

Jeff Sorensen

From: Peter Reinthal [pnr@email.arizona.edu]
Sent: Thursday, April 27, 2006 2:31 PM
To: Jeff_Simms@blm.gov
Cc: Heidi_Blasius@blm.gov; Amanda Hervatin; Bill_Brandau@blm.gov; Duane Aubuchon; Don Mitchell; Doug_Duncan@fws.gov; fish.dr@asu.edu; Jeff Sorensen; Jeremy Voeltz; kwiley@tnc.org; Marlo_Draper@blm.gov; marty_tuegel@fws.gov; mhaberstich@tnc.org; MJHolloran@MSN.com; pnr@u.arizona.edu; rclarkson@lc.usbr.gov; Sherry_Barrett@fws.gov; stefferud@cox.net; Ted_Cordery@blm.gov; Doug_Duncan%FWS@blm.gov; pcrosen@u.arizona.edu; sbonar@ag.arizona.edu
Subject: Re: South Rim Gila topminnow and Desert pupfish Update

FYI - Preliminary stable isotope analyses (nitrogen) of Aravaipa fishes and invertebrates show some odonates at higher trophic levels than any of the fish species. I can't wait to see the Lethocerus trophic levels.

Peter Reinthal

Jeff_Simms@blm.gov wrote:

>This is a very interesting field observation.
>
>I am having the same problem at Empire Gulch which was stocked
>initially in
>2001 and augmented multiple times since. This site is even more
>problematic in that it has low DO (<2ppm) as a result of a complete
>cover of duck weed and sluggish flow (little opportunity for gas exchange).
>
>The data indicate that the cause of fish loss is predacious aquatic
>insects on the South Rim. This does not rule out handling stress, however.
>
>In the 1980s about 200 sites were stocked and follow up indicated a
>high initial failure rate. No close order monitoring was performed due
>to the existing assumption by fishery managers that topminnow can live
>under just about any conditions. Clearly, predacious aquatic insects
>can easily capture small bodied fishes which may be capable of
>eliminating any new founder population before it can begin building
>population size. In lotic systems, these insects are largely regulated
>by productivity of the site, predacious fishes and abiotic disturbances
>(drying/flooding). These systems have not likely flooded much or dried
>completely during the drought (last 6 years) and there are no large
>bodied fishes to prey on the early instars to keep the population size
>in check. As a result, we have large standing biomasses of predacious
>aquatic insects at may of our springs that will likely consider topminnow and pupfish y-o-y and adults easy
>pickins'.
>
>Before we stock topminnow and pupfish into new habitats that have a
>large biomass of predacious aquatic insects, we may want to consider
>renovating the habitat to eliminate the bulk of these insects using
>seines and dipnets. They are easily collected to the point where they
>have to start over with a population dominated by small bodied
>individuals (early

>instars) that even topminnow and pupfish can readily eat.

>

>If we are to make the best use of the limited aquatic habitats we have,

>monitoring the results of transplanted populations and suspected

>limiting factors seems like the sensible thing to do. Perhaps this is

>a good topic for the next NFCT meeting.

>

>?Question? - Heidi, how many fish did you start with at each site?

>What is the surface area of the available habitat that the fish spread out in?.....

>Your stocking density may have been very low to begin with which

>accentuates the effect of limiting factors such a losses to predation

>or other mortality factors.

>

>Cheers

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>

>

>

>

Heidi

Blasius/SFO/AZ/BL

M/DOI

To

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04/26/2006 05:33 Bill Brandau/SFO/AZ/BLM/DOI@BLM,

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> cc

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Subject

South Rim Gila topminnow and Desert

pupfish Update

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>Hello,
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>The following attachment contains Gila topminnow and Desert pupfish
>results from Parson's Grove, Cement Tank, and Bleak Springs.
>
>Thanks, Heidi
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>(See attached file: South Rim survey 4 26 2006.doc)
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