

Lead Exposure in Iowa's Bald Eagle Population

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Study Years:

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Concern about the negative effects of lead ammunition on wildlife has motivated research on lead exposure in various species. In Iowa 59% of Bald Eagles admitted to rehabilitation centers between 2004 and 2013 had lead in their blood. Despite this, there is still very little knowledge of the magnitude of lead exposure in the total population. This is largely due to legal restrictions on human interference with wild Bald Eagles and their nests.

Project Goals:

- Non-invasively determine dietary lead levels in wild Bald Eagles by measuring lead content of excrement samples.
- Compare lead levels in wild Bald Eagles versus Bald Eagles in rehabilitation centers.
- Investigate possible variation in lead exposure based on location and season.

Research Findings:

- Although the majority of excrement samples (93%) from wild Bald Eagles contained lead, most samples had low levels
- There was no significant variation in lead levels based on location or season
- Excrement lead levels were significantly higher in rehab eagles, indicating these individuals are not representative of lead levels in the general population
- Excrement lead levels were a significant predictor of blood lead levels in rehab eagles. However, confidently predicting clinical outcomes based on excrement lead levels is limited
- Nest success was lower in nests closer to roads, nests closer to the Mississippi River or on private land, likely due to increased human disturbances in these areas. Eagles that nest near the Mississippi River also face more competition from other eagles.



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