ILLINOIS SOIL CLASSIFIERS ASSOCIATION

February 1992 Newsletter

## PROPOSED CHANGES TO THE ISCA CERTIFICATION STANDARDS

The following proposed changes to the Certification Standards were approved at the January Council meeting and are being passed on to the membership for a vote at the annual meeting. Deletions are shown as ~~strikeouts~~ and additions are shown as redlines.

SECTION 5.

STANDARDS AND REQUIREMENTS FOR CERTIFICATION

In order to be eligible for certification as a professional soil classifier in Illinois, applicants must (a) subscribe to the Code of Ethics of the Illinois Soil Classifiers Association, (b) be a Full Member or Honorary Full Member of the Illinois Soil Classifiers Association, (c)submit a written application to the Certification board containing such information as required in Section 6, (d) have actively practiced ~~soil classifying in a responsible position at least three (3) of the preceding four (4) years, or have more than six (6) years total soil classifying experience and have actively practiced soil classifying during the preceding year and,~~ (e) have practiced soil classification for a minimum of two (2) years with supervision under a Certified Professional Soil Classifier (CPSC) or two (2) years of collaboration with two or more Certified Professional Soil Classifiers (CPSC's), (f) have successfully passed a written and/or oral examination designed to determine the proficiency and qualifications of the applicant to engage in soil classifying and, (g) a minimum of seven CEU's shall be required from categories A, B, or C during a four year period prior to application for certification.

All applicants shall receive ten (10) sample questions at least two weeks prior to examination. Written examinations shall be monitored by a Board member. A passing grade on an examination shall be a score of seventy (70) percent or higher. Applicants may be re-examined once within two years of first applying for certification without submitting an additional fee.

SECTION 6.

PROCEDURES FOR APPLICATION

Applications for certification may be submitted at any time and shall be on forms prescribed and furnished by the Board. Such application shall contain a signed statement showing (1) the applicant's formal education, (2) a detailed summary of his or her work experience, (3) a copy of all transcripts of formal academic studies, and (4) such other information as the board may require, including the names and addresses of three (3) references who have personal knowledge

of the applicant's classifying experience and shall state the technical skill level of the applicant. At least one of the references shall be a supervisor or collaborator as specified in Section 5 (d). e.
(5) The applicant shall be required to document a minimum of 500 hours of supervision or collaboration in the practice of soil classification. A maximum of 300 hours of supervision or collaboration shall be allowed in any one calendar year. A maximum of five consecutive years shall be allowed to achieve the minimum of 500 total hours necessary for certification. The following items must be documented:

1. Date(s) of training
2. Location(s) of training
3. Type of training and hours received, i.e. soil mapping and hours, on-site soil investigation or other related work as defined under the practice of soil classifying
4. Name, address, and phone number of supervisor or collaborator providing training

(6) It shall be accompanied by the proper fee as prescribed in Section 7.

Any Full Member of ISCA at the time these standards go into effect shall have the requirements of examination and references waived, until January 1, 1989.

~~The Board shall approve applications for reciprocal certificates for applicants who are certified or licensed to practice professional soil classifying in another state or country having equal or higher requirements for certification or licensure than those prescribed in these standards. The applicant shall provide evidence of the standards and his current good standing. At such time that the holder of a reciprocal certificate ceases to be certified or licensed in another state or country he or she shall transfer their confidential file from the other state or country to the Board, or otherwise provide the item required in an application as stated in the first paragraph of this section.~~

SECTION 7.

FEES

To pay the expenses of the operation of the certification process, the Board shall, at the time an application for certification is submitted, collect from the applicant a fee of fifteen dollars ($15.00). If the applicant fails to qualify, such fee shall not be returned, but such applicant is eligible for re-examination once within two (2) years.

The fee for renewal of the certificate shall be ten dollars ($10.00).

The fee for restoration of a certificate which has lapsed shall be fifteen dollars ($15.00).

The fee to be paid for a duplicate certificate shall be five dollars ($5.00).

~~The fee to be paid for a reciprocal certificate shall be five dollars ($5.00).~~

These fees may be adjusted as necessary by action of the Council of the Illinois Soil Classifiers Association.

## ISCA AND THE SEARCH FOR THE STATE SOIL: THE SAGA CONTINUES ...

Dear Editor:

In a recent Pantagraph article, Kurt Erickson reported that Representative Gordon Ropp has been chuckled at by colleagues and the media for pushing a state soil bill. While it is obvious that most do not appreciate Ropp's efforts in this area, I personally give the man a lot of credit.

He sponsored the state soil legislation at the request of the Illinois Soil Classifiers Association (ISCA), knowing full well that he would be setting himself up for much "jovial backslapping". Still, he pursued the cause because he saw that a state soil would provide many conservation and natural resource organizations (such as ISCA) with a symbol to help in their education efforts. Representative Ropp appreciates the fact that our soil, water, plant, and animal resources are indispensable to the support and growth of a strong and prosperous state, and indeed, are the things that make Illinois a special place.

We have state symbols to recognize many of these resources, but none to recognize our soil resources. If asked about a state soil, Ropp will say "Soil has made our state great in terms of it's agricultural heritage. Maybe that should have been the symbol we started with." I agree!

The best hope we have for the long-term conservation of our natural resources is to develop a strong conservation ethic in our children. They need to know that "food does not come from the grocery store and that heat does not come from the furnace".

With Ropp's help we'll get there. He deserves a pat on the back!

Robert L. McLeese
Illinois Soil Classifiers Association

## SOIL SURVEY INVESTIGATION NUMBER 41 AVAILABLE

Soil Survey Investigation Number 41, " A Reevaluation of the "Illinoian Till Plain" and the Origin of the Gritty Loess Substratum of Avonburg and Clermont Soils in Southeastern Indiana", has recently been completed. Distribution has been within SCS and to our cooperators in soil survey, but if others want a copy we still have about 20 left. They can be obtained by calling or writing.

Our address is: USDA-SCS
1902 Fox Drive
Champaign, Illinois 61820
(217) 398-5285

**Abstract**

A Reevaluation of the "Illinoian Till Plain" and the Origin of the Gritty Loess Substratum of Avonburg and Clermont Soils in Southeastern Indiana

Gamble, E.E., M.J. Mausbach, H.R. Sinclair, and D.P. Franzmeier.

The original objective of the study reported here was to determine the origin, nature, and significance of the "gritty loess" substratum of Avonburg and Clermont (Cobbsfork) soils in southeastern Indiana. During the course of the study, however, significant new information about the glacial stratigraphy and landforms of the area was obtained. This new information forms the major part of this report.

The general area selected for study of the "gritty loess" was in Decatur and Ripley Counties, Indiana, where Avonburg and Clermont soils are found on what has been traditionally called Illinoian till (or drift) plain. The area is on the major north to south drainage divide that traverses the Wisconsin drift border and the "Illinoian till plain." Drainage to the east enters the Ohio River via Laughery Creek and the Whitewater River. Drainage to the west is to the Wabash River via the East Fork of the White and Muscatatuck Rivers.

Detailed coring traverses in three study areas began on the crest of the Wisconsin moraine in Decatur County and extended to the southeast onto the so-called Illinoian till plain in Ripley County. The two areas on the "till plain" each included one of the low hills found on the drainage divide. A stratigraphic section and topographic profile was developed along the divide from the coring data and from distance and elevations determined by transit survey and topographic map measurements.

The coring transects along the divide cross a sequence of landscapes. The Wisconsin moraine crest stands at elevations ranging from 1,090 to 1,100 feet (332-335 m). The moraine front descends to a loess-mantled dissected drift surface at an elevation of 1,050 to 1,060 feet (320-323 m), herein called the St. Maurice upland. The non-calcareous loess mantle consists of an upper silty unit and a lower gritty or sandy unit. The upland surface is of limited extent and is bounded on the southeast by an "escarpment" that has a toe elevation of 1,015 feet (309.5 m), herein called the Mechanicsburg scarp. This scarp descends to a lower plain, which continues south along the divide and is characterized by an occasional low hill.

Cores taken on the moraine crest show thin silt at the surface, Wisconsin till, thin silt over a paleosol, leached till, calcareous till, and a second paleosol. The first paleosol is considered Sangamon and the till below it is thus Illinoian. This paleosol and till are traced across the St. Maurice upland beneath the silty over gritty loess cover to the Mechanicsburg scarp. Cores reveal a complex stratigraphy beneath the upland with at least three paleosols and three tills resting on bedrock.

The St. Maurice upland, the Illinoian till, and the stratigraphy beneath it are all truncated by the Mechanicsburg scarp. The non-calcareous silty over gritty loess sequence continues down the

scarp and onto the lower plain. At the scarp toe the loess rests on a truncated paleosol over bedrock. The scarp is interpreted as an erosion feature and is apparently the outer or southern limit of Illinoian till on the divide. The erosion surface is marked by the base of the gritty loess and in some cores and sampling pits by a stone line. This loess covered erosion surface forms the major part of the lower plain or surface to the south of the Mechanicsburg scarp.

South on the lower surface, coring transects along and normal to the divide axis cross two of the low hills. At the crest of both hills, the stratigraphic sequence is silty over gritty loess underlain by a red (2.5YR 4/6) paleosol developed primarily in probable sands and gravel over till. In both hills, the entire section beneath the loess is leached to bedrock. At one site, this part of the section was 29.5 feet (9 m) thick. Down the flanks of the hills, the red paleosol thins and disappears from beneath the silty over gritty loess. Thus, it has been truncated by the loess covered erosion surface. The low hills are eroded outliers of a more extensive former land surface. This is the same erosion surface that cut the Mechanicsburg scarp.

The presence of the erosion surface beneath the silty over gritty loess sequence provides a ready explanation of the origin of the gritty loess. The sands in the gritty loess were mixed into the early loess increments by various surface and near surface processes that took place on the erosion surface during early stages of loess deposition. Linear regression analyses show that the amount of sand in the lower part of the gritty loess is directly related to the amount of sand in the erosion surface. Similarly, the geometric mean size of sands in the lower increments of the gritty loess is directly related to the size of sands in the erosion surface.

Other analyses show that the silty over gritty loess tends to be thicker on lower elevations of the erosion surface and the silts tend to be finer on the higher elevations.

John Doll, Asst. State Soil Scientist, SCS.

## UPDATING AND MAINTAINING THE SOIL SURVEY IN ILLINOIS -AN MLRA APPROACH-

The soil survey of Illinois began in 1902 with soil survey projects in Clay, Clinton, Clair, and Tazewell Counties. By 1929 most of the counties in the State had been mapped. Fifty-three (53) of these "first generation" soil surveys were published at a scale of 1/2 inch per mile. Also, by 1929, forty-five (45) counties were considered in need of updating in order to meet user needs.

The "second generation" of soil survey work began in 1929 when the soil series and "place name" system of nomenclature was adopted. Twenty-two "second generation" county reports were published at a scale of 1 inch per mile.

In 1953 the first of the "third generation", or so-called "modern" soil surveys was published. "Modern" soil survey mapping has been completed for 98% of Illinois. By 1994 the mapping in

Illinois will be finished. We will have a complete inventory of the soil resources of Illinois! <u>But, will it be current</u>??

The "third generation", "modern" soil survey will consist of a medley of county soil survey reports completed over a 40 year period, and published at various scales. Not all of the "modern" soil surveys meet current user needs.

*The "Next" Generation*

Soil survey users are more sophisticated than they use to be. In order to meet their current and future needs we need a regionally correlated soil survey, with well documented computerized interpretations and digitized maps on a controlled base.

There is a need to bring the patchwork of county soil surveys to a common standard, to build on the existing information, and to develop a coordinated database in order to address state, regional, and national concerns.

Our approach for updating and maintaining the "modern" soil surveys will be to assume that we have a good product to start with. The job of updating and maintaining soil surveys will not necessarily be to produce an entirely new survey, but, where possible, to upgrade the existing survey by refining and enhancing it.

The update of an existing soil survey may take one of several forms depending on the accuracy, precision, and usefulness of the original survey. All soil survey update projects will require recorrelation of the soils, recompilation of the line work onto a proper base, and digitization. Some will require only minimum field work (descriptions, transects, remapping), while others will require extensive fieldwork. All update activities will be managed by Major Land Resource Area (MLRA).

*The MLRA Concept*

In the 1960's USDA divided the United States into land resource regions (LRR) and major land resource areas (MLRA). This system affords a basis for making decisions about national and regional agricultural concerns, provides a broad base for extrapolating the results of research and resource inventories within national boundaries, and serves as a framework for organizing and operating resource conservation programs. The 25 land resource regions of the USA have been divided into 212 MLRA's. MLRA's are geographically associated areas that are characterized by a particular pattern of soils, climate, water resources, and land uses.

Parts of two LRR's, the Lake States Fruit, Truck, and Dairy region (L) and the Central Feed Grains and Livestock region (M) cover Illinois. There are 2 MLRA's in LRR (L) and 7 MLRA's in LRR (M) within Illinois (See MLRA map).

The soil survey area of the future will be the MLRA, not an individual county, as in the past. Soil survey identification legends, taxonomic and map unit descriptions and correlation activity will be on an MLRA basis. Soil maps will join across political boundaries (county and state) line for line, map symbol for map symbol, map unit name for map unit name, and soil interpretation for soil interpretation.

The objective of all MLRA soil survey update activities will be to provide an improved product on a controlled base, that can be used in a geographic information system (GIS). Significant improvements expected include:

- A uniform map scale and mapping intensity for the MLRA.
- A common standard of documentation.
- Better description of composition and pattern of soils in map units.
- More precise statements about the expected reliability of maps and interpretations.
- New soil property data and interpretations.
- A coordinated database of soil properties.
- A digital soils data layer meeting national map accuracy standards.

*MLRA Soil Survey Organization*

Ideally, soil survey update activities would be done concurrently for an entire MLRA. Realistically, update activities will be done in stages. Because state and local cost share dollars help support soil survey activities in Illinois, and because surveys in need of update are scattered across the state, county projects will still be initiated. However, these projects will be considered as subsets of the MLRA project.

Five MLRA soil survey update offices have been established and staffed in Illinois (see MLRA map). All update soil survey activities will be managed from these 5 offices.

Soil survey evaluations have been completed for each of Illinois' 102 counties. As mentioned earlier, some counties will require significant field work, while others will only require recorrelation and recompilation onto orthophotography and digitization to make them state-of-the-art.

*MLRA Soil Survey Guidelines*

The following guidelines will be used to bring individual county soil surveys up to current cooperative soil survey standards.

- SURVEY AREA is the MLRA with county projects as possible subsets.
- BASE will be USGS orthophoto quarter quads (OQQ).
- SCALE of the OQQ's is 1:12,000.
- LEGEND will be an MLRA legend with a typical pedon described for each taxonomic unit and map unit in the MLRA.
- DOCUMENTATION is required in order to make unbiased, statistically reliable statements of map unit composition. This will require transects and descriptions throughout the MLRA in addition to any fieldwork that may be needed in county subsets.
- PRODUCT will be a coordinated, joined, digitized soil survey on a 1:12,000

orthophoto quarter quad base. Both hardcopy and digital information will be produced. Eventually, a soil survey map series (similar to USGS's topographic map series) will be available in digital form.

*WHY??*

Inevitably, the questions will be raised - "Why a county, once surveyed, should need to be updated?? After all, the soils haven't changed have they?? And the mapping was done well, wasn't it??" The answer to these questions is - "While the soils, by and large, were done well; the needs of the users have changed!"

We now have "modern" soil survey information for about 98% of Illinois. This data has been gathered in the last 40 years, on a county by county basis, and reflects what was known about the soils at the time of the survey. The published soil survey reports are excellent sources of soils data, but have become outdated to varying degrees as new information about soils is gathered, and as demographics, technologies, environmental questions, and intensities of land use change have changed.

We must continuously work with soil survey users to arrive at a product that meets current and projected needs. We are committed to producing a product that is accurate and precise and provides understandable and useful information to individuals who need to understand and use soils as they occur on the landscape.

This MLRA approach forces us to change our provincial way of thinking and go beyond county boundaries and provide a soils database that works at the state, regional, and national levels.

Robert L. McLeese, State Soil Scientist, SCS

## HELLO FROM COLORADO!

I've been mapping in Kit Carson County, Colorado since October 1990. The survey has been in progress for 9 years, with about 950,000 acres mapped. Only about 60,000 acres left to map. We map range land with a probe truck, 500-1000 acres a day, trying to avoid cactus and flat tires. I see jackrabbits, mule deer, coyotes, hawks, and pronghorns most days. Rattlesnakes are around, but I haven't come across one yet. The average annual precipitation is about 16 inches. Most cropland in the county is irrigated. Every soil on the legend is highly erodible because of wind erosion. Most soils in the county are formed in aeolian sands, loess, or old alluvium (Ogallala Formation). We map Aridic and Pachic Argiustolls, Ustic Torripsamments, Aridic Paleustolls, and Ustollic Haplargids. There isn't one poorly drained soil in the county.

In June and July, I was mapping a detail in the Arapahoe/Roosevelt National Forest near Boulder, CO. The mountain weather and scenery was great! I had to learn how to dig holes through rocks. We mapped Lithic Haploborolls, Typic Ustochrepts, Lithic and Alfic Cryochrepts, Psammentic Cryoboralfs, and Typic Eutroboralfs.

Instead of attending the American Society of Agronomy National Convention in Denver as planned, I spent the week in the hospital. October 29 we were blessed with a beautiful 6lb 13oz baby boy, Samuel August. He surprised us 3 weeks early - we still had to move from Burlington and finish two Lamaze classes.

Starting in January, I will be working on the 1992 National Resources Inventory detail in Lakewood at the SCS State Office. We're using photo interpretation and remote sensing to complete the 10 month project.

We're having fun in Colorado. Visitors are always welcome. Stay dirty!

Laura Merkel, 15760 E. Alameda Pkwy., #3-301, Aurora, CO 80017

## CONGRATULATIONS! CONGRATULATIONS! CONGRATULATIONS!

Jane Hansen Anklam had a baby girl on October 28. Welcome to our soil sister, Anna Louise!

## MEMBERSHIP NEWS

| | |
|---|---|
| Scott D. Harding | upgraded to Full |
| Bob Paul Oja | upgraded to Full |
| Scott Wegman | upgraded to Full |

## WELCOME NEW MEMBERS

| | |
|---|---|
| F. William Simmons | Full |
| Perry E. Van Beek | Affiliate |
| Debbie Carlson | Affiliate |
| Grundy County Health Dept. | Affiliate |
| Lester Johnson | Affiliate |
| Dale E. Parker | Affiliate |

## BIOGRAPHICAL SKETCHES OF PRESIDENTIAL AND VICE-PRESIDENTIAL CANDIDATES

For President-Elect:

SAMUEL INDORANTE

Sam received his B.S. from Iowa State University and became a soil scientist on the Bond County Soil Survey in 1975. He then completed a M.S. at the University of Illinois in 1979 and resumed his soil scientist career in Perry County. He has also worked in Bureau and Putnam Counties and was a part of a soil survey detail to the State of Florida. In 1990, he received a Ph.D. from the University of Missouri. He is presently the Soil Survey Update Leader for MLRA 115 and other resource areas in Southwestern Illinois. He has been an ISCA member since 1979 and is also a member of SSSA, SWCS, and ARCPACS certified.

JAMES HORNICKEL

Jim was raised on a farm in Livingston County near Chatsworth, Illinois. He received a B.S. degree from Illinois State University in 1972. He began his soil scientist career on the Livingston County Soil Survey. He then worked on the McLean County Soil Survey. He is presently a soil scientist with Woodford County. In addition, he is a contract soil scientist in Fulton and Marshall Counties, and has a private consulting soil classifier business preparing intensive soil surveys for subdivision planning. Jim is a certified soil classifier with ISCA and is also a member of the Indiana Soil Classifiers organization.

For Vice-President:

BRYAN FITCH

After Bryan Fitch received his B.S. in Plant & Soil Science from SIU, he began his career as a soil scientist on the Jasper County soil survey in 1983. Near the end of the Jasper County project, he returned to SIU and completed his M.S. in Soil Science in 1988. Bryan now lives in Herrin and is a member of the Franklin/Jefferson soil survey team. Bryan, originally from the family farm in Cumberland County near Casey and Hazel Dell, has been on the ISCA Membership Committee and is currently serving on the Finance Committee. He is also the contributing editor for the ISCA Newsletter for southern Illinois.

THOMAS D'AVELLO

Until 1988, Tom D'Avello had spent most of his life and career in Ohio. He was born and raised in Akron, received his B.S. in agronomy from Ohio State University, and began his career with SCS in 1981 as a soil scientist in eastern Ohio. Outside of Ohio, he was detailed twice to Florida and once to Montana to assist with FSA mapping. In 1988, he completed his M.S. in Forest Soils from Michigan Tech. Much of his course work involved GIS, which was helpful in bringing him to Illinois. After serving a brief stint as survey leader in Ross County, Ohio, he came to Champaign in 1990 as the Resource Inventory Specialist in charge of the National Resources Inventory and GIS activities.

## MEETINGS! MEETINGS! MEETINGS!

*What's Wrong with Illinois Land Use Law?* Northern Illinois University, March 5, 1992. Contact NIU College of Continuing Education (800) 345-9472 (IL only) or (815) 753-0277.

*Midwest Friends of the Pleistocene.* Glacial landforms in NE Minnesota, May 15-17, 1992. Field trip leaders are Howard Hobbs and Jay Lehr. Contact Howard Hobbs, Minnesota Geological Survey, 2642 University Avenue, St. Paul, MN 55114-1057.

# DON'T FORGET TO VOTE!!!

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## BALLOT

Return Ballots to Ken Gotsch prior to the start of the Annual Meeting. Voting privileges are limited to Full Members, Honorary Full Members, and Associate Members.

President-Elect (Vote for One)

_____ Samuel Indorante

_____ James Hornickel

Vice President (Vote for One)

_____ Bryan Fitch

_____ Thomas D'Avello

## ISCA ANNUAL MEETING

The 1992 ISCA Annual Meeting will be held Friday March 20, 1992 at the Best Western -- East in Springfield. Mr. Robert McLeese, State Soil Scientist and Worldly Soil Mapper, will present "The Politics of Soils: Soil Survey in Bulgaria". Registration and Social Hour will be held from 11:00 AM until Noon. The Banquet will begin at Noon. Selected entrees include Chicken Sicilian and Beef Stroganoff. Cost is $11.55 per person. Advance registration is required.

LOCATION: Just west of I-55 on Stevenson Drive in Springfield. Centrally located for your driving pleasure.

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**Annual Banquet Registration**

Name ______________________________

Address ______________________________

______________________________

_____ Number of registrations @ $11.55 = $_________

Total Remittance $_________

Please make checks payable to: Illinois Soil Classifiers Association.

Send Registration to:

Steve Zwicker, Treasurer
Illinois Soil Classifiers Association
772 Mayfair Drive
Route 6
Princeton, Illinois 61356

# ILLINOIS SOIL CLASSIFIERS ASSOCIATION

**June 1992 Newsletter**

## MESSAGE FROM PRESIDENT BRUCE PUTMAN

One of the major changes I have noticed in the Illinois Soil Classifiers Association is the increasing diversity of our membership. I feel this is a trend we should encourage. Enclosed in this month's newsletter is an application for affiliate membership. Cut this application out or copy it and give it to someone that might be interested in the ISCA or its activities. Examples of individuals or groups who might be interested in becoming affiliate members with our organization are local health or planning department staff, community college or university faculty, and individuals working with the local Soil and Water Conservation District or Soil Conservation Service. As an introduction to the Illinois Soil Classifiers Association invite these individuals to attend our local workshops or annual meetings.

## ILLINOIS SOIL CLASSIFIERS ASSOCIATION CERTIFICATION BOARD 1992

Two new members were appointed by ISCA President Bruce Putman to replace John Doll and Don Wallace, whose three-year terms had expired. The Certification Board thanks John and Don for their service, particularly in revising the Certification exam and developing the Continuing Educational Unit program. The two new members are Toni Endres and Bob McLeese. Welcome aboard!

The 1992 Certification Board members and officers are as follows, with the expiration date of their respective three-year terms:

William R. Kreznor, Chairman (1993)
904 Powers Road
Woodstock, IL 60098-2702

Toni Endres, Vice Chair (1995)
908 Jefferson, P.O. Box 686
Lawrenceville, IL 62439

Mark Bramstedt, Sec./Treas. (1993)
320 East Locust
Watseka, IL 60970

Emil Kubalek
3408 56th Street Place
Moline, IL 61265

Gary Ward Lenz, Member (1994)
RR 3, Box 510
Centralia, IL 62801

Robert L. McLeese, Member (1995)
RR 1, Box 238
Monticello, IL 61856

## ISCA PROFESSIONAL SERVICES DIRECTORY

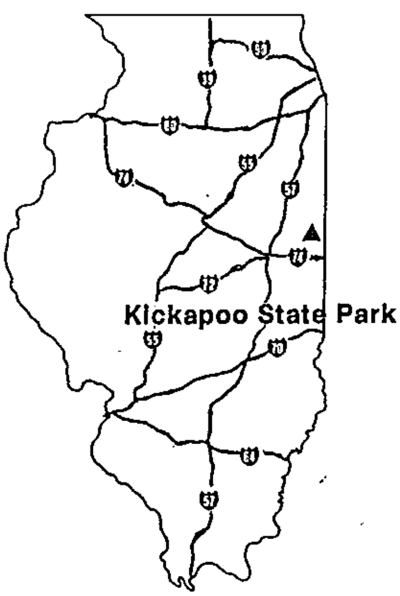
In an effort to promote the importance of certification as professional soil classifiers, the ISCA Executive Council has approved the use of a professional services listing. This listing will consist of a copy of professional business cards of ISCA certified professional soil classifiers and will be included in several ISCA Newsletters each year.

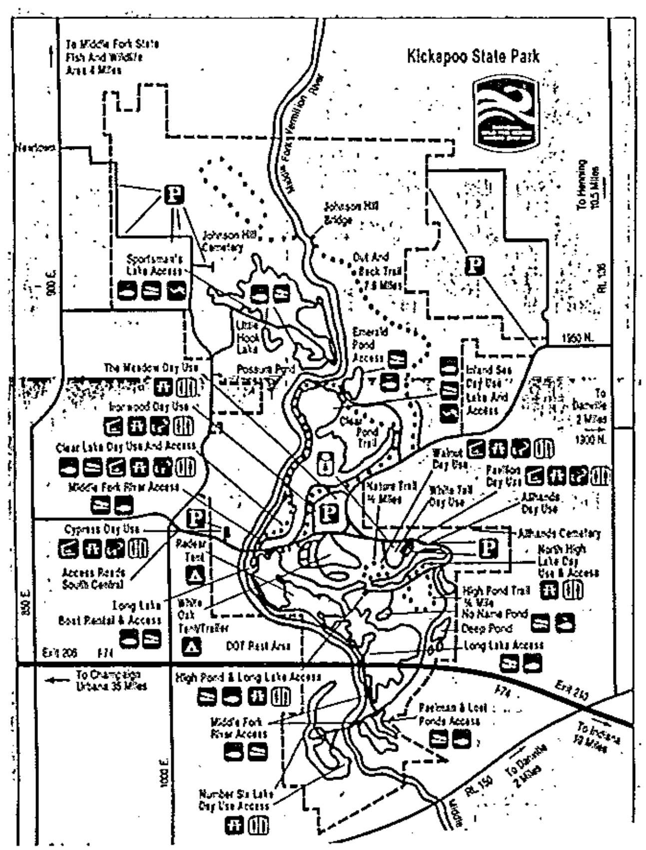
In order to participate, (1) you must be a current ISCA certified professional soil classifier and (2) the business card must include the name of the certified professional soil classifier. Send your professional business card to Mark Bramstedt, Secretary/Treasurer - Certification Board, 320 E. Locust, Watseka, IL 60970.

## ATTENTION PICNICKERS: ISCA SUMMER PICNIC AND FIELD DAY!!!!

The ISCA summer meeting is scheduled for August 22, 1992 at Kickapoo State Park in Vermilion County near Danville, Illinois. Activities for the day include a picnic, softball, volleyball, canoeing, and a look at exposed Pleistocene tills at a nearby strip mine. The event begins at the Ironwood Pavilion at 11 a.m. and will conclude at 4 p.m. Chicken and drinks will be provided. Please bring a dish to pass.

Kickapoo State Park is located near Exit 206 on I-74 in beautiful east central Illinois. Fortunately, Kickapoo State Park does not resemble the rest of east central Illinois.



## COMMITTEE CHAIRS

| | |
|---|---|
| Constitution and By-Laws | Mary Kluz |
| Ethics, Certification, & Membership | Mike Walker |
| Program | Larry Gramm |
| Public Relations | Don Fehrenbacher |
| Newsletter | Pat Kelsey |
| Finance | Brian Fitch |
| Nominations | Bob Darmody |
| State Soil | Bob McLeese |
| Ad-hoc Historic | Les Bushue |

## AFFILIATE MEMBERSHIP

The Illinois Soil Classifiers Association Affiliate Membership is designed to keep professionals in allied disciplines informed about current conditions in soil science and classification in Illinois. Affiliate members receive the newsletter and information concerning upcoming workshops in soils sponsored or cosponsored by ISCA. Constant changes in regulations involving all facets of soils and their utilization makes membership in the Illinois Soil Classifiers Association a good way to stay informed. Affiliate members dues are $5.00 per year.

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## APPLICATION FOR AFFILIATE MEMBERSHIP:

Name________________________________________

Address______________________________________

City__________________ State_____ Zip___________

Home Phone______________ Work Pone______________

Profession____________________________________

# STANDARDS FOR CERTIFICATION OF PROFESSIONAL SOIL CLASSIFIERS

## by the

## ILLINOIS SOIL CLASSIFIERS ASSOCIATION

March 1, 1980
Amended

A program to provide Standards for the practice of professional soil classifying in Illinois; define terms; create a Certification Board, setting forth the terms, compensation, powers and responsibilities of such board; establish procedures for application; establish fees; and to provide penalties for violations thereof.

Be it adopted by the membership of the Illinois Soil Classifiers Association:

SECTION 1.

Declaration of Policy

In order to safeguard life, health, and property; to foster wise use of the land and maintain quality in the environment; to foster maintenance of professional competency and provide credentials to practicing soil classifiers, the ISCA shall create an examining program to provide for Certified Professional Soil Classifiers.

SECTION 2.

Definitions

As used in these standards, unless the context otherwise requires, the terms specified in Sections 2.01 through 2.06 have the meanings ascribed them in those Sections.

Section 2.01 "Board" means the Certification Board created by these standards.

Section 2.02 "Council" means the Executive Council of the Illinois Soil Classifiers Association

Section 2.03 "Professional Soil Classifier" means a certified professional soil classifier as defined in subsection 2.04 of this section.

Section 2.04 "Certified Professional Soil Classifier" shall mean a person who by reason of special knowledge of the physical, biological, and chemical sciences applicable to soils and the methods and principles of soil classification as acquired by soils education and by soil classification experience in the formation, morphology, description, and mapping of soils is qualified to practice soil classifying and is certified to do so under these standards.

Section 2.05 "Practice of soil classifying" shall mean any service or work the adequate performance of which requires education in the physical, chemical, biological, and soil sciences and training and experience in the application of the knowledge of these sciences to soil classification. It includes the classification of soil by accepted principles and methods; investigation, evaluation, and consultation on the effect of measured, observed and inferred soil properties on various uses; the preparation of soil descriptions, maps, reports, and interpretive drawings; or other such service or work, either public or private, requiring the education or training referred to above. A person shall be construed to practice or offer to practice soil classifying within the meaning and intent of these certification standards who by verbal claim, sign advertisement, letterhead, card or use of some other title represents himself/herself to be a soil classifier, but shall not mean or include the work ordinarily performed by persons who sample and test soil for fertility status or construction materials and engineering surveys and soundings to determine soil properties influencing the design and construction of engineering and architectural projects. Notwithstanding the foregoing provisions, he/she offers soil classifying services to or performs such soil classifying for the public. The practice of soil classifying shall not restrict other disciplines such as architects, structural engineers, professional engineers, geologists, or and surveyors from classifying soils in the context of their respective disciplines.

Section 2.06 "Soil" shall mean the natural occurring accumulation of mineral and organic matter occupying the upper part of the unconsolidated portion of the earth's surface, in places re-worked by people, and capable of supporting plant life. Soil has morphological and compositional properties developed during its formation by the combined effect of climate and living organisms, as modified by topography, acting over time upon soil parent materials.

SECTION 3.

Appointment and Composition of the Certification Board.

(a) A Certification Board is hereby created within the Illinois Soil Classifiers Association. The Board shall consist of six (6) members nominated by the President and approved by the Council to serve staggered three (3) year terms.

(b) Eligible nominees shall be citizens of the United States and residents of Illinois. They shall have at least four (4) years of experience in a responsible soil classifying position and be Certified Professional Soil Classifiers. Any member who ceases to be a legal resident of Illinois shall be deemed to have resigned from membership on the Board as of the last date of Illinois residency.

(c) Members of the Board shall be Certified Professional Soil Classifiers and shall serve a term of three (3) years and until a successor has been appointed. Unfilled terms on the Board shall be filled within thirty (30) days by nomination by the President and approval by the Council at their next scheduled meeting. New members of the Board shall assume duties after being approved by the Council.

(d) The membership of the Board should represent governmental agencies, private sector and academic interests in approximately the same proportions as the certified membership of ISCA.

(e) The Board members shall receive reimbursement for necessary and reasonable expenses incurred in the performance of their duties to the Board, but shall not receive other compensation.

SECTION 4.

Procedures and Responsibilities of the Certification Board.

(a) The Board shall elect from its membership, at its first meeting, officers for the coming year. The officers shall be chairman, vice-chairman, and secretary-treasurer. The duties of the chairman shall be to preside at all meetings of the Board. The vice-chairman shall preside in the absence of the chairman. The secretary-treasurer shall keep all records and files of the Board.

(b) The Board shall hold an organizational meeting annually within thirty (30) days after the annual meeting of ISCA, and as many other meetings as may be necessary to conduct the business of the Board. It shall process applications and examine candidates seeking certification. Applications shall be processed within reasonable time and no later than six (6) months after they are received. Notice of all meetings of the Board shall be given by the chairman, at least thirty (30) days in advance, to each member of the Board and to each applicant seeking certification.

(c) The Board shall maintain a current roster of the names and addresses of Certified Professional Soil Classifiers, and a confidential file for each one that contains (1) the application and supporting documentation that qualifies him or her for certification, and (2) date of certification and current status such as good standing, revoked, or suspended.

(d) The Board shall issue a certificate suitable for framing to each Professional Soil Classifier that it certifies, and annually, upon renewal, shall issue membership cards to each.

SECTION 5.

Standards and Requirements for Certification.

In order to be eligible for certification as a professional soil classifier in Illinois, applicants must (a) subscribe to the Code of Ethics of the Illinois Soil Classifiers Association; (b) be a Full Member or Honorary Full Member of the Illinois Soil Classifiers Association, (c) submit a written application to the Certification Board containing such information as required in Section 6, (d) have actively practiced soil classifying in a responsible position at least three (3) of the preceding four (4) years, or have more than six (6) years total soil classifying experience and have actively practiced soil classifying during the preceding year (e) have practiced soil classification for a minimum of two (2) years with supervision under a Certified Professional Soil Classifier (CPSC) or two years of collaboration with two or more Certified Professional Soil Classifiers (CPSC's), (f) have successfully passed a written and/or oral examination designed to determine the proficiency and qualifications of the applicant to engage in the practice of soil classifying and, (g) a minimum of seven CEU's shall be required from categories A, B, or C during a four year period prior to application for certification.

All applicants shall receive ten (10) sample questions at least two weeks prior to examination. Written examinations shall be monitored by a Board member. A passing grade on an examination shall be a score of seventy (70) percent or higher. Applicants may be re-examined once within two years of first applying for certification without submitting an additional fee.

SECTION 6.

Procedures for Application.

Applications for certification may be submitted at any time and shall be on forms prescribed and furnished by the Board. Such application shall contain a signed statement showing (1) the applicant's formal education, (2) a detailed summary of his or her work experience, (3) a copy of all transcripts of formal academic studies, (4) the names and addresses of three (3) references who have personal knowledge of the applicant's classifying experience and shall state the technical skill level of the applicant. At least one of the references shall be a supervisor or collaborator as specified in Section 5 (e). (5) The applicant shall be required to document a minimum of 500 hours of supervision or collaboration in the practice of soil classification. A maximum of 300 hours of supervision or collaboration shall be allowed in any one calendar year. A maximum of five consecutive years shall be allowed to achieve the minimum of 500 total hours necessary for certification. The following items must be documented:

1. Date(s) of training
2. Location(s) of training
3. Type of training and hours received, i.e. soil mapping and hours, on-site investigation or other related work as defined under the practice of soil classifying
4. Name, address, and phone number of supervisor or collaborator providing training. (6) It shall be accompanied by the proper fee as prescribed in Section 7.

SECTION 7.

FEES

To pay the expenses of the operation of the certification process, the Board shall, at the time an application for certification is submitted, collect from the applicant a fee of fifteen dollars ($15.00). If the applicant fails to qualify, such fee shall not be returned, but such applicant is eligible for re-examination once within two (2) years.

The fee for annual renewal of the certificate shall be ten dollars ($10.00).

The fee for restoration of a certificate which has lapsed shall be fifteen dollars ($15.00).

The fee to be paid for a duplicate certificate shall be five dollars ($5.00).

These fees may be adjusted as necessary by action of the Council of the Illinois Soil Classifiers Association.

SECTION 8.

Renewal, Expiration, and Restoration of Certification.

(a) Each professional soil classifier who continues in active practice shall renew certification annually for five (5) years by the payment of the required renewal fee on or before January 1. At the end of five (5) years, renewal requires the payment of the required fee, meeting the specified requirements for re-certification, and submission of the re-certification application form. Specified requirements for re-certification are:

1. In each five (5) year period, acquire continuing education units in at least two (2) of the following categories, with a minimum of nine (9) CEU's required.

| No. | Activity | CEU | Per | Maximum Allowed |
|---|---|---|---|---|
| Category A: | Continuing Education and Training | | | |
| 1. | Germane college courses | 1.0 | course | 5.0 |
| 2. | Short courses | 0.5 | course | 2.0 |
| 3. | Workshops, clinics, field days, conferences | 0.5 | activity | 2.0 |
| 4. | Symposia | 0.5 | symposia | 2.0 |
| 5. | Seminar series (non-course) | 0.5 | series | 2.0 |
| 6. | Technical field mapping; soil | 0.25 | 3-mo. period | 5.0 |
| Category B: | Professional Publications, Reports, or Presentations | | | |
| 1. | Soil survey report, book writing, | 1.0 | book | 2.0 |
| 2. | Refereed publication, book or soil survey report chapter | 0.5 | publication | 3.0 |
| 3. | Non-refereed publication, legal deposition | 0.5 | publication | 1 . 5 |
| 4. | Soil correlation, generalized soil maps, interpretations, series descriptions | 0.5 | publication | 2.0 |
| 5. | Formal employer/project reports | 0.5 | report | 1.5 |
| 6. | Publication or grant reviewer | 0.25 | review | 1.0 |
| 7. | Popular article | 0.25 | article | 1.0 |
| 8. | Paper presentation, exhibit | 0.5 | presentation | 1.0 |
| 9. | National scientific committee or board membership | 0.5 | item | 1.0 |
| Category C: | Professional Activity | | | |
| 1. | National or international scientific meeting | 0.5 | meeting | 2.0 |
| 2. | Regional or state scientific meeting | 0.5 | meeting | 1.5 |
| 3. | Local or county scientific meeting | 0.25 | meeting | 1.5 |

| No. | Activity | CEU | Per | Maximum Allowed |
|---|---|---|---|---|
| 4. | National, regional, or state committee membership | 0.5 | membership/term | 1.5 |
| 5. | Elected office (local, state, national, or international) | 0.5 | office/term | 2.0 |
| 6. | Appointed office (local, state, national, or international) | 0.5 | office/term | 2.0 |
| Category D: | Other Professional Activity | | | |
| 1. | Self-training (journal or book reading) | 0.5 | item | 1.0 |
| 2. | Awards and recognition | 0.5 | award | 2.0 |
| 3. | Community scientific involvement (land judging, advisory, boards, school programs, etc.) | 0.5 | event | 2.0 |
| 4. | Develop new lecture notes or new training materials or new techniques | 0.5 | item | 2.0 |
| 5. | Other | 0.25 | item | 1.5 |

Every certificate not renewed on or before January or in the month of January of any year expires on February 1 of the year. A professional soil classifier whose certificate has expired may have his certificate restored only by making application to the Board and upon payment of all lapsed renewal fees and payment of the required restoration fee provided that he or she has engaged in the practice of soil classifying three (3) of the preceding four (4) years, or have more than six (6) years of total soil classifying experience and have actively practiced soil classifying during the preceding year. If certification has lapsed for more than four (4) years, the applicant shall be required to pass an examination.

(b) Any professional soil classifier whose certificate expires while he or she is engaged in active duty with the armed forces of the United States may have his or her certificate restored without paying any lapsed renewal fees or restoration fee or passing any examination if, within one (l) year after termination of such service, he or she furnishes the Board with an affidavit to the effect that he or she was so engaged, and if the Board finds that he or she is of good character and reputation, and if not more than four (4) years has lapsed since he or she last engaged in the practice of soil classifying. If more than four (4) years has lapsed, the professional soil classifier shall be required to successfully pass an examination to determine his or her proficiency.

(c) The Board shall notify every Certified Professional Soil Classifier of the date of expiration and the amount of fee required for renewal. The notice will also include the ending date of the five (5) year certification period and a listing by category, of the CEU's accepted to date. The notice shall be mailed least thirty (30) days in advance of the expiration of the certificate.

SECTION 9.

Revocation.

The Board may, upon its own motion, and may, upon receipt of written complaint, investigate the actions of any professional soil classifier certified by it. It shall have the power to suspend certification. It shall also have the power to revoke certification when the professional soil classifier is found guilty of any of the following practices: fraud or deceit in obtaining certification, or negligence, misconduct, or incompetency in the practice of soil classifying. Before the Board shall suspend or revoke the certification of any professional soil classifier it shall give that individual a hearing on the matter and shall, at least twenty (20) days prior to the date set for such hearing, notify the individual in writing. Such notice shall contain the exact statement of charges against him or her and the date and place of the hearing. Such individual shall be heard in person or by counsel before the Certification Board. If, after such hearing, the Board votes in unanimous favor of suspension or revocation, the soil classifier shall be notified and shall, on such notice, immediately return his or her certificate of certification.

SECTION 10.

Effective date.

These standards shall go into effect upon approval by a majority of the eligible voters present at the Annual Meeting of ISCA.

Approved at the annual meeting, March 1,1980.

Rev. March 1982
Rev. October 1987
Rev. March 1989
Rev. March 1991
Rev. March 1992

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J. Wiley Scott, Chairman
Ethics, Registration and Membership Committee

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Linus M. Kiefer, President, ISCA

# ILLINOIS SOIL CLASSIFIERS ASSOCIATION

**Fall 1992 Newsletter**

## ISCA INTENSIVE SOIL SURVEY WORKSHOP

ISCA, in cooperation with the USDA-SCS and the DeKalb County Soil and Water Conservation District, sponsored a two day workshop on "Intensive Soil Survey for Land Planning." The meeting focused on policy issues related to intensive soil survey for development, techniques and methods involved in this type of survey, and regulatory issues surrounding the use of this planning tool. The first day included Dr. Jerry Tyler, University of Wisconsin speaking on "Research on Soil Survey Interpretations". The second day focused on field operations of intensive soil survey. A field trip was taken to a recently mapped development project in Ogle County. The project's soil classifier was Bruce Putman.

## MEETINGS! MEETINGS! MEETINGS!

Soil Science Society of America with American Society of Agronomy, Minneapolis, MN, October 31-November 4.

American Society of Agricultural Engineers. 6th International Drainage Symposium and ASAE Annual Meeting. Nashville, TN. Dec 13-18.

## RATIONALE FOR EXPANDING THE SERIES CONTROL SECTION SOIL TAXONOMY ISSUE NO. 15

BACKGROUND

Soil Taxonomy Issue No. 15 changes the series control section, thereby allowing more flexibility in differentiating soil series. Previously, the soil series control section was defined on page 391 in Soil Taxonomy. Issue No. 15 makes important changes to the control section which are outlined below.

1. Changes to the upper boundary of the control section

    The series control section for both mineral and organic soils now begins at the soil surface, the contact between air or shallow water and the soil. Prior to Issue No. 15 only organic soils and mineral soils that were cryic or very shallow began the series control section at the surface.

The soil surface is the top of the mineral surface, or for soils with an O horizon, the soil surface is the top of the part of the O horizon that is at least partially decomposed. Fresh leaf or needle fall that has not undergone any decomposition is excluded from the soil and may be described separately. The top of any surface horizon identified as an O horizon, whether Oi, Oe, Oa, is considered the soil surface.

Extending the series control section to the soil surface allows Soil Taxonomy to be more consistent with higher levels that include the surface characteristics as part of their criteria. The presence or absence of a mollic epipedon is an important consideration for classifying a soil as a Mollisol. Often the criteria used to separate subgroups use characteristics of the surface. Obvious examples include many of the mollic subgroups, where color of the upper 18 cm is used as criterion.

The surface layer has many important characteristics that are critical to the interpretation needs of agronomists, foresters and other users. Expanding the series control section to the surface allows series separations to be made that are important to our users.

2. Changes to the lower boundary of the series control section.

A. For soils with a paralithic contact within 150 cm of the soil surface: The soil series control section is extended to 25 cm below a paralithic contact or 150 cm from the soil surface, whichever is shallower. This allows series with paralithic contacts within 150 cm of the soil surface to be separated on properties of the materials below a paralithic contact.

B. For soils with lithic or petroferric contacts within 150 cm of the soil surface: The series control section extends to (but not into) the lithic or petroferric contact.

C. For soils without lithic, petroferric, or paralithic contacts within 150 cm of the soil surface: The series control section is extended to 150 cm provided the bottom of the deepest diagnostic horizon is less than 150 cm from the soil surface. (If the deepest diagnostic horizon is deeper that 150 cm, the series control section extends to the bottom of the diagnostic horizon, but does not exceed 200 cm.) This extends the control section depth of many series from 100 cm to 150 cm.

In the past series have been differentiated on characteristics below the confines of the previous series control section. The new series control section will legitimize series separated on characteristics outside the old series control section. In addition, water quality and other environmental issues are requiring soil scientists to make deeper observations of soils. Extending the depth of the series control section allows soil scientists to make series separations that our users need.

D. Soils with permafrost: The series control section has been deepened for soils with permafrost. (Details are listed in Soil Taxonomy Issue No. 15.) This, too, will allow more flexibility in differentiating soil series.

## APPLICATION OF THIS CHANGE IN SOIL TAXONOMY

We do not expect a proliferation of new soil series as a result of this change to the series control section. Most soil series will continue to recognize surface texture phases within the concept of the series. Various types of substratum phases are still allowed. These changes to the series control section, however, will provide greater flexibility to recognize soil series for conditions for which we could not set up new series in the past.

Following is a discussion concerning series concepts and distinguishing series.

As stated in Soil Taxonomy, the function of series is pragmatic, and differences within a family that are important to the use of the soil should be considered in classifying soil series (pg 390). The differentiae for series in the same family are expected to meet three tests. The first is that properties serving as differentiae can be observed or can be inferred with reasonable assurance. The second is that they must create soil series whose unique range of properties is significantly greater than the normal errors of measurement, observation, or estimate by qualified scientists. The third is that differentiae have some relationship to horizon differentiation if horizons are present (pg 81).

The following assumptions and principles are accepted that a series must:

- -be mappable.
- -be significant to interpretation and management.
- -have genetic implication.
- -be reasonably stable--the life story of a survey.

In addition:

- -a series is a concept.
- -the need for a series is judgmental.

- -differentiae must be in the series control section.

## GUIDELINES FOR DISTINGUISHING SERIES - NATIONAL SOILS HANDBOOK AND/OR SOIL SURVEY MANUAL

1. Some of the characteristics commonly used to differentiate series are the kind, thickness, and arrangement of horizons and their structure, color, texture, reaction, content of rock fragments, and mineralogical composition.

2. A significant difference in any one of the characteristics noted in (1.) can be the basis for recognizing a different series. Very rarely, however, do two soil series differ in just one of these characteristics. The distinctions usually are in several characteristics, and some are greater than others.

3. The distinctions between any one soil series and its competitors must be large enough to be consistently recognized and to be differentiated from all other soil series.

4. Ranges in differentiating characteristics must not overlap.

5. Textural phases generally identify the dominant texture of a mineral layer about equal in thickness to that commonly mixed in tillage, which is generally 12 to 25 cm. If the layer has not been mixed, the texture of the A horizon can be used in naming phases even if it is less than 12 cm thick.

6. In some areas such as deserts, where the surface layer is normally thin and cultivation is unlikely, the texture of the A horizon can be used in naming phases even if it is less than 12 cm thick.

7. Some mineral soils have a thin layer at the surface that contrasts sharply with the next layer. Such soils may be designated as separate phases if they are unlikely to be tilled and if significant to use and management.

EXAMPLES OF DIFFERENTIAE

A soil with a surface layer of loamy fine sand over an argillic horizon that is clayey could be differentiated from a soil that has a loam or clay loam surface layer. Certain subgroups are provided for some great groups, but not for others. An example is the abruptic subgroup if it were provided for in its great group. An abrupt textural change has interpretative as well as genetic implication. This could be recognized at the series level when subgroups are not provided.

A soil with a few inches of organic material overlying mineral soil could be differentiated from a soil that does not have an organic surface. If the organic layer were thick enough to be a histic epipedon, it would be recognized at either the order or subgroup level. This has both an interpretative and genetic interference. The organic layer has to be thick enough to be stable.

A soil that is gravel-free would likely be separated from a soil that contains a significant amount of gravel. A genetic inference and perhaps also an interpretative difference would be reflected. Judgement would be needed, as the lack of gravel in one soil and 10 percent gravel in another could be significant enough to reflect mode of deposition or kind of parent material. While, for other soils, 10 percent gravel for one and 20 percent gravel for another would be significant.

A soil that has a thin dark colored surface layer that meets all the criteria for a mollic epipedon except for thickness, can now be separated. The "mollic" material with additional organic matter has more biologic activity and nutrient reserve and is important to interpretation. Some suborders recognize mollic subgroups, and now this same genetic and interpretative feature can be recognized in the series category as well.

A soil that has major horizons (not just a thin strata) dominated by cobbles and stones could be separated from a soil that contains mainly gravel. This provides an interpretative feature that is appropriate to recognize at the series level.

A soil that is leached of lime in the upper 15 cm of the surface layer could be separated from a soil that effervesces to the surface. This would provide interpretative information and it is the result of soil genesis.

A soil that has a paralithic contact to sandstone can be separated on its own merit from a soil that has a paralithic contact to weathered granite. Previously these soils have been separated on kind or composition of pebbles within the control section, or minor color or reaction differences, rather than separating on the kind of material below the paralithic contact.

## USE OF THE n SUFFIX IN DESCRIBING SOILS
## NSSC -- SOIL TECHNICAL NOTE NO. 3

In describing soils, the suffix n, which indicates an accumulation of exchangeable sodium, has not been used consistently. Some states do not use it at all in horizon symbolization in their series descriptions. In part this reflects a decision in at least one region not to use the suffix n because the accumulation of sodium could not be observed in the field. Some states have indicated that the suffix n should be used only when there are laboratory data to support your use.

Following are guidelines in using the suffix n.

An n suffix should definitely be used, with or without laboratory data in the following situations.

1. In soils placed in great group of soils with natric horizons and sodium accumulations.

2. In soils in natric subgroups with sodium accumulations.

3. In soils, not in natric great group or subgroup, that have evidence to indicate an accumulation of sodium.

It is not possible to visually observe accumulations of sodium. However, where laboratory data are available, there must have been some reason the soils were classified as, for instance, as Natriborlls instead of Argiborolls or Natrudalfs instead of Hapludalfs. The common indicators of sodium affected soils are distinct vegetation types, reduced permeability, and generally columnar or prismatic structure in the upper part of the natric horizon. The use of the suffix n is an interpretation by the individual describing the soil as to where they believe the accumulation occurs.

The range of SAR for each horizon, where applicable, is given for most series in the range in characteristics for that series. In most cases in the remarks section of the series description statements such as the following are given: natric horizon - the zone from 5 to 30 inches (Bt1 and Bt2 horizons) and in others - the zone from 5 to 30 inches (Btn1 and Btn2 horizons). When information on accumulation of sodium is noted on the SIR and/or in the range of characteristics and/or the remarks section in the series descriptions, then the horizons should reflect this.

We recommend that the suffix n be added to the appropriate horizon(s) in all taxonomic descriptions for the soils with an accumulation of sodium. This can be done when the official series descriptions are being updated or soil survey manuscripts are being revised.

## WET SOILS AMENDMENT

National Soil Correlation Workshop
May 5-8, 1992
Robert J. Engel

Introduction

The International Committee on Aquic Moisture (ICOMAQ) was established in 1982 and chaired initially by Frank Moormann, then by Johan Bouma (since 1985). The main classification problems which the committee undertook to solve were the inadequate definition of the term aquic soil moisture regime, the lack of distinction between soils with perched and ground water tables, and the question of wetness induced by rice culture (paddy soils).

The following is a summary of the major changes in terminology proposed by ICOMAQ and implemented by this amendment:

1. The concept of aquic conditions now replaces that of the aquic moisture regime. Aquic conditions in a soil or horizon require saturation, reduction, and redoximorphic features. The new term aquic conditions has a wider range of application than the term aquic moisture regime and will be used extensively in Soil Taxonomy.

2. Use of the term mottles that have chroma of 2 or less is discontinued, and so is the use of the term mottles, with few exceptions. The following terms are introduced as replacements:

    a. Redoximorphic features, which essentially include all wetness mottles;

    b. Redox concentrations, which are concentrations of Fe and Mn and include the high-chroma wetness mottles;

    c. Redox depletions, which represent low-chroma wetness mottles (mottles with a chroma of 2 or less) where Fe and Mn have moved out; and

    d. Reduced matrix, which represents reduced soil materials that change in color when exposed to air.

3. The new term endosaturation means the saturation of a soil with water in all layers from the upper boundary of saturation to a depth of 200 cm or more from the mineral soil surface.

4. Episaturation means a saturation with water of one or more layers above a depth of 200 cm or more from the mineral soil surface.

5. The term anthric saturation characterizes a variant of episaturation which is associated with controlled flooding, e.g., of rice paddies.

"Aquic conditions [1]

Soils with aquic (L. aqua, water) conditions are those which currently experience continuous or periodic saturation and reduction. The presence of these conditions is indicated by redoximorphic features (defined below) and can be verified, except in artificially drained soils,[2] by measuring saturation and reduction.

Elements of aquic conditions:

1. Saturation is characterized by zero or positive pressure in the soil-water and can generally be determined by observing free water in an unlined auger hole. However, problems may arise in clayey soils with peds, where an unlined auger hole may fill with water flowing along faces of peds while the soil matrix is and remains unsaturated (bypass flow). Such free water may incorrectly suggest the presence of a water table, while the actual water table occurs at greater depth. Use of well-sealed piezometers or tensiometers is therefore recommended for measuring saturation. Problems may, however, still occur if water runs into piezometer slits near the bottom of the piezometer hole or if tensiometers with slowly reacting manometers are used. The first problem can be overcome by using piezometers with smaller slits, and the second by using transducer tensiometry, which reacts faster than manometers. Soils are considered wet if they have pressure heads greater than -1 KPa. Only macropores such as cracks between peds or channels are then filled with air, while the soil matrix is usually still saturated. Obviously exact measurements of the wet state can only be obtained with tensiometers.

For operational purposes, the use of piezometers is recommended as a standard method.

The duration of saturation required for creating aquic conditions is variable, depending on the soil environment, and is not specified.

Three types of saturation are defined:

a. Endosaturation.--The soil is saturated with water in all layers from the upper boundary of saturation to a depth of 200 cm or more from the mineral soil surface.

b. Episaturation.--The soil is saturated with water in one or more layers within 200 cm of the mineral soil surface and also has one or more unsaturated layers, with an upper boundary above 200 cm depth, below the saturated layer. The zone of saturation, i.e., the water table, is perched on top of a relatively impermeable layer.

c. Anthric saturation.--This variant of episaturation is associated with controlled flooding (for such crops as wetland rice and cranberries), which causes reduction processes in the saturated, puddled surface soil and oxidation of reduced and mobilized iron and manganese in the unsaturated subsoil.

2. The degree of reduction in a soil can be characterized by the direct measurement of redox potentials. Direct measurements should take into account chemical equilibria as expressed by stability diagrams in standard soil textbooks. Reduction and oxidation processes are also a functions of soil Ph. Accurate measurements of the degree of reduction existing in a soil are difficult to obtain. In the context of Soil Taxonomy, however, only a degree of reduction that results in reduced Fe is considered, because it produces the visible redoximorphic features that are identified in the keys. A simple field test is available to determine if reduced iron ions are present. A freshly broken surface of a field-wet soil sample is sprayed with a.a'-dipyridyl in neutral[3], 1-normal-ammonium-acetate solution. The appearance of a strong red color on the freshly broken surface indicates the presence of reduced iron ions. Use of a.a'-dipyridyl in a 10-percent acetic-acid solution is not recommended because the acid is likely to change soil conditions, for example by dissolving CaC03. The duration of reduction required for creating aquic conditions is not specified.

3. Redoximorphic features associated with wetness result from the reduction and oxidation of iron and manganese compounds in the soil after saturation with water and desaturation, respectively. The reduced iron and manganese ions are mobile and may be transported by water as it moves through the soil. Certain redox patterns occur as a function of the patterns in which the ion-carrying water moves through the soil, and of the location of aerated zones in the soil. Redox patterns are also affected by the fact that manganese is reduced more rapidly than iron, while iron oxidizes more rapidly upon aeration. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese is oxidized and precipitated, it forms either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redox processes in a soil may result in redoximorphic features that are defined as follows:

a. Redox concentrations.--These are zones of apparent accumulation of Fe-Mn oxides, including:

(1) Nodules and concretions, i.e., firm, irregularly shaped bodies with diffuse boundaries if formed in situ, or with sharp boundaries after pedoturbation;

(2) Masses, i.e., soft bodies of variable shapes within the matrix; and

(3) Pore linings, i.e., zones of accumulation along pores which may be either coatings on pore surfaces or impregnations of the matrix adjacent to the pores.

b. Redox depletions.--These are zones of low chroma (2 or less) where either Fe-Mn oxides alone or both Fe-Mn oxides and clay have been stripped out, including:

(1) Iron depletions, i.e., zones which contain low amounts of Fe and Mn oxides but have a clay content similar to that of the adjacent matrix (often referred to as albans or neoalbans); and

(2) Clay depletions, i.e., zones which contain low amounts of Fe, Mn, and clay (often referred to as silt coatings or skeletans).

c. Reduced matrix.--This is a soil matrix which has a low chroma in situ, but whose hue or chroma increases within 30 minutes after the soil material has been exposed to air.

d. In soils that have no visible redoximorphic features, a reaction to an a,a'-dipyridyl solution satisfies the requirement for redoximorphic features.

Field experience indicates that it is not possible to define a specific set of redoximorphic features that is uniquely characteristic of all the taxa in one particular category. Therefore, color patterns that are unique to specific taxa are referenced in the keys.

Anthraquic conditions represent a special kind of aquic conditions which occur in soils that are cultivated and irrigated. Soils with anthraquic conditions must meet the requirements for aquic conditions and in addition have both the following:

a. A tilled surface layer and an immediately underlying slowly permeable layer which have, for three months or more per year, both;

(1) Saturation and reduction; and

(2) In the matrix, a chroma of two or less; and

b. A subsurface horizon with one or more of the following;

(1) Redox depletions with a color value, moist, of 4 or more and a chroma of 2 or less in macropores; or

(2) Redox concentrations of iron; or

(3) Two times or more the amount of iron (by dithionite citrate) contained in the tilled surface layer."

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[1] The term aquic conditions was introduced, and other changes were made throughout Soil Taxonomy, in 1992 as a result of recommendations submitted to SCS by the International Committee on Aquic Moisture Regime (ICOMAQ), which was established in 1982 and chaired initially by Frank Moormann, then by Johan Bouma (since 1085).

[2] Artificial drainage is defined here as removal of free water from soils (by surface mounding, ditches, or subsurface tiles) to the extent that water table levels are changed significantly in connection with specific types of land use. In the keys artificially drained soils are included with soils that have aquic conditions, on the assumption that aquic conditions would return if artificial drainage were discontinued.

[3] A positive reaction to the a,a'-dipyridyl field test for ferrous iron (Childs 1981*) may be used to confirm the existence of reducing conditions and is especially useful in situations where, despite saturation, normal morphological indicators of such conditions are either absent or obscured (as by the dark colors characteristic of melanic great groups). A negative reaction, however, does not imply that reducing conditions are always absent; this may merely mean that the level of free iron in the soil is below the sensitivity limit of the test or that the soil is in an oxidized phase at the time of testing.

*Childs, C.W. 1981: Field test for ferrous iron and ferric-organic complexes (on exchange sites or in water-soluble forms) in soils. Australian Journal of Soil Research 19: 175-180.

## HOT OFF THE PRESS

Soil Survey of Bureau County, Illinois. S.E. Zwicker. Field work by S.E. Zwicker, D.B. Rahe, B.R. Putman, M.J. Walczynski, S.J. Indorante, G.J. Pomeranke, W.A. Ebert, K.G. Kroeger, T.J. Fredrickson, and L.L. Acker.

Soil Survey of Putnam County, Illinois. S.E. Zwicker. Field work by S.E. Zwicker, D.B. Rahe, M.J. Walczynski, S.J. Indorante, B.J. Cate, and C.C. Heffner.

ILLINOIS SOIL CLASSIFIERS ASSOCIATION

Winter 1992 Newsletter

# PAH CONTAMINATION IN DOWNTOWN CHICAGO FILL SOILS

Richard G. Berggreen, David L. Grumann, Jr., Paul R. Blindauer, and Bakulesh H. Khara. STS Consultants, Ltd, Northbrook, Illinois.



## Introduction

Virtually every real estate transaction today involves an evaluation of the environmental condition of the property being developed or transferred. In an urban environment, like the City of Chicago, many factors, including land use and filling activities, have altered natural conditions. These alterations result in certain contaminants being commonly detected during assessments of urban property. Commonly occurring contaminants in Chicago include polynuclear aromatic hydrocarbons (PAHs). During a number of property assessments in Chicago, STS Consultants, Ltd.(STS) detected the presence of these compounds in soil samples. The historical sources of these compounds, and the potential environmental impact of PAHs, are discussed below.

## Sources and Character of PAH Contamination

PAH compounds have a variety of potential sources, including naturally occurring events such as forest fires or man-made contamination such as combustion of fossil fuels. PAH compounds are a significant component in heavy fuel oils, tars, and coal combustion by-products such as coke, creosote, or manufactured coal gas. These compounds are also present in gasoline and diesel fuel exhaust. Creosote, which has long been used as a wood-treating chemical, is a coal tar product containing high levels of PAH compounds, and burning of creosote-treated products would likely produce a residue with a significant PAH concentration.

Analysis of coal tar and coal ash debris from former coal gasification plants shows PAH concentrations in the parts per thousand to the percent range for individual compounds. These compounds always occur as a complex mixture, rather than as individual chemicals, with the ratio of concentrations varying with the source.

Chicago Fill Soils

There are numerous sources of PAH compounds in Chicago's soils. Significant filling activity occurred in the areas along the shores of the Chicago River and Lake Michigan. Much of the fill consisted of ash and cinders from industrial boilers and furnaces and domestic stoves, fireplaces, and furnaces.

Another source of PAH-containing ash and debris were the major fires which swept through the City several times during its history, including the "Great Chicago Fire" of 1871. Portions of the fill along the Chicago lakefront and riverfront consist of fire debris dumped following these fires. The river and lakefront may have creosote-treated timbers used to construct rot-resistant wharves and dock facilities. PAH compounds could derive from these materials or their combustion during a fire.

Newspaper articles from a century ago offer vivid descriptions of the filled-in areas. The Chicago Tribune of October 17, 1890 describes the lakefront landfilling between Randolph and Madison Streets as consisting of "garbage, paving blocks, and other refuse." Paving blocks were frequently timbers impregnated with creosote to resist rot when in constant contact with moist soils. Along the near north shore of Chicago, Streeterville was developed on a landfill consisting of ash and municipal waste. The Chicago Tribune of October 27, 1895 describes the lakeshore from Indiana Street on the south to the intersection of Oak Street and Lake Shore Drive on the north as a "dreary waste of ash heaps, street sweepings, and rubbish." The Chicago Tribune of November 28, 1903 describes the area on the lake side of railroad tracks between Randolph and Jackson Streets at the lakefront as "a stretch of refuse, cinders, ashes, and clay, half-filling the water space destined for the new [Grant] park. These descriptions, along with the use of ash and other debris as a fill material, provide the historical background for the presence of PAH compounds in Chicago soil.

Soil Analysis

Analysis by STS of 26 soil samples from typical downtown and near north locations confirmed the presence of PAH compounds in Chicago soils. The analysis also provided additional information regarding the nature and concentration of these compounds.

The soils analyzed are generally from fill soils or the uppermost native soils encountered in soil borings. Deep soils more than 5 feet below the fill/native soil contact typically show no PAH content.

The typical downtown Chicago soil profile consists of up to several tens of feet (along river banks and in filled basements) of soil and rubble fill. This fill is underlain by a fine sand, from the lake bottom and beach deposits. The sand may be several feet to perhaps 10 feet thick. Beneath the sand, silty clay glacial till extends to bedrock on the order of 100 feet deep. Perched groundwater is frequently encountered in the fill or sand.

The 26 samples analyzed by STS demonstrated that a variety of PAH compounds will be found in the fill material that makes up the upper layer of Chicago soils. The 18 PAH compounds detected included fluoranthene, anthracene, phenanthrene and pyrene. The concentrations of PAH compounds ranged from 1 part per million (ppm) to 500 ppm.

Implications of PAH Contamination

Determining the significance of PAH contamination during a real estate assessment will depend in large measure on the source of the compounds. The presence of environmental impairment from a specific source, such as an underground storage tank, may require a different response than impairment which is a general feature of the area's soils. The Illinois Environmental Protection Agency (IEPA) sets PAH concentration for clean-up criteria on spills of diesel and heating oil from underground storage tanks. The clean-up criteria permissible for clean closures range to fractional parts per billion levels (soil objective of 4 parts per billion; groundwater objective of 0.2 parts per billion) for summary levels of five carcinogenic PAHs. For noncarcinogenic PAH compounds, the clean-up criteria are in the low part per million levels for these ten compounds (soil objective of 4.2 parts per million; groundwater objective of 0.21 parts per million).

These levels are clearly not reasonable to use as clean-up criteria on remediation efforts in soils where background levels are consistently in the part per million range. Other clean-up criteria such as visual or odor indications, and possible volatile organic compounds detections are frequently used to document clean-up efforts.

The consistent presence of PAH compounds in Chicago soils presents two questions. Do these levels represent a risk to public health sufficient to require remedial actions? When these soils are excavated in the course of construction and developments projects, do they require handling and disposal procedures typical of hazardous or special wastes?

Because these PAH materials are essentially non-volatile and almost insoluble, they have little opportunity to migrate. Where some migration may occur, the potential absorption onto organic soil particles or debris will significantly retard the contaminant mobility.

Additionally, the virtually complete coverage afforded by buildings, pavement, and imported topsoil to support any vegetation in the downtown area effectively precludes direct human contact with these soils, thus minimizing any health risks.

Excavation of these soils raises questions of proper management and disposal. The soils are not classified as hazardous, either on the basis of listed hazardous waste or characteristic hazardous waste, based on the PAH analysis results presented herein. Illinois also specifies a classification of special waste consisting of industrial process wastes or pollution control wastes which pose a present or potential threat to human health or to the environment, or which possess inherent properties which make the disposal of such waste in a landfill difficult to manage by normal means.

At several properties in this article, the owner excavated PAH-contaminated soils. The IEPA indicated that these soils could be treated as non-special, non-hazardous waste which could be managed as normal excavation spoil without requirements for manifesting or waste stream permitting. It is judged likely that future determinations by the IEPA would similarly classify the material as non-hazardous, non-special waste in the absence of other more specific sources of impairment.

## Conclusions

The following points should be considered in the evaluation of chemical analysis of downtown Chicago soils. Similar findings may be anticipated in urban soils containing significant fractions to fill.

- Most of the area in downtown Chicago has been filled from several feet to several tens of feet above natural grade. Fill materials contain a significant fraction of ash, coal combustion by-products, and other fire-related materials.

- Chemical analysis of the soils show a consistent presence of PAH compounds ranging from low parts per million to several hundred parts per million levels. Constituents detected are consistent in terms of specific compounds and generally consistent with regard to relative concentrations, suggesting a reasonably uniform or common source. That source is judged likely to be industrial use of coal or domestic burning of coal or other fossil fuels.

- Public exposure to these contaminated soils is limited by the virtually complete encapsulation of the soils beneath buildings, pavements, and imported topsoil. The mobility of these compounds is limited by their low volatility and low solubility. Considering the lack of any potential long-term exposure, the presence of these compounds in the urban soils is not judged to represent a significant public health risk.

- The soils are not classified as hazardous waste, either as listed hazardous waste or by characteristic. The Illinois Environmental Protection Agency has, on a case-by-case basis, consistently determined that the management of these soils when excavated, does not require manifesting or waste stream permitting.

- Thus, the presence of PAH compounds in downtown Chicago must be evaluated and considered in the context of the background environment.

## SSSA ABSTRACTS

Reprinted from 1992 Agronomy Abstracts.

Soil Degradation as a Result of Long-term Management at the Morrow Plots. S.J. LIVINGSTON*, L.D. NORTON, and R.G. DARMODY, USDA-ARS and Univ. of Illinois

The effect of long-term management on soil properties was studied at the Morrow plots, Univ. of Illinois. Organic carbon and aggregate size and stability were analyzed from bulk and undisturbed samples obtained just prior to harvest in 1991. Surface monoliths were extracted using structural foam for containment due to frailty of the soil. Kubiena tins were taken from moisture equilibrated samples in the laboratory. Organic carbon varied significantly ($p=0.01$) among crop rotations, continuous grass > corn/oats/alfalfa > corn/soybeans > corn/corn. Fertilization significantly ($p=0.01$) affected organic carbon under corn/corn and corn/soybean rotation with the highest input having the highest organic carbon percentage. $D_{50}$ values from wet sieving varied significantly ($p=0.01$) among rotations, similar to organic carbon variations, but $D_{50}$ values did not vary across fertilization levels. Thin sections confirm aggregate size and stability varies with rotation and does not vary with fertilization level. After long-term cultivation organic carbon and aggregate size and stability vary significantly among rotations but did not vary among fertilization levels. All rotations and fertilization levels degraded soil structure compared to continuous grass.

Comparison of Ways to Identify Sodium-Affected Soils in Southern Illinois. S.J. INDORANTE*, W.D. NETTLETON, L. BUSHUE, G. HAMILTON, and L.R. SABATA, USDA-SCS.

A comparison was made of the effectiveness of aboveground electromagnetic conductivity meter (EM) readings, pH, and electrical conductivity (EC) in predicting exchangeable sodium percentage (ESP). Conductivities were measured to 75 and 150cm with a GEONICS Limited EM-38 ground conductivity meter and soil properties were described and measured at seven sites. The EM-38 readings to 150cm correlate about equally well with ESP ($r=0.76$) and EC ($r=0.71$), whereas pH between the 75 and 150cm depth correlates better with ESP ($r=0.83$) than with EC ($r=0.60$). The EM-38 readings to 150cm are somewhat more efficient for predicting ESP between 75 and 150 cm depths ($r=0.76$) than the 0-75cm readings are in predicting ESP for the 0-75cm depth ($r=0.67$). The ESP between either the 0-75cm depth or the 75-150cm depth is about as equally correlated with pH ($r=0.81$ and 0.66 respectively) and with the EM-38 readings ($r=0.72$ and 0.67 respectively). The results indicate that identifying the presence of a natric horizon may be accomplished using either pH or the more easily obtained EM values.

Historical Perspectives in Clay Mineralogy and Soil Science. J.P. TANDARICH*, Hey and Assoc., and D.M. MOORE, Ill. Geol. Surv.

Scientific interest in clays and soils began to crystallize in the 16th century within the loosely-defined science of mineralogy; parent of earth science disciplines. Classification of the rocks, minerals and earths (clays and soils) was a major concern in mineralogy through the end of the 18th century. From the late 18th to the mid-19th centuries, it was within the framework of mineralogy that the geological sciences developed. Mineralogy became more limited in scope. As geology emerged, the subdiscipline of agricultural geology arose, which was a parent science of pedology. Initially, the sciences of chemistry and mineralogy had been intertwined (chemical mineralogy), but they diverged in the 18th century. It was during the 19th century within the discipline of agricultural chemistry, from which soil science had developed, that interest in colloidal chemistry originated. During the 20th century, the controversy about whether the components of soils and clays were amorphous or crystalline was settled through x-ray diffraction studies published in 1930 and 1931.

Soil Map Unit Composition in Sodium-Affected Areas of Southern Illinois. T.J.ENDRES*, J.A. DOOLITTLE, D.R. GRANTHAM, R.A. TEGELER, and L.J. BUSHUE, USDA-SCS.

The difficulties in mapping sodium-affected soils in southern Illinois are well documented. Two major problems in mapping are determining the pattern of sodium soils within a map unit and the map unit composition. Conductivity readings from a GEONICS Limited EM38 ground conductivity meter and pH in 1:1 $H_2O$ were used to determine sodium soil patterns and map unit composition at nine sites in five counties. The EM prediction model indicates that if ESP averages 15 in the upper 75 cm of a soil the EM reading would be about 45 ms/m, and if ESP averages 15 in the 75 to 150 cm depth the EM 150 reading would be about 50 ms/m. The pH prediction model indicates that if ESP averages 15 in the upper 75 cm the pH reading would be about 6.9, and if ESP averages 15 in the 75 to 150 cm depth the pH would be about 7.2. Since southern Illinois is dominated by soils with pHs less than 6.0, results of this study suggest that absolute and relative EM values or soil pH may be used to identify the presence of a natric horizon.

## LETTER TO THE EDITOR: RESTORATION OF NATURAL AREAS AND SOIL MAPPING

Submitted by: Drew Ullberg, 5539 N. Central Avenue, Chicago, IL 60630

The landscape of present day Illinois differs significantly from that of just 150 years ago. Urban growth, farming and general land clearing has altered a majority of our land. During the first decade of this century regional planners in northeastern Illinois predicted a population boom and foresaw a need to save some land for the common citizen's use. Through a unique governmental body, called the Forest Preserve District of Cook County, these planners set out to purchase land for permanent preservation. One goal of the land acquisition efforts was to set aside land near urban centers for future recreational use and aesthetic enjoyment. Today more than 60,000 acres of land, or 11% of Cook County, are owned by the Forest Preserve District of Cook County.

Inadvertently, but importantly, tracts of remnant native vegetation, including prairies, wetlands and oak savannas, were included in the preservation effort. Today volunteers groups of average citizens, including librarians, carpenters, school teachers, nurses, housewives, and a token few scientists, are working in their free time to restore the natural vitality and health of these remnant plant communities. In 1983 The Nature Conservancy (TNC) created the Volunteer Stewardship Network (VSN) to organize and empower people to protect and care for Illinois' rare and threatened natural areas. In Cook County alone, approximately 17,000 work hours were logged by volunteers during 1991.

Wide scale, organized volunteer restoration efforts on Cook County Forest Preserve lands began a little more than 15 years ago. In that time emphasis has been placed on brush control, weed eradication, conducting site specific plant inventories, and fortifying degraded areas with seed of endemic plants. A new age has dawned in volunteer work in that reliable scientific studies are being conducted. Studies of insects, small mammals, snakes and reptiles are underway across the more than 36 sites, encompassing some 7000 acres of land, presently managed by volunteers.

The importance of soil and its relation to restoration activities has also been recognized by volunteers as they pursue more site specific scientific knowledge. In 1991 Mark Bramstedt, an ISCA member, assisted the North Branch Prairie Project, a TNC affiliate, with soil mapping of the Miami Woods Prairie located in northern Cook County. Through his efforts locations of historic prairie and savanna communities are now more clearly refined.

Soil maps have been prepared for only a few of the remnant plant communities managed in northern Cook County due to the overall urbanized condition of the area. Soil maps of tracts in central and southern Cook exist, yet at a scale not readily usable by citizen scientists.

VSN groups in Cook County, such as the North Branch Prairie Project, have very limited budgets and rely on generous support from skilled scientists to accomplish scientific studies. Members of the ISCA who may be interested in assisting with soil mapping projects in throughout Cook County Forest Preserve lands, on voluntary basis, are encouraged to contact the North Branch Prairie Project, P.O. Box 74, Northbrook, Illinois, 60065, Mr. Mark Bramstedt (815) 937-3225, or by calling the author at (312) 631-0332.