Hello Fellow SCAN Members,

In the years since I joined SCAN we have had plenty of sunny days. This year we had several wet ones. Each has its merit. Our outing at Ernest F. Hollings ACE Basin was a pleasant but wet day. We were fortunate that the day was not also cold. We enjoyed seeing wildlife in a rainy setting. Attending were Bill Hamlin, Phil Harpootlian, Kate Hartley, Greg Mancini, Tom Jones, Mary Douglass, Jan Ciegler, Jules Fraytet, Ben Gregory, Wayne Grooms, Pat and Jerry Bright.

I took the opportunity to try out some gear. I was pleased with my lightweight poncho and rain chaps. I wore a day pack and had a camera and binoculars under the poncho. All were kept dry. Rain chaps are great for the sudden rain. They pack down the size of a fist, slide over shoes, allow more air circulation than rain pants and are less expensive. The downside is if you wish to sit you will get your bottom wet.

Unfortunately we were limited in where we could go as this is a season where the birds use the impounded ponds. I got a glimpse in the distance and an aural confirmation of greatness beyond where we were allowed to travel. Some of the folks enjoyed birding from rocking chairs on the Grove Plantation house second story porch. This would have been a great location for a spotting scope on a sunny day. The steady rain dropped the visibility on this day to the point where distance viewing was impossible.

Despite the fact that we were unable to reach the big impoundment we were able to observe a nice variety of wildlife in the small pond near the plantation home and the GPS verified that we did manage to walk about 4 miles.

SCAN’s third decade accomplishments have been printed. “From Marsh to the Mountain” will be distributed at meeting. You don’t want to miss this opportunity to pick up your copy. It is free for all current SCAN members. It includes a searchable CD with FF listings and trip notes!

Also this month is our annual meeting. We once again have some great speakers for our learning enjoyment. The Clemson Sandhills facility is a great location for our annual meeting. We can bring food and soft drinks. There is an ice machine, sink and refrigerator. Come early and enjoy coffee and donuts. Pat will make a couple of loaves of banana nut bread. Feel free to bring a favorite to share. Directions follow in this newsletter.

I look forward to seeing you all there. --- Jerry Bright
Meeting Agenda (Times are approximate. There should be time for Q&A)

9:30 Gather for coffee, donuts and conversation

10:00 Opening remarks

10:15 Billy Moore - The subterranean estuary: An unseen pathway between land and sea
Billy will introduce the concept of the subterranean estuary, where fresh water in coastal aquifers mixes with sea water. The mixture reacts with aquifer solids to release nutrients, metals, carbon compounds, and natural radioactive tracers that we use to assess how much of this water enters the ocean. The subterranean estuary is expanding due to mining of fresh water from the aquifers, sea level rise, construction along the coast, and other changes. This expansion is making the subterranean estuary even more important in the coastal ecosystem. Billy will conclude with a case study of how water from the subterranean estuary can be tied to hypoxic (very low oxygen) waters along Myrtle Beach.

11:45 Break for lunch
The Lake House has a wonderful porch but you need to bring a chair to enjoy the view. Bring a bag lunch and walk around the Clemson Sandhills property woods and lake. Or you can cross the street for the many food offerings at the Sandhills outdoor mall. See www.villageatsandhill.com/dining.aspx

1:15 Jim Welch - 25 years of Nature Scene
A few choice memories and smiles of working with Rudy Manckie on NatureScene trails around the world. From Alaska to Maine to Costa Rica to Siberia and Chernobyl, Twenty five years and 250 shows, and all of it a great adventure.

2:30 Dixie Dramel - Adventures in the Field
Collecting for the Clemson Herbarium in Great Britain
Dixie will share some of the highlights of her fieldwork abroad emphasizing points of connection between the native and naturalized plants of Britain and our South Carolina native flora. She will also explain just how herbaria operate and why they are important to anyone interested in botany.

3:30 Business meeting
Treasurers report
Election of officers. The following have agreed to have their names placed in nomination for 2014. Additional nominations will be accepted from the floor, providing that the nominees have given their consent.
President - Gordon Murphy
Vice-president - Greg Ross
Secretary - Mary Douglass
Treasurer - Greg Mancini
Historian - Gordon Murphy
Database Manager - Jan Ciegler
Northern Regional Director - Phil Harpootlian;
Western Regional Director - Marsha and Bob Hamlin
Central Regional Director - Caroline Eastman
Southern Regional Director - Kathy Boyle and Wayne Grooms
Eastern Regional Director - Kim McManus and Paul Kalbach
Old Business
New business
Adjourn (Our contract is good till 4:30)

5:30 or whenever we get there
Pot luck and social at Jan Ceigler’s home.
Jan invites everyone to her lovely home for pot luck, further conversation and socializing following the annual meeting. See information and directions in this newsletter.
WILLARD S. MOORE

Education
B.S., 1962, Chemistry, Millsaps College, Jackson Mississippi
M.A., 1965, Geology, Columbia University, New York, NY
Ph.D., 1969, Earth and Space Sciences, SUNY at Stony Brook, NY

Professional Experience
2000 to present: Research Professor & Distinguished Professor Emeritus, USC
2010 to present Visiting Distinguished Scholar, Xiamen University, Xiamen, CN
2009 to present Visiting Distinguished Scholar, East China Normal University, Shanghai
2008 to 2010: Fellow, Hanse-Wissenschaftscollege, Germany
2001 to 2004: Adjunct Scientist, Woods Hole Oceanographic Institution
1981 to 2000: Professor of Geology and Marine Science, Univ. of SC
1981 to 1985: Chairman, Department of Geology, University of South Carolina
1976 to 1981: Associate Professor of Geology and Marine Science, Univ. of SC
1971: Research Fellow, Tata Institute of Fundamental Research, Bombay, India

Society Membership/Professional Activities & Honors
American Geophysical Union, elected Fellow 2006
Distinguished Alumni Award, Stony Brook University, 2007
Who’ Who in America, 2009-present
B. H. Ketchum Award, Woods Hole Oceanographic Institution, 1999
USC Education Foundation Award for Research in Science & Engineering, 1993
Marine Chemistry, Member Editorial Board, 1993-present
SCOR, Groundwater Discharge Working Group 1998-2004
Coastal Ocean Processes (CoOP), Scientific Steering Committee 1998-2001
NSF Future of Ocean Chemistry in the US, Steering Committee 1997-1999
American Association for the Advancement of Science
Sigma Xi, President USC Chapter, 1978-79
Oceanographic Society
Geochemical Society
Explorers Club, Chairman Greater Piedmont Chapter, 1995-1996

Total Number of Refereed Publications: 210, H index = 48.
Review Articles: 19
US patents: 2

Five Selected Publications
• Moore, W. S., The subterranean estuary: a reaction zone of ground water and sea water, Marine Chemistry, 65, 111-126, 1999 (about 300 citations).
• Moore, W.S., J.O. Blanton, S. Joye, Estimates of Flushing Times, Submarine Groundwater Discharge, and
JIM WELCH

Jim Welch began his television career at KONA-TV in Honolulu, Hawaii as a news reporter-photographer in 1964. In 1967 he left Hawaii and joined the news team at WIS-TV in Columbia and served as a reporter and news anchor until 1974. Jim then became news director and later program director at the SCETV Network where he produced, wrote and hosted a variety of news and public affairs programming. He hosted the nationally televised series NatureScene, with naturalist Rudy Mancke, a series of 250 half hours produced on location in all fifty states, the Canadian provinces and several foreign countries.

Jim was born and raised on a Vermont dairy farm and knew from age 12, following a television appearance on a CBS Quiz show in New York City that he wanted to be on television and not on the farm. After graduating from Alan Hancock College in Santa Maria, California, he attended the University of Miami, UCLA and the University of Hawaii and went on to serve three years in the Army as a writer. In 1998, Jim was awarded the degree of Doctor of Science from Lander University. His first poem, My Prayer, based on his love of the outdoors, has been published in nature magazines, newspapers and periodicals. In 2010 Ceille and Jim Welch were named Literary Residents at The Richland Library and have been awarded the Lucy Hampton Bostick Award for significant literary achievement.

DIXIE DAMREL

Dixie Damrel is curator of the Clemson University Herbarium and has spent part of each of the last several summers in the United Kingdom, collecting plants and working with the Oxford University Herbaria.

Dixie received her MS Arizona State University in 2001. Dixie has been the curator of the Clemson University Herbarium since 2008. She came to Clemson after years of botanical experience in the US Southwest as assistant curator of the Desert Botanical Garden Herbarium in Phoenix. She also established and curated an herbarium for the two million acre Tonto National Forest where she served as staff field botanist. At Clemson she teaches field botany and plant taxonomy labs and is involved in documenting the Clemson Experimental Forest as well as the SC Botanical Garden. She is currently preparing a flora of the Silver Bluff Audubon Center and Sanctuary in Aiken County.

Grove Plantation House at Ernest Hollings ACE Basin
Directions to Clemson Lake House
There are many ways to get there. Use the maps below to guide you. However, if you drive on I-20 between I-77 and Spears Creek Church Road the road divides into an express lane and a local lane. Stay in the right land in order to make your desired exit. SCDOT has a map on their web site  See it at: www.scdot.org/inside/images/1-20/AerialLocationMap.jpg
For those of you with a GPS navigation system
The turn into the Clemson Sandhills Experimental Station is at (34° 07’ 55”, -80° 52” 33”)
Follow the dirt road to the Lake House at (34° 08’07”, -80° 52’ 15”)

White Ibis at Ernest Hollings ACE Basin
Come One, Come All!
Everyone is invited – members, spouses, guests, drop-ins. After the Annual Meeting, drive over to Jan Ciegler’s house for a potluck supper and socializing. If you’ve never been there before, this is your chance (and if you have been there, do come back!). Please bring some food to share (a modest quantity – no leftovers desired). Eating utensils, sodas, beer, and wine will be provided. We know you’ve been in a meeting all day, so we don’t expect hot casseroles; picking up fast food on the way is just fine.

From Clemson University Sandhill R & E Center, turn left onto Clemson Road, and drive to I-20; turn right toward Columbia. Drive 16 miles to I-26, and take the second exit East toward Charleston. Stay near the right lane, as the left lanes go into Columbia. Cross the Saluda River and take Exit 110 (US-378) right toward Lexington. Drive past Lexington Hospital, and then turn right at the second traffic light, just past the Mobil Station (labeled Fairlane Street). Continue straight ahead to the cul-de-sac, and park on the street.

American Alligator at Ernest Hollings ACE Basin
Hollings ACE Basin Nat. Wildlife Refuge
Charleston Co., SC
December 14, 2013

This list was produced by SCAN from sightings produced by SCAN members and is subject to revision as needed. An asterisk (*) indicates a new sighting for SCAN. Send any changes or corrections to Jan Ciegler at jciegler@sc.rr.com. Please indicate exactly to which flora/fauna list you are referring. Thank you.

**FLORA**

**Resurrection Fern**
- Pleopeltis polypodioideis
  - michauxiana

**Spruce Pine**
- Pinus glabra

**Longleaf Pine**
- Pinus palustris

**Loblolly Pine**
- Pinus taeda

**Eastern Red Cedar**
- Juniperus virginiana
  - virginiana

**Bald-cypress**
- Taxodium distichum

**Dwarf Palmetto**
- Sabal minor

**Cabbage Palmetto**
- Sabal palmetto

**Common Rush**
- Juncus effusus solutus

**Switch Cane**
- Arundinaria tecta

**Saltmarsh Foxtail-grass**
- Saccarum giganteum

**Common Cattail**
- Typha latifolia

**Spanish-moss**
- Tillandsia usneoides

**Cathrier**
- Smilax bona-nox

**Southern Magnolia**
- Magnolia grandiflora

**Swamp Bay**
- Persea palustris

**Sweet Gum**
- Liquidambar styraciflua

**Common Wax-myrtle**
- Morella cerifera

**Swamp Chestnut Oak**
- Quercus michauxii

**Water Oak**
- Quercus nigra

**Cherrybark Oak**
- Quercus pagoda

**Post Oak**
- Quercus stellata

**Live Oak**
- Quercus virginiana

**Sparkleberry**
- Vaccinium arboreum

**Sesban**
- Sesbania herbacea

**American Holly**
- Ilex opaca opaca

**Yaupon**
- Ilex vomitoria

**Popcorn Tree**
- Triadica sebifera

**Muscadine**
- Vitis rotundifolia
  - rotundifolia

**Eastern Poison Ivy**
- Toxicodendron radicans
  - radicans

**Carolina Ponyfoot**
- Dichondra carolinensis

**Brazilian Vervain**
- Verbena brasiliensis

**Beautyberry**
- Callicarpa americana

**Cross-vine**
- Bignonia capreolata

**Trumpet- creeper**
- Campsis radicans

**Japanese Honeysuckle**
- Lonicera japonica

**Common Elderberry**
- Sambucus canadensis

**Silverling**
- Baccharis halimifolia

**Elephant's-foot**
- Elephantopus tomentosus

**Common Dog-fennel**
- Eupatorium capillifolium

**Flat-topped Goldenrod**
- Euthamia caroliniana

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<th>FAUNA</th>
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<tbody>
<tr>
<td><strong>Aphodiine Dung Beetle</strong></td>
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<td>* Aphodius crassulus</td>
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<td><strong>Cloudless Sulphur</strong></td>
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<td>Phoebis sennae eubule</td>
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<td><strong>American Alligator</strong></td>
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<tr>
<td>Alligator mississippiensis</td>
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<td><strong>Green Anole</strong></td>
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<td>Anolis carolinensis</td>
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<td><strong>Pied-billed Grebe</strong></td>
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<td>Podilymbus podiceps</td>
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<td><strong>Snowy Egret</strong></td>
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<td>Egretta thula</td>
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<td><strong>Great Egret</strong></td>
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<td>Casmerodius albus</td>
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<td><strong>Great Blue Heron</strong></td>
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<td>Ardea herodias</td>
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<td><strong>White Ibis</strong></td>
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<td>Eudocimus albus</td>
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<td><strong>Blue-winged Teal</strong></td>
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<td><strong>American Coot</strong></td>
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<td>Fulica americana</td>
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<td><strong>Laughing Gull</strong></td>
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<td>Larus atricilla</td>
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<td><strong>Ring-billed Gull</strong></td>
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<td>Larus delawarensis</td>
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<td><strong>Turkey Vulture</strong></td>
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<td>Cathartes aura</td>
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<td><strong>Black Vulture</strong></td>
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<td>Coragyps atratus</td>
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<td><strong>Bald Eagle</strong> (juvenile)</td>
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<td>Haliaeetus leucocephalus</td>
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<td><strong>Red-shouldered Hawk</strong></td>
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<td>Buteo lineatus</td>
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<td><strong>Merlin</strong></td>
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<td>Falco columbarius</td>
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<td><strong>Belted Kingfisher</strong></td>
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<td>Ceryle alcyon</td>
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<td><strong>Yellow-bellied Sapsucker</strong></td>
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<tr>
<td>Sphyrapicus varius</td>
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<td><strong>Pileated Woodpecker</strong></td>
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<td>Dryocopus pileatus</td>
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<td><strong>Eastern Phoebe</strong></td>
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<td>Sayornis phoebe</td>
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<td><strong>American Crow</strong></td>
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<td>Corvus brachyrhynchos</td>
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<td><strong>Fish Crow</strong></td>
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<td>Corvus ossifragus</td>
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<tr>
<td><strong>Eastern Bluebird</strong></td>
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<td>Sialia sialis</td>
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<tr>
<td><strong>Cedar Waxwing</strong></td>
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<tr>
<td>Bombycilla cedrorum</td>
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<tr>
<td><strong>Yellow-rumped Warbler</strong></td>
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<tr>
<td>Dendroica coronata</td>
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<tr>
<td><strong>Song Sparrow</strong></td>
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<tr>
<td>Melospiza melodia</td>
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<tr>
<td><strong>Raccoon (scat)</strong></td>
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<tr>
<td>Procyon lotor</td>
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<tr>
<td><strong>Wild Pig (tracks, scat, digging)</strong></td>
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<tr>
<td>Sus scrofa</td>
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<tr>
<td><strong>White-tailed Deer</strong></td>
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<tr>
<td>Odocoileus virginianus</td>
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2014 Proposed Outings

February 22 – Marsha & Bob Hamlin - Western
Phinizy Swamp Nature Swamp

March 22 – Kathy Boyle & Wayne Grooms - Southern
Cheeha in ACE Basin
Due to access or hunting Cheeha may not be available. Alternates include:
• Dargan Tract – Eastern
• 40 Acre Rock new addition - Northern

April 26 – Caroline Eastman - Central
Santee WMA

May 24 – Kathy Boyle & Wayne Grooms - Southern
Hell Hole Swamp

June 28 – Kim McManus & Paul Kalbach - Eastern
Waties Island

July 26 – Phil Harpootlian – Northern
DuPont Forest

August 23 – Marsha & Bob Hamlin – Western
Carey Conservation Trust

September 27 - Kim McManus & Paul Kalbach – Eastern
Sugarloaf Mountain and Campbells Pond

October 25 – Phil Harpootlian – Northern
Andrew Jackson State Park

November 15 - Caroline Eastman – Central
Congaree National Park – McCord’s Ferry

December 13 - Kathy Boyle & Wayne Grooms – Southern
Webb Center

The above list is tentative. The District Director has the final decision on the location of the outing. Hunting and permissions may exclude a particular place or date. District Directors and the President can also offer specials for locations of interest or scouting for future SCAN trip
SCAN New Membership & Renewal Form
(Members must be age 15 or older)

Today’s Date: _________________________

Dues: $12.00 per calendar year due by the January annual meeting
$5.00 per calendar year for each additional member at the same address
Note: Persons joining in July or later pay 1/2 price. Make checks payable to SCAN.

Name(s): 1. _________________________________________________________
         2. _________________________________________________________
         3. _________________________________________________________
         4. _________________________________________________________

Mailing Address: Please notify SCAN of home and email address changes.

Street/PO Box __________________________________________________________

City __________________________ State _____ Zip Code ____________

Newsletters will be sent through e-mail. Please print clearly the preferred address or addresses.

E-mail:  1. _______________________________________________________________
        2. _______________________________________________________________
        3.  ______________________________________________________________
        4.   ______________________________________________________________

Phone(s): (_____) ___________________________ (Home)
          (_____) ___________________________ (Work)
          (_____) ___________________________ (Cell)

Mail form and check to:
SCAN
PO Box 5651
Columbia, SC 29250-5651