

Environmental Flows Competing for Limited Resources

By Martin C. Rochelle

Illustration by Ryan Day

The TWDB's most recent State Water Plan projects a shortfall of available water resources over the next 50 years of more than five million acre-feet of water, even after existing supplies are fully considered.

Since the Texas Legislature's passage in 1997 of SB 1, the omnibus water legislation that changed the face of water law in Texas, the state has been engaged in aggressive water supply planning efforts through the work of regional water planning groups and the Texas Water Development Board (TWDB). This ongoing planning effort is intended to enable Texas to identify Year 2050 water supply demands and the means by which those demands will be met. The TWDB's most recent State Water Plan projects a shortfall of available water resources over the next 50 years of more than five million acre-feet¹ of water, even after existing supplies are fully considered. Competing interests for limited water resources are driving the legislature to consider an array of possible changes to Texas' surface- and ground-water laws. One of the principle issues to be considered over the course of the next year relates to the manner in which environmental flows will be addressed in surface water rights permitting while ensuring the availability of water for human consumption. This article addresses the evolution of environmental flows² protection measures in Texas and the impact such measures have had and likely will have on new and amended surface water rights

issued by the Texas Commission on Environmental Quality (TCEQ).

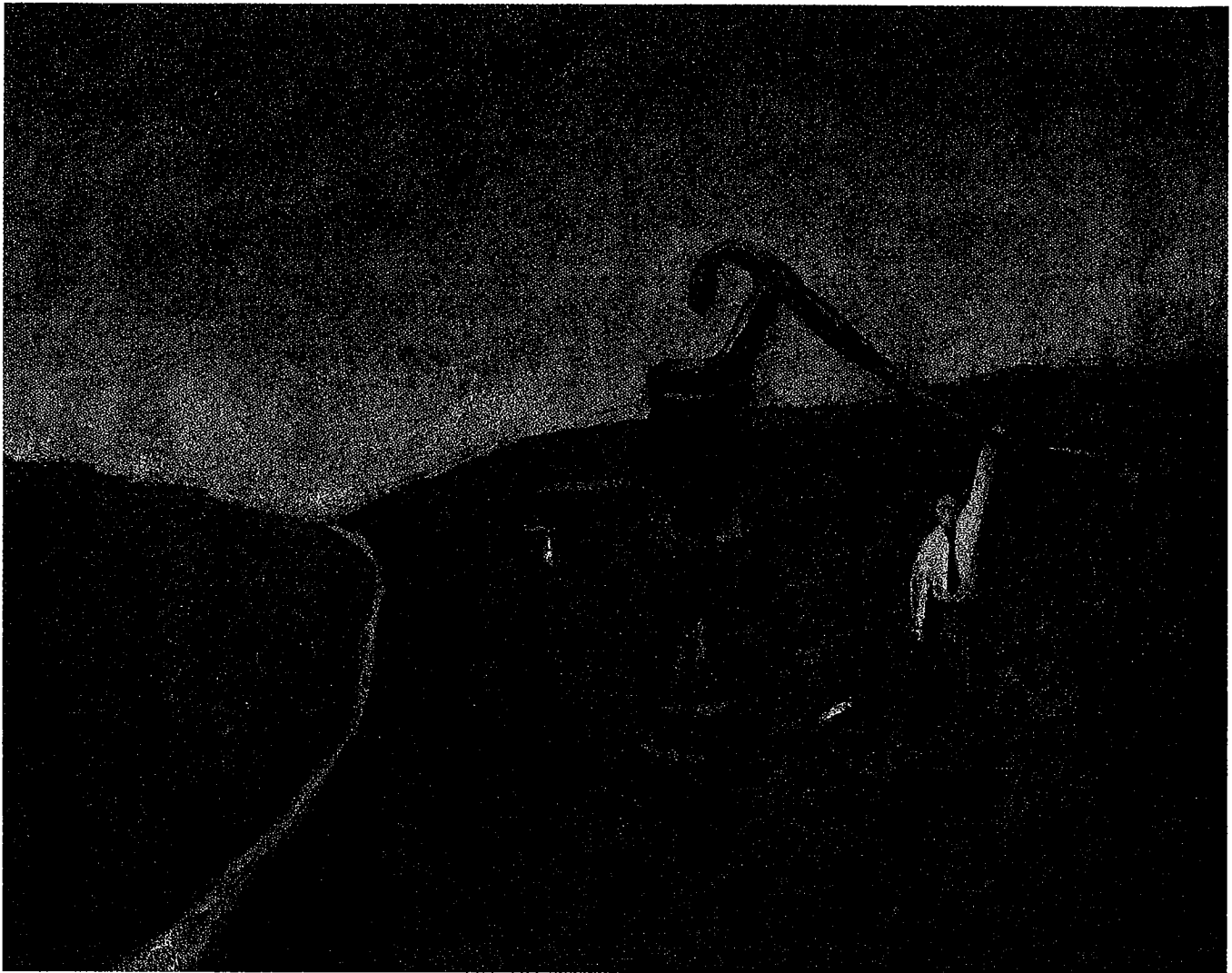
The Evolution of Environmental Flows Laws

The Texas Water Code provides that all "water of the ordinary flow, underflow, and tides of every flowing natural stream, and lake, and of every bay or arm of the Gulf of Mexico, and the storm water, floodwater, and rainwater of every river, natural stream, canyon, ravine, depression, and watershed in the state is the property of the state."³ This provision identifies that all surface waters within Texas are owned and held in trust by the state.

In allocating the right to the use of state water, Texas follows the doctrine of prior appropriation, where the actual "use" of water is a major element. Water Code Section 11.022 provides that the "right to the use of state water may be acquired by appropriation," and when such a right of use "is lawfully acquired, it may be taken or diverted from its natural channel."⁴ This provision, along with many others in the code, contemplates that the "use" of water within an appropriative system requires the actual taking, storage, or diversion of such water.⁵

It can be argued that Texas first rec-

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ognized the need to protect water for the environment when its citizens adopted the state constitution's conservation amendment in 1917.⁶ The amendment provides that the legislature will pass "all laws" as may be appropriate for the "preservation and conservation" of the state's water resources.⁷ Pursuant to the amendment, the legislature in 1985 adopted Sections 11.047, 11.150, and 11.152, which mandate an environmental review process by TCEQ during its consideration of new water rights. With passage of this environmental flows legislation, the legislature expressed its clear intent that instream flows, flows necessary to protect water quality in streams,

and freshwater inflows to the bays and estuaries of the state were to be considered as the state appropriated surface waters for diversion and use. Pursuant to these provisions, and if environmental analyses so warrant, TCEQ staff will recommend and the agency will impose flow restrictions as special conditions in new water rights.⁸ Such flow restrictions are intended to provide an appropriate level of environmental protection for the state's waterways. While these 1985 provisions included some measure of protection for the environment as the state appropriated water for human needs, these provisions only applied prospectively. Given that the state had been

appropriating water for almost a century, environmentalists often complained that the state's environmental flows consideration was too little, too late, and did not adequately protect the environment.

Current Environmental Review Process

Water right applications filed with TCEQ are either applications to request new appropriations or applications to amend existing authorizations. Section 11.121 addresses new appropriations;⁹ Section 11.122 addresses amendments to existing appropriations.¹⁰ Both types of applications undergo an environmental review process by agency

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staff when they seek to appropriate additional water, add or move diversion points, or increase the rate of water diversion.

During the environmental review process, TCEQ staff consider the "effects" of a proposed application on the instream uses of water. This instream-use assessment typically involves an analysis of representative stream gauges near the proposed application site and a quantification of base median flows necessary to maintain aquatic life. This analysis, often referred to as the Lyons method,¹¹ is then used as the foundation to impose restrictions within a permit if the base median flow patterns are impacted by the proposed application. During the environmental

review process, TCEQ staff also consider the proposed application's impacts on wildlife, terrestrial and riparian habitats, and bay and estuary inflows.¹² Each of these analyses requires detailed, site-specific study and coordination with federal permitting agencies.¹³

Recent Changes in the Environmental Flows Arena

In July 2000, the San Marcos River Foundation (SMRF) filed an application to appropriate more than one million acre-feet of water per year in the Guadalupe and San Marcos rivers for "beneficial, nonconsumptive, instream use."¹⁴ On March 19, 2003, in a unanimous decision, TCEQ commissioners determined that the agency lacked the statutory authority to issue an appropriate right for environmental flows purposes, and that the only clear authority the agency had to protect flows for the environment was through the review process specified in Section 11.147 and TCEQ Rule 30 TAC §297.1(25).¹⁵

The issue of environmental flows permits did not go away with TCEQ's decision on the SMRF application. That decision is currently being challenged in Travis County district court. On Nov. 19, 2003, TCEQ commissioners considered and dismissed several environmental flows applications in other river basins of the state requesting appropriations totaling more than 10 million acre-feet per year.¹⁶ These applications were denied on the basis of a lack of express statutory authority to issue new water rights for purely environmental flow purposes when such proposals do not involve the diversion or storage of water.¹⁷

The 78th Texas Legislature acted to further address environmental flows by enacting SB 1639. In part, SB 1639 affirmed that the legislature has not authorized the granting of water rights exclusively for environmental flow pur-

poses or other similar uses.¹⁸ Through SB 1639, the legislature clarified that further consideration of these issues is needed and created the Study Commission on Water for Environmental Flows.¹⁹ SB 1639 also prohibited TCEQ from approving any environmental flows applications until the study commission and the legislature have had the opportunity to more fully consider this issue over the course of the next two years.²⁰

The Future

Water development interests and environmental interests often address water issues from different perspectives, and water for the environment is no different. However, Texas is faced with water demands that may not be met if it does not determine how to address both the needs of people and the needs of the environment. Indeed, the state must reach some consensus if it is to fulfill the promise of SB 1 and the regional and state water planning processes.

The Texas Water Conservation Association, a statewide association of water interests whose members have been at the forefront of water supply issues for almost 60 years, has been actively engaged for more than two years in an effort to formulate sound policies and proposals concerning environmental flows. Through that process, several principles have been identified that should be considered as the study commission proceeds to do its work. Many of these principles are, or should be, principles upon which the water development and the environmental communities can agree:

- *Sound science* — Determinations of flows necessary to protect the environment should be based on sound science. And the science used should be continually updated and improved, be validated and widely accepted, and be inclusive of all available knowledge.
- *Certainty* — If environmental flow criteria are to be applied, they should be known at the initiation of water supply planning and in the permitting of new water supply projects, so as to provide certainty to those processes and

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- **Balance** — The administration of Texas water law to protect the environment should respect the evolving nature of the science related to environmental flows and the important balance between human and environmental needs.
- **Basin-wide management** — Environmental flow criteria should be developed basin by basin, to respect the unique nature and man-made systems existing in each basin. Such criteria should be proposed by regional planning groups, then considered and adopted by the commission through rulemaking. Once adopted, rules setting environmental flow criteria should be utilized by regional planning groups in developing revisions to the regional water plans, by the TWDB in developing revisions to the State Water Plan, and by the TCEQ as it considers water rights applications for water supply projects.
- **Integrated planning** — Decisions regarding the development and application of environmental science, development of basin-wide management objectives and criteria for environmental flows, and the balance between environmental and human needs, should be formulated as an integrated process. The SB 1 regional and state water planning processes are the appropriate venue for this integrated planning process.

Issues surrounding environmental flows are complex and there exist few simple answers, given limitations on water supplies and the vast demands that humans and nature place on those supplies. And, as efforts to develop new water supplies are pursued, providing adequate environmental protection will become even more critical to our state's economic and environmental future. However, Texas can ill afford to fail in its resolution of these issues, if the promise of SB 1 is to be realized. That promise — supplying water to the next several generations of Texans

while ensuring that the environment is adequately protected — is as important today as it has ever been.

Notes

1. An acre-foot of water is 325,851 gallons, or one acre of land one-foot-deep in water.
2. "Environmental flows" are, generally, waters needed to ensure adequate instream flows, waters needed to preserve water quality in streams, and waters necessary to ensure adequate freshwater inflows to bay and estuary systems.
3. TEX. WATER CODE ANN. § 11.021(a) (Vernon 2000).
4. *Id.* at § 11.022.
5. For example, Water Code § 11.002 defines a "water right" as a right to "impound, divert, or use state water." § 11.023 identifies the uses for which "state water may be appropriated, stored, or diverted." § 11.121 provides that "no person may appropriate any state water or begin construction of any work designed for the storage, taking or diversion of water without first obtaining a permit from the Commission."
6. TEX. CONST. ART. XVI, § 59.
7. *Id.*
8. TEX. WATER CODE ANN. § 11.147(b) (Vernon 2000).
9. *Id.* at § 11.121.
10. *Id.* at § 11.122.
11. Robert L. Bounds and Barry W. Lyons, *Existing Reservoir and Stream Management Recommendations Statewide Minimum Stream Flow Recommendations*, Texas Parks and Wildlife Department, Oct. 16, 1979.

12. 30 Tex. Admin. Code § 297.53-56.
13. The U.S. Army Corps of Engineers retains jurisdiction for permitting impacts to affected wetlands under Section 404 of the Clean Water Act.
14. Application No. 5724, Docket No. 2003-0027-WR.
15. *Id.*
16. These included applications filed by the Caddo Lake Institute, Inc.; the Lower Colorado River Authority; the Matagorda Bay Foundation; the Galveston Bay Conservation and Preservation Association and Galveston Bay Foundation; and the Lavaca-Navedad River Authority.
17. See, for example, Tex. Comm. on Env. Quality, *Application of the Caddo Lake Institute, Inc. for a New Water Right*, Docket No. 2603-0719-WR (Dec. 19, 2003) (final order denying application).
18. Act effective May 23, 2003, 78th Leg., R.S., S.B. 1639, § 2.
19. *Id.*
20. *Id.*



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