

A photograph of a dark-colored mudpuppy salamander resting on a light-colored, textured rock surface. The salamander is positioned diagonally across the frame, with its head towards the upper right. The background is a soft-focus natural setting.

# Evidence of a new species of mudpuppy in Tennessee

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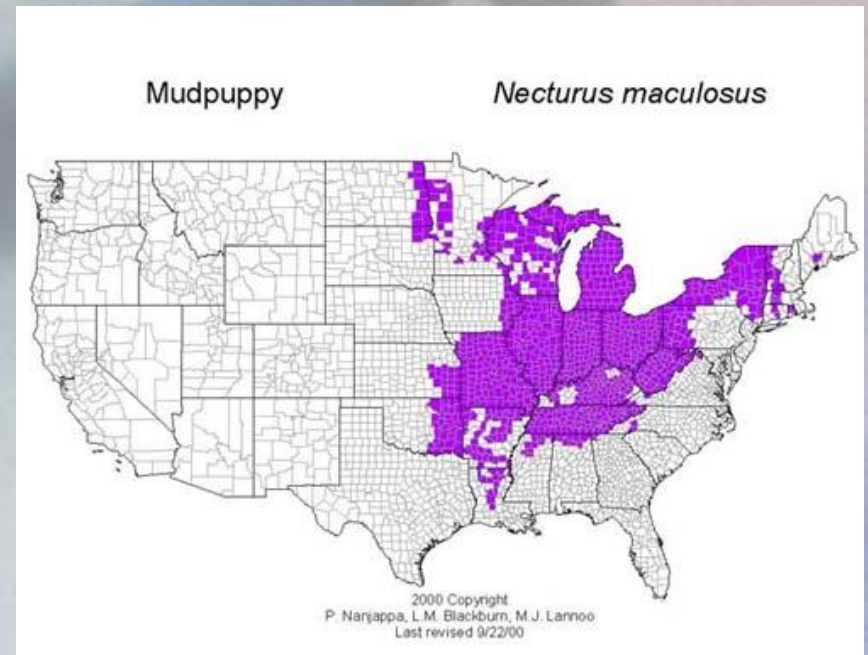
# Mudpuppies Overall

- 5 species plus 1 recognized subspecies (*Necturus maculosus*, *Necturus maculosus louisianensis*, *Necturus alabamensis*, *Necturus beyeri*, *Necturus punctatus*, and *Necturus lewisi*).



# Mudpuppies in Tennessee

- Currently thought to only have one mudpuppy in TN (*Necturus maculosus*).
- Thought to occur statewide





# Hellbender Surveys

- Part of a team surveying hellbenders 2009-2012.
- It was noticed by Michael and Matt that mudpuppies in the Hiwassee look a little weird.

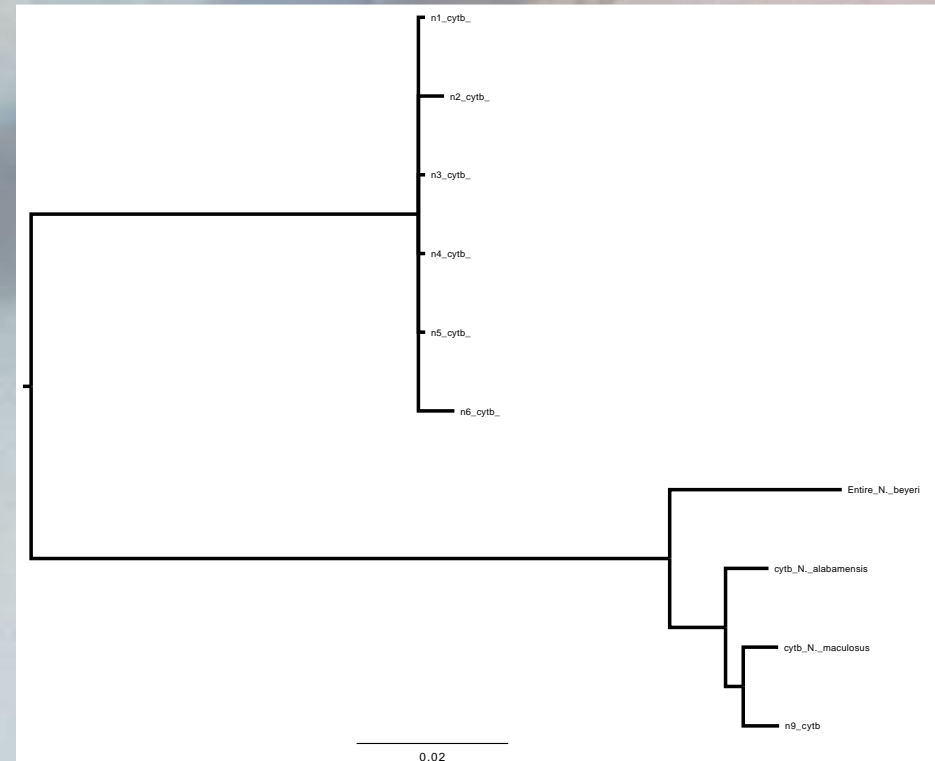


# Hiwassee Mudpuppies



# Preliminary Data

- Collected samples from 9 individuals in 2012
- Sequenced PCR product for CytB
- Showed that some of the samples were pretty different than *Necturus maculosus*



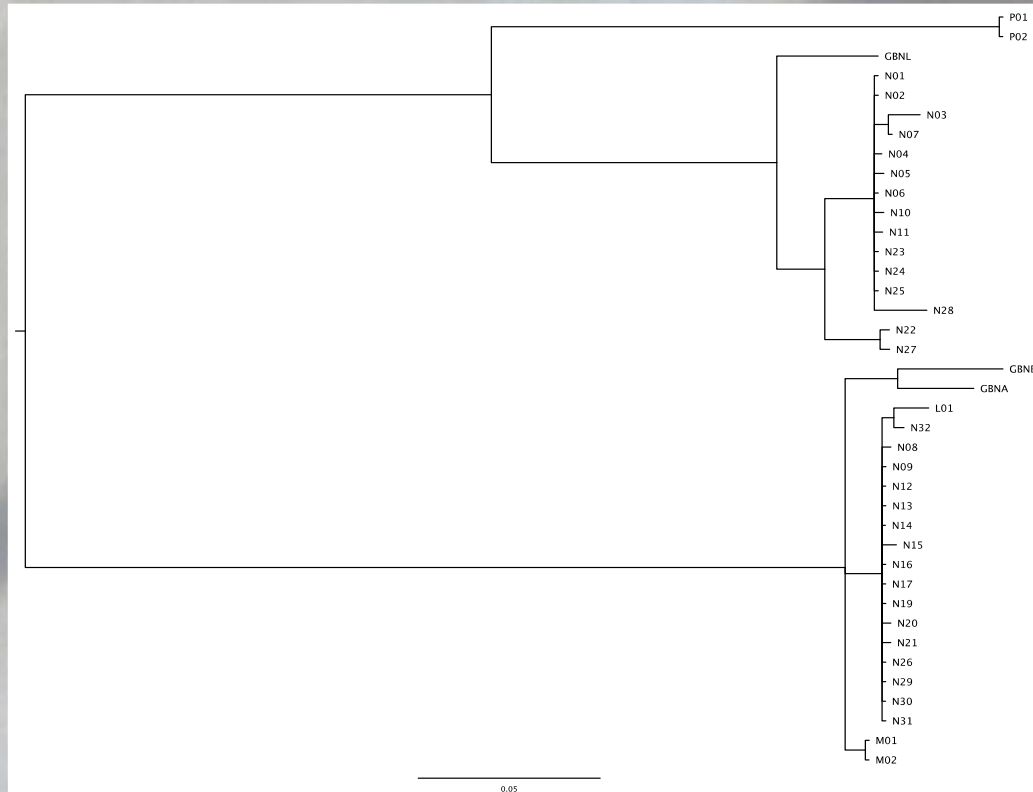


# Continued field/lab work

- Collected more tissue
- Obtained reference tissue from other species
- Selected another mitochondrial and 4 nuclear genes to sequence (ND2, RAG1, NCX1, SLC8a3, and POMC)

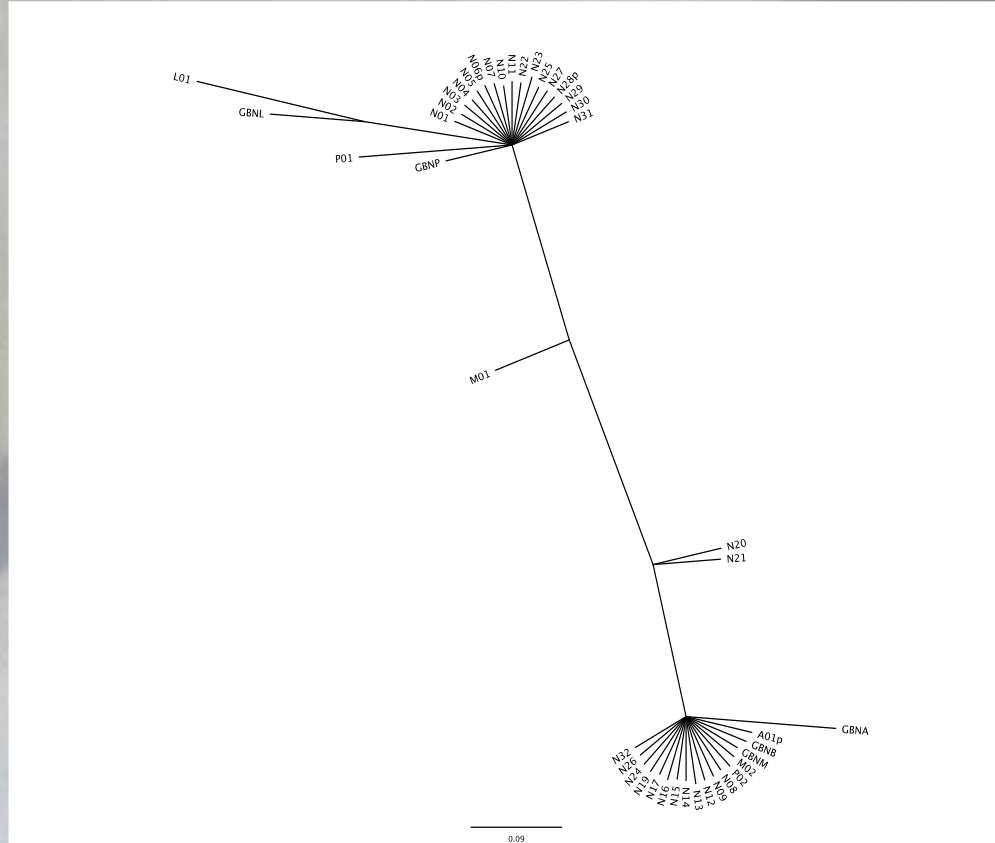


# ND2



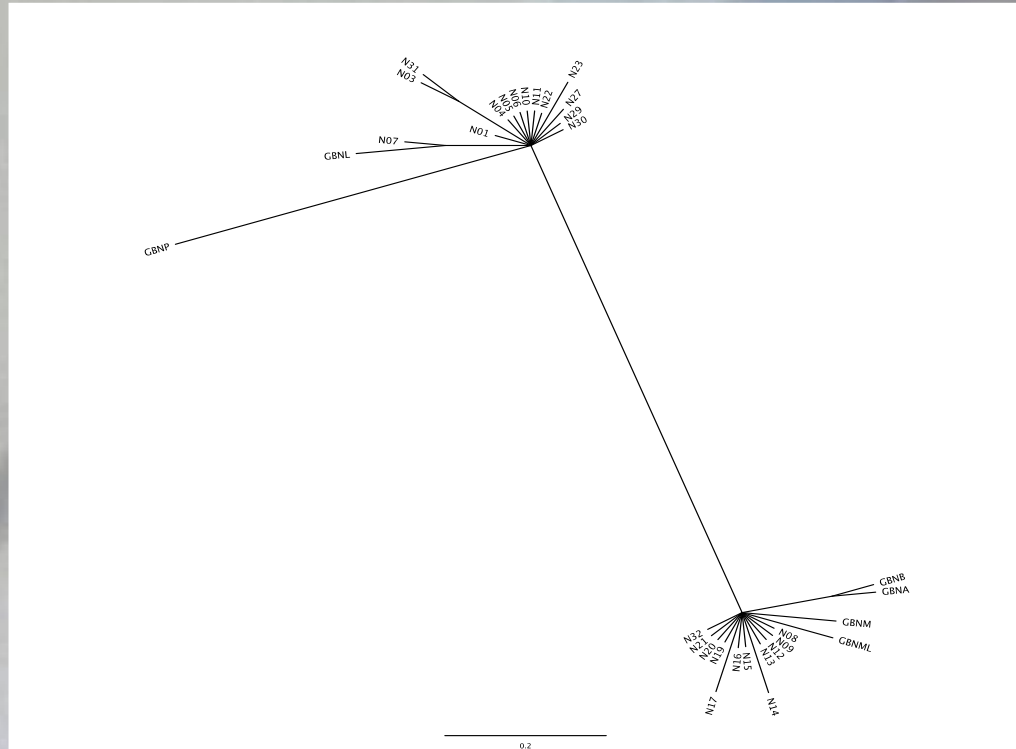


# NCX1



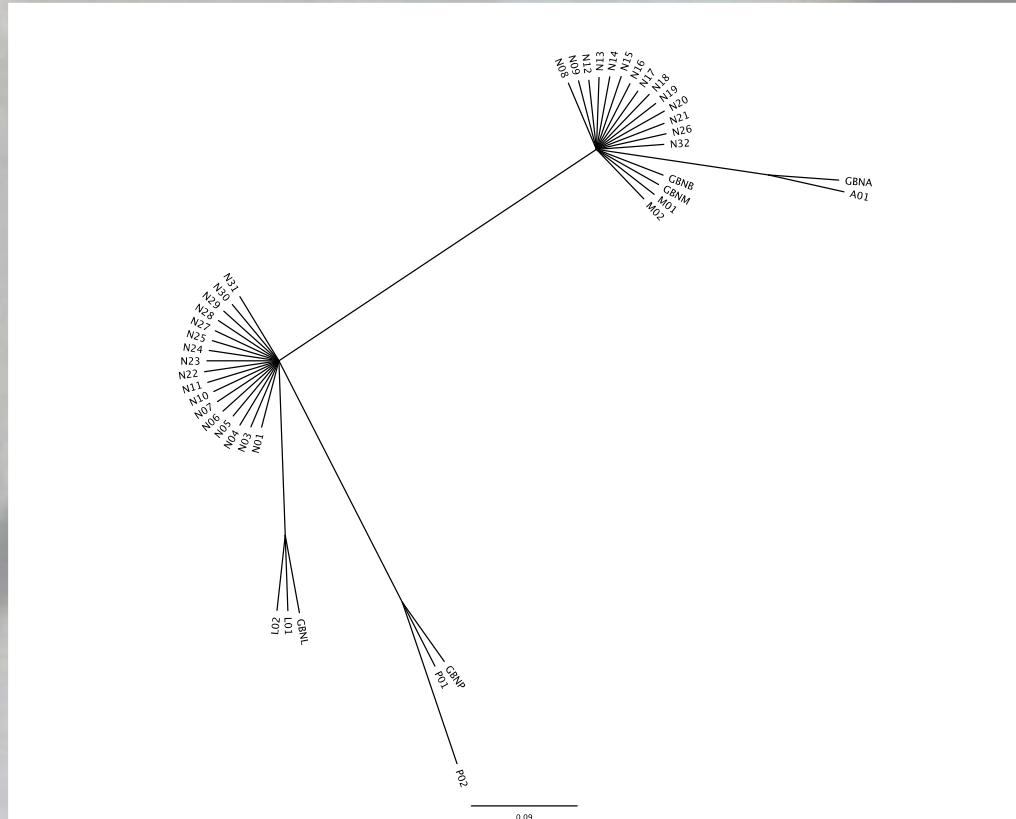


# RAG1

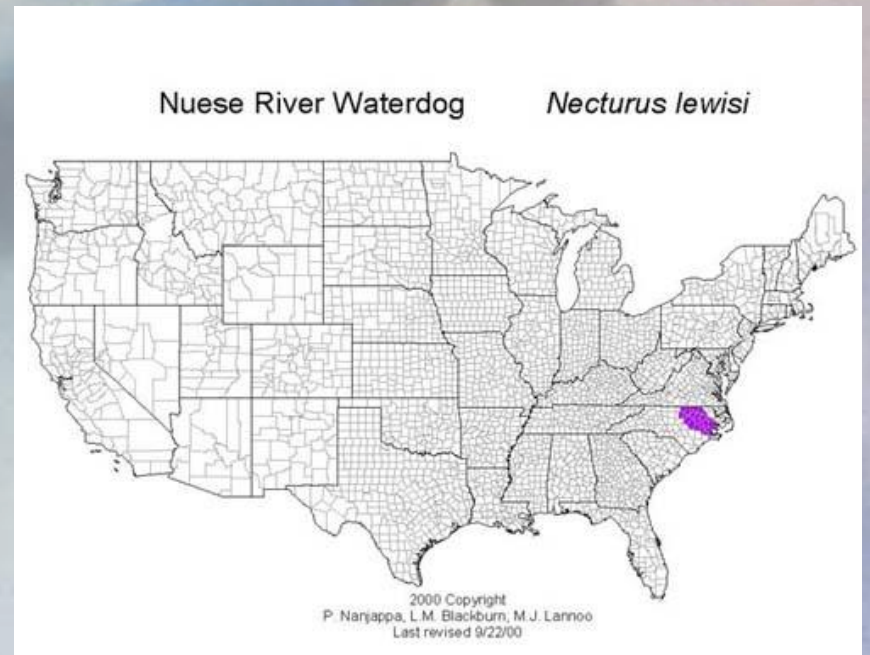




# SLC8a3



# Necturus in Hiwassee



# Something new in the Hiwassee River

- Smaller
  - 14.5-19.5 cm (8 adults)
  - 20.0-33.0 cm (*N. maculosus*)
- *Two* distinct belly patterns
  - Spotted, resembling *N. lewisi*
  - White stripe or pigment on belly, resembling *N. alabamensis* or *maculosus*.





# Acknowledgements

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# Thank you to the following supporters



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