INTRODUCTION

Urban fish communities are established in a myriad of ways, not least of which is that associated with water delivery to populated areas. In Arizona, much of our water is delivered by Salt River Project canals (Fig. 1). It is well known that these canals house many species of fish, form the source waters, and from bizarre introductions by the general population. That many, if not most, of the bodies of water within Arizona are highly altered in some way by human activities, understanding the fish communities that persist within these artificial waterways is fundamental to a larger understanding of the region’s aquatic ecosystems. As a first look at the canal community, we used stable isotope analysis for detecting long-term diet signatures. We compared our findings with studies of other modified and restored fish communities in Arizona.

PRIMARY QUESTIONS

(1) Is the isotopic diet signature the same in the canals as in other systems, particularly for native species?

(2) Is there a difference in dietary diversity and food chain length among systems?

METHODS

- Fish samples were collected January 2011 from SRP canals during planned ‘drain downs’.
- Fishes were identified to species (Fig. 2), and frozen.
- Tissue samples were oven dried, ground finely via mortar and pestle, subsampled to < 0.002g, and placed in tin capsules for analysis which was performed at the Goldwater Environmental Laboratory (GEL) on a PE2400 CHN Elemental Analyzer.
- For stable isotope analysis, tissues were collected from the white muscle mass on the dorsal surface of the fish.
- Tissue samples were oven dried, ground finely via mortar and pestle, subsampled to < 0.002g, and placed in tin capsules for analysis which was performed at the Goldwater Environmental Laboratory (GEL) on a PE2400 CHN Elemental Analyzer.
- We compared our findings with data from Marks et al. (2009)* who quantified food webs.

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