SAN JOAQUIN RIVER RESTORATION PROGRAM

Bureau of Reclamation
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Winter/Spring Soil Salinity Surveys
Frequently Asked Questions

Q: What is a soil salinity survey?
A: The purpose of a soil salinity survey is to measure the presence and amount of salt in the soils in a defined area and compare it with other data. Salts found in soils in California's Central Valley are typically from naturally occurring deposits or salt carried in from a water source.

Q: Why conduct a soil salinity survey?
A: This survey is designed to collect baseline data on existing soil salinity conditions on irrigated farms. The information will be used as part of the San Joaquin River Restoration Program's Seepage Management and Monitoring Plan. As part of the Plan, the Program would like to monitor and respond to changes associated in shallow groundwater and soil salinity that may be associated with the Program's increased flows in the San Joaquin River.

Q: When and where will the surveys occur?
A: The surveys will occur between the hours of 8 a.m. and 5 p.m. beginning in late February and extend through early May depending on weather and soil conditions. Sites will be selected with close input from the landowner. While the target spacing of the soil surveys is approximately every 0.5 mile, the Program plans to conduct a majority of these surveys on lands where a seepage monitoring well has been installed at the request of the landowner. Surveyors will primarily focus on lands planted in row and hay crops. Data collected will help the Program and the landowner track soil and groundwater conditions that can affect crops.

Q: How are the surveys conducted?
A: All surveys are conducted on foot with hand-operated equipment and last about four hours. However, due to weather conditions and the need to select representative sites, the surveys may to take up to two days per area. Up to three people are needed to conduct a survey. The entire survey is conducted within a 100-foot radius. Three types of soil salinity sampling will be conducted. When combined, these three sampling methods provide a view of soil conditions to a depth of five feet. The three sampling types are as follows:

- Hand-auger: At the center of the radius, surveyors will bore to a depth of five feet and collect soil samples at various levels. The hole will be backfilled with leftover soil.
- Plow layer: Using a one inch diameter soil probe, a minimum of 12 soil sample increments to a depth of 12-inches will be taken within the 100-foot radius of the central boring. These sample increments will be composited into a single composite soil sample.
- Electrical conductivity: To estimate soil salinity depth within the 100-foot radius of the central boring, a hand-held EM-38 electrical conductivity meter is walked throughout the zone. The meter estimates soil salinity to a depth of five feet by measuring the bulk electrical conductivity of the soil.

Q: When will survey data be available to landowners?
A: Results will be provided to the landowner in approximately 90 days. Soil analysis will be conducted by the Fruit Growers Laboratory, Inc. In addition to measuring salts, the laboratory will also measure soil pH, saturation percentage, and percentage of field moisture. Gypsum content and sodium absorption ratio may be measured on selected samples.

Q: When will follow-on surveys be conducted?
A: Surveys of this type are traditionally repeated every three years for comparison to baseline data. Additional surveys could occur if a landowner experiences a decline in crop yields potentially linked to adverse soil salinity.

For additional information, see the Restoration Program website at www.restoresjr.net or contact the Program's Landowner Coordinator, Craig Moyle at 916-418-8248.