Signalment and history

• Approximately 2-year-old male bald eagle
• Found alive on an island in Keg Creek Wildlife Management Area
  • Columbia County, Georgia
• Lethargic, could not hold up head
• Died later that same day
Figure 3. Transmission electron micrograph of white matter in the stratum opticum of a hawk that consumed tissues from coots with vacuolar myelinospathy. Multiple vacuoles are delimited by myelin laminae (arrows) that split at the intraperiod line (arrowhead).
Morphological Diagnosis

Severe, chronic, bilateral intramyelinic edema and white matter vacuolation
Avian Vacuolar Myelinopathy

Hypothesized pathogenesis:
- Neurotoxin produced by *Aetokthonos hydrillicola*
- *A. hydrillicola* grows on submerged aquatic vegetation
- Herbivorous prey animals eat the contaminated vegetation (e.g. the American coot)
- Eagles eat the prey species that contain the toxin
EXPERIMENTAL VACUOLAR MYELINOPATHY IN RED-TAILED HAWKS

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ESTABLISHING A FOOD-CHAIN LINK BETWEEN AQUATIC PLANT MATERIAL AND AVIAN VACUOLAR MYELINOPATHY IN MALLARDS (ANAS PLATYRHYNCHOS)

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Aetokthonos hydricola gen. et sp. nov.: Epiphytic cyanobacteria on invasive aquatic plants implicated in Avian Vacuolar Myelinopathy

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Other agents that induce intramyelinic edema

- Hexachlorophene
- Triethyltin
- Bromethalin
- Rafoxanide
- Cuprizone
- Isonicotinic acid hydrazide
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