ILLINOIS SOIL CLASSIFIERS ASSOCIATION

WINTER 1995 NEWSLETTER

FROM THE PRESIDENT'S DESK

Steven E. Zwicker, CPSC

Soil Health is a subject receiving wide spread interest these days! You will have an excellent opportunity to hear the latest information on the "Soil Health Test Kit" at our ISCA annual Meeting, March 25, 1995. This will be your chance to be updated and to offer your ideas regarding the usefulness of the test kit. Come and bring someone from another professional organization.

This has been another active year for ISCA. Some highlights were: 1. Summer Meeting in St. Charles, Mo., hosted by the Missouri Association of Professional Soil Scientists (MAPSS). 2. Farm Progress Show near Bloomington. 3. Central Forest Soils Workshop, Carbondale, IL. 4. Hydric Soils Workshop, Lexington, IL. 5. Northern Illinois Septic contractors Workshop, Pheasant Run, IL. 6. Proposed revisions to IDPH Private Sewage Code.

Next year should be even more exciting! ISCA has already begun planning a celebration with cooperators, and other supporters of the soil survey program, to recognize a long awaited milestone, "ONCE OVER SOIL MAPPING IN ILLINOIS" and "THE NEXT GENERATION OF SOIL SURVEYS"!

As I begin closing out my term as President, I am encouraged by the outstanding cooperation I have experienced in working with our members. We have a lot of talent and expertise in ISCA and you are very willing to share these for the good of all. It has been a pleasure to serve over the past year and I wish to thank all of you.

IN MEMORIAM -- FRED L. AWALT

Fred L. Awalt, 61, died December 10, 1994 at St. Anthony Memorial Hospital Effingham, Illinois after a very short illness.

He was born October 18, 1933 in Springfield, Illinois. He grew up in Springfield, Berwyn and Cicero Illinois. He also lived for a time in New Jersey. Fred graduated from high school in Cicero Illinois in June 1951.

He was an army veteran of the Korean War and served from June 17, 1943 to May 13, 1955.

Fred graduated from the University of Illinois with a Bachelor of Science degree in February 1958. Lyetta Pursell and Fred were married that same year.

Fred worked as a Soil Scientist Student Trainee with the Soil Conservation Service (SCS) in Hillsboro in 1956 and Jerseyville in 1957 his college years. He worked with Charley Downey at Hillsboro and Joe Fehrenbacher at Jerseyville.

His first assignment as a Soil Scientist with SCS after graduation was at Mt. Vernon where he worked with Don Wallace from 1958 to 1960.

Next, he worked at Champaign from 1960 to 1964 followed by Carmi from 1964 to 1968. Fred became Area Soil Scientist at Effingham in 1968. He was Survey Leader in Clark, Effingham and Crawford Counties. He authored soil survey reports in Clark and Effingham Counties and worked on the Crawford County report until his retirement December 31, 1988.

Fred attended the Soil Science Institute at Cornell in Ithaca, New York in 1960. He provided leadership and technical direction for a soil map finishing section financed by the Illinois Department of Agriculture while at Effingham in 1978 and 1979. Fred was a dependable and thorough soil scientist and was a credit to his profession.

He was a charter member of ISCA and was certified with the first group after the standards were prepared. He served on the certification board and was secretary for the certification board for several years.

He is survived by his wife; sons Terry of Mattoon and David of Effingham, a brother William of Sycamore and four grandchildren.

Prepared by Lester Bushue, USDA-SCS (retired).

SUMMARY FINANCIAL STATEMENT

1/1/94 THROUGH 12/31/94

BANACE IN ACCOUNT (01/01/94)	$8,365.29	
INCOME		
ANNUAL INC-ANNUAL MEETING-BANQUET		729.00
DUES-DUES (MEMBERSHIP/CERT)		2,360.00
FALL INC-FALL MEETING		640.00
FOREST WORKSHOP		5,013.87
INTEREST INCOME		299.93
MEMBERSHIP SERVICES		919.68
SUMMER INC-SUMMER MEETING		684.00
TOTAL INCOME		10,646.48

EXPENSES		
ADMINISTRATION		221.17
ANNUAL MEETING BANQUET		883.27
AWARDS & TROPHIES		100.00
CENTRAL STATES FOREST SOIL CONF.		5,013.87
FALL MEETING EXPENSE		313.49
MEMBERSHIP SERVICES		1,471.49
SOIL SURVEY HORIZONS		684.00
SUMMER MEETING EXPENSE		723.99
TOTAL EXPENSES		9,411.28
TOTAL INCOME/EXPENSE		1,235.20
ENDING BALANCE	$9,600.49	

POSITION ANNOUNCEMENT

Appointment: Assistant Research Scientist - Soil Scientist (grant-supported full-time position). The incumbent will be employed by the Illinois Natural History Survey and stationed at the Survey's offices on the campus of the University of Illinois at Champaign-Urbana.

Job Description: The candidate will lead or assist others with wetland surveys within Illinois Department of Transportation (IDOT) project areas. Primary responsibilities are identifying and recording hydric soil field indicators, making hydric soil determinations according to the *Corps of Engineers Wetland Delineation Manual*, interpreting surficial hydrology and determining the boundaries of hydric soil units during on-site wetland determinations. The successful applicant will also participate in long-term wetland mitigation projects, including locating and evaluating potential mitigation sites, assisting with site design, and designing and implementing monitoring programs. Duties include collecting and analyzing field data, and preparing scientific reports for funding agencies or for publication in INHS literature and other professional journals. He or she will provide soils training for the group and other agencies, and keep informed of current literature in soil science and hydrology. The soil scientist will provide technical expertise to the Illinois Department of Transportation (IDOT) Wetland Program regarding current wetland issues, as contractual agreements describe. Research opportunities exist and participation is encouraged as time permits.

Qualifications: B.S. in an appropriate discipline (with field experience) required. M.S. preferred. Ability to classify and map soils, identify hydric soil units, interpret soil survey reports and interpret wetland hydrology is required. Knowledge of Illinois (prairie) soil types is desired. Familiarity with current federal wetland determination methods and current wetland restoration techniques is also desired. The soil scientist should have the scientific skills and ability necessary to collect and analyze field data for the completion of wetland studies, as well as strong verbal and written communication skills to translate survey and research findings into appropriate management recommendations, reports and presentation to co-workers, supervisory staff, and scientific and lay communities. The soil scientist should have good interpersonal and organizational skills to maintain effective working relationships with other staff. He or she will be encouraged to publish

in peer-reviewed scientific journals. Familiarity with Macintosh computer systems and software is desired. The candidate must have a valid automobile driver's license, and be willing to travel overnight throughout Illinois and work under adverse weather conditions.

Salary: $22,000 to 26,000. Benefits: Vacation equal to 27 days/year plus 11 holidays. Sick leave equal to 12 days/year. State Universities Retirement System. State Health Insurance.

Availability: 30 April 1995

Application: To ensure full consideration, applications should be received by 15 March 1995. Send letter of application, resume, and the names, address, and telephone numbers of three references to:

Ms. Jacqueline Sanders, Personnel Officer, Illinois Natural History Survey, 607 E. Peabody Drive, Champaign, IL 61820 (217) 244-7790

Specific questions regarding the technical nature of this position should be referred to Allen Plocher, Search Chair, Center for Wildlife Ecology, Illinois History Survey, (217) 333-6292.

Applicants should note that the survey operates as a non-smoking environment. The Illinois Natural History Survey is an Equal Opportunity Employer and an Americans with Disabilities Employer without regard to race, age, religion, color, national origin, sex, or disabled condition.

CANDIDATES FOR ISCA OFFICERS

Candidates for President Elect

Patrick Kelsey. Pat is a Research Soil Scientist with the Morton Arboretum. He has been a soil scientist since 1983. He has been ISCA Newsletter Editor since 1991. Pat has been a Certified Professional Classifier since 1987. He represents ISCA on the NISC Workshop Program Committee and SSSA Committee on Continuing Education in Soil Science, S577. Pat received a B.S. in Biological Sciences from Northern Illinois Univeristy (1981) and an M.S. in Geography (Soils emphasis) from NIU. Pat is currently an adjunct faculty member of the Dept. of Geography at NIU.

Robert Tegeler. Bob has worked for the Natural Resources Conservation Service for over seventeen years. He began his career as a student trainee in 1976. He is a graduate of the University of Wisconsin -- Stevens Point. Bob has worked on several soil surveys in northwestern and central Illinois. He was the survey leader of the Jo Davies and Cumberland County soil surveys. He is currently a member of the MLRA Update staff in Springfield. Bob has been a Full Member of ISCA for 14 years, and served as Secretary from 1988 through 1991.

Candidates for Vice-President

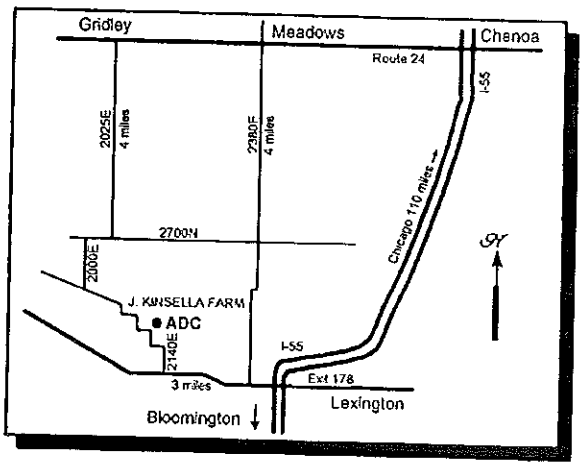
Charles Love. Charles is an MLRA Update Survey Project Leader in the Springfield MLRA Update Survey Office. He has 18 years of service with NRCS. He served as a Soil Survey Project Leader at Bowling Green Soil Survey Office, Missouri. Charles also worked as a Soil Scientist on four soil surveys in Central and Western Illinois.

He received a Bachelor of Science degree in Plant Science from Tennessee State University. Charles is a full member of the Illinois Soil Classifiers Association. He is a Certified Professional Soil Classifier through ARCPACS.

Martha Sheppard. Martha has a Bachelor of Science in General Agriculture from Southern Illinois University -- Carbondale (1984). That same year she became a County Soil Scientist in Pittsfield, working on the Pike County soil Survey (also my home county). In 1987 she became an SCS Soil Scientist on the newly started Bowling Green, Missouri Soil Survey. Martha became a Certified Professional Soil Classifier with ISCA in 1989. When the Bowling Green survey was completed in 1991, she became a Soil Conservationist, working in the Bowling Green, New London, and Palmyra, Missouri field offices. In July 1993 (about 1 month before the birth of her second child). she began her present job, as the District Conservationist in Calhoun County, Illinois.

ISCA 20TH ANNUAL MEETING

Saturday March 25, 1995
BASF Training Center
J. Kinsella Farm
Lexington, Illinois



10:00 AM Certification Board Meeting

11:00 AM Council Meeting
Registration
Texture Contest

12:00 AM Luncheon

1:00 PM KEYNOTE ADDRESS: SOIL HEALTH TEST KIT
Mr. Dennis Bowman, Cooperative Extension Service

2:00 PM Business Meeting
Steve Zwicker, President

2:45 PM ADJOURN

Registration for ISCA 20th Annual Meeting

Name _____

Address _____

City _____ State ___ Zip _____

Cost for the Annual Meeting will be $10.00 per person.

Make checks payable to ISCA and mail to Chuck Frazee, RR 1, Box 14B, Divernon, IL 62530
Registration Deadline: March 20, 1995.

1995 BALLOT FOR ELECTION OF OFFICERS

FOR PRESIDENT-ELECT

_____ Patrick Kelsey

_____ Robert Tegeler

FOR VICE PRESIDENT

_____ Charles Love

_____ Martha Sheppard

Voting privileges are extended only to Full, Honorary Full, and Associate Members.

Ballots must be received by the Nominations Committee Chair by the start of the annual business meeting of the Illinois Soil Classifiers Association, March 25, 1995. If you will not be in attendance, ballots must be received by the Secretary of ISCA prior to the annual meeting.

Ballots received by mail by the Secretary after postal delivery on March 24, 1995 will not be counted. Ballots may be mailed to: Ward Lenz, ISCA Secretary, 5746 LRC Road, Waterloo, IL 62298-6554

ILLINOIS SOIL CLASSIFIERS ASSOCIATION

1995 SPRING NEWSLETTER

CHANGES TO HYDRIC SOILS WORDING CRITERIA

SUMMARY. Pursuant to 7CFR 12.30(a) (4), the Soil Conservation Service, United States Department of Agriculture gives notice of a change in the wording of the criteria used to generate the list of hydric soils of the United States as published in the third edition of *Hydric Soils of the United States*, Miscellaneous Publication 1491, U.S. Department of Agriculture, Soil Conservation Service, June 1991.

FOR FURTHER INFORMATION CONTACT: Craig A. Ditzler, Chair, National Technical Committee for Hydric Soils, National Soil Survey Center, Soil Conservation Service, Room 152, MS33, Federal Building, 100 Centennial Mall North, Lincoln, NE 68508-3866. Telephone (402) 437-5353. EMAIL: ditzler@nssc600.mntc.scs.ag.gov

SUPPLEMENTARY INFORMATION: This list of hydric soils was created by computer using criteria that were developed by the National Technical Committee for Hydric Soils. The criteria are selected soil properties that are documented in *Soil Taxonomy* and were designed primarily to generate a list of hydric soils from the national database of Soil Interpretations Records, Criteria 1, 3, and 4 serve as both database criteria and as indicators for identification of hydric soils. Criterion 2 serves only to retrieve soils from the database.

The wording of criterion 2 has been changed to incorporate recent changes in *Soil Taxonomy* and delete references to water table frequency and duration. Until all soils have been reclassified, the computer program will continue to select soils under their former classification. The water table frequency and duration data are not contained on the Soil Interpretation Records and, therefore, were not selection criteria.

The wording of criterion 2 also has been changed to clarify the way in which water table data were used to select soils from the Soil Interpretations Records database. Because the water table depths on the Soil Interpretations Records are entered in 0.5 ft. increments, previous versions of criterion 2 used water tables at less than 0.5, 1.0, and 1.5 ft. in order to extract hydric soils from the database with actual recorded water tables of 0.0, 0.5, and 1.0 ft. It is important to note that these changes do not cause soils to be added or deleted from the list.

CRITERIA FOR HYDRIC SOILS

1. All Histosols except Folists, or

2. Soils in Aquic suborders, great groups, or subgroups, Alboils suborder, Aquisalids, Pachic subgroups, or Cumulic subgroups that are:

a. Somewhat poorly drained with a water table equal to 0.0 foot (ft) from the surface during the growing season, or

b. poorly drained or very poorly drained and have either:

(1) water table equal to 0.0 ft. during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches (in), or for other soils

(2) water table at less than or equal to 0.5 ft. from the surface during the growing season if permeability is equal to or greater than 6.0 in/hour (h) in all layers within 20 in, or

(3) water table at less than or equal to 1.0 foot. from the surface during the growing season if permeability is less than 6.0 in/h in any layer within 20 in, or

3. Soils that are frequently ponded for long duration or very long duration during the growing season, or

4. Soils that are frequently flooded for long

duration or very long duration during the growing season.

Dated: August 24, 1994

Richard W. Arnold
Director, Soil Survey Division

USING REDOXIMORPHIC TERMINOLOGY

The use of redoximorphic terminology was discussed at the recent MLRA soil scientist work session. The subject was brought up as part of a discussion on updating official soils series descriptions. The following guidelines were agreed to and are based on paragraph 615.89, National Soil Taxonomy Handbook Amendment 16 (Aug. 4, 1992):

1. When editing existing series descriptions, their terminology "mottles" will no longer be used to refer to wetness colors. Instead, the term redox depletions will be used to describe colors with chroma lower than the matrix color; and redox concentrations will be used to describe colors with chroma higher than the matrix color.

2. Redox concentrations also refer to the presence of some nodules, concretions, masses, and/or pore linings. Note that the term "accumulations" is no longer referred to in Amendment 16. Accumulations equate to masses in the new terminology. However, the use of the term "accumulations" is not unacceptable.

3. Redox depletions – iron depletions have low amounts of Fe and Mn oxides relative to adjacent areas and estimated by lower chroma. Clay depletions have low amounts of Fe and Mn and low amounts of clay (previously referred to as silt coatings).

4. As for the placement of the redoximorphic features statements in the series description, it is acceptable to edit existing "mottles" terminology in series descriptions and not move the statements within the horizon description. When preparing new series descriptions, redoximorphic features are described as other features and follow statements of structure, consistence, and surface coatings. They are described immediately prior to effervescence and/or soil reaction.

Robert L. McLeese
State Soil Scientist

DR. LINDO BARTELLI PASSES AWAY

Dr. Lindo J. Bartelli, retired soil scientist, passed away January 21, 1995 after suffering a stroke on January 6. The funeral was held in Hancock, Michigan on January. 25. Dr. Bartelli is survived by his wife Sigrid, who makes her home at 1414 Cedar St., Hancock, Michigan, 49930.

ISCA FINANCE COMMITTEE ANNUAL REPORT 1994-1995

The Finance Committee of the Illinois Soil Classifiers Association (ISCA) for the administrative year 1994-1995 consisted of Bill Dreznor (Chair), Larry Gramm, and Bruce Houghtby.

The Finance Committee met on 10 March 1995 and conducted an audit of the books of the Association for fiscal year 1994 (1 January through 31 December 1994). The books were found to be accurate and in good order. The financial information that Treasurer Chuck Frazee prepared for the Committee was clear and quite useful in preparing a budget. Chuck is to be commended for his fine work in service to the Association.

The Finance Committee prepared a budget for fiscal year 1995. That budget is attached to this report. The Finance Committee noted a gradual increase in the account of the Association over the last several years. We believe this is a result of frugality and low fixed expenses (such as the newsletter, which currently is produced and distributed at no cost to the Association). The account balance as of 31 December 1994 was $9,600. We find the financial position of the Association to be solid, and see nothing in the near-term to alter this status.

The proposed budget for fiscal year 1995 calls for expenses to exceed income by $2,025. Four major one-time expenses are expected or proposed in 1995 which are not offset by income.

The first is new stationary with the new logo at a cost of about $500. The second is the publication of the 2nd edition of the ISCA Membership Handbook at a cost of about $725. The third is a proposed $500 increase in the ASA-SSSA expense item. It is anticipated that with these meetings being convened in St. Louis, the Association may take a more active role there. The fourth expense item at $400 is for some type of commemorative celebrating the completion of the once-over mapping in Illinois. The sum of these one-time expenses is $2,125. Without these one-time expenses, the budget would have a surplus of $100.

We ask the membership to note the following items:

(1) We budget a fairly large income/expense for an ambitious fall workshop or short course.

(2) The $600 expense item for the ASA-SSSA meetings in St. Louis includes the customary $100 for the President to attend and $500 to promote the Association there. The Association might consider sponsoring an information/education booth or awarding travel grants to one or more college students.

(3) On the advice of the Newsletter Editor, we included an expense item of $600 for publication and distribution of the Newsletter. Our free ride on this is not guaranteed.

Submitted 25 March 1995
William R. Kreznor, Chair
ISCA Finance Committee

ISCA BUDGET FOR FISCAL YEAR 1995

INCOME

Category	Actual	Budget 1994	Budget 1995
Dues, certification, and renewals	$2,360.00	$1,800.00	$2,300.00
Interest on account	299.93	300.00	300.00
Annual meeting/banquet	729.00	300.00	500.00
Fall workshop/short course	640.00	1,500.00	4,000.00
Membership services (postcards)	919.68	150.00	0.00
TOTAL INCOME	$4,948.61	$4,050.00	$7,100.00

EXPENSES

Category	Actual	Budget 1994	Budget 1995
Administration (postage, mileage, stationery, telephone, and supplies)	$ 221.17	$ 900.00	$1,200.00
Awards	100.00	100.00	100.00
Soil Survey Horizons	684.00	400.00	700.00
Annual meeting (banquet & speaker)	883.27	700.00	700.00
Fall workshop/short course	313.49	1,500.00	4,000.00
Newsletter	0.00	400.00	600.00
Summer meeting	723.99	100.00	100.00
ASA-SSSA meeting	0.00	100.00	600.00
State soil	0.00	300.00	0.00
Professional memberships/ affiliations	0.00	50.00	0.00
Membership handbook	0.00	0.00	725.00
Last acre ceremony commemorative	0.00	0.00	400.00
TOTAL EXPENSES	$2,925.92	$4,550.00	$9,125.00

1995 ISCA NEWSLETTER ANNUAL REPORT

The ISCA Newsletter was published four times in

1994. A total of 44 pages were included in the 1994 volume of the newsletter. The newsletter has a current mailing list of 115. This includes membership, newsletter exchanges, allied organizations, and several regulatory agencies.

Assistance in preparation of the newsletter came from Tom Hanzely and Kari Womack, Morton Arboretum Interns. The Morton Arboretum Soil Characterization Laboratory covered the cost of development and reproduction of the newsletter in 1994.

Congratulations to Bob McLeese and his secretary, Jeanne, they are the winners of the 1994 Newsletter Material Submission Award. This award entitles them to continue submitting information for each issue of the newsletter in 1995.

The 1995 Newsletter Submission Deadlines are as follows:

NEWSLETTER	DEADLINE
Winter	Feb 10, 1995
Spring (Ha, Ha, Ha)	May 19, 1995
Summer	Aug 11, 1995
Fall	Nov 10, 1995

Thanks to all who submitted information to the newsletter...keep it coming.

ISCA CONSTITUTION, BY-LAWS, AND LEGISLATIVE COMMITTEE ANNUAL REPORT 1994-1995

The Constitution, By-Laws, and Legislative Committee of the Illinois Soil Classifiers Association for the administrative year 1994-1995 consisted of Bill Kreznor (Chair), Bruce Putman, and Gloria Westphal.

The Committee concluded its main task begun over 2 years ago: to revise, update, and publish an *ISCA Membership Handbook*. The previous edition of this handbook was dated August 1988. As the membership knows, a number of changes have occurred since then, mainly in the Certification Standards and the applications for membership and certification. Also, sections pertaining to Continuing Educational Units (CEUs) and a table of contents were added. This Committee gratefully acknowledges the work of the Previous committees and other ISCA members who edited and offered comments in the development of the March 1995 edition of the ISCA Membership Handbook.

The Committee was to a lesser extent active in tracking the progress of the Illinois Department of Public Health state code regulating sewage disposal. A separate, ad hoc committee was established in January 1994 to provide technical expertise to the state health department regarding the use of soils information and the conduct of on-site soil investigations. As of this date, the State Code appears stalled at some level of administration within the state health department.

Rather than be discouraged by the failure at the state level, the Association should continue to hammer away where we have been most successful: the local level. A number of county health departments, municipalities, park districts, etc. have expressed great interest in using detailed soils information prepared by professional soil classifiers for a host of uses. These include soil suitability investigations for on-site wastewater disposal and residential development, high intensity soil survey, and the establishment of conservancy districts based upon soil type as identified by a professional soil classifier to name a few. If the Association can continue to enlighten the localities, perhaps the state will eventually follow.

Every member of ISCA should consider himself or herself a member of the Constitution, By-Laws, and Legislative Committee in this regard: to promote the use of soils information prepared by professional soil classifiers in his or her "territory". Our membership is scattered throughout the state, but most of the interest in what we do appears to begin in areas experiencing growth. This interest then tends to spread outward (for lack of a better analogy) like an infection. We have a number of examples of local agencies writing ordinances requiring the use of detailed soils information. Others have ordinances under consideration. Let us all resolve to make at least one contact with an official of some local agency and promote the goals of ISCA. Let us show them what professional soil classifiers can do for

the public activities they regulate where the wise utilization of the soil resource is concerned.

Submitted 25 March 1995
William R. Kreznor, Chair
ISCA Constitution, By-Laws, and Legislative Committee

REPORT OF THE AD HOC HISTORIC COMMITTEE

The committee has purchased a 4 drawer file with file frames in January 1995 to store Ad Hoc Historic Committee records. The purchase was approved by the Cuncil. Committee records have been placed in files but they need to be better categorized.

An article was prepared for the ISCA Newsletter asking for input from the membership for our committee records. We asked for photos, articles and anything that would contribute to the committee records.

Doug Gaines made a suggestion that our committee prepare a listing of ISCA officers, council members and other committee members over the years. We could locate lists that are in our records and ask the membership if they have other lists that are not in our records. We gathered information and prepared an obituary after the recent death of charter member Fred Awalt.

Prepared by the Ad Hoc Committee - John Alexander, Earl Voss, and Lester Bushue.

ISCA PUBLIC RELATIONS AND EDUCATION COMMITTEE REPORT ANNUAL MEETING -

COMMITTEE MEMBERS
Ken Anderson
Mark Bramstedt
Don Fehrenbacher, chair
Pat Kelsey
Bruce Putman

ACTIVITIES 1994-1995
Farm Progress Show, Bloomington, IL, 9/27-29/94
Mark Bramstedt coordinated the efforts of many soil classifiers throughout the state to make the soil survey and soil pit displays a success. Additional soil classifiers assisted the effort by collecting soil monoliths.

Hydric Soils Workshop, Lexington, IL, 10/21/94
A hydric soils workshop was held to discuss the hydric soil definition, criteria, and indicators. Greg Schellentragger, Iowa State Soil Scientist, was a guest speaker. The meeting was attended primarily by soil classifiers. The committee thought that internal workshops on hydric soils were needed before training for other wetland specialists was held.

Northern Illinois Septic Contractors Workshop, St. Charles, IL, 2/27-28/95
The workshop's theme was the pros and cons of soil percolation tests versus soil analysis. Dr. Bob Simmons, UIUC was the first speaker and discussed and defended the use of soil analysis for septic suitability and design. Later there was a panel discussion with two soil classifiers (Larry Gramm and Don Fehrenbacher), two professional engineers, and two septic contractors (one of the contractors is also an attorney). The discussion moderator was a septic contractor and president of the Illinois On-site Waste Association (IOWA). This organization originated from the Waste Hauler's Association. Though the discussion was framed as a debate, the panel members agreed that soils information was critical to septic design. The moderator attempted to generate conflict among the panel members, but was unsuccessful. On the second day a panel discussion of county health departments was also moderated by the president of IOWA.

PLANNED ACTIVITIES 1995-1996
Illinois Private Sewage Disposal Code Public Hearing, Illinois State University, 4/11/95. All soil classifiers should attend this public hearing. One of the proposed changes in question is the use of soil classification. It is important that we show support for the proposed amendments that include the option of using soil classification by soil classifiers.

Soil Survey Use and Interpretations Workshop, Winter, 1996
The committee feels that we have not marketed soil survey information to land use planners,

developers and engineers as successfully as we must. This includes public soil surveys and private consultant services. We feel there is a need to conduct a broad based workshop that can be reproduced in several regions of the state as needed.

TIERRA TRIVIUM

Below is the list for the 12 textural classes of soils in English and Spanish.

English	Spanish
Clay	Arcilloso
Sandy clay	Arenoso arcilloso
Sandy clay loam	Arenoso arcilloso franco
Silty clay	Limo arcilloso
Clay loam	Arcilloso franco
Silty clay loam	Limo arcilloso franco
Sand	Arenoso
Loamy sand	Franco arenoso
Sandy loam	Arenoso franco
Loam	Franco
Silt loam	Limo franco
Silt	Limo

SOIL SURVEY CELEBRATION COMMITTEE, PLANNING MEETING NOTES

DATE: 5/18/95
TO: Soil Survey Celebration Committee

McLeese, Voss, Alexander, Ochwald, Kitchen-Maran, Olson, and Brumley met on Thursday, May 11 at the NRCS state office to continue planning for the "Soil Survey Celebration".

Following is a summary of discussion, decisions, actions, etc.

1. Kitchen-Maran presented the theme/logo proposed for the Celebration (attached). It will be used two ways:
   a. Celebrating the next generation of the Illinois Cooperative Soil Survey
   b. Also, when used in narrative--Illinois Cooperative Soil Survey: Celebrating the Next Generation
2. McLeese presented parts of briefing package. DRAFTS are attached for your review and comment.
3. Kitchen-Maran will pursue Governor's Proclamation (DRAFT is attached as part of briefing package). Please review and comment.
4. Certificate of Appreciation will be presented at events (attached). Please review and comment.
5. Celebration events were discussed.

*State Fair Ag Day	Oschwald, Kitchen-Maran, and McLeese will coordinate
*AISWCD	Brumley and Tom Miller to coordinate.
*UI Agronomy Day	Olson to coordinate.
*Soil Scientist Reunion	ISCA (Voss and Alexander) to coordinate.

Keep in touch!!

Robert L. McLeese
State Soil Scientist

ILLINOIS DEPARMENT OF REVENUE ISSUES GUIDELINES

As you are aware, the Department of Revenue has consistently advocated the use of Illinois Cooperative Soil Survey (ICSS) soil mapping (Detailed Soil Surveys maps were prepared for the county) for computing farmland assessments.

An increasing number of landowners are now purchasing non-ICSS soil mapping for their farms and are presenting it in complaints as a replacement for ICSS soil mapping.

While the department would support the use of alternative soil mapping when proven to be

superior to ICSS mapping, any evaluations of alterntive mapping by assessment officials should always include the expert opinion of the ICSS. The enclosed guideline, which is promulgated under authority granted the department in Section 10-115 of the Property Tax Code (35 ILCS 200/10-115), gives boards of review a viable way to acquire such expert opinion.

If you have any questions regarding the enclosed mapping guideline, please call Steve Jones at (217) 782-3014.

ALTERNATIVE SOIL MAPPING GUIDELINE
This guideline is promulgated under authority granted the Department of Revenue in Section 10-115 of the Property Tax Code (35 ILCS 200/10-115).

Section 10-125 of the Property Tax Code requires that assessment of cropland, permanent pasture and other farmland be based on soil productivity index (PI) and land use. Accurate soil PI's cannot be determined without accurate soil mapping. The Illinois Cooperative Soil Survey (ICSS) soil maps contain the level of accuracy needed to assure that soil PI's and assessed values are accurate. ICSS soil maps are prepared under the terms of a **Memorandum of Understanding** between eight state and federal agencies and the Illinois Soils Classifiers Association, and in accordance with specifications and standards contained in *Soil Taxonomy, Soil Survey Manual* and the *National Soil Survey Handbook.*

Mapping scales that are considered suitable for use in computing farmland assessments fall into two general categories (orders). Order 1 soil mapping is prepared at a scale usually larger than 1:7,920 and order 2 soil mapping is prepared at a scale of 1:12,000 to 1:20,000. The United States Department of Agriculture's Natural Resources Conservation Service (NRCS), which is the lead agency responsible for directing the ICSS program, is a producer of order 2 soil surveys. Order 2 soil mapping is regarded as the largest, feasibly manageable scale with which to conduct a reliable state mapping project. The ICSS has produced order 2 soil mapping for nearly 100 percent of the state. The ICSS does not produce order 1 soil mapping for a county. Although order 1 soil mapping is capable of providing a more detailed account of the soils for a specific site than order 2 soil mapping, it is not necessarily more accurate. In fact, due to the lack of national and state standards for order 1 soil mapping , order 1 soil mapping will often be less accurate.

Landowners may challenge ICSS soils data (mapping) in a tax assessment complaint and submit alternative soil mapping which may not be prepared at the same scale or under the same specifications and standards as ICSS soil mapping. In fulfilling their statutory duties pertaining to the determination of complaints (Section 16-55 of the Property Tax Code), boards of review must decide whether evidence supports replacing ICSS soil mapping with alternative mapping. Evidence that would support substituting alternative soil mapping for ICSS soil mapping would be the acceptance of such alternative mapping by the NRCS and resulting change in the "official record copy" of the soil map. An "official record copy" soil map showing all approved order 2 soil surveys is maintained by the NRCS. It is the department's position that board of review decisions regarding the standing of alternative mapping should not be made without considering the expert opinion of the NRCS.

Through combined efforts of the department, NRCS, and the Illinois Agricultural Experiment Station (AES), the following mechanism has been developed which will give boards of review access to such expert opinion. The chief county assessing officer should forward any alternative order 2 soil mapping complaint to the local NRCS field office. The NRCS field office will conduct an initial evaluation of the alternative soil mapping and, as warranted, will forward the material to the NRCS area and/or state offices for further evaluation. Upon completion of the evaluation process at the NRCS area and/or state level (in consultation with the AES), the NRCS will determine if the alternative mapping warrants a change in the "official record copy." Boards of review should give substantial weight to NRCS decisions when settling complaints.

Since NRCS evaluations will only be performed on alternative order 2 soil mapping, pursuant to this guideline, board of review rules should be amended to require that corresponding order 2

soil mapping must accompany any order 1 soil mapping submitted in a complaint. Boards of review can benefit greatly from an NRCS evaluation of order 2 soil mapping.

Finally, since ICSS soil maps identify soils as they occur on the landscape (not simply the analysis of individual core samples), boards of review should not replace ICSS soil mapping with any alternative mapping (order 1 or order 2) for areas smaller in size than a tax parcel. The entire tax parcel should be evaluated and mapped if alternative mapping is done.

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UPCOMING EVENTS

August 15, 1995 – Soil Survey Celebration at the Illinois State Fair.

September – Soil Scientist Reunion and ISCA Summer Meeting. This will be hosted by the Adams County soil survey update team and feature more geologic tales with Leon Follmer. Leon, you did agree to this, right?

1995 CERTIFICATION BOARD

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A FRIENDLY QUESTION FROM THE ISCACERTIFICATION BOARD:

HAVE YOU SUBMITTED CEU's YET?!

REQUEST FOR INFORMATION

Do you have information or pictures that would be of historic interest to the Illinois Soil Classifiers Association? If you do the Ad-Hoc Historic Committee would like to hear from you. We can copy pictures, if you need them back. Check out those old folders and see what you can come up with. If you find something of interest, send it to : Lester Bushue, 1911 Scottsdale Drive, Champaign, Illinois, 61821.

ATTENTION: ISCA CERTIFIED PROFESSIONAL SOIL CLASSIFIERS

The Certification Board is requesting the following information in order to update the current listing of ISCA Certified Professional Soil Classifiers. Please complete the following and send to:

Toni Endres, Secretary/Treasurer
908 Jefferson St.
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ILLINOIS SOIL CLASSIFIERS ASSOCIATION

1995 INDIAN SUMMER NEWSLETTER

WELCOME NEW MEMBERS

Jeff Brewbaker is the owner/operator of Brewbaker Soil Testing in Wisconsin Rapids, WI. He performs on-site soil investigations as well as other consulting work. He earned his B.S. degree from Western Illinois University and his M.S. from the University of Wisconsin-Stevens Point. His experience includes soil mapping and classification in the Nicolet National Forest and the Project Soil Survey in Edgar County, Illinois. Jeff is a member of the Wisconsin Society of the Professional Soil Scientists.

Thomas Davis joins ISCA as a Affiliate Member. He is a hydrogeologist. He is employed by the firm of Fehr-Graham & Associates in Freeport, Illinois.

Todd Soukup is a consulting soil scientist with the firm of Environmental S/E in Glen Ellyn, Illinois. He earned his B.S. degree at Iowa State University, and is a M.S. candidate (thesis pending) at North Dakota State University. His professional experience has taken him to such venues as North Dakota, Florida, and now Illinois. Todd is a member of the Soil Science Society of America.

EDITOR'S NOTE...BUENAS DIAS!!

I just returned from an exciting exchange in Mexico City working with the scientists from the Unversidad Nationales Autonoma Mexico. While there,I sampled and characterized soils (suelos) from a number of urban conditions in the valley of Mexico. I also had an opportunity to work with archaeologists from the Temple Mayor in the sampling of pre-Hispanic urban fills specifically designed to support Aztec temples within the lakebed which later became Mexico City. Additionally, while I was there I presented a colloquium on urban soils, their limitations, and opportunities for use. An interesting outgrowth of my talk was the desire of soil scientists, urban foresters, and archaeologists in and around Mexico City to develop a soil science working group. It turns out that soil scientists in Mexico do not have local affiliations just national organizations. Perhaps in the near future they will organize groups similar to our state soil science organizations. And perhaps, in the future, we can include more than just soil scientists in the study of soils .

EDITOR'S NOTE II

The following "Perspectives on Soil Taxonomy" were prepared for SoilTech: The technical newsletter of the Missouri Cooperative Soil Survey. It is printed here to stir debate within the soil science community in Illinois. Frankly, the future of soil survey and interpretation requires that we refine and improve our science. If we do not, we certainly will not be a part of the natural resource solutions in the 21st century. In taking this a step further, I would like to suggest that Illinois host a meeting in 1996 to discuss the concerns between those who simply see classification as limited tool and those who would like to see it become a more useful tool. Should we sponsor a meeting on the usefullness of Soil Taxonomy? If you have interest please contact me at (708) 719-2417 or drop me a line here at the Arboretum.

PERSPECITVES ON SOIL TAXONOMY

Fred Young, editor

As pedologists, the knowledge and use of Soil Taxonomy is important in our professional lives. Attitudes about Taxonomy seem to range widely, from diligent dedication to exasperated frustration to benign neglect. Recent changes in Taxonomic classes have forced some of us out of the "neglect" category, but not necessarily towards the "dedication" category.

I believe that an airing of diverse viewpoints on the issues surrounding Taxonomy is in order, and that SoilTech can provide a forum for discussion. So, I called Bob Ahrens, NRCS Lead Scientist for Soil Taxonomy, and Dave Hammer, UMC pedologist and

sometimes critic of Taxonomy. I asked them these questions:

1) Why are revisions to Soil Taxonomy necessary or desirable? What are the problems (if any) with changing classification criteria and/or classes, and how can these be overcome?

2) What can be gained from additional refinements of Soil Taxonomy? Can a better Soil Taxonomy help us progress in our knowledge and understanding of pedological systems? Will a better Taxonomy allow for a better soil survey?

3) What is the appropriate role , or function, or scope, of Soil Taxonomy within a soil survey? Here are their responses.

SOIL TAXONOMY: A POWERFUL AND DYNAMIC CLASSIFICATION SYSTEM

Robert J. Ahrens
Lead Scientist, Soil Taxonomy
NRCS, Lincoln, NE

During the last few years it has become increasingly popular for some pedologist to take a critical and/or apathetic view of Soil Taxonomy. Criticism, if channeled properly, can serve as a mechanism to improve Soil Taxonomy. However, apathy can lead to negativism, which is unproductive. Perhaps it is time to revisit some of the principles of Soil Taxonomy and hopefully show Soil Taxonomy to be meaningful and useful.

The purpose of any classification system is to organize our knowledge so that the properties of objects can be remembered and their relationships understood easily for a specific objective (Cline, 1949). There are three important aspects to this statement that deserve elaboration:

1) Any classification system reflects the state of knowledge at the time the system was devised. It is not better than that knowledge, and changes should be expected and incorporated as new knowledge is acquired.

2) A classification system has an objective. It was designed by humans for a purpose, and that purpose influences the design of the system.

3) Classification groups objects based on common attributes (Smith, 1965).

Changing the System

Consider the first aspect of Cline's statement. Guy Smith realized that Soil Taxonomy was limited by our imperfect knowledge of soils, and designed a system wherein parts could be changed without disrupting the entire system. For example, the original spodic horizon criteria involved ratios of iron and aluminum as extracted by different solvents. A ratio of extracted iron and aluminum to clay was also employed to exclude those soils with an appreciable crystalline clay fraction. However, the analytical error inherent in the measurement of small amounts of clay, coupled with dispersion problems in these soils, resulted in what pedologists believed to be the misclassification of many pedons.

To correct these problems, the International Committee on Spodosols (ICOMOD) recommended a different extractant for iron and aluminum, and suggested that clay ratios be eliminated. These recommendations were accepted and incorporated into the 5th edition of the "Keys to Soil Taxonomy." Spodic criteria may undergo further refinement as more is learned about these soils.

In the above example, changes were made to Soil Taxonomy to reflect advances in the science. The problem with change is that it requires us all to rethink some of our old concepts and perhaps to learn some new ones. This is not an easy assignment.

Another obstacle to changing Soil Taxonomy is that it often requires an increased workload in updating the classification of soil series. This can be a considerable task, and for that reason proposed changes to Soil Taxonomy are not taken lightly.

For example, one of the recommended changes from the International Committee of Families (ICOFAM) was to standardize the particle-size control section. A sample of 10 percent of all the series with argillic horizons was examined to test the effects of this proposal on soil series. The results indicated that 74 percent of the selected series would not be affected by the change, 18 percent would be split into more than one particle-size class (based on the series' range in characteristics), and 8 percent of the series would change particle-size classes. While there are certain advantages to this change, the workload of modifying and adjusting all the affected series with argillic horizons was not justified and the proposal to change the particle-size control section was rejected.

The Objective

The second aspect of Cline's statement is that a classification system has an objective. Classification system are made by humans for specific purposes. Soil Taxonomy was written for making and interpreting soil surveys.

Before Soil Taxonomy there were difficulties comparing proposed new series with the several thousand already recognized. The development of Soil Taxonomy undermined the power of the correlator. Prior to Soil Taxonomy the correlator had seen all the

soil series and knew where each should be mapped. The field party saw only a limited amount of series and had to rely on the knowledge and experience of the correlator.

With the advent of Soil Taxonomy, the field mapper had more power, because the mapper had a way of communicating soil information. The mapper could classify a pedon and correlate the pedon to a soil series without ever having seen other areas of that series in the field. Soil Taxonomy is a powerful tool!

Common Attributes

The third aspect of Cline's statement is that the classes are formed by grouping the objects on the basis of their common attributes. Cline (1963) stated: "The system has been developed deliberately to place soils thought to have had similar genesis in the same group. The groups, however, have been developed deliberately in terms of soil properties without reference to genesis. Clearly, the bases on which the classes have been formed are genetic considerations, and in this sense the system is based on genesis. The criteria by means of which the classes are differentiated, both in the written outline of the system and in practice in the field, however, are soil properties. In this sense, the system is based on soil properties. In this case also, at least one step of reasoning is necessary to develop genetic interpretations form the definitions of the classes."

Conclusions

Soil Taxonomy is a system devised by humans and, therefore, has limitations. The past development of Taxonomy has been an inductive process because of the use of field experience and the assignment of different degrees of importance to observed properties. The continued development of Soil Taxonomy is an ongoing process that is vital to the development of soil science. Think of the amount of information contained in our classification system. It would be easy to write a page on the properties of a soil with only the classification to the family level as a reference.

Soil Taxonomy can always be improved, and we have a mechanism for making proposals to Soil Taxonomy. Unfortunately, we rarely hear from those most critical of our soil classification system.

References

Cline, M.G. 1949. Basic principles of soil classification. Soil Sci. 67:81.

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SOIL TAXONOMY AFTER THIRTY YEARS

R. David Hammer
Associate Professor (pedology)
University of Missouri, Columbia

I regard Soil Taxonomy as one of the major accomplishments of modern science. The act of creating logical, recognizable classes of soil from the continuum of soils over the earth's surface was a major accomplishment. My concerns are with how Taxonomy is (or isn't) being modified and how it is being used as a linkage to soil survey and soil interpretations.

The Purposes of Taxonomic Systems

An accepted taxonomic system is essential to any science, and the ideal taxonomy is convenient, logical, and comprehensive (Joel, 1926). The basic purpose of a taxonomy is to organize human knowledge of an entity so the properties can be remembered and their relationships for a specific purpose may more easily be understood (Cline, 1949). Cline said that ".. a single classification rarely serves two objectives equally well." A noteworthy component of Cline's discussion (1949) was the concept of a class. Cline later said he had "...lived to regret" the modal pedon concept, which he called " misleading" (Cline, 1979).

Those interested in the concept of the modal pedon should carefully consider Knox's (1965) treatise, and should read a precise statistical definition of the term "modal." Jones' (1959) comments are relevant:

"It can easily be appreciated that the complete range of any modal quality at each level of the (hierarchical) classification will decrease as one approaches the lower orders of the classification. It must eventually then become extremely difficult, if not impossible, to recognize either the extremes of the modal quality or even the modal expression itself. No soil property has a discrete or circumscribed existence... and is currently and continuously merging into some new property."

How then can a single pedon be "modal" for as many as 80 properties, each of which might have different relevance for a different soil survey user?

Basic Concepts of the 7th Approximation

The 7th Approximation (Soil Survey Staff, 1975) was introduced in 1963. Ten manuscripts published in a single edition of Soil Science, described and discussed the new system. Some of the ideas in these papers are relevant to the current discussion.

Kellogg (1963) stated that the most useful

classification is a general one that can be interpreted accurately for a wide variety of uses. Predicting behavior and responses to management were mentioned as examples. Kellogg pointed out that the "new" taxonomy was created from a need for "more precision" in soil definition, and said that the current requirement was that a single taxa mapping unit should be about 85% pure (many subsequent soil variability studies have shown that most soil survey mapping units are less than 50% pure). Kellogg concluded by stating:

"No system of classification should ever become so sacred or so classical that the system becomes an end in itself. It should always remain a tool for use, to be sharpened or replaced as the attainment of our objectives in applying soil science demands."

Thus, Kellogg envisioned a flexible system which would be changed as knowledge was required and as perspectives about the soil resource changed.

Smith (1963) also addressed the general intention underlying the new taxonomy. A primary objective was to create a classification system based upon the properties of the soil (rather than individual perceptions of genesis) which could be uniformly applied by competent scientists. Smith emphasized that soil survey should be based upon "...vigorous application of scientific methods..." and that knowledge of soil genesis should be the "...primary basis for development of the classification."

The Questions

Are Revisions Necessary?

A taxonomy should be revised to accommodate new knowledge, providing the revisions are logical and contribute to the purposes for which the classification was intended. The relevant question, then, is not should Taxonomy be revised, but how Taxonomic revisions are conceived and implemented and what are the purposes of the revisions.

More is known about soils in 1995 than was known in 1963. New analytical techniques have been developed which increase the accuracy and precision of measurements in the field and laboratory. Computers allow statistical analyses of large, complex databases in ways not possible previously. We can acquire data that were not available 30 years ago.

Additionally, the perceptions of soils and their importance to humans have changed. Soil is now more broadly perceived as a filtrate for municipal drinking water, a disposal medium for biosolids, a carbon sink for much of the global carbon pool, and other non-agricultural functions. Scientists from other disciplines (ecologists, engineers, botanists, foresters, etc.) increasingly work with the soil resource. People are beginning to understand that soil, water, and landforms form a complex, dynamic, interacting system. Is Soil Taxonomy being revised to reflect knowledge gained from new techniques and methods which reveal a pedon to be a part of a larger, multidimensional system?

Concerns with Taxonomy

My concerns with revisions to Taxonomy are:

1) the focus seems to be on adding classes to Taxonomy rather than asking if the philosophical underpinnings of Taxonomy are appropriate, or if the "pedon" is the proper basic descriptive unit for a soil survey map unit;
2) inconsistencies in Taxonomy are not being addressed, and in some cases are being created;
3) reasons for revisions are not being communicated to users; and
4) revisions are being made too rapidly

Problems with changing Soil Taxonomy

The framers of Soil Taxonomy agreed that a classification system should convey information and have classes based on recognizable, genetically formed soil properties. Certainly the Taxonomy has the structure to meet those requirements. The formative elements (Heller, 1963) are precise, descriptive, and were defined in Soil Taxonomy (Soil Survey Staff, 1975), so that users had easy access to them. Taxonomic considerations for some diagnostic horizons were explained sufficiently in Soil Taxonomy (Soil Survey Staff, 1975) that readers could understand the intentions. For example, one could read Soil Taxonomy and understand the concept of argillation sufficiently to develop a vivid mental image of a Fine-silty, mixed, mesic Typic Hapludalf.

However, When revisions to Taxonomy are unexplained, unjustified, or not developed from quantitative scientific data, the classification becomes mystical or nonsensical and no longer conveys information. The importance of clearly conveying the logic behind, intentions of, and purposes for Taxonomic classes was recognized by Cline (1980), who was concerned that "... the paucity of published information about the evolution of the ideas that shaped Soil Taxonomy and the reasons for seemingly arbitrary decisions about definition ... created problems for those who apply the system."

Cline's concern was written before four sets of revisions were published. As one who teaches soil genesis and classification, I am frustrated by the lack of explanation for the Taxonomic revisions that have been issued since 1987. For example, almost no information is available on the Andisol order for those who were not Andisol committee members.

The failure by Soil Taxonomy revisions

committees to communicate the logic and justification of taxonomic changes to other soil scientists is a disservice both to the profession and the user public. The long-term ramifications are important. If changes are made without regard to scientific data and are made rapidly and without explanation, the core of persons who can understand and interpret the system becomes smaller. Taxonomy and those who use it become smaller. Taxonomy and those who use it become entities unto themselves and will become isolated from those with whom they should be cooperating and assisting. If Taxonomy becomes too complicated for all but a select "inner circle" to understand, it will be ignored.

The philosophical underpinnings of Soil Taxonomy

The "new" Taxonomy was not universally accepted when first proposed. Webster (1968) argued that the hierarchical design would create inaccurate perceptions of soil heterogeneity and cause unrealistic divisions within related soil populations. Research at the University of Missouri supports Webster's concerns.

Websters argued that some class overlap is necessary on a regional basis. An example that supports Webster's contentions was observed in a recent soil survey. Eight soil profiles were described, sampled and sent to a laboratory for analyses. Pipette textural analyses revealed that four profiles were in the fine-silty family and four were in the fine family. The range of clay content in the control section was 33-38%. A correlator required the party leader to collect samples from the control sections of 18 additional profiles and submit them to the laboratory for analysis. Nine of these samples were fine and remainder were fine-silty, and the range of clay content was 32-38%. All 26 soil profiles were from the same "population" and had a fairly narrow range of clay in the control section. This should have been a single taxa rather than a multiple taxa soil. A more flexible system would have permitted classification as such and would shave allowed control section clay content within the sample range.

Is it reasonable to expect that the same hierarchical divisions will be useful throughout the range of soil-forming conditions for any soil Order? For example, will textural attributes be related in the same way to base saturation for an Alfisol in residuum in Tennessee as for an Alfisol in loess in Wisconsin? Is it reasonable to try to design a taxonomy to accommodate all of the soils on earth? Is it reasonable to expect a taxonomic system to convey interpretive data to meet all possible uses of the soil? Other taxonomies do not. How cumbersome would a plant taxonomy be that attempted to incorporate growth responses of soybeans or white oak to the myriad of site and management conditions to which those species are subjected across their growth ranges?

The frequency and number of recent taxonomic modification suggest that we are wandering from the conceptual foundation of Soil Taxonomy, that we are eschewing science and common sense as the basis for revisions, and that the system is becoming hopelessly confounded by minutiae and trivia unrelated to the needs of the increasingly large group of non-soil scientists who need soil information. If the Taxonomy becomes too complex to use and cannot be explained to the general user audience, the risk is that both Taxonomy and those who use it will be ignored.

Several scientists suggested years ago that multivariate statistical analyses would be useful methods for identifying soil variables that are discriminators among soil population (Arkley, 1976; Webster & Burrough, 1974; Norris, 1970). Subsequent studies have verified this hypothesis (Edmonds & Lentner, 1987; Richardson & Bigler, 1984; Hammer & Philpot, 1987), but no apparent efforts have been made to include rigorous statistical classification as a method to help identify necessary revisions to Soil Taxonomy.

Some classes in Soil Taxonomy appear to be arbitrary; they are not applied universally across the ranges of soil conditions observed in the field. One example in Missouri is in Aqualfs. A Vertic subgroup exists for Epiaqualfs but not for Endoaqualfs. However, both kinds of soils co-exist in the "clay-pan" region of north-central Missouri. Another example of Taxonomic inconsistency is in the Fragic subgroup, which exists for Paleudults but is not available for Hapludults, Hapludalfs or Paleudalfs. Soils with Fragic properties occur in all four of these Great Groups in Missouri.

Will a better Taxonomy allow for a better soil survey?

The purposes of a soil survey are twofold:
1) to gather information about soils, and
2) to make soil maps (Soil Survey Staff, 1951).
The applicability of Soil Taxonomy to soil survey is dependent on the conceptual model of the map unit and how soils data are gathered, analyzed, interpreted and presented to the user. These issues will be addressed separately.

The developers of Taxonomy did not agree on all purposes of the system. Cline's (1949) statement about the value of classification "... for a single purpose..." is in direct disagreement with Kellogg's (1963) belief that a system could be developed for "... a wide variety of uses..." including predicting responses. Is it reasonable to expect that a classification system

should do more than to identify and arrange the "individuals" which comprise the population? Has too much been expected of Soil Taxonomy?

Soils are unique from other entities that humans have attempted to classify in that the "individuals" are not discrete. The large number of descriptive features required to describe a soil complicates taxonomic perspectives, particularly when, as Webster (1968) points out, each feature is grading to a different value or is disappearing.

The idea of the "pedon" as a "Representative" sampling unit may be poorly suited as the linkage between Soil Taxonomy and the map unit. Can a single soil profile in a landscape represent how soils vary through time and space? Jones (1959) asked if the two-dimensional pedon could "... be expected to provide a satisfactory basis for classification of soils -- and soil is essentially a three-dimensional continuum..." Numerous transect studies have shown that soils sometimes vary systematically (predictably) down hillslopes in relatively uniform parent materials. Research in progress suggests that systematic variability may have been hopelessly confounded by mass erosion, mass movement and land use in the upper reaches of many watersheds in the Ozarks of Missouri.

Cline (1980) concluded his review with the observation that "major improvements remain to be made ... that will adapt quantitative limits of criteria more realistically to soil variation in the field ... to reconcile the conceptual framework of Taxonomy with the reality of soils in nature." This need remains. Indeed, the future of soil survey in this nation may depend on satisfying this need.

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FIELD INDICATORS OF HYDRIC SOILS IN THE CENTRAL FEED GRAINS AND LIVESTOCK RESOURCE REGION (LRR M)

Introduction

The "Field Indicators of Hydric Soils in the United States (Indicators)" is a tool to help identify and delineate hydric soils in the field. The Indicators are not intended to replace or relieve the requirements contained in the definition of a hydric soil. The

Indicators are used to identify the hydric soil component of wetlands; however, there may be some hydric soils that lack one of the currently listed Indicators. Therefore, these indicators are considered to by dynamic and changes and additions are anticipated annually. The section *To Comment on the Indicators* provides guidance to recommend changes, deletions, and additions. Any changes, deletions, or additions to the Indicators must be approved by the Interagency Field Indicator Committee. In order to properly use the Indicators, a basic knowledge of soil landscape relationships and soil survey procedures is necessary.

Concept:

Nearly all hydric soils exhibit characteristic morphologies as a result of having undergone repeated periods of saturation for more than just a few days. The combination of this saturation and/or inundation along with microbiological activity in the soil results in a depletion of oxygen. This anaerobiosis in turn promotes biogeochemical processes such as the accumulation and differential decomposition of organic matter and the reduction, translocation, and accumulation of iron and other elements. These processes result in characteristic morphologies which reflect the periodic cycles of saturation and/or inundation, reduction, and oxidation in the soil. These morphologies persist in the soil during both wet and dry periods, making them particularly useful for identifying hydric soils.

Hydric soil indicators are formed predominantly by the accumulation or loss of materials composed of iron/manganese, sulfur, and carbon. The presence of hydrogen sulfide gas (rotten egg odor) is a strong indicator of a hydric soil, but the indicator is not frequently found. While indicators related to Fe/Mn depletions or concentrations are (the most) common, they cannot form in soils whose parent materials contained low amounts of Fe/Mn initially. Soil formed in such materials may have low chroma colors that are not related to saturation and reduction. For such soils, features related to organic carbon depletions or accumulations should be used. These features are identified in this document, in part to handle soils whose parent materials may have had low amounts of Fe/Mn and where hydrogen sulfide gas is not detected.

Cautions:

There are hydric soils that have soil conditions which are difficult to interpret or seem inconsistent with the landscape, vegetation, or hydrology such as cultivated areas, soils formed in low chroma, red, or low iron content parent material; soils with high pH or low organic matter content; mollisols and vertisols; and soils with relict redoximorphic features.

Morphological features of hydric soils indicate the that saturation and anaerobic conditions have existed under either current or former hydrologic regimes. Features that do not reflect current hydrologic conditions of saturation and anaerobiosis are relict features. Artificially drained or protected (such as by levees) hydric soils are hydric if the soil in its undisturbed state would have met the criteria for hydric soils. These soils should also have at least one of the Hydric Soil Field Indicators. Occasionally it is difficult to ascertain whether morphological features being observed are the result of current or former hydrologic regimes unless other hydrologic features can be verified. When soil conditions are inconclusive, other hydrologic features are unobservable, or soil conditions seem inconsistent with the landscape, vegetation, or observable hydrology, it may be necessary to obtain the assistance of an experienced soil scientist and/or wetland scientist.

Procedure:

To document a hydric soil first remove all loose leaf matter, needles, bark, and other easily identified plant parts to expose the surface. Depth of excavation and examination is usually 50 cm (20 inches (in.)), but may be greater if determination of an appropriate Indicator so requires. It is always recommended that soils be excavated and described as deep as necessary to understand the redoximorphic processes. For example, this may be less than 50 cm (20 in.) in soils with surface horizons of organic material or mucky sand. It will often be greater than 50 cm (20 in.) in Mollisols. In many sites it will be necessary to make some exploratory observations to a meter or more to determine the hydromorphic processes and soil morphological distinctions appropriate for the site. These observations should be made with the intent of documenting and understanding the variability in soil properties and hydrologic relationships.

Particular attention should be paid to changes in microtopography and parent materials over short distances. Small changes in elevation may result in sequences of hydric-nonhydric soils. In addition, the shape of the local landform surface can greatly affect the movement of water through the landscape. Significant changes in parent material or lithologic discontinuities in the soil can affect the hydrologic properties of the soil. After sufficient exploratory observations have been made to understand the soil-hydrologic relationships at the site, subsequent excavations may then be shallower if interpretations of the Indicators identified as appropriate to the site

allows.

Depths used in the Indicators are measured from the mineral surface. Unless otherwise specified, all colors refer to moist Munsell colors. For simplicity, soil colors specified in the Indicators do not have decimal points listed; however, colors do occur between Munsell color chips. Soil colors should not be rounded to meet an indicator. For example: a soil ped with chroma of between 2 and 3 should be described as having chroma of 2+. This soil does not have chroma of 2 and would not meet any Indicator that requires chroma of 2 (or less). Compare the soil characteristics in the soil to those recorded in the soil profile description for completeness. Using the completed soil description and comparing the soil features required by each Indicator, specify which Indicators have been matched with the conditions observed in the soil.

The following list of Field Indicators of Hydric Soils are structured as follows:

1. Alpha Numeric Listing
2. Short Name
3. Applicable Land Resource Region(s)
4. Description of the Field Indicator
5. User Notes

For example, A1 indicates the first indicator for all soils; Histosol is the short name; the indicator is for use in all LRRs; Classifies as a Histosol, except Folists is the indicator description; and user notes are added.

Unless otherwise indicated, all mineral layers above any of the hydric soil indicators have dominant chroma of 2 or less, or the layer(s) with dominant chroma of 3 or more are less than 15 cm (6 inc.) thick. In addition, unless otherwise stated, nodules and concretions are not considered to be redox concentrations for the purposes of this document.

All Soils

All soils refer to soils with any USDA soil texture. Use the following hydric soil indicators regardless of texture:

A1. Histosol. For use in all LRRs. Classifies as a histosol, except folists.

Histosol User Notes: A histosol has 40 cm (16 in.) or more of the upper 80 cm (32 in.) as organic soil material. Organic soil material has an organic carbon content (by weight) of 12 to 18 percent, or more, dependent upon the clay content of the soil. These materials include muck (sapric soil material), mucky peat (hemic soil material), or peat (fibric soil material). Use of this indicator requires the presence of aquic conditions or artificial drainage. There are no Folists in LRR M, therefore, all Histosols are hydric.

A2. Histic Epipedon. For use in all LRRs except W, X, and Y. Presence of a histic epipedon.

Histic Epipedon User Notes: Most histic epipedons are surface horizons 20 cm (8 in.) or more thick of organic soil material. Aquic conditions or artificial drainage are required. See Keys to Soil Taxonomy, page 3 (Soil Survey Staff, 1994). Slightly lower organic carbon contents are allowed in plowed soils (See Keys to Soil Taxonomy, page 4).

A3. Black Histic. For use in all LRRs except W, X, and Y. Presence of a surface layer of peat, mucky peat, or muck 20 cm (8 in.) or more thick having hue 10YR or yellower and value 3 or less and chroma 1 or hue of N.

Black Histic User Notes: Unlike Indicator A2 (above) use of this indicator does not require proof of aquic conditions or artificial drainage. This indicator only requires identification of a dark colored organic surface layer without having to determine aquic conditions.

A4 Hydrogen Sulfide. For use in all LRRs. Presence of hydrogen sulfide odor within 30 cm (12 in.) of the surface.

Hydrogen Sulfide User Notes: This "rotten egg smell" indicates that sulfate-sulfur has been reduced and therefore the soil is anaerobic. In most hydric soils, the presence or absence of a sulfidic odor is dependent upon current hydrology.

A10. 2 cm Muck. For use in LRR M. Presence of a surface layer of muck 2 cm (0.75 in.) or more thick with value 3 or less and chroma 1 or hue of N.

2 cm Muck User Notes: Organic soil material is called muck (sapric soil material) if virtually all of the material has undergone sufficient decomposition to limit recognition of the plant parts. Hemic (mucky peat) and fibric (peat) soil materials do not qualify for this indicator. To determine if muck is present, first remove loose leaves, needles, bark, and other easily identified plant remains. This is sometimes called a leaf/root mat. Then, examine for decomposed organic soil material. Generally muck is black and has a "greasy" feel, sand grains should not be evident. The presence of a leaf or root mat is not indicative of hydric soils or upland soils; it indicates that the vegetation present produces a large amount of biomass. Hydric soil indicator determinations are made below the leaf or root mat; however, root mats that meet the definition of hemic or fibric soil material are included in the decision making process for Mucky Peat, Peat, Organic Bodies or Histic Indicators. See glossary for definition of muck.

Sandy Soils

Sandy soils refer to those soils with a USDA texture of loamy fine sand and coarser. Use the following sandy hydric soil indicators if all layers are

sandy to a depth of 25 cm (10 in.):

S1. Sandy Mucky Mineral. for use in all LRRs except W, X, and Y. Presence of a mucky modified mineral surface layer 5 cm (2 in.) or more thick.

Sandy Mucky Mineral User Notes: "Mucky" is a USDA texture modifier for mineral soils. The organic carbon content is at least 5 and ranges as high as 14 percent. The percentage requirement is dependent upon the clay content of the soil; the higher the clay content, the higher the organic carbon requirement. An example is mucky fine sand which has at least 5 percent organic carbon but not more than about 12 percent organic carbon. In sandy soils a quick field test for mucky is: place one unbroken ped of soil between thumb and fingers; rub twice only, if you can neither see or feel sand grains it is likely mucky. See glossary for definition of mucky modified mineral texture.

S3. 5 cm Mucky Peat or Peat. For use in LRRs F and M. Presence of a surface layer of mucky peat or peat 5 cm (2 in.) or more thick with value 3 or less and chroma of 2 or less.

5 cm Mucky Peat and Peat User Notes: Organic soil material is called peat if virtually all of the plant remains are sufficiently intact to permit identification of plant remains. Muck peat is an intermediate stage of decomposition between peat and highly decomposed muck. To determine if mucky peat and/or peat are present, first remove loose leaves, needles, bark, and other easily identified plant remains. This is sometimes called a leaf/root mat. Then, examine for undecomposed to partly decomposed organic soil material. The presence of a leaf or root mat is not indicative of hydric soils or upland soils; it indicates that the vegetation present produces a large amount of biomass. Further investigation and documentation is needed in LRR M to determine if a lesser thickness of mucky peat or peat is diagnostic of a hydric soil. See glossary for definition of mucky peat and peat.

S4. Sandy Gleyed Matrix. For use in all LRRs except W, X, and Y. Presence of a gleyed matrix within 15 cm (6 in.) of the soil surface.

Sandy Gleyed Matrix User Notes: Gley colors are not synonymous with gray colors. Gley colors are those colors that are found on the gley page (Kollmorgen Instruments Corporation, 1994). They have hue 5GY, 10GY, 5G, 10G, 5BG, 10BG, 5B, 10B, or 5BP; or hue is neutral (N) with value 4 or more. The gleyed matrix only has to be present within 15 cm of the surface. Soils with gleyed matrices are saturated for significant duration; this is why no thickness of the layer is required. See glossary for definition of gleyed matrix.

S5. Sandy Redox. For use in all LRRs except V, W, X, and Y. Presence of a layer with an upper boundary within 15 cm (6 in.) of the soil surface that is at least 10 cm (4 in.) thick and has a matrix chroma 3 or less with 2% or more distinct or prominent redox concentrations as soft masses and/or pore linings.

Sandy Redox User Notes: Distinct and prominent are defined in National Soil Survey Handbook (Soil Survey Staff, 1993a). Redox concentrations include iron and manganese masses (reddish mottles) and pore linings (Vepraskas, 1992). Included within this concept as redox concentrations are iron/manganese bodies as soft masses with diffuse boundaries. The iron/manganese masses are 2 to 5 mm in size and have a value of 3 or less and a chroma of 3 or less; most commonly they are black. Iron/manganese masses should not be confused with the larger and redder iron nodules (Soil Survey Staff, 1993a) associated with plinthitic soils or relic concretions. Common to many redox concentration (Soil Survey Staff, 1993b) are required.

S6. Stripped Matrix. For use in all LRRs except V, W, X, and Y. Presence of a layer within 15 cm (6 in.) of the surface in which iron/manganese oxides and organic matter have been stripped from the matrix exposing the primary base color of soil materials. The translocated oxides and organic matter forms a diffuse splotchy pattern of two or more colors. The stripped zones are 10% or more of the volume, rounded, and 1 to 3 cm (0.5 to 1 in.) in diameter.

Stripped Matrix User Notes: This indicator includes the indicator previously named "polychromatic matrix" (Florida Soil Survey Staff, 1992) as well as the undefined term "streaking". Common to many (Soil Survey Staff, 1993b) areas of stripped (uncoated) soil materials 1 to 3 cm (0.5 to 1 in.) in size is a requirement. Commonly the splotches of color have value 5 or more and chroma 1 and/or 2 (stripped) and chroma 3 and/or 4 (unstripped). The matrix may lack the 3 and/or 4 chroma material. The mobilization and translocation of the oxides and/or organic matter is the important process and should result in splotchy coated and uncoated soil areas.

Loamy and Clayey Soils

Loamy and clayey soils refer to those soils with USDA textures of loamy very fine sand and finer. Use the following loamy and clayey hydric soil indicators if any layer is loamy or clayey within the upper 25 cm (10 in.) of the soil:

F1. Loamy Mucky Mineral. For use in all LRRs except v, W, and Y. Presence of a mucky modified mineral surface layer 10 cm (r in.) or

more thick.

Loamy Mucky Mineral User Notes: "Mucky" is a USDA texture modifier for mineral soils (Soil Survey Staff, 1951, 1993a, and 1993b). The organic carbon is at least 8 percent but can range up to 18 percent. The percentage requirement is dependent upon the clay content of the soil; the higher the clay content the higher the organic carbon requirement. An example is mucky sandy loam, which has at least 7 percent organic carbon but not more than about 14 percent organic carbon. See glossary for definition of mucky modified mineral texture.

F2. Loamy Gleyed Matrix. For use in all LRRs except W, X, and Y. Presence of gleyed matrix which occupies 60 % or more of a layer within 30 cm (12 in.) of the surface.

Loamy Gleyed Matrix User Notes: Gley colors are not synonymous with gray colors. Gley colors are those colors that are found on the gley pages (Kollmorgen Instruments Corporation, 1994). They have hue 5GY, 10GY, 5G, 10G, 5BG, 10BG, 5B, 10B, or 5BP; or hue is neutral (N) with value 4 or more. The gleyed matrix only has to be present within 30 cm (12 in.) of the surface. Soils with gleyed matrices are saturated for significant duration, this is why no thickness of the layer is required. See glossary for definition of gleyed matrix.

F3. Depleted Matrix. For use in all LRRs except W, X, and Y. Presence of a layer at least 15 cm (6 in.) thick with 60% or more depleted matrix starting within 25 cm (10 in.) of the surface.

Depleted Matrix User Notes: Redox concentrations include iron and manganese masses (reddish mottles) and/or pore linings. The low chroma matrix must be due to wetness and not a relict or parent material feature. The layers above the depleted matrix must be chroma 2 or less; or be less than 15 cm (6 in.) thick. See glossary for definition of depleted matrix.

F4. Depleted Below Dark Surface. For use in all LRRs except W, X, and Y. Presence of a layer at least 15 cm (6 in.) thick with 60% or more depleted matrix starting within 20 cm (12 in.) of the surface. The layer(s) above the depleted matrix have value 3 or less and chroma 2 or less.

Depleted Below Dark Surface User Notes: This indicator often occurs in Mollisols but also applies to soils with umbric epipedons and dark colored ochric epipedons. This indicator is most often associated with soils in depressional landscape positions. E horizons in Argialbolls and Calcic horizons in Calciaquolls have high value and low chromas, E and Calcic horizons are not considered depleted matrices unless they have 2 percent or more distinct or prominent redox concentrations. Also included in this indicator could be a thin (15 cm) depleted matrix with gleyed matrix below. For soils with dark colored epipedons greater than 30 cm (12 in.) thick use Indicator F5.

F5. Thick Dark Surface. For use in all LRRs except W, X, and Y. Presence of a layer at least 15 cm (6 in.) thick with 60% or more depleted or gleyed matrix starting below 30 cm (12 in.) of the surface. The layer(s) above the depleted or gleyed matrix have hue N and value 3 or less to a depth of 30 cm (12 in.) and value 3 or less and chroma 1 or hue of N in the remainder of the epipedon.

Thick Dark Surface User Notes: The soil has a black or very dark gray surface layer 30 cm (12 in.) or more thick. The dark colored subsoil has value of 3 or less, chroma 1 or hue of N. Below the dark colored epipedon is a depleted matrix or gleyed matrix. This indicator is most often associated with overthickened soils in concave landscape positions. Further testing is needed in LRR M to determine if soils with 2/1 surface layers should be included in this indicator. See Test Indicator TF8.

F6. Redox Dark Surface. For use in all LRRs except W, X, and Y. Presence of a layer at least 10 cm (4 in.) thick entirely within the upper 30 cm (12 in.) of the mineral soil that has:

a. matrix value 3 or less and chroma 1 or less and 2% or more distinct or prominent redox concentrations as soft masses or pore linings, or

b. matrix value 3 or less and chroma 2 or less and 5% or more distinct or prominent redox concentrations as soft masses or pore linings.

Redox Dark Surface User Notes: Redox concentrations in high organic matter mineral soils (Mollisols) are often difficult to see. The organic matter "masks" some or all of the concentrations that may be present. Careful examination is required in order to see what are often brownish "mottles" in the darkened materials. In some instance, drying of the samples makes the concentrations (if present) easier to see. Dried colors, if used, need to have matrix chromas of 1 or 2 and the redox concentrations need to be distinct or prominent. In soils which are wet due to a subsurface water table, the layer immediately below the dark epipedon should have a depleted or gleyed matrix. Soils which are wet due to ponding or shallow perched water tables may not always have a depleted/gleyed matrix below the dark surface. It is recommended to evaluate the hydrologic source and to examine and describe the layer below the mollic epipedon when applying this indicator.

F7. Depleted Dark Surface. For use in all LRRs except W, X, and Y. Presence of redox

depletions, with value 5 or more and chroma 2 or less or hue of N, in a layer at least 10 cm (4 in.) thick entirely within the upper 30 cm (12 in.) of the mineral soil that has:

a. matrix value 3 or less and chroma 1 or hue of N and 10% or more redox depletions, or

b. matrix value 3 or less and chroma 2 or less and 20% or more redox depletions.

Depleted Dark Surface User Notes: Care should be taken not to mistake mixing of an E or calcic horizon into the surface layer as depletions. The "pieces" of E and calcic horizons are not redox depletions. Knowledge of local conditions is required in areas where E and/or calcic horizons may be present. In soils which are wet due to a subsurface water table, the layer immediately below the dark surface should have a depleted or gleyed matrix. Further testing is requires to determine if the diagnostic percentage for redox depletions is less than presently specified.

F8. Redox Depressions. For use in all LRRs except R, W, X, and Y. In closed depressions subject to ponding, %% or more distinct or prominent redox concentrations as soft masses or pore linings in a layer 5 cm (2 in.) or more thick within the upper 15 cm (6 in.).

Redox Depressions User Noes: Most often soils pond water because of two reasons: they occur in a landscape positions that collect water and they have a restrictive layer(s) that prevent water from moving downward through the soil. For these landscape positions there is no restriction on matrix value and chroma.

ATTENTION ILLINOIS SOIL SCIENTISTS

The Illinois Soil Classifiers Association is planning to host a reunion of past and present Illinois Soil Scientists in recognition of the milestone reached this year by the Cooperative Soil Survey. Soil mapping for the "modern" soil survey was completed in 1995 and field work for the first of the "next generation" soil survey s was also completed. To commemorate this important point in the history of the Illinois Cooperative Soil Survey, the ISCA would like to honor all those involved with the soil survey. We hope to see soil scientists, NRCS employees, private consultants, and retired and out-of-state personnel at this celebration.

The reunion will take place on March 22, 1996 at the Holiday Inn in Bloomington, IL. Dinner is planned for 6:00 PM, with presentations and slide shows to follow. A banquet room with a cash bar will be open at 4:00 PM. ISCA'a 21st Annual Meeting will also be conducted at the reunion.

Please make reservations before February 22, 1996 by either contacting Bob Oja at (815) 338-0099 (days) or (414) 275-9625 (evenings) or by sending in the reservation form which will be in the winter newsletter.

A similar announcement will appear in several other publications, however if you know someone you have worked with in the past please contact them if you believe they would be interested in attending such an event.

Also, if you have slides of soil survey activities please send them to Les Bushue.

NORTH CAROLINA PASSES SOIL SCIENCE LICENSING

The North Carolina General Assembly ratified House Bill 826 on 11 July 1995, creating Chapter 89F, the North Carolina Soil Scientist Licensing Act. The bill says the purpose of Chapter 89F is to protect life, property, health, and public welfare through regulation of the practice of soil science. The definition of soil science means any service or work, the adequate performance of which requires education in the physical, chemical and biological sciences, as well as soil science. The definition of practice includes, but is not limited to, investigation and evaluating the interaction between water, soil, nutrients, plants, and other living organisms that are used to prepare soil scientist reports for subsurface ground absorption systems, including infiltration galleries; land application of residuals such as sludge, septage, and other wastes; spray irrigation of wastewater; remediation of soil at conventional rates; land application of agricultural products; processing residues, bioremediation, and volatilization; soil erodibility and sedimentation; and identification of hydric soils and redoximorphic features.

The legal definition of soil science includes soil characterization, classification, mapping, and the physical, chemical, hydrologic, mineralogical, biological and microbiological analysis of soil. Soil science does not include design or creative works, the adequate performance of which requires extensive geological, engineering, or land surveying education, training, and experience.

After a similar bill failed to pass in 1978, the Soil Science Society of North Carolina formed a "voluntary" registration program governed by the North Carolina Registry of Certified Professionals in Soils (NCRCPS). This registry was formed to "certify" soil scientists until a state licensing act was passed. By

1987 there were 67 soil scientists certified by the registry. This number had swelled to over 150 by 1994.

In order to raise funds for a licensing effort, the NCRCPS annual registration fee was raised to $50 for consultants in 1989. By 1994 $12,000 had been raised. Over 60 registry members donated $100 each and several consulting firms kicked in up to $1,000 each. A similar fund raising drive in 1990 failed since only 29 out of 120 who pledged to donate followed through. When the dust had settled, NCRCPS had spent $20,000 ($14,000 on a lobbyist and $6,000 on mailing/postage and clerical time.) to get the bill through in one legislative session.

The key to the bill's passage were personal contacts with state legislators by soil scientists from back home and up-front coordination with potential opposition to the bill. Most legislators reported knowledge of the bill and willingness to support it when contacted by our lobbyist because they had already been contacted by a constituent. Many groups including SSSA, the Professional Engineers of North Carolina, the North Carolina Board of Licensing for Geologists, the North Carolina State Board of Registration for Engineers and Land Surveyors, the North Carolina Division of Environmental Management and Division of Environmental Health, the North Carolina Aggregates Association, North Carolina Board of Registration for Foresters, National Society of Consulting Soil Scientists, and North Carolina State University worked with NCRCPS to formulate a mutually acceptable bill. The bill had little opposition and easily passed both houses with the few legislators voting against it citing a general opposition to licensing/new regulation as their only reason.

A Licensing Board is being appointed by the governor and the general assembly, after which applications will be taken. Persons seeking information on the act should write to the NC Registry of Certified Professionals in Soils, PO BOX 5316, Raleigh NC 27650.

Agronomy News. October 1995

NEW TECHNICAL REFERENCE AVAILABLE

ILLINOIS URBAN MANUAL

A Technical Manual Designed for Urban Ecosystems Protection and Enhancement

The Illinois Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), has recently developed the ILLINOIS URBAN MANUAL: A Technical Manual Designed for Urban Ecosystem Protection and Enhancement. The manual consists of over 1,000 pages and includes conservation practice standards, construction specifications, material specification and standard drawings. Also included is a section evaluating the physical effects that specific practices have on soil, water, air, plant and animal resources. Contained in a three-ring binder, the manual will be expanded and revised as needs indicate.

Although the practice standards and associated material primarily describe best management practices (BMP's) for controlling urban nonpoint source water pollution, the scope of broad use includes soil erosion and sediment control, water management, fish and wildlife habitat improvement, visual and environmental quality and other significant applications. Municipalities, counties and local, state and federal resource agencies are encouraged to adapt this manual by reference in their guidance documents, ordinances or regulations.

The manual will be an invaluable technical reference for developers, planners, engineers, resource agencies and governmental officials involved in land use planning, site development and natural resource protection or enhancement. It should be used as a companion document to the 1988 edition of Illinois Procedures and standards for Urban Soil Erosion and Sedimentation Control, commonly known as the "Greenbook". Standards and specification contained in the new ILLINOIS URBAN MANUAL replaces Chapter 6 of the Greenbook and the 1987 Illinois Environmental Protection Agency's Standards and Specifications for Soil Erosion and Sediment Control.

To view or purchase a copy of the ILLINOIS URBAN MANUAL for $75.00 plus handling, contact the **Lake County Soil & Water Conservation District, 100 N. Atkinson Road, Suite 102-A, Grayslake, Illinois 600030-7805, or phone (708) 223-1056.** Contact your local Natural Resources Conservation Service (NRCS), Soil and Water Conservation District (SWCD) or the NRCS Chicago Metro Urban and Community Assistance Office for further information of the ILLINOIS URBAN MANUAL and its applicability in your area.

ILLINOIS SOIL CLASSIFIERS ASSOCIATION

1995 FALL NEWSLETTER

ISCA 21ST ANNUAL MEETING AND COOPERATIVE SOIL SURVEY REUNION

Date: Friday March 22, 1996
Time: 4:00 pm to 9:00 pm
Where: Holiday Inn, I55 & Rt. 51, Bloomington, IL.
Cost: $15.00

The focus of this years annual meeting will be to commemorate the completion of soil mapping for the "modern" soil survey and our entry into the "next generation" of surveys.

Soil Scientists and all others involved with soil survey activities are invited to attend what we hope will be a reunion of friends and colleagues. Spouses are encouraged to attend.

The Holiday Inn banquet room has been reserved. A cash bar will be available at 4:00 pm. Dinner and the evening program/business meeting follows at 6:00 pm.

LODGING OPTIONS
The following are lodging options for ISCA's 21st Annual Meeting and Soil Survey Reunion to be held on Friday March 22nd at the Bloomington/Normal Holiday Inn.

Holiday Inn
8 Traders Circle
Interstate 55 & Rt. 51
Normal, IL 61761
(309) 452-8300

Single $69.00
Double $78.00

A block of rooms have been reserved at this reduced rate. You must make reservations before March 1st and mention ISCA to get these rates.

Best Inns of America
1905 W. Market St.
Bloomington, IL 61701
(309)827-5333

Single (1 person) $36.88
Single (2 persons) $42.88
Double (1 person) $38.88
Double (2 persons) $44.88

Best Western University Inn
6 Traders Circle
I55 & Rt. 51
Normal, IL 61761
(309) 454-4070

All rooms $69.00

Super 8 Lodge
818 IAA Drive (Just off Veteran's Parkway)
Bloomington, IL 61701
(309) 663-2388

Single (1 person) $40.88
Single (2 person) $48.88
Double (2 persons) $52.88

→Please fill out the attached registration form (last page of newsletter) and mail to Chuck Frazee by **February 22, 1996**.

STORIES AND TALL TALES WANTED:

We will be looking for a few good stories at this years annual meeting/reunion. Those of you with humorous tales concerning on-the-job experiences are asked to step forward and spill the beans. Our field of work seems to give us good potential for some interesting

happenings.

The rules of these stories are simple - there are none, and embellishment is encouraged. This may be a good time to get back at some of your precious associates, although names can be left out to protect the guilty.

If you've have a good story to tell that you wouldn't mind sharing at the annual meeting please give me a call.

Bob Oja, (815) 338-0099 or
(414) 275-9625 evenings

LETTER TO THE EDITOR

Dear Pat

I enjoyed your creative Indian Summer Newsletter. Perhaps we can hear more about your experiences in Mexico, say at a future ISCA meeting.

A small (I hope) suggestion. Would it be possible to list the ISCA officers and board members in each newsletter, with their telephone number. I'm enclosing an example from another one of my newsletters. It's very handy for reference.

Thanks for listening.

Mary Kluz

EDITORS NOTE

Here you go!

President - Doug Gaines (618) 656-1452
President Elect - Pat Kelsey (708) 719-2417
Past President - Steve Zwicker (815) 875-2279
Vice President - Charles Love (217) 483-4227
Secretary - Ward Lenz (618) 532-2887
Treasurer - Chuck Frazee (314) 947-1221

Certification Board - Mark Bramstedt
(217) 463-1685
Certification Board Secertary - Tonie Endres
(618) 943-4583

Editor - Pat Kelsey (708) 719-2417

NATIONAL SOCIETY OF CONSULTING SOIL SCIENTISTS ANNUAL CONVENTION

Palmer House
Chicago, IL
January 1996

Wednesday, January 17

12:00 pm to 5:00 pm	Registration
10:00 pm to 12:00 pm	Set-up of exhibits
12:00 pm to 5:00 pm	Exhibits Open/Exhibitor Demonstrations on the Half Hour Roundtable Business Organizations workshops Committee meetings
5:00 pm to 7:00 pm	"Welcome to Chicago" Reception

Thursday, January 18

7:00 am to 9:00 am	Registration
9:00 am to 10:00 am	Welcome & Opening Session
10:00 am to 10:30 am	Break
10:00 am to 5:00 pm	Exhibits & Exhibitor Demonstrations on the Half Hour
10:30 am to 11:30 am	Keynote Speakers
11:30 am to 1:00 pm	Lunch
1:00 pm to 3:00 pm	Business Workshop & Breakout Sessions
3:00 pm to 3:30 pm	Break
3:30 pm to 5:00pm	Computer & Cyberspace Communications Workshops
5:00 pm to 7:00 pm	Exhibitor Reception

Friday, January 19

7:00 am to 9:00 am	Registration
8:00 am to 4:00 pm	Exhibits & Exhibitor Demonstrations on the Half Hour
8:00 am to 9:30 am	Wetland & Hydric Soils Sessions
9:30 am to 10:00 am	Break
10:00 am to 11:30 am	Environmental Site Assessments/Audits & Site Specific Investigation Session

11:30 am to 1:00 pm	Lunch
1:00 pm to 2:30 pm	Bioremediation Sessions
2:30 pm to 3:00 pm	Break
3:00 pm to 4:30 pm	General Environmental Issues
	Exhibits Close
4:30 pm to 5:00 pm	Closing Session

Saturday, January 20

8:00 am to 10:00 am	NSCSS Business Meeting
9:30 am to 11:30 am	Brunch Meeting
11:30 am to 12:00 pm	Closing Session:
	Board of Directors Meeting
	Board of Directors Meeting
	Committee Meetings

Contact **Mark S. McClain**, President-Elect and Annual Meeting Coordinator, for additional information at:

Soil Horizons, Inc.
1300 Drawbridge Lane
Lafayette, Indiana 47905-7814
E-mail: 75363.2232@compuserve.com

LETTER TO THE EDITOR OF THE JOURNAL OF SOIL AND WATER CONSERVATION

I support the designation of a state soil for Illinois and agree with most of the "State Soils of the United States" article in the July/August issue of the *Journal*. The selection of the Drummer series, however, by a few soil scientists goes against the broader goal of conservation education. As many of you know, Drummer soils are mainly drained wetlands that are not threatened by soil erosion.

Another series that does need protection from erosion would be much more useful for an example in a conservation education program.

Drummer has the added danger of severe limitations for development. A partially informed person could be in for some very unpleasant surprises when building on that great "official" state soil! For these reasons, and others I have not mentioned, the Drummer series should be elminated from consideration for the state soil of Illinois.

Dana Walker
Macomb, Illinois

Editors Soap Box:
Obviously, we as soil classifiers have not done an effective job of communicating our intent for a state soil to other members of the soil science community in Illinois. Perhaps we should work to further enlighten and educate other professionals to our goals and objectives for a state soil. It will be difficult for the general public and the legislature to understand our purpose if it is not easily understood by our colleagues

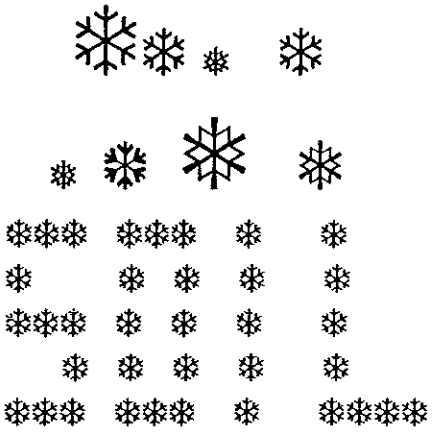
MLRA UPDATE

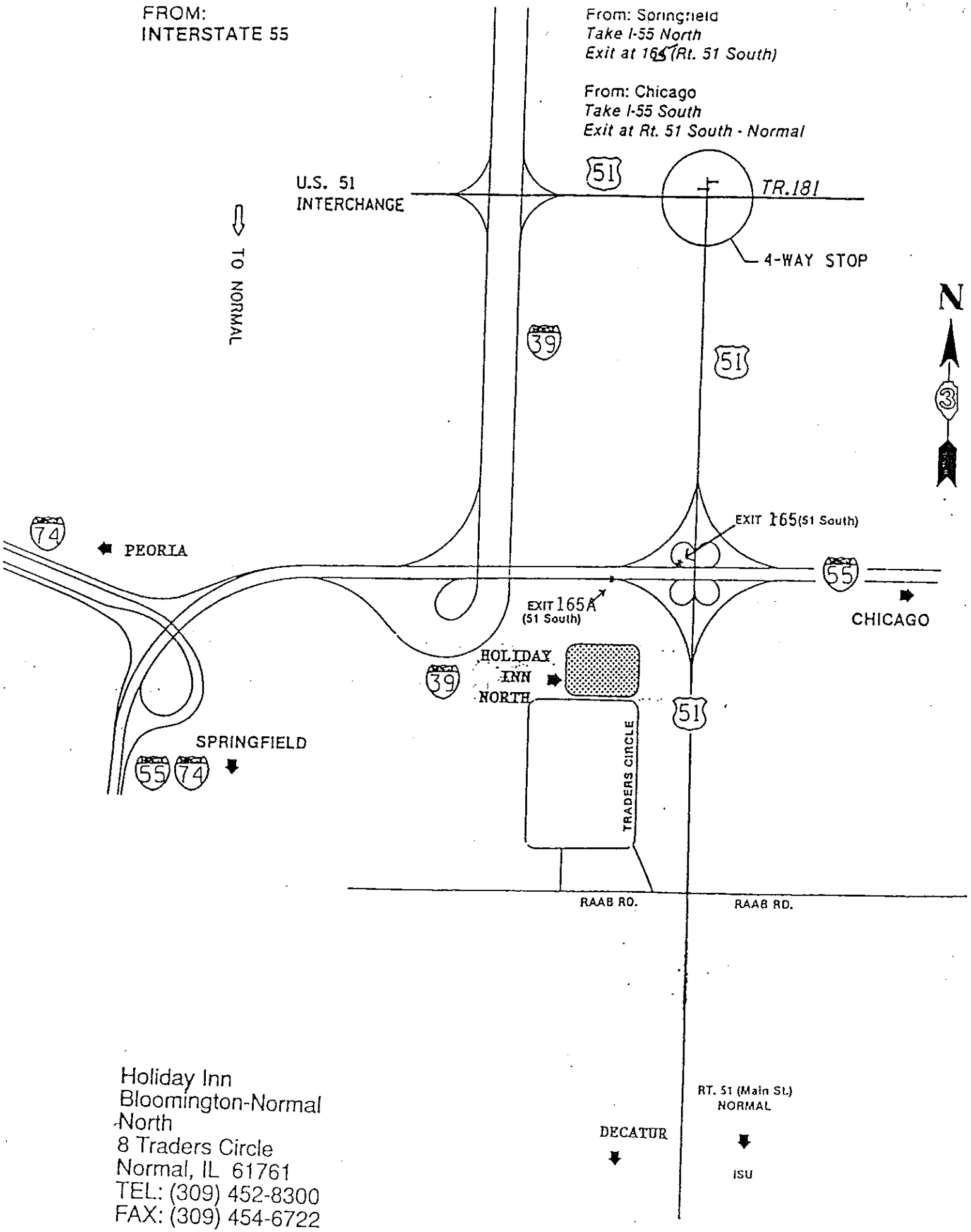
With the anticipated signing of the "Southern 7" GIS Project, the Belleville MLRA Office will be moving to the campus of Southern Illinois University in Carbondale. The project is a cooperative effort between USDA-NRCS, the Illinois Department of Agriculture, USDA-FS, USDI-FWS, SIU-C, The Nature Conservancy, and the seven most southern counties in Illinois. The Belleville office will close on February 19 and the Carbondale Office will open on January 8. The office will be located in the Southern Illinois Small Business Incubator. The new address will be:

USDA-NRCS, MLRA Office
Small Business Incubator, Room 244
Southern Illinois University
150 Pleasant Hill Road
Carbondale, IL 62901

We wish everyone a safe and joyous holiday season.

Happy Holidays





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