

Braddock Bay Raptor Research Bird of Prey Days

Man-made Threats to Raptors

Bob Williams April 26, 2025





Overview





- Electric Shock
- Landfill Flare
- Fishing Equipment
- Lead
- Shooting
- Windows/Glass
- Vehicle Collisions
- Rodenticide





This bald eagle is one of the 47 birds of prey that received electrical shocks from power lines and were brought to the O.W.L. Orphaned Wildlife Rehabilitation Society in Delta. (O.W.L. rescue centre)

Electric Shock



Electric Shock

Affects: Larger Birds of Prey

- Power Line Separation
 - Wing-to-wing
 - Wing-to-foot
- Nest on Transformers
- Necrosis
- Reference
 - B.C. raptor rehab treats birds of prey shocked by power lines |
 CBC News
 - Bald Eagle Survives Electric Shock | Enoch Wildlife Rescue
 - Swainson's Hawk shock victim |
 Santa Fe Raptor Center





Electric Shock

Mitigation Measures

- Structure and Pylon Configuration
- Distances Between Components
 - Wire-to-wire
 - > Energized Conductor to Grounded Hardware
- Insulators
- Diverters (Reflectors)
- Reference
 - Guidance for Preventing Electrocution Impacts on Birds | International Association for Falconry and Conservation of Birds of Prey
 - Bird Diverters | P& R Tech







Landfill Flare



Landfill Flare





Landfill Flare

Treatment

- Natural Molt
- Feather Implants
- Mitigation
 - Anti-Perching Devices
 - Enclosed Burners
 - Vent Covers
- Reference
 - > Impacted Red-tailed Hawk | Tri-State Bird Rescue & Research
 - > Impacted Red-tailed Hawk | Blackland Prairie Raptor Center
 - > Feather Implanting Process | Toronto Wildlife Centre
 - > Threats to Birds: Gas Flares | U.S. Fish & Wildlife Service
 - > Methane Burner Impacts on Raptors | EDM International







Fishing Equipment



Fishing Equipment

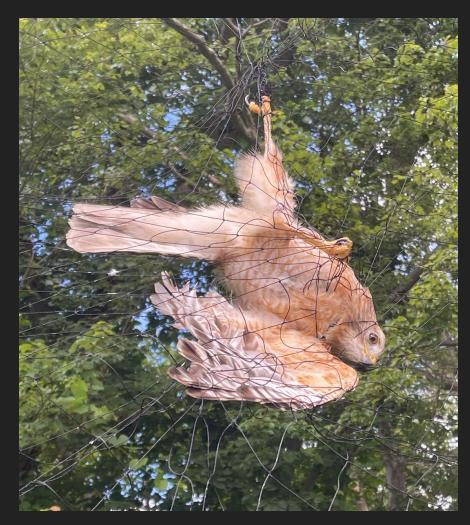
Discarded Fishing Line

- Use as Nesting Material
- Secondary Entanglement
 - Resistance Injury
- Reference
 - Impacted Barn Owl | Badger Run Wildlife Rehab
 - Impacted Eastern Screech Owl | Woodlands Wildlife Sanctuary
 - Entanglement | OWL Rehabilitation Society



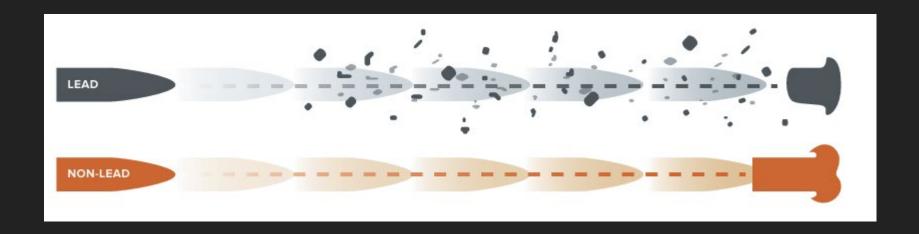


Other Netting









Lead Poisoning



Lead Poisoning







Lead Poisoning

Affects: Scavengers

Symptoms

Loss of Balance, Breathing Difficulty, Tremors/Seizures

Alternatives

Copper Bullets, Steel Shot, Bismuth Shot

Treatment

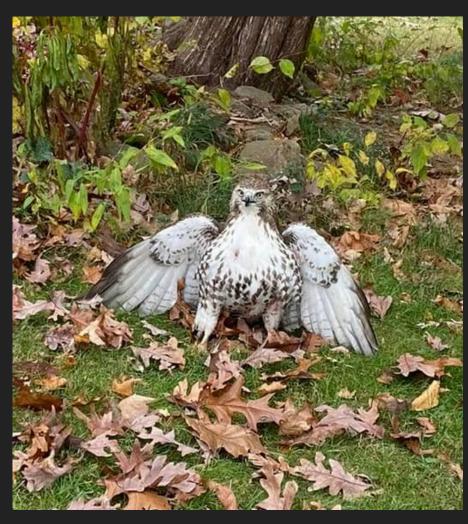
Chelation Therapy

- > Afflicted Bald Eagle | A Place Called Hope
- > To help eagles, NYS deer hunters can choose non-toxic ammo | Cornell Chronicle
- High Tech Bullets and Slugs | NYDEC
- > Lead it Go | The Peregrine Fund





Shooting







Shooting







Shooting

Legal Consequences

Federal Statute

- Class B Misdemeanor
- > \$15,000 fine, 6 months jail time, or both per count

New York

- > Red-tailed Hawk | A Place Called Hope
- > Red-tailed Hawk | Christine's Critters
- > Red-Shouldered Hawk (right) | A Place Called Hope
- > Portsmouth man faces federal charges for killing hawks | WJAR News
- > Migratory Bird Treaty | U.S. Code







Window/Glass Collisions



Windows/Glass







Windows/Glass

Mitigation Measures

Glass Treatments

- Window Decals/Film
- Screens
- Shades/Shutters
- Bird Feeder Location

- Red tail hawk crashes into News 12 studio building in Bethpage
- Juvenile Red-tailed Hawk (1) | Wildlife in Need of Rescue and Rehabilitation
- Juvenile Red-tailed Hawk (2) | Wildlife in Need of Rescue and Rehabilitation







Vehicle Collisions

Braddock Bay Raptor Research

Vehicle Collision









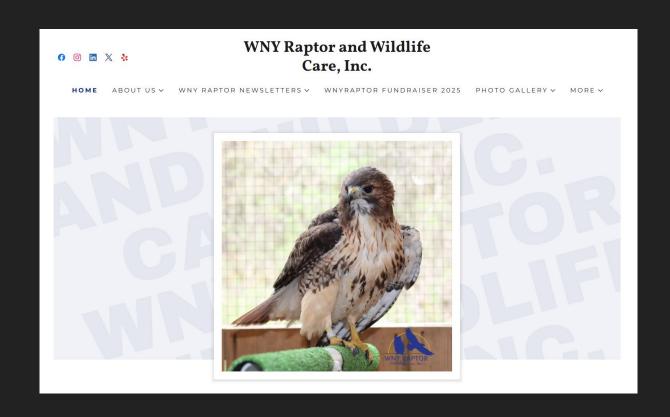
Help an Injured Raptor

Be Prepared

Know Who to Contact

- Finger Lakes Raptor Center
- WNY Raptor and Wildlife Care
- Lakeside Animal Hospital
- Fairport Animal Hospital

- Emergency Resource | Animal Help Now
- Wildlife Rehabilitators | NYSDEC
- Wildlife Rehabbers | Rochester Birding
 Association





Help an Injured Raptor

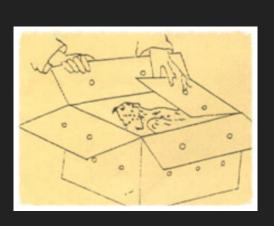
Be Prepared

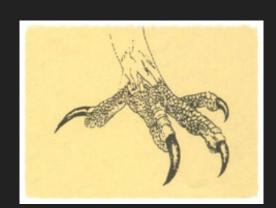
Raptor Rescue Kit

- Cardboard Box w Ventilation
- Towel/Blanket
- Heavy Duty Gloves

- Handling Injured Raptors | Rocky Mountain Raptor Program
- How to Handle an Injured Raptor | Raptor
 Education Group, Inc.











Secondary Rodenticide Poisoning



What are rodenticides?

Acutely Toxic Compounds

- Anticoagulants Excessive Bleeding
- Nerve Toxins Respiratory Distress
- Activated Vitamin D3 Kidney Failure,
 Cardiovascular Abnormalities, Tissue
 Mineralization
- Zinc Phosphide Inhibits Cell Energy Production





Secondary Exposure/Ingestion

Poisoned Rodents are Weakened

- > Take days to die
- DO NOT remain in traps
- Make easy prey

Effects in Predators

Anemia, Lethargy, Compromised Immune System,
 Internal and External Hemorrhaging, others

Treatment Difficulty

- Timeliness of discovery
- Arduous process





Documented Impacts

- Odds of Great Horned Owls testing positive for rodenticide exposure were
 10 times greater and Red-tailed Hawks 9 times greater than all other bird species studied. 62 percent overall exposure level
 - Anticoagulant Rodenticide Exposure in Raptors from Ontario, Canada. Thornton et al. 2022
- 100 percent of the Red-tailed Hawks in the present study tested positive for exposure to anticoagulant rodenticides. 91 percent tested positive for two or more different types
 - > Continued Anticoagulant Rodenticide Exposure of Red-tailed Hawks in the Northeastern
 United States with an Evaluation of Serum for Biomonitoring. Murray. 2020.
- 68 percent of New York State Red-tailed Hawk livers tested for anticoagulant rodenticide exposure had detectable residues
 - Prevalence of anticoagulant rodenticide exposure in red-tailed hawks and utility of clotting time assays to detect coagulopathy. Hopf-Dennis et al. 2022.

Ecotoxicology (2022) 31:919–932 https://doi.org/10.1007/s10646-022-02558-



Prevalence of anticoagulant rodenticide exposure in red-tailed hawks (*Buteo jamaicensis*) and utility of clotting time assays to detect coagulopathy

Cynthia Hopf-Dennis o¹ · Sarrah Kaye² · Nicholas Hollingshead³ · Marjory Brooks³ · Elizabeth Bunting³ · Noha Abou-Madi⁴

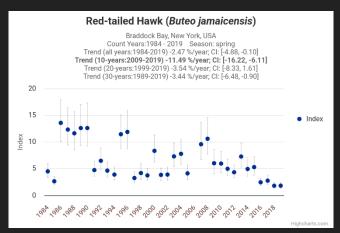
Received: 6 January 2022 / Accepted: 12 May 2022 / Published online: 27 May 2022

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Abstra

Anticoagulant rodenticides (ARs) continue to be used across the United States as a method for controlling pest rodent species. As a consequence, wild birds of prey are exposed to these toxicants by eating poisoned prey items. ARs prevent the hepatic recycling of vitamin K and thereby impede the post-translational processing of coagulation factors II, VII, IX, and X that are required for procoagulant complex assembly. Through this mechanism of action, ARs cause hemorrhage and death in their target species. Various studies have documented the persistence of these contaminants in birds of prev but few have attempted to use affordable and accessible diagnostic tests to diagnose coagulopathy in free-ranging birds of prey. In our study free-ranging red-tailed hawks were found to be exposed to difethialone and brodifacoum. Eleven of sixteen (68%) livers tested for AR exposure had detectable residues. Difethialone was found in 1/16 (6%), and brodifacoum was detected in 10/16 (62%) liver samples that were tested for rodenticide residues. Difethialone was found at a concentration of 0.18 ug/g wet weight and brodifacoum concentrations ranged from 0.003-0.234 ug/g wet weight. Two out of 34 (6%) RTHA assessed for blood rodenticide had brodifacoum in serum with measured concentrations of 0.003 and 0.006 ug/g. The range of clotting times in the prothrombin time (PT) and Russell's viper venom time assays for control RTHA were 16.7 to 39.7 s and 11.5 to 91.8 s, respectively. One study bird was diagnosed with clinical AR intoxication with a brodifacoum levels in blood of 0.006 and 0.234 ug/g wet weight in blood and liver respectively, a packed cell volume (PCV) of 19%, and PT and RVVT times of >180 s. No correlation was found between PT and RVVT in the control or free-range RTHA, and there was no relationship found between the presence of liver anticoagulant residues and clotting times in the PT and RVVT.

Keywords Anticoagulant rodenticides · Red-tailed hawks · Buteo jamaicensis · Coagulation · Prothrombin · Russell's viper venom





Alternatives – Integrated Pest Management

Reduce Attractants

Food and waste management

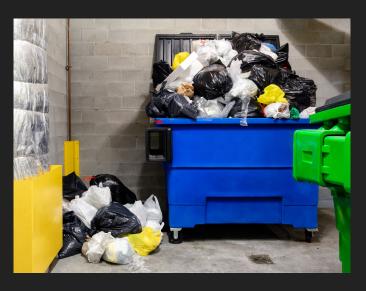
Shelter Exclusion

Seal building entry points

Removal

- One-way exit doors
- Traps

- > Rodents | Frogger Wildlife
- > Rats | Eviction Nuisance Wildlife Control







Legislative Efforts to Restrict Sale and Use

- Legislation in Effect
 - Statewide/Provincial Restrictions
 - Municipal Action
- Legislative Consideration
 - Massachusetts
 - Connecticut
- Legal Petition
 - Harvard Law Review

Rodenticide

The Commonwealth of Massachusetts

PRESENTED BY:

James K. Hawkins

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act restricting the use of rodenticides in the environment.

PETITION OF:

NAME:	DISTRICT/ADDRESS:	DATE ADDED:
James K. Hawkins	2nd Bristol	1/15/2025
Carmine Lawrence Gentile	13th Middlesex	1/22/2025
David T. Vieira	3rd Barnstable	1/22/2025
Steven Owens	29th Middlesex	1/22/2025
Kristin E. Kassner	2nd Essex	1/22/2025
Angelo J. Puppolo, Jr.	12th Hamndon	1/22/2025
Marc T. Lombardo		
Natalie M. Blais		HARVARI
Simon Cataldo	ANIMAL LA	
Mike Connolly		ANIMAL LA
Daniel M. Donahue		
Patricia A. Duffv		

Rodney M. Elliott Kimberly N. Ferguson Sean Garballey Colleen M. Garry

John R. Gaskey

Richard M. Haggerty

HARVARD LAW SCHOOL ANIMAL LAW & POLICY CLINIC



May 13, 2024

Michael Moore, Director, Bureau of Climate and Environmental Health Food Protection Program Ashley E. Randle, Commissioner, Department of Agricultural Resources Brian Arrigo, Commissioner, Department of Conservation and Recreation Dr. Robert Goldstein, Commissioner, Department of Public Health Richard Berman, Public Member

c/o Hotze Wijnja, Environmental Chemist Pesticide Board Subcommittee

Massachusetts Department of Agricultural Resources

Via email: Hotze.Wijnja@mass.gov

Re: PETITION TO SUSPEND THE REGISTRATIONS OF ANTICOAGULANT RODENTICIDE PRODUCTS IN MASSACHUSETTS



- Owl on Death's Door Waits Outside Post Office, Hoping Someone Will Notice | The Dodo
- Rodenticides Are Killing Massachusetts Wildlife; Will Authorities Step Up? | Harvard Law School
- S. 644/H. 965: An Act Restricting the Use of Rodenticides in the Environment | MSPCA
- Lowell, MA Ordinance Amendment
- > Petition Ban The Use of SGARS in Massachusetts | Change.org
- > EwA Rat Poison (ARs) Brigade
- > Afflicted Red-tailed Hawk | Andrew Joslin Cape Ann Wildlife
- Red-Tailed Hawk (Juvenile) Rescue | James Joyce Wakefield, MA
- > Afflicted Red-tailed Hawks | Newhouse Wildlife Rescue









More Information/Questions

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