

BBRR Raptor Banding: Sharp-shinned Hawk Study

Written by David Mathiason, Raptor Bander

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It was during the spring of 2016 that BBRR banders started to notice deformed beaks on some of the Sharp-shinned Hawks that were caught. Further, closer examination revealed some lesions on the inside of bird's mouths.

Discussion of the issue was expanded to other banding stations in the country. It turns out that others had been seeing the same thing for a few years. No one reported it as being common many years ago; it seems to be relatively new.

There were some guesses about what the infection might be, but no one had actually done the laboratory work to figure out what it was. In the spring of 2017, some infected birds were transported to Cornell University, where Dr. Sara Childs-Sanborn treated them and determined that the infection was a capillarid nematode *Eucoelus dispar*. Her results were published in 2019 (Journal of Wildlife Diseases, 55(4): 928-934).



*Left: A Sharp-shinned Hawk showing signs of a parasitic capillaria infection
Right: A normal, uninfected Sharp-shinned Hawk for comparison.*

This parasitic infection is common in raptors, though usually does not present itself in such an obvious, and graphic, way. The banders at BBRR have been making more careful examinations of Sharp-shinned Hawks over the past few years, concluding that it is now present in about 30% of them. We do not know why this infection is being seen now, when it was not seen in earlier years. Is it related to some toxin that the birds are being exposed to? It is related to habitat changes? Most importantly, we do not know how this infection might impact a bird's overall health and survival.

BBRR banders Barb French and Melissa Mance-Coniglio created a 0-5 scoring system for assessing the scope of the observable symptoms which was used this past spring to more accurately assess the infection. The table below shows the results for 119 Sharp-shinned Hawks banded this spring. It was true still that about 30% of the Sharp-shinned Hawks were observed to be infected with the capillaria nematode. The data suggests that perhaps the rate of infection might be different among males and females, but the number of males captured was too small to make a definitive statement about that possibility.

Capillaria Observed?	Female	Male	Total
No	74 (67%)	9 (100%)	83 (70%)
Yes	36 (33%)	0	36 (30%)
Total	110 (100%)	9	119 (100%)

Only a few of the birds were scored as having high levels of infection. The table below shows the results for the 110 females.

Capillaria Score Among Females						
0	1	2	3	4	5	Total
74 (67%)	15 (14%)	12 (11%)	1 (1%)	6 (5%)	2 (2%)	110 (100%)

We are in the early stages of understanding the impact of this infection. No firm conclusions can be made at this point and we will continue to assess Sharp-shinned Hawks for the next several years. The 0-5 scoring protocol has been offered to other banding stations to collect more data and also to see if there are regional differences.