MEMORANDUM

TO:	Nathan Pence
FROM:	Ed Oborny (BIO-WEST)
DATE:	**January 9, 2015**
SUBJECT:	EA HCP Biological Monitoring – **Week 39**

BIOLOGICAL MONITORING UPDATES

COMAL SYSTEM:

The total system discharge at Comal Springs/River was 131 cfs this morning following a late week adjustment by USGS (Figure 1). This week marks the 39th 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.

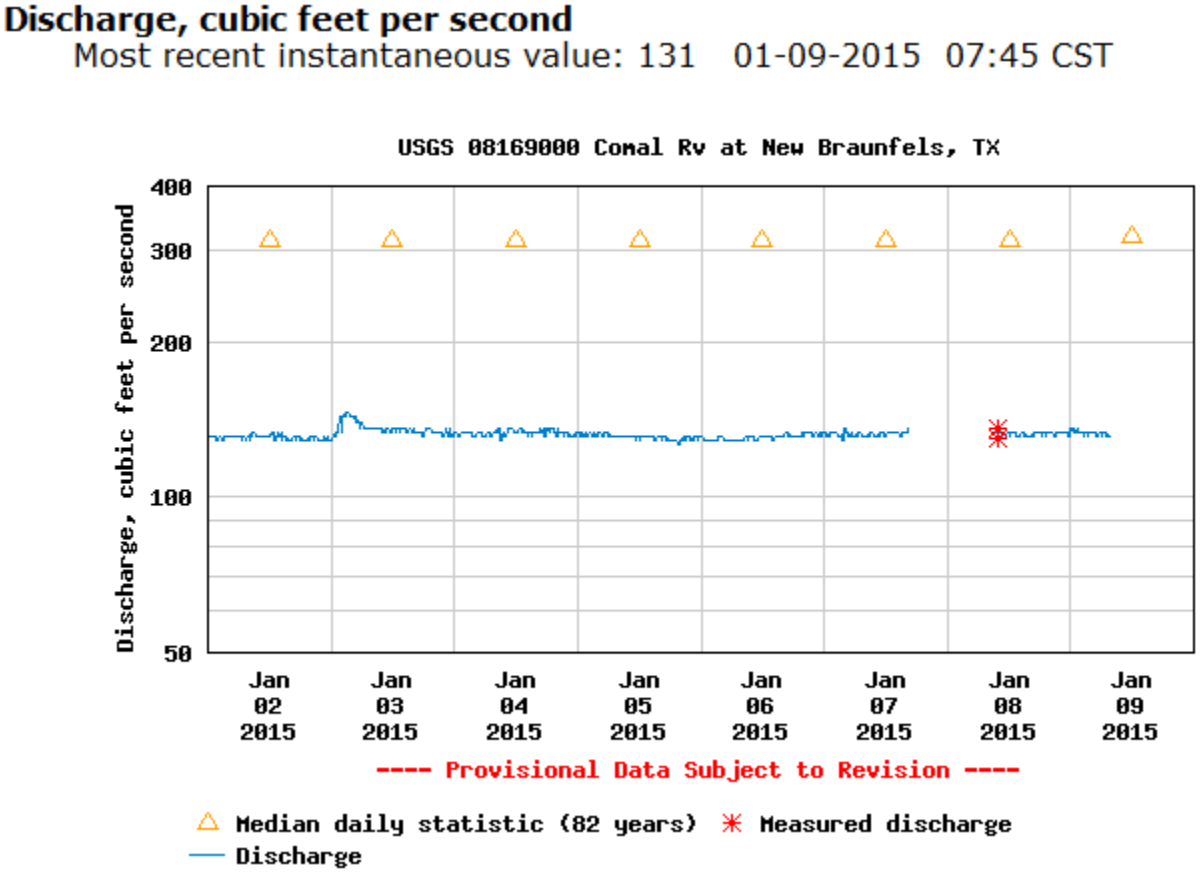

Figure 1: Screen shot of USGS webpage for the ***COMAL*** gage (08169000) showing total system discharge this past week.

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 39 CONDITIONS:
Weekly habitat observations and photo documentation associated with HCP biological monitoring were conducted on Thursday, January 8th. HCP species specific low-flow monitoring activities continue to be controlled by the <150 cfs level, which has currently triggered aquatic vegetation mapping of the four study reaches and fountain darter presence/absence dip netting.

OBSERVATIONS AND ACTIVITIES: Total system discharge on paper decreased this week for the Comal River (Figure 1). I say "on paper" because this is contrary to what was observed in the field as wetted surface area in each of the spring runs, western shoreline, and Spring Island areas experienced slight improvements relative to last week's observations. As of this week, Spring Run 1 supports a flowing channel for the entirety of the spring run, albeit quite restricted in areas (Figure 2). The Upper Spring Run continues to be devoid of any bryophytes while supporting reduced levels of aquatic macrophytes resulting in continued marginalized fountain darter habitat in this reach. It is impressive, however, that a patch of *Cabomba* has survived the past 39 weeks of springflow of < 3 cfs in this reach at a water depth of approximately 1 foot (Figure 3). Exposed surface habitat is still evident around Spring Island (Figure 4) but slightly improved this week relative to the past month. Quality fountain darter habitat continues to persist in Landa Lake and the floating aquatic vegetation mats remain under control (Figure 5). As in all previous memos, the Old Channel continues to support high quality fountain darter habitat via restored native aquatic vegetation. Additionally, New Channel fountain darter habitat remains abundant again this week (Figure 6). Finally, it is always cool to observe the steam coming off the water evident in Figures 4, 5 and 6 on a downright cold January morning.

Figure 2: Spring Run 1 wetted channel extending downstream from headwaters area.

Figure 3: *Cabomba* patch in the Upper Spring Run reach.

Figure 4: Exposed substrate and spring upwellings looking upstream from Spring Island.

Figure 4: Floating vegetation mat condition in Landa Lake.

Figure 5: Extensive Fountain darter habitat in the New Channel.

In summary, although total system discharge was reported as declining, water level conditions and wetted surface habitat were slightly improved this week relative to the past month. However, endangered species habitat continues to be impacted for surface dwelling invertebrates in the spring runs, western shoreline and spring island areas. At this time, impacts to fountain darter habitat are mostly restricted to areas in the upper system. Floating aquatic vegetation mats in Landa Lake are under control and recreation in the system is highly suppressed with the sub-freezing temperatures. The last two notes are additional reasons why aquatic vegetation conditions in both Landa Lake and the New Channel are improved from last fall. Restored areas in the Old Channel continue to provide high quality fountain darter habitat.

Cheers!

Ed