Anurans as Indicators of Landscape Change in Southwest Florida

Acknowledgements

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Background

- Early 1990’s – focus on global decline of amphibians
- Mid 1990’s – increasing occurrence of malformed frogs
- Recognition of frogs as critical indicators of environmental health, particularly water quality
- Frogwatch – Southwest Florida Frog Monitoring Program – started 2000
METHODS

- Following NAAMP protocol
- 23 routes – nine currently active
- Each route 10-15 stops
- Sampled four times a year (June-September)
- Each stop – listen for three minutes, recorded each species on a calling intensity of 1, 2, or 3
- Data collected on weather and habitat changes
- Data analyzed by entire database, individual routes, and individual stops
- Calling frequency – proportion of the time a call is heard (counts divided by total stops)
- Mean Calling Intensity – sum of all calling intensity divided by total number of stops
Questions so far?
Occurrence of 'No Calling'

Frequency

· Year


y = 0.4272x - 832.35

R² = 0.1137
Richness Route 7 Stop 7 Restoration Site

Frog Species Richness

Mean Native Calling

restoration
Preliminary Conclusions

• Overall frog calling is declining for the entire region
• Exotic species calling frequency is increasing.
• Some native frogs are maintaining or increasing calling, others are declining (southern toad, squirrel treefrog, leopard frog, barking treefrog, pinewoods treefrog, and little grass frog)
• Individual routes show variation in population changes suggested localized impacts rather than regional or global
• Preliminary (very) stop analysis indicates that wetland restoration can maintain – maybe improve - habitat for native frogs
• Next steps - Individual stop analysis may help illuminate driving mechanisms (site-specific, regional trends, or global changes).
Questions?