

CLEVELAND REGION

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a n d

The Kirtland Bird Club

THE CLEVELAND REGION

The Circle Has A Radius of 30 Miles Based on Cleveland Public Square

- 1 Beaver Creek
- 2 North Amherst
- 3 Lorain
- 4 Black River
- 5 Elyria
- 6 LaGrange
- 7 Avon-on-the-Lake
- 8 Clague Park
- 9 Clifton Park
- 10 Rocky River
- 11 Cleveland Hopkins Airport
- 12 Medina
- 13 Hinckley Reservation
- 14 Edgewater Park Perkins Beach
- 15 Terminal Tower
- 16 Cleveland Public Square Cuyahoga River
- 17 Brecksville Reservation
- 18 Akron Cuyahoga Falls
- 19 Akron Lakes
- 20 Gordon. Park Illuminating Co. plant
- 21 Doan Brook
- 22 Natural Science Museum Wade Park
- 23 Baldwin Reservoir
- 24 Shaker Lakes
- 25 Lake View Cemetery
- 26 Forest Hill Park
- 27 Bedford Reservation
- 28 Hudson
- 29 Kent



30 Lake Rockwell 31 White City 32 Euclid Creek Reservation 33 Chagrin River 34 Willoughby Waite Hill 35 Sherwin Pond 36 Gildersleeve 37 North Chagrin Reservation 38 Gates Mills 39 South Chagrin Reservation 40 Aurora Lake 41 Aurora Sanctuary 42 Mantua 43 Mentor Headlands 44 Mentor Marsh 45 Black Brook Headlands State Park 46 Fairport Harbor 47 Painesville 48 Grand River 49 Little Mountain Holden Arboretum 50 Corning Lake 51 Stebbin's Gulch 52 Chardon 53 Burton

- 54 Punderson Lake
- 55 Fern Lake
- 56 LaDue Reservoir
- 57 Spencer Wildlife Area

CLEVELAND METROPOLITAN PARK SYSTEM

PORTAGE ESCARPMENT (800-foot Contour Line)

THE GLEVELAND BIRD CALENDAR

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SUMMARY OF WEATHER CONDITIONS From U. S. Weather Bureau Reports (Cleveland Hopkins Airport)

June -	Moderately warm, sunny, and very dry.
July -	Although average temperature of 71.3° was about normal, new lows were set on the 4th., 5th, 10, and 11th, Precipitation was again below normal for the 7th consecutive month,
August -	With average temperature of 66.7°, this was the coolest August since 1927 and the 3rd coolest on record. Sunshine hours amounted to only 57% of possible. For the 3 summer months, rainfall totaled 5.51 inches which was 4.51 inches below normal, making this one of the driest summers in the history of the weather bureau.

THE COVER: We are greatly indebted to John Lehling, art director for the Pennsylvania Refining Company of Cleveland, for the attractively designed and skillfully executed cover which will now be a standard feature of The Cleveland BIRD CALENDAR. We are grateful, too, to William Klamm for arranging to have the cover prepared. - The Editors

> All records, observations, and comments should be sent to Donald L. Newman 14174 Superior Road., Cleveland, Ohio 44118

COMMENT ON THE SEASON

Although we have no date for measuring the success of nesting birds this summer, it would appear that the weather was favorable to the rearing of young. Certainly the extreme dryness and coolness precluded a high nestling mortality from either excessive heat or extended wet weather, probably the two principal causes of death of young in the nest. More easily determinable then nesting success were the beginnings of migration, which will be discussed below.

<u>Shorebirds</u>. A phenomenon which has escaped the notice of most observers is the congregating of large numbers of adult Spotted Sandpipers along Lake Erie in early July. This year the "return influx was well underway on July 6,...and it was seemingly sustained for a more lengthy period then usual with more than 50 being observed on the breakwall at Cleveland on July 21 through a survey by boat" (Klamm).

At White City "first returning shorebirds" were recorded on July 10, when three Semipalmated Sandpipers were seen, and on the following day a Dowitcher appeared (Carrothers). Numbers and variety of birds gradually increased until by the end of July some 14 species had been observed in the region, including a dozen Dowitchers "in spring plumage" on July 30 at Nimisila Reservoir, where there was a large assemblage of 'peeps' and other shorebirds (Hjelmquist). In August the influx continued, an early and unusually large flock of 11 Ruddy Turnstones at White City on the 4th being particularly notable. At Cleveland-Hopkins Airport, where Upland Plovers have gathered in considerable numbers in August in other summers the high count was only 16 birds on the 17th (Stasko). Perhaps, however, the parched condition of the short grass caused the birds to feed in areas beyond the range of observers.

<u>Gulls and Terns</u>. Along the lakefront at Cleveland the first sizable number of Herring and of Ring-billed Gulls was recorded on July 21, when an estimated 2,500 were observed. By August 4 this number had about doubled, and some 1,100 Bonaparte Gulls were also present. Thereafter to the end of August, Herring and Ring-billed Gulls became less numerous, while the Bonaparte's grew more abundant, with an estimated 2,900 along the lakefront on the 31st (Klamm).

No Common Terns were reported anywhere in the region until August 10, when an estimated 1,000 birds 'were observed at Headlands State Park (Booth). This was the only large flock reported. The Caspian Tern was first observed on August 10 along the lake at Cleveland, and a few (as many as ten) were recorded regularly to the end of the month. A fairly sizable movement of Black Terns occurred on August 3, with about 300 being recorded off Lakewood Park (Klamm).

<u>Nighthawks and Swallows</u>. Flocking of Common Nighthawks was reported as early as July 26, when 20 to 30 birds were observed feeding over a semi-wooded area in Pepper Pike Village (Raynes). The first migrant flight was recorded on August 20 as 14 birds

flew south over Shaker Heights at 3:00 p.m. (Tramer). In Lorain County near Grafton, migrant Nighthawks were noted on the evening of August 21, "when about 15

passed over in the company of 100 Purple Martins", while on the 22nd "five Cliff Swallows accompanied the Martins and Nighthawks" (Morse). During the last ten days of August the Nighthawk population built up in many areas throughout the region, but it did not appear that migration was actually underway, at least not on a wide front. The largest group reported consisted of 200 birds "milling around above the woods on the Lake Erie College campus in Painesville on August 31" (Maynard Allen <u>fide</u> Booth).

"Large flocks of Purple Martins were observed during the last week of July along the lake road from Lorain to Willoughby" (Martin). Near the Spencer Wildlife Area a flock of approximately 500 Martins was observed on August 9, and "there were large flocks still in that area on August 24" (Barber). Sizable flights moving westnorthwest were noted over western Lorain County and over Medina County late in the afternoon of August 11 (Klamm), By far the largest local congregation of Martins - an estimated 1,000 birds - was observed on August 29 in the City of Rocky River (Stasko)

<u>Warblers and Other Passerines</u>. Among the warblers the earliest migrants sighted were a male Chestnut-sided and a Blue-winged feeding together in Forest Hill Park, Cleveland Heights, on July 21 (Newman). Not until the weekend of August 24-25, however, was a fair number and variety of migrant warblers and other southbound passerines observed generally in the region. Thereafter to the end of August the flow of birds increased. At Waite Hill on the 28th good numbers of warblers particularly Wilson's - appeared together with Warbling and Red-eyed Vireos, Baltimore Orioles., and Rose-breasted Grosbeaks (Flanigan).

<u>New Occurrence Dates</u>. For annotation in "Birds of the Cleveland Region" are the following new earliest fall dates of occurrence:

<u>Black-bellied Plover</u> (2) - July 30, Nimisila Reservoir (Hjelmquist) Lincoln's Sparrow (2) - August 11, Lakewood Park (Klamm)

NOTEW0RTHY RECORDS

<u>Yellow-crowned Night Heron</u> - (1) An immature bird was photographed at mid-day on July 27 in Rocky River Reservation, where, after rousing from a nap, it began to hunt among some logs in the river (Klamm). (2) In Lorain County, near Grafton, a fully adult bird appeared on July 16 in the vicinity of a residence on the Black River, and "it was seen daily thereafter until July 31. The bird seemed to have a fairly well-established routine and could usually be seen feeding in the river for several hours in the morning (typically 8:00 to 11:00) and again for several hours in the evening (6:00 to 9:00). Where it spent the afternoon and night was not determined. It was never seen to eat anything other than crayfish, but did eat a prodigious number of them. Small ones were swallowed whole immediately, while large ones were passed from side to side in the bill several times, apparently to crush the shell, and then swallowed whole. On one occasion the bird was seen to lift one foot and move it slowly out to the side

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and then forward and back. After one such cycle it alternated feet and continued this motion, occasionally taking a step forward. This technique wag apparently successful since it resulted in catching a crayfish. The bird was quite approachable and several times was studied at 50 to 60-foot range" (Morse).

<u>Bald Eagle</u> - The fully adult bird which arrived at Sherwin Pond, in Waite Hill on May 31 remained much of the following day, flying about and perching in the pond area (Sherwin and Flanigan).

<u>Osprey</u> - There were three June records: (1) on the 1st at Waite Hill, a bird which had appeared the day before and which was harassed by a Bald Eagle [see above] (Flanigan); (2) at Cloverdale Lake, south of Painesville, one - perhaps the Waite Hill bird- was present from about the 2nd to the 8th (Carl Newhous <u>fide Booth</u>); (3) on the morning of the 20th one was sitting in a dead tree in Rocky River Reservation (Ackermann).

<u>Piping Plover</u> - (1) For at least three days - August 4-6 - a single bird van among a large company of shorebirds gathered at Nimisila Reservoir (Hjelmquist). (2) At Lorain Harbor 15 birds were studied for over an hour on the morning of August 24, as they fed on the mud flats and sand bars inside the west breakwall, where many Semipalmated Plover, Killdeer, and Semipalmated Sandpipers were also feeding. These birds "may have been driven ashore by the strong, cold northwest wind and sought shelter behind the sea wall" (Wallen). Never before in the present century has so large a number of this rare migrant been reported.

Knot - One was observed at Nimisila Reservoir on August 16 (Barber).

<u>White-rumped Sandpiper</u> - One bird, still in spring plumage, was identified on August 24 at LaDue Reservoir in Geauga County (English).

<u>Stilt Sandpiper</u> - Two birds were present at Nimisila Reservoir on July 30 (Hjelmquist), In August at White City one bird in fall plumage was recorded on the 24th; and one in changing plumage on the 30th (Carrothers).

<u>Great Black-backed Gull</u> - At Clifton Park lagoon two immatures were among a flock of Ring-billed Gulls flying and feeding along Rocky River on August 14, and one immature was observed farther up the river on the 18th (Ackermann). This is just the fourth summer occurrence and the first since August 1952.

Franklin's Gull - One was seen at White City on August 17 (Carrothers).

<u>Little Gull</u> - Early on the stormy evening of August 13, a single bird. its head plumage giving evidence of moulting - was studied while in flight and while it sat on the ground at Edgewater Park, where some 3,000 Bonaparte's Gulls had congregated (Stasko). Only once before, in August 1961, has this species been recorded in the summer; and there are but seven regional records in all.

<u>Forster's Tern</u> - Two were identified at Edgewater Park on August 13 (Stasko) and one at White City on August 31. (Klamm).

<u>Western Kingbird</u> - First noticed at 4:00 p.m. on August 25 on the spacious grounds of a residence in Hudson, this bird remained in the vicinity through most of the next day, during which time it was studied carefully by a number of observers. When it was first discovered, it was catching insects 30 to 50 feet above ground. These may have been honeybees from a nearby hive which was unusually active that day, many of the bees flying at that height. Later in the day, after 6:00 p.m., "it moved to lower perches, usually barbed wire fences, and caught insects close to the ground, perhaps grasshoppers" (Henderson). This is the fourth record in the history of the region and is the first August record.

<u>Carolina Chickadee</u> - For about five minutes at mid-morning on August 22, two birds were observed at a distance of 20 feet as they sang and flitted about in willow trees in a wooded area near the shore of Nimisila Reservoir. Identification was of course based upon the "completely different" four-note song (Hjelmquist and Steiner). Although there are two specimens in the collection of the Cleveland Natural Science Museum - each collected in 1935, one at Hudson and one at Aurora lake -, this is the first acceptable field record for the Cleveland region.

<u>Red-breasted Nuthatch</u> - At Holden Arboretum, in a clump of pines between Blueberry Pond and Buttonbush Bog, at least three birds were seen together, as though in a family group, on June 30; and two were seen in the same place on August 18 (Hammond). Not since the summer of 1954 has this species been reported from the Arboretum, where it has been presumed to breed.

<u>Brown Creeper</u> - For a scant minute on July 6, a bird was observed hitching its way up the trunk of a pin oak tree on the grounds of a residence in a wooded section of Cuyahoga Falls; then it departed and was not seen again (Hjelmquist).

<u>Loggerhead Shrike</u> -There were two records for this species which has now become a rarity in the region: an adult in Waite Hill on July 20 (Tramer); an adult on August 25 and 26 in Hudson, where the shrike sometimes occupied the same dead tree as a Western Kingbird [see above], the latter perching near the top and the shrike lower down (Henderson).

<u>Black-and-white Warbler</u> - A seeming pair - one of them singing - was found in the wooded bottomland of Rocky River Reservation on June 9 and 15, but could not be located thereafter (Klamm).

<u>Chestnut-sided Warbler</u> - For the third successive summer a singing male was present in a scrub-growth area off Sherman Road, Geauga County, where it was regularly observed from June 6 to July 15, though no female nor young were discovered (Carrothers). Vol. 59, No. 3

<u>Western Meadowlark</u> - At Burke Lakefront Airport, from which this species has been reported each summer since 1958, two birds were identified on June 1 and a singing male on June 30. Temporary destruction of nesting habitat probably prevented successful breeding (Klamm).

<u>Pine Siskin</u>-A solitary individual which had been a regular visitor to a feeding station in Bath since about mid-April continued to feed there until about the end of June (Hjelmquist). This is the first summer record for the region.

FIELD NOTES

<u>Nesting of Least Bittern</u>. At Spencer Wildlife Area on August 3, a Least Bittern's nest was discovered in a small tangle of dead, weedy shrubs located about 50 feet out from the shore of Spencer Lake and about the same distance from the nearest stand of cattails. The nest, which was some 18 inches above the water, contained three downy young, perhaps four to five days old, and one egg. On August 10, the three nestlings had lost almost all of their downy plumage and were perched within two feet of the nest, which was falling apart. The young were still present the following day (Klamm and Morse).

<u>Kingbird Catches Frog</u>. On June 30 at Spencer Wildlife Area, I watched an Eastern Kingbird perched in a small dead shrub perhaps 50 feet out in the lake, where the water is quite shallow and there is considerable brush whose roots were drowned when the lake was created. In the bird's bill was a frog about one and one-half inches in length. During two minutes of observation it continually beat the frog against a branch in an attempt to break it up, though to no avail. Once it dropped the frog but quickly retrieved it. Finally, with the frog still in its bill, the Kingbird flew to the far side of the shrub and out of my sight, so that I was unable to learn the outcome of this incident. -ROBERT J. MORSE

<u>Cliff Swallow Colony</u>. A thriving colony of Cliff Swallows again occupied the Richard Smith farm in Medina County this summer. Thirty nests were active, the largest number since the start of the colony about seven years ago. The colony originated with two pair of birds which built beneath the roof overhang of the barn. When their first nests fell before incubation commenced, Mr. Smith nailed up a board to serve as a ledge to support the nests. Since then the colony has grown every year. Mr. Smith attributes his success with Cliff Swallows to complete control of House Sparrows and Starlings (with a shotgun), both of which will take over the swallow nests if allowed on the premises. - ROBERT J. MORSE

Jays Raid Warbler Nests. In the Bedford Reservation on June 22, I found an unusually low nest of a Cerulean Warbler located ten feet up in a beech sapling. The nest contained four small birds which were soon carried off by Blue Jays. All of the nestlings were quickly and quietly removed within a period of 35 minutes despite my vigorous efforts to drive the Jays away. Whenever both parent warblers were absent, a Blue Jay would alight on the rim of the nest and snatch one of the young. After all of the young had been taken, the male warbler made four trips to the nest and the female seven trips in a period of 12 minutes, each time going through the motions of feeding. Then all activity apparently ceased.

During the last week of June, Blue Jays were also observed removing nestlings from two Hooded Warbler nests and one American Redstart nest in Tinkers Creek Gorge in the Reservation. Each nest was completely emptied of young. - CHARLES H. KNIGHT

<u>Observation at Waite Hill</u>. June 3 - A Blue Jay plucked a shiny aluminum marker from a plant in the garden and carried it away. Then the bird returned and tried but failed to get another.. The next day a pair of jays tried without success to carry off another marker.

June 25 to July 10 - In a tree at the edge of the woods adjoining the pond, a Rubythroated Hummingbird had built her nest at a height of about 40 feet. On June 30 she was feeding young in the nest, and on July 3 when she discovered me watching the feeding activity, she made three passes at me, coming within two feet. By July 8 the two nestlings had become quite restless, often stretching their wings and fluffing out their feathers. On July 10 the nest was empty, but one young bird was hanging head down from the edge of the nest, its feet having caught in the nest material.

July 2 - Two fledgling Yellow-shafted Flickers on the ground near the sidewalk kept up a continuous begging outcry as the mother bird busily dug for food. From time to time the young birds would flick out their tongues as though to pick something off the mother's feathers. When I looked closely, I saw that her body and head were crawling with ants.

August 24 - At early morning a Black-capped Chickadee bathed in the dew on the leaves of a sapling tulip tree by fluttering backward down several leaves, almost as though the bird were wriggling or squirming across the broad surface of the leaves. Then it perched in the tree to preen its dampened feathers. - ANNETTE B. FLANIGAN

Swifts Settle for Night. During the latter part of August there was a considerable concentration of Chimney Swifts in the chimney of the Cleveland Trust Bank Building in downtown Willoughby. I arrived at the location on the evening of August 18 as the flock was getting ready to enter the roosting spot, and I estimated there were 3,000 or more, perhaps even 5,000. My father who lives across the street from the building had not observed any such massing there before. On August 25 the flock seemed to him to be the largest he had seen; on that evening it took the birds approximately ten minutes to enter the chimney, pouring in a continuous stream. On September 2, I watched from 7:10 to 8:15 p.m., when about 1150 swifts entered the chimney - all between 8:09 and 8:11 p.m. Comparing the density of the movement into the chimney that evening with the density in August, I must conclude that the earlier flocks consisted of probably more than 5,000 birds. - WAYNE A. HAMMOND

SPRING 1963 HAWK MIGRATION OVER CLEVELAND

by

Neil Henderson

Migrating hawks ride over Cleveland on the turbulent spring winds with purpose and control. We may not be learning the workings of their brains, but we do observe the regularity in their routes through this region, and we observe how efficiently they use the shifting air. Avoiding a crossing of Lake Erie in the Cleveland area, they fly east or northeast parallel to the shoreline for many miles inland, guided apparently by terrestrial features. The great majority make the trip with a following wind, but they maintain their usual course regardless of wind direction. Some days even the floating buteos migrate with surprising speed by tacking into an opposing breeze.

The Kirtland Bird Club has for two successive years carried out a cooperative hawk-watch throughout the spring at lookouts from Lake Erie south to Akron, The results are so similar as to suggest that the hawks fly by the same rules and routes every year. We also have scattered observations from earlier years which bear this out. The results of 1963, which duplicate those of 1962 (The Cleveland BIRD CALENDAR, 58:26 33. 1962), are as follows:

- 1) The main flight was to the east or northeast.
- 2) The biggest migration occurred toward the last week of April, with a peak of 200 hawks in one day, mostly Broad-winged. This was half the total reported for the season.
- 3) Most hawks migrated on days when the wind was from the south west. Wind shifts, for example, to northerly, tended to choke off migration.
- 4) There were, however, days of southwest wind with no observed migration, and some migration did occur on days when winds were other than southwest; the flight direction remained east or north east.
- 5) At least in some locations, the hawks appeared to favor fairly narrow lanes.
- 6) A large proportion were flying very high, some over 3,000 feet.
- 7) Most were buteos, half Broad-winged. This year 15% were accipiters, most of them passing Perkins Beach April 17 and April 19 (Vera Carrothers).

It is well known that the major spring hawk migration around Lake Erie and Lake Ontario crosses into Canada principally around the eastern end of Lake Ontario. Few hawks, it is reported, enter Canada between these two lakes. Strong-flying accipiters and falcons no doubt cross by the Pelee Island route and perhaps also from Presque Isle. Although most of our accipiters were near the lake, in all of our locations they, as well as the even scarcer falcons, flew the same direction as the buteos. Therefore, we still have no evidence of any hawks crossing Lake Erie anywhere between Sandusky, Ohio, and Erie, Pennsylvania. Instead, we find them at least as far south as Akron flying parallel to Lake Erie, not approaching Lake Erie. I think we have to conclude that the hawks here in our region - buteos, in particular - anticipate no early lake crossing. Perhaps they are already heading for the eastern end of Lake Ontario, whether by instinct, experience, or extreme farsightedness.

Where do the hawks make the choice between going east or west around the lakes? All we know so far is that when they reach the Cleveland region they have chosen to go east, whatever the wind direction here. On the other hand, at Crane Creek, near Toledo, on March 21, the mass movement was to the northwest in spite of a strong southwesterly wind (Table 1). Somewhere, previously, the hawks arriving at Crane Creek had chosen to go west although to our non-hawk eyes the eastern route might have served as well.

It is from their behavior in off-course winds that we know the hawks are steering a terrestrial course. They compensate for the wind. This is very obvious when even the buteos flap laboriously in a strong sidewise wind, as many of us watched them do at Crane Creek on March 24. It is still more interesting, I think, that in a light northerly breeze buteos can move quite rapidly to the east or even north of east with hardly a wing flap. They do this by alternately spiraling on thermals and gliding straight. Each thermal, being a free-floating bubble of air, carries the hawk south, but mostly it carries him up. From a great height, with partly-closed wings, he dives out of the thermal in a long, straight glide to the northeast. He gains much forward speed by falling, enough to carry him fast into the breeze with no beating of the wings. Eventually, he takes another thermal, and so on, perhaps all the way to Canada. From the ground the net result appears to be a zig-zag course: short zigs south, long zags northeast, the net direction east or slightly north of east. From a favorable location, such as Harper's Ridge picnic ground, one can watch the procedure through one or two complete cycles.

So many hawks flew the same course over Perkins Beach and Terminal Tower last spring, missing other places such as Lakewood Park, Gordon Park, and White City, that we concluded there was a preferred lane or "track" over Perkins Beach and Terminal Tower. Other tracks turned up farther south. This spring we have prejudiced the evidence in favor of these tracks by locating observers on them. Yet continuing Vol. 59, No.3

field work keeps turning up new ones more or less by accident. Moreover, the tracks near Lake Erie are not always more heavily traveled than those inland (See Table 1: April 20). Finally, we still do not know what happens to the stream of hawks that sometimes passes over Perkins Beach (See Table 1: April 21). All things considered the track concept may be too simple.

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The foregoing article by Dr. Neil Henderson is based upon data gathered principally on weekends during the spring of 1963 by the observers listed below who were stationed at selected vantage points for the purpose of discovering the number, identity, and flight direction of hawks migrating through the Cleveland region. Note that the accompanying table indicates the <u>average</u> number of migrating hawks per hour of observation. Thus in those instances where fewer than one hawk was recorded per hour, the average is shown as zero.- Ed.

Hawk Watch Observers

Kay F. Booth Vera Carrothers James Coristine Neil Henderson Nancy Klamm William Klamm T. W. Mastin Donald L. Newman Gretta Pallister Bertram C. Raynes Robert Shaper Michael Stasko James Surman, Jr. Elliot Tramer

TABLE I

AVERAGE NUMBER OF MIGRATING HAWKS PER HOUR OF OBSERVATION

		BEACN	ROCKY RIVER	STINCH COMB MEM.	LAKE- VIEW CEME- TERY	WAEKEN SVILLE HENGHTS	HARPERS RIDGE 13	BRECKS- VILLE	VIREINIA KENDALL	24 22 23	à
										1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	35
DATE	TOTAL HAWKS			33	1. 1.	33	Sec.			WIND	
3/12	2	ain.	2.5	2.12	Sec. 4	2		2-3		W	
3/17		10	Sec	3.3	25	100	Card.	24	122	SW	2
3/24	(200)#	1.00	2.24	1.4	1993	1221	1.20	199	1.11	SW	
3/25	.7	0	104	1.0	335		1.65	12.	225	S	
3/26	0	0	12.5%	2.2	12	32	2.34	122	2.4	5	
3/30	0	0	R.C.		33	32	199		Contra 1	NE	
3/31	1	0	Start.	175	3.R.	1.25		19	2.5.3	NE	
4/4	0	0	1.24	1.1	235	14	2120	and here	122	WNW	
4/6	11	2	15.27	1.1	14.45		1	100	1.254	W	
417	4				5.55	12.5	4	2.2	22.2	NE	
4/15	1	Sec.	235	22	198	232	1		$0 \leq t_{\rm e}$	N	
4/17	8	3	1.24	Sec.	C.	1.1	4	1995	Sec.	SW	
4/19	46	15	23.5	28	12.5	12	6.32	23	22	S	
4/20	80	0	114	5	1.2	.5	5	10	7	W	
4/21	236	40	12	20	6	3	1	12.25	8	SW	
4/27	4	233	1.2.2.1	in the second	2	2-	12.7	103		NE	82
4/28	3	1.	1		2	1.20	12.5	111	2.7	SE	
514	6		5151	251	2	1	2.33		1.	5	
5/7	0	0	-32	1	1.1	1.0	1.50	Sec. 2	1.1	S	
5/8	0	0	100	2.2	-	26	182	253	23	S	10
5/14	0	0		83	12	dia.	Sent.	3.65	12.2	WNW	
5/18	2	1	1.19 h	22	Sec."	1.25	1.1.1	1995	138	W	
5/19	16	8	250	125	254	Sec. 19.	125	35	1.2	SW	

a) HAWKS MIGRATING NW AT CRANE CREEK ONIO NEAR TOLEDO b) NAWKS SETTLING FOR THE NIGHT