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## Surveyors Report: Georgia's Water Shortage and a Surveyor's Miscalculations

Because of typographical errors in a book of mathematical tabulations and poorly constructed equipment, the nearly infinite supply of water in the Tennessee River is not available to the citizens of the State of Georgia. Residents of Atlanta and portions of northwest Georgia are experiencing one of the most drastic droughts in years and now fret at the actual possibility that they could completely run out of that vital liquid. Little do they know that because of a series of historical accidents, the State of Georgia should have full access to those sweet waters of the Tennessee River.

In June of 1796 the United

States Congress established the State of Tennessee. Part of the Act designated the south boundary of the new State to be the 35th degree

*But, unfortunately for the citizens of the State of Georgia, the corner is where the corner is.*

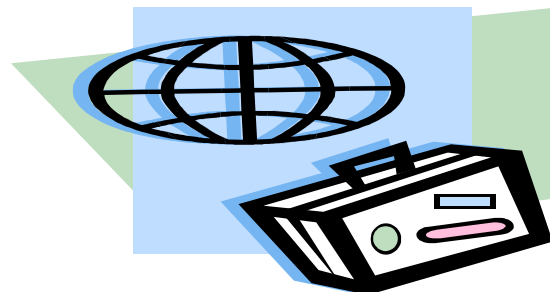
of north latitude. Georgia, at that time, had already enjoyed eight long years of statehood. This Act officially established the line between the former colony and the new state. During this period, the boundaries of Georgia extended all of

the way to the Mississippi River.

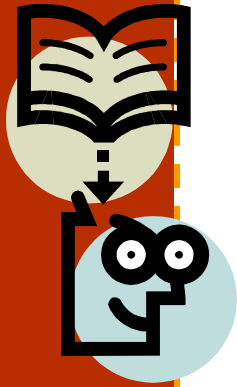
In 1802 Georgia gave up all possession of what was then known as the Mississippi Territory (currently the States of Alabama and Mississippi). The 1802 Articles of Agreement and Cession described the new western boundary of Georgia to be, in part, "...thence in a direct line to Nickajack, on the Tennessee River; thence crossing the said lastmentioned river, and thence...along the western bank thereof to the southern boundary of the State of Tennessee."

In the spring of 1818, steps were made to mark this boundary corner (Alabama, Georgia and Tennessee). As

Continued on back page...



**Our Next Meeting**  
**March 6, 2008**  
**See inside for details**



Learning is a never ending quest!

*A flower is an educated weed...*

*Luther Burbank*



## Professional Development

CLSA announces the start of a voluntary Professional Development Program that will be available to Land Surveyors and Civil Engineers authorized to practice land surveying. The purpose of this program is to encourage and support the continued professional growth and competency of Land Surveyors and to recognize their

continuing education efforts.

Every participant will be required to obtain 30 Professional Development Hours per two year period.

There are many opportunities to earn hours. You will be happy to hear that many of the things you are doing already will count. Here is a partial

list of acceptable activities:

Attending presentations, Chapter meetings, workshops

University classes Publishing papers, articles,

Initial presentation of lecture or instruction

Membership is not required for this service, but members do receive a reduced fee for participation!

## Editor's Notes

The ability to bloom is latent in every seed or idea. What makes the bloom actually possible is effort.

In this issue are some new ideas coming from many sources. Some are the result of individual effort and some are the culmination of efforts made by a great many over time. It is our hope that these new ideas will encourage you to step outside and participate in some growing activities of your own.

Speaking of new things, this newsletter is the first prepared on the new laptop acquired by our skilled tech team.

Send your bouquets of ideas to:  
focalpointeditor@gmail.com

## GeoWoodstock IV May 24, 2008

**GeoWoodstock** is an annual get-together for geocachers from all over the world. In five short years **GeoWoodstock** has become the world's largest geocaching-related event. It is a relaxed, friendly, and free gathering. Typical activities at past GeoWoodstock events have included meeting people, prize giveaways, geocoin sales and trading, travel bug swaps, and of course, caching like crazy. There have been large and small cache runs, and records have been

made for the most caches found in a 24-hour period.

In 2008, **GeoWoodstock** is going to be all that

**Our Chapter is manning the booth at this event.**

**CLSA State Board voted to fund the sponsor fee.**

and much more. **GeoWoodstock VI** will take place on ...

... a **farm**, echoing the setting of a Woodstock of another era. Attendees can hang out, find caches, take a train

or hay ride, climb a tree house, slide down a couple of giant slides, go panning for marbles, or play with the animals in the petting zoo. And that's just the stuff that the farm has to offer.

*Posted by LilDevil on Wednesday, October 10, 2007 on GeoWoodstock website*



### Special Note:

The booth manned by Chapter members will be a CLSA outreach and a PR effort to show off our cool technology. Imagine a captive audience already interested in a surveying activity!

## Upcoming Sacramento Chapter Meetings

Thursday, March 6 - Cattlemen's Roseville

Group Discussion of Current Events

5:00 - 6:00 relaxation/attitude adjustment

6:00 - 7:00 business meeting and dinner

7:00 - 8:30 group discussion

Directions:

2000 Taylor Road Roseville, CA 95678

*From the West:* Exit Rocklin-Taylor Road. Cross over freeway and turn right at first driveway.

*From the East:* Exit Eureka road. Cross over freeway to Taylor Road (first stop light). Turn left and follow Taylor Road back over the freeway. Turn right at first driveway.



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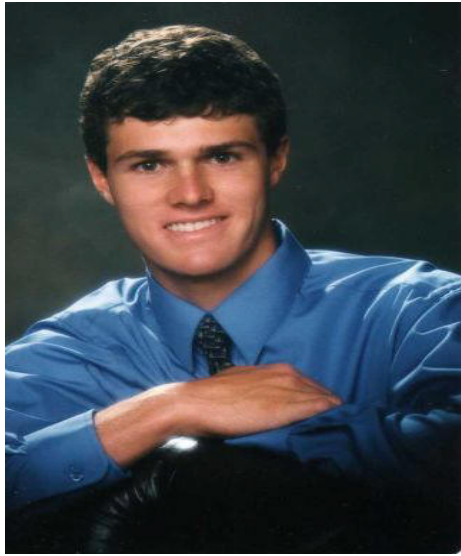
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*President*

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# Dave Goodman Scholarship



This year's recipient, **CSUF Junior Kent Poythress** received his scholarship at the **Fresno State Conference** from our own **Rob McMillan**.

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# Job Announcement



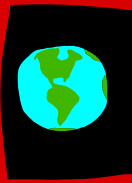
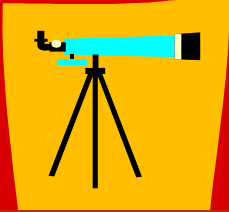
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## NGS Info presented by Marti Ikehara



At our February meeting, there was a discussion about new information from NGS. Changes have been made to the NGS datasheets. The most notable change is the expression of accuracy, which is now shown as positional accuracy. Leveling sources can now be GPS or conventional leveling. Vertical datums will be redefined as part of the 10 year plan. Marti made note of other changes to come.

One change is that she will be retiring in about 5 years.

She reminded us that she is available to answer questions, but much of her duties take her away from the office, so be patient about getting a response.

## Recruiting Success Story by Rob McMillan

**So there I was...** at the Northern California Construction Careers Awareness Day (CCCAD) - an event that promotes awareness of the opportunities in the construction trades available to young people. The morning was set up for High School students; the afternoon was a "helmets to hardhats" session introducing members of our armed forces to construction careers after completion of their military service.

After meeting and greeting about 1200 high school students, telling them about this cool profession called Land Surveying, I was ready for some people with a slightly longer attention span... Along came a young Airman. He was on terminal leave from the USAF. He had been a specialist working with satellites. His dad was with him, and had already introduced him to the operators and grade checkers at the Operating Engineers, Local 3 booth. The father was a union laborer for one of the big construction firms, and although he had provided well for his family, he wanted better for his son.

They stopped at the Caltrans booth, and asked questions about Land Surveying as a profession. I showed him a total station, and demonstrated some of the capabilities. We talked for a half an hour or so, about all the different career paths that are available to a person interested in land

surveying. We discussed the Union apprenticeship program, educational opportunities, internships, opportunities at Caltrans after passing the LSIT exam, and the role of professional societies such as CLSA in establishing working relationships and maintaining high professional standards.

The more we talked about all the aspects of land surveying, the more interested the Airman became in choosing his path, and making his mark. I invited him to the Chapter meeting, which was only a couple days away. He arrived early to the meeting, right at the start of the pre-meeting stage. I introduced him in the meeting as an aspiring land surveyor looking for an entry-level position with a local firm. At the end of the meeting, he was busy talking with several managers of local firms. I told him to call or e-mail me if there was anything I could do for him.

That was the last I saw of the Airman,



until last month at the International Sportsman's Expo (ISE show) at Cal Expo. I was walking around, trying to decide what to spend money on next, and I recognized a familiar face across the exhibit hall. I couldn't recall the Airman's name, but I remembered the events listed above, and asked him what he was doing? He proudly said that he had been accepted into Local 3, was attending the Union surveying classes, and happily working for a large firm here in the area. I'd call that a recruiting success story... What will you do to create one of your own?



President Paul Tonn called the meeting to order.  
Introduction of attendees.

#### President's Report

Paul reported on the Scout merit badge program and had Clayton report on his meeting with the scouts for the survey merit badge. Clayton reported that the boys were getting to understand monuments and property rights. After the introductory lesson, they will be going to the State Capitol for traverse and closure on the 16th.

Dave Goodman scholarship was handed out at conference. (See page 5)

#### Vice President's Report

Next meeting is at Cattlemen's in Roseville. March will be a brainstorming session and discussion of future speakers. .

#### Secretary

Minutes approved as read.

#### Treasurer

About \$5000 in checking and \$10000 in the interest bearing account.

#### Board Representatives Report

State Board meetings will be held in Oakland for the next 4 for ease of travel. Reports and agenda are 120 pages long. If interested in .pdf , contact Rob. (robmcmillan@comcast.net)  
Discussion of the Professional Development Program particulars.

#### Committee Reports

Skipped

#### Old Business

LS review Instructors got gift cards.

Sac City has intro and advanced surveying this term. School might get funding for equipment. Will have to work with Ed Zimmerman on equipment donation by chapter.

GeoWoodstock-Rob went to meeting on Saturday. State CLSA will allow us to use their booth and will cover the \$150 fee. We will have to pick up the booth by May 24th. Organizers are excited to have us attend.



Focal Point– Need MS Publisher. Discussion about purchasing a computer. Motion to buy laptop and programs for \$1200. Seconded. Discussion followed with motion passing.

Conference-Several going. State asking for student sponsorship and door prizes. Motion to sponsor 3 students with \$900 for the conference. Seconded. Motion discussed and passed.

LSIT Prep Class– Pass rate for last exam was 30%.. Monterey has an 8 week class. We are considering having one in August. Jerry Miller has a class in Santa Rosa that lasts 32 hours, costing \$295 /person.

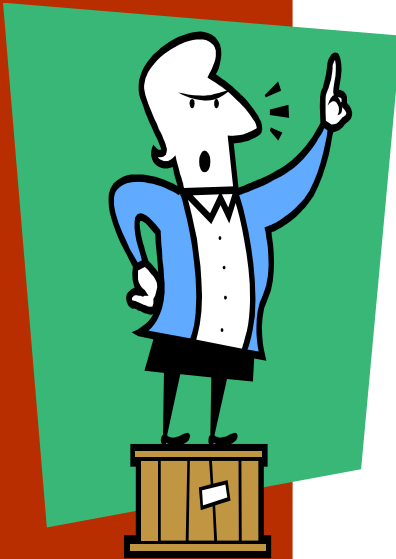
Speaker for the evening was Marti Ikehara, State NGS Advisor.

## January Talk by Pat Tami

Topics I covered during talk:

- The Board for Professional Engineers and Land Surveyors (BPELS) is made up of 7 public members and 6 professional members only one of which is a PLS.
- The BPELS has an annual budget of approximately \$9,000,000.
- Exam subversion is very important to the BPELS. If an LSIT exam is lost or compromised while in the boards control it could cost the board about \$300,000 in fines from NCEES.
- The BPELS examined about 14,000 people last exam administration.
- Staff reviews applications for licensure and Ric Moore addresses problems.
- The BPELS is looking into contracting out the exam administration.
- The BPELS is looking for licensed individuals to be part of the examination process and enforcement activities.
- The total number of outstanding enforcement cases is dropping while the number of new cases is increasing. Most enforcement cases deal with exam subversion, unlicensed activity, contracts or competence.
- The BPELS is working toward having a full time Professional Land Surveyor on staff by March 2009. This would replace the current position held by Ric Moore.
- There is no current push by the BPELS to make continuing education a requirement.
- If your license is not renewed before the expiration date you may not practice.
- The new reporting of legal actions program became effective January 1, 2008. It requires notifying the BPELS of settlements over \$50,000.

Visit the BPELS web site at <http://www.dca.ca.gov/pels/>



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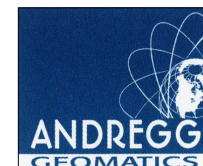
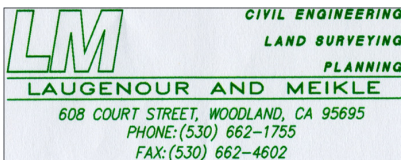
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## Surveyors Report (continued from Page 1)

recounted in a March 2004 article in Professional Surveyor by Greg Spies, a mathematician named James Camak gathered at the village of Nickajack along with a group of appointed commissioners and fellow surveyors. The village occupied a large flat plain on the south bank of the Tennessee River just below the cave of the same name. Agreeing they were in the vicinity of the 35th parallel, the surveyors proceeded to make a number of astronomic observations.

Prior to the proliferation of global positioning units, surveyors relied on the heavenly bodies to determine their location on the face of the earth. Books of known data on various stars and the sun called ephemerides were available and relied upon by the early surveyors. By making observations at specific times and performing calculations based on the information in the charts, it was possible to arrive at quite precise answers as to one's location. However, the answer was only as good as the charts being used as well as the apparatus employed. The first session placed them anywhere from 11 miles north to 11 miles south of the target line. Wisely, the group decided to dispense with that particular instrument and all calculations to date. Mr. Camak observed for 10 more days and nights, finally to arrive at the conclusion to place the corner stone "...one mile and 7 chains [about 5700 feet] from the Tennessee River and

about one quarter of a mile south of Nickajack Cave."

Camak taught mathematics at the University of Georgia in Athens. He had fruitlessly begged the Governor to allocate decent, state of the art surveying instruments. These never arrived, so he relied on simply a sextant "of English construction". Sextants being primarily for marine usage simply get you close to your destination. Camak also expressed doubts about his astronomical tables stating they "were not such as I could have wished them to be".

In 1826, Camak had occasion to return to the Cherokee village below the cave. Once again, he had been appointed by his State to mark the entire boundary line between Georgia and Alabama. Again, Camak made 10 days of astronomic observations. This time, he determined that the northwest corner of Georgia was marked 37.9 chains (about 2500 feet) south of the 35th parallel. So that year, the "Camak Stone" was pulled up and moved north to its current location.

Unfortunately for the State of Georgia he was terribly off with the corner location in both cases.

Present day, using modern mapping and measuring techniques, we now know that Mr. Camak placed the now recognized,

established and accepted corner approximately 5600 feet (about 1.1 miles) south of where the Congressional Acts and the record description say it should have been placed. The original record location actually falls within the old bed of the Tennessee River, prior to the formation of the Nickajack Reservoir and its subsequent flooding. The Tennessee River actually cut into a corner of Georgia, much as I-24 cuts into the state at Wildwood today.

But for expenses thought saved and rushed bureaucrats of days long gone by, this current water shortage crisis within the State of Georgia could have been avoided. Many a land title attorney and land surveyor can discuss the various merits of the currently established location of this corner. But, unfortunately for the citizens of the State of Georgia, the corner is where the corner is. Georgia is rightly entitled to those waters of the Tennessee River but not legally so.

*Bart Crattie is a Land Surveyor registered in the States of Georgia and Tennessee. He serves on the Board of Directors of the Surveyors Historical Society.*

*Article reprinted by permission. Originally published by American Surveyor February 2008*

