



# Spade and Auger

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November 2006

## *2006 Board of Directors*

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## **Message from the President**

*Mark Stolt, President.*

Another awesome fall in southern New England. I think this has been one of the best I can remember. The colors and patterns of the foliage are just remarkable. The falling leaves-- orange, red, and gold-- cover our work and remind us of the end of yet another season. As is said "to every season turn, turn, turn" --- things change. This coming year we will have two new officers leading our society. With this change we must thank the folks that have worked tirelessly for our society. Although the SSSSNE is composed of over 200 members, just like most not-for-profit organizations a few do much of the work that makes the society a success. Art Allen has served as the treasurer for the past 6 years and Joyce Rabbe as secretary for the past eight years. Their work has been the written and financial record of our society over those years. Thank you Art and Joyce for all of your efforts!!

Jim Turenne has agreed to be the society's next secretary and Rob Tunstead the new Treasurer. Our membership has accepted them as new officers with unanimous votes. Jim McManus has agreed to serve as alternate board member. Please acknowledge Jim, Rob, and Jim for continuing to support the society through their efforts. In addition, please support the society through your own contributions such as writing an article for the *Spade and Auger*, assisting with society functions, or providing suggestions for next years workshop

## **Peter Fletcher Receives Award at ASA Meeting:**

Peter Fletcher received the Irrometer Professional Certification Service Award at the 2006 American Society of Agronomy/Soil Science Society of America annual meeting in Indianapolis Indiana. The special award recognizes an outstanding certified professional who has demonstrated adherence to the certification goals and personal growth, impact on associates, and the public at large. The award is administered by SSSA and supported by the Irrometer Company through the Agronomic Science Foundation. Arthur Allen initiated the nomination for Peter—congratulations Pete!



## **Websites:**

The Scoop On Dirt—Why We Should all Worship the Ground We Walk On.  
<http://www.emagazine.com/view/?3344>

Transect Points (Philip Small's Soil Blog): <http://transectpoints.blogspot.com/>

## Rainbow Coarse-loamy, mixed, active, mesic Aquic Dystrudepts



*This profile was exposed during a soil evaluator class at the Great Swamp in Washington County, Rhode Island—looking at the color patterns you can see where the soil gets its name from!*

Photo by Mark Stolt

## A World Concealed by William Green

There is a hidden, secret place  
That seldom is revealed;  
A place where beauty, known to few,  
Lies patiently concealed;

Where soft rainbows of earthy hues  
Cast revealing light  
On histories of mice and men;  
The tracks of former life;

A complex, yet a simple place  
Where silent songs are sung  
Of ashes, ashes, dust to dust,  
And life not yet begun.

Here cold and grey and lifeless rock  
Has become fertile ground.  
Where once were stones of fiery birth,  
A garden now is found.

Where earth meets sky and moist meets dry,  
There life caresses earth.  
The conjugation of the two  
To living soil gives birth.

Here the Master's hand still paints  
A work that stands alone.  
His brush is water, warmth and life,  
His canvas, lifeless stone.

It's here the seed lies down to sleep  
To wake, a mighty oak.  
In this the farmer lays his plow  
And sows his seed in hope.

*This poem was first published in Soil Survey Horizons (Winter 2003).*

*Copyright 2004 by William Green*

## Published Soil Survey's Now Online

The Rhode Island and Bristol County, Massachusetts Southern Part soil survey reports along with the atlas sheets are now online at <http://nesoil.com>

## Welcome New Society Members

**Please welcome our new Society members:**

Katherine Daniel (basic) from Bethel, CT., Hartley Mead (associate) from Norfolk, CT., Joshua Wilson (basic) from Easthampton, CT., Scott Morrison (professional) from Holden, MA., Katie Bednaz (associate) from Westfield, MA., Joseph McCue (Professional) from Richmond, RI.

## SSSSNE Membership Declines

A report from SSSSNE Treasurer, Art Allen during the October Board meeting showed that over 30 members have not renewed their membership for 2006 and new membership applications has also dropped off. The board discussed possible reasons for the membership decline during the October meeting. In 2006 the Board decided to try to reduce it's workload by providing the Spade and Auger and other printings/mailings online. Email notices of the newsletter and registry update procedures have been sent to members. Moving to an electronic format may have caused those who do not have email (there are a lot of bounce-backs) to not renew their membership, although the board did not receive any complaints from members or any requests to receive the newsletter via mail. The board has decided to start printing and mailing the newsletter but will continue to only allow electronic registry updates.

## Hemingway's Tribute to Soil

Just Published - "Hemingway's Tribute to Soil" by Henry Mount, retired soil scientist – Natural Resource Conservation Service –USDA.

Henry Mount has worked extensively over the past 35 years in the National Cooperative Soil Survey and Internationally. He has done extensive readings and research on Ernest Hemingway's collection of short stories and novels. He has completed and published his extensive findings in a book entitled "Hemingway's Tribute to Soil." This book will be of interest to teens, adults and scientists.

Two quotes on the back of the book cover are as follows—"Scientists beware! One of the finest documentation specialists of soil characteristics was Ernest Hemingway. Henry Mount has assembled hundreds of Hemingway passages and critiqued them from a science – based perspective in his book Hemingway's Tribute to Soil."

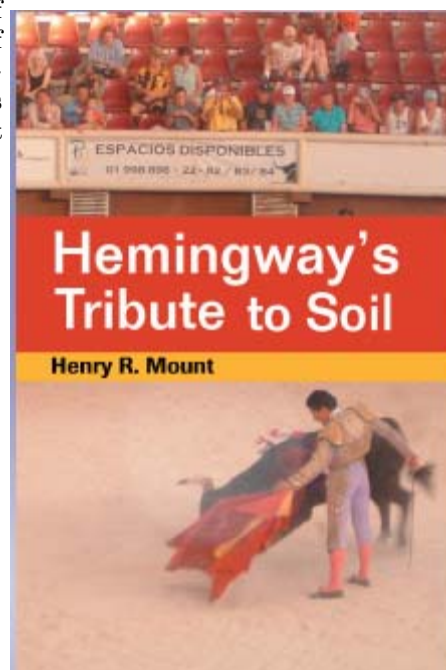
"Henry Mount grew up on the prairie of Illinois. After graduation with a degree in Agronomy at the University of Illinois, he completed a 35-year career as a soil scientist for the USDA. A world traveler, he has visited every continent and lives with his wife in Lincoln, Nebraska."

This book is available at 1-800-AUTHORS to order or visit [www.iUniverse.com](http://www.iUniverse.com). The book size is 6 by 9, contains 160 pages and sells for a very modest \$14.95.

An excellent very interesting book cover. "Ernest Hemingway wrote many of his great novels and short stories based on bullfights in Spain. The running of the bulls in Pamplona is covered every year by the network news. Hemingway facilitated this annual bullfight sequence into literary history in his novel *The Sun also Rises*. Consequently, the cover for my book has a bullfight motif with the ever-present crowd judging the accuracy of the bullfighter."

For more detail information you may wish to contact Henry at:

Henry & Ethel Mount  
8110 Prescott Avenue  
Lincoln, Nebraska  
(402) 483-0337  
email: [mounthenry@aol.com](mailto:mounthenry@aol.com)



# Red Soil Tour

In June the Society held a sold-out tour of the soils derived from red Mesozoic Aged parent materials, often considered problem soils for interpreting hydrologic conditions (hydric soil delineations and septic interpretations). The tour was held at the Auer Farm in Bloomfield, Connecticut where a series of shallow monitoring wells were installed by SSSSNE members in February and monitored by the CT. NRCS staff. The workshop opened with a series of informative talks followed by a rotation of the 3 field sites. The weather was perfect.

Byron and Janet Stone with the US Geologic Survey gave an overview of the geology of the Mesozoic rift basin and Harvey Luce talked about the soil series' mapped in the basin.

The site will continue to be monitored for the next year. The New England Technical Committee for Hydric Soils will visit the site in the Fall of 2007 to develop an indicator for the next version of Field Indicators for Identifying Hydric Soils in New England. The soils at the site were discussed by the Committee during their summer meeting and a healthy discussion of the test indicator ensued followed by an email discussion of over 13 threads back and forth. Below is the TF2 Test Indicator in Field Indicators.

Special thanks to Donald Parizak for locating the site and monitoring the wells and Margaret Washburn for organizing the workshop.

## TF2. Red Parent Material:

In parent material with a hue of 7.5YR or redder, a layer at least 10 cm (4 in) thick with a matrix value 4 or less and chroma 4 or less and 2 percent or more redox depletions or redox concentrations as soft masses or pore linings, or both. The layer is entirely within 30 cm (12in) of the soil surface. The minimum thickness requirement is 5 cm (2 in) if the layer is the mineral surface layer.(USDA, 2002).

# Summary of Changes: Keys to Soil Taxonomy 10th Edition

A new edition of Keys to Soil Taxonomy has been published and is available for download or order. The following are some of the changes for Inceptisols and Horizon Designations.

## Chapter 11 – Inceptisols

Mollic & Umbric subgroups. – References to Ap horizons in the keys are changed to specify mixing to 15 cm.

Cryepts – P. 171, Major revisions to this great group.

Delete Eutrocryepts, Establish 3 new great groups

Humicryepts, with 15 subgroups

Haplocryepts, with 17 subgroups

Revise the existing Dystrocryepts

Delete Humic, and Humic-Lithic subgroups.

Sulfaquepts – P. 171, Corrected error in item number one for Hydraqueptic subgroup to require 8 or more percent clay.

Durudepts – P. 174, Criteria revised to allow cemented layers in addition to Duripans.

## Chapter 18 – Designations for Horizons and Layers

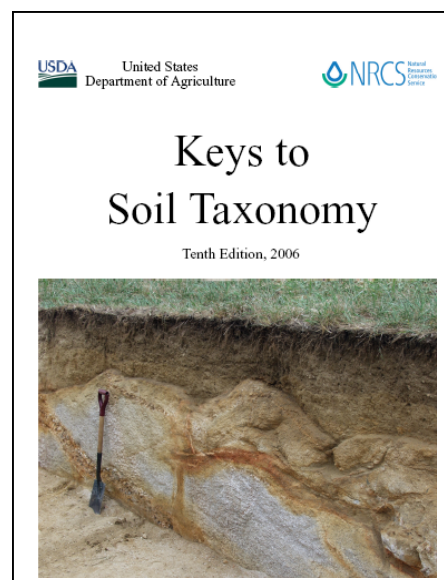
Revisions to reflect changes to Horizon nomenclature resulting from ICOMANTH, P. 313.

New master horizon "M", for manufactured layers.

New subscript "u", for layers containing artifacts.

New prefix ^ for layers formed in human transported materials.

Copies of Keys can be obtained for \$28 from the Government Printing Office: <http://bookstore.gpo.gov/> or from Pocahontas Press \$35 (5 X 9 X 0.75 inch narrow version) Pocahontas Press, Inc PO Box F Blacksburg, VA 24063



[http://soils.usda.gov/technical/classification/tax\\_keys/](http://soils.usda.gov/technical/classification/tax_keys/)

## Matching Funds for the Smithsonian Soil Exhibit

Society of Soil Scientists of Southern New England ("SSSSNE") Board Members recently announced that the Society will provide matching funds for contributions to the Massachusetts and Rhode Island soil monoliths. These soil profiles will be part of a 5,000 square foot, \$2.5 million exhibit at the National Museum of Natural History in Washington, DC, scheduled to open in 2008, depending on funding.

The Society will match contributions, dollar for dollar, up to \$2,500 per state (\$5,000 total) for any contributions to the Massachusetts and Rhode Island state soil monoliths. For more information on the project or to make a gift on-line, please visit <http://www.soils.org/smithsonian/> Or you can mail your gift, payable to ASF (Agronomic Science Foundation) with "Smithsonian MA" or "Smithsonian RI" on the memo line, to: Paul Kamps, SSSA, 677 S SEGOE RD, MADISON, WI, 53711-1086.

Whatever amount you give is appreciated; surpassing \$10,000 would ensure that MA and RI have a plaque placed on the permanent exhibit and contributors of \$1,000 or more would have their names listed on that plaque.

SSSSNE represents professional soil scientists, and those interested in soil science, in Connecticut, Massachusetts and Rhode Island. SSSSNE members have already raised more than \$10,000 to sponsor the Connecticut soil monolith in memory of founder and long-term SSSSNE member Ed Sautter.

## Massachusetts allows soil scientists to evaluate soils!

The revised MA Title V regulations for septic systems are out. They have included soil scientists and geologists as qualified to become soil evaluators but only those with a bachelor's degree or higher.

(2) In order to qualify for the examination described in 310 CMR 15.017(6), the applicant must demonstrate to the Department or an agent authorized by the Department that he/she is a Massachusetts Registered Sanitarian, a Massachusetts Registered Professional Engineer, Engineer in Training (EIT certificate) with a concentration in civil, sanitary or environmental engineering, Massachusetts Registered Land Surveyor, Certified Health Officer, Board of Health Member or Agent, an employee of the Department involved in the administration of 310 CMR 15.000, or that he/she has a Bachelor of Arts or Sciences degree or more advanced degree in Soil or Geological Sciences from an accredited college or university.

Visit: <http://www.mass.gov/dep/water/laws/regulati.htm#t5regs> for full details.

## Soil Judging 2006—URI Places 2nd!

The University of Rhode Island soil judging team recently participated in the Northeast Regional Collegiate Soil Judging Contest. The competition was hosted by the University of Maine from October 4th to the 7th. The weather was great and fall foliage almost at the peak. Despite these distractions from the soils, all of the students had a good time and learned a lot about New England soils. Students during the 4 days of practice and competition examined soils formed in lodgment and ablation till, outwash, and glaciomarine parent materials. We saw nice examples of albic and spodic diagnostic horizons and densic materials. Two URI students, Sarah Shoppell and Alan Tufts, placed 1st and 7th, respectively in the individual competition. The efforts from the URI team earned them the rights to participate in the National Collegiate Soil Judging Contest in Utah this spring.

Thanks go out to the SSSSNE for financially assisting the URI team that represented Southern New England at the competition.

Article by Mark Stolt

## 2006 Field Season Soil Mapping in the Maine North Woods—*Donald Parizek USDA-NRCS*

In 2006 I had the opportunity to map soils in northern Maine for the National Cooperative Soil Survey from June through mid September. I was one of 3 soil scientists from across the eastern U.S. who volunteered to help Maine work towards completing the initial soil survey by 2010. The two other soil scientists were David Hargis from Tennessee and Jared Beard from West Virginia. We worked with Mary Jo Kimble the soil survey project leader for western Aroostook County, Maine to collectively map over 250,000 acres of previously un-mapped northern Maine forest soils.

We worked out of the Fort Kent field office located along the banks of the Saint John River which is also the border between Canada and the United States. Our field mapping was conducted in Allagash area of The North Maine Woods; a 3.5 million acre tract of privately owned commercial forestland in northern Maine. The forestland is intensively managed for timber and pulp wood production. A vast network of logging roads provided the survey crew with excellent access into many areas along with some great road cuts for soil observations. 4 wheel drive vehicles were the mode of transportation into the field sites; beaver dams and blow downs tended to slow down the survey activities at times but we managed to get into most areas.



The soils are for the most part well developed Spodosols along with some Histisols and Inceptisols in the wetter areas. The parent materials encountered include the following: Basil till, ablation till, outwash, alluvium, eolian sands, glaciolacustrine and organic deposits. The most common bedrock is metamorphic pyllite and slate which weathers easily to a silt loam texture in the 12,000 year old glacial soils of Northern Maine. This bedrock excavates easily and is used for road fill on many of the logging roads; it also has sharp edges that tend to cut tires so traveling with a spare is recommended. Many of the soils are very shallow (<10 inches), shallow (10 to 20 inches) or moderately deep (20 to 40 inches) to bedrock. Most of the basil till is shallow to the Cd horizon it was rare to find a Cd horizon greater than 20 inches below the mineral soil surface; this may be due to the relatively young age of the soils and the shorter growing seasons (frigid temperature regime). The color of the un-weathered till and outwash was a consistent grayish brown typically a 2.5Y 5/2 or 4/2. The soils have well developed albic (E) horizons above the spodic (Bs) horizons. The darker Bhs horizons were less common and tended to be very thin. One of the interesting observations made over the summer was how the Spodosols dominated in the uplands and the Inceptisols were found only in the wetlands. Gleization seems to be a stronger soil forming process than podzolization in Northern Maine wetlands. The clay content of the soils ranged from less than 5 % to more than 30% in some of the fine loamy tills.

The soils were mapped at a scale of 1: 40,000 with a 40 acre minimum size delineation, this is an order 3 level of soil survey intensity. The soils mapping units are mostly 2 and 3 member complexes and associations. The difference between complexes and associations are that soil complexes can not be mapped out separately at a scale of 1:24,000 because they soils are found in such an intricate pattern on the landscape. Associations could be mapped separately at a scale of 1:24,000. Armed with these mapping units and some knowledge of glacial landscapes a trained soil scientist can map hundreds of acres in a day.

The primary use of the soil survey will be for forestry interpretations. The forestland consists of mixed northern hard woods and soft woods: Sugar maple, yellow birch, Balsam Poplar, Paper Birch, Red Spruce, Black Spruce, White Spruce, Balsam Fir and Northern White Cedar are all common tree species. The forestland has been harvested numerous times over the years creating a patch work of different tree species and ages. Spruce seedlings are often planted by hand to ensure regeneration of soft woods in the clear cuts.

Extensive areas of younger trees and brush create ideal habitat for moose, bear and ruffed grouse many of these were seen throughout the field season. The harsh winters, predators and clear cutting of traditional winter deer yards tends to keep the whitetail deer densities low. Some of the other wildlife sightings included Coyotes, Bald Eagles, Pine Marten and even a Mountain Lion.

Maine has more than 2 million acres of initial soil survey mapping to complete; they are currently looking for experienced soil scientists to work on detail in the Maine North Woods over the next few years. Any interested Soil Scientists should contact Wayne Hoar the NRCS State Soil Scientist for Maine at (207) 564-2628.

## USDA—NRCS Updates

### NRCS Chief Tours Rhode Island

Bruce Knight, Chief of the USDA-NRCS spent a day visiting Rhode Island farms and touring projects that the RI NRCS has been working on. This was the first time the chief of the agency has visited the Ocean State. During a lunch meeting at Save the Bay headquarters with numerous NRCS partners, Society President



*Bruce Knight and RI State Conservationist Roylene Rides at the Door*

Mark Stolt gave a presentation to the audience about ongoing work in subaqueous soils and the Mapping Partnership for Coastal Soils and Sediment (MapCoast). Following lunch the Chief toured an aquaculture farm and other coastal projects which would benefit from subaqueous soils data and mapping. Shortly after this tour, the Chief was promoted to a higher position with the USDA.

### USDA Names New State Conservationist for Massachusetts

The USDA Natural Resources Conservation Service has selected Christine Clarke to serve as State Conservationist for Massachusetts. As State Conservationist, Clarke will oversee the federal agency's programs, operations and staff in the Bay State.



Clarke currently serves as Leader of the agency's national Geographic Information System Laboratory and as NRCS Geodata Coordinator in Maryland.

A Rhode Island native, Clarke began her career with the agency in 1981 in the Newport field office as a soil conservation technician. She later served as a Soil Scientist with the U.S. Peace Corps and U.S. Agency for International Development in Jamaica. Upon returning from overseas, Clarke served as a Soil Scientist in Tolland and Hartford, Connecticut. She graduated URI in 1984 and was a student of SSSSNE founding member William Wright. She also competed in the soil judging competition. A SSSSNE membership form is in the mail! Welcome back, Christine.

## Full House for the 2006 Annual Dinner

Over 40 fellow soil scientists and spouses met at the Colonial Restaurant in Webster Massachusetts for the 2006 annual meeting. A social hour was followed by a business meeting, treasurers report and scholarship award. SSSSNE President Mark Stolt presented long time secretary Joyce Raabe and treasurer Arthur Allen III with plaques for their service to the board. Votes were then tallied for the treasurer and secretary nominations and the votes were unanimous—Rob Tunstead will be our new treasurer and Jim Turenne the new secretary. The \$500 undergraduate scholarship award was then presented to Sarah Shoppell a senior at URI. Sarah was the number one individual winner at the Maine soil judging competition and placed 3rd last year in New Hampshire. A raffle was also held for SSSSNE products with the proceeds being donated to the Smithsonian Soils Exhibit, \$392.00 was raised for the planned soils exhibit (<http://www.soils.org/smithsonian>)

The guest speaker for the evening was State Archaeologist Nicholas Bellantoni. Nick works for the Office of State Archaeology and the Connecticut Archaeology Center (<http://www.cac.uconn.edu/osa.html>) and gave an excellent power point presentation that highlighted the close relationship of soils and archaeology.



Society of Soil Scientists of Southern New  
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**SSS of SNE**



**Congratulations to  
Mark and Dana  
Stolt on the birth of  
Carter William 8 lb  
14 oz!**

*Dedicated to advancing the soil science profession and encouraging broad  
use of soil resource information.*

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Jim Turenne, editor.