

RETURNS OF TRANSIENT SHOREBIRDS

By Betty Knorr

Recent studies have shown (Nisbet) that with the exception of waterfowl and hawks, there are very few returns on record for birds that have been banded as transients. To be classified as true transients, such birds can only be species that do not nest or spend the winter in the area where they are banded.

Considering the fact that comparatively few shorebirds are banded (Van Velzen), the 40 returns I've gotten on transient shorebirds seem particularly noteworthy. These birds nest on the Arctic Tundra and spend the winter in Central and South America, stopping only briefly in my area during their migrations.

Ten years ago when my husband and I moved to the coastal area of South Amboy, New Jersey, I decided to start a shorebird banding project. Getting started with such a project did present a number of problems and continuing it has not been easy. First of all, in this crowded metropolitan area it is difficult to find a suitable place to capture shorebirds. Most of the beaches are constantly disrupted by an assortment of human activity and are therefore unsuitable for attempting to catch shorebirds. After several unsuccessful efforts we finally decided that a portion of the South Amboy landfill looked like the best place to get started.

This area is situated on Raritan Bay near the mouth of the Raritan River. The entire area might best be described as being one big "Pollution City". Travelers crossing the Garden State Parkway bridge are often shrouded in thick haze as factories belch and spew their odoriferous smog 24 hours a day. The bay has sometimes been described by politicians as being a huge open sewer and the beaches are often embalmed with black tar-like goo, the results of oil spills from ships and local refineries. Nevertheless, shorebirds do occur here, and sometimes in large numbers.

The area is known to bird watchers because it is one of the few places on the coast where rare gulls can be found regularly. European species such as the Little Gull and Black-headed Gull can often be seen here, however, but many transients do occur here as well as wintering gulls and waterfowl. In addition to shorebirds, other species that I have banded in this spot include: Black-crowned Night Heron, Herring Gull, Ring-billed Gull, Laughing Gull, Bonaparte's Gull, Common Tern, Black Tern, Black Skimmer, Horned Lark and Snow Bunting.

After selecting this area as the site of our shorebird project we were anxious to get started. Our "staff" was pityfully small - only one bander(me), and one assistant (my husband). We weren't discouraged, however; at least not yet. That part came later!

I had always wondered why so few shorebirds were ever banded. A great many banders live in areas where these birds do occur yet few of them band shorebirds. And very few band shorebirds in the same place year after year. Why? Could it be that most banders are hung up on Warblers or chasing the mouth-watering rarities? No, I don't think so. Actually the answer is very simple. Banding shorebirds is just as easy as banding warblers. The only difference is that catching the shorebirds is something else!

These fast flying birds have exceptional vision and their acrobatic maneuvering to avoid hitting the nets are spectacular as they whiz by going over, under, around and through holes in the nets. The techniques and equipment used to catch shorebirds are very different from those used for most species. (Knorr) Usually, the nets are set out on the open mud flats or exposed beaches. The flat terrain with no camouflaging background silhouettes the nets making them clearly visible against the sky. Winds are always strong and changing tides are a problem. Trudging through slippery mud in cumbersome hot hip boots while trying to swat Green-headed flies and hordes of mosquitoes is truly no picnic!

A few banders who managed to endure these difficulties for a short while soon gave up banding shorebirds because they encountered too many casualties. After 10 years of banding these species I am thoroughly convinced that 99% of all shorebird casualties can be blamed on the bander. Any bander who strings up a bunch of nets for shorebirds and checks them only every 15 minutes or so is truly courting disaster.

To me, a dead bird in the net or trap is a personal tragedy. All banders should remember that the primary purpose of banding is to catch the bird, band it, and release it unharmed, so that something can be learned about it in the future. At times a few "scientific" banders(who never have qualms about casualties) have accused me of being overly sentimental. Well, maybe so....but I don't learn much from dead birds and they don't produce usable data for the Banding Lab, either. True, some can be salvaged for study skins, but most banders don't bother unless it happens to be a rare species.

When banding shorebirds I use only 2 nets (2 3/8" mesh x 60') which are set up individually about 200' apart. Our banding "headquarters" are

situated back on the beach between the two nets. The nets are under constant observation and birds are removed as soon as they are caught. I never leave a shorebird in a net to act as a decoy. While this practice can be safely used for some other species, it will often result in injury or death to shorebirds. The idea that the distress calls of trapped decoys will sometimes lure others into the net does not work. The only problem is that most shorebirds caught in the net do not utter distress calls unless they are truly in distress due to the pain of constricting strands of the net! Perhaps shorebirds on their breeding grounds will vocalize in the net, but transients are usually silent when caught unless they are suffering. Most shorebirds are very susceptible to net injuries. They are especially susceptible to hanging themselves and to injury of the axillar region under the wings. Most shorebirds left in a net for more than a couple of minutes will show some degree of injury under the wings. When caught in a net these birds can also drown very quickly in only a tiny puddle of water and for this reason I do not set nets over water.

Although shorebirds are usually difficult to catch, once in a while a whole flock will hit the nets simultaneously. A few years ago another bander and a friend came along with us to act as helpers. They were used to seeing nets strung up all over the place at O.R. stations and just could not understand why I would use only two nets. They reasoned that the four of us could easily handle more nets. A few minutes later in one swoop we had 93 birds in the two nets! An exceptionally high tide was coming in rapidly and we worked frantically extricating the birds while water surrounded us. Although some of the birds had sore wings, there were no casualties.

The first year (1961) we caught only 30 birds of 2 species. The next year we improved our techniques and moved our location about 3/4 of a mile down the beach and we have since remained in that location. Unfortunately, we ran into a serious problem. Although our station is within view of a busy highway, the only access to the area is by a little known and seldom used dead-end dirt road. This semi-isolated spot has become a haven for illegal hunters, "pot" parties and drinking sprees. The local authorities have not been able to stop the illegal slaughter of birds and they rarely catch the other violators. When these youths have guns and get "hopped up", anything can happen and on several occasions they laughingly shot at us deliberately. One woman on a passing train lost an eye from a bullet fired by one of these idiots. During 1968 the situation was so bad and dangerous that we had to discontinue all banding in the area. Last year the situation eased a bit, and when we were able to get two husky assistants who bolstered our courage, we again resumed our shorebird banding.

When I first started the project I decided to learn as much as I possibly could about shorebirds. Although many good books and articles have been written about these fascinating birds, there is still much to be learned. Many questions arose and it was my aim to try to find some of the answers. The bits and pieces of information that I have accumulated can hardly scratch the surface; rather, they can be considered as only adding a few links to an already existing chain. The material presented in this paper is only intended as a brief summary of general information on shorebird banding. More specific and detailed information on age and sex ratios, measurements, weights, etc., will be presented in separate future articles.

A Lot of Questions and a Few Answers

(1) Where do shorebirds come from?

Although textbooks give their general range and suggested routes of migration, specific details are still lacking. So far I have captured 3 Semipalmated Sandpipers that were banded elsewhere. The first was banded as an adult at Duntas Marsh, Ontario, Canada, on May 27, 1958 and trapped and released by me on August 18, 1961. The second one was banded (no age given) at Ocean City, Maryland, on August 4, 1962 and trapped and released by me on August 5, 1963. The data on the third peep is still a mystery as the band was so badly worn that the complete number could not be deciphered.

(2) Where do shorebirds go from here?

Reference books (Bent, Peterson, Hall) list the nesting area for these birds as generally being the Arctic Tundra. Some species have a more limited range, such as the Western Sandpiper which only breeds in Alaska. As these remote areas are so sparsely populated with humans I have not had any recoveries on their nesting grounds. Only one of my birds has been recovered in its wintering area. This was a Semipalm. Plover that I banded as an adult on August 1, 1963 and was reported shot September 6, 1964 on the French island of Martinique, off the coast of South America.

(3) Do any of these shorebirds return to this area?

Indeed they do! This was one of the questions that intrigued me most. During the past 10 years I've gotten 41 returns on these shorebirds (see Table 2) and 40 of these are definitely transients. Some of these returns were previously published (Knorr).

(4) Why do these birds stop at this particular spot?

A glance at a map will reveal that this area is geographically situated in a likely spot to attract shorebirds that migrate along the coast of New England. Also, since one of my foreign peeps came from Dundas, Ontario, a straight line south-easterly direction indicates the area is the nearest coastal location for birds coming from that section of Canada. It is also one of the few extensive areas that remain undeveloped on the north N.J. shore.

(5) How long do birds stay here?

My records indicate that in spring the northbound shorebirds stop here for only a day or two. The bulk of these spring migrants pass through between May 20th and June 5th. Southbound birds start to arrive around July 15th. There is a constant turnover of new flocks arriving and departing until the beginning of September, at which time almost all of these shorebirds leave this area. My records of repeat captures during July and August show that many birds stay in the area for 3 or 4 days and others probably less. These birds rarely stay in the area for a week or more unless they are injured or coated with oil slick.

(6) Why are so few birds in the area at low tide?

As the water recedes after a high tide the birds generally disperse and spread out over a large area to feed. Some fly across the bay to Staten Island, N.Y., and others go south along the coast down as far as Sandy Hook. When the tides change, the birds come back again to the South Amboy Landfill to rest and feed because the other suitable areas are under water at high tide. I had suspected this for a long time but was not able to prove this theory until last year. One of my new assistants is a pilot and together we made a number of helicopter tours of the entire region. Many flocks of shorebirds were seen arriving and dispersing with the change of the tides.

(7) How long do these shorebirds live?

Published longevity records for most species of shorebirds are apparently very few. Of the ones I've banded, one semi. Peep that returned 6 years after banding was more than a year old at the time it was banded. This sandpiper is at least in its 8th year. The record of the Ruddy Turnstone was actually a local recovery. I banded this bird on August 11, 1956 and it was found dead on August 11, 1968 a few miles south of the area. We did no shorebird banding during 1968 because of the dangerous situation which I've already mentioned, but luckily this bird was found by Dave Schwendeman, of the American Museum of Natural History and he preserved it as a study skin. This bird was more than a year old when it was banded so was in at least its 5th year.

- (8) Do these birds stop here only on their northbound or southbound flights, or do they stop here for both migrations?

One of the returns I've gotten does indicate that some of these shorebirds do use this spot for both migrations. This Semi. Peep was banded on its flight south on August 11, 1962 and returned on its northward migration on May 24, 1964.

- (9) Can I learn about ageing and sexing these shorebirds?

I have found that most of the shorebirds I catch can be aged and many of them can be sexed by wing and bill measurements. (Robbins) These measurements were taken on approximately 90% of all the shorebirds I have banded. After additional comparison with museum specimens these data will be published in a separate article. Since most of the shorebirds are captured on cloudy days or at dusk the available light is usually insufficient for skulking. However, most birds can be aged by a careful examination of the plumage. The plumage and soft parts of hatching year birds are usually distinctive (Roberts) and the prolonged molt of adult birds will usually show some traces of breeding plumage or some faded and worn feathers that are conspicuous among the new feathers. Some remnants of old faded feathers are usually present until at least the beginning of September. A few species, however, may not have such a prolonged molt. Sanderlings seem to complete their molt much sooner than other species and are sometimes fully feathered with their fall plumage by mid August.

- (10) What is the sex ratio?

Of the many birds that could be positively sexed, the ratio of males to females was usually about even. With semi. Peeps there does seem to be a higher percentage of females. It varies a bit from year to year but usually 65% of these birds are females. Tables of sex ratios, wing measurements and bill measurements will be published in a separate future article.

- (11) What is the age ratio?

Surprising as it may seem, 90% of the shorebirds I band are adults, or after hatching year birds. This lopsided ratio of adult to hatching year birds has been consistent every year! The few hatching year birds that occur here do not arrive until almost the end of August, except Least Sandpipers, Semi. Plovers and some Sanderlings, which arrive earlier. After the first week of September almost all the shorebirds are gone from this area. This unusual age ratio is found among all the species of shorebirds I band.

The Semi. Peeps are the most abundant of the species that occur here and their large numbers have provided unmistakable evidence each year that few young birds of the year stop in this area. Why so few HY birds occur here is a complete mystery. Do they follow a different migration route on their first journey south? Of the 40 transient returns I have gotten only one was banded as a hatching year bird!

- (12) What can I learn about the various plumages, changes of the soft parts, parasites and diseases of these shorebirds?

This information will be published in separate articles.

- (13) Can I learn from their body weights?

Although I have taken weights and noted the fat class of many shorebirds, I have been unable to utilize these statistics in regard to their flight range capabilities. Weights have varied tremendously among birds captured in the same flocks. I think it's probable that these birds have come from different areas and merged into new mixed flocks here at this location. Those that have made long flights over inland areas coming from the northwest would certainly weight less than those that have been able to feed along the New England coast. One very fat female Semi. Peep weighed almost twice as much as a very small emaciated male!

- (14) Is there a reliable way to separate Western Sandpipers from Semipalmated Sandpipers?

After experimenting with various methods (Robbins) I believe that these two similar species can be separated with measurements. Female Western Peeps have a typically very long bill-- usually 25-28mm. Such birds cannot possibly be confused with Semi. Peeps. Male Semi. Peeps have a typically short bill (16-19mm) which is shorter than both female and male Western Peeps. The bill range for Semi. Peeps is 16-23mm. The bill range for Western Peeps is 21-28mm. Apparently the only real problem of distinguishing between the two species is when the bill measurements overlap. This does occur with female Semi. Peeps and male Westerns. I have found that the wing measurement will separate the species when the bill measurements overlap. The bill of the male Western can be shorter than that of a female Semi, and when it is, the wing measurement is also correspondingly shorter. Most male westerns average around 92-93mm for the wing whereas the female Semi. Peeps average 97-100mm.

- (15) What about band sizes for shorebirds?

In my opinion (Knorr) there should be a number of changes made in the

suggested band sizes for shorebirds. The returns I have gotten have shown that some sizes recommended in the Banding Manual are too small, often causing crippling and loss of toes and feet. Although the recommended sizes seem to fit well, tiny foreign particles (bits of shell, sand, etc.) often become lodged under the bands. The close fitting bands do not allow these particles to be swished out by natural water action and the resulting irritation causes swelling of the tarsus around the band. If the birds don't die from such infections the foot usually becomes withered and useless and in time it will fall off - leaving a one-legged unbanded bird.

(16) What conclusions can be made about the shorebirds in this area?

Not many. There is still much to be learned. Although there is not much change in the species that occur here, there has been a big change in the number of birds. As will be noted in Table 1 there has been a general decrease in the birds banded during the past 5 years. During the first year (1961) few birds were banded although many birds were in the area. The results of the next 3 years indicate the improvement in capturing techniques and equipment. But starting in 1965, the numbers of birds banded and numbers seen in the area decline markedly. Since then, each year we have worked longer and harder to capture fewer birds. Perhaps there may be a general decrease in these species. Or maybe the changing ecology is forcing them to take different routes of migration. I don't know. But one thing is for sure, I do know that water pollution from chemicals, sewerage, and oil spills is taking a heavy toll of our shorebirds. If I can continue this project for another 10 years, perhaps I'll learn a few more of the answers.

Acknowledgements

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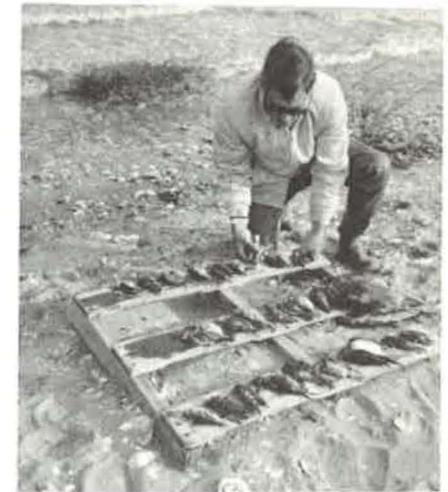
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(Tables on following pages. ed.)



Shorebird banding area
South Amboy, N. J.



Neil checks over some
shorebirds that were
illegally shot.

Shorebirds Banded

Species	1961	1962	1963	1964	1965	1966	1967	1969	1970	Totals
Semipalm. Plover	5	25	20	14	5	5	3	3	4	84
Black-bel. Plover		1	1	1	1			1		4
Ruddy Turnstone		29	8	12	27	2	1	1	1	81
Spotted Sandpiper		5	8	6	7	6	1	4	2	39
Gr. Yellowlegs		1								1
Knot		1	1							2
Fectoral Sandpr.					3					3
Wht.-rump Sandpr.					1					1
Least Sandpiper		13	18	26	8	4	19	47	10	145
Dunlin		2		1				1		4
Sh.-bl. Dowitcher				1						1
Semi. Sandpiper	25	485	433	646	282	116	71	260	184	2502
Western Sandpiper		6	6	2	1			20	3	38
Sanderling		69	29	91	36	10		13	20	268
Totals	30	636	524	800	371	143	95	350	224	3173

Note: No birds banded during 1968

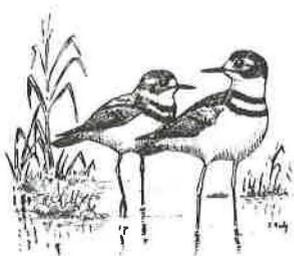


Table #2

Returns of Transient Shorebirds

Band Number	Species	Date Banded	Date Returned	Approximate Time Interval
61-01133	Semi. Sandpiper	8/16/61	8/11/62	1 year
63-64454	Semi. Sandpiper	6/2/62	5/24/64	2 years
63-64468	Semi. Sandpiper	7/20/62	8/19/63	1 year
26-135315	Spotted Sandpr.*	7/28/62	8/5/63	1 year
63-64209	Semi. Sandpiper	7/29/62	8/3/63	1 year
63-64216	Semi. Sandpiper	7/29/62	8/13/63	1 year
26-135320	Semi. Plover	8/4/62	8/4/64	Exactly 2 years
63-64290	Semi. Sandpiper	8/5/62	8/5/64	Exactly 2 years
61-01324	Semi. Sandpiper	8/11/62	7/22/64	2 years
61-01343	Semi. Sandpiper	8/11/62	5/24/64	1 year 9 months
61-01358	Semi. Sandpiper	8/11/62	7/30/63	1 year
65-23312	Semi. Sandpiper	8/16/62	7/30/63	1 year
65-23325	Semi. Sandpiper	8/16/62	8/16/63	Exactly 1 year
62-138523	Sanderling	8/16/62	9/4/64	2 years
65-23352	Semi. Sandpiper	8/25/62	8/10/63	1 year
65-23395	Semi. Sandpiper	8/30/62	8/22/63	1 year
65-23409	Semi. Sandpiper	9/3/62	8/16/63	1 year
65-23562	Semi. Sandpiper	5/30/63	5/31/65	2 years 1 day
65-23590	Least Sandpiper	7/17/63	7/21/64	1 year
65-23648	Semi. Sandpiper	8/1/63	7/30/65	2 years
65-23674	Semi. Sandpiper	8/2/63	8/9/64	1 year
65-23682	Semi. Sandpiper	8/2/63	8/4/64	1 year
65-23712	Semi. Sandpiper	8/5/63	7/27/65	2 years
65-23769	Semi. Sandpiper	8/9/63	8/17/64	1 year
65-23780	Semi. Sandpiper	8/10/63	9/4/64	1 year
70-45011	Semi. Sandpiper	8/16/63	7/30/66	3 years
70-45019	Semi. Sandpiper	8/16/63	9/4/64	1 year
70-45037	Semi. Sandpiper	8/17/63	8/5/64	1 year
70-45132	Semi. Sandpiper	9/3/63	8/22/65	2 years
70-45236	Semi. Sandpiper	5/24/64	5/28/65	1 year
70-45279	Semi. Sandpiper	7/21/64	8/16/67	3 years
70-45356	Semi. Sandpiper	7/23/64	7/31/65	1 year
70-45427	Semi. Sandpiper	8/5/64	8/8/65	1 year
70-45527	Semi. Sandpiper	8/9/64	8/7/70	6 years
70-45535	Semi. Sandpiper	8/9/64	7/31/65	1 year
70-45633	Semi. Sandpiper	8/19/64	8/8/65	1 year
70-45680	Semi. Sandpiper	8/22/64	8/16/66	2 years
29-192122	Semi. Sandpiper	7/25/65	7/30/66	1 year
623-03388	Ruddy Turnstone	8/11/65	8/11/68	Exactly 3 years
29-192501	Semi. Sandpiper	7/31/66	8/7/67	1 year
29-192965	Semi. Sandpiper	8/30/69	8/2/70	1 year

Total Returns of Transient Shorebirds: 40
Plus 1* may not be true transient