

# Texas AgriLife Research Center at El Paso

## Established the Guidelines for Landscape Uses of Reclaimed or Saline Water

Dr. S. Miyamoto, S. Khurram, I. Martinez, Texas AgriLife Research Center at El Paso  
Texas A&M University System;  
D. Ornelas and D. Tierre, El Paso Water Utilities

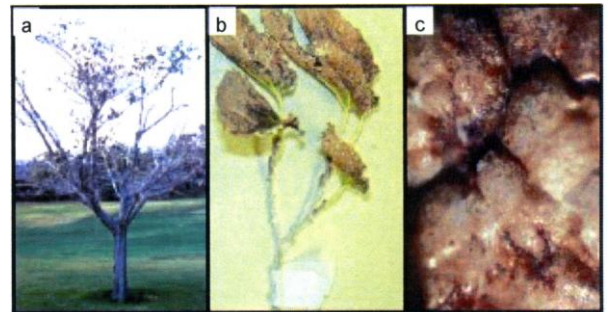
Support provided by: USDA-NIFA Rio Grande Basin Initiative and El Paso Water Utilities

### BACKGROUND

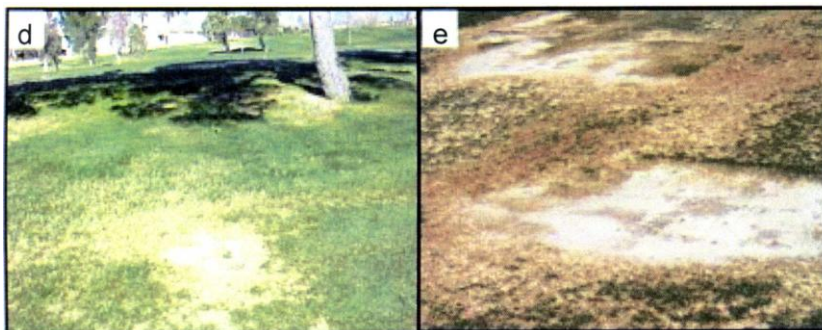
With increasing costs of securing potable water, reclaimed or saline water is beginning to be used for irrigating urban landscape. The experience in El Paso and far west Texas, however, indicates that under certain conditions, the use of water with elevated salinity can cause salt damage to landscape plants. Photographs below illustrate salt damage to broadleaf trees through sprinkling of salty water (a through c) and damage to turf as a result of soil salinization (photo d and e). The goal of this project is to develop management practices which minimizes salt problems.

### OBJECTIVES

- Evaluate salt tolerance of plant species against sprinkler application of salty water.
- Develop cost-effective measures to reduce salt damage caused by foliar absorption.
- Screen plant species based on their tolerance to soil salinity.
- Develop practical ways of predicting salt accumulation potential.
- Develop soil and irrigation management practices which reduce soil salinization.



*Sprinkler irrigation damage to plants from salts*



*Soil salinization damage to turf grass*

### BENEFITS

- Tolerance of landscape plants against sprinkling of saline water is highly species-dependent, and a plant-salt tolerance relationship was developed.
- Conversion to a low angle nozzle is a practical way to reduce leaf damage, but not all sprinkler heads can be retrofitted.
- Tolerance of plants against soil salinity varies tenfold; tolerant species grow well with irrigation water having 10,000 ppm of dissolved salts. Sensitive ones can suffer at 1,000 ppm.
- Soil salinization under normal irrigation practices is primarily a function of soil types and management, but seldom salinity of water used for irrigation. An empirical equation is now available for assessing salinization potential.
- Soil and irrigation management practices to reduce salinity hazards are being developed.