



Environmental Flows

A sound natural environment is essential for maintaining the quality of life enjoyed by Texans and a strong state economy. Healthy aquatic ecosystems conserve biodiversity and support many industries, including recreation, tourism, commercial fishing, transportation, and water supply. The term environmental flow is used to describe the quantity, quality, and timing of water flows needed to maintain ecologically healthy riverine and estuarine ecosystems. As early as 1968, with the publication of the first state water plan, Texas recognized the potential impact of water development on the ecology of bays and estuaries. Subsequently, through a series of directives from the Texas Legislature, the Texas Water Development Board (TWDB), Texas Parks and Wildlife Department, and Texas Commission on Environmental Quality have worked to identify, recommend, and ensure the protection of environmental flows within rivers and to the estuaries.

With the state's population expected to increase by 70 percent over the next 50 years, the demand for water is anticipated to exceed current supply, requiring increased use of surface water and groundwater resources. Despite existing efforts and regulations for environmental flows, the need persists to ensure sufficient water continues flowing in our rivers and to the estuaries to maintain a healthy ecological environment.

Senate Bill 137 (1975), House Bill 2 (1985), Senate Bill 683 (1987) – Freshwater inflows

Early legislation directed the state's natural resource agencies to conduct studies to understand and determine the effects of and needs for freshwater inflow to support a sound ecological environment in the state's estuaries. Study reports identifying recommended volumes of freshwater inflow, to provide ecological support and to achieve fisheries management goals, have been completed for each of the major estuaries, in addition to numerous other supporting studies. Additionally, the Texas Commission on Environmental Quality was directed to include permit conditions to maintain environmental flows when issuing water rights permits within 200 river miles of the coast.

Senate Bill 2 (2001) – Instream flows

In 2001, the 77th Texas Legislature similarly directed the state's natural resource agencies to conduct studies to determine the flow conditions necessary to support a sound ecological environment in the state's rivers and streams. Final study reports have been completed for the lower San Antonio River (2017) and middle and lower Brazos River (2018). Final

study reports for the middle Trinity and lower Guadalupe rivers are in progress. Study results are to be used by the Texas Commission on Environmental Quality when reviewing a water management plan, water right, or interbasin transfer.

Senate Bill 1639 (2003) – Study Commission on Water for Environmental Flows

The 78th Texas Legislature directed a commission to study public policy implications for balancing the demands on the state's water resources and evaluating options for providing adequate environmental flows to ensure a sound ecological environment of the state's rivers and estuaries.

Senate Bill 3 (2007) – Establishing environmental flow standards

Detailed instream flow and freshwater inflow studies require several years to complete and, when finished, provide flow recommendations for a relatively small portion of the state. Recognizing the need to identify appropriate amounts of water for the environment in a shorter timeframe, the 80th Texas Legislature created an accelerated, stakeholder-driven process for developing instream flow and freshwater inflow standards for the major river basins and associated bay systems of the state. The process relies on using existing information and best available science to develop the initial recommendations that inform the regulatory standards, followed by an iterative adaptive management process to refine the standards.

The process involves a statewide Environmental Flows Advisory Group and Science Advisory Committee, with specific basin and bay area stakeholder committees and expert science teams, as well as technical and administrative support from the natural resource agencies—the TWDB, Texas Parks and Wildlife Department, and the Texas Commission on Environmental Quality, the latter of which establishes the regulatory standards.

Senate Bill 3 identified seven priority basin and bay systems (see map) for which the development of environmental flow regime recommendations has been completed. Between 2011 and 2014, the Texas Commission on Environmental Quality carried out a rulemaking process to adopt instream flow standards at 96 locations within seven major river basins and freshwater inflow standards for five estuaries (Table 1). An adaptive management component allows for the basin and bay area stakeholder committees to consider refinement of these standards at least every 10 years. For the initial seven priority

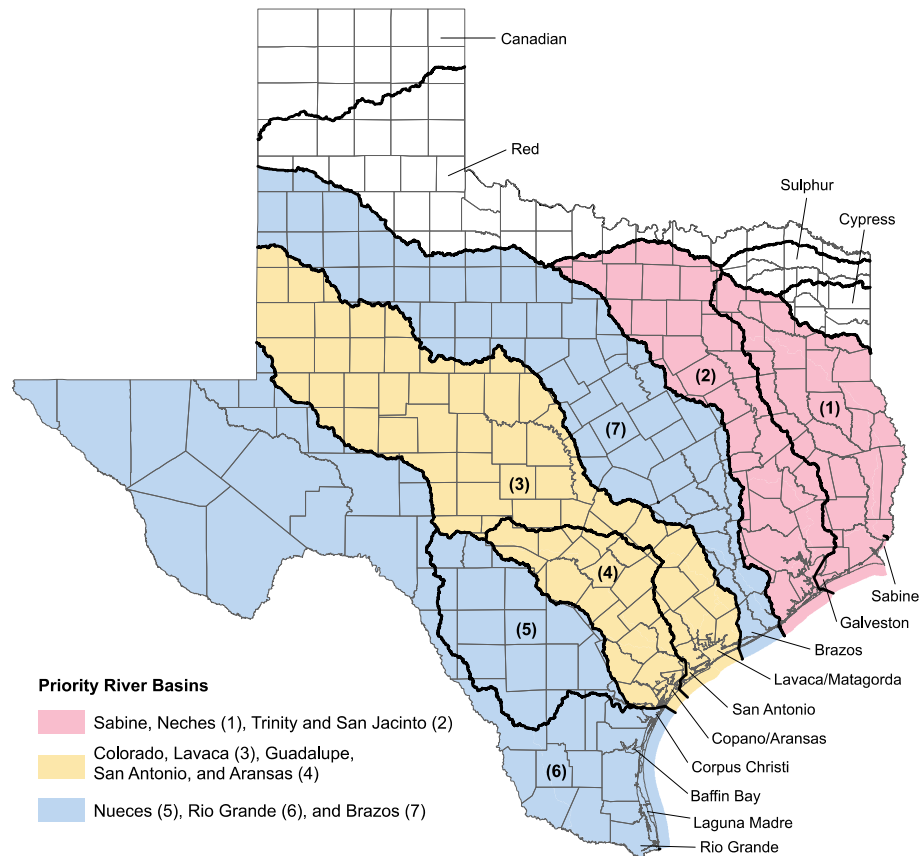
basin and bay systems, adaptive management is ongoing. The remaining Canadian, Red, Sulphur, and Cypress basins have not yet been scheduled to begin the process.

The adaptive management phase is guided by basin-specific work plans describing additional data and scientific studies necessary to allow for the validation or refinement of the environmental flow analyses, recommendations, or adopted standards and to identify strategies to achieve those standards. Adaptive management work plans have been developed by stakeholder committees for the Sabine-Neches, Trinity-San Jacinto, Brazos, Colorado-Lavaca, Guadalupe-San Antonio, and Nueces basins. Since 2014, the TWDB has provided funding to support the collection and analysis of environmental flow information for more than 50 projects identified in the work plans.

Table 1. Schedule of the rule effective rule date for adopted environmental flow standards and the first adaptive management review of the adopted standards.

| Basin-Bay | Rule effective date | Revision schedule |
|-----------------------|---------------------|-------------------|
| Sabine-Neches | 5/15/2011 | 5/15/2021 |
| Trinity-San Jacinto | 5/15/2011 | 5/15/2021 |
| Brazos | 3/6/2014 | 3/6/2024 |
| Colorado-Lavaca | 8/30/2012 | 8/30/2022 |
| Guadalupe-San Antonio | 8/30/2012 | 8/30/2022 |
| Nueces | 3/6/2014 | 3/6/2024 |
| Rio-Grande | 3/6/2014 | 3/6/2024 |

Priority River Basins and Bay Systems



*For more information, refer to TCEQ Adopted Environmental Flow Rules: www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/eflows/rulemaking

Contact Information

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 Additional information is available on the Texas Commission on Environmental Quality's website at www.tceq.texas.gov/permitting/water_rights/wr_technical-resources/eflows/group.html.