

NESTING STUDIES OF THE BLACK-BILLED MAGPIE IN SOUTHERN IDAHO

BY FRED G. EVENDEN, JR.

THE name of Mountain Home, Idaho, where these studies were made, is very misleading. The town, itself, is situated approximately 50 miles southeast of Boise, Idaho. The general topography is a plateau, sloping gradually from the foothills in the north to the Snake River Canyon in the south. Mountains directly north go to 7,500 feet elevation, but the 25 miles of distance from the foothills, south to the river, goes from 3,300 feet elevation to approximately 2,900 feet at the rim of the canyon. A few streams meander through this region, but they are dry, except in the very wettest seasons of the year. Few trees are native to this plateau area, but sagebrush forms a not too uniform blanket over the slightly undulating surface of the plateau. Scrubby willows will be found growing where there is sufficient moisture to support them. The winters are cold, the summers are hot, and the rainfall is slight.

The material on the magpies was gathered from two different sites near Mountain Home, which were the only nesting concentrations within six miles of the town.

AREA I

The first area was just a quarter of a mile from the southern edge of town. It consisted of a patch of sagebrush and rabbit-brush of approximately five acres. A nearly stagnant creek meandered through the area. A growth of willows and an occasional hawthorn could be found along the course of the stream. During the summer the stream was completely dry, even though there was a current flowing during the winter and spring.

In this area there were between 35 and 40 adult birds. On April 17, 1944, we found and recorded the following data on 16 nests:

<i>Nest</i>	<i>No. of eggs</i>	<i>Height of nest, etc.</i>	<i>Vegetation type</i>
1	6	4½ ft. (over water)	hawthorn
2	2	5 ft. (over water)	willow
3	8	6 ft. (over water)	sagebrush
4	8	4½ ft. (over water)	willow
5	7	4 ft. (over water)	willow
6	6	4 ft. (over water)	willow
7	6	6 ft.	willow
8	6	5 ft.	willow
9	7	6 ft. (old crow's nest)	hawthorn
10	6	5½ ft.	willow
11	6	3 ft.	?—?

Nest	No. of eggs	Height of nest, etc.	Vegetation type
12	6	4 ft.	willow
13	8	6 ft.	willow
14	6 (small)	4½ ft. (open on top)	willow
15	7	7 ft.	willow
16	4	4 ft.	willow

The total number of eggs in the sixteen nests was 99. The average height of the nests was approximately 5 feet (4.93 ft.). The measurements were made to the top rim of the inner nesting cup.

From the above table it can be seen that 12 of the 16 nesting sites were placed in willows, two were placed in hawthorn, and only one nest was found in sagebrush. One shrub chosen as a nesting site still remains unidentified.

The presence of water, temporary as it may have been, seems to have had a dominant influence in the location of the nests, for 75 per cent of the nesting sites were in willows, and they were found only close to the water channel. Even those nests in the sagebrush and hawthorn were over water, with the exception that the one in the old crow nest was a few feet back from the water.

Thorough examination of the sagebrush area away from the water-course failed to reveal other nests. A few more nests were due to be constructed later in the season, for it was quite evident that the total population of magpies in this area was not nesting at the time we were there.

This area was heavily infected with western wood ticks (*Dermacentor andersoni*), and they were found frequently in the nests (probably accidental occurrences), but never on the birds. We did find examples of dipterous maggots working their way out of the abdomens of young birds when we visited the area a few weeks later.

Several dead adults or, rather, parts thereof, were found from time to time throughout the area. Some had been shot by boys with .22 rifles, but others had met their fate at the hands of the Marsh Hawks and coyotes that frequented the area.

By the last of May, most of the young had left the nest, and almost every bush in the area held its share of young magpies.

The first area served for verification of the data gathered in the area next to be described.

AREA 2

The second area was three and one-half miles northeast of the town. It was in a shallow valley which had been converted into a reservoir by placing a rock and dirt dam across the lower end of it. At full capacity the water surface would cover about 100 acres, but during

low-water times, the upper end was out of the water, and it was here that a dense growth of willows was situated. The tallest willows were not over ten feet high. A dry stream channel meandered through this part of the reservoir area, and although the willows covered a considerable portion of this area, all nests were found within 100 feet or so of the dry stream channel.

Our first visit to this area was made on April 7, 1944. On that date we found two nests with three and four eggs in them, four nests just being built, and one old nest (which later was to be remodeled and occupied). Visits were made regularly every five days thereafter.

Nest 1.—This nest was in a dead willow, at a height of four feet. There was a full set of six eggs in it on April 12, and on April 27 the female stayed on the nest until I looked into it, for there were four young and two eggs. The young apparently were about two days old, as we judged from later experience. All four young were of approximately equal size, possibly indicating that incubation did not begin until the set was nearly completed. As there were four eggs in the nest on April 7, and on the 27th we found the four two-day-old young, it would appear that there was an 18-day incubation period for this nest. No sign of egg shells was ever found in or around the nest or on the ground. Every time I visited the nest during the incubation period, the same bird was on the nest. This could be told easily for it had the left tarsus badly damaged. The other bird of the pair, presumably the male, was usually close by, and when I would flush the female from the nest, he immediately joined her in scolding and trying to chase me away.

On May 2, the other two eggs had hatched, and the young were considerably smaller in size than the four young that hatched several days ahead of them. By May 17, the young had reached the point of development where they were ready to leave the nest, and when I returned on May 28, they had been gone for some time.

Nest 2 was found in a rose bush at a height of two and one-half feet. It held three eggs on April 7 and a full set of eight eggs on April 12. It would seem that one egg was laid each day from the 7th to the 12th. On May 2, the female stayed on the nest until I looked into it, for there were seven young and one egg in it. Judging by the rate at which the eggs were laid, that egg supposedly would have hatched on May 3, giving a minimum incubation period, at least for that one egg, of 21 days. It may have been more, but our visits were not frequent enough to determine it. The eighth egg had hatched when we visited the nest on May 7. All eight young

had left the nest by May 28. Even after leaving the nest, they stayed fairly close in the bushes near the original nesting site. When they first left the nest they usually could fly only a very few feet.

Nest 3 was placed in a live willow at 44 inches height. The nest was under construction on April 7, had one egg on April 12, four eggs on April 17, and the set of six eggs on April 22. When we visited the nest on May 7, there were six young in the nest, apparently from one to two days old. All were of the same size, so incubation presumably began between the 17th and the 22nd, and hatching was completed by May 7. In this case the incubation period would have been at most 17 days, and could have been as low as 14 days if an egg was laid every other day, as seemed to be indicated—that is, on April 11, 13, 15, 17, 19, and 21, with incubation beginning April 21. The uniform size of all the young seemed to indicate that the eggs were all equally incubated. Incubation included nine days in April and five in May, for on May 7 the young were about two days old, as mentioned above. On May 28 they were on the edge of the nest and in the same bush as the nest, all ready to leave.

Nest 4 was placed five feet above ground in a live willow. It was under construction on April 7, but on April 12 there were three eggs in it. On April 17 there were *no* eggs in it, and there were none in it as long as I continued to visit it every five days. On April 17 I found that an old nest had been remodeled (*Nest 7*) in which there were three eggs. All this had taken place since my visit on the 12th. Could the three eggs from the original nest have been carried by the parent birds into the hurriedly remodeled nest? The distance between the nests was about 250 feet. It seems to me quite logical that this could have been done, for it seems unlikely that all the events could have been crowded into the five days, except by moving the three eggs to the new nest. The new nest was placed in a dead willow three feet above ground. It certainly was not a new pair of magpies, for there were only six nesting pairs in the area. The original nest was placed in a willow which was by itself in an open situation, and perhaps these birds learned the advantage of having the nest sheltered. On April 22 the remodeled nest had five eggs in it, and on May 12 there were four young and one egg in the nest. The young were of equal size and had been hatched for about three days. On May 17 there were still four young and one egg; and on May 28 there were *three* young and one egg, the young about ready to leave the nest. When I last visited the nest on June 15, there were no young and no eggs. What happened to the one young be-

tween May 17 and 28, I do not know, but the unhatched egg may have been damaged in transferring it from one nest to another. Incubation began at least by April 22, and the eggs hatched about May 9, giving a total of at least 17 days. Incubation may have been started as early as April 19 or 20, which would have given even 19 or 20 days for the incubation period. If three of the eggs were the same ones that were laid in nest four, it means that two or three of them were a month in hatching.

Nest 5 was at a height of two and one-half feet in a rose bush. It was under construction on April 7, had four eggs in it on April 12, and a set of seven eggs on April 17. On May 2 there were four eggs and three young in the nest. On May 7 there were seven young. On May 28 there were only two young in the nest; the other five had left. On May 2, the three young were one or two days old, and on the basis of an egg laid each day, as appeared to be the case here, the incubation period was exactly 18 days for this nest.

Nest 6 was in a live willow at a height of three feet. It was under construction on April 7 and was completed on April 12. There was one egg in it on April 17, there were two eggs on April 22, and four eggs on April 27. Exactly four eggs were laid over at least a ten-day period. On May 12 there was one young in the nest, and there were *two* eggs. On May 17, there were still one young and two eggs, and on May 28, one young and *no* eggs. On June 15 the nest was empty, and the young one had left. This again was an example of a young pair of birds nesting, for this nest was in an open site, as was Nest 4. In all the times I visited this nest with the single young in it, I never flushed a parent bird off the nest, although the parents must have been taking care of it, for it continued to grow and eventually left the nest. I rather suspect they were busy elsewhere most of the time, for 55 or 60 feet away, across the dry stream channel mentioned before, a quite new nest (Nest 8) was started on April 22, which was completed on April 27. This nest was in a dense willow clump at a height of two and one-half feet. On May 2 there was one egg in the nest, but on May 7 there was *no* egg. However, on May 12 there were three eggs in the nest, and on May 17 there were seven eggs. When I last visited the nest on June 15, the young were within a week of flight from the nest. The conditions were so mixed with regard to these last two nests that I shall not try to hazard an estimate on the length of the incubation period for either of them. This pair of birds certainly had a difficult time in getting a successful nesting, but they finally succeeded. It would be interesting to

know what happened to the egg that had unaccountably disappeared when I visited the nest on May 7, and also what happened to either one egg or one young in this pair's first nest between May 7 and 12. The only way events of this type could be accurately traced would be by visiting the nesting area daily, rather than every five days, the way we did.

TABLE OF NESTINGS IN AREA 2

Nest	Apr. 7	Apr. 12	Apr. 17	Apr. 22	Apr. 27	May 2	May 7	May 12	May 17	May 28	June 15
1	4 e	6 e	6 e	6 e	{ 2 e 4 y	6 y	6 y	6 y	6 y	m	m
2	3 e	8 e	8 e	8 e	8 e	{ 1 e 7 y	8 y	8 y	8 y	m	m
3	n	1 e	4 e	6 e	6 e	6 e	6 y	6 y	6 y	6 y t	m
4	n	3 e	o	o	o	o	o	o	o	o	o
5	n	4 e	7 e	7 e	7 e	{ 4 e 3 y	7 y	7 y	7 y	{ 5 g 2 y	m
6	n	c	1 e	2 e	4 e	4 e	4 e	{ ?2 e ?1 y	{ ?2 e ?1 y	1 y	m
7	o	o	{ r 3 e	5 e	5 e	5 e	5 e	{ 1 e 4 y	{ 1 e 4 y	{ 1 e 3 y	m
8	—	—	—	n	c	1 e	?0 e	3 e	7 e	7 e	{ 7 y x

e—egg or eggs
y—young
n—building new
c—completed
r—remodeled
o—old nest
m—empty
t—ready to leave the nest
g—gone
x—1 week before leaving nest

SUMMARY

A total of six pairs of birds built and occupied eight nests during the season. One of the nests was completely abandoned, and another was only partially maintained. In both nesting failures, the nests were situated in open sites, and could well have been the first nesting attempts of two pairs of birds hatched the previous nesting season.

These six pairs laid a total of 43 eggs, with five of the eggs failures. This assumes that the three originally laid in Nest 4 were transferred to Nest 7. For the six satisfactorily completed nestings, the average number of eggs was 6.50. In comparison, the 16 nests in the other nesting area we studied had a total of 99 eggs, for an average of 6.187 eggs per nest.

The average height of the nesting cavities for the six nests was 3.25 feet, in contrast to an average height of 4.93 feet for the nests in the other nesting area. Height of available vegetation in the two areas was about equal.

The mean incubation period for five of the nests is 18 days with the extremes from 14 to 21-plus days. Data from the other nests were too unreliable to use.

It has already been mentioned that only one bird appeared to incubate. The bird's mate was, however, always near by. After the young were hatched, and up to the time when they began to feather out, a parent bird was always found on the nest, remaining on it until we were at the edge of the nest, looking into it.

From the data gathered it seems to take from three to four weeks, after hatching, for the young to leave the nest.

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RECENT OBSERVATIONS ON MARYLAND BIRDS

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IN the course of working on a study of the 'Geographical and Ecological Distribution of the Birds of Maryland,' a considerable number of records of occurrence have been obtained, which have helped to clarify the status of many Maryland birds. Some of these records are new for the state and many serve to extend the known breeding or wintering ranges within Maryland. Others will serve as additional information on the seasonal and geographical distribution of certain species whose ranges are imperfectly known.

This study was started in earnest in the early summer of 1945, although a few field trips had been taken before this date. During this period, several people from the Audubon Society of the District of Columbia, the Maryland Ornithological Society, and the Patuxent Research Refuge accompanied us from time to time and contributed to the observations.

Most of the more interesting information derived from the records obtained in this study is included in the following annotated list. An asterisk (*) indicates that there is no previous published record for Maryland.

RED-THROATED LOON (*Gavia stellata*).—Although this species is a regular winter resident along the coast of Maryland, its presence during the summer was unexpected. On August 5, 1945, three birds in non-breeding plumage were observed on Sinepuxent Bay about two miles south of Ocean City.

WILSON'S PETREL (*Oceanites oceanicus oceanicus*).—Nine Wilson's Petrels were observed on Chincoteague Bay on July 3, 1945. These birds, including one that was collected, were seen near the center of the bay at least a mile from the nearest island.