

**Jeff Sorensen**

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**From:** Peter Reinthal [pnr@email.arizona.edu]  
**Sent:** Thursday, October 15, 2009 2:30 PM  
**To:** Tony Robinson; David Orabutt  
**Cc:** Heidi Blasius; Mary Richardson; Don Mitchell; Rob Clarkson; Mark Haberstich  
**Subject:** Aravaipa Fall 2009 Survey

Tony and Dave -

Here is a summary of the Fall 2009 fish survey with my recommendation in regard to MEFU and TICO removal. Sorry for not getting it out sooner but I have had a variety of deadlines to meet at the University this week.

Please feel free to contact me if you have any questions or would like additional data or explanation.

Results of Fall 2009 Fish Survey

We observed fairly large decreases in the surveyed populations of loach minnow (TICO) and spikedace (MEFU) in Aravaipa Creek during the fall

2009 survey. For TICO, fish were observed throughout the stream but at lower levels, especially in the upper canyon. We found an overall 51% decrease when comparing the total number of individuals at all sites from October 2008 to October 2009 (fall vs. fall in consecutive years).

There was also an overall 53% decrease when comparing the total number of individuals at all sites from April 2009 to October 2009 (spring vs.

fall, same year). A similar pattern was seen for MEFU: an overall 63% decrease when comparing the total number of individuals at all sites from October 2008 to October 2009 and a 54% decrease when comparing the total number of individuals at all sites from April 2009 to October 2009. MEFU numbers were lower for every site and none were found at site

#7 (lower canyon) where they had been found the previous two sampling periods. Anecdotally, MEFU appeared to stress more rapidly than what we observed during the last two sampling periods. We also noticed greater incidence of /Lernea/ sp. and yellow grub (parasites) in /Gila robusta/ than seen in recent sampling periods.

I would hypothesize that populations of both species are showing downward trends for the following reasons. Flow was lower than last year (about one cfs) and there was no flooding during this past summer/monsoon season (Mark Haberstich, TNC, pers. com.). MEFU populations appear to respond positively to flooding and increased flow and TICO populations respond negatively to decreased flow. However, the populations have not reached their lowest counts as observed during the

2002-04 drought. MEFU populations are near and TICO populations well below their 8.5 year mean levels but MEFU shows more extreme population fluctuations than TICO. Also of concern was at site #4 – Hell Hole/Deer Creek – the first mid-canyon site, four juvenile yellow bullheads (AMNA) were found for the first time since fall 07 and before that, fall 04 and spring 05 and, for the first time in 8.5 years, a red shiner (CYLU) was found. These are thought to be due to lack of flooding events.

Given that (1) populations of both species are showing significant declines, (2) exotics are more wide-spread and (3) the uncertainty of winter precipitation, I would recommend that you not take 200 individuals of TICO or MEFU from the Aravaipa populations for supplemental stocking of other populations. Taking some or all of these fish of either species would probably have minimal impact at current levels but if conditions do not improve, the removals could exacerbate population declines.

Peter Reinthal

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