Diet of largemouth bass (*Micropterus salmoides*) in the Santa Ana River

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INTRODUCTION

Largemouth bass (*Micropterus salmoides*, LMB) are an invasive species present in the Santa Ana River. As one of the most impactful invasive species on the planet LMB are often responsible for the extirpation of native species in locations where they have been introduced[1,2]. Historically, young LMB are known to feed on small crustaceans and insects before undergoing an ontogenetic shift as they mature to become piscivores[3]. We propose to examine the diets of LMB in a wastewater dominated river in Southern California, the Santa Ana River (Riverside and San Bernardino Counties). Within the Santa Ana River LMB are commonly found in river reaches in close proximity to wastewater outflows. These areas are characterized by deeper pools and runs, an elevated temperature regime, and high flows[4]. In 2019 during a shutdown of the RIX and Rialto wastewater facilities 503 LMB were removed from the Santa Ana River. We assessed these fish and their stomach contents to categorize their diets and populations along a spatial gradient.

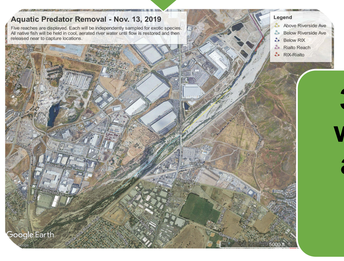
Questions

1. What are the primary food sources for LMB in the Santa Ana River?
2. How does distance from a wastewater outflow impact LMB diet and population?

METHODS

1. Riverside County agencies conducted an invasive removal event in 2019 in coordination with a wastewater facility shutdown event

2. 503 Largemouth bass were dissected and stomach contents were removed for analysis



3. Stomach contents were categorized and assessed in order to determine feeding patterns

Invasive largemouth bass in the Santa Ana River **did not demonstrate the traditional ontogenetic shift to piscivory** and primarily fed upon benthic macroinvertebrates in all examined river reaches.

The diversity of prey BMIs differed based upon the reach LMB were captured within

DISCUSSION

- Out of 513 Largemouth bass caught in 2019 only 13 had any fishes found in their stomach contents. This could be a seasonal or permanent shift away from piscivory among this population.
- When we identified the majority of stomach contents we found extremely high densities of four BMI orders; **Ephemeroptera, Lepidoptera, Odonata, and Trichoptera**.
- The diversity of BMIs found in LMB stomach contents differed depending upon the reach and index used. We decided to focus on Simpson's Index because of the dominance of a few orders and families
- We plan to pursue other analyses on the interactions between LMB body size, condition, capture location, and diet in the future.

Acknowledgements and References

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RESULTS

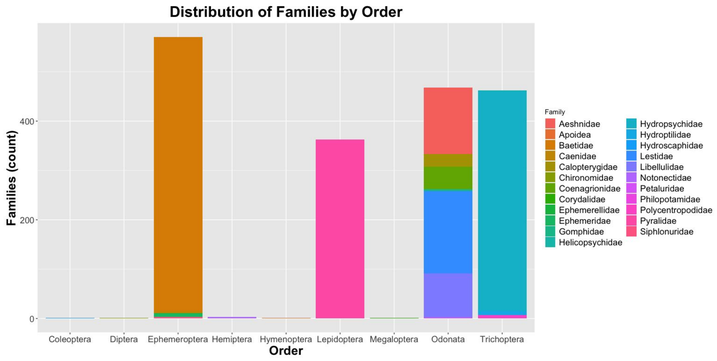

Fig 1: Largemouth bass diet composition by order and family

Figure 2: Simpson's diversity of LMB stomach contents differed significantly between studied river reaches (1-2, 1-3, 1-5, 4-5)

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