0	0	4,119
New Mexican Duck	0	1	0	0	0	0	0	5	6
Florida Duck	27	52	0	0	0	0	17	46	540

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Gadwall	145	54	204	400	90	697	1076	631	7,849
(hand-reared)	0	0	0	0	0	0	0	0	8
European Widgeon	0	0	0	0	0	0	0	0	11
Baldpate	374	183	533	498	615	1430	1301	2680	21,574
Green-winged Teal	1400	1218	963	985	219	351	1237	4480	47,397
Blue-winged Teal	3394	2343	3747	4213	2260	4637	2923	4957	58,874
Cinnamon Teal	82	13	8	16	12	8	176	145	3,007
Shoveller	579	170	144	115	289	253	902	474	6,470
Pintail	9949	3256	4476	2602	3002	3019	4211	13851	193,981
(hand-reared)	0	0	0	0	0	0	0	0	1,256
Wood Duck	738	911	748	710	692	939	964	2054	13,254
(hand-reared)	0	31	0	240	18	0	0	0	933
Redhead	854	400	318	283	257	667	932	2886	17,472
(hand-reared)	0	0	0	0	0	0	0	0	337
Canvas-back	100	66	95	153	9	159	280	679	6,508
(hand-reared)	0	0	0	0	0	0	0	0	244
Greater Scaup	8	8	3	2	27	0	7	92	2,950
Lesser Scaup	910	1155	628	1301	148	1565	661	1925	44,921
(hand-reared)	0	0	0	0	0	0	0	0	52
Ring-necked Duck	580	802	249	268	182	244	111	564	22,983
Am. Golden-eye	32	41	3	36	4	63	44	464	768
Barrow's Golden-eye	1	0	0	2	1	0	1	448	456
Buffle-head	27	14	84	37	15	189	90	202	928
Old-squaw	3	0	0	0	0	2	2	2	23
Harlequin Duck	0	0	0	0	0	0	0	0	10
Steller's Eider	0	0	0	0	0	0	0	0	11
Spectacled Eider	0	0	0	0	0	0	0	1	14
American Eider	1	2	6	0	0	0	1	4	60
Pacific Eider	0	0	0	0	0	0	0	0	12
King Eider	0	0	0	0	0	0	0	0	1
American Scoter	0	0	0	0	0	0	1	0	4
White-winged Scoter	6	1	2	2	0	12	5	0	111
Surf Scoter	2	0	0	0	0	0	1	0	5
Ruddy Duck	26	42	30	24	11	23	57	43	1,023
Snow Goose	19	12	2	1	1	0	4	32	366
Blue Goose	3	2	1	2	0	3	6	139	1,148
(hand-reared)	0	0	0	0	0	0	0	0	2
Ross's Goose	3	0	1	0	0	0	0	3	11
White-fronted Goose	87	11	1	0	0	0	0	76	313
Canada Goose & subsp.	1556	1615	3276	1113	240	1474	2618	2169	21,343
(hand-reared)	245	22	2	8	110	0	0	68	651
Black Brant	0	0	0	0	0	1	0	0	22
Barnacle Goose	0	0	0	0	0	0	0	0	4
Emperor Goose	15	0	0	0	0	0	0	0	79
Fulvous Tree-duck	21	0	0	2	0	0	0	0	63
Mute Swan	0	0	0	0	0	3	0	0	4
Whistling Swan	1	4	0	0	0	3	2	6	104
Trumpeter Swan	7	0	0	0	20	0	0	5	32
Roseate Spoonbill	0	0	0	0	0	0	0	0	68
White Ibis	0	0	0	0	0	0	0	0	237

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Eastern Glossy Ibis	1	0	0	0	0	0	0	0	19
White-faced Glossy Ibis	3	0	1	0	0	0	3	27	161
Wood Ibis	0	0	0	0	3	0	0	0	114
American Bittern	25	14	3	13	21	14	10	26	663
Least Bittern	25	11	14	12	13	4	13	31	340
Great White Heron	0	0	0	0	0	0	0	0	2
Great Blue Heron	199	143	103	54	30	189	168	251	4,586
American Egret	22	0	2	0	8	1389	1656	50	7,142
Snowy Egret	432	34	0	0	2	344	531	304	5,096
Reddish Egret	0	0	0	0	0	0	0	0	443
Louisiana Heron	439	0	0	0	0	39	265	16	6,260
Little Blue Heron	1030	459	1	0	0	1759	679	18	12,193
Green Heron	34	71	31	88	27	92	82	21	2,050
Bl.-cr.Night Heron	586	524	196	158	55	505	388	210	18,200
Yel.-cr. Night Heron	2	0	0	0	0	6	4	13	197
Little Brown Crane	0	0	0	0	0	0	0	0	7
Sandhill Crane	1	0	0	0	1	1	1	0	21
King Rail	4	2	1	1	1	3	0	2	74
Light-footed Rail	0	0	0	0	0	0	0	0	3
Clapper Rail	5	16	2	95	7	1	1	15	237
Virginia Rail	14	2	5	2	9	1	17	17	333
Guam Rail	0	0	0	0	2	0	0	0	2
Sora Rail	5	12	6	4	3	2	26	27	381
Yellow Rail	0	0	0	0	0	0	1	0	18
Black Rail	0	0	0	0	0	0	0	0	14
Purple Gallinule	8	64	1	0	0	1	0	0	134
Florida Gallinule	62	18	8	1	37	41	19	68	2,348
Gallinule x Coot	0	0	0	0	0	0	0	0	1
American Coot	1888	1340	1035	1609	1214	1410	1366	1283	34,489
Red Phalarope	0	0	0	0	0	0	0	0	19
Northern Phalarope	0	0	1	0	4	0	1	1	32
Wilson's Phalarope	0	1	1	11	17	2	0	11	143
Avocet	1	3	0	11	1	26	9	18	329
Black-necked Stilt	13	0	1	0	0	3	12	51	215
Woodcock	171	78	29	49	71	72	48	65	1,521
Wilson's Snipe	112	0	63	2	26	36	8	47	873
Dowitcher	0	0	5	2	2	16	0	6	400
Stilt Sandpiper	1	0	0	0	2	2	1	0	109
American Knot	0	1	0	0	0	0	0	0	15
Purple Sandpiper	0	0	0	0	0	0	0	0	8
Pectoral Sandpiper	7	0	0	25	2	0	10	5	432
Wh.-rump.Sandpiper	0	0	0	0	0	1	0	0	112
Baird's Sandpiper	3	1	0	1	1	0	0	0	35
Least Sandpiper	920	4	676	26	765	701	270	18	6,443
Red-bkd.Sandpiper	3	10	0	0	0	1	7	8	280
Semipal.Sandpiper	208	7	0	113	0	25	104	8	10,597
Western Sandpiper	619	12	121	1	113	15	1	40	1,870
Sanderling	20	1	0	2	0	0	26	0	301
Marbled Godwit	18	3	4	9	25	9	2	5	208
Hudsonian Godwit	0	0	0	0	0	0	0	0	6

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Greater Yellow-legs	63	1	0	0	0	7	2	3	283
Lesser Yellow-legs	36	1	9	8	42	13	9	23	743
Solitary Sandpiper	5	0	0	2	1	4	9	0	195
Willet	4	12	3	4	24	35	10	2	373
Wandering Tattler	0	0	0	0	0	0	0	2	5
Upland Plover	15	28	7	3	1	11	16	0	202
Buff-breast Sandpiper	0	0	0	0	0	0	0	0	2
Spotted Sandpiper	113	97	31	49	81	40	379	115	3,799
Long-billed Curlew	3	1	0	0	0	3	0	1	81
Hudsonian Curlew	3	0	0	2	0	0	1	0	19
Black-bellied Plover	2	0	0	0	0	0	1	2	16
Golden Plover	10	1	0	0	0	0	1	1	17
Killdeer	149	56	103	71	72	179	163	135	3,546
Semipalmated Plover	24	1	0	16	2	1	0	3	501
Piping Plover	94	53	34	222	10	95	101	90	1,778
Snowy Plover	3	0	0	0	0	0	1	0	18
Wilson's Plover	4	0	0	2	0	3	2	4	89
Mountain Plover	0	0	0	0	0	0	0	0	10
Ruddy Turnstone	0	3	0	11	0	0	0	3	49
Black Turnstone	0	0	0	0	0	0	0	7	13
Am. Oyster-catcher	1	0	0	6	0	0	1	0	52
Bl. Oyster-catcher	0	0	0	3	2	0	0	0	9
Hungarian Partridge	117	43	2	6	14	0	0	12	663
Chukar Partridge	5	19	0	0	0	0	0	0	134
Bob-white	397	281	165	185	86	336	148	444	21,123
(hand-reared)	0	0	44	0	35	0	0	0	239
Masked Bob-white	0	0	0	0	0	0	0	0	33
Mountain Quail	33	25	0	5	3	0	1	0	111
Scaled Quail	5	4	0	0	0	0	0	0	184
California Quail	36	115	30	48	172	117	187	252	6,002
Gambel's Quail	76	3	185	12	15	34	95	17	2,355
Dusky Grouse	0	0	0	0	0	0	0	0	17
Spruce Grouse	0	0	0	0	0	0	0	0	6
Franklin's Grouse	0	0	0	0	0	0	0	0	4
Ruffed Grouse	1	3	2	1	1	6	30	12	340
Willow Ptarmigan	4	6	0	0	0	0	0	0	25
Rock Ptarmigan	0	7	0	0	0	0	0	0	7
Prairie Chicken	41	2	0	0	1	0	0	1	358
Lesser Prairie Chicken	17	0	0	0	0	0	0	0	373
Sharp-tailed Grouse	596	36	0	0	119	1	0	71	1,782
Sage Hen	0	0	0	0	0	0	0	0	43
Ring-necked Pheasant	5	323	6	1	12	8	12	316	1,909
Wild Turkey	0	0	3	35	3	0	17	0	743
(hand-reared)	0	0	0	0	0	0	0	0	420
Band-tailed Pigeon	7	2	5	1	2	98	3	198	508
White-crowned Pigeon	75	15	0	0	0	0	0	0	115
Chinese Spotted Dove	77	758	15	65	18	33	32	24	2,021
Ringed Turtle Dove	0	0	0	0	22	6	1	0	30
Plain-br. Ground Dove	0	0	1	0	0	0	0	0	1
Mountain Dove	0	0	0	35	0	0	0	0	35

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Marianas Fruit Dove	0	0	0	0	3	0	0	0	3
Phillipine Turtle Dove	0	0	0	0	2	0	0	0	2
White-thr.Ground Dove	0	0	0	0	2	0	0	0	2
Ring-necked Dove	0	0	0	0	0	0	0	11	11
Mourning Dove	1706	1927	1337	2030	958	1502	1737	2764	45,060
White-winged Dove	504	175	90	144	8	3	14	85	1,974
Ground Dove	56	5	5	1	3	8	0	2	1,509
Inca Dove	240	107	71	127	112	107	113	82	1,993
California Condor	0	0	0	0	2	0	0	0	2
Turkey Vulture	13	13	42	108	32	40	86	36	1,269
Black Vulture	3223	1902	6	0	1402	2	3	3	22,684
White-tailed Kite	5	0	15	15	0	0	22	5	78
Mississippi Kite	0	0	0	0	0	0	0	0	10
Everglade Kite	0	15	0	0	0	0	0	0	16
Marsh Hawk	150	67	26	19	29	62	52	48	2,136
Sharp-shinned Hawk	65	51	26	20	10	62	50	25	714
Cooper's Hawk	114	122	78	75	36	69	76	86	1,414
Goshawk	6	6	7	4	0	2	4	5	89
Harris's Hawk	0	0	0	0	0	0	0	0	2
Red-tailed Hawk	170	77	76	39	31	66	86	65	1,627
Red-shouldered Hawk	65	112	104	48	6	164	77	18	1,065
Zone-tailed Hawk	0	2	0	0	0	0	0	0	2
Sennett's Wh.-tail.Hawk	0	0	0	0	0	2	0	0	10
Swainson's Hawk	56	34	8	3	22	7	4	5	475
Broad-winged Hawk	18	17	9	10	12	16	8	6	283
Am. Rough-legged Hawk	12	0	0	9	0	2	5	6	159
Ferruginous Rough-leg	37	29	5	3	23	6	2	0	420
Golden Eagle	24	9	19	9	15	9	3	11	196
Bald Eagle	139	11	129	245	9	305	103	78	1,431
Prairie Falcon	58	18	54	8	8	13	13	2	402
Duck Hawk	47	63	12	3	5	38	35	33	527
Pigeon Hawk	5	9	5	2	0	5	7	5	139
Merlin	0	0	0	0	0	0	1	0	1
Sparrow Hawk	129	163	107	60	57	133	227	199	2,661
Audubon's Caracara	3	3	0	0	0	8	0	0	28
Osprey	294	9	104	65	162	275	315	164	2,757
Barn Owl	140	93	66	47	85	93	95	134	2,307
Long-eared Owl	21	25	12	1	0	27	33	21	646
Short-eared Owl	11	1	14	1	1	3	0	11	243
Barred Owl	9	13	36	11	4	56	23	6	331
Spotted Owl	1	0	0	1	0	0	0	1	7
Great Gray Owl	0	0	0	0	0	0	0	2	2
Richardson's Owl	0	1	0	0	0	0	3	0	14
Saw-whet Owl	7	6	25	3	10	8	43	121	383
Screech Owl	103	79	85	86	180	155	125	228	3,139
Great Horned Owl	120	64	50	29	42	61	78	96	1,301
Snowy Owl	15	1	3	0	3	1	1	4	145
Hawk Owl	0	0	0	0	0	0	0	0	3
Burrowing Owl	79	8	6	0	0	1	9	15	1,001
Pygmy Owl	0	0	0	2	0	0	0	0	7
Elf Owl	1	0	0	0	0	0	0	0	1

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Smooth-billed Ani	0	0	0	0	0	0	0	0	44
Road-runner	10	4	2	1	0	0	0	1	96
Yellow-bill Cuckoo	34	42	13	20	1	9	19	18	554
Black-billed Cuckoo	126	26	16	22	10	14	18	16	702
Belted Kingfisher	23	17	9	12	10	19	126	133	1,066
Ivory-bill Woodpecker	0	0	0	0	0	0	0	0	1
Hairy Woodpecker	110	88	62	70	45	63	69	115	1,995
Downy Woodpecker	342	441	391	376	281	280	523	943	10,134
Texas Woodpecker	0	0	0	0	0	0	0	0	10
Nuttall's Woodpecker	2	0	0	0	0	0	3	0	27
White-headed Woodpecker	4	1	0	1	1	0	0	10	37
Arc.Three-toed Woodpkr.	0	0	0	0	1	1	4	0	6
Am.Three-toed Woodpkr.	1	0	0	0	0	0	0	0	14
Yellow-bell.Sapsucker	73	27	26	23	13	15	27	29	1,143
Williamson's Sapsucker	0	0	0	0	0	0	0	0	7
Pileated Woodpecker	3	0	0	0	0	1	0	0	40
Red-headed Woodpecker	37	30	39	27	29	18	24	25	2,281
Ant-eating Woodpecker	5	7	4	0	1	1	6	8	110
Lewis's Woodpecker	1	4	0	0	0	0	0	0	53
Red-bellied Woodpecker	39	36	21	17	27	28	38	47	972
Golden-fr. Woodpecker	0	0	0	0	0	0	0	0	2
Gila Woodpecker	7	6	0	8	13	7	7	1	117
Flicker	394	293	210	217	136	180	292	446	13,416
(hybrid)	1	0	0	0	0	0	0	0	4
Red-shafter Flicker	65	35	6	8	15	20	25	61	719
Gilded Flicker	1	4	3	2	0	0	0	0	22
Chuck-will's-widow	0	0	0	0	0	0	5	0	21
Whip-poor-will	0	3	5	2	1	0	7	1	85
Poor-will	2	0	0	0	0	0	0	0	6
Nighthawk	20	25	7	2	15	16	11	14	589
Texas Nighthawk	1	0	0	0	0	0	0	0	45
Chimney Swift	29326	11020	6376	8644	12883	22836	12709	9370	437,583
Vaux's Swift	0	0	1	0	0	0	0	0	6
White-throated Swift	1	0	1	0	0	0	0	0	6
Ruby-thr.Hummingbird	1	2	3	2	5	4	6	2	201
Black-chin.Hummingbird	1	0	0	0	0	0	0	0	1
Anna's Hummingbird	1	0	0	0	0	0	0	0	8
Broad-tail.Hummingbird	0	0	0	0	0	0	0	0	2
Rufous Hummingbird	0	0	1	0	0	0	0	0	8
Scissor-tail Flycat.	0	0	0	2	0	0	0	0	60
Eastern Kingbird	178	84	46	45	38	36	47	43	2,937
Gray Kingbird	0	0	0	0	0	0	0	0	1
Arkansas Kingbird	228	13	94	3	52	30	8	5	1,847
Cassin's Kingbird	3	0	0	0	0	0	0	0	8
Crested Flycatcher	48	49	48	29	45	31	32	44	1,001
Ariz. Crested Flycat.	3	0	9	0	0	0	0	0	23
Ash-throat Flycatcher	9	13	0	0	2	8	8	3	95
Olivaceous Flycatcher	0	0	0	0	0	0	0	0	1
Eastern Phoebe	416	505	347	240	277	521	276	300	12,093
Say's Phoebe	64	17	137	5	5	12	41	16	851
Black Phoebe	25	35	12	20	3	16	35	21	427

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Olive-side Flycatcher	1	0	0	2	0	4	0	1	53
E. Wood Pewee	17	16	6	4	5	5	2	4	414
W. Wood Pewee	3	5	2	1	1	5	5	1	80
Yellow-bell.Flycatcher	12	24	9	5	8	5	2	15	332
Western Flycatcher	17	14	11	11	2	5	6	6	208
Acadian Flycatcher	0	4	2	5	9	5	10	10	150
Alder Flycatcher	15	16	9	15	20	31	230	9	757
Least Flycatcher	44	67	31	43	30	30	29	31	1,543
Hammond's Flycatcher	2	0	0	0	0	1	0	0	19
Wright's Flycatcher	1	0	0	1	0	0	0	0	16
Vermilion Flycatcher	0	0	0	0	0	0	0	0	27
Horned Lark	247	51	20	0	71	44	546	55	3,952
American Magpie	71	6	18	7	29	9	11	69	1,709
Yellow-billed Magpie	2	1	0	0	0	0	3	4	20
Blue Jay	3347	2527	2498	2240	2384	1914	2902	3047	62,199
Steller's Jay	64	38	12	29	19	54	52	58	1,979
Florida Jay	0	0	0	0	0	0	0	0	27
California Jay	113	135	59	87	75	77	117	135	2,637
Couch's Jay	0	0	0	0	0	0	0	0	21
Green Jay	0	0	0	0	0	0	0	0	2
Canada Jay	9	6	0	0	5	9	9	10	234
Oregon Jay	0	0	0	0	0	0	44	26	91
American Raven	13	5	7	7	9	1	3	8	173
White-necked Raven	0	0	0	0	0	0	0	0	863
American Crow	391	199	143	82	132	175	149	171	9,191
Fish Crow	8	4	0	0	0	0	1	0	633
Clarke's Nutcracker	3	8	8	0	0	1	72	59	335
Pinon Jay	0	0	0	0	0	0	0	0	60
Starling	4590	3728	4046	1704	2699	3525	4200	5913	144,225
Micronesian Starling	0	0	0	0	5	0	0	0	5
Bobolink	69	20	20	6	4	5	16	65	715
Cowbird	1554	1054	1422	1514	1108	1126	2537	1426	62,929
Red-eyed Cowbird	2	0	0	0	0	0	0	0	18
Yellow-hd.Blackbird	134	36	4	5	8	273	138	211	5,144
Red-wing Blackbird	2459	1383	795	655	753	1141	1758	1634	60,625
Tricolored Red-wing	435	217	0	18	0	22	78	179	20,747
E. Meadowlark	74	42	50	15	20	37	41	92	4,594
W. Meadowlark	67	14	4	5	12	16	17	89	1,279
Audubon's Oriole	0	0	0	0	0	0	0	0	2
Scott's Oriole	1	0	0	0	0	0	0	0	14
Hooded Oriole	66	150	51	74	11	34	20	27	1,333
Orchard Oriole	166	121	31	22	28	21	21	14	1,506
Baltimore Oriole	351	268	181	168	183	221	215	144	7,451
Bullock's Oriole	94	59	13	18	16	300	158	114	1,603
Rusty Blackbird	221	11	8	15	27	5	36	198	6,381
Brewer's Blackbird	411	819	292	197	150	253	463	180	8,060
Purple Grackle	4152	4601	3038	4116	3113	5132	6133	4831	140,320
Boat-tailed Grackle	841	22	8	13	22	0	1	42	10,005
Evening Grosbeak	703	508	887	597	1535	1202	1374	2076	16,880
Pine Grosbeak	10	4	2	10	4	1	31	24	636
Purple Finch	3870	1170	3390	1599	2753	4406	2142	1717	119,791

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Cassin's Finch	14	4	0	0	0	2	204	15	394
House Finch	1812	4438	1023	1942	806	1973	1761	1947	73,233
Red Crossbill	6	4	0	1	0	2	1	12	2,426
White-wing Crossbill	7	0	1	0	0	2	4	6	263
Gray-cr.Rosy Finch	58	0	3	0	2	0	306	0	891
Black Rosy Finch	0	0	0	0	3	0	0	0	6
British Goldfinch	0	0	0	0	0	0	0	0	2
Hoary Redpoll	5	68	16	0	0	32	31	81	291
Common Redpoll	1552	2393	387	85	47	567	1161	1381	18,708
American Goldfinch	1555	735	532	612	1059	1194	1168	3046	28,985
Arkansas Goldfinch	241	160	237	215	125	81	645	61	3,739
Lawrence's Goldfinch	10	12	9	3	4	22	12	9	140
Pine Siskin	88	52	100	25	22	487	295	930	13,239
Snow Bunting	382	93	197	28	77	63	8	72	5,917
McKay's Snow Bunting	0	0	0	0	0	0	0	2	2
Lapland Longspur	6	21	1	0	70	20	11	7	2,361
Smith's Longspur	2	0	0	0	0	0	0	0	5
Chestnut-col.Longspur	2	0	0	0	0	1	0	0	114
McCown's Longspur	0	0	0	0	0	0	0	0	51
Vesper Sparrow	202	95	169	71	88	91	91	92	5,600
Ipswich Sparrow	0	0	0	0	0	0	0	0	10
Savannah Sparrow	601	631	493	481	551	391	555	535	16,879
Belding's Sparrow	0	0	0	0	0	0	0	0	1
Large-billed Sparrow	0	0	0	0	0	0	0	0	1
Baird's Sparrow	0	1	4	1	0	2	0	0	40
Grasshopper Sparrow	15	21	58	16	26	56	17	51	770
Henslow's Sparrow	1	4	4	1	1	2	14	14	247
Leconte's Sparrow	1	1	0	0	2	0	0	0	69
Sharp-tailed Sparrow	32	5	0	0	2	9	8	0	156
Seaside Sparrow	1	0	0	0	0	0	0	0	142
Lark Sparrow	61	13	24	10	31	95	172	24	1,060
Harris's Sparrow	2275	1684	599	967	519	561	945	940	40,099
White-cr.Sparrow	4730	3824	3219	2539	2814	3589	10983	6840	120,379
Golden-cr.Sparrow	1042	836	323	319	1085	513	1039	1141	25,754
White-th. Sparrow	8770	10223	10300	9111	7575	8032	10543	10813	283,717
Tree Sparrow	4290	2608	2010	2779	2978	1960	4050	4743	87,762
Chipping Sparrow	2954	1788	1912	1885	1036	1528	1888	1615	60,624
Clay-color.Sparrow	276	163	116	275	407	377	280	185	10,297
Brewer's Sparrow	9	3	0	0	20	18	10	0	214
Field Sparrow	837	879	899	831	467	623	563	862	19,637
Worthen's Sparrow	0	0	0	0	0	0	0	0	1
Black-chinned Sparrow	0	1	0	0	0	0	0	0	9
White-winged Junco	0	1	5	0	21	23	60	71	950
Junco (hyemalis-oreganus)	14931	11715	13361	10434	10393	10563	14882	16349	340,032
Junco (phaeonotus-caniceps)	402	11	179	76	0	126	101	22	4,237
Black-th. Sparrow	18	18	1	0	2	0	0	0	150
Bell's Sparrow	0	0	0	0	0	0	7	0	43
Pine-woods Sparrow	4	0	0	0	0	8	3	1	77
Cassin's Sparrow	0	0	0	0	0	0	0	0	1

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Rufous-wing Sparrow	0	0	0	0	0	0	0	0	2
Rufous-cr. Sparrow	4	3	0	3	6	3	1	0	92
Song Sparrow	8538	6464	6524	4152	4319	4851	7285	8146	176,606
Lincoln's Sparrow	995	611	522	800	544	559	570	445	24,339
Swamp Sparrow	332	319	439	279	187	286	269	252	13,863
Fox Sparrow	735	654	1062	957	894	592	753	1299	31,333
Towhee	1257	1077	1219	1060	849	1174	1521	1430	27,865
Arctic Towhee	506	312	218	184	273	237	278	299	8,539
Towhee (fuscus-crissalis)	556	526	286	278	297	313	308	303	10,342
Abert's Towhee	102	4	101	64	0	134	35	16	1,342
Green-tailed Towhee	52	5	22	3	2	7	9	4	662
Cardinal	1712	1517	1485	982	983	1803	2313	2630	34,235
Pyrrhuloxia	2	5	0	0	0	0	0	0	77
Rose-br. Grosbeak	123	134	149	212	142	129	185	144	3,981
Black-hd. Grosbeak	76	118	43	121	62	79	85	66	3,387
Blue Grosbeak	9	4	5	4	2	9	4	7	94
Indigo Bunting	216	235	133	122	68	172	148	150	3,656
Lazuli Bunting	41	49	15	29	19	29	4	11	718
Painted Bunting	44	50	66	106	55	39	37	46	789
Dickcissel	1	2	1	5	3	2	1	3	200
Lark Bunting	328	18	0	0	0	0	111	1	956
Western Tanager	40	61	18	89	20	53	22	41	1,080
Scarlet Tanager	48	42	45	40	28	36	57	52	1,056
Hepatic Tanager	0	0	0	0	0	0	0	0	9
Summer Tanager	22	4	13	2	5	12	19	6	207
Purple Martin	592	269	311	147	341	231	218	455	9,823
Cliff Swallow	500	672	593	475	21	606	755	95	7,602
Barn Swallow	1714	2403	1016	698	481	1065	1270	773	37,416
Tree Swallow	759	791	790	252	303	565	623	1140	18,627
Violet-green Swallow	44	48	37	1	2	11	10	4	652
Bank Swallow	1766	752	234	980	222	1189	1068	642	29,040
Rough-winged Swallow	76	37	17	17	8	38	33	37	1,107
Bohemian Waxwing	1202	16	1	0	4	1	95	30	2,596
Cedar Waxwing	1533	390	954	109	3013	1241	1775	281	27,607
Phainopepla	2	0	0	2	4	0	0	6	97
Northern Shrike	10	6	4	2	9	9	4	8	285
Loggerhead Shrike	74	49	32	17	20	38	53	53	2,227
Black-wiskered Vireo	0	0	0	0	0	0	0	0	6
Red-eyed Vireo	100	90	37	44	64	55	84	73	2,232
Philadelphia Vireo	11	6	2	17	3	5	3	5	172
Warbling Vireo	21	11	10	8	3	5	11	14	454
Yellow-th. Vireo	10	4	19	5	2	1	3	4	114
Blue-headed Vireo	23	31	3	7	3	5	5	9	277
White-eyed Vireo	3	10	8	10	6	11	3	7	148
Hutton's Vireo	3	2	2	12	0	1	3	4	31
Bell's Vireo	8	8	8	3	8	2	8	4	169
Gray Vireo	0	0	0	0	0	0	0	0	3
Black & White Warbler	252	313	135	123	76	142	209	131	4,858
Prothonotary Warbler	10	6	2	51	28	12	21	13	540
Swainson's Warbler	0	0	0	0	0	0	0	0	3

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Worm-eating Warbler	4	6	11	7	4	4	4	2	123
Bachman's Warbler	0	0	0	0	0	0	0	0	4
Blue-winged Warbler	45	55	24	19	25	19	54	31	589
Brewster's Warbler	0	0	2	0	0	0	1	0	25
Lawrence's Warbler	0	0	0	0	0	0	0	0	11
Golden-winged Warbler	19	12	5	11	5	11	9	11	257
Lucy's Warbler	0	0	0	0	0	0	0	0	1
Virginia's Warbler	0	0	0	0	0	2	0	0	5
Nashville Warbler	156	245	119	68	48	100	158	114	2,951
Orange-cr.Warbler	156	203	160	254	142	163	94	140	4,398
Tennessee Warbler	199	372	139	159	137	274	263	220	5,345
Parula Warbler	20	31	16	12	23	34	32	26	626
Cape May Warbler	34	76	39	33	30	50	64	35	766
Yellow Warbler	387	393	249	401	323	342	234	226	8,216
Bl.-th.Blue Warbler	105	95	42	77	37	51	110	78	1,674
Myrtle Warbler	1018	1264	1210	1297	434	1165	1233	973	27,052
Audubon's Warbler	529	377	375	457	79	128	281	164	5,744
Magnolia Warbler	248	365	133	142	125	128	215	230	4,771
Cerulean Warbler	6	13	3	1	1	0	0	8	68
Chestnut-side Warbler	137	139	47	46	38	73	138	66	1,954
Bay-br. Warbler	59	171	26	29	9	47	62	85	1,134
Black-poll Warbler	108	255	56	109	91	111	170	166	4,245
Blackburnian Warbler	77	118	16	17	6	13	21	42	820
Yellow-th. Warbler	1	0	0	0	0	0	0	0	35
Grace's Warbler	0	0	0	0	0	0	0	0	9
Bl.-th. Gray Warbler	22	24	6	6	2	9	7	1	127
Bl.-th. Green Warbler	111	163	64	33	18	84	111	107	1,827
Townsend's Warbler	9	7	6	8	8	4	3	12	86
Hermit Warbler	69	1	0	0	0	1	1	1	76
Kirtland's Warbler	11	8	5	12	10	29	17	46	174
Pine Warbler	102	31	80	77	54	114	194	72	2,067
Palm Warbler	47	70	44	23	26	30	32	43	1,107
Prairie Warbler	25	9	26	23	10	9	10	16	387
Ovenbird	516	593	104	540	194	224	361	322	11,047
N. Water-thrush	161	84	114	83	60	78	118	106	3,736
La. Water-thrush	3	5	1	2	1	1	31	0	195
Kentucky Warbler	13	18	33	29	13	14	8	12	373
Connecticut Warbler	40	45	42	25	11	26	29	17	745
Mourning Warbler	53	69	49	50	48	46	49	40	1,395
Macgillivray Warbler	14	30	14	8	7	2	5	5	362
Md. Yellow-throat	647	575	553	401	345	808	457	437	11,802
Yellow-breasted Chat	110	68	64	54	20	71	50	48	1,548
Hooded Warbler	10	9	34	23	1	33	8	7	217
Wilson's Warbler	250	149	112	151	93	128	78	77	2,933
Canada Warbler	170	156	84	92	54	90	88	64	2,401
Am. Redstart	812	697	344	438	370	565	555	416	11,675
Painted Redstart	0	0	1	0	0	0	0	0	1
English Sparrow	686	200	341	209	325	695	1185	1317	12,247
European Tree Sparrow	0	0	1	0	3	0	0	0	183
Alaska Yellow Wagtail	0	0	0	0	0	0	0	11	11
American Pipit	72	0	31	0	39	13	3	1	677
Sprague's Pipit	0	1	0	0	0	0	0	0	8
Dipper	4	0	3	0	4	0	0	5	70
Sage Thrasher	119	0	0	0	0	0	7	1	141

Species	1942	1943	1944	1945	1946	1947	1948	1949	Grand Total
Mockingbird	782	684	464	306	213	479	264	320	12,340
Catbird	3212	2739	2419	1870	1648	1874	2774	2731	61,354
Brown Thrasher	2048	1524	1394	1412	1175	1124	1700	1579	40,210
Sennett's Thrasher	0	0	0	0	0	0	0	0	1
Curve-billed Thrasher	31	42	28	11	29	32	24	4	497
Bendire's Thrasher	8	2	3	1	0	13	4	3	98
California Thrasher	36	90	38	54	51	35	55	61	1,473
Leconte's Thrasher	0	2	0	0	0	0	0	0	10
Crissal Thrasher	3	0	1	0	0	0	1	2	77
Cactus Wren	76	30	13	11	12	13	31	14	508
Rock Wren	1	4	0	0	1	0	0	4	99
Canon Wren	10	3	1	0	0	0	4	2	63
Carolina Wren	92	119	102	90	95	180	168	189	3,203
Bewick's Wren	96	146	61	62	36	175	59	100	2,402
House Wren	1341	1528	1209	1031	982	1222	1384	1263	51,607
Panama House Wren	0	0	1	0	0	0	0	0	5
Winter Wren	47	69	70	44	37	69	52	61	1,461
Short-bill Marsh Wren	0	0	1	0	1	4	0	0	41
Long-bill Marsh Wren	324	62	23	9	1	13	9	19	2,396
Brown Creeper	168	245	119	73	70	53	76	89	5,454
White-br. Nuthatch	470	328	317	250	223	291	388	484	9,760
Red-breasted Nuthatch	170	69	94	41	36	47	90	35	1,588
Brown-headed Nuthatch	0	7	4	6	7	10	38	0	127
Pigmy Nuthatch	2	25	1	0	0	0	0	6	704
Tufted Titmouse	500	514	328	378	407	413	730	834	9,795
Black-crest.Titmouse	0	0	0	0	0	0	0	1	22
Plain Titmouse	44	28	16	32	25	44	38	49	1,151
Bridled Titmouse	0	0	0	0	0	0	0	0	9
Black-cap.Chickadee	2965	1746	1272	1016	1233	1755	2080	2390	42,801
Carolina Chickadee	91	149	49	72	67	108	149	239	2,023
Mountain Chickadee	73	50	8	59	39	123	84	71	1,277
Hudsonian Chickadee	0	0	0	0	0	16	8	6	116
Chest-back.Chickadee	5	21	17	25	26	10	10	13	365
Wren-tit	76	45	20	50	32	42	67	58	1,332
Bush-tit	84	45	19	27	9	11	14	7	618
Verdin	0	1	0	0	0	0	1	0	46
Golden-cr. Kinglet	175	206	135	99	67	150	103	57	3,235
Ruby-cr. Kinglet	263	182	271	205	179	262	256	202	6,034
Blue-gray Gnatcatcher	5	7	0	5	0	0	1	0	67
Plumbeous Gnatcatcher	0	0	0	0	0	0	0	0	1
Townsend's Solitaire	20	4	0	1	1	1	0	6	155
Wood Thrush	437	389	245	214	225	202	397	262	7,083
Veery	141	117	76	152	50	65	149	110	3,473
Gray-cheeked Thrush	183	293	175	306	120	128	231	125	6,370
Russet-backed Thrush (ustulata)	887	835	461	774	508	498	640	595	17,037
Hermit Thrush	586	660	630	545	466	547	707	799	20,437
Robin	7024	5707	4511	7255	4214	3680	5244	4836	149,431
Varied Thrush	26	12	38	0	48	9	14	68	946
Eastern Bluebird	1359	1281	1294	1405	1334	1789	915	1017	28,379
Western Bluebird	46	34	14	17	17	6	0	14	2,174
Mountain Bluebird	98	10	8	1	11	11	73	47	914
Total Individuals	272923	182511	154418	146570	138425	203635	239255	294502	5,697,521
Total species	435	378	348	340	353	359	384	390	607

Interior--Duplicating Section, Washington,D.C.25 84059