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Texas Environmental Flows Dashboard

Key flow standards aspects for Rio Grande, Rio Grande Estuary, and Lower Laguna Madre *as of Aug 2023*

Instream flows, number of measurement points: There were two expert science teams. The expert science team for the upper Rio Grande Basin recommended flow levels at 13 measurement points. For the lower Rio Grande Basin, the Estuary, and the Lower Laguna Madre, the expert science team recommended flow levels at 1 measurement point. TCEQ only adopted flow standards for 4 measurement points, all in the upper Rio Grande Basin. Unfortunately, TCEQ does not require the use of the protected flow regimes at those points to calculate protection levels to be applied at additional flow gages. As a result, with so few measurement points, assessment of compliance with flow protections at most locations would be based on flow levels at very distant gages, sometimes on a different stream. Because the Rio Grande is considered fully permitted, there are unlikely to be new permits and a focus on proactive strategies to improve flow conditions may be appropriate.

Instream flows, diversions down to subsistence levels: The expert science team for the upper basin recommended that diversions down to subsistence should only be allowed during the driest 10% of months when flows are otherwise below the applicable baseflow level. Because subsistence flows represent very low levels intended to be reached only rarely during droughts, aquatic species are at risk at those levels. The adopted flow standards reflect that recommendation. The science team for the lower basin recommended a minimum flow level with periodic higher flows, which are not included in the standards.

Instream flow, levels of baseflows: The expert science team for the upper basin recommended three different levels of baseflows, representing dry, average, and wet conditions because different species do better with different flow levels. The adopted standards match those recommendations at the few measurement points included in the standards. There were no specific baseflow recommendations for the lower basin and there are no criteria in the standards.

Instream flows, levels of pulse flows: The expert science team for the upper basin recommended multiple levels (2-6 ranging from small to large, depending on location) of pulse flows for protection, with all levels applicable during all flow conditions. The adopted flow standards include only 1 level of pulse flows, either equal to or lower than the lowest level recommended by the science team. The science team for the lower basin recommended a pulse flow criterion aimed at preventing the mouth of the Rio Grande from silting shut, which is not included in the standards.

Instream flows, strategy targets: Under the applicable statute (SB 3), flow standards, in addition to establishing criteria for new permits, are intended to establish target levels of river flows and freshwater inflows to bays and estuaries to be met through the implementation of voluntary proactive strategies, such as purchases of water rights, to improve impaired flow levels. There are no strategy targets for instream flows, or freshwater inflows, in these flow standards.

Freshwater inflows, drought period criteria: The adopted standards do not include separate bay-related inflow criteria for the Lower Laguna Madre or the estuarine portion of the Rio Grande. The expert science team for the lower basin and estuary recommended a flow regime at the Brownsville gage intended to maintain moderate salinity levels in the Rio Grande estuary and prevent the recurrence of extremely low flows that previously resulted in a buildup of sand blocking the connection of the Rio Grande with the Gulf of Mexico.

Freshwater inflows, reopener mechanism: Senate Bill 3 directs that permits issued after Sept. 1, 2007, can be reopened to increase protection by a limited amount if flow standards later are amended to be more protective. Although there are no separate inflow protections, increased protections for instream flows would increase protections for inflows in the unlikely event increased flows were actually passed to the estuary.

Freshwater inflows, strategy targets: The expert science team for the lower basin and estuary did recommend consideration of redirecting some wastewater return flows from the Arroyo Colorado, which appears to have artificially elevated flows during dry periods, to the Rio Grande, which has reduced flows much of the time. However, the adopted flow standards do not include targets to guide voluntary proactive strategies, such as purchases of existing water rights or redirected return flows, to increase instream flows or bay inflows.

Overall: match with science team recommendations: The expert science teams were charged with developing recommendations adequate to protect a sound ecological environment. There are major differences between the adopted standards and the science team recommendations, especially for number of measurement points, protection of pulse flows and absence of criteria addressing estuary inflows, resulting in less flow protection than the science team recommended.