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## 173-6 Characterization and Management of a Karst Aquifer In Central Texas

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George R. Brown Convention Center, 342BE

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The Barton Springs segment of the Edwards Aquifer has been fairly well studied for the past 30 years and has been under the management of a groundwater conservation district for the past 20 years. To adequately protect the users of the aquifer and the endangered species that live in Barton Springs, more detailed characterization of the aquifer is needed, along with additional, effective management strategies.

Approximately 60,000 users depend on the Barton Springs segment of the Edwards Aquifer as their sole source of drinking water, and Barton Springs is a major recreational feature and habitat to threatened and endangered species of salamanders. Because it is a karst aquifer with numerous recharge features such as caves and other solutionally enlarged openings, water recharges the aquifer quickly during periods of high rainfall. However, the aquifer is drained quickly by Barton Springs so that the aquifer enters into drought much sooner than surface-water supplies in the area. Groundwater availability studies indicate that under severe drought conditions and high rates of pumping, many water-supply wells will go dry and the salamanders that live in Barton Springs will likely face stresses that could jeopardize the species.

To address these issues, the Barton Springs/Edwards Aquifer Conservation District has promulgated rules that limit the amount of pumping from the aquifer under severe drought. Any new permits for pumping allow for pumping at authorized levels under non-drought conditions, but increasingly restrict the amount of pumping as drought conditions worsen. Additional management strategies, such as designation of management zones with differing rules, incentives to utilize alternative water supplies, and development of additional supplies through desalination of saline groundwater, aquifer storage and recovery, and recharge enhancement, are being considered to further reduce impacts of pumping and drought on the aquifer.

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