A TEN YEAR BLUEBIRD TRAIL STUDY AT NECEDAH NATIONAL WILDLIFE REFUGE

Mary Rather

We have had a bluebird trail of nest boxes at the Necedah National Wildlife Refuge since 1985. The habitat is virtually wetlands with prairie areas near wetlands, the rest of the Refuge is composed of forests. Over these few years we have modified boxes, mounting posts and trail areas to try to eliminate our biggest problem of predation, the raccoon. We do not have any starling or English sparrow population. We found that the wooden predator guards, on the entrance holes, worked well to prevent raccoon disturbance. We had tried to wrap the posts with metal only to find the raccoons could find toe holds with scrambling, or could 'hug' climb the post to get at the nest boxes. With the metal wrap, we had the additional problem of ants attracted by the trapped moisture. We also found that mice could crawl through the metal wrap, if it were too loosely applied. We had no invasive climbers for two or three years after we installed some nest boxes on pvc posts. This year we had eight nest boxes with wooden entrance predator guards mounted on thin/slick round metal pipes and four boxes with out entrance predator guards mounted on gutter down spouts. These were not 'predatorized' this year. I can only suspect that these too, will puzzle a predator for only a short period of time.

We did have some unknown predator in the pvc post mounted nest boxes this year, the nests were not disturbed, eggs and young were found to be missing. I find it hard to believe we have a large enough population of snakes to be responsible for their plight. Although red squirrels were not reported, they might be the culprit. There was no evidence of a wren population in the areas where the pvc post mounted boxes were located.

An overview of the statistics at Necedah National Wildlife Refuge for the years 1985-1994 shows many factors that make the production of bluebirds and tree swallows a lesson in trying to outwit weather, food supply and the intelligence of predators.

In 1985, we started a trail of 30 nest boxes. The nest boxes were of the same type. The raccoon problem soon became apparent. We tried to stop them by placing "tin" over the cedar mounting posts. It took less than two years to notice that the raccoon found a way to climb the post. Plus moisture under the metal attracting ants became a new problem for the birds.

In 1986, we had 169 nest boxes of two varieties. We suffered a hot dry spell that year. Only 8%* of the tree swallow young in the original boxes survived, compared to that of 100% survival in a nest box with greater ventilation. We revised the original boxes to include 1 1/2 inch wooden predator guards, added more ventilation and made the boxes deeper. We have not suffered the heat effect since these changes were made.

In 1987 and 1988, we had success in the three box types we used. Our original box rated lowest in production, 55% of young fledged, compared to 80% and 94% in the other two boxes in 1987. This was an over all success rate for all box types of 74% to 76%.

In the years 1990 and 1991, the bluebird production was reduced to less than 50% young fledged. The original nest boxes had a fledge rate of 11% and 28% for these years.

In 1992 and 1993, the fledge rate for the original nest boxes was 15% and 26%. The other nest box styles had fledge rates of 83% and 100% for the bluebirds.

But in 1994, the original boxes fledged 69% and the other box styles fledged only 53%. We had altered our trail to include some boxes mounted on metal posts covered with pvc in an attempt to thwart the climbing mammals. The greater number of mounting posts with pvc were placed on the original trail

boxes, which might account for the success rate in the original nest box style.

We have found variable success rates for production of birds in regard to weather, the unit, the mounting post, or use of predator guards as well as the amount of ventilation provided. We have noticed the bluebirds seem to bond to the original box type used, even though it had been altered. I also did a comparison of different locations on the Refuge where are boxes are located. There seemed to be a variance of 0% (total loss of all eggs and young) to 87% production in the same area from one year to the next year.

I would like to acknowledge the statistics kept by Andrew Nelson when we first started the trail at Necedah.

I know that the statistics we have to work with are only a portion of the actual nest boxes that have been placed and are being monitored throughout my two county area. That is to say, some people are not interested in sending in the results of their nest box surveys and other nest boxes are simply not being monitored. I also realize that this must be also true for other counties. My point is that many factors should be taken into consideration and tested over a long time frame of several years to be valid.

* All % figures represent success of fledging from number of eggs in nest box.

Statistics Help Improve Bluebird Trail

Mary Rather

This year at Necedah National Wildlife Refuge I worked our nest box statistics in several different ways. I grouped box styles, mounting posts, and/or areas. I could then determine which area, box style and/or mounting post was the most beneficial to the nesting birds and eliminate the least productive or negative productive areas, boxes or posts.

We have eleven separate areas upon which we have 177 nest boxes placed. I found 5 areas (16 boxes) that yielded 0% productivity, that is, the eggs laid did not produce any fledglings. The adults were wasting their time or were also loosing their lives. These nest boxes, various styles, were all on wooden posts but had the 1 1/2" predator guard over the 3/4" nest box entrance opening.

Our alternatives were to eliminate the boxes from these five areas, or replace the wooden posts with pvc or narrow (2") stainless steel posts which have better productivity rates over the years.

I have found that the area and box styles productivity vary year to year, I waited several years before making the decision to pull out 16 wooden fence posts, relocate them or substitute pvc or metal mounting posts.

DO WE HAVE ENOUGH INFORMATION TO DRAW CONCLUSIONS?

Mary Rather

Reading the latest statistics, Wisconsin Bluebird, Volume 10 Number 2, showing the positive impact of English sparrow populations on tree swallow and Eastern bluebird production, makes one think that they should import English sparrows to improve the population of tree swallows and bluebirds. We at the Necedah National Wildlife Refuge thought we were fortunate not to have English sparrows or starlings.

I believe a closer look at the statistics, including more information would be of value in determining the English sparrow vs. tree swallow/bluebird production.

Some of the questions that occur to me are:

1. Were the English sparrows eliminated from the trail/nest boxes when found?
2. If the English Sparrows were allowed to nest, what was the impact on others attempting to nest in the nest box or in the nest boxes in the vicinity?
3. What weather considerations might have affected the nesting birds, hot/humid, hot/dry, wet/cool, or wet/hot?
4. Was there adequate food supply for species competing in the area and nest boxes in the area?
5. What type of predator control is used: mounting post, entrance guard, traps, etc?
6. If you have an extensive trail, with several different units, what is the over all success as compared to the unit and/or box type success? Is this consistant over a multiple year time frame?
7. In what type of habitat are the nest boxes located, what biogeographical region in the state?
8. Would our cooperators add the additional information to the data collection base?
9. How often are the boxes monitored?