

Ohio Pedologist Newsletter
Vol. 5 No. 2 - June 1979

George Hall - Editor

Summer is here again and a somewhat more leisurely attitude seems to prevail. Time out for picnics, reunions, vacations, Little League baseball, fishing and all the other relaxing things that make us forget the cold winter. The AOP picnic is just one of those occasions when we can get together and share experiences, meet families and just relax with those people you have been telephoning and writing to all year.

AOP Summer Picnic

Where: Upper Sandusky City Park (Harrison-Smith Park). On the floodplain of the Sandusky River - east side of town.
1½ mile West of Rt #23 on US 30.

When: Saturday, July 21, 1979

Plan to assemble at the shelter house by 12:00 noon and eat by 1:00 PM.

(AOP Executive Committee will meet at 11:00)

What To Bring: The Family
Sport and game equipment
Your own meat dish
Either a salad or dessert to be shared pot luck
Your own hot drink

AOP will supply soft drinks for all

Who Gets Blamed If It Rains - Bob Hendershot

News from Lands and Soil

Personnel - Several recent personnel changes have occurred since the last newsletter. They are as follows:

Ed Miller has been appointed to the Survey Leader position in Marion County, filling the position vacated by Forrest Cunningham.

Nancy Bonet, a spring graduate of Cornell University, has been appointed to a Soil Resource Specialist position in Marion.

Neil Martin, also a spring Cornell University graduate, is working as a Soil Resource Specialist in Athens County.

Tim Wiater, a spring graduate of Ohio State, was employed as a Soil Resource Specialist in Tuscarawas County.

Mark Fuesner was promoted and transferred from Tuscarawas County to Scioto County.

Kevin Covich has resigned to accept a position as Director of a summer camp in northeastern Ohio.

We welcome the new employees and are happy to have them on board.

Publications - The Soil Inventory Progress Report of Belmont County has been printed and released. We congratulate Neil Rubel for the fine job he has done on the Belmont survey and his efforts toward the report.

Progress Report No. 57 for Madison County is now in the hands of the printer and should be available by the end of August.

Our publications section is busy working on reports for Auglaize, Hamilton and Geauga Counties.

Awards - Norris Williams received the ODNR Outstanding Employee Service Award for the month of February. Congratulations Norris!

From SCS State Office

Personnel - The month of May was a sad time for the National Cooperative Soil Survey and the Ohio Soil Survey. Ralph L. Meeker died suddenly on May 16, 1979, from a massive heart attack. Ralph was at Fremont on the Sandusky County mapping inspection--his last trip out before retirement on June 1. Ralph had completed nearly 40 years of federal service. He was truly a professional soil scientist. Ralph was proud of the soil science profession and always had concern for the reputation and future of the Ohio Soil Survey. He emphasized high standards and insisted on quality control in our work.

Ralph will be missed by all of us, especially those working in soil map compilation and soil map finishing.

Tommy L. Sims, Soil Scientist at the Fairfield project soils office will be transferred to the Newark project soils office effective July 2, 1979.

New soil surveys - As most of you know, USDA soil surveys have been received for Williams, Lake, and Crawford Counties. Public release and information meetings have been set for Williams County and Lake County. The Crawford County meeting is being finalized.

We expect to receive the Mercer County Soil Survey later this summer.

Interest in new soil surveys - Interest to cost-share in a project soil survey by local units of government continues to be strong. Cooperative agreements for a project soil survey were signed recently with Holmes County officials. Resolutions to support a soil survey have been passed by officials in Adams and Muskingum Counties.

Soil surveys nearing completion - The field parties in Geauga and Hamilton Counties will be completing the field work this calendar year. Geauga County will have mapping completed in August while Hamilton County will have mapping completed in December.

OSU Ivy Towers

The new Agronomy building is now underway. Groundbreaking took place June 5 with several hundred people celebrating the long awaited first shovel. Plans are for completion in two years. This schedule sounds a bit optimistic to most of us but the base is already taking form. There will be no basement so the footers are already poured. The contractor has said that the concrete for the second floor will be poured by August (there will be four floors). By football season the skeleton should be pretty much in place.

Application for the Nick Holowaychuk position are in and we hope to do some interviewing within a month.

Our turfgrass extension specialist, Dr. Dave Martin, is moving to Michigan and a position with Chemlawn.

Erosion and Water Quality Symposium

A symposium on erosion and water quality will be held Wednesday, November 7 and Thursday, November 8 at the OARDC Auditorium in Wooster.

Tentative program is as follows:

Wednesday, November 7, 1979

- I. Soil Erosion and the Universal Soil Loss Equation
- II. Sediment and Nutrient Transport
- III. Environmental Consequences of Accelerated Erosion

Thursday, November 8, 1979

- IV. Nonpoint Pollution Research and Demonstration Projects in Ohio
- V. Planning Approaches to Nonpoint Pollution Control
- VI. Governmental Programs for Implementation of Nonpoint Pollution Controls

SEE YOU AT THE PICNIC

Loess Deposits of the Eastern Shore of Maryland¹

J. E. FOSS, D. S. FANNING, F. P. MILLER, AND D. P. WAGNER²

ABSTRACT

A silty mantle on the upper Eastern Shore of Maryland was studied to determine its origin and characteristics. Thickness of the silts was studied by selecting traverses in an east-west direction from the Chesapeake Bay and also scattered borings between traverses. These deposits are believed to be loess; they are characterized by 50 to 75% silt-sized particles. The material is also carbonate-free, nonstratified, and yellowish brown in color. In addition, the silty mantle shows a reduction in thickness and particle size with increasing distance from the Chesapeake Bay, which was the probable source area. In areas of thin loess (< 90 cm), increasing amounts of sand were apparently incorporated into the loess at the time of deposition. Based on ¹⁴C date of a 11A1b horizon of a buried paleosol below the loess, deposition of the silts took place after 10,520 ± 240 years B.P. Profile characteristics of soils developed in the loess show moderately well expressed argillic horizons with the soil in this study having an increase of 9% clay from the A to the B2t horizon or a B2t/A clay ratio of 1.65.

Additional Index Words: ¹⁴C date, Pleistocene, weathering ratios, Chesapeake Bay.

¹Contribution no. 5335 and Scientific Article no. A-2328 of the Maryland Agric. Exp. Stn., Dep. of Agronomy, College Park, MD 20742. Presented in part before Div. S-5, Soil Science Society of America, 11 Nov. 1974. Received 6 June 1977. Approved 3 Jan. 1978.

²Professor, Professor, and Research Assistant, respectively.

Compaction and Soil Structure Modification

by Wheel Traffic in the Northern Corn Belt¹

W. B. VOORHEES, C. G. SENST, AND W. W. NELSON²

ABSTRACT

Increasing size and weight of farm tractors is causing increasing concern about soil compaction. Controlled wheel-traffic studies in Minnesota on a silty clay loam showed that wheel traffic of normal farming operations could compact the soil to a 45-cm depth. Penetrometer resistance was a more sensitive indicator of soil compaction than was bulk density. Wheel traffic increased soil bulk density by 20% or less, whereas penetrometer resistance was increased by as much as 400%. Fall tillage essentially alleviated bulk compaction in the 0- to 15-cm layer. Plowing was more effective than disking or chiseling in decreasing compaction in the 15- to 30-cm layer. Compared with plowing, bulk density and penetrometer resistance values for chiseling or disking were about 5 and 40% higher, respectively. Compaction below the tillage depth was not completely ameliorated by annual freezing and thawing.

Wheel-induced compaction was more persistent in individual soil structure units than in bulk soil. Strength and density of wheel tracked clods were greater and average aggregate diameter was larger than that of nontracked clods, a difference which persisted overwinter.

¹Contribution from the North Central Soil Conservation Research Center, North Central Region, ARS, USDA, Morris, MN 56267, in cooperation with the Minnesota Agric. Exp. Stn., Sci. Jour. Series no. 9809. Received 29 Aug. 1977. Approved 4 Jan. 1978.

²Soil Scientist and Agricultural Research Technician, USDA, Morris, Minn.; and Professor, University of Minnesota, St. Paul, Minn.; respectively.

IN SITU HYDRAULIC CONDUCTIVITY OF A FRAGIPAN SOIL IN THE SOUTHERN COASTAL PLAINS¹

K. G. PRASAD AND H. F. PERKINS

University of Georgia, Athens

SOIL SCIENCE Vol. 126, No. 5

ABSTRACT

More than 250,000 ha of soils having a fragipan or fragic properties occur in the Southern Coastal Plains Soil Province. These soils have moderate to severe land use restrictions, partially due to perched water, slow permeability, and restricted root growth. The Cowarts soil (Fragic Paleudults; fine-loamy, siliceous, thermic family), which is developed from marine sediments, was selected to determine in situ hydraulic conductivities and related hydrological properties. The moderately well-expressed fragipan has higher bulk density, less pore space, smaller pores, less available water, and lower hydraulic conductivity values than horizons above or below the pan. With an increase in hydraulic head, an increase in hydraulic conductivity was less in the fragipan than in associated horizons.

SOIL WATER RETENTION AS RELATED TO PARTICLE SIZE IN SELECTED SANDS AND LOAMY SANDS

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Bureau of Reclamation, Missouri—Souris Projects Office, Bismarck, North Dakota 58501

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ABSTRACT

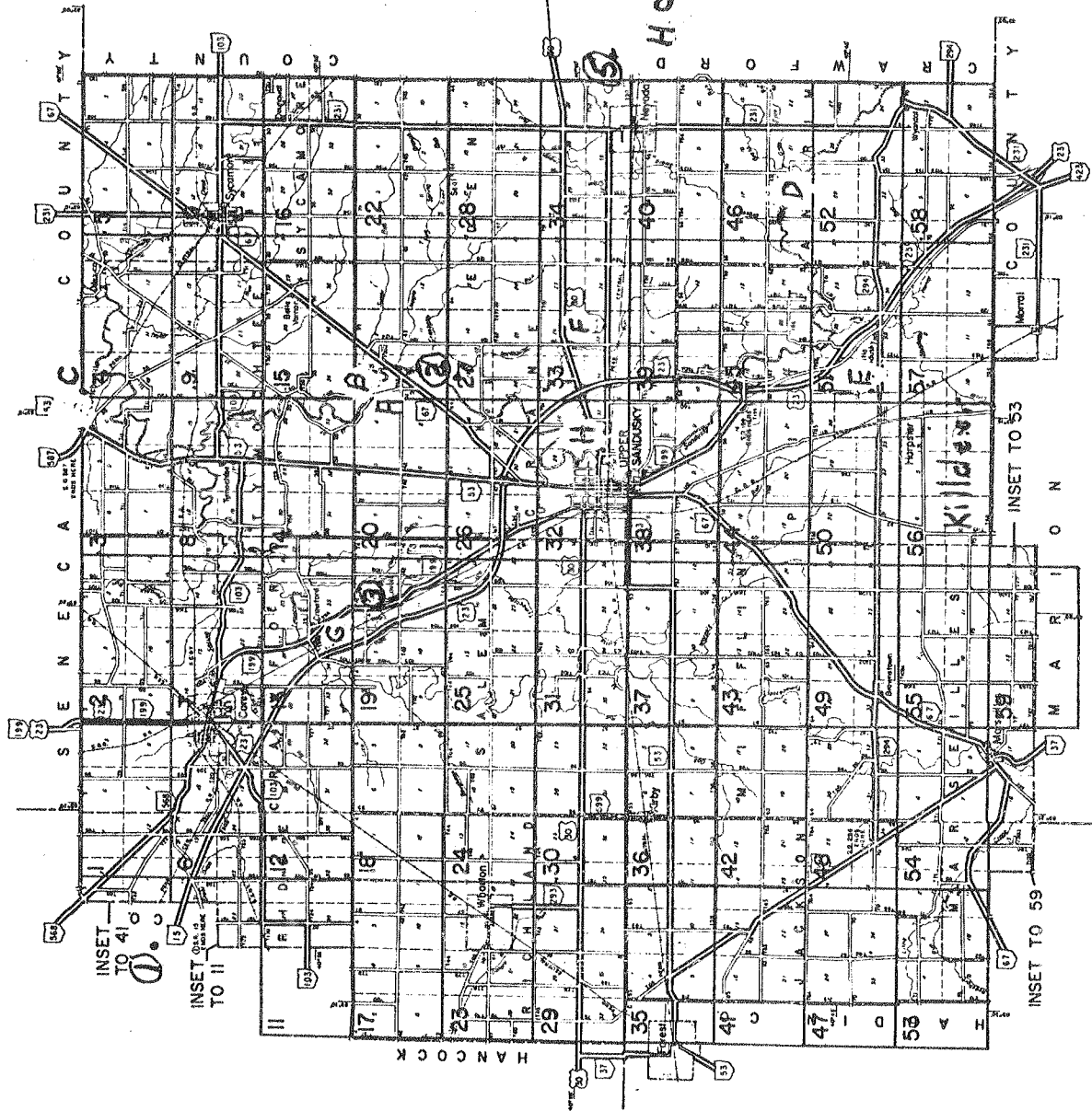
Sands and loamy sands within the Glacial Lake Souris basin in North Dakota vary considerably from one area to another in their particle size distribution. The objective was to relate water retention of these sandy soil textural classes to particle size percentage.

Water retention percentages, on an oven-dry basis, were determined for samples at field capacity under field conditions and also at 1/10-, 1/15-, and 1/20-bar soil water suction for air-dried, < 2-mm samples in conventional porous ceramic plate-pressure pot equipment. No single soil water suction produced water retention values adequately representing field capacity for all textures. In most instances the percentage of very fine sand alone and in combinations with the percentages of silt and clay were

AOP Summer Picnic

U. S. DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE



- Campgrounds**
- ① KOA-Vanlue
 - ② Indian Mill
 - ③ Tee Pee
 - ④ Sunset
 - ⑤ Fox FIRE
- Other landmarks:**
- A. Farhe grave
 - B. Covered bridge
 - C. McCutcheville Inn
 - D. Covered bridge
 - E. golf course
 - F. golf course
 - G. Col. Crawford monument
- INDEX TO MAP SHEETS**
WYANDOT COUNTY, OHIO
SOIL SURVEY

SPONSORED BY THE
 WYANDOT COUNTY
 SOIL & WATER CONSERVATION DISTRICT
 WITH THE ASSISTANCE OF
 WYANDOT COUNTY COMMISSIONERS
 OHIO DIVISION OF LANDS AND SOIL
 OHIO AGRICULTURAL RESEARCH AND
 DEVELOPMENT CENTER
 U. S. SOIL CONSERVATION SERVICE

SCALE 0 1 2 3 4 5 MILES
 1/253,440

SOURCE:
 1973 COUNTY HIGHWAY MAP AND
 1973 COUNTY SOIL SURVEY
 POLYCONIC PROJECTION
 U.S. GEOLOGICAL SURVEY, 1977

7-77
 5P-36,383

