

1997

Twenty-eight Year Study of Upland Sandpiper Breeding Population in New York

Steven D. Garber

Sammy Chevalier

Jay Richard Cohen

Follow this and additional works at: <https://digitalcommons.usf.edu/nabb>

Recommended Citation

Garber, Steven D.; Chevalier, Sammy; and Cohen, Jay Richard (1997) "Twenty-eight Year Study of Upland Sandpiper Breeding Population in New York," *North American Bird Bander*. Vol. 22 : Iss. 3 , Article 1.
Available at: <https://digitalcommons.usf.edu/nabb/vol22/iss3/1>

This Contents is brought to you for free and open access by the Searchable Ornithological Research Archive at Digital Commons @ University of South Florida. It has been accepted for inclusion in North American Bird Bander by an authorized editor of Digital Commons @ University of South Florida. For more information, please contact digitalcommons@usf.edu.

Twenty-eight Year Study of Upland Sandpiper Breeding Population in New York

Steven D. Garber
Department of Ecology
Evolution and Nat. Resources
Rutgers University
Piscataway, NJ 08855-1059

Sammy Chevalier
P.O. Box 356
Ingram, TX 78025

Jay Richard Cohen
133 Broome Avenue
Atlantic Beach, NY 11509

INTRODUCTION

The United States Fish and Wildlife Service describes the Upland Sandpiper (*Bartramia longicauda*) as a migratory non-game bird of management concern in the Northeast (Carter 1992). Upland Sandpiper populations have declined significantly from Ohio through the northeastern states since the 1940s (Peterjohn and Rice 1991). In New York, according to the North American Breeding Bird Survey, Upland Sandpiper numbers declined by 83 percent during the past 30 years (from 1966 to 1996), representing a decline of 5.73% per year ($P=.3645$, $N=28$; N = the total number of breeding bird survey routes where Upland Sandpipers were detected in New York). These numbers were calculated from unpublished data provided by Pardieck and Peterjohn (pers. com. 1997).

At John F. Kennedy International Airport (JFK), located on the east shore of Jamaica Bay in New York City, there is a significant Upland Sandpiper population about which we have collected data for decades (Garber and Chevalier 1996), creating a valuable source of information useful to those interested in managing this species on or off airports. Efforts to attract breeding Upland Sandpipers from the JFK population to establish a satellite population at Floyd Bennett Field, on the west shore of Jamaica Bay, have been unsuccessful. Upland Sandpipers have done well at JFK, and we recently documented a breeding population at Newark Airport in Newark, New Jersey, where we are managing for them based on what we have learned from the methods used at JFK. We have worked with bird populations at JFK, LaGuardia, and Newark airports in an ongoing effort to reduce the risk

of a plane crash from birds getting sucked through airplane engines. Whenever possible, we conduct our wildlife management methods in ways that enable us to protect both people and birds. One of our many efforts to protect birds at JFK is reported here, where we have documented an Upland Sandpiper population living at one of the biggest, busiest airports in the world in the middle of New York City.

Upland Sandpipers did not occur on the habitat where the airport is presently located before the airport was constructed. Originally, most of the over 5,000 acres that currently comprise JFK were a mixture of fresh and saltwater wetlands. The nearest population of Upland Sandpipers that historically occurred in the area was found on the Hempstead Plains of Long Island, which formerly comprised approximately 60,000 acres (Garber 1997). Hempstead Plains was one of the best remaining habitats for Upland Sandpipers in the John F. Kennedy International Airport area until the first part of the century, before the region was developed and before the airport was built. In the 1920s John T. Nichols estimated at least 25 pairs bred on the Hempstead Plains (Bull 1975, 1985); but by the early 1940s, the Hempstead Plains population had only four to six remaining pairs (Cruickshank 1942); afterward the population disappeared. Currently, JFK has approximately 20 breeding pairs of Upland Sandpipers.

JFK is very close to where the Hempstead Plains used to extend. Much of JFK's habitat is created artificially from primarily sandy dredge spoils, which

were built approximately six feet above sea level (Garber 1995). The airport was built in stages, primarily in the 1930s and 1940s, with one last runway extension added on in the 1960s. The goals were to make a flat, dry region suitable for taxiways, runways, and buildings. Although upland meadow habitat was created where there used to be wetlands, to some extent, it appears these upland meadows replaced the original natural upland meadows of the Hempstead Plains. It could be that the birds breeding at JFK are descendants of the birds that used to breed at Hempstead Plains, and the birds moved to JFK when the Hempstead Plains were fragmented and reduced in size, while simultaneously, JFK was increasing in size. Today, Upland Sandpipers breed only at a relatively small number of discrete, local sites, and these sites usually have a small number of birds.

Throughout their entire range, which includes North and South America, the total number of breeding pairs is quite small. For these reasons, and because JFK has one of the largest breeding populations in the East, as well as one of the most significant long-term data bases on the species, we continue to monitor the species at the airport. In North America, it breeds as far south as Virginia. To date, this species has not represented a significant hazard to aircraft in light of the low number of individuals that have been struck at JFK over the years. Even though there has been just one strike from January 1979 through February 1997 (it occurred on 30 August 1996, without any damage to the aircraft), we are making every effort possible to record relevant information about the birds at the airport so others interested in this species' management might benefit from our experience.

Most of the research on breeding habits, reproductive success, habitat requirements, home range, movements, coloniality, and effects of grazing was done on midwestern Upland Sandpiper populations. Studies of the species' breeding biology have been conducted (Higgins and Kirsch 1975, Kirsch and Higgins 1976, Ailes 1979, Ailes 1980), and their home range and daily movements were studied elsewhere (Ailes and Toepfer 1977). In addition, coloniality, reproductive success, and habitat interactions have been studied in the Midwest (Bowen 1976), as have the effects of grazing

on nesting Upland Sandpipers in south-central North Dakota (Bowen and Kruse 1993).

METHODS

From 1969 through 1997, bird banding has been conducted at JFK under the permits held by Jay Richard Cohen, Sammy Chevalier, and Steven Garber. From 1969 through 1987, 410 Upland Sandpipers were banded at JFK; all were banded by Cohen and Chevalier on aeronautical parts of the airport (near runways and taxiways). The Upland Sandpipers that were caught and banded were primarily young that could not fly. Juvenile birds were chased down and captured by hand. Adults that could be caught because they were more likely to come close enough to a person when protecting their young were chased down and captured by net. The effort was not equal each year, so the yearly numbers primarily represent relative effort. Population estimates were made using the spot mapping method. Banding data and observations by biologists at the airport are presented in an effort to determine the history of this species at the airport during our tenures here.

RESULTS

Two of the Upland Sandpipers banded here were recovered subsequently, both at the airport. Each was banded at JFK when they were too young to fly. The first was banded on 6 July 1976 and was recovered 8 May 1978. The second was banded 12 June 1981 and recovered 28 May 1990. We believe the latter bird is a longevity record for the species; the hiatus between times captured was nine years.

The total number of Upland Sandpipers banded and recovered at JFK each year is as follows:

1969-2; 1970-9; 1971-19; 1972-12; 1973-6;
1974-13; 1975-8; 1976-22; 1977-22; 1978-36;
1979-39; 1980-30; 1981-7; 1982-32; 1983-48;
1984-6; 1985-0; 1986-14; 1987-2; 1990-1.

All were banded when they were too young to fly except for one adult in 1971, one adult in 1977, two adults in 1978, one adult in 1979, and one adult in 1990. The number banded appears to drop off markedly after 1983, which may be a result of the grassland management at the airport. It has been suggested that it was after 1983 that the grass was

Figure 1.

UPLAND SANDPIPER BANDING DATES

If the bird was banded and recaptured, it is followed by an R. The number of birds banded or recaptured is in parentheses, if there is no number in parentheses, then the number banded was 1

1969	June 22, 1977	June 25, 1981 (2)
July 2, 1969 (2)	June 26, 1977	June 29, 1981
1970	June 28, 1977 (2)	July 27, 1981
June 11, 1970 (6)	June 29, 1977	1982
June 24, 1979	July 6, 1977 (2)	May 31, 1982 (2)
June 26, 1970	1978	June 1, 1982 (2)
July 8, 1970	May 5, 1978 R	June 2, 1982 (5)
1971	June 1, 1978 (2)	June 6, 1982
June 11, 1971	June 6, 1978 (2)	June 8, 1982 (6)
June 14, 1971	June 14, 1978 (3)	June 9, 1982
June 15, 1971	June 15, 1978 (2)	June 10, 1982 (3)
June 16, 1971 (5)	June 16, 1978 (3)	June 11, 1982
June 18, 1971 (3)	June 19, 1978	June 14, 1982 (3)
June 22, 1971	June 20, 1978 (6)	June 16, 1982 (2)
June 23, 1971 (2)	June 21, 1978 (3)	June 19, 1982
June 25, 1971 (2)	June 24, 1978 (3)	June 20, 1982 (2)
June 27, 1971 (3)	June 28, 1978 (2)	June 23, 1982
1972	June 29, 1978 (2)	June 25, 1982
June 7, 1972 (2)	June 30, 1978 (3)	June 26, 1982
June 9, 1972	July 5, 1978	1983
June 15, 1972 (7)	July 8, 1978	June 8, 1983 (3)
June 19, 1972	July 24, 1978	June 9, 1983 (7)
June 20, 1972	1979	June 10, 1983 (3)
1973	June 3, 1979 (2)	June 13, 1983 (3)
June 25, 1972	June 7, 1979 (3)	June 14, 1983 (5)
June 26, 1972 (3)	June 12, 1979	June 16, 1983 (3)
July 5, 1972	June 14, 1979 (4)	June 17, 1983 (4)
July 11, 1973	June 16, 1979 (6)	June 22, 1983
1974	June 17, 1979	June 26, 1983
June 12, 1974 (3)	June 20, 1979 (5)	June 27, 1983 (2)
June 13, 1974 (3)	June 21, 1979	June 30, 1983 (5)
June 14, 1974 (4)	June 22, 1979 (4)	July 1, 1983 (5)
June 18, 1974 (2)	June 25, 1979 (3)	July 3, 1983 (2)
June 26, 1974	June 26, 1979	July 4, 1983
1975	June 27, 1979 (4)	July 9, 1983
June 24, 1975	June 28, 1979	July 11, 1983
June 25, 1975	July 3, 1979 (2)	July 27, 1983
July 7, 1975 (3)	July 4, 1979	1984
July 8, 1975 (3)	1980	June 9, 1984
1976	June 2, 1980 (3)	June 10, 1984
June 6, 1976 (4)	June 4, 1980	June 25, 1984
June 13, 1976 (2)	June 7, 1980 (2)	July 11, 1984
June 14, 1976	June 10, 1980	July 13, 1984
Junw 16, 1976 (2)	June 12, 1980 (2)	July 20, 1984
June 17, 1976 (3)	June 16, 1980 (3)	1986
June 18, 1976 (2)	June 17, 1980 (3)	June 3, 1986 (1)
June 19, 1976 (2)	June 18, 1980	June 5, 1986 (3)
June 20, 1976 (3)	June 19, 1980 (2)	June 6, 1986
June 24, 1976	June 20, 1980	June 10, 1986 (2)
June 25, 1976	June 21, 1980	June 14, 1986
July 6, 1976	June 22, 1980	June 16, 1986 (3)
1977	June 23, 1980 (3)	July 1, 1986
June 1, 1977	June 24, 1980 (3)	July 9, 1986
June 3, 1977 (3)	June 25, 1980	July 14, 1986
June 8, 1977 (3)	June 27, 1980	1987
June 14, 1977	July 4, 1980	June 20, 1987
June 17, 1977	1981	July 23, 1987
June 19, 1977 (4)	June 23, 1981	1990
June 21, 1977 (2)	June 24, 1981 (2)	May 28, 1990 R

allowed to grow high during the summer; whereas during previous years, it was always kept shorter during the summer months. Although the longer grass does not appear to hinder the Upland Sandpipers' success at JFK, it does affect the success of those trying to locate and capture them so they can be banded. No new birds were banded in 1988, 1989, 1990, 1991, or 1992. Each of these years Chevalier was busy during the summer with other chores at the airport and was not able to devote time to banding. He retired in October 1992, and Garber began working at JFK in December 1994. (See Figure 1 for banding dates.)

Figure 2. Number of Upland Sandpipers observed at JFK Airport on each date during 1994 and 1995.

1994

May 11, 1994 (1)
May 19, 1994 (1)
May 23, 1994 (2)
May 24, 1994 (1)
May 25, 1994 (1)
June 8, 1994 (2)
June 14, 1994 (6, of which 2 were chicks)

1995

May 22, 1995 (1)
May 25, 1995 (1)
June 1, 1995 (4)
June 5, 1995 (3)
June 7, 1995 (2)
June 10, 1995 (4 adults, 1 juvenile)
June 15, 1995 (1)
June 16, 1995 (4)
June 17, 1995 (3)
June 19, 1995 (1)
July 14, 1995 (4)
August 4, 1995 (2)

The hiatus between Figures 1 and 2 reflects the time between when Chevalier worked at the airport and when Garber began. Dates during 1994 and 1995 do not represent birds banded; rather, they represent Upland Sandpiper observations at JFK during the following days. In 1994, 14 Upland Sandpipers were seen from 11 May through 14 June. In 1995, 31 were seen from 22 May through 4 August. In 1996, over 100 were seen because we spent a great deal of time in the field each day conducting a falconry program to scare gulls from

the airport (Garber 1996). During the years 1991 through 1993 no Upland Sandpipers were banded or recorded at JFK.

DISCUSSION

From the banding and observation dates listed in Figures 1 and 2, Upland Sandpipers are here during the months of May, June, July, and August; therefore, one might conclude that the earliest date the birds are back at JFK was 8 May and the latest they were here was 4 August. However, most banding dates start at the end of May and beginning of June, which may be more representative of when the birds are on their nests and when they have young in the area.

From the above observation data, it appears that many Upland Sandpipers arrive at JFK through May, but eggs do not hatch until the end of May and in June, and some may hatch as late as July. As stated earlier, there are as many as 20 pairs of Upland Sandpipers breeding at JFK. This population has been utilizing air-side grassland habitats for many years. The Upland Sandpiper will not continue breeding in an area when its fragmentation reaches a certain critical threshold; therefore, continued divisions of the air-side habitat with more taxiways and open blacktop areas could lead to an eventual decline of this species at JFK.

LaGuardia Airport and Newark International Airport - Upland Sandpipers do not occur at LaGuardia Airport, which is much smaller than both JFK and Newark airports and without the vast expanses of potential Upland Sandpiper habitat. Because we felt Newark had appropriate Upland Sandpiper habitat, we looked for them in 1996 and for the first time found six breeding pairs there.

LITERATURE CITED

- Ailes, I.W. and J.E. Toepfer. 1977. Breeding biology and habitat use of the Upland Sandpiper in central Wisconsin. *Inland Bird Banding News* 49:203-212.
- Ailes, I.W. 1980. Breeding biology and habitat use of the Upland Sandpiper in central Wisconsin. *Passenger Pigeon* 42:53-63.

- Ailes, M. 1979. A shore bird at home on the range. *Animal Kingdom* Aug/Sept: 21-25.
- Bowen, D.E. 1976. Coloniality, reproductive success, and habitat interactions in Upland Sandpipers (*Bartramia longicauda*). Ph.D. dissertation. Kansas State Univ. Manhattan, KS.
- Bowen, B.S. and A.D. Kruse. 1993. Effects of grazing on nesting by Upland Sandpipers in south-central North Dakota. *J. Wildl. Manage.* 57:291-301.
- Bull, J. 1975. Birds of the New York area. Dover Publications, NY, NY.
- Bull J. 1985. Birds of New York State. Cornell Univ. Press, Ithaca, NY.
- Carter, J.W. 1992. Upland Sandpiper. In: K.J. Schneider and D.M. Pence, eds. Migratory nongame birds of management concern in the Northeast. U.S. Fish and Wildlife Service, Newton Corner, MA.
- Cruikshank, A.D. 1942. Birds around New York City. American Museum of Natural History NY, NY.
- Garber, S.D. 1995. John F. Kennedy International Airport wildlife management plan. In: Minutes of the twenty-third meeting of bird strike committee Canada. 29-30 Nov. 1995. Ottawa, Ont. Transport Canada, Dept. of National Defense.
- Garber, S.D. 1996. Effectiveness of falconry in reducing risk of bird strikes under study at JFK Airport: data so far indicate that trained birds of prey can reduce significantly the number of problem birds that visit the airport. *ICAO Journal* (International Civil Aviation Organization) 50(5):5-7.
- Garber, S.D. 1997. Bird atlas for Jamaica Bay Wildlife Refuge and John F. Kennedy International Airport. The Port Authority of New York and New Jersey, NY, NY.
- Garber, S.D. and S. Chevalier. 1996. A 27-yr. study of Upland Sandpipers (*Bartramia longicauda*) at John F. Kennedy International Airport in New York City. In: Minutes of the twenty-fourth meeting of bird strike committee Canada. 10-11 Apr. 1996. Richmond, BC. Transport Canada, Dept. of National Defense.
- Higgins, K.F. and L.M. Kirsch. 1975. Some aspects of the breeding biology of the Upland Sandpiper in North Dakota. *Wilson Bull.* 87:96-102.
- Kirsch, L.M. and K.F. Higgins. 1976. Upland Sandpiper nesting and management in North Dakota. *Wildlife Society Bull.* 4:16-20.
- Peterjohn, B.G. and D.L. Rice. 1991. The Ohio breeding bird atlas. Ohio Dept. of Natural Resources, Columbus, OH.

