First-autumn dispersal of hand-reared Mallard

Hugh Boyd & Jeffery Harrison

Summary

RECOVERIES of young Mallard in their first season are used to compare the dispersal of hand-reared and of wild ducks in Britain. The only important difference is in the proportion of birds moving away from the point of release: hand-reared birds are less likely to travel far than wild ones. This favours the building-up of local populations by the use of hand-reared birds.

Introduction

One of the most interesting recent developments in wildfowl conservation in Britain has been the growing enthusiasm for the duck-rearing scheme of the Wildfowlers' Association of Great Britain and Ireland, W.A.G.B.I. Since 1954, 20,055 Mallard have been reared, ringed and released by associated individuals and wildfowling clubs. Rearing of Mallard for shooting is no new thing: the novelty of the W.A.G.B.I. scheme is in its co-operative nature, the extensive use of rings, the deliberate intention in releasing on to reserves to add to breeding stocks rather than to provide immediate sport, and the frequent use of release areas which are not strictly private and artificially fed. It is still too early to assess the long-term value of the scheme in increasing and invigorating the British breeding population. The short-term benefits and some results from the ringing have been described by Harrison and Butt (1961) and Harrison (1961). The purpose of this short additional paper is to discuss one aspect of the releases, the dispersal of young birds in their first autumn and winter, and to compare in this respect the performance of hand-reared and wild Mallard. Two questions are asked: To what extent do young ducks move away from their release point and is dispersal concentrated in any particular direction?

W.A.G.B.I.-reared Mallard are usually released at about eight weeks old, shortly before being able to fly. Some results of releases of hand-reared Mallard on some private estates at various times and places during the last fifty years are available for comparison. Ringing of wild ducklings has been on a smaller scale and for comparative purposes it has seemed proper to include a number of juveniles caught when able to fly, but only in the months April-July, for it is likely that captures in August include immigrants from places far removed from the ringing station. W.A.G.B.I. releases have been made at many points in Britain and the earlier hand-reared samples were also widely scattered (see Table II). The 'wild' sample is, by contrast, almost entirely restricted to birds marked at Abberton, Essex by Major General C. B. Wainwright, and at the Slimbridge, Gloucestershire, decoy of the Wildfowl Trust, with a few others scattered from Midlothian to Somerset.

Extent of movement from the release point

Table I summarises the 'direct' recoveries of W.A.G.B.I.-reared Mallard, defined as those birds killed in the year of their birth and release or in January and February of the next calendar year. The proportion reported killed in their first season is 4.9%. This is a low direct recovery-rate for ducks ringed in Britain. The number of recoveries offering evidence of

dispersal is very much smaller still, even when the qualification for movement is put as low as 10 miles, a distance frequently exceeded in many areas by Mallard on daily feeding-flights. The average proportion of known wanderers is 9.7 per 1000 released.

Table I. Direct recoveries and dispersal of hand-reared Mallard released by W.A.G.B.I., 1954-61.

Year	Total released	Direct recoveries		Direct recoveries more than 10 miles from release point		
			% of released	total	per 1000 released	% of recoveries
1954 ..	110	—	—	—	—	—
1955 ..	403	13	3.2	4	9.9	30.8
1956 ..	911	34	3.7	3	3.3	8.9
1957 ..	1311	55	4.2	15	11.4	27.2
1958 ..	1361	53	3.9	10	7.4	18.9
1959 ..	3413	213	6.2	47	13.8	22.1
1960 ..	5278	198	3.8	31	5.9	15.6
1961 ..	7268	409	5.6	83	11.4	20.3
	20,055	975	4.9	193	9.7	19.9

The behaviour of hand-reared Mallard released privately in earlier years (Table II) is evidently similar in that few wanderers were reported.

Table II. Direct recoveries and dispersal of hand-reared Mallard released on private estates before 1950.

Place and date of release	Total released	Direct recoveries		Direct recoveries more than 10 miles from release point		
			% of released	total	per 1000 released	% of recoveries
Lancashire 1911-12	80	35	43.7	1		
Norfolk, 1912	40	18	45.0	0		
Cheshire, 1925-28	100	77	77.0	0		
Norfolk, 1936-39	340	126	37.0	0		
Ross-shire, 1938-39	380	90	23.7	1		
total	940	346	36.8	2	2.1	0.6
Perthshire, 1925-34	not known	55		5		9.1
Slimbridge, Glos., 1948-49	152	6	4.0	1	6.6	(16.7)

There is a striking difference between the direct recovery-rates of the first five samples in Table II and those of the W.A.G.B.I. birds. This is very largely due to the fact that these ducks were subjected to heavy local shooting soon after release in contrast to the birds released by W.A.G.B.I. The only entry in Table II giving a direct recovery-rate of the same low order as that for W.A.G.B.I. birds is that for the Mallard released at Slimbridge in 1948 and 1949 in order to build up a 'lead' in the decoy.

Young wild Mallard behave differently (Table III), a much higher proportion being found at a distance from the point of capture. (The Gloucestershire sample specifically excludes many young ducks caught in the years 1959-61 which were released away from Slimbridge). There is a marked difference in the apparent behaviour of the wild ducks in Essex, where

shooting near the ringing station is heavy, and in Gloucestershire, where many of the marked birds are known to have remained within an area where there is little shooting. Even the Slimbridge birds, however, show a higher proportion of wanderers than the hand-reared birds from the same place (though both recovery samples are small) and those released by W.A.G.B.I.

Table III. Direct recoveries and dispersal of young wild-caught Mallard ringed in England, 1952-61 (ringing from April to July only).

Where ringed	Total ringed	Direct recoveries		Direct recoveries more than 10 miles from release point		
			% of ringed	total	per 1000 ringed	% of recoveries
Gloucestershire	133	7	5.3	2	15.0	22.9
Essex	500	57	11.4	15	30.0	26.3

Directions of dispersal

Given the points of release and recovery the direction of movement between the two can be found. Although there is no reason to assume that the journey has been made in a single flight, it may be argued that if any tendency to move in a standard direction exists this should be apparent in the distribution of the recoveries. Matthews (1961) has shown that in experiments in which Mallard were released in unfamiliar country they tended to fly off heading between north and west, irrespective of the relative positions of the points of capture and release. This N.W. heading is only apparent under clear skies or light overcast, the birds flying off in all directions if the sky is heavily clouded, and so must be a form of astronomical orientation. Subsequent recoveries of experimentally-transported ducks show that the N.W. direction of movement is not long sustained, the places where the ducks were eventually found being scattered more or less at random with respect to the points of release and origin.

Table IV. Directions of dispersal of hand-reared and wild Mallard, as determined by bearing of recovery-point from release-point, for direct recoveries showing movement greater than 10 miles. The W.A.G.B.I. birds tabulated here are limited to those recovered outside the county where they were released.

Direction of movement	Hand-reared ducklings		wild-caught
	W.A.G.B.I.	others	
N	6	2	2
NE	10		4
E	8	3	2
SE	10	4	1
S	10	2	3
SW	5	1	3
W	9	2	3
NW	8	1	3
total	66	15	21

Thus there is no *a priori* reason to expect recoveries to show directional grouping. The scatter of directions obtained (Table IV) is remarkably uniform, for both wild and hand-reared Mallard. It is true that eleven of the

fifteen direct recoveries of W.A.G.B.I. ducks overseas are grouped between ENE and SSW, but this reflects the distribution of land in relation to short sea crossings rather than any directional tendency. Apparently British Mallard rarely make long non-stop flights (of more than 100 miles or so). They are thus most unlikely to be encountered in the relatively distant countries of Iceland and Greenland to the north-west, while the high density of shooters as well as ducks in Holland and France increases the likelihood of British birds being found across the English Channel.

Harrison (1961) has pointed out that the behaviour of ducks released by W.A.G.B.I. in 1959 and 1960 seemed to differ. The proportion of birds recovered at a distance in 1960 was very low (see Table I). In 1961 the proportion of known travellers was again similar to that in 1957-59. Harrison suggested that the exceptionally wet weather of 1960 provided a good acorn crop and a late and difficult cereal harvest offering excellent local feeding and discouraging dispersal.

Though the numbers of recoveries are too small to form a basis for any detailed argument, it is perhaps worth noting that in 1959-60 all five overseas recoveries were in Holland; in 1960-61 there were three in Holland and one in Eire; and in 1961-62 none in Holland, one in Eire, one in the Isle of Man and four in France.

It had seemed possible that ducks released in different parts of the country might behave in different ways, but the recoveries so far give no indication of any significant variations in the directions or distances of dispersal.

Practical significance of results

These findings are largely negative: hand-reared birds do not behave differently from wild ones because neither do anything in particular. The one detectable difference is that hand-reared birds are less likely to move far. This is important because it shows that releases result in bigger stocks in the immediate vicinity.

What has still to be proved is whether the breeding performance of released birds is as good as that of wild ones. If so, then the value of the W.A.G.B.I. release scheme should be considerable. It is difficult to obtain evidence of the breeding success of released ducks on a large scale, though results reported by the Dorset Club for 1960 and 1961 are very encouraging, showing an output of fledged young per breeding pair well above the average reported from studies of wild birds in England and Holland. There is a great need for similar detailed following-up by clubs elsewhere.

Acknowledgements

We are most grateful to the following for their help: Mr. Raymond Butt, W.A.G.B.I. Duck Ringing Secretary until 1961, and his successor, Mr. John Wardell, who abstracted all the data from the W.A.G.B.I. records. Mr. Paul Shattock was of considerable help in plotting the records and Mr. George Bennett, Librarian at the Sevenoaks Public Library, and his assistant, Mrs. L. Bullen, went to much trouble to identify some of the localities. We are also pleased that Lieut. Commander J. W. Anderton. W.A.G.B.I. Secretary, has read and commented upon the paper for us.

We are indebted to Mr. R. Spencer (Ringing Officer) and the Bird Ringing Committee of the British Trust for Ornithology for permission to make use of ringing and recovery data in the files of the B.T.O., including the older records originally contributed to the scheme operated by the late H. F. Witherby. Major General C. B. Wainwright, C.B., has kindly allowed us to make use of unpublished records from his ringing station in Essex.

References

HARRISON, J. G. 1961. W.A.G.B.I. Duck rearing in 1960. *W.A.G.B.I. Annual Report 1960-1961* : 20-3.

HARRISON, J. G. & R. BUTT. 1961. Duck rearing and ringing. Chapter XVI, pp. 194-203 of *The New Wildfowler*, ed. by N. M. Sedgwick, P. Whitaker and S. Harrison. London, Herbert Jenkins. 311 pp.

MATTHEWS, G. V. T. 1961. "Nonsense" orientation in Mallard *Anas platyrhynchos* and its relation to experiments on bird navigation. *Ibis* 103a : 211-30.

The migrations of wild geese in France*

Francis Roux

(Centre de Recherches sur les Migrations des Mammifères et des Oiseaux, Museum National d'Histoire Naturelle, Paris)

Summary

FRANCE is only a secondary wintering place for grey geese (*Anser* sp.). No more than 3000 stay, except during severe winters.

Population of *A. anser* which winter in south-west Spain, about 10,000 birds, migrate through France on a line approximately NE-SW. The geese may stop temporarily during this journey, especially at the end of winter.

A.a.albifrons winters locally in the north-west, near the Channel and Atlantic coasts; *A.fabalis* subsp. in the north-east; and *A. anser* between the estuaries of the Loire and Gironde.

6,000 to 6,500 *Branta b.bernicla* winter on the French coast from Cotentin to the Arcachon Gulf, concentrated especially in the Morbihan Gulf. Their migrations are strictly maritime.

When cold weather strikes mid-Europe and the coastal areas around the North Sea, it brings to France large populations of the species mentioned (mainly the *Anser* group) and some *A.brachyrhynchus*. The other European geese only occur exceptionally.

Because wild geese offer fewer attractions to shooters in France than to those in other European countries, their migrations in France are still imperfectly known and researches in this field are less advanced than they are in Great Britain, the Netherlands or the Scandinavian countries. In the present state of our knowledge, it is difficult to give more than a rough sketch of the situation. It must be emphasised, above all things, that France is on the margin

*Translation of a paper "Coup d'oeil sur les migrations des Oies sauvages en France" presented to the Fifth Congress of the International Union of Game Biologists in Bologna in September 1961, reproduced with the permission of the author and the Congress Committee.