Relations Between Hydrological Variables and Year-Class Strength of Sportfish in Four Florida Rivers

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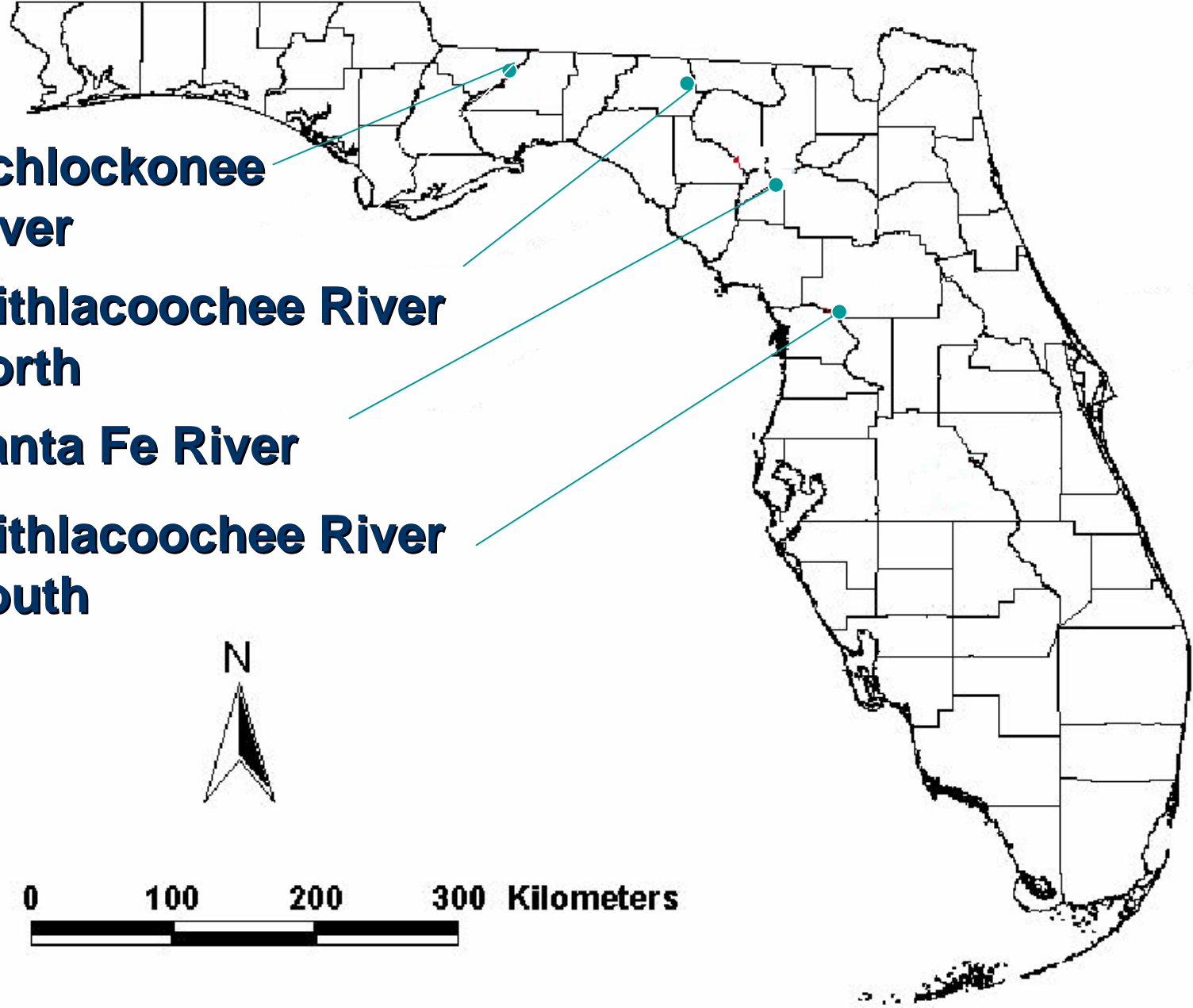7922 NW 71st Street, Gainesville, Florida 32653

Objectives

- Assess how variation in flow influences recruitment of riverine fishes
  - Survival and abundance

Ochlockonee River
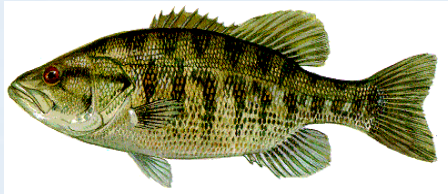
Withlacoochee River North

Santa Fe River

Withlacoochee River South

N

0   100   200   300   Kilometers

Methods

- Boat electrofishing was conducted in 20 minute transects

- At least five fish per centimeter group were sacrificed for aging

Species Collected

Micropterus notius
Suwannee Bass

Micropterus salmoides
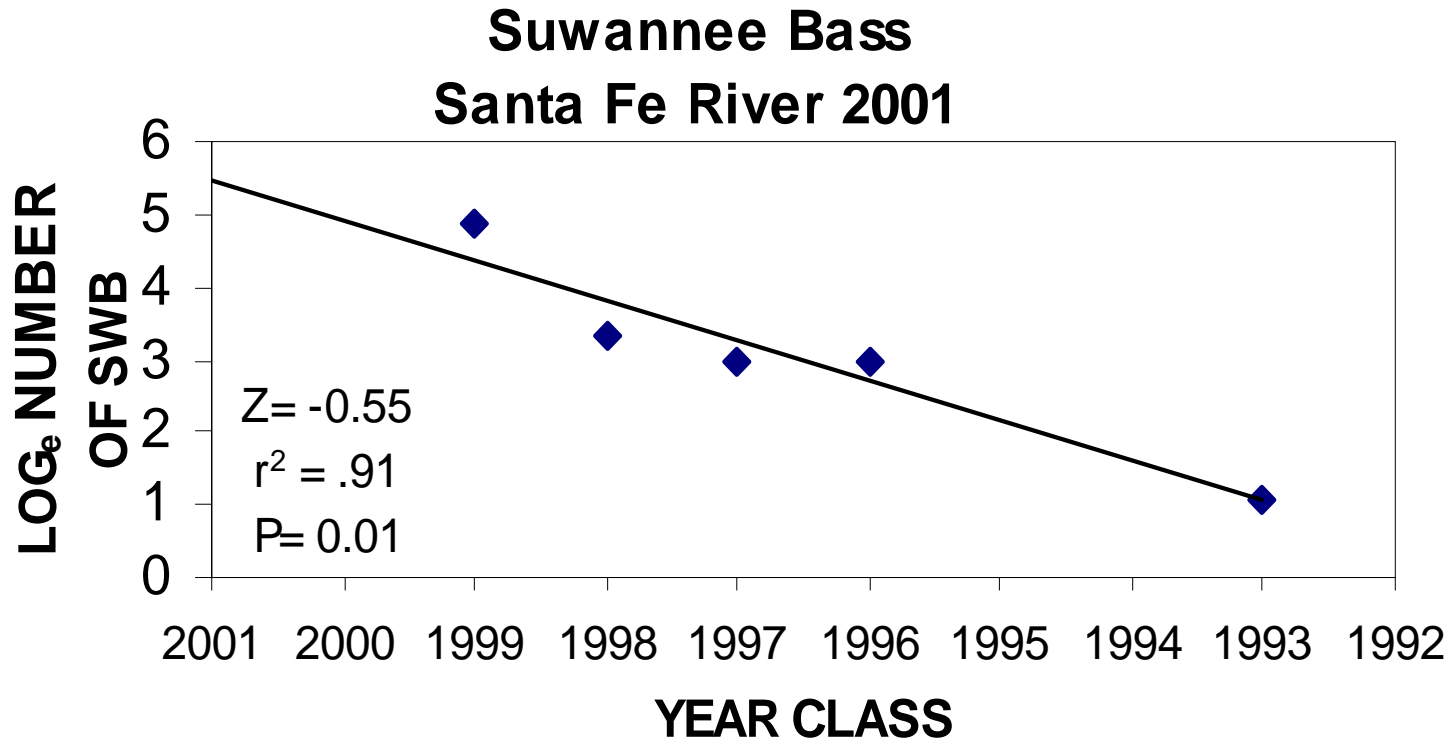Largemouth Bass

Lepomis macrochirus

Bluegill Sunfish

Lepomis auritus

Redbreast Sunfish
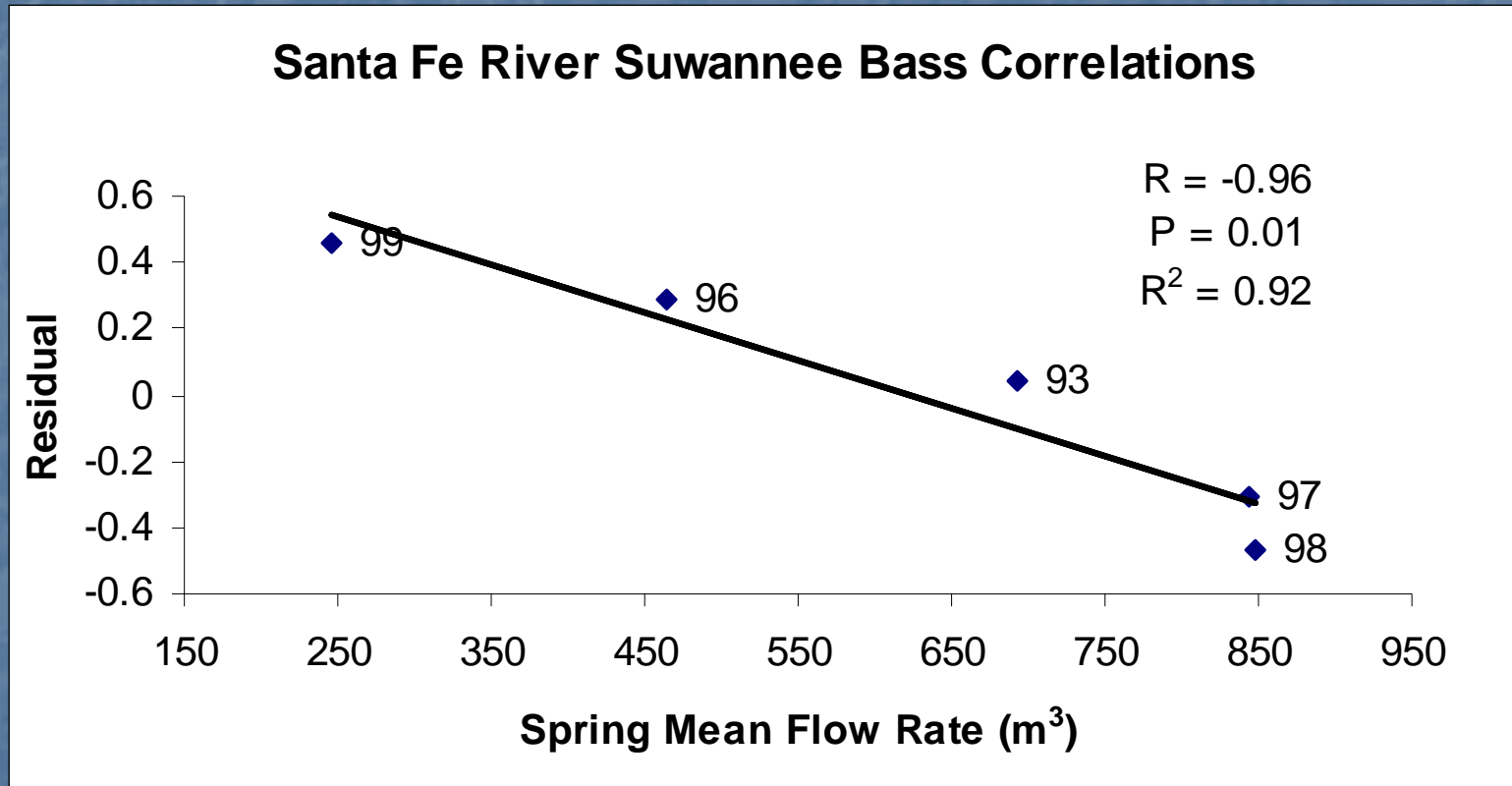
Age Determination

- **Otoliths from fish were sectioned with a diamond wheel saw into 0.5 mm sections**

- **Annuli were counted by two independent readers**

Catch- Curve

Suwannee Bass
Santa Fe River 2001

Z= -0.55
r^2 = .91
P= 0.01

Correlation Analysis
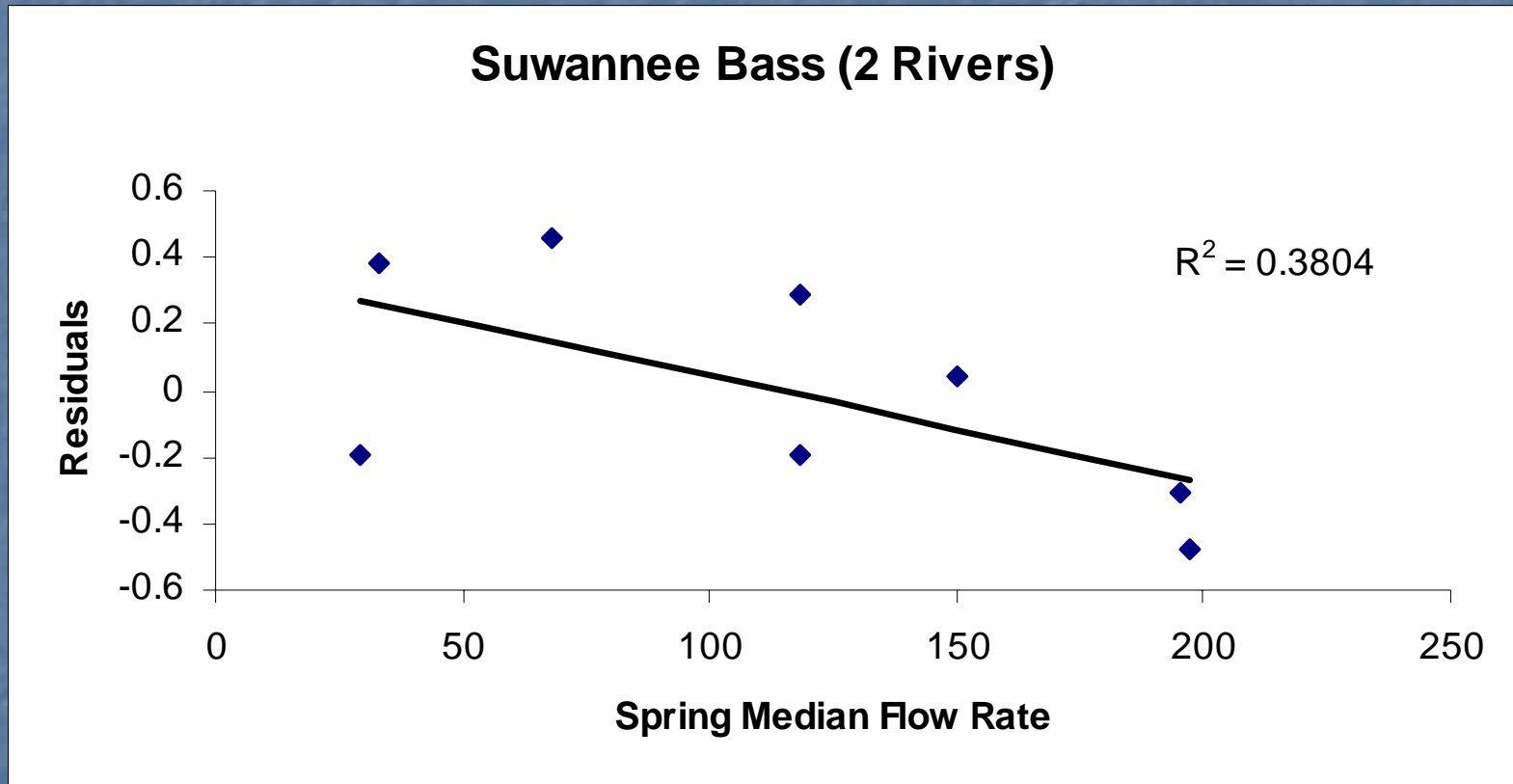

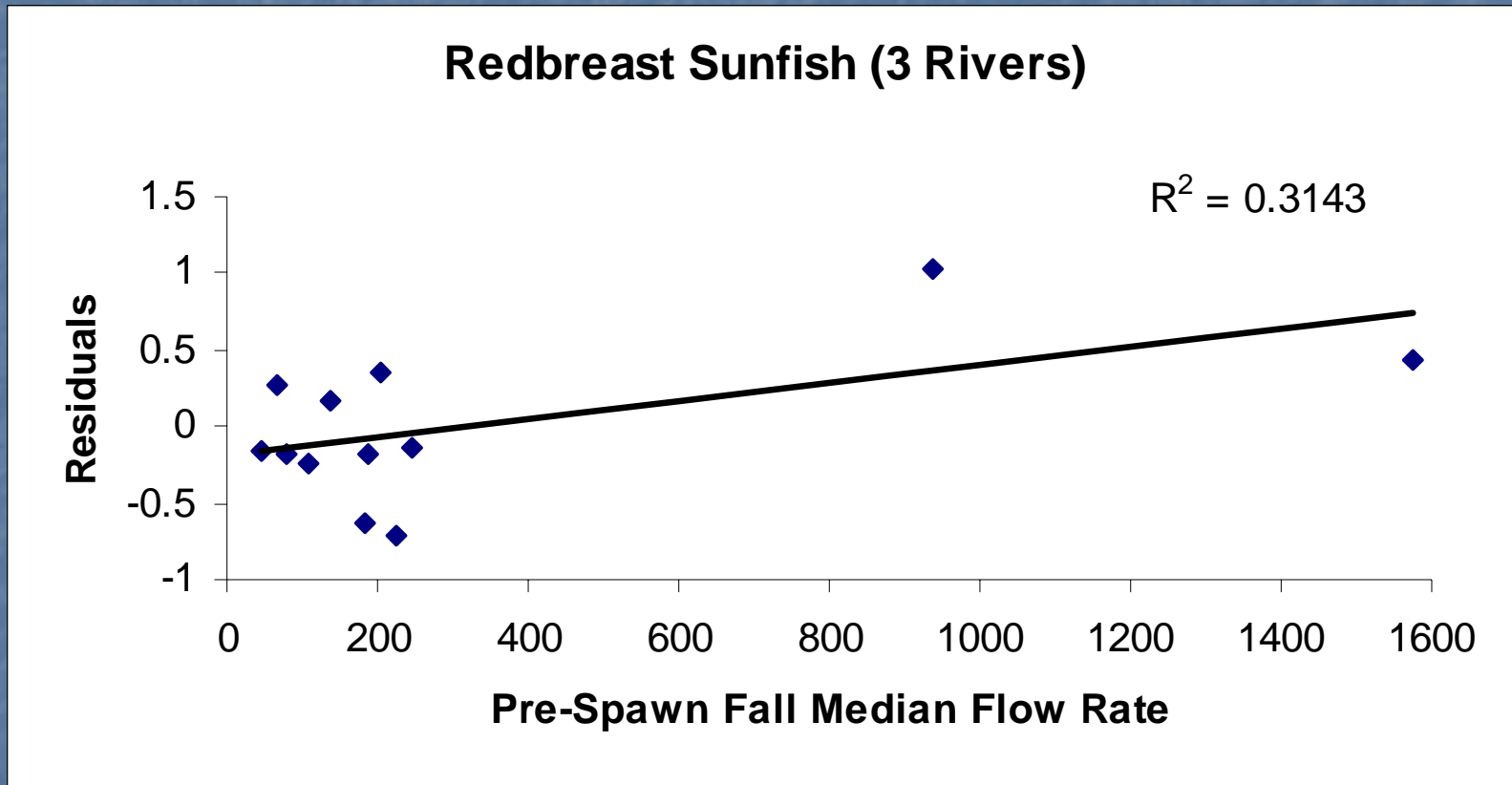**Santa Fe River Suwannee Bass Correlations**

Results

Correlation Results

- Year-class strength of largemouth and Suwannee bass was negatively related to flow in rivers

- Year-class strength of bluegill and redbreast sunfish was positively related to flow in rivers

Regression Graphs

Regression Graphs

Redbreast Sunfish (3 Rivers)

Management Implications

- **Species examined responded differently to flow and levels**

    sunfish +

    Black bass –

- **Longevity of the species may be a integral part in setting MFL's**

    sunfish - short lived

    Black bass - longer lifespan

Management Implications

■ **High flows at least once every three years in fall may allow inundation of floodplain habitat, thus favorable conditions for *sunfish* in rivers.**

■ **low flows for three or more consecutive years should be prevented, and thus MFL's should consider biological impacts to short-lived species such as *sunfishes.***

Acknowledgements