

Harmful Algal Blooms and Bird Die-offs in Chesapeake Bay: A Potential Link?

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Coaches Island

Poplar Island Complex



Anabaena sp.



Microcystins

- 7 amino acid monocyclic peptide
- 70 structural variants
- LD50 of “MC-LR” ~50 $\mu\text{g}/\text{kg}$

MCs were detected in water samples

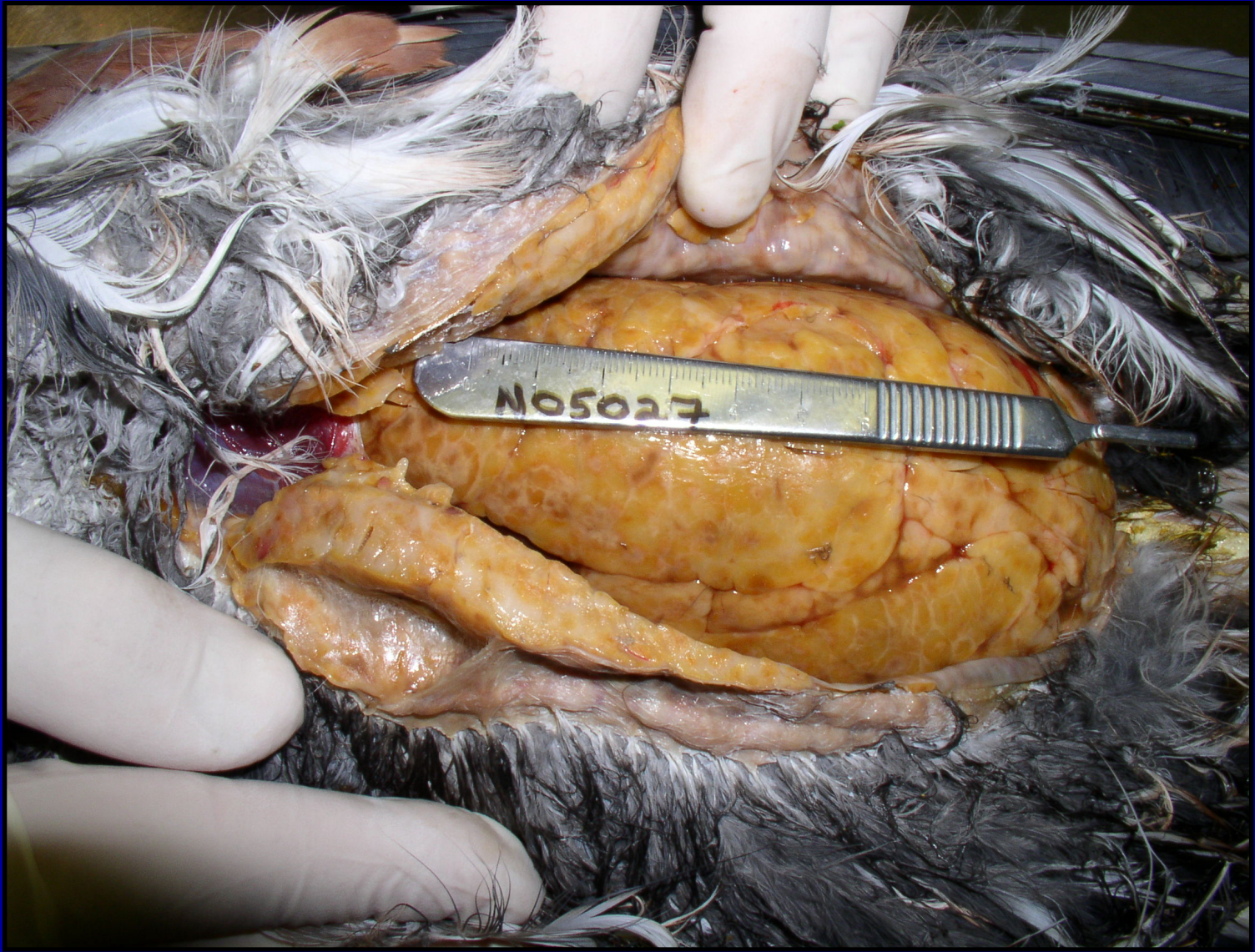






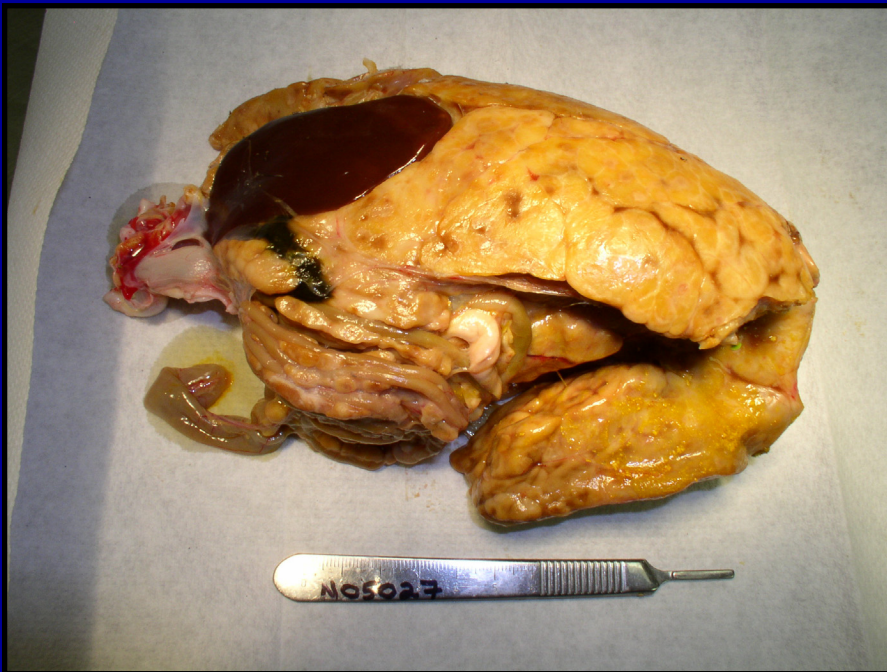
Debilitated Heron





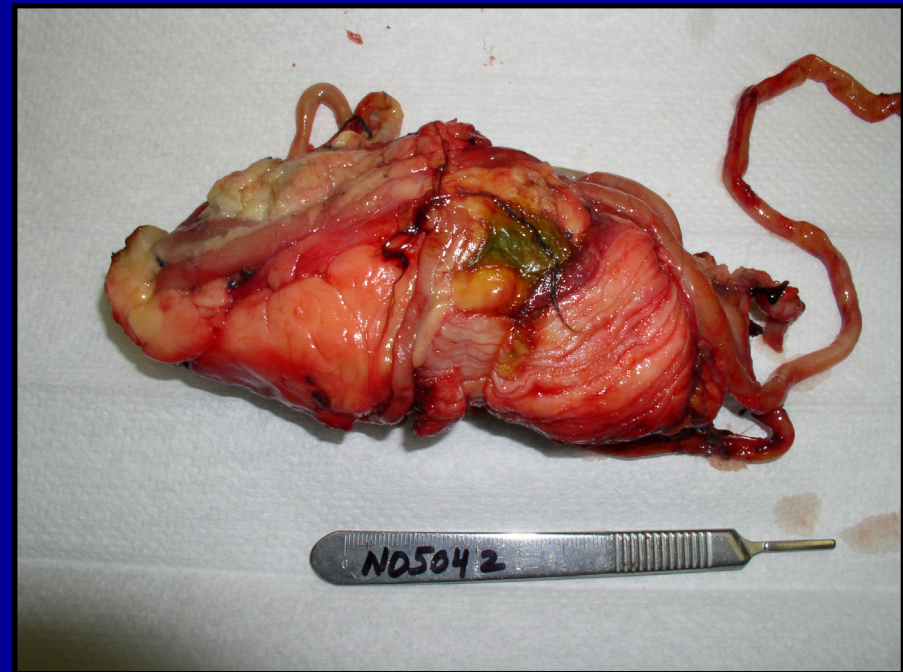
“Affected”

Poplar & Coaches Islands



“Reference”

Blackwater NWR



Causes of Steatitis?

- Alternate Prey Hypothesis
- Rancid Fish Hypothesis
- Harmful Algal Bloom Hypothesis

What do we need? (\$)

- Data on [MC] and trophic transfer of toxins
- Information on MC toxicity in birds
- Relation of MCs exposure and steatitis
- Examine HABs as initiator of avian botulism outbreaks