

Introduction

- Insecticides are applied to millions of acres of land in the United States each year despite little research into their impacts on native wildlife.
- During the summer of 2020, staff at Raptor Education Group, Inc. (REGI) noticed a drastic increase in the number of songbirds showing signs of poisoning.
- REGI is an avian rehabilitation center in Antigo, WI.
- The true cause of these poisoning cases remains unknown, but insecticides are suspected given the behaviors exhibited by the birds.

Objective

To determine if there were more poisoning cases in passerines and near-passerines in 2020 compared to the previous seven years.

Methods

- We recorded the date, location found, species, injury type and patient number of admitted birds.
- Common signs of poisoning include neurologic symptoms such as seizures and head tilting/lolling.
- We included birds in the dataset from largely insectivorous orders of Passeriformes, Apodiformes, Caprimulgiformes, Cuculiformes, and Piciformes.
- We tallied cases with suspected poisoning and other causes of disease or injury from the years 2013-2020.
- We used a chi-square test ($\alpha = 0.05$) for homogeneity to compare poisoning cases to other causes in the past seven years (2013 to 2019) to 2020.

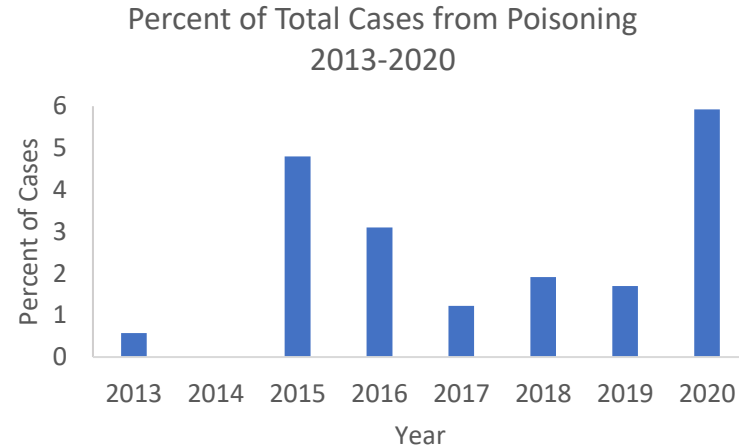


Figure 1:
Percent of total passerine and near-passerine cases resulting from suspected poisoning at Raptor Education Group, Inc. Average for 2013-2019 is 1.9 percent.

Results

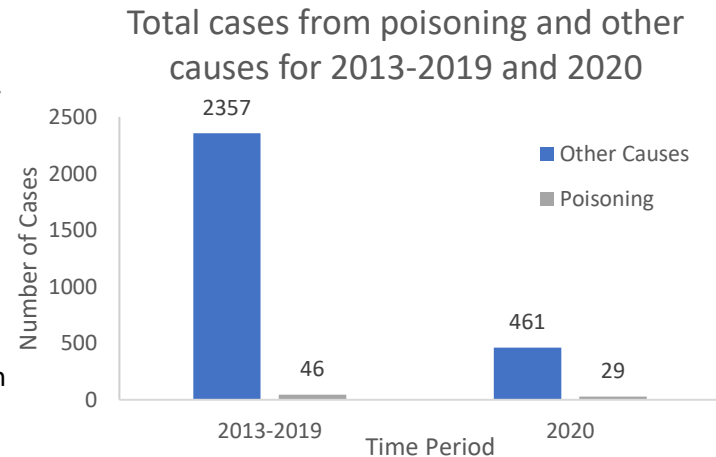
We analyzed a total of 2893 cases, 75 of which were likely poison. We identified a higher proportion of poisoning cases in 2020 than in the previous 7 years. Most of the chi-square value came from a difference in poisoning proportion.

$$N = 2893$$

$$X^2_{0.05,1} = 25.8$$

$$p = 0.000000371$$

Figure 2:
A comparison of case numbers by cause between previous seven years (2013-2019) and 2020. 2020 saw about 2/3 as many poisoning cases as the past seven years combined.



Discussion

- Poisoning cases in insectivorous bird species were higher in 2020.
- Increases in 2020 may have resulted from people spending more time outside and at home, people may have been spotting more birds and may have sprayed for insects more because they were spending more time in their yards.
- While the staff is knowledgeable, determining the cause of symptoms can be difficult.
- Little can be done once birds begin to show symptoms, the best solution is to limit insecticide use.
- We have not contacted other wildlife rehabilitation centers, but that may be an interesting next step.



A young Northern Cardinal exhibiting classic symptoms of insecticide poisoning. Photo courtesy of Marge Gibson, Raptor Education Group, Inc.

Acknowledgements

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