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Table 2

## Species Snapshot: Cooper's Hawk (Accipiter cooperii)

This is the 13th installment in our regular feature presenting a brief synopsis of the banding and encounter records submitted to the Bird Banding Lab for a particular species. Each installment will feature a new species; suggestions for species to be covered or data to be presented are welcome (swgabrey@gmail.com). Space limitations of *NABB* prohibit any in-depth analysis of the data and these notes are not meant to show any trends in population parameters such as population density or growth rate, geographic distribution, etc., and should not be viewed as a definitive analysis of the status of the species.

Although the banding program began in the 1920s, the currently available digital records for banding data include only those records from 1960 to the present (pre-1960 banding data are available in other formats, however). All encounters, including those of birds banded before 1960, are available in digital format. The following summary includes only those birds banded and encountered from 1960 through Apr 2021in the United States, Canada, Mexico, and Central America.

Thousands of Cooper's Hawks have been banded as part of numerous captive breeding, rehabilitation, and translocation programs. For simplicity and brevity, any records of these birds (n = 8,539) have been excluded from the following discussion, which includes only those birds banded with a bird status code of 3 (Normal, wild bird, released in same 10-minute block as captured and held 24 hours or less).

## **Banded birds**

Numbers and Age and Sex Categories.— Since 1960, 160,418 Cooper's Hawks (with a bird status of 3) have been banded in the United States, Canada, and Mexico (Table 1). Sex was identified (either at banding or upon encounter) for 94% (n = 150,881); of these, 49% were males (n = 73,973) and 51% were females (n = 76,908). Seventy-three percent of the males were aged as HY or L (n = 54,059), 27% were aged as AHY, SY,ASY, TY, or ATY (n = 19,863), and <1% were aged as

U (n = 51). Sixty-six percent of the females were aged as HY or L (n = 50,601), 34% were aged as AHY, SY, ASY, TY, or ATY (n = 26,266), and <1% were aged as U (n = 41). Ninety-six percent of the 9,537hawks for which sex was not identified were aged as HY or L (n = 9,139), 4% were aged as AHY, SY, ASY, TY, or ATY (n = 350), and <1% were aged as U (n = 48).

**Geographic distribution.**— Cooper's Hawks have been banded in all the United States except Hawaii and Washington, DC (n = 144,469), in 6 Canadian provinces (n = 11,881) and in Mexico (n = 4,067) (Figure 1). The top 4 states (New Jersey, n = 35,055; Nevada, n = 19,983; California, n = 19,829; and New Mexico, n = 12,248) accounted for 60% of all hawks banded in the United States. One province (Ontario, n = 8,404) accounted for 71% of all hawks banded in Canada.

**Seasonal distribution.**— Overall, 15% of all Cooper's Hawks were banded between May and Aug (n = 23,878), 74% between Sep and Oct (n = 118,758), 6% between Nov and Feb (n = 9,287), and 5% between Mar and Apr (n = 8,494) (Table

2). Of the hawks banded in the United States, 14% were banded between May and Aug (n = 20,694) compared to 75% between Sep and Oct (n = 107,800), 5% between Nov and Feb (n = 7,648), and 6% between Mar and Apr (n = 8,327). Of the hawks banded in Canada, 27% were banded between May and Aug (n = 3,184), 61% between Sep and Oct (n = 7,304), 10% between Nov and Feb (n = 1,226), and 1% between Mar and Apr (n = 167). Of the hawks banded in Mexico, 90% were banded between Sep and Oct (n = 3,654) and 10% were banded between Nov and Feb (n = 413). No hawks were banded in Mexico between May and Aug or during Mar and Apr.

## **Encounters**

Numbers and Age and Sex Categories.— There have been 5,236 encounters representing 5,151 Cooper's Hawks (excluding those hawks banded with bird status other than 3) in the United States, Canada, Mexico, and Central America between 1960 and Apr 2021 (Table 3). No encounter records had invalid or mismatched sex, age, or species data. Encounters that occurred on the day

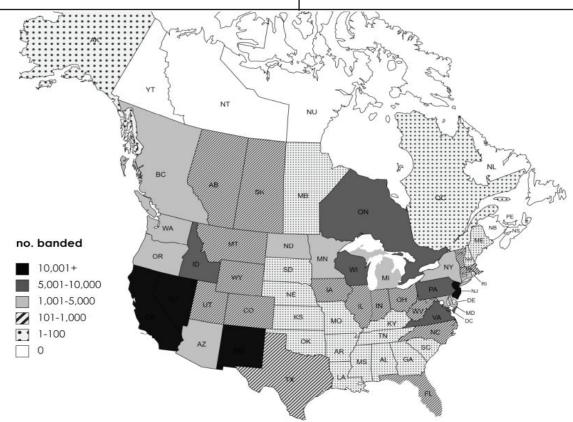


Figure 1. Geographic distribution of banding locations of Cooper's Hawks in the United States and Canada between 1960 and Apr2021. Not shown: Mexico, n = 4,067.

the bird was banded (24 encounters representing 23 individuals) are not included in the following summary (1 hawk was encountered on the day it was banded and at another time; this second encounter is included). Thus, there were 5,212 encounters of 5,128 individual hawks. One hawk was encountered 3 times, 82 were encountered twice, and the remaining 5,045 were encountered once each.

Sex was identified for 91% of the hawks encountered (n = 4,678); 42% of these were males (n = 1,968) and 58% were females (n = 2,710). Seventy-four percent of the males were aged as HY or L (n = 1,466), 26% were aged as AHY, SY, ASY, TY, or ATY (n = 502), and none were aged as U. Seventy percent of the females were aged as HY or L (n = 1,902), 30% were aged as AHY, SY, ASY, TY, or ATY (n = 807), and 1 was aged as U. Ninety-seven percent of the 450 hawks for which sex was not identified were aged as HY or L (n = 436), 3% were aged as AHY, SY, ASY, TY, or ATY (n = 13), and 1 was aged as U.

Eleven of the 5,128 hawks encountered were 15 yr 0 mo or older when encountered: 8 females (3 aged as ASY, 2 as SY, and 1 each as AHY, HY, and L), 2 males (1 each aged as ASY and HY), and 1 for which sex was not identified (aged as L). About 2% (n = 109) of the hawks encountered were between 10 yr 0 mo and 14 yr 11 mo, 12% (n = 612) were between 5 yr 0 mo and 9 yr 11 mo, and 39% (n = 2,022) were between 1 yr 0 mo and 4 yr 11 mo. The remaining 2,374 hawks were less than 1 yr 0 mo old when encountered or had no minimum age at encounter recorded (incomplete or inexact

band or encounter date, or the how obtained code indicated that the band or number only was found [codes 50, 96, 97, 98, for example]).

The oldest hawk encountered (minimum age at encounter 20 yr 4 mo) was an HY-M banded in Oct 1986 and found dead (how obtained code = 0) in Oct 2006 in Washington, 990 km (615 mi) north of its banding location. The oldest known female encountered (minimum age at encounter 18 yr 4 mo, 2nd oldest overall) was an ASY-F banded in Jun 1998 in Arizona and found dead in Oct 2014, 10 km (6 mi) southeast of its banding location. The oldest hawk aged as L when banded was a female banded in May 2002 in Arizona and found dead (how obtained code 13, striking stationary object other than wire or tower) in Aug 2019, 8 km (5 mi) southeast of its banding location (minimum age at encounter 17 yr 3 mo, 3rd oldest overall). These last two hawks, along with another 3 of the 11 oldest to be encountered, were all banded under the same permit at the same banding location in Arizona.

Geographic distribution.— Encounter region was missing or recorded as "United States" or "Canada" for 13 of the 5,128 encounters (i.e., the band was purchased or obtained through a trade [how obtained code 70] or the reporter did not provide any information other than the band number [how obtained code 56]). Of the 5,115 remaining encounters, 54% (n = 2,785) occurred in the state or province in which the bird was banded (Table 3). Eighteen hawks were encountered more than 3,219 km (2,000 mi) from their banding location: 11 females (3 aged as L, 3 as HY, 1 as ASY and

Table 1. Number of Cooper's Hawks banded and encountered in the United States, Canada, Mexico, and Central Americabetween1960 and Apr 2021 by age at banding and sex (either sex at banding or sex updated upon encounter).

		Band	ed birds			Encount	ered birds	
Age code	Male	Female	Unknown	Total	Male	Female	Unknown	Total
L	50,447	47,021	530	97,998	1,235	1,685	22	2,942
HY	3,612	3,580	8,609	15,801	231	217	414	862
SY	6,433	6,420	217	13,070	123	215	7	345
AHY	5,724	7,888	84	13,696	141	248	0	389
TY	7,246	11,185	48	18,479	227	332	6	565
ASY	285	317	0	602	10	11	0	21
ATY	175	456	1	632	1	1	0	2
Unknown	51	41	48	140	0	1	1	2
Total	73,973	76,908	9,537	160,418	1,968	2,710	450	5,128

Table 2. Number and seasonal distribution of Cooper's Hawks banded in the United States, Canada, and Mexico between 1960 and Apr 2021. Grand total banded does not include 1 individual with an unknown banding date.

Country/region	May – Aug	Sep – Oct	Nov – Feb	Mar – Apr	Total
United States	20,694	107,800	7,648	8,327	144,469
Canada	3,184	7,304	1,226	167	11,881
Mexico	0	3,654	413	0	4,067
Total	23,878	118,758	9,287	8,494	160,417

4 as SY), 4 males (3 aged as L and 1 as HY), and 3 with sex unidentified (all aged as L). Two hundred forty-two of the remaining hawks were encountered between 1,611 and 3,218 km (1,001 to 2,000 mi), 449 between 806 and 1,608 km (501-1,000 mi), and 1,600 between 163 and 805 km (101 to 500 mi). The remaining 2,819 were encountered less 162 km (100 mi) from their banding site or had no encounter distance recorded.

The greatest distance between banding and encounter locations was 4,471 km (2,778 mi) for an L-U banded in Alberta in Jul 1989 and encountered (how obtained code 57, entangled in other than fishing gear)in Mexico in Dec 1991. The greatest distance for a known male (and 2nd greatest overall) was 3,858 km (2,397 mi) for an HY banded in Veracruz, Mexico, in Oct 2010 and found dead (how obtained code 0) in Alberta in May 2013. The greatest distance for a known female (and 3rd greatest overall) was 3,821 km (2,374 mi) for an L banded in North Dakota in Jul 2011 and shot (how obtained code 1) in Honduras in Apr 2012. The greatest distance for a known female aged as other than HY or L was 3,634 km (2,258 mi, 7th greatest overall) for an ASY banded in Washington in Sep 2009 and found dead in Mexico in Feb 2010. The greatest distance for a known male aged as other than HY or L was 2,981 km (1,852 mi, 28th greatest overall) for an AHY banded in Veracruz in Oct 2001 and found dead in Wisconsin in May 2002.

Other interesting encounters.— A Cooper's Hawk banded as an L-U in Jun 2001 in Steven's Point, WI, was encountered three times (how obtained code 53, captured for scientific purposes) at its banding location in Jun 2003, Jun 2004, and Jul 2005. A hawk banded in Pennsylvania as an SY-F on Mar 1989 was encountered in New York in Aug 1990, 254 km (158 miles) from its banding location. It was later found dead in Texas in Mar

1996, 1,923 km (1,194 miles) from its banding location. A hawk banded in West Virginia as an HY-F in Oct 1988 was encountered on 2 Jun 1992 after colliding with a motor vehicle (how obtained code 14) in New Hampshire, 637 km (396 miles) from its banding location. This hawk was then encountered again (how obtained code 3, caught due to injury) the next day in Vermont, 670 km (416 miles) from its banding location. The present condition code for both encounters (7, released alive, band left on bird) suggest that the bird survived its injuries at least temporarily.

Birds banded before 1960.- Two-hundred sixtyeight Cooper's Hawks banded before 1960 have been encountered (each was encountered once). Sex was identified for 86 (34 males, 52 females). One-hundred ninety-eight were aged as L, HY, or J (obsolete code for "juvenile," most likely meaning HY), 34 were aged as AHY or SY, and the remaining 36 were aged as U. The earliest banding date and earliest encounter date was Jul 1920 for an HY-U banded in Pennsylvania and shot (how obtained code 1) in Apr 1922 in North Carolina, a distance of 803 km (499 mi). The oldest hawk banded before 1960 and later encountered was a J-U banded in Jun 1944 in New Jersey and encountered (how obtained code 20, caught due to disease) in Jun 1951 (minimum age at encounter 7 yr 0 mo) also in New Jersey, 124 km (78 mi) from its banding location. The greatest distance between banding and encounter locations was 5,538 km (3,441 mi) for a J-U banded in Jul 1933 in Manitoba and shot in Colombia in Jan 1938.

Acknowledgements.— I thank the more than 1,230 permit holders who have banded Cooper's Hawks over the decades, all the individuals who reported encounters, and staff at the Bird Banding Lab for supplying the data. Steven Gabrey

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