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A Newsletter from the Florida Geological Survey

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Chief's Corner by Walt Schmidt

Facts, Myths, Misconceptions, and Media Misrepresentations About Global Warming

Many reports on climate change (almost invariably referred to as “global warming”) continue to fill our TV screens, newspapers, and magazines. Most of these reports ignore the bulk of scientific information reported or presented in various professional journals. For example, the cooling trend in the lower five miles of the atmosphere detected by weather balloons and independently confirmed by NASA’s satellites. This information shows an average drop of 0.19°F in air temperature since 1979. Most media reports ignore any evidence for cooling, instead focusing on records from land stations which show a slight increase during the past 100 years. They fail to point out this increase is measured mainly around urban centers. The heat absorption and reflectance properties of an area change when concrete, asphalt, and steel replace fields, forests, meadows and wetlands. Further, 90% of this urban warming occurred before 1940 which is also routinely not mentioned.

If carbon dioxide emissions from factories and cars were causing warming, most of the increase in temperature should have occurred after 1940, when industries and cars became much more plentiful, causing carbon emissions to increase significantly. Also left unreported is the fact that from 1946 until 1975 (when industrialization greatly expanded), urban surface temperatures actually cooled. During that time, many in the media feared a new Ice Age and terms such as “global cooling” and “global chilling” were used.

Is the climate changing? Yes! It changes continually, every year. Sometimes it’s warmer, sometimes its cooler, or wetter or drier, etc., but it is never the same. It is the result of the interaction of dynamic and complex natural systems (both terrestrial and extra-terrestrial). There is wide awareness of the ways the activities of people can affect their own environmental well-being, that of ecosystems and even weather. There is less recognition, however, that human activities occur within natural changes which take place on varying time-scales. For example, data collected suggests climate is cooling in the long term over the last 8,000 years. The usual gap between major glacial ages during the Pleistocene has been about 10,000 years. We are now at over 10,000 years since the last glacial advance. So, while we may see natural episodic warming over the next



100 years, at any time the climate could turn the other direction and start us once again towards colder times.

Geologists take a longer term view of the earth and its associated systems than most, and this is appropriate. We generally work backwards through hundreds of thousands to millions and even bil-

The vast amounts of energy in our natural systems greatly outweigh our puny attempts to control nature.

lions of years. Placing human history in the appropriate earth process setting eliminates much human effect on the Earth. We like to believe we as a species are important, but Earth processes are largely independent of human intervention. The vast amounts of energy in our natural systems greatly outweigh our puny attempts to control nature. One recently published geologic report estimated the relative significance of various processes that affect climate on earth. These processes are categorized into four orders. The first order includes things such as the solar system geometry and solar luminosity, these impact climate on the order of 1 – 10 billion years duration; the second order includes the global distribution of the continents and the associated geometry of the oceans resulting in impacts on the order of 10 to 100 million years; the third order lists orbital and solar variability and large scale oceanographic oscillations on the order of 10 to 100 thousand years; and finally the fourth order including volcanoes, solar storms and flares, smaller orbital cycles, meteorite impacts, weathering, and lastly human intervention, causes impacts for a duration of 10 to 100 years. As you can see, each category changes by at least one order of magnitude from the prior. Evidence (scientific information) for these past processes is available to geologists in the historical library contained in the rocks and sediments. In addition to extreme weather events like hurricanes, and natural hazards such as earthquakes, eruptions, and landslides, these include changes in the chemistry of the rocks, soils, and waters, rates of ero-

sion, and re-deposition of the resulting sediments. So in assessing the condition of ecosystems and the environment together with the human activities that affect them, we need to take into account natural changes and biological and non-biological factors. These affect the environment on a daily, seasonal, decadal, centennial, and millennial scale.

Natural climate variability overshadows any human climate impact. Sun spot data correlates solar cycles with climate changes over the last few hundred years with a nearly 100% correspondence. And too often computer models are used to predict human-induced global warming. But to the contrary, there is no evidence that the steady increase in carbon dioxide over the last 50 years is reflected in actual climate measurements. Remember computer models are not information. They are scientists' ideas set to mathematical music. Real information is what we can actually measure. What has been measured does not indicate a significant human contribution to present climate change. We cannot control climate except by controlling the sun, the earth's orbit, rotation, axis tilt, and the dynamic processes that drive continents and ocean currents.

Much of this month's "Chiefs Corner" is the result of the authors past discussions with and papers written by John P. Bluemle, and Lee C. Gerhard, and review of the recently released report "Climate Change Science : An Analysis of Some Key Questions" by the National Research Council.

Forum Is Now Available Digitally

The *Florida Geology Forum* is available digitally as an Adobe pdf document. You can download a copy at <http://www.dep.state.fl.us/geology/newsevents/newsletters.htm>.

If you prefer to receive the forum digitally please send your request by email to paula.polson@dep.state.fl.us or send your request by mail to Florida Geology Forum, FGS, 903 W. Tennessee Street, Tallahassee. Fl. 32304-7700 Attn: Paula Polson.

Hydrogeology Program

THE HYDROGEOLOGY PROGRAM'S OUTSOURCING ACTIVITIES

The Florida Legislature authorized the FGS, in Fiscal Year 2001/2002, to conduct research and assessment activities in the field of hydrogeology. The funds, drawn from the Water Quality Assurance Act trust fund, are to be largely "outsourced" through contracts with universities and the private sector. In consideration of the results of a DEP needs assessment for hydrogeological research, general agreement exists in support of research pertaining to ground water - surface water interaction, which is complicated by Florida's unique karstic geology. The most visible surface manifestation in Florida of this interaction is the prevalence and extreme contamination vulnerability of springs. For these reasons, projects selected for outsourcing focus heavily on using springs as conduits (pun un-intended) to provide a better understanding of the dynamics of this interaction. Based on such understanding, water resource scientists and managers will have a better set of tools to manage and protect not only springs but all of our State's aquatic resources. Below is a brief sketch of the projects planned for either completion or initiation during the year 2002.

- 1) Location of areas of ground water interaction with surface waters, especially springs, on regional basis using innovative and relatively economical techniques:** Remote sensing technology, such as aerial thermography and boat-towed electric resistivity will be used to survey large segments of rivers, lakes, estuaries, bays and off shore waters, for the presence of ground water either as base flow or as point source discharge (springs) in both the upland and submarine environments. Areas chosen include parts of the Suwannee River, the Chipola River, the Fenholloway River, the Ortega River, St. Joseph Bay, Spring Creek springs

system, Escambia Bay, several lakes in north central Florida, and offshore tracts suspected to contain hard bottoms, springs or sinkholes southwest of the mouth of the Steinhatchee River.

- 2) Locations identified in # 1 will be confirmed and quantified (ground-truthed) using conventional techniques including the following:** Conductivity surveys, Doppler acoustic profiling, seismic profiling, water quality assessment, side scan profiling, water age characterization, dye and isotopes tracing and measurements of water volume discharged using seepage meters.
- 3) Establishment of Florida karst centralized database:** Existing data related to karst are not available in a centralized digital data repository that can be used to facilitate delineation of watershed boundaries or to model ground water flow and fate of contaminants in karstic aquifers. We plan to establish a



*Photo supplied by the Northwest Florida
Water Management District*

database that will incorporate existing databases (such as the FGS sinkhole database) and to allow input of new karst-related data, such as cave maps.

- 4) **Construction of educational models and exhibits:** A combination of a physical (3-D) model, posters and video related to karst will be developed with students, their teachers and other non-professionals in mind. These interactive materials will provide an educational resource for Florida residents living in, managing and protecting ecosystems dominated by karstic geology.
- 5) **A Workshop entitled “Blueprints for the management and protection of Florida’s springs”:** This is a two-day workshop to be held in Ocala during May 8 and 9, 2002. The workshop will focus on both the science and policies of managing and protecting springs.

- 6) **Special Projects:** Selected pilot sites will be chosen to demonstrate new technology in understanding the relationship between land use and ecological health. For example, we will test the utility of assessing populations of benthic foraminifera as indicators of natural or man-made changes in water quality. We will also carry out more extensive water quality measurements in an effort to “finger print” sources of pollution to ecosystems.

For more details on any of the above please contact Rodney DeHan (850-488-9380).

For more information on the FGS Hydrogeology Program, please see our web site at: <http://www.dep.state.fl.us/geology/programssections/hydrogeology.htm>

or contact Jon Arthur at the above phone number.

Hydrogeology Program *Continued*

Florida Aquifer Vulnerability Assessment Model Update

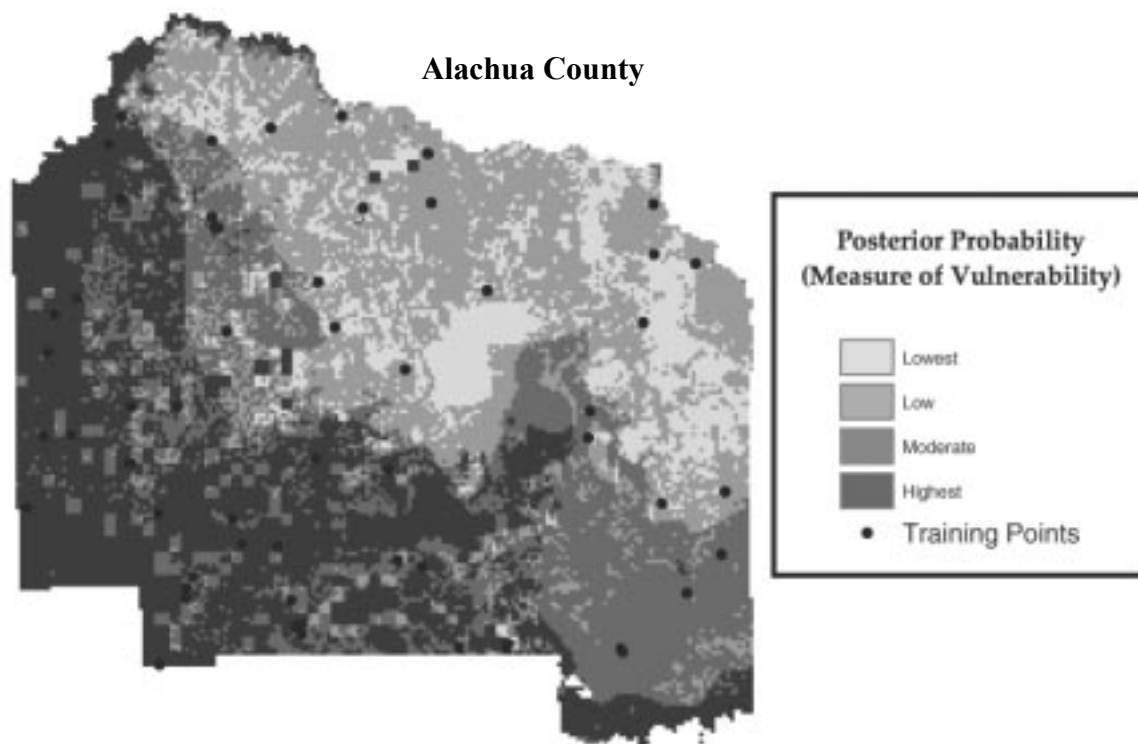
In late October FGS staff met with the FAVA Technical Advisory Committee (TAC) to familiarize new members with the project, provide a progress report and solicit input regarding data acquisition, model development and model verification. Important dialog occurred regarding methodologies and verification of the model. Based on this dialog a consensus was reached that staff should continue with the current FAVA methodology while investigating the weights of evidence and fuzzy logic methods. These results will be presented to the TAC at an upcoming committee meeting.

Methodology development is currently in the preliminary stages and consists of small-scale pilot mapping projects (Alachua, Hillsborough and Polk counties). Staff is presently examining the weights of evidence method, which quantifies the relationship of layers within a model. Traditionally, the weights of evidence method has been used in mineral exploration where mineral potential (probability) maps have been produced using single or multiple weighted layers as input. This method estimates the magnitude of weights depending upon the measured association between predictors and known occurrences (training

points).

As this methodology is applied to the FAVA model, a statistically significant number of training points i.e., known groundwater pollution/contamination locations must be present. Furthermore, as in the case of multiple input layers, there should be conditional independence between the layers, specifically; the values of a particular parameter should be independent from the values of another parameter.

To gain a better understanding of the ArcView extension, ArcSDM (Spatial Data Modeler), the FGS invited Dr. Gary Raines (developer of these extensions) to



DRAFT

Sample Output, Weights of Evidence Method

Sample vulnerability output model using weights of evidence methodology

Model results based on reclassifications of the following GRIDs

- 1.) Karst (percent of square kilometer covered by karst feature)
- 2.) Soil Permeability
- 3.) Thickness of Intermediate Confining Unit
- 4.) Head difference between Floridan aquifer system and surficial aquifer system

The training set (point coverage) consists of DEP and HRS wells that have nitrate concentrations equal to or greater than 0.10 mg/L. A total of 62 training points met this minimum criterion for incorporation into the sample model.

teach a two-day class on these tools in late February. The ArcSDM extension is comprised of statistical and knowledge driven approaches that include weights of evidence, fuzzy logic and logistical regression. The majority of class time focused on the statistical “data driven” method known as weights of evidence. Attendees included representatives from the FGS, other divisions of DEP and several water management districts. We anticipate the incorporation of this method in support of the FAVA model.

Integral to the FAVA project is the data that is employed in the model. This data must be of high quality, without errors and well documented. One of the datasets needing immediate attention is the Digital Elevation Model (DEM) for the panhandle of Florida. This December, the FGS joined a coordinated effort between DEP and the NFWMD to create a seamless and accurate topographic line coverage for the Florida panhandle. This, in turn, will be used to create a detailed DEM for Florida. Several data layers also

under development include a karst density and polygon coverage for Florida, a coverage of Florida’s major aquifers as well as the incorporation of recent work completed as a result of the Southwest Florida Mapping project. We also hope to improve upon much of the already existing geological data sets and incorporate them into the model.

For more information on Weights of Evidence see <http://ntserv.gis.nrcan.gc.ca/wofe/>

FGS's Continued Involvement in the Florida Springs Initiative

The FGS
Springs Team, **Tom
Scott, Harley
Means, Ryan
Means and Rebecca**

Meegan, completed an investigation of Florida's first magnitude springs resulting in publication of FGS Open-file Report 85 "First Magnitude Springs of Florida" in January 2002. The investigation of Florida's springs is continuing with evaluation of the second order magnitude springs. The Springs Team has undertaken the visiting, describing and sampling water of approximately 70 2nd magnitude springs that were included in the Springs of Florida bulletin (FGS 1977). The water samples acquired from these springs are being analyzed by the DEP laboratory. If funding for the Florida Springs Initiative for fiscal year 2002-2003 is approved by the Legislature, the FGS will continue investigating the remaining 2nd and lower magnitude springs in the state. Ultimately, the FGS will publish a Florida Springs Atlas that will include descriptions and locations of as many of the State's 700+ springs as the staff can visit. Water analyses for the 1st magnitude and some of the 2nd magnitude springs will be included in the final publication.



Fanning springs



Ichnetucknee Head Springs

University of South Florida Geology Alumni Associa- tion presents first Outstanding Alumni Award

The University of South Florida Geology Alumni Association presented its first Outstanding Alumni Award to **Dr. Tom Scott**, Assistant State Geologist for Geological Investigations at the Florida Geological Survey.

Tom graduated from USF in 1971 with a B.A. in Geology. Tom then moved to Richmond, KY where he received a Masters degree in Geology from Eastern Kentucky in 1974.

Tom began his career with the Florida Geo-

logical Survey in 1974 as a Geologist II. Since then he has published more than 130 papers, maps and abstracts. These include Bulletin 59 on the Hawthorn Group, the 2001 Geologic Map of Florida, and an Open-file Report on the first-magnitude springs in Florida. He is working on the Florida Springs Initiative,

a new geomorphic map of the state, and a publication on Lake Jackson, a disappearing karst lake near Tallahassee.

During Tom's geological career, he has served in various officer positions in the Southeastern Geological Society, American Institute of Professional Geologist's Florida Section, Southeastern Section of the Geological Society of America, and the Florida Association of Professional Geologists. Tom currently serves on the Florida Board of Professional Geologists as the designee of the State Geologist.

Please join us in congratulating Tom on his receipt of this honor.

Parts of this article were extracted from the University of South Florida, Second Annual Geology Alumni Society Dinner Program.



News from Oil and Gas Section

Owners of mineral property acreage in Florida routinely call the Oil and Gas Section to see if their property lies within an oil and gas field. "No," is the usual answer, but in January 2002 **Dave Taylor** and **Ed Garrett** had the pleasure of telling Mrs. Kraycheck* of Indiana that her 5 acres were centered in the Raccoon Point Field. Mrs. Kraycheck had inherited the mineral acreage from her aunt in 1990, but never received a royalty check. One well adjacent to Mrs. Kraycheck's acreage produced in excess of 3000 barrels per day during the mid-1990's.

Mrs. Kraycheck was referred to Calumet Florida, Inc., the operator of Raccoon Point Field. The company is currently processing her claim for unpaid royalties. Raccoon Point is a unitized field, meaning all the field's mineral owners will share all the production according to the proportion of the field for which they control the mineral rights. Unfortunately for Mrs. Kraycheck, her share in Raccoon Point's production will be minimal. Her 5 acres comprise a fraction of 1% of Raccoon Point's 4500 acres.

Raccoon Point Field, located halfway between Miami and Naples in the Big Cypress Swamp, is currently the most prolific field

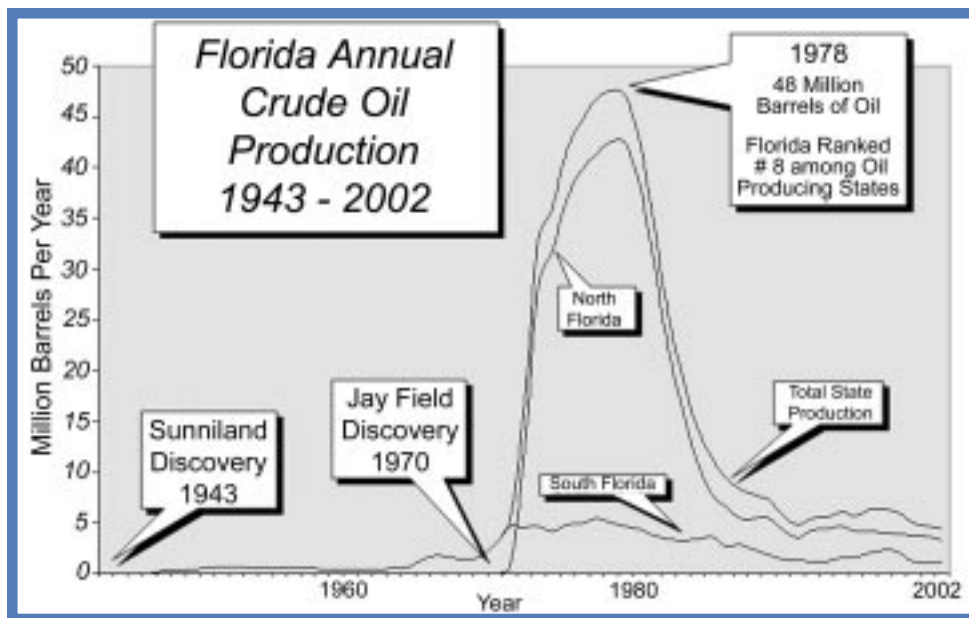
in south Florida, producing 11 million barrels of oil and 1.3 billion cubic feet of natural gas since 1990, when Mrs. Kraycheck inherited her aunt's property. Raccoon Point now produces more oil (and twice as much gas) as all the other fields in south Florida combined. Raccoon Point is part of the Sunniland Trend which was discovered by Humble Oil and Refining Company (now ExxonMobil) in 1943. Since then, 111 million barrels of crude oil and 10 billion cubic feet of gas have been produced from 13 oil and gas fields in the Sunniland Trend.

For almost 60 years production from the Sunniland Trend has been relatively slow and steady, never exceeding 5 million barrels of oil per year. By contrast, north Florida's oil and gas production has been a flash in the pan. In 1970

Humble Oil Company made a spectacular discovery in the tiny farming town of Jay near the northwest corner of the state. By 1978 Jay Field's production made Florida the 8th largest oil producing state. Almost 48 million barrels were produced that year. Although Jay's production had dropped sharply by the 1990's, nearly half a *billion* barrels have now been produced from Jay and several surrounding fields.

Florida's production has now stabilized at approximately 5 million barrels per year, which is about 0.2% of total U.S. production. Although no new fields have been discovered since 1988, Florida is currently ranked 17th among oil producing states.

*Her name has been changed to protect her privacy.



Mining Industry Notes

National:

The United States Geological Survey reported that Florida ranks fifth in the nation with an industrial mineral production value of \$1.75 billion. As for individual resources Florida ranks first in production of phosphate rock, first in production of heavy minerals, second in crushed stone, remains one of the top five states in production of horticultural peat, and 15th in production of sand and gravel used or produced.

Florida:

Senator Jim Sebesta, from District 20, issued a proclamation recognizing February 6, 2002, as "Mining Day at the State Capitol." The 21 mining companies attending the event took the opportunity to display their companies products, and to discuss mining issues with interested legislators, colleagues and visitors to the Capitol. The Florida Limerock and Aggregate Institute wishes to extend a warm thank you to all participants who made this event successful and welcomes ideas for next year's session.

Association News:

The Florida Minerals Association

The Florida Minerals Association (FMA) was formed in March of 1997 to support the interests of mining and mineral companies throughout the State of Florida. The association is designed to serve as a monitor for Florida's mining and minerals industry among legislators and government agencies. Their key objectives are to protect the industry with effective governmental and public relations programs and to encourage the safe, efficient, and environmentally sensitive extraction of Florida's mineral resources. The FMA provides annual training and furnishes information updates to its members on safety, health, and environmen-

tal issues. The FMA also acts jointly with other mining associations in the State to maximize resources and provide a unified voice where appropriate. The association has over 50 members including mining and mineral processing companies, service providers, contractors and suppliers, as well as regulatory agencies and university representatives.

The FMA established the David C. Williams Scholarship Foundation to award scholarships to deserving senior high school students across the State of Florida. The scholarships are awarded every March at the FMA annual meeting.



FGS Website

The Florida Geological Survey's website recently underwent some changes. The FGS website is now a complete website where previously it was woven within the MyFlorida website.

Even though the FGS website was changed it is still part of the MyFlorida website and can still be accessed through www.myflorida.com by clicking on Environment (on the left sidebar) then scrolling down to Geology. The Geology link will take you to the FGS homepage.

You also can access the FGS homepage directly <http://www.dep.state.fl.us/geology/>.

What's available?

The FGS website has much to offer and is constantly changing, adding new information and available resources daily.

Two of the most frequently used areas of the web are the Data and Maps and the Publications sections. Both of these can be accessed from the left hand sidebar of the home page. On the Data & Maps page you can access the County Geologic Maps (digital files in Autocad .dxf format), State Geologic Map (which is available as an Arcview

project or as a jpeg image file), the Lithologic Database, Sinkhole Database, and also much of the Oil & Gas databases, production reports and the new Oil and Gas Well Location Maps. The Publication link will take you to the List of Publications. This pdf document contains many links to our digital publications (see the FGS Research Library article for more information).

Activity on the FGS Website:

Statistical information has recently been supplied to the FGS webmaster. An amazing amount of people are coming to the site. For the week of March 3rd- 21,244 hits on the server were reported. There were 10,326 pages viewed with 1,943 ses-

sions served. The most commonly accessed pages were the Home page (974 hits) followed by the Data & Maps page (685 hits). Next on the list was the Geologic Topics page (374 hits). The “About the FGS “ page was read 337 times, followed by Programs & Sections (viewed 325 times) and the Publication page (viewed 323 times).

As you can see many people are using the website to answer their questions about Florida geology. The FGS webmaster welcomes additions to the website along with suggestions for improvement in content, navigability and visual appeal. Please send your suggestions or comments to paula.polson@dep.state.fl.us.

Coastal Geology Program

OFFSHORE SPRINGS STUDY

Florida has nearly 600 springs that provide recreational and economic values to Floridians. What isn't known is how many more springs exist on the offshore shelf of the Florida Platform. These unknown springs are equally in danger of being lost or degraded by the same threats that challenge land springs. Loss of water quality by chemical contaminants, nutrients and septic tanks and reduction in flow rates by over pumping of the aquifer may have enormous effects on water quality. Also water quality influences aquatic life. Submarine springs play an important role in healthy fish populations, provide habitat for marine food stocks and may contain some of the oldest archaeological sites to be found in Florida. Preliminary evidence indicates that several offshore sites, sinkholes and springs, were used by Native Americans during the last ice age. Additionally, these springs may become an important source of fresh or brackish water for use by the citizens of Florida in localities experiencing water shortages.

To catalogue and research this hidden resource,

the Florida Geological Survey's Coastal Research Group (CRG) has been investigating data from a diversity of sources. The CRG welcomes input and information on offshore springs from fisherman, divers, and concerned groups and individuals. The Florida Geological Survey is the state repository for offshore geological data and can act as the investigative agency for new offshore springs research.

CENTRAL-EAST COAST SAND SEARCH INVESTIGATION

The U.S Department of Interior Minerals Management Service (MMS) and the Florida Geological Survey (FGS) are concluding a multi-year cooperative agreement designed to locate sand deposits suitable for beach restoration in federal waters off the east coast of central Florida. The scope of this study included the publication of an annotated bibliography describing previously conducted work in the area, a baseline survey characterizing beach sand in the study area, the collection of more than 1500 miles of subsurface acoustic profile data in federal waters, and the acquisition and analysis

of numerous bottom grab samples and vibracores.

Preliminary results of this study, which will be published as an FGS publication, include the successful identification of sand sources off of Martin and St. Lucie counties. Additional probable sand reserves have been found off of Martin, St. Lucie, Indian River and Brevard counties.

The MMS and the FGS are currently negotiating a new multiyear cooperative agreement designed to locate beach restoration sands in federal waters off of the east coast of north Florida. The area offshore of Nassau, Duval, St. Johns, Flagler and Volusia counties will be included in this study. Projected duration of this project is 5-6 years.



The FGS Coastal Geology Program recently acquired the **R/V GeoProbe**, a 22 foot trailerable C-Dory that will enable the FGS to respond to time controlled coastal events in a rapid and efficient manner. The new vessel, which has GPS integrated radar, is capable of performing side-scan and conventional seismic data collection in addition to gathering current and sediment samples from shallow and deep water. The new vessel's size fills a gap in boat capability available to coastal research for the state.

New Publications of the Florida Geological Survey:

Special Publication 49

Geology and hydrology of Lee County, Florida: Durward H. Boggess Memorial Symposium: edited by Thomas M. Missimer and Thomas M. Scott, 2002, 230 p.

A special symposium on the geology and hydrology of Lee County, Florida was held in Fort Myers on November 18 and 19, 1999. This symposium was held as part of the 9th Southwest Florida Water Resources Conference, conducted in honor of Durward H. Boggess, who made significant contributions to the understanding of the geology and hydrology of Lee County.

Most of the papers published in this volume were presented at the conference and a few others were added to make the volume as complete as possible in terms of recent knowledge on the geology and hydrology of Lee County. The volume is organized with a discussion of the contributions of Durward Boggess, followed by a series of papers on the geology of the county. Based on the geologic framework, a series of papers follows on the hydrogeology of the county. Finally, some papers on the surface-water hydrology and water quality of the county complete the volume.

Special Publication 50

Guidebook to the Correlation of Geophysical Well Logs within the St. Johns River Water Management District, by Jeff Davis, Richard Johnson, Don Boniol and Frank Rupert, 2001, 114 p.

This guidebook identifies the correlation of geophysical well logs (natural gamma and electric logs) within the St. Johns River Water Management District (SJRWMD). The correlations were documented through a comprehensive review of existing well log data and literature. Geophysical logs are presented in cross sections and individual figures to serve as reference logs for correlation purposes. These reference logs exhibit a characteristic log response that can be identified in other logs. Additionally there is sufficient lithologic data available to identify specific geologic units. The study includes the geophysical log characterization and correlation for the entire SJRWMD and encompasses all the geological units commonly penetrated by water wells.

Open File Report 85

First Magnitude Springs of Florida, by Thomas M. Scott, Guy H. Means, Ryan C. Means, and Rebecca Meegan, 2002, 138 p.

The 2001 Florida Legislature funded the Florida Springs Initiative, providing funding for the Florida Geological Survey to investigate the first order magnitude springs in the State. Seventeen springs, eight spring groups/systems, seven river rises, and one karst window (49 vents total) were sampled from 25 September 2001 through 15 November 2001. The physical characteristics, water chemistry and bacteriology of Florida's first order magnitude springs are discussed and described in this report. The information herein on Florida's largest springs, unique and treasured natural resources, provides data to be used by scientists, planners, environmental managers and the citizens of Florida.

Florida Geological Survey Research Library



The Florida Geological Survey Library is an integral part of the Survey's research and regulatory programs. In support of the information needs of staff, students, and researchers from the public sector, the library provides access to basic research materials including books, maps, state and federal documents, photographs and periodicals. The library is used by the general public, students, other government agencies, and private consulting companies. While circulation is restricted to Survey staff and the Florida State University Geology Department faculty, the library is open to the general public for research. In addition, library materials are available to libraries in other state agencies, and all public and academic libraries throughout the United States and the world via the OCLC Interlibrary Loan system.

This past year many changes were initiated at the library. A massive weeding program has begun, getting rid of many materials that were outdated or used infrequently. Much of the library collection is now automated, using Winnebago Spectrum Library Software. Many of the smaller collections are being incorporated into the main collection, which is being converted to the Library of

Congress Classification System, instead of Dewey. The ongoing conversion is time consuming, as each item must be linked to a barcode.

The library also is responsible for the distribution of all of the FGS publications, past and present. This includes sending publications to over 100 public institutions in the state of Florida, more than 75 public institutions in other states from Rhode Island to California, and to 8 foreign countries, through our Gift & Exchange Program. The Gift & Exchange Program gives public access to FGS publications in public and academic libraries throughout the world. Many of the publications have been digitized by the Digital Library Center for the Publication of Archival Library and Museum Materials (PALMM) and are available in full text, free on the internet. These links are included in our List of Publications (<http://www.dep.state.fl.us/geology/publications/index.htm>.) With the publication of many new works each year, and the depletion of others, the List of Publications must be updated on the web site every few months so that the most current information is available to the public for publication orders.

Libraries are dynamic, ever-changing entities, and the Florida Geological Survey Library is changing with the times in order to better serve the geological community and the state.

Education and Outreach Program



After School Project

On December 12 the Florida Geological Survey partnered with Bureau of Labs in presenting the first in a series of "After School Projects" at Maclay State Gardens. The After School Projects are part of a cooperative effort between the Department of Environmental Protection and the Community Classroom Consortium. These events are designed to provide educational, hands-on learning opportunities for underserved students. Staff members Jackie Lloyd, Frank Rupert and Paulette Bond led students in interactive activities that highlighted various aspects of Florida geology and were designed to be fun as well.

Introduction to Rocks and Minerals-A Classroom Activity

On January 25 Paulette Bond presented "An Introduction to Rocks and Minerals" to two fifth grade classes at Riley Elementary School in Tallahassee. Students took a brief pretest and also a post-test in order to allow Paulette to evaluate the effectiveness of the presentation. At the suggestion of the classroom teacher Theresa Williams large illustrations of a volcano and a sinkhole were prepared so that they could be colored. The illustrations were labeled to reinforce vocabulary

words that were introduced to students in the course of the talk.

Upcoming Earth Day Events

The FGS anticipates celebrating Earth Day, April 22, 2002 in two upcoming events. The Department of Environmental Protection is sponsoring Earth Day 2002 at the State Capitol courtyard between the old and new capitol buildings on April 22, 2002. The FGS will bring its mobile *Geolab* and copies of various popular educational materials will be distributed.

FGS staff will be on hand to discuss programs and field questions.

The FGS also plans to participate in an Earth Day event organized by Eglin Air Force Base that organizers are billing as one of the largest educational Earth Day Events in the nation. The event will take place at the City of Niceville Mullet Festival Site and will run from April 21 through April 23. The general public will be welcomed on April 21 and up to 9,000 students from Okaloosa, Walton, and Santa Rosa counties are expected on April 22 and 23.



News from the USF Department of Geology

- USF is continuing its long-standing commitment to coastal studies with the hiring of Dr. Ping Wang as their newest Assistant Professor. Dr. Wang received his doctorate from the University of South Florida in 1995 and has since worked as a research associate at Louisiana State University. Dr. Wang is also Chief Scientist at the Army Corps of Engineers Longshore Sediment Transport Facility in Vicksburg, Mississippi. His research is dedicated to mitigation of coastal erosion problems in Florida.
- Dr. Chuck Connor joined the Geology Department as Chair in August, 2001. Dr. Connor received his doctorate from Dartmouth College in 1987 and was on the faculty at Florida International University, before going to Southwest Research Institute in San Antonio, Texas. Dr. Connor's research focuses on active volcanism. He is currently funded by NASA and NSF to conduct various volcanic hazard reduction projects in Latin America. Two of these projects are being run in collaboration with Tim and Jackie Dixon, both on the geology faculty at the University of Miami.
- Friday 8 Feb 2002, nearly two hundred environmental professionals and students of all kinds attended the 4th annual Geological Alumni Society Exposition featuring a diverse array of exhibits and demonstrations of equipment and technology. The event marked the inauguration of the Geological Alumni Society Geopark, on campus, a short walk from the Geology Department's offices and labs.
- Saturday 9 Feb 2002, about a hundred alumni and friends of the Department attended the 2nd Annual Geological Alumni Society Banquet, a fundraising event in support of the Richard A. Davis Jr. Endowed Fellowship in Geology. The program featured an overview of the Department by Chuck Connor, the new Chair, and the awarding of the first Outstanding Alumni Award by the Geology Alumni Society. The recipient was Tom Scott (Class of 1971), Assistant State Geologist, and the award was presented by alumni Walt Schmidt, State Geologist, and Gabrielle Enos, Board of Professional Geologists.



The Florida Association of Professional Geologists was formed to protect, enhance and promote the profession of geology within the state of Florida. FAPG provides a number of services for the professional geologist in Florida.

These services include:

Seeking equitable treatment of Professional Geologists by the legislature and any other governmental body involved with matters of interest to the profession.

- Monitor and report on the activities of the Department of Business and Professional Regulation, the DBPR Board of Professional Geologists and its staff.
- Monitor and report on the activities of the Legislature, including the House Committee on Business Regulation and Consumer Affairs and the Senate Committee on Regulated Industries.
- Monitor and report on allied organizations, such as the Florida Engineering Society and the Florida Department of Environmental Protection.
- Cooperate with and assist the enforcement and discipline activities of the DBPR license enforcement and investigative services staff.
- Maintain the FAPG website, offering prompt replies to inquiries and a central source of links, so that both licensed and lay persons will better understand the profession of geology in Florida.

Creating a communication system to inform members about important state information and to educate the public about the profession.

- Provide an email list to inform members about important state information quickly.
- Communicate regularly with all members through a quarterly newsletter highlighting developments in the PG profession.
- Invite members to utilize the email list and to access the FAPG website at www.fapg.org for calendar notices, organization news, guest commentary, photos, DBPR board activities, Florida news clips, and related links.
- Respond quickly and professionally to members' calls, faxes, and e-mail inquiries to the FAPG office.
- Cooperate with the DBPR Board of Professional Geology to promote legislative changes and disseminate information.
- Publish a directory of FAPG members and their specialization on the association's website.
- Hold meetings around the state with talks of interest to geologists.

Providing a unified voice for the promotion of the geology profession.

Providing a Code of Professional Ethics for geologists.

Providing a source of discounted Professional Liability Insurance to geologists.

FAPG is currently seeking input and promoting a number of changes to both Florida Statutes and Florida Code that would provide equity with other professionals in Florida. For more information on these or on FAPG in general, please visit the web site at <http://www.fapg.org> or call our Association Offices in Tallahassee at 850-222-6000.

New FGS Employees:

Dr. Rick Copeland received a B.S. (1972), and a M.S. (1974) in Geology from the University of Florida and a Ph.D. (1998) in Geology from Florida State University. He worked as a hydrogeologist with the Suwannee River Water Management District for over eight years where he conducted a variety of ground-water quality and quantity studies. In 1984 he joined FDEP's Division of Water Resource Management where he administered a state-wide ground-water and later, a combined ground- and surface-water quality monitoring program and evaluated ground-water quality monitoring data. In November Rick joined the Hydrogeology Program as a senior hydrogeologist. He currently works With Drs. Jon Arthur and Rodney Dehan, and Mr. Tom Greenhalgh in coordinating FDEP's hydrogeology research and outsourcing needs.

Tom Greenhalgh joined the Florida Geological Survey in December of last year. He is a 44 year old, native Floridian. He married his high

school sweetheart, Jolynn in 1986 and has a six year old daughter, Jessica. Tom obtained a B.S. in Geology from Florida State in 1984 and began a career in environmental consulting conducting environmental assessments at petroleum and hazardous waste sites.

In 1988, he began working for the Department in Petroleum Reimbursement and a year later moved to the Petroleum Cleanup Section. In 1991, he joined the Pesticides Section where he performed ground water environmental fates studies on pesticides known and/or suspected to contaminate ground and surface water and served on the Pesticide Registration and Evaluation Committee. In 1997, he was transferred to the Bureau of Watershed Assessment to work on Total Maximum Daily Loads where he focused on the nitrate contamination in the Suwannee River Basin.

Outside of work, Tom enjoys outdoor activities including hunting, fishing, and being a weekend farmer. At the farm, Tom is working diligently to restore native longleaf wiregrass habitat.

Doherty Visiting Professor - Florida Institute of Technology



The faculty of the Department of Marine and Environmental Systems (DMES) in Florida Tech's College of Engineering invite applications for the academic year 2002-2003 Doherty Visiting Professor. The endowment to DMES from the Henry L. and Grace Doherty Charitable Foundation, Inc. provides up to \$40,000, and is ideally suited as matching funds for a sabbatical. DMES offers undergraduate and graduate degrees in oceanography together with coastal zone management, ocean engineering including naval architecture, environmental science, environmental resource management, and in meteorology. We are seeking an established professional from academia, government, or industry, preferably with a terminal degree in science, engineering or man-

agement, and a clear vision for their time at our university. Applicants should mail a statement of interest on letterhead stationary not exceeding two pages in length, and a two-page curriculum vitae to: Dr. George A. Maul, Professor and Head, Department of Marine and Environmental Systems, Florida Institute of Technology, 150 West University Boulevard, Melbourne FL 32901. Please see our website at <http://www.fit.edu/dmes> for additional information on our focus of integrating science, engineering, and management in the marine environment.

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DEPARTMENT OF ENVIRONMENTAL
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