



MEMORANDUM

TO: Nathan Pence
 FROM: Ed Oborny (BIO-WEST)
 DATE: **January 2, 2015**
 SUBJECT: EA HCP Biological Monitoring – **Week 38**

BIOLOGICAL MONITORING UPDATES

COMAL SYSTEM:

The total system discharge at Comal Springs/River was 134 cfs this morning following another stable week (Figure 1). This week marks the 38th consecutive week for habitat evaluations and memorandums which will continue to occur until total system discharge at Comal Springs/River increases and consistently stays above 150 cfs.

Discharge, cubic feet per second

Most recent instantaneous value: 134 01-02-2015 08:45 CST

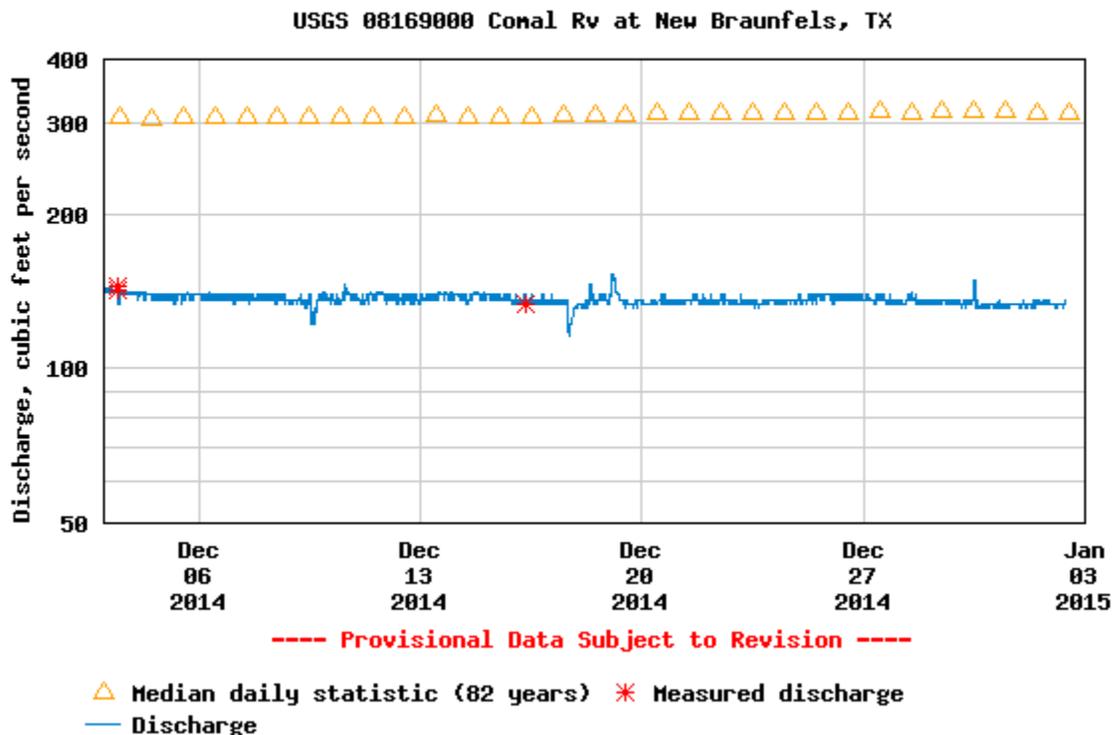


Figure 1: Screen shot of USGS webpage for the *COMAL* gage (08169000) showing total system discharge over the past 30 days.

SAN MARCOS SYSTEM:

The total system discharge for San Marcos Springs/River is approximately 117 cfs this morning. No Critical period sampling activities were conducted this week or are anticipated for next week.

COMAL SPRINGS/RIVER - WEEK 38 CONDITIONS:

Weekly habitat observations and photo documentation associated with HCP biological monitoring were conducted on New Year's Day 2015. HCP species specific low-flow monitoring activities continue to be controlled by the <150 cfs level, which has triggered aquatic vegetation mapping of the four study reaches and fountain darter presence/absence dip netting this month.

OBSERVATIONS AND ACTIVITIES: Total system discharge was consistent again this week as it has been throughout December with a slow, steady decline illustrated in Figure 1. Wetted surface area in each of the spring runs, western shoreline, and Spring Island areas remain similar to last week's observations. Figure 2 shows the wetted surface area currently present in the Spring Run 1 headwaters with surface discharge only present within one of the two main orifices. The Upper Spring Run continues to be devoid of any bryophytes resulting in continued marginalized fountain darter habitat in this reach (Figure 3). Quality fountain darter habitat continues to persist in Landa Lake and the floating aquatic vegetation mats remain under control. As in all previous memos, the Old Channel continues to support high quality fountain darter habitat with thriving restored native aquatic vegetation (Figure 4). Additionally, New Channel fountain darter habitat remains abundant at this time (Figure 5) with no tubers to be found on a brisk New Year's Day.



Figure 2: Spring Run 1 wetted area within headwaters area.



Figure 3: Upper Spring Run reach barren area.



Figure 4: Restored native aquatic vegetation in the Old Channel.



Figure 5: Fountain darter habitat in the New Channel.

In summary, total system discharge and water level conditions were consistent with those reported for the final month in 2014. Endangered species habitat continues to be impacted for surface dwelling invertebrates in the spring runs, western shoreline and spring island areas while impacts to fountain darter habitat continue to be mostly restricted to areas in the upper system.

Happy New Year!

Ed