Hitchcock Nature Center Hawk Watch and Banding Project, 2007

Mark Orsag

SEASON IN SUMMARY—THE YEAR OF THE VULTURE

This was not a good season according to the numbers. The flight of 9,273 raptors and vultures of nineteen species, though average in diversity, was the worst ever for total raptors and vultures counted in the five years of full coverage at the Hitchcock Nature Center (HNC) hawk watch. This decline occurred despite a record 774 hours of coverage and a runaway record flight of Turkey Vultures (over 4,000). We only counted 12 raptors/vultures per hour in 2007, another record low for the hawk watch. The counts for Swainson's Hawks, Red-tailed Hawks, and Bald Eagles were particularly disappointing. In all, ten species of raptors posted record low counts for the full coverage era at the HNC, while six more turned in below average counts. Three new season records were set, however, (with one other species posting an above average count for 2007) along with three new day records (the day records were all set on 7 Oct).Once again this season, the weather patterns didn't help us. The lack of fronts in September followed by stalled fronts, clouds, rain, and fog in October definitely depressed totals at some key times during expected peak months of the HNC season.

Despite the slow flight and often miserable weather, our volunteers and our excellent paid counter Libbey Taylor staffed the watch every day between 1 Sep and 20 Dec. Libbey took over the counter's job, after our first hire failed to work out, under very difficult circumstances in mid-Sep. She learned fast and did a stellar job. On her last day on 14 Dec, a number of HNC volunteers turned out to see her off on what

Figure 1. Jori How, Libbey Taylor (in front), Mark Orsag, Elliot Bedows, and Jerry Toll at Hitchcock Nature Center Hawk Watch Tower, 14 December 2007. Photograph by Fritz Davis, Omaha, NE.

was one of the coldest parties in history (Figure 1). A subadult Golden Eagle joined in too (circling the tower for five minutes)—a fitting sendoff. We also, despite a general lack of adequate resources, began a banding program for a few weeks this year, largely thanks to the boundless energy, expertise, and enthusiasm of Jerry Toll (see results at end).

SEASON IN DETAIL

August

Eight days of counting in the last two weeks of August produced a solid start to the 2007 season with 143 raptors and vultures of 10 species recorded. An immature Mississippi Kite found by Sandy Reinken on 26 August was the bird of the month. By the end of the month, immature Turkey Vultures were beginning to push south in respectable numbers. Winds were mostly southerly with temperatures in the 80s and 90s. A weak cold front on 29 August brought the best day of the month: a mixed flight of mostly vultures (20), buteos (25), and kestrels (9) that totaled a surprising 56 birds for counters Jason McMeen and Jerry Toll. Two days later on 31 August, 23 Turkey Vultures tacking into moderate southerly winds were joined by two Cooper's and two Red-tailed Hawks.

September

Due to the dearth of Red-tailed and Swainson's Hawks recorded in September 2007, the month was (by a small margin) the worst September in HNC full coverage history. The month was dominated by south winds and Turkey Vultures; cold fronts were few. As is often the case, the first week of September was quite slow in overall numbers with immature vultures predominating. The flight picked up on 11 Sep with a flight of 107 birds of nine species for counters Jerry Toll, Jason McMeen, and Chad Graeve. This sunny day with light NNW winds seemed conducive for Turkey Vultures (39), Sharp-shinned Hawks (25), and Red-tailed Hawks (21).Very steady good numbers began on 19 Sep and continued through the end of the month with only one day (26 Sep) producing a count of less than 100 vultures and raptors.

The three best days in this long, consistently good stretch were 21, 23, and 30 Sep. On the 21st, a mild, partly cloudy day with light WNW winds, Fritz Davis, Jerry Toll, and Sandy Reinken observed a flight of 235 vultures and raptors of eleven species. Turkey Vultures (58) and Broad-winged Hawks (73) dominated the flight, which was also highlighted by two Merlins, four Peregrine Falcons, and an adult Mississippi Kite. Two days later, on a hot sunny day with strong SSW winds, the birds were much lower and closer for counters Sandy Reinken and Mark Orsag. Turkey Vultures (162) dominated this flight with accipiters (30 total), buteos (56 total), and Ospreys (6). The last day of Sep produced the month's largest flight as strong southerly winds and partly cloudy skies ahead of a promised (but never arriving) cold front produced yet another low-altitude, vulture-dominated flight for Sandy and Mark. Turkey Vultures (278) comprised approximately 70% of the 398 bird/11 species flight. Swainson's Hawks were the next most common species with a count of 43—a very disappointing number as a big flight had been expected. It was a strong day for falcons: seven American Kestrels, four Merlins, and eight Peregrine Falcons. The stalled front that day, however, probably caused the main mass of Swainson's Hawks to bypass HNC, which decreased the season totals.

October

October started off with what we had missed the day before—Swainson's Hawks. The first day of October was a mild sunny day with a slight westerly breeze. Swainson's Hawks (223) passing the tower that day were joined by 56 Turkey Vultures and a few other raptors for counters Libbey Taylor and Jason McMeen, for a total of seven species of 317 raptors and vultures. For the next five days, a repetitive pattern of vulture-dominated flights totaling between 200 and 252 birds occurred. On 7 Oct, a powerful cold front in the afternoon caused strong SSE winds to turn into strong NW winds, and the best flight of 2007 at HNC occurred. Mark Orsag and his Welsh Terrier Griffin were alone on the tower for much of the day, though Jerry Toll (who was in the banding station to the north of the tower) helped Mark count the vultures and raptors that poured through (particularly after the frontal boundary had gone past). By the time the sun set and the last swirling kettle was counted, 824 vultures and raptors of 13 species had been recorded. New HNC day records had been established for Turkey Vultures (512), Red-shouldered Hawks (3), and Merlins (8). Many Sharp-shinned (97), Cooper's (36), and Red-tailed Hawks (123) had also apparently liked riding the frontal boundary south past the HNC that day.

The second best flight of the fall occurred on 8 Oct, a sunny day with light WNW winds. A flight of 457 vultures and raptors of eleven species observed by counters Libbey Taylor, Jori How, Jason McMeen, and Jim Meyer was dominated by Turkey Vultures, with decent showings by Sharp-shinned (45) and Swainson's Hawks (44). Merlins (4) and Peregrine Falcons (2) were also seen, as were an impressive 5,150 Franklin's Gulls and 6,108 Double-crested Cormorants. Shortly after that, however, two fronts stalled over the Council Bluffs area and rain, fog, and clouds took a heavy toll on the raptor flight during this annually crucial middle section of October. The counts of Northern Harriers, Sharp-shinned Hawks, and particularly Red-tailed Hawks were greatly decreased and the whole HNC raptor flight never truly revived. October's last real hurrah occurred on 21 Oct when a strong cold front with howling WNW winds finally broke the pattern. A flight of 373 raptors and vultures of eight species was dominated by Red-tailed Hawks (296), a good late showing by Turkey Vultures (34), and a Merlin and an adult Red-shouldered Hawk being the best birds of the day for counters Mark Orsag and Sandy Reinken. While not the worst ever October during the HNC full-coverage era, October 2007 was well below average overall despite the explosion of Turkey Vultures during the first week of the month.

November

November 2007 was the worst November in the HNC history. The very poor totals for Bald Eagles, and also for Northern Harriers and Sharp-shinned Hawks, helped keep totals for the entire month below 1,000 raptors. While November had its share of precipitation, fog, and clouds, the weather didn't seem to have been as much of a negative factor as it had been in October. There were a number of promising days, but the birds simply didn't seem to be there. Daily totals never exceeded 70 birds for the entire month with the exception of 28 Nov. A perfect cold, partly sunny, late-season day with gusty NW winds, the 28th produced a 132 raptor/five species flight for Libbey Taylor, Don Paseka, and Jerry Toll. Bald Eagles (73) and Red-tailed Hawks (50 [with several morphs/forms seen]) predominated. They were joined by three Sharp-shinned Hawks,

two Rough-legged Hawks, and two Golden Eagles. A rare, strong Snow Goose flight of 3,500 was also seen that day.

December

December 2007 was well below average in total numbers of raptors (315) and very disappointing in the very low Bald Eagle count (133) that actually lagged behind the Red-tailed Hawk count for the month (145), something that hadn't happened at HNC during the full-coverage era before. November did feature some excellent birds though—a Ferruginous Hawk, a Prairie Falcon, and two Golden Eagles along with 15 Rough-legged Hawks. December began with a snow-out day on 1 Dec. With winds gusting from the NW at 13–31 mph and temperatures in the 20s on 2 Dec, warmly dressed hawk watchers Jerry Toll, Mark Orsag, Bill Johnson, and Sandy Reinken counted a steady flight of Bald Eagles (51) and Red-tailed Hawks (48) that were joined by a lone Northern Harrier and a single American Kestrel for a total of 101 raptors of four species. After the 2nd, however, daily counts never reached 40 birds. Stan How, Clem Klaphake, and Jerry Toll closed out the season with a single Northern Harrier (an odd last bird for a very disappointing fall season) on 20 Dec.

SPECIES ACCOUNTS

Black Vulture (0). This species, which was seen at HNC in September of 2002 and August of 2005, again failed to make an appearance in 2007.

Turkey Vulture (4,004). A truly massive new season record was 31% above the five-year average at HNC. The nearly constant southerly winds in September and early October were clearly a big factor, and Turkey Vultures tacking south through the Loess Hills were a constant presence in the early season. Sometimes they kettled, but more often they moved steadily and singly in almost assembly-line type fashion (one visible behind the other). October was, once again, the best month as the Turkey Vulture flight continues to shift later into the season each year. A record 512 Turkey Vultures were counted on 7 Oct. Two late individuals were seen headed south two days apart in November, with the last being recorded on 15 Nov.

Osprey (94). The Osprey count rebounded from a truly dismal 2006 total of 73, but this was still well below 2004 and 2005 when an average of 174 Ospreys per year were recorded. The count was also 19% below the five-year HNC average of 116. One must also note that the conditions were quite favorable for Ospreys this past year at the HNC, as they (like Turkey Vultures) often use the Loess Hills updrafts to tack their way south on days with moderate-to-strong southerly winds. September was, as always, the top month for Ospreys at HNC. The first two birds were recorded on 28 August, the last was seen on 13 Nov. The peak flight of 12 occurred with quite normal timing on 20 Sep.

Bald Eagle (443). Of all the "worst ever" counts this year, the 46% below-average total for the Bald Eagle was the most perplexing. There were plenty of good fronts in November and December, but there wasn't an abnormally early freeze of lakes and rivers. Conditions should have been ideal, and, by all accounts, Bald Eagle populations are increasing continent-wide. The problem for the HNC may be the increasingly westward-shifting path of the Snow Goose migration. Migrant Bald Eagles traditionally follow this food source, and

now relatively few snow geese are using areas such as DeSoto National Wildlife Refuge northwest of the HNC as fall stopovers. Despite the record low count, flight timing was normal in every way. The first Bald Eagle appeared on 3 Sep, and the high count of 73 occurred on 28 Nov. November was once again the best month for this species.

Northern Harrier (210). This species had another worst-ever species count for the full coverage era at HNC and was 27% below average. The first harrier was recorded on 24 August with the last southbound bird recorded on 20 Dec. The peak flight of 17 occurred on the 2007 season's best day, 7 Oct. October was, as usual, the best month despite some very bad weather during the traditional peak of the harrier flight in mid-Oct. At least one wintering bird remained in the area at the end of the season.

Sharp-shinned Hawk (766). This species was another worst-ever for the full coverage era, with the 2007 count being 24% below average. We wouldn't have guessed this result after a surprisingly fast start to the sharp-shinned flight in early September; 46 were counted on 9 Sep and another 25 two days later on 11 Sep. Other than a slightly late peak flight of 97 on 7 Oct and an echo flight of 45 the following day, however, the 2007 season proved to be a very disappointing one indeed for these small accipiters at the HNC. As with the Red-tailed Hawk and the Northern Harrier counts, poor weather in mid-Oct probably had a detrimental effect on the 2007 count for this species. The first sharp-shinned was counted on 28 August, and the last on 14 Dec (though some wintering birds remained in the area). Despite the fast start in September, October was the best month for sharp-shinneds at the HNC in 2007. There was some speculation among HNC's counters that low-flying sharp-shinneds tacking into the prevailing southerly winds were not easily visible from the tower and were being missed behind the East Ridge and the East Spurs, but the above average 2007 totals for the similarly behaving Cooper's Hawks seem to belie this hypothesis. We have also learned to watch the "backdoor" area near the old Badger Hill observation point to spot these often low-flying accipiters on south-wind days; many birds not seen while approaching the tower were indeed counted after passing it. We didn't consistently age birds, but the sharp-shinned flight seemed to have relatively few immatures this year.

Cooper's Hawk (259). The Cooper's Hawk was one of only four species to post above average totals at HNC in 2007. The autumn flight was 16% above average, and it was the second best total for this species in the HNC hawk watch history (behind only the 273 Cooper's Hawks recorded in 2004). This species also breeds and winters at the the HNC. The peak flight of 36 Cooper's Hawks occurred on 7 Oct. This was the first time ever at HNC that October was the peak Cooper's Hawk flight month—another indicator of a broad spectrum trend toward somewhat later migration among a number of early season migrants at the HNC.

Northern Goshawk (2). A full coverage worst at HNC, the Northern Goshawk count was 64% below average. An immature bird was seen on 11 Oct and an adult was sighted on 15 Nov. This is quite a rare species at HNC, however, so it is difficult to draw many conclusions about its migration or population status.

Red-shouldered Hawk (4). Despite an HNC day record three Red-shouldered Hawks on 7 Oct, this season's count was yet another HNC full coverage worst (31% below average). The remaining bird was recorded on 21 Oct. The migratory timing of this rare (at HNC) species has been quite unpredictable over the years, and this year continued that

trend. The birds recorded on the 7th were two immatures and one bird of indeterminate age. The bird recorded on 21 Oct was an adult.

Broad-winged Hawk (511). Though it was the second highest count of the full coverage era at the HNC for Broad-winged Hawks, the 2007 flight total was actually 19% below average due to the distorting effects of the massive 2005 flight (1,682 birds), which was very unusual for HNC. In 2007, for the first time ever at HNC, the total of Broad-winged Hawks exceeded the total of Swainson's Hawks. The first two Broad-winged Hawks were recorded on 19 August. The last two broad-wingeds were recorded on 8 Oct. The peak flight of 137 birds occurred on 22 Sep. September was the best month. Two dark-morph broad-wingeds were seen in 2007 at HNC.

Figure 2. Harlan's Red-tailed Hawk, Pottawattamie,*19 October 2007. Photograph by Jerry Toll, Omaha, NE.*

Swainson's Hawk (419). The 2007 flight of Swainson's Hawks was 75% below the HNC average. This was less than half of the total recorded in the (previously) worst full coverage season (2003). It was less than one-eighth the number of Swainson's Hawks recorded at HNC during the record-setting 2005 season. It was less than the total recorded in many of the partial coverage seasons before 2003. In a very poor 2007 season, these numbers, along with those of Red-tailed Hawks, were greatly decreased from previous seasons. The main movement of Swainson's Hawks over the eastern Great Plains seems to have taken place west of HNC in 2007. A cold front predicted to come through on 30 Sep stalled in the Missouri River Valley area while winds immediately to the west shifted around to the north (and anecdotal evidence suggests that the birds did follow the frontal boundary through eastern Nebraska). The peak flight of 223 Swainson's Hawks at HNC occurred the next day on 1 Oct. The first Swainson's Hawk was recorded on 29 August, and the last 44 were recorded on 8 Oct. No dark morph Swainson's Hawks and just one rufous morph Swainson's Hawk were recorded in 2007.

Red-tailed Hawk (2,269). If there was one species that we could always count on for big numbers at HNC, it was the Red-tailed Hawk—that is, until 2007. The fall 2007 total for Red-tailed Hawks was 32% below average. While the red-tailed migration had a slow start in September, stalled fronts with rain, fog, and low-lying clouds plagued HNC during a ten-day period (10–20 Oct). During this normal peak red-tailed migration in most seasons at HNC, the watch recorded only 266 Red-tailed Hawks. The average for the two preceding seasons for the same period had been 1,505 red-taileds. When strong north

winds finally broke through and the rain held off on 21 Oct, the 2007 peak flight of 296 red-taileds was recorded. Six Krider's, 25 Harlan's, two Harlan's light morphs, 28 western dark morphs, two western rufous morphs, and 20 dark-morph indeterminate red-taileds were recorded this season.

Rough-legged Hawk (22). The 2007 Rough-legged Hawk total at HNC was slightly higher than the record low posted in 2006, but it was still 30% below the five-year full coverage average at the HNC. The first rough-legged was seen on 15 Nov, and the peak flight of five occurred on 16 Dec. December was the peak month. Six dark-morph rough-leggeds were recorded; this amounted to 27% of the 2007 flight at HNC. This is a higher percentage than HNC normally records, and it may suggest that birds from the eastern North American Arctic (where dark-morph rough-leggeds are a much higher percentage of the population than in more western regions) constituted a higher proportion of 2007's flight.

Ferruginous Hawk (1). A lone juvenile dark morph was recorded on 9 Dec. This count is 38% below the four-year average, but given the rarity of this species at HNC, this result is not statistically significant.

Golden Eagle (13). This was another poor year for this species at the HNC (33% below average); after an even worse one in 2006. The first Golden Eagle was spotted on 12 Oct. November was, as usual, the top month, and peak flights of two occurred on three dates—22 Oct, 28 Nov, and 14 Dec. This multiple peak-flight phenomenon, for unknown reasons, has repeatedly been a distinguishing feature of the Golden Eagle flight over the years at HNC. The last two Golden Eagles recorded in 2007 at HNC were those seen on 14 Dec, and none appeared to be wintering in the area this year (as had been the case in some recent years).

American Kestrel (122). The American Kestrel count bested the very poor 2006 total (107), but was still the second worst count in the full coverage period at HNC for this species. Thus, there is no real evidence of a reversal of the pattern of decline that this species has exhibited at HNC. Many of the best seasons for this species at HNC actually occurred when the watch was far less systematically covered than is currently the case. For example, in only 426 hours of coverage in 2002 (as opposed to 774 hours in 2007), the HNC hawk watch recorded 224 American Kestrels. The only other species that show a remotely similar pattern are two rare and irruptive (from opposite directions geographically) migrants—the Northern Goshawk and the Mississippi Kite—and those species posted higher totals in only one pre-full-coverage year (2000). The 2007 count for American Kestrels was 6% below the full coverage average. The first migrant kestrel was recorded on 24 August, and the last on 18 Dec (though a few wintering birds remained in the area past that date). The shallow peak flight of 11 occurred just a bit early on 7 Sep.

Merlin (36). One of the few bright spots this year, the 2007 Merlin count constituted a new season record and was 23% above average. The first Merlin appeared on 13 Sep, and the last was recorded on 19 Nov. Merlin migration was slightly later (a bit more centered in October) than usual. The peak flight of eight on 7 Oct was a new day record. The south winds in early October probably helped the count a bit as did the little falcons' interest in the banding station and its lures (though no Merlins were trapped). This probably slowed them down a bit and made these "pocket rockets" a bit easier to spot. As usual, both *columbarius* and *richardsoni* individuals were recorded.

Peregrine Falcon (46). This count was another new season record for the HNC at 25% above average. This strong count (as with the Merlins) was probably due to the nearly constant south winds in September and early October, which probably encouraged more peregrines to seek a bit of extra lift from the updrafts of the Loess Hills as they powered and tacked their way south. The first peregrine was spotted on 7 Sep, and the last was seen quite late on 23 Nov. September was the peak month, and the daily high counts of eight were recorded on 20 and 30 Sep. As usual, both ***tundrius*** and ***anatum*** birds were recorded.

Prairie Falcon (2). This western species posted a very poor total (57% below average) with one immature bird seen harassing a Northern Harrier on 28 Oct and an adult bird powering past the watch on 13 Dec. This was the lowest total for this species in the full coverage period at HNC.

Mississippi Kite (2). After being missed entirely in 2006, this rare southern species once again graced the HNC hawk watch in 2007 with an immature appearing on 26 August and an adult on 21 Sep. Still, the 2007 count was 73% below the five-year average.

NONRAPTOR FLIGHT

Waterfowl, Shorebirds, Wading Birds, and Gulls

The nonraptor totals were inconclusive this year due to the mid-season change in counters and a series of new protocols regarding nonraptors. We finally think that we have this perfected, which will allow us to produce more informative data in the future. For 2007, a list of notable numbers or individual sightings must suffice. Double-crested cormorants produced two big flights this year: 3,000 birds on 30 Sep and 6,108 on 21 Oct. A late Great Blue Heron was notable on 15 Dec, a laggard Great Egret headed south on 6 Nov, and Sandhill Cranes made two appearances at HNC this year with four seen on 21 Oct and nine seen on 16 Nov. A lone Bonaparte's Gull appeared on 28 Oct, a Common Snipe winged by on 3 Nov, and Franklin's Gulls produced a rather shallow peak flight of 5,150 on 8 Oct. Snow Goose numbers are, in the words of Jerry Toll, "absolutely pitiful" now at HNC—a shadow of the sky-filling flights that we used to see. Their flight peaked with a meager 8,470 on 30 Nov; three Ross's Geese accompanied their larger cousins that day. American White Pelican numbers were so feeble that no notable flights of them were recorded in 2007 at HNC.

Passerines and Corvids

Blue Jays were seen in big numbers this year with a huge peak flight of 4,000 on 25 Sep. American Crows, on the other hand, posted extremely poor numbers, peaking with a meager flight of 1,030 on 23 Oct. On 7 Oct, 24 Common Nighthawks were spotted. November produced the nonraptor sighting of the 2007 HNC season when Eliot Bedows, Jori How, Jason McMeen, and Libbey Taylor saw the first Common Raven ever recorded at the HNC on 9 Nov. Two days later on 11 Nov, a flock of nine Red Crossbills passed within 15 feet of the tower and an Orange-shafted Northern Flicker was seen 40 minutes later.

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Raptor Banding at Hitchcock Hawk Watch, 2007

Jerry Toll

DIURNAL BANDING

In conjunction with HNC, a raptor banding station was opened this season to expand our knowledge of the HNC migration. By collecting morphological data on individuals, the HNC will have a better understanding of age and sex ratios and the overall health of the migrants. This new program will provide a platform for future raptor research and educational opportunities.

Results

Diurnal banding began on 25 Sep and continued during the peak migration period, which is the entire month of October. The effort consisted of 30 banding days and 161 hours. Three species were banded for a total capture of 37 birds:

Five Sharp-shinned Hawks
- one male hatch-year
- four females, two hatch-year and two after-hatch-year

Nine Cooper's Hawks
- five males, three hatch-year and two after-hatch-year
- four females, one second-year, one after-second-year, and one after-hatch-year

Twenty-three Red-tailed Hawks. Sex cannot be determined in the fall.
- Age: Sixteen hatch-year, one second year, and six after-hatch-year.
- Forms: One Harlan's (Figure 2), one Krider's, four westerns, and nineteen easterns.

Discussion

The low capture rate was disappointing, but a number of the underlying reasons are correctable. The first season of a new raptor banding station is mostly a learning experience. Each site is unique and must be improved to become more efficient. Equipment is tested

Figure 3. Northern Saw-whet Owl, Pottawattamie*, 27 November 2007. Photograph by Jerry Toll, Omaha, NE.*

and refined during the initial season. The first season was shortened and was not initiated until peak season for buteos and accipiters, and the site was only opened for a month due to limited funding. The accipiter capture rate was particularly low due to a lack of foresight on my part. Other influences on capture rate are beyond the control of the bander. Weather greatly influences raptor movement. It influences not only whether raptors will be concentrated on the Loess Hills ridgeline, but also what track they take along the ridgeline. The HNC is set up to identify raptors up to four miles distant in any direction. The banding station is much more limited in its scope of influence. Raptors could be seen more than a mile distant from the station, but the highest response rate is by those closer and flying at low or medium heights. A detailed discussion of the influence of weather patterns on the fall migration can be found in the rest of the HNC report.

NORTHERN SAW-WHET OWL BANDING

While Northern Saw-whet Owls had never previously been found at HNC, discussions with banding instructors at both Hawk Ridge (MN) and in the Sandia Mountains (NM) suggested that Northern Saw-whet Owls are probably using the Loess Hills as a nocturnal migration route. This species, however, is not easily detected because of their nocturnal and secretive habits. Therefore, their population-range limits need to be further tested. When diurnal banding ceased, it was decided to see if they were occurring at the HNC as a prelude to expanding the program to include Saw-whets. Four evening sessions occurred between 11 and 27 Nov lasting 4 to 5 hours each for a total of 18 hours of effort. The phenology of saw-whets for latitude 40–45 degrees north is 1 Oct–1 Dec; therefore, the sessions were probably post-peak to late season attempts. The sessions were timed to maximize results by banding on dark moonless nights with moderate northerly tail winds. The skewed capture rate is somewhat offset by using heavier mist nets that allows smaller saw-whets to escape and with a less than recommended net array.

Results

Seven Northern Saw-whet Owls were captured (although one escaped on approach), resulting in six being banded (Figure 3):

- Sex: Five females and one could not be reliably sexed.
- Age: Four hatch-year, two after-hatch-year.

Discussion

All of the captures were in the lower half of the mist net. Four of the captures were in

the end nets furthest from the taped recording; three were in the middle nets, but one net away from the recording. The lack of the smaller males captured suggests that perhaps they were able to extricate themselves before net-checks. The high capture rate, particularly late in the season, suggests that saw-whets occur frequently in the Loess Hills and this merits continued research.

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