

From: [Tony Robinson](#)
To: [Duane Aubuchon](#); [John Bacorn](#); [Don Mitchell](#); [Suzanne Ehret](#); [Jason Kline](#); [Jeff Sorensen](#); [Ross Timmons](#); [Chris Cantrell](#); [David Orabutt](#); [Clayton Crowder](#); [Amy Bailey](#); "[Heidi Blasius@blm.gov](#)"; "[Jeff Simms@blm.gov](#)"; "[Jeffery Conn@blm.gov](#)"; "[Doug Duncan@fws.gov](#)"; [Glen Knowles](#); "[Mary Richardson@fws.gov](#)"; "[brogers@tnc.org](#)"; "[kwiley@tnc.org](#)"; "[swilliams@land.az.gov](#)"; "[pnr@email.arizona.edu](#)"; "[mhaberstich@TNC.ORG](#)"; "[rclarkson@lc.usbr.gov](#)"; "[fish.dr@asu.edu](#)"
Subject: Preliminary Results of Muleshoe Conservation Area Fish Monitoring
Date: Wednesday, September 16, 2009 2:54:08 PM

All,

We just got back from our two-day fish surveys to monitor the stocked populations of T&E fish in the Muleshoe Ecosystem waters. Here is a quick summary of the fish that we captured:

Redfield Canyon: 20 spikedeace and 12 loach minnow. Plus as of yet uncounted numbers of Gila chub, desert sucker, and speckled dace. And we captured 34 Gila topminnow (and observed thousands), which must have washed down from Swamp Springs Canyon.

Hot Springs Canyon: 24 spikedeace and 23 loach minnow. Plus as of yet uncounted numbers of Gila chub, desert sucker, Sonora sucker, speckled dace, and longfin dace.

Swamp Springs Canyon (upper): 951 Gila topminnow plus many longfin dace and a few speckled dace. The crew think that they observed at least one desert pupfish.

Swamp Springs Canyon (lower): 83 Gila topminnow, but no desert pupfish.

Cherry Springs Canyon: 125 Gila topminnow and 5 desert pupfish. Plus we saw a school of 15-20 desert pupfish.

Headquarters Spring: 879 Gila topminnow but no desert pupfish (captured or observed).

Secret Spring: thousands of Gila topminnow and 3 desert pupfish.

I think we can consider Gila topminnow to have established and prospering in each of the sites that we have stocked them; although they are doing much better in upper Swamp Springs than lower, but the habitat is much better up there. It is my opinion that we do not need to stock anymore Gila topminnow into any of these sites this year.

Pupfish are persisting at Secret and Cherry, and probably Swamp, but not sure about Headquarters. We may want to consider stocking more pupfish (if we can find enough) into some of these, plus Bob Rogers has dug out another pond up the hill from the headquarters, that we can stock with just pupfish. Pupfish are in somewhat of a short supply right now.

Spikedeace and loach minnow are persisting in both Redfield and Hot Springs Canyon, and we captured more than last year in both streams. We measured all spikedeace and loach minnow this year, rather than eyeballing them into either <40 or > 40 mm size classes. All of the spikedeace and loach minnow that we captured were greater than 40 mm. So, we are unsure if they have reproduced this year. I think we could have caught a lot more if we had surveyed more areas, as they were quite abundant in a couple 100-m transects in Hot Springs. So, the question is to stock again this year, or hold off and wait until monitoring next year to see how they are doing. I am leaning towards the latter option.

Anthony Robinson
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'Nothing in biology makes sense except in the light of evolution.' Theodosius Dobzhansky

From: Tony Robinson

Sent: Wednesday, September 09, 2009 10:35 AM

To: Duane Aubuchon; John Bacorn; Don Mitchell; Suzanne Ehret; Jason Kline; Jeff Sorensen; Ross Timmons; Chris Cantrell; David Orabutt; Clayton Crowder; Amy Bailey; 'Heidi_Blasius@blm.gov'; 'Jeff_Simms@blm.gov'; 'Jeffery_Conn@blm.gov'; 'Doug_Duncan@fws.gov'; Glen Knowles; 'Mary_Richardson@fws.gov'; 'brogers@tnc.org'; 'kwiley@tnc.org'; 'swilliams@land.az.gov'; 'pnr@email.arizona.edu'; 'mhaberstich@TNC.ORG'; 'Abraham.Karam@asu.edu'; 'rclarkson@lc.usbr.gov'; 'fish.dr@asu.edu'; 'brookem@email.arizona.edu'; 'jeprice@coastal.edu'; Tim Grosch

Subject: RE: Annual Monitoring of Muleshoe Ecosystem Waters---Proposed for Week of September 14

All,

I want to revise the Muleshoe Monitoring schedule a bit, because we had a few people drop out or had their schedules change.

On Monday we will arrive at the Muleshoe Headquarters at approximately noon. Two people will conduct the monitoring of Headquarters Spring and Secret Spring. Three to six people will begin the monitoring of Hot Springs Canyon. So far I can confirm that we will have the following people on Monday: myself, Ross Timmons, Amy Bailey, David Orabutt, Clay Crowder, Mary Richardson. If Suzy Ehret can also make it out, and one TNC person, then we can have 6 people (two crews) working on Hot Springs Canyon, and two people working on Headquarters Spring and Secret Spring. Mary Richardson will leave that night or early the next day, and the other seven people would stay the night at the Headquarters dorm. If Hot Springs Canyon is not finished, we will finish the sampling on Tuesday.

On Tuesday, I am hoping to have 10 people available (4 TNC staff, and 6 AGFD personnel). If Hot Springs is completed on Monday, then I can send 6 people (two crews) into Redfield Canyon. If Hot Springs Canyon is not finished, then three people will be sent to Redfield Canyon, three to Hot Springs Canyon, two to Swamp Springs Canyon and two to Cherry Springs Canyon. So, on Tuesday, likely field assignments will be:

Redfield Canyon: David, Clay, and Suzy, and possibly Tony and two TNC people.

Cherry Spring Canyon (or lower Swamp Springs Canyon): Amy Bailey and Bob Rogers

Upper Swamp Springs Canyon: Ross Timmons and TNC person #1

Hot Springs Canyon: Tony Robinson, and two TNC people

So, Bob, can we count on one TNC person on Monday, and four TNC people on Tuesday? Also, can we use the Ranger to transport people up the Redfield Canyon (would likely need two rangers if 6 people go)?

And Suzy, can we count on you being there at noon on Monday?

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'Nothing in biology makes sense except in the light of evolution.' Theodosius Dobzhansky

From: Tony Robinson

Sent: Monday, August 31, 2009 2:54 PM

To: Duane Aubuchon; John Bacorn; Don Mitchell; Suzanne Ehret; Jason Kline; Jeff Sorensen; Ross

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Cc: Tim Grosch

Subject: RE: Annual Monitoring of Muleshoe Ecosystem Waters---Proposed for Week of September 14

All,

It looks like we have nearly enough people (12), so I am scheduling the annual Muleshoe Monitoring for September 14 and 15, as outlined in the previous email below.

Right now I have put people on the following crews (but that can change based on suggestions) for Tuesday September 15:

Cherry Spring Canyon: Amy Bailey and Bob Rogers

Swamp Springs Canyon: Ross Timmons and TNC person #1

Redfield Canyon: David Orabutt, Clay Crowder, and Suzy Ehret

Hot Springs Canyon: Rob Clarkson, Tony Robinson, Mary Richardson

The other two TNC folks will either go to lower Swamp Spring Canyon or down into Redfield Canyon. Unless I can find one more volunteer, then they will definitely go into Redfield Canyon.

Tony Robinson

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From: Tony Robinson

Sent: Thursday, August 20, 2009 9:28 AM

To: Duane Aubuchon; John Bacorn; Don Mitchell; Suzanne Ehret; Jason Kline; Jeff Sorensen; Ross Timmons; Chris Cantrell; David Orabutt; Clayton Crowder; Amy Bailey; 'Heidi_Blasius@blm.gov'; 'Jeff_Simms@blm.gov'; 'Jeffery_Conn@blm.gov'; 'Doug_Duncan@fws.gov'; Glen Knowles; 'Mary_Richardson@fws.gov'; 'brogers@tnc.org'; 'kwiley@tnc.org'; 'swilliams@land.az.gov'; 'pnr@email.arizona.edu'; 'mhaberstich@TNC.ORG'; 'Abraham.Karam@asu.edu'; 'rclarkson@lc.usbr.gov'; 'fish.dr@asu.edu'; 'brookem@email.arizona.edu'; 'jeprice@coastal.edu'

Cc: Bill Stewart; Amberle Vasey; Kyle Tulisiak; Lorraine Avenetti; Tim Grosch

Subject: Annual Monitoring of Muleshoe Ecosystem Waters---Proposed for Week of September 14

All,

We have tentatively scheduled the Muleshoe native fish monitoring for the week of September 14. However, this is not fixed in stone, so if that doesn't work for enough people we also have the week of September 28 available (we would just need to reschedule other planned activities for that week).

Like last year I think we can accomplish all of the monitoring in two days if we get enough people to help out. Monday and Tuesday work for us, but we can move it to two other consecutive days in the week. Like last year, my crew (myself, David Orabutt, and Clay Crowder) can travel down on the first day and conduct the monitoring at Headquarters Spring and Secret Spring that afternoon. On the second day we need to monitor Redfield Canyon, Hot Springs Canyon, and Swamp Springs Canyon; Ross and Bob Rogers monitored Cherry Spring last month, so I don't think we need to do that again this year. So on the second day we will need a minimum of 13 people (maximum of 16).

- Redfield Canyon (spikedace&loach minnow monitoring): need at least 6 people (two crews of 3).
- Hot Springs Canyon (spikedace&loach minnow monitoring): need at least 3 people (one crew of

3), but 6 people (two crews of 3) would be better.

- Upper Swamp Springs Canyon (topminnow&pupfish monitoring): we need 2 people.
- Lower Swamp Springs Canyon (topminnow&pupfish monitoring): we need 2 people

Four of the 13 will definitely be AGFD employees (myself, David Orabutt, Clay Crowder, and Ross Timmons), so we need 9 additional people on the second day.

We will follow the same general protocol that we tried to implement last year; we had some implementation variation that we need to eliminate this year (everyone needs to follow the same sampling protocol). I think the monitoring plan needs to be modified slightly to make it more clear as to how sampling should be done; that may have been part of the problem last year. I will revise (or several of us can) it and send out a revision to everyone.

I have attached a general data sheet that we are using for our monitoring and surveys throughout the Gila River basin, and can use for the Muleshoe monitoring.

Please forward this email to anyone that I may have missed.

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