

Soil Surveys of Potentially Irrigable Land in North Dakota

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The soil survey staff of the North Dakota Agricultural Experiment Station has been making detailed soil surveys of organized irrigation districts since 1956. The objectives are to complete and publish detailed soil surveys and determine the suitability of the soils for irrigation.

Standard soil survey procedures and the soil classification system of the National Cooperative Soil Survey are followed. These procedures include initial field reviews to classify the soils in the survey area, progress field reviews during the course of the survey to resolve problems and maintain quality, a final field review of the quality and adequacy of the survey and a final correlation to place the soils properly in the classification system. The surveys are made in cooperation with the Soil Conservation Service, and correlators of their soil survey staff correlate the surveys.

Information necessary for soil characterization in the field and laboratory is provided by the laboratories of the Department of Soils. Some of the chemical and physical properties determined include pH, electrical conductivity, quantity of salts, texture and available moisture capacity.

Each survey provides a classification of the soils, their location and extent. It serves as the base for predicting the behavior of each kind of soil under defined situations. In this case it provides the basis for predicting the results that can be expected and the soil management problems likely to occur under irrigation. Other uses include predictions about the behavior of soils for dryland farming, grazing, forestry, estimates of engineering properties, recreation, and urban planning to name a few.

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Soil surveys completed in organized irrigation districts.

Following is the current status of the soil surveys in organized irrigation districts.

Tri-County Irrigation District in Cass, Ransom, and Richland counties; approximately 274,000 acres. Report has been published: "Soil Survey of Tri-County Area, North Dakota."

LaMoure Section of Garrison Diversion in LaMoure and Stutsman counties and Oakes Section of Garrison Diversion in Dickey county; approximately 127,000 acres. Report has been published: "Soil Survey of LaMoure County and Parts of James River Valley, North Dakota."

Warwick-McVile Irrigation District in Benson, Eddy, and Nelson counties and New Rockford Irrigation District in Eddy county; approximately 301,000 acres. Report in preparation: "Soil Survey of Eddy County and Parts of Benson and Nelson Counties, North Dakota."

Lincoln Valley Irrigation District in Sheridan County; approximately 29,000 acres. Interim report in preparation: "Soil Survey of Lincoln Valley, Area, North Dakota."

Karlsruhe Irrigation District in McHenry County, approximately 47,000 acres. Soil survey to be completed in 1972.

Future plans are to map the soils in the Middle Souris Irrigation District in Bottineau and McHenry counties, containing approximately 137,000 acres. Field mapping will start in 1972. Field and laboratory studies of the soils in the irrigation districts will be continued.