

Field Scale Monitoring of Salinity in the Arkansas River Basin

Ayman Elhaddad

Department of Civil Engineering, Colorado State University

Luis A. Garcia

Department of Civil Engineering, Colorado State University

Abstract. Increasing salinity levels in the arable lands of the Arkansas River Basin are causing reductions in crop yields. Rising water tables in these lands are causing waterlogging, which increases the severity of the problem. Four fields were selected intensive monitoring of soil salinity, water salinity, and water table. These data were used to produce GIS coverages, 2D and 3D maps representing all those parameters. These GIS coverages have been used to create animations that show the temporal variation of these parameters. This presentation will present the methodology being develop to show both the spatial as well as the temporal variation on different parameters related to salinity. Also all the parameters being collected are being used to determine the spatial and temporal crop yield reduction. Our objectives are to determining the extent of salinity and waterlogging problems in these fields and its effect on crop yield.