ROJECT NEST-BOX — Edmonton, 1972.

by ROD BURNS*, DON STAPLEY, RICHARD SVRCEK**
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In the spring of 1972, the nest-box project here in Edmonton was fortunate ough to receive financial assistance from the Opportunities for Youth Program. or this we owe thanks to the Federal Government and Susan Tanner, a project- ficer in Edmonton, who was a major supporter. We also received letters of recom- ndation from the following people: Cameron Finlay, Richard Fyfe, Bob Gehlert, ichael Hampson, Edgar T. Jones, Al Karvonen, Gordon Kerr, Robert Lister, avid Neave and Andy Stork. To them we also owe thanks.

Given so much support and such freedom, we were able to accomplish most of our jectives, and try a few experiments. We planned to build 200 more Bluebird nest- xes and 200 Sparrow Hawk boxes. We would keep notes, maintain the trail of xes, and band the young.

The smaller houses, for Mountain Bluebirds, were easily built, and putting them the trail was no problem. We always carried a few houses with us and put them up here necessary. The Sparrow Hawk boxes were a problem. We had difficulty fin- ng wood and we had difficulty building the houses without taking a large amount time. Compared to bluebird houses, we also had to spend four or five times the nount of time per Sparrow Hawk box just finding a suitable location. Then we had put them up which, in some cases, involved the use of climbing spurs. But even so, e did manage to get out about 80 boxes. Unfortunately, we were too late for the 72 season, but we are looking forward to results in the spring of 1973.

During the course of the project, questions and ideas arose, which we tried to ex- re. For example, "Would boxes placed in small 'habitat groups' provide more ailable nesting sites than the standard one box every 1/2 mile?" We were asking is question because there were many pairs of Bluebirds that appeared dissatisfied th the "one box" or were chased out by competition (Tree Swallows, House arrows or House Wrens). We wondered if one or two extra boxes placed nearby uld lessen the competition or prove to be a more suitable site for fussy Bluebirds. worked in several areas. In a nest-box numbered 23-66 a pair of Bluebirds built a st early in the season (May 9). They appeared established but several days later we w three pairs of Tree Swallows harassing the Bluebirds. So we placed three more xes nearby; one was on a post about 30 feet from the first box on the same side of e road and the other two were placed on the opposite side of the road, also about) feet apart. The reaction to this was immediate. The Tree Swallows were over ecking the new boxes before we were back in the car. When we returned several ys later, the Bluebirds had moved to the new house on the same side of the road d two pairs of Tree Swallows were nesting in the boxes on the other side of the ad. The original box still contained a Bluebird nest, but was abandoned in favor the new box. This little trick also worked on House Sparrows and House Wrens und harassing Tree Swallows and Bluebirds.

The significance of this is that a Bluebird trail need only be 20 miles long to have effect. An area could be saturated and then a few "feeler" houses set out beyond is limit to encourage the occupancy by new pairs. This new area could then be ammed and so on. But it must be kept in mind that this is only a theory, with a few ccessful cases. There is a possibility that as well as Bluebirds, the increase of

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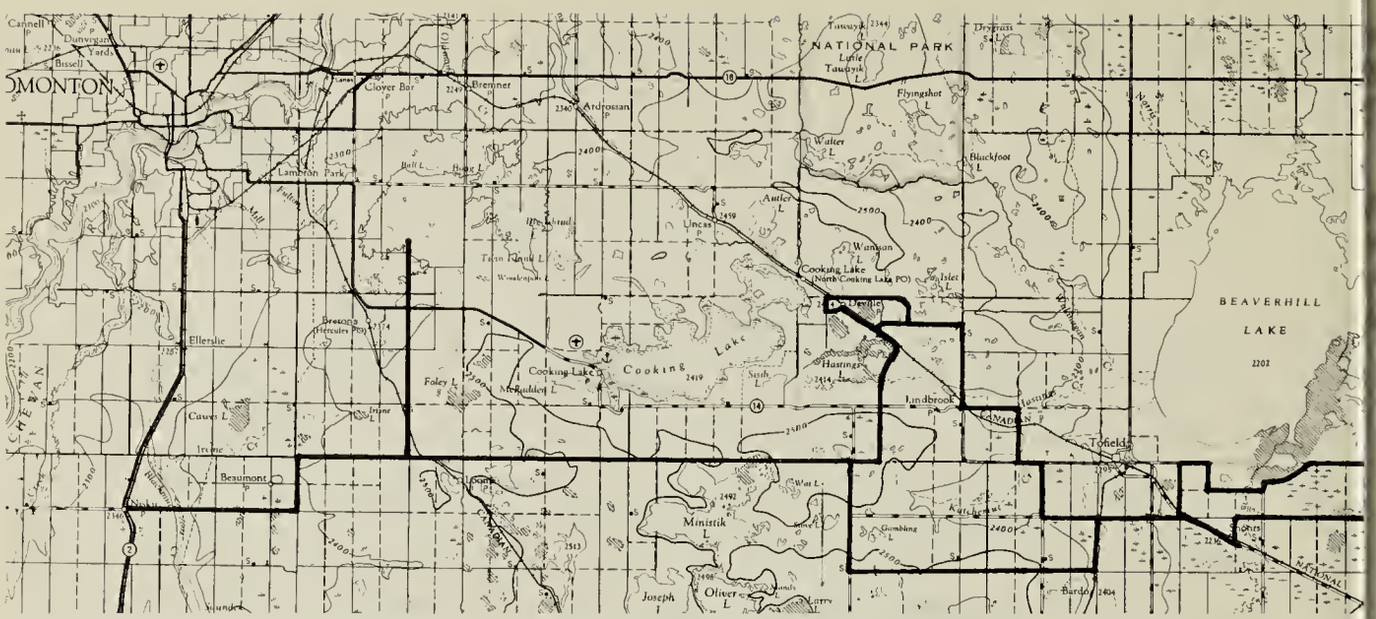

House Sparrows and House Wrens would also be encouraged. To prevent this w were poking tiny holes in the eggs of House Sparrows and leaving them. This prove to be a better idea than cleaning out the house and have the Sparrows renest. W were also putting up another house on the other side of the road from the Sparrow The Wren problem is not so easy. We have not solved it, but putting up more house in an area does take the pressure off. The Wrens will keep to themselves if the new erected houses are placed far enough away, but this could also encourage anothe pair of Wrens to nest. So Wrens remain a problem that is not easy to solve.

We tried another interesting idea that we got in other years when we noticed tha some Bluebirds did not renest. We also noticed that the original nest-box was ofte occupied by Tree Swallows or Wrens in the few days before a renest would hav been started. So we tried the "new house experiment". We would place a new hous

Table 1. – Bluebird and Swallow data from Edmonton nest-boxes. 1972.

	Production						*Banding*
	Eggs	*Eggs*	*Young*	*Young Left*	*Adults*		*Your*
Species	*Laid*	*Hatched*	*Fledged*	*Nest*	*Male*	*Female*	
Mountain Bluebird	97	77	67	66	1	5	6
Tree Swallow	1,578	1,272	1,117	1,117	33	137	1,11

Table 2. – Edmonton Nest-box production – 1972 and 4 years combined.

	1972			*1969-1972*		
	Nests Started	*Nests Successful*	*Young Fledged*	*Nests Started*	*Nests Successful*	*Young Fledged*
Goldeneye	2	1	8	5	3	25
Bufflehead	1	0	0	1	0	0
Boreal Owl	0	0	0	1	1	5
Yel.-sh. Flicker	1	1	4	1	1	4
Say's Phoebe	0	0	0	1	0	0
Tree Swallow	282	224	1,117	434	342	1,735
House Wren	33	29	186	66	55	323
Mountain Bluebird	26	17	67	46	28	126
Starling	2	2	6	–	–	–
House Sparrow	17	0	0	–	–	–
Common Grackle	0	0	0	1	1	2
Total	364	274	1,388	556	431	2,220

Total Houses: 514 in 1972. 900-1,000 for 4 years.

ear a pair of Bluebirds whose young were ready to leave. On four occasions the luebirds renested in the new house. On two occasions they used the original house. his is all we tried.

By keeping notes on each Bluebird house and by banding adult nesting birds, an teresting piece of information was collected on Tree Swallows. On three occasions e found more than one female Tree Swallow incubating a clutch of eggs or feeding oung. At any one time there was only one female in the house but we caught other males either sitting on the eggs or feeding the young.

Hatched Egg-Shells Covering COMMON TERN EGGS

by DAVID R. M. HATCH*

While conducting a study on Little eorge Island (52°51' — 97°47'), Lake innipeg, between July 1 and July 10, 971, I made an unusual observation in ommon Terns regarding hatched egg-ells.

In each of seven nests, one egg in the utch of two or three was covered by e large end of an egg-shell from a hat-ed egg. In each case, the additonal ell was firmly stuck over the large end the unhatched egg. I removed the ex-a egg-shell from six eggs. In two of ese six cases, the big end of the unhat-ed egg was already pipped. Chicks tched within 24 hours from four of ese six eggs. The two remaining eggs ch contained fully developed dead oung. All four young from the eggs hich hatched were accepted by their rents. In the seventh egg from which I d not remove the additional shell, the ick failed to hatch.

N. Tinbergen refers to the large end the hatched egg as the "small 'lid' at e obtuse end which comes off during tching."[3] In dealing with the Black-eaded Gull, Tinbergen suggested that ne of the reasons for egg-shell removal the possibility that this "lid" might end to slip over an unhatched egg, us trapping the chick in a double ell." This may have occurred in the se of the Little George observations.

Adults that I observed generally carried the hatched portions of eggs from their territory and usually out of the colony. This behaviour differs somewhat from that described by R. S. Palmer who wrote that "adults may fly up with a shell, then drop it while they are still over their own nesting territory."[2] He did not mention egg-shells slipping over the ends of unhatched eggs.

There is the possibility that these "lids" were actually placed over the unhatched eggs. In the Honey Buzzard, the two halves of a hatched egg-shell are placed one inside the other before they are removed from the nest.[1] My observations may represent a similar tendency in Common Terns, or they may merely show a failure of some adults to remove egg-shells following hatching with the resultant accidental slippage of the "lids" over unhatched eggs.

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[1]ARMSTRONG, E. A. *In*: A. L. Thomson, ed. 1964. *A new dictionary of birds.* McGraw-Hill Book Company, New York.

[2]PALMER, R. S. 1941. *A behavior study of the Common Tern.* Boston Society of Natural History, 42: 1-119.

[3]TINBERGEN, N., G. J. BROEKHUYSEN, F. FEEKES, J. C. W. HOUGHTON, H. KRUUK, and E. SZULE. 1962. *Egg-shell removal by the Black-headed Gull (Larus ridibundus L.): a behaviour component of camouflage.* Behaviour, 19: 74-118.