

Investigating Potential Salt Contamination of Aquifers from Irrigated Landscapes

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Purpose of the Study

Potable water resources are limited, and the demand for non-potable saline waters for irrigation is increasing. One use of low quality saline waters is the irrigation of turfgrasses and other landscape plants. But because salt accumulates in the soil over time, salt-tolerant species must be used, and salts must be leached from the rootzone into deeper soil profiles. Over time, leaching the salt could degrade the groundwater or the underlying aquifer. The aim of this study is to investigate salt accumulation in the soil due to saline irrigation of turfgrasses to determine its long-term effects.

Study Underway

- Using research plots already established at New Mexico State University's golf course, the researcher will collect soil samples from various depths of turfgrass irrigated with saline water, moderately saline water, and potable water as well as irrigated, bare soil plots and undisturbed, non-irrigated plots.
- The samples will be analyzed and a model will be developed that accurately predicts movement and accumulation of solutes in soil profiles with varying depths, water quality, and precipitation.

Benefits

- Determining the long-term effects of salt accumulation in soils irrigated with saline waters is important for verifying the feasibility of using non-potable waters for landscape irrigation.



Left: Elena holds a green-seeker, used to monitor changing turfgrass conditions during the growing season.



Right: Elena poses at an NMSU turfgrass plot. She is from Russia, where she received a B.S. from St. Petersburg State University in 1990. She obtained an M.S. in horticulture from NMSU in 2004 and plans to graduate with her Ph.D. in approximately three years.

