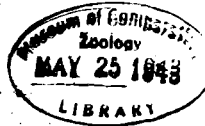


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HOMING INSTINCT IN THE DWARF COWBIRD
IN ARIZONA

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During the summer of 1942 Carlos Stannard, Phoenix, Arizona, citrus grower and bird bander, cooperated actively with the writer on certain phases of an official field assignment at his home which lies near Camelback Mountain some nine miles northeast of the State Capitol Building. During the first three weeks of May I spent considerable time at the Stannard ranch assisting him in the early phases of the work, and during the time assisted in the banding of numbers of birds, including many Dwarf Cowbirds (*Molothrus ater obscurus*).

The homing instinct of the cowbird has aroused the interest of a number of banders and bird students but to present date there has been no report on this phenomenon in the arid Southwest. Since cowbirds were so numerous as to be a nuisance about the traps, to say nothing of their depredations on the nests of other birds of the area, it was suggested that we transport some of them away from the Stannard ranch to study their homing qualities in the desert.

Beginning on May 13, 1942, cowbirds in varying numbers were taken from the traps and released at distances ranging from 4 to 110 miles. Due to the rubber situation travel was curtailed and trapped cowbirds were placed in a large holding cage where they readily took food and water until such time as there was opportunity to transport them. The liberations were made by Stannard, the writer, and some five or six other interested individuals, along routes where normal duties required their presence; no special trips were made for the purpose of liberating cowbirds.

Demands upon Stannard's time occasioned by ranch duties occasionally made it necessary for him to close his traps for from one to three days; furthermore, his traps are never operated during the heat of the day in the hotter portion of summer, but are opened for action only during the morning and late afternoon. Some of the recoveries may thus have occurred some time after the individual cowbird in question arrived back at the traps. May 13, the beginning date, is also quite late in the normal breeding season of the species in Arizona. Even with these disadvantages, some interesting results were obtained.

Cowbirds have been present in some numbers each season since Stannard began banding, and a total of 51 had been banded during the period 1937 to 1941, inclusive. Of these, eighteen had returned in succeeding seasons, seventeen the first year following banding, and one the third year after banding. Five returned for two successive seasons, two for three successive seasons. One skipped the third and returned again the fourth season after banding, and two skipped the fourth season and returned for the fifth season after banding.

It further appears from examination of his records that the cowbirds of the immediate area have a fairly wide range and are probably not daily visitors to the traps, for the records show a period of time elapsing between the normal repeat records even after making allowance for the periods that the traps are closed. Usually several days elapse between normal visits to the traps.

During the 1942 season 83 Dwarf Cowbirds were trapped and banded at the Stannard station, more than the total for the five seasons preceding. Of these, eight were recoveries from past seasons and 75 were new bandings. Of the new bandings 53 were males, 18 were females, and 4 were juveniles. The eight returns were all adults when banded.

A total of 71 individual birds were transported and liberated at points away from the banding station; a total of 144 liberations were made. Of the 71 birds moved, 43 returned at least once to the traps.

The following tabulation records the results of the liberations:

<i>Number of Returns</i>	<i>Number of Birds Moved</i>	<i>Males</i>	<i>Females</i>
Did not return from first.....	28	20	8 (2 juv.)
Returned from only one.....	25	20	5
Returned from two.....	8	5	3
Returned from three.....	7	6	1
Returned from four.....	0		
Returned from five.....	1	1	0
Returned from six.....	2	2	0

Many of the liberations were made in the Phoenix area not far from the Stannard ranch. The following tabulation lists the returns of these birds, with the airline distance accurate to within one mile; exact locations are omitted.

<i>Number of Birds freed</i>	<i>Date</i>	<i>Distance and Direction</i>	<i>Number Returning</i>	<i>Dates of Returns, 1942</i>
3	5/13/42	8 miles W	3	5/17; 5/26; 7/17.
1	5/14/42	8 miles SW	1	6/1.
2	5/16/42	4 miles E	2	5/24 (2).
2	5/16/42	5 miles NE	2	5/17; 5/23.
2	5/16/42	6 miles E	2	5/24; 5/28.
2	5/17/42	7 miles SE	2	5/24; 6/5.
2	5/17/42	8 miles SW	2	5/18 (2).
6	5/25/42	7 miles SW	6	5/28 (2); 6/1 (2); 6/2; 6/3.
4	5/26/42	5 miles SW	3	5/27; 5/28 (2).
6	5/30/42	5 miles SW	6	5/31; 6/1; 6/2 (2); 6/3; 7/16.
9	6/ 1/42	5 miles SW	7	6/2; 6/3 (2); 6/6 (2); 6/15; 6/17.
9	6/ 1/42	7 miles SW	8	6/2 (2); 6/3; 6/5; 6/6; 6/12; 6/15; 6/17.
5	6/ 3/42	5 miles SW	4	6/4; 6/6 (3).
13	6/ 9/42	5 miles SW	8	6/12; 6/13 (2); 6/14; 6/16; 6/26; 7/1; 7/19.
9	6/12/42	8 miles SW	2	6/14; 7/16.
6	6/21/42	5 miles SW	1	7/19.
6	7/10/42	8 miles SW	1	7/14.

In the following tabulation are the results of the liberations made at more than 10 miles from the Stannard ranch. The approximate distances are airlines obtained by measurements on an official state map. In these liberations attention was directed toward freeing the birds at a point where water was fairly close.

<i>Number of Birds Freed</i>	<i>Freed At</i>	<i>Airline Distance</i>	<i>Date Freed</i>	<i>Number of Returns</i>	<i>Dates of Return (All in 1942)</i>
1	Mesa	13	5/21/42	1	5/26.
1	Chandler	18	5/21/42	0	
1	Sacaton	32	5/21/42	0	
1	Coolidge	46	5/21/42	1	5/25.
1	Picacho Peak	80	5/21/42	1	5/27.
1	Tucson	110	5/21/42	0	
13	Wickenburg	54	6/ 2/42	7	6/13 (2); 6/15; 6/16; 6/17; 6/24; 7/16; 7/24.
14	Glendale	13	6/16/42	7	6/17; 6/22 (2); 6/26; 6/29; 7/17; 7/19.
7	Gila Bend	56	6/29/42	1	7/8.
16	Higley	24	7/19/42	1	7/24.
4	Superior	52	7/27/42	0	

It is impractical to list the travels of each individual cowbird that was "taken for a ride," but detailed records for four sample birds are of considerable interest.

- No. 40-167022. Male, banded 5/22/41; retrapped on 5/1/42.
 Liberated 4 miles east on 5/16, retrapped 5/23.
 Liberated 7 miles southwest on 5/25; retrapped on 6/1.
 Liberated 7 miles southwest on 6/1; retrapped on 6/4.
 Liberated 8 miles southwest on 6/12, retrapped on 6/14.
 Liberated in Glendale, 13 miles west, on 6/16, retrapped 6/29.
 Liberated at the Capitol, 8 miles southwest on 7/10. Did not return.
- No. 40-187092. Male, banded 5/15/42.
 Liberated 5 miles northeast on 5/16; retrapped on 5/17.
 Liberated 8 miles southwest on 5/17, retrapped on 5/18.
 Liberated in Mesa, 13 miles east, on 5/21, retrapped on 5/26.
 Liberated 5 miles west on 5/26, retrapped on 5/28.
 Liberated 5 miles west on 6/3, retrapped on 6/6.
 Liberated 7 miles southwest on 6/8, retrapped on 7/19.
 Liberated at Higley Army Air Base, 24 miles east on 7/19, and did not return.
- No. 40-187096. Male, banded 5/17/42.
 Liberated at Picacho Peak, 80 miles southeast on 5/21, retrapped on 5/27.
 Liberated 5 miles west on 5/30, retrapped on 6/2.
 Liberated 5 miles southwest on 6/3, retrapped on 6/4.
 Liberated 5 miles southwest on 6/9, retrapped on 6/13.
 Liberated 13 miles west in Glendale on 6/16, retrapped on 6/22.
 Liberated 56 miles southwest in Gila Bend on 6/29, retrapped on 7/8.
 Liberated 8 miles southwest on 7/10, and did not return.
- No. 40-187104. Female, banded 5/17/42.
 Liberated at Coolidge, 46 miles southeast on 5/21, retrapped on 5/25.
 Liberated at Wickenburg, 54 miles north northwest on 6/2, retrapped on 6/13.
 Liberated at Glendale, 13 miles west on 6/16, and did not return.

Great variation is noted in the time required for birds liberated together to return to the station. Three birds liberated 8 miles west of Stannard's on May 13 returned, respectively, on May 17 and 26, and July 17. Fourteen liberated in Glendale, 13 miles west, at 8:30 P.M. on June 16, returned over a long period. One was back in the trap at 7:00 A.M. on June 17, two on June 22, one June 26, one June 29, one July 17, one July 19, and seven did not return.

On May 21 the writer was travelling from Phoenix to Nogales and left Phoenix with six cowbirds. The first, freed at Mesa (13 miles) returned to the traps on May 26; the next two (Chandler, 18 miles, and Sacaton, 32 miles) did not return to the traps. The bird released at Coolidge, 46 miles, was retrapped on May 25, and the one released at Picacho Peak, 80 miles, was recovered on May 27. One released in Tucson, 110 miles, did not return.

Thirteen birds were released at Wickenburg, 54 miles north-northwest, on June 2; seven came back to the traps, the first two on June 13, the last on July 24. Of seven freed at Gila Bend, 56 miles southwest, only one came back; and of sixteen released at Higley Army Air Field on July 19, only one made the 24 mile trip back to the Stannard traps.

It would appear from study of the records that male cowbirds must predominate greatly, or that they are easier to trap, for a great preponderance of males has been trapped.

Analysis of the detailed records shows that the transported birds returned to the trapping station, if they came at all, usually more quickly than did birds trapped and released at the station; that is, if two cowbirds were trapped, one taken away and one released at the station, the bird released some distance away was usually back in the traps more quickly than the one that was released at the traps. The logical explanation is that the transported bird arrived "home" hungry and went quickly to the traps for food.

Further study of the records indicates that a large percentage of the birds transported and liberated before June 20 returned to the trapping station, while only a small percentage of the birds liberated after that date came back to the traps. Field observations indicate that this change is correlated with the ending of the active breeding season, for by late June large flocks of cowbirds have assembled in the Phoenix district; there is little evidence of paired activity, and trapping becomes less active.

Stannard will continue the study in other seasons to such extent as circumstances may permit, and it is hoped that further information may be assembled.

SUMMARY

A study of the homing instinct of the Dwarf Cowbird, *Molothrus ater obscurus*, was made in the vicinity of Phoenix, Arizona, during the summer of 1942 by Carlos Stannard and the writer.

One hundred and forty-four liberations involving 71 individual cowbirds were made at points other than the banding station.

Sixty-six birds were liberated in the Phoenix district within 10 miles of the banding station prior to June 10; of these, 56 returned to the traps. Of 21 birds released in the same area after that date, only four returned.

Thirty-three cowbirds were released at distances ranging from 13 to 110 miles away *prior* to June 20; of these 17 returned to the traps. Of 27 liberated at distances of from 20 to 56 miles *after* June 20 only two returned.

The longest return flight was that of a male cowbird released at the foot of Picacho Peak, 80 miles from the Stannard ranch, on May 21, which returned to the traps on May 27. The greatest percentage return among a large group of liberated birds was when seven returned out of a total of 13 released at Wickenburg, 56 miles to the north-northwest; the first two came back in 12 days, the last in about seven weeks.

Owing probably to their hunger, cowbirds that had been transported and released at a distance returned to the traps more speedily than did birds banded and released *at* the traps.

Males appear to outnumber considerably females in the population.

During the last part of June cowbirds in the Phoenix district begin to flock, and there is notable cessation of activity, and in the number trapped. It seems apparent that the homing instinct displayed is closely correlated with the active breeding season even though the cowbird is parasitic and builds no nest of its own.

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