



# MEMO

**TO:** Nathan Pence  
**FROM:** Jared Miller and Andy Sansom  
**DATE:** May 1, 2014  
**RE:** EAHCP Project Procedures during Flows < 120 cfs Variance Request

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Section M of the Incidental Take Permit for the Edwards Aquifer Habitat Conservation Plan (EAHCP) states that the City of San Marcos (COSM) and Texas State University (TxSt) will suspend activities that may result in disturbance of the substrate, water quality, plants, animals and invertebrates of the San Marcos Springs, Spring Lake and River when flows decline to 120 cfs or lower.

Flows in the San Marcos River, according to the USGS statistics for May 1, were 113 cfs. As of May 2, in-river conservation measures were suspended with the exception of the following:

1. Floating vegetation mat removal has continued. The EAHCP identifies this as an important measure in response to drought. The EAHCP Section 5.3.3 states "*Management activities will include removal of vegetation mats that form on top of the water surface as well as on top of Texas wild-rice plants, particularly during low flows, and removal of litter.*"
2. Enclosing TWR stands will also be continued as part of the TPWD Scientific Study Area TWR protection project. EAHCP Section 5.4.2 states "*Additionally, TPWD will pursue creation of State Scientific Areas in the San Marcos Springs ecosystem and River that would limit recreation in these areas during low flow conditions. (See Section 5.6.1). With the exception of the eastern spillway immediately below Spring Lake Dam, none of the protected areas would extend across the entire river channel which would allow longitudinal connectivity throughout the river.*"

In January 2013, the Implementing Committee requested that a group of resident experts and contractors be convened specifically to address the question of which activities permitted under the EAHCP might need to be suspended under drought conditions and at what flow rates any actions would be stopped. The unanimous consensus of the experts for the San Marcos system was that, given the nature, work location, small areas, and approved techniques of the EAHCP projects, they should be able to continue over spring flow rates as low as ~60cfs without significant impact.

The COSM and TxSt request a variance from the requirement for cessation of activities as stated in Section M of the ITP for the following:

### **5.3.6/5.4.4 Sediment Removal**

Removal of sediment occurs after the removal of non-native plants and is limited to specific areas in City Park and Bicentennial Park (map attached). This activity is not accomplished within 10 meters of any Texas wild-rice stand. Divers work a 10 m<sup>2</sup> plot for two hours and visually ensure the absence of

fountain darters before beginning work. If darters are present, slowly fanning the small plot will remove them. Turbidity from the disturbance of fine sediment is monitored by the on-shore person. This person measures the length and width of the sediment plume. Work will be suspended in the event of a sediment plume extending further than 20 meters downstream. Suctioned sediment is isolated from reentry to the stream through storage in a large pit on the bank.

It is important to continue removal of sediment during drought because of the increased impact of suspended sediment due to recreation increases during warm temperatures and the potential impact of suspended sediment on listed species behaviors and habitat. Recreation activity stirs up fine silts which remain suspended during the extent of recreation (10 hours/day). Reduction in fine silt through sediment removal will reduce turbidity intensity and duration. In 2013, this activity was continued down to flows levels of 90 cfs with no observed increase in sediment suspension or plume. Our monitoring indicated no quantitative or qualitative impacts on any listed species, thus no increased take resulting from this activity during flows down to 90 cfs.

We propose to continue this activity through December 31, 2014 unless monitoring of field conditions indicate negative impacts on listed species and their habitat. The EAHCP Biological Monitoring Program will function as objective validation of COSM/TxSt onsite monitoring that take of listed species is not increasing beyond what is covered in the EAHCP.

#### **5.3.3/5.4.3 Litter and Floating Vegetation Mat Removal**

This activity is performed by experienced divers that have been through the Scientific Diving Course at the Meadows Center. From direct observations, their actions do not result in substantive sediment suspension and movement downstream or habitat disturbance. They also remove plant mats from the surface of Texas wild-rice stands which is even more imperative during low flows. As stated above, the removal of plant mats from TWR stands will be continued without a variance request.

Removal of litter is an important component of listed species protection because litter accumulates on the river substrate covering potential habitat and decreasing water quality, particularly during the recreational season.

We propose to continue this activity through December 31, 2014 unless monitoring of field conditions indicate negative impacts on listed species and their habitat. The EAHCP Biological Monitoring Program will function as objective validation of COSM/TxSt onsite monitoring that take of listed species is not increasing beyond what is covered in the EAHCP.

**5.4.6 Sessom Creek Sand Bar Removal.** This project is temporarily suspended in order to develop a turbidity study for TPWD as part of the requirement for a sand & gravel permit to remove this sediment deposition. This project will not begin until September/October 2014 and therefore will not require a variance.

#### **5.3.8/5.4.12 Non-native plant removal**

The activity by experimental design is designed to be non-intrusive in that only one meter sections adjacent to Texas wild-rice will have non-native plant removal. This activity does not dislodge undue

amounts of sediment given the small areas involved. These activities do not result in disturbance of Texas wild-rice. The protocol also ensures that fountain darters and other organisms are removed from the vegetation being targeted for removal.

Our experience in 2013 indicated that plant removal was more effective and less intrusive during low flows due to reduced velocity and water depth. Additionally, non-native plant growth will continue during drought thus jeopardizing gains made thus far in 2014 and 2013. However, as a result of decreasing river depth, more areas of the river are accessible than during average flows. Therefore, non-native plant removal will be suspended in areas in which their removal would open up recreational access, such as in upper City Park just below the last Sewell Park footbridge on river right and on river left upstream of the wooden pedestrian bridge above Hopkins Road.

In 2013, this activity was continued down to flows levels of 90 cfs and monitoring indicated no quantitative or qualitative impacts on any listed species, thus no increased take resulting from this activity during flows down to 90 cfs.

We propose to continue this activity through December 31, 2014 unless monitoring of field conditions indicate negative impacts on listed species and their habitat. The EAHCP Biological Monitoring Program will function as objective validation of COSM/TxSt onsite monitoring that take of listed species is not increasing beyond what is covered in the EAHCP.

#### **5.3.1/5.4.1 Texas wild-rice enhancement/restoration**

This measure is fundamentally embedded within the two work elements discussed above (5.3.6/5.4.4 and 5.3.8/5.4.12) and consists solely of planting propagated tillers harvested during vegetation mat removal. Working under drought conditions allows us to empirically determine ideal locations for TWR planting that are protected against impacts associated with lower flows and recreation activities. TWR enhancement will only be accomplished in areas that receive sufficient flow and depth during low flows to sustain growth of newly installed plants. Additionally, non-native plant growth will continue during drought thus jeopardizing significant gains made thus far in 2014 and 2013 in TWR expansion in Sewell and City Parks.

In 2013, this activity was continued down to flows levels of 90 cfs and monitoring indicated no quantitative or qualitative impacts on any listed species, thus no increased take resulting from this activity during flows down to 90 cfs.

We propose to continue this activity through December 31, 2014 unless monitoring of field conditions indicate negative impacts on listed species and their habitat. The EAHCP Biological Monitoring Program will function as objective validation of COSM/TxSt onsite monitoring that take of listed species is not increasing beyond what is covered in the EAHCP.

#### **5.3.9/5.4.13 Non-native Species Control**

This activity primarily utilizes spearing targeted at non-native species, and does not result in significant suspension of sediment, disturbance to aquatic vegetation or other animals within the river. However,

this activity will be modified during drought (flows less than 120 cfs) to occur only in Spring Lake which is not impacted by current flow conditions.

We propose to continue this activity as modified for flows less than 120 cfs through December 31, 2014 unless monitoring of field conditions indicate negative impacts on listed species and their habitat. The EAHCP Biological Monitoring Program will function as objective validation of COSM/TxSt onsite monitoring that take of listed species is not increasing beyond what is covered in the EAHCP.

**Remaining projects not requiring a variance:**

**5.3.7 Bank Stabilization**

This project is complete.

**5.3.8/5.7.1 Riparian Restoration**

All plantings are complete for the designated 2014 areas. No further action needed outside of weekly watering of new trees and shrubs.

**5.3.2/5.4.2 Management of Recreation**

Five university students will begin work on May 22 to increase public awareness of the San Marcos River listed species and influence recreation behavior to enhance protection of these species. No negative impacts on listed species expected.

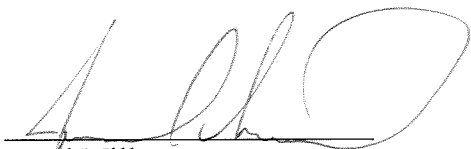
**5.7.6 Impervious Cover/Water Quality Protection.**

The current actions under this measure are training workshops for COSM and TxSt on the contents of the Water Quality Management Plan and oversight on development plans for the purpose of adding water quality protection measures. No negative impacts on listed species expected.

**5.7.5 Management of Household Hazardous Waste**

HHW will continue to be collected on Tuesdays and Fridays with no expected impact on the San Marcos River listed species.

The EAHCP conservation measures provide benefit to listed species that is particularly critical during the recreational season. Last year, all measures continued during a similar low flow regime and without negative impact as measured by biological monitoring. Therefore, we request that these measures are allowed to continue in 2014.



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