

SALINITY IN THE SOUTH PLATTE BASIN

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ABSTRACT

Water is a critical factor in maintaining agricultural lands at optimal yield and crop capacity. Because the most valuable crops grown in Colorado require irrigation, the quality of applied irrigation water is highly influential in determining which crops can be grown. Crop selection may be limited, or yields may decrease as salinity levels of irrigation water exceed critical levels, or if irrigation water is applied at the wrong crop stage. Salinity is an ongoing concern among Colorado growers. As more information is gathered, it is apparent that the problem is spreading.

The Northern Colorado Water Conservancy District (Northern Water), in cooperation with the U.S. Bureau of Reclamation, has undertaken a multi-year study assessing salinity levels throughout the Lower South Platte Basin.

This study involves monitoring the surface waters of the Lower South Platte River and its tributaries, assessing salinity and water levels at several groundwater observation wells, and mapping soil salinity levels throughout the District boundaries. The monitoring began in the spring of 2001 and has continued to expand in its scope. Currently, there are twenty-six automated and twenty-eight manual stations recording salinity levels along the South Platte and its tributaries. Additionally, nine agricultural irrigation systems, a number of natural returned flows and forty-three groundwater observation wells are being monitored. Northern Water has also gathered soil salinity data from several fields.

While salinity is an ever-increasing problem facing Colorado growers, we hope that information gathered from this study will help minimize negative effects of salinity in Northeastern Colorado. Upon completion of the study in 2008, Northern Water hopes to have a comprehensive overview of salinity levels throughout its boundaries, how they change spatially and temporally, possible sources and contributing factors, as well as suggestions for growers to more effectively manage their crops with increased awareness. More information can be found on Northern Water's web site www.ncwcd.org.