

WRD RETIREES

NEWSLETTER 164
August 2014

An organization of retirees of the Water Resources Discipline, U.S. Geological Survey, whose purpose is to keep its members in touch with each other and their former agency.

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PRESIDENT'S MESSAGE

By far the most important item this month is to look closely at the reunion information included in the newsletter. If you have not already done so, please register for the October reunion to be held in Portland, Maine. We all look forward to renewing old friendships and making new ones. This is the last newsletter before the reunion!

In the last newsletter, I tried to give you information about the important issue of AWRA IMPACT that Dick Engberg worked hard to develop. This is *AWRA at 50: The Future of Water Resources in the United States*, Jan. 2014. By mistake the link to find the issue was omitted, so here it is now, better late than never: <http://www.awra.org/1401impact.pdf>. But Dick has not been idle, and has followed up with another stellar issue of IMPACT in May 2014. This one is *AWRA at 50: Looking Back, Moving Forward*. While I don't have a handy link for this one, please let me know at etsmithsiri@aol.com if you want an issue, and I will send one to you as an attachment to email.

Some of you may know that our newsletter editor, Charles Nethaway, has been grappling with serious illness. Because of this, Charles has resigned as editor, so he can concentrate on getting well. We certainly wish him lots of good luck, and hope he feels better soon. Meanwhile, Andy Anderson, Merilee Bennett, and I have worked to put this issue together, and I want to thank them for the extra effort. This also means we are looking for a new editor for the newsletter, and I would ask anyone who has an interest in this to contact me at etsmithsiri@aol.com.



NEWSLETTER SUBMISSIONS

Information sent in pertaining to retirees should be sent to several emails simultaneously. These are to: Tim Smith, President (etsmithsiri@aol.com), Andy Anderson, Secretary (cande2@juno.com), Merilee Bennett, Layout Editor (merjimeric@comcast.net), and wrdretirees@usgs.gov. This will eliminate loss if information is sent only to any one person, and guarantees that it will be included.

SEVENTEENTH WRD RETIREES REUNION
Portland, Maine
Thursday, October 2nd through Saturday, October 4th, 2014

AUGUST UPDATE: Reunion Activities, Registration Process, and Agenda

All Registrants--Please Read this update

As of July 15th, 95 people have registered for the reunion. Sixty of the 70 rooms reserved for our group at the Westin Portland Harborview Hotel have been booked. We estimate that 130-150 retirees will register for the reunion. So, reserve your room at the hotel as soon as possible. After the 70 rooms are booked, the room rate will go to \$199 per night. **For Hotel Reservations:** call **855-811-0043** or use the [hotel assigned website](#) .

Hotel Reservation Update: The first group of rooms has been booked; the hotel has initiated Group 2, and will increase availability, if needed, only upon request from Derrill Cowing through August 29, 2014. If you run into a problem with registering at the hotel, please contact Derrill Cowing immediately at 297.242.0826 (cell).

The Conway Foliage Tour option has been very popular. The Valley Train Dining car is booked full and people requesting the train ride option are now being booked in the 1st class car with the box lunch provided. A second bus has been scheduled to Conway, to accommodate all those who have requested the Conway Foliage Tour.

Lee Lenfest is making arrangements with a local golf course for those interested in playing golf while at the reunion. If you are interested in a round of golf, please email Lee at llefest@gmail.com . The better estimate he has of the number interested, the easier it will be for him to set the date, time, and venue for the golf outing.

A description of the proposed Post Reunion Trip along the coast of Maine from Portland to Acadia Nation Park (Bar Harbor) is included below as part of this update. Again, we are asking those interested in this Post Reunion Trip to email Derrill Cowing at djcowing@aol.com. The final plan for this trip to Acadia will depend on the level of interest expressed by reunion attendees. At the current time, it is planned as a "self-guided" tour for attendees with their own transportation. If there is enough interest in a group tour in a rented van, the associated costs and collective schedule would be researched and negotiated with the group.

Remember, register as soon as possible. The sooner the Local Arrangements Committee has an estimate of the total number of attendees and their interests, the better able we are to serve you. Also, we may ask some of you to help with support activities during the reunion.

Local Arrangements Committee Members:

Bill Bartlett	703-380-7990
Lee Lenfest	207-692-6413
Rick Fontaine	207-510-1041
Marion Fischer	575-652-1158
Walton Low	571-338-8271
Carolyn and Alan Lumb	540-424-9789
Doug Posson	970-215-2080
Mary Jean Cowing	207-242-0657
Derrill Cowing	207-242-0826

SEVENTEENTH WRD RETIREES REUNION
Portland, Maine
Thursday, October 2nd through Saturday, October 4th, 2014

Optional Early Trip to L.L.Bean Flagship and the Delorme Map Stores

NOTE: To those attendees interested in both tours on Saturday, we are making special arrangements to add a trip to Freeport for the L.L.Bean store and Yarmouth for the Delorme Map Store on Thursday (Oct. 2nd) from about 9:00 a.m. to about 3:00 p.m. This would require that the interested parties travel to Portland and overnight on Oct 1st, adding an extra day to your hotel stay, in order to catch the van to Freeport the next morning. Since this is an *ad hoc* adventure, call Derrill Cowing (207-242-0826) to schedule your seats on the van/bus and include a note with your registration form expressing your interest as well. If you have already registered, give Derrill a call and he will add this trip to your package. We will scale this trip to the level of demand and work out a nominal fee for the event.

Proposed Post Reunion Trip from Portland to Acadia National Park

For those electing to make this drive along the Maine coast, it would likely begin in Portland on the Sunday morning after the Gala Banquet. The drive would be along US Route 1, passing through many small coastal Maine towns and cities. A map of the route along with a travel log which includes: mileage notes, a listing of featured communities and suggestions for interesting stops along the way has been drafted. A copy of this map and travel log will be posted on the WRD Retirees website (<http://wrdretirees.org/Reunion2014/index.html>) and Facebook page, and can also be emailed to anyone that submits a request to Derrill Cowing at djcowing@aol.com.

The points of interest listed are a fraction of those available along the route. In the log, we have highlighted (with a red asterisk) several of the listed stops that are particularly popular with visitors to Maine. Obviously, the more stops, the longer it will take to travel the 160 miles to the destination of Acadia National Park. If one drives straight to the Park from Portland, it takes a little under 4 hours (also an option) if time is short.

Once on Mt. Desert Island and at Acadia Park, you should plan to spend about 2 days in the Park and the island community of Bar Harbor. Overnight hotel accommodations are available in both Bar Harbor and just north of the Island in Ellsworth. The rooms in Ellsworth would likely be less costly.

Again, the final plan for this trip will be scaled to the level of interest expressed by reunion attendees. Feel free to call Derrill or email him, if you have questions.

SEVENTEENTH WRD RETIREES REUNION
Portland, Maine
Thursday, October 2nd through Saturday, October 4th, 2014

AGENDA

Thursday, October 2, 2014

Reunion Check-in -- 12:00 p.m. to 6:00 p.m. (Official hotel room check-in time is 3:00 p.m.)
(Registration desk will be in the Hotel Lobby)
Informal Reunion kickoff-gathering -- 5:00 p.m. to 9:00 p.m. *(Winslow Homer Ballroom)*
Information Technology (IT) Meeting -- 7:00 p.m. to 9:00 p.m. *(Longfellow Room)*
(Gail Kalen will lead this session)

Friday, October 3, 2014

Pre-Business Meeting Breakfast -- 7:00 a.m. to 9:00 a.m. *(Winslow Homer Ballroom)*
Business Meeting -- 9:00 a.m. to 11:00 a.m. (All attendees are invited to participate in the business meeting) *(Winslow Homer Ballroom)*
Lunch and an early afternoon on your own in Portland downtown and "Old Port" areas
Optional Activity: Peaks Island Ferry and Lobster Bake Dinner -- 5:00 p.m. to 8:00 p.m.
Please catch the CBL Ferry on the 2:15 or 3:15 sailings to Peaks Island

Saturday, October 4, 2014

Optional Foliage Tour to Conway, NH -- 8:30 a.m. to 5:00 p.m. *(Meet in lobby at 8:15)*

NOTE: 2014 Reunion, Portland, Maine North Conway, NH Update: The dining car option on the Conway, NH Valley Train Ride has been booked full as of 06/23/2014. The first class car with box lunch is still available for \$45 per person. From now on anyone who has sent in their registration form and have paid the \$50 per person fee for the dining car option will be rolled over to the first class car. The \$5 extra per person you paid will be refunded to you at the registration desk at the reunion. If the first class coach fills up, additional requests for the train ride will be rolled over to the coach cars with box lunch, at the cost of \$37 per person.

Optional Tour to Freeport, ME, and the Delorme Map Store -- 9:00 a.m. to 4:00 p.m.
(Meet in Lobby at 8:45)
Gala Banquet -- 6:00 p.m. to 10:00 p.m. *(Eastland Grand Ballroom)*

Sunday, October 5, 2014

Specific information regarding post-reunion activities will be posted on the WRD Retirees website and Facebook page.

For more information contact: Derrill Cowing djcowing@aol.com

NOTE: Reunion details can be found in the February newsletter (NL162, pages 6-8).

SEVENTEENTH WRD RETIREES REUNION 2014
Portland, Maine
Thursday, October 2nd through Saturday, October 4th, 2014

Complete the following form, keep a copy, and mail the completed form, with check payable to:
 "WRD Retirees Reunion 2014"

WRD Retirees Reunion
 Derrill J. Cowing
 P.O. Box 339
 Monmouth, ME 04259

OR You can pay with a credit card using PayPal and send the payment to the email address:
PayPal WRD.REUNION.2014@gmail.com

REGISTRATION--Deadline August 29, 2014 - Refunds are available prior to the August 29th deadline.

NAME(S) _____
 STREET ADDRESS _____
 CITY _____ STATE _____ ZIP CODE _____
 EMAIL _____ PHONE _____

REGISTRATION FEE:	NUMBER _____ @ \$75 per person	\$ _____
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Includes costs of the Thursday evening informal reunion kick-off gathering, Friday breakfast before the business meeting, and Hospitality Room activities for the three days.

THURSDAY OCTOBER 2, 2014
Reunion Check-in Noon to 6 p.m. Hospitality Room will open at Noon. Informal Reunion kick-off gathering from 5 p.m. to 9 p.m. There will be an open meeting to discuss USGS Information Technology (IT) topics from 7 p.m. to 9 p.m. at the hotel.

FRIDAY, October 3, 2014				
Peaks Island Ferry (see Ferry schedule) and Lobster Bake Dinner, 5 p.m. to 8 p.m.				
Check your entrée choice				
Lobster	Steak	Chicken	Vegetarian	
_____	_____	_____	_____	NUMBER _____ @ \$60 per person
				\$ _____
Extra lobster with any entrée is \$10. each				NUMBER _____ @ \$10 per lobster
				\$ _____

Saturday, October 4, 2014
 TOUR Buses are reserved for each tour. Cancelled tours due to lack of participation will either be refunded or we will try to accommodate the participants in the remaining tour.

Foliage Tour to Conway, NH 8:30 a.m. to 5 p.m. Lunch on your own in Conway				
	NUMBER _____ @ \$30 per person	\$ _____		
Can add Valley Train ride with lunch				
	NUMBER _____ @ \$50 per person	\$ _____		
Freeport, ME and Delorme Map Store (EARTHA). 9 a.m. to 3 p.m. Lunch on your own in Freeport				
	NUMBER _____ @\$25 per person	\$ _____		
Gala Banquet in the Grand Ballroom at the hotel, 6 p.m. to 10 p.m.				
Check your entrée choice				
Salmon	Steak	Chicken	Vegetarian	
_____	_____	_____	_____	NUMBER _____ @ \$60 per person
				\$ _____

TOTAL (Registration, Tours and Banquet)	\$ _____
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Questions? WRD.Reunion.2014@gmail.com or Derrill Cowing 207/242-0826 (cell)

CLIMATE CHANGE IMPACTS IN THE UNITED STATES OVERVIEW AND REPORT FINDINGS

Prepared by U.S. Global Change Research Program

<http://www.globalchange.gov/>

Report Findings

These findings distill important results that arise from this National Climate Assessment. They do not represent a full summary of all of the chapters' findings, but rather a synthesis of particularly noteworthy conclusions.

1. Global climate is changing and this is apparent across the United States in a wide range of observations. The global warming of the past 50 years is primarily due to human activities, predominantly the burning of fossil fuels.

Many independent lines of evidence confirm that human activities are affecting climate in unprecedented ways. U.S. average temperature has increased by 1.3°F to 1.9°F since record keeping began in 1895; most of this increase has occurred since about 1970. The most recent decade was the warmest on record. Because human-induced warming is superimposed on a naturally varying climate, rising temperatures are not evenly distributed across the country or over time. See page 18.

2. Some extreme weather and climate events have increased in recent decades, and new and stronger evidence confirms that some of these increases are related to human activities.

Changes in extreme weather events are the primary way that most people experience climate change. Human-induced climate change has already increased the number and strength of some of these extreme events. Over the last 50 years, much of the United States has seen an increase in prolonged periods of excessively high temperatures, more heavy downpours, and in some regions, more severe droughts. See page 24.

3. Human-induced climate change is projected to continue, and it will accelerate significantly if global emissions of heat-trapping gases continue to increase.

Heat-trapping gases already in the atmosphere have committed us to a hotter future with more climate-related impacts over the next few decades. The magnitude of climate change beyond the next few decades depends primarily on the amount of heat-trapping gases that human activities emit globally, now and in the future. See page 28.

4. Impacts related to climate change are already evident in many sectors and are expected to become increasingly disruptive across the nation throughout this century and beyond.

Climate change is already affecting societies and the natural world. Climate change interacts with other environmental and societal factors in ways that can either moderate or intensify these impacts. The types and magnitudes of impacts vary across the nation and through time. Children, the elderly, the sick, and the poor are especially vulnerable. There is mounting evidence that harm to the nation will increase substantially in the future unless global emissions of heat-trapping gases are greatly reduced.²⁴ See page 32.

5. Climate change threatens human health and well-being in many ways, including through more extreme weather events and wildfire, decreased air quality, and diseases transmitted by insects, food, and water.

Climate change is increasing the risks of heat stress, respiratory stress from poor air quality, and the spread of waterborne diseases. Extreme weather events often lead to fatalities and a variety of health impacts on vulnerable populations, including impacts on mental health, such as anxiety and post-traumatic stress disorder. Large-scale changes in the environment due to climate change and extreme weather events are increasing the risk of the emergence or reemergence of health threats that are currently uncommon in the United States, such as dengue fever. See page 34.

6. Infrastructure is being damaged by sea level rise, heavy downpours, and extreme heat; damages are projected to increase with continued climate change.

Sea level rise, storm surge, and heavy downpours, in combination with the pattern of continued development in coastal areas, are increasing damage to U.S. infrastructure including roads, buildings, and industrial facilities, and are also increasing risks to ports and coastal military installations. Flooding along rivers, lakes, and in cities following heavy

downpours, prolonged rains, and rapid melting of snowpack is exceeding the limits of flood protection infrastructure designed for historical conditions. Extreme heat is damaging transportation infrastructure such as roads, rail lines, and airport runways. See page 38.

7. Water quality and water supply reliability are jeopardized by climate change in a variety of ways that affect ecosystems and livelihoods.

Surface and groundwater supplies in some regions are already stressed by increasing demand for water as well as declining runoff and groundwater recharge. In some regions, particularly the southern part of the country and the Caribbean and Pacific Islands, climate change is increasing the likelihood of water shortages and competition for water among its many uses. Water quality is diminishing in many areas, particularly due to increasing sediment and contaminant concentrations after heavy downpours. See page 42.

8. Climate disruptions to agriculture have been increasing and are projected to become more severe over this century.

Some areas are already experiencing climate-related disruptions, particularly due to extreme weather events. While some U.S. regions and some types of agricultural production will be relatively resilient to climate change over the next 25 years or so, others will increasingly suffer from stresses due to extreme heat, drought, disease, and heavy downpours. From mid-century on, climate change is projected to have more negative impacts on crops and livestock across the country – a trend that could diminish the security of our food supply. See page 46.

9. Climate change poses particular threats to Indigenous Peoples' health, well-being, and ways of life.

Chronic stresses such as extreme poverty are being exacerbated by climate change impacts such as reduced access to traditional foods, decreased water quality, and increasing exposure to health and safety hazards. In parts of Alaska, Louisiana, the Pacific Islands, and other coastal locations, climate change impacts (through erosion and inundation) are so severe that some communities are already relocating from historical homelands to which their traditions and cultural identities are tied. Particularly in Alaska, the rapid pace of temperature rise, ice and snow melt, and permafrost thaw are significantly affecting critical infrastructure and traditional livelihoods. See page 48.

10. Ecosystems and the benefits they provide to society are being affected by climate change. The capacity of ecosystems to buffer the impacts of extreme events like fires, floods, and severe storms is being overwhelmed.

Climate change impacts on biodiversity are already being observed in alteration of the timing of critical biological events such as spring bud burst and substantial range shifts of many species. In the longer term, there is an increased risk of species extinction. These changes have social, cultural, and economic effects. Events such as droughts, floods, wildfires, and pest outbreaks associated with climate change (for example, bark beetles in the West) are already disrupting ecosystems. These changes limit the capacity of ecosystems, such as forests, barrier beaches, and wetlands, to continue to play important roles in reducing the impacts of these extreme events on infrastructure, human communities, and other valued resources. See page 50.

11. Ocean waters are becoming warmer and more acidic, broadly affecting ocean circulation, chemistry, ecosystems, and marine life.

More acidic waters inhibit the formation of shells, skeletons, and coral reefs. Warmer waters harm coral reefs and alter the distribution, abundance, and productivity of many marine species. The rising temperature and changing chemistry of ocean water combine with other stresses, such as overfishing and coastal and marine pollution, to alter marine-based food production and harm fishing communities. See page 58.

12. Planning for adaptation (to address and prepare for impacts) and mitigation (to reduce future climate change, for example by cutting emissions) is becoming more widespread, but current implementation efforts are insufficient to avoid increasingly negative social, environmental, and economic consequences.

Actions to reduce emissions, increase carbon uptake, adapt to a changing climate, and increase resilience to impacts that are unavoidable can improve public health, economic development, ecosystem protection, and quality of life. See page 62.

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NOAA, Partners Predict an Average 'Dead Zone' for Gulf of Mexico; Slightly Above Average Hypoxia in Chesapeake Bay

Scientists are expecting an average, but still large, hypoxic or "dead zone" in the Gulf of Mexico this year, and slightly above-average hypoxia in the Chesapeake Bay.

NOAA-supported modeling is forecasting this year's Gulf of Mexico hypoxic zone to cover an area ranging from about 4,633 to 5,708 square miles (12,000 to 14,785 square kilometers) or about the size of the state of Connecticut.

While close to averages since the late 1990s, these hypoxic zones are many times larger than what research has shown them to be prior to the significant human influences that greatly expanded their sizes and effects.

The Gulf of Mexico prediction is based on models developed by NOAA-sponsored modeling teams and individual researchers at the [University of Michigan](#), [Louisiana State University](#), [Louisiana Universities Marine Consortium](#), [Virginia Institute of Marine Sciences/College of William and Mary](#), [Texas A&M University](#), and the [U.S. Geological Survey](#), and relies on nutrient loading estimates from the USGS. The models also account for the influence of variable weather and oceanographic conditions, and predict that these can affect the dead zone area by as much as 38 percent.

A second NOAA-funded forecast, for the Chesapeake Bay, predicts a slightly larger than average dead zone in the nation's largest estuary. The forecast predicts a mid-summer low-oxygen hypoxic zone of 1.97 cubic miles, an early-summer oxygen-free anoxic zone of 0.51 cubic miles, with the late-summer oxygen-free anoxic area predicted to be 0.32 cubic miles. Because of the shallow nature of large areas of the estuary the focus is on water volume or cubic miles, instead of square mileage as used in the Gulf.

The Chesapeake Bay prediction is based on models developed by NOAA-sponsored researchers at the [University of Maryland Center for Environmental Science](#), [University of Michigan](#), and again relies on nutrient loading estimates from USGS.

The [dead zone in the Gulf of Mexico](#) affects nationally important commercial and recreational fisheries and threatens the region's economy. The Chesapeake Bay dead zones, which have been highly variable in recent years, threaten a [multi-year effort to restore the water and habitat quality](#) to enhance its production of crabs, oysters, and other important fisheries.

Hypoxic (very low oxygen) and anoxic (no oxygen) zones are caused by excessive nutrient pollution, primarily from human activities such as agriculture and wastewater, which results in insufficient oxygen to support most marine life and habitats in near-bottom waters. Aspects of weather, including wind speed, wind direction, precipitation and temperature, also affect the size of dead zones.

"We are making progress at reducing the pollution in our nation's waters that leads to 'dead zones,' but there is more work to be done," said Kathryn D. Sullivan, Ph.D., Under Secretary of commerce for oceans and atmosphere and NOAA administrator. "These ecological forecasts are good examples of the critical environmental intelligence products and tools that NOAA provides to interagency management bodies such as the Chesapeake Bay Program and Gulf Hypoxia Task Force. With this information, we can work collectively on ways to reduce pollution and protect our marine environments for future generations."

Later this year, researchers will measure oxygen levels in both bodies of water. The confirmed size of the 2014 Gulf hypoxic zone will be released in late July or early August, following a mid-July monitoring survey led by the Louisiana Universities Marine Consortium. The final measurement in the Chesapeake will come in October

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following surveys by the [Chesapeake Bay Program](#)'s partners from the [Maryland Department of Natural Resources](#) and the [Virginia Department of Environmental Quality](#).

USGS nutrient-loading estimates for the [Mississippi River](#) and [Chesapeake Bay](#) are used in the hypoxia forecasts for the Gulf and Chesapeake Bay. The Chesapeake data are funded with a cooperative agreement between USGS and the Maryland Department of Natural Resources. USGS also operates more than [65 real-time nitrate sensors](#) in these two watersheds to track how nutrient conditions are changing over time.

For the Gulf of Mexico USGS estimates that 101,000 metric tons of nitrate flowed down the Mississippi River into the northern gulf in May 2014, which is less than the 182,000 metric tons in last May when stream flows were above average. In the Chesapeake Bay USGS estimates that 44,000 metric tons of nitrogen entered the bay from the Susquehanna and Potomac rivers between January and May of 2014, which is higher than the 36,600 metric tons delivered to the Bay during the same period in 2013.

"The USGS continues to conduct long-term nutrient monitoring and modeling" said William Werkheiser, USGS Associate Director for Water. "This effort is key to tracking how nutrient conditions are changing in response to floods and droughts and nutrient management actions."

The research programs supporting this work are authorized under the Harmful Algal Bloom and Hypoxia Research and Control Act, known as HABHRCA, which was recently amended and reauthorized earlier this month through 2018.

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Gary Firda



After 36 years that spanned part or all of five different decades, Gary has decided to return the Zeiss Ni2 W-310911 to its carrying case for the last time on August 1st. Gary began his career in July 1978 in the Hydrologic Data Section of the Jackson, MS office and although he was told when hired that he would be groomed to be a water quality hydrologist, at the last minute it was decided he would be a surface water hydrologist (the surface water gods were smiling that day). In his own words... "I have always felt fortunate to have begun my career in an office that was so rich in talented surface-water individuals. I will always be grateful to Harold Bishop for teaching me high-flow measurement techniques, Jim Hudson for everything he knows about indirect measurements, and the late E.J. Tharpe for his logarithmic rating skills and E.J.'s overall mentoring." After a few years in the MS data section, a few years in the MS project section performing bridge-site studies, and then a few years back in the data section as the assistant data chief, Gary transferred to the Albany, NY office in 1984 to become the Hydrologic Records Section Chief. As the NY Section Chief, he attempted to do what no other had ever done, and that was to tame the 'animals' (an appropriate label that was given to the data-section personnel back then) – he would say, with limited success. In 1995, the New York Water Science Center (District) was fortunate when Gary agreed to become the surface water specialist, the position he still holds. Gary says that "throughout my career the most enjoyable aspects of my work have been quality control, training/assisting other employees, and performing indirect measurements." Gary has always worked to pass his knowledge to others. In the 90's, Gary developed a ratings/shifts workshop that he conducted at over 20 other WSCs across the nation. He has been involved with well over 100 indirect measurements and has been detailed to other WSCs to perform indirect such as AR, WV, OR, and RI. Gary plans to spend more time with his wife of 36 years (Cindy), his granddaughters, his pets, and his hobbies: remodeling, gardening, ponds, fishing, target shooting, motorcycles, and sports cars. They plan to search for that perfect piece of property somewhere down south to have their dream home built.

Susan Hutson



After a career with the USGS that spanned several decades, Susan is retiring on July 3, 2014. Susan's work with the USGS began in the fall of 1977, when she brightened the doorway of the Tennessee District Office, and with a Bachelor's degree in hand from the University of Tennessee Knoxville, took a job as a hydrologic technician. For the next seven years, she got her hands dirty and her feet wet collecting data for various projects in the Tennessee District. In 1984, Susan successfully made the transition to a hydrologist, and began working as the Water Use Technical Specialist in the Tennessee WSC, which she continued for the next 26 years. Susan authored her first USGS report in 1988 on water use in Tennessee, the first of 21 reports in her career. Along the way, she headed up studies of water use in the Duck River basin, the larger Tennessee River basin for the TVA, and numerous statewide studies in Tennessee and Alabama, as well as a study of water demand from major aquifers in Mississippi. Susan also dabbled in water quality, publishing a report on VOC's in the Memphis aquifer. While continuing to expand her experience with water use data, Susan completed her studies at the University of Memphis and received her Master's degree from the Department of Earth Sciences in 1997. She soon began leading efforts on a national level to increase the understanding and knowledge of patterns of water use and to advance the science of water use. In addition to writing or contributing to two reports on water use in the U.S., Susan began a long association with the National Water Use Information Program. This led to a recent study and report on the use of water for thermoelectric generation in the U.S., which developed new methods for estimating consumptive water use for power generation. Not one to be contained by national boundaries, Susan served as the water-use specialist on a water-resource study in Jordan through USAID. In 2010, Susan made a move to the MD-DE-DC WSC to become the Center's Water Use Specialist. Long a birding enthusiast, the move allowed her to combine birding with her other great love, baseball, as she watched many Orioles games over the past few years. (And, always with a scorecard in hand!) In Maryland she led the water-use component of a statewide water availability study, and other efforts to improve the quality of available water use data. At the same time, she served as the water use specialist for both the northeastern and southeastern regions of the United States, coordinating and guiding the efforts in each of the states to compile and review water use estimates and information for the 2010 water-use compilation. Notwithstanding Susan's long list of

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scientific contributions to the field of water use, she will be best remembered for her relationships with the people she worked with. Susan has always been willing to share her expertise and experience with co-workers across many USGS offices and with colleagues in cooperating agencies across many States. No matter how challenging the project or the timeline, Susan always faced them with a positive attitude and a smile. Through her mentoring of scientists scattered in various states, presenting at conferences, and teaching at workshops, Susan has left her mark not only on the science of water use but on the many people with whom she came in touch. Susan plans to spend some well-deserved time sailing, birding, hiking, and visiting her son in Germany. While we will miss her, we wish her the best, and invite you to join us. (A luncheon was held on July 2, 2014, to honor Susan for her nearly 37 years of service and friendship at the USGS MD-DE-DC Water Science Center in Baltimore, MD.)

Mike Rupert



After more than 23 years with the USGS, Mike of the Pueblo sub-office of the Colorado Water Science Center has decided to take the VERA. Mike exemplifies the high qualities of an outstanding USGS scientist: a creative mind, hard work ethic, attention to detail, and an innate ability to easily translate science to the public. His retirement will be a big loss to the Colorado Water Science Center, to his cooperators, to the Pueblo science community, and to his colleagues.

Mike has had a long and varied career. Occupations include apprentice electrician, ski racing coach, laser technician, ski lift mechanic, Hazardous Materials Specialist, whitewater rafting guide, Hazardous Waste Permit Officer, Senior Groundwater-Quality Analyst, and most recently as Hydrologist with the USGS (first in Boise, Idaho, and later in Pueblo, Colorado. While working for the Survey, Mike's fields of expertise included statistical modeling, groundwater geochemistry, groundwater age dating, and groundwater-quality trends assessment. Mike's assignments included serving as groundwater-quality specialist for the NAWQA Upper Snake River Basin Study Unit, and lead scientist for the NAWQA Western Volcanics Principal Aquifer Team. Mike's most notable projects include modeling the probability of debris flows in areas recently burned by wildfires, using groundwater geochemistry and groundwater age dating to define the groundwater flow system at Great Sand Dunes National Park, and using groundwater age dating and ultra low-level VOC's to develop groundwater susceptibility maps near Vail, Colorado. We wish him all the best as he spends his retirement on bone-breaking hobbies including skiing, hunting, and white-water rafting. Mike retirement party has already been held; however, if anyone would like to contact Mike to send their congratulations on his retirement or share remembrances of past USGS experiences please do so by email at: mike8sharon@gmail.com

Linda Weiss



Linda is retiring July 31, 2014, after almost 31 years working for the Federal Government, starting as a student in the USGS Illinois Water Science Center in 1983. She was converted to a permanent hydrologist in Illinois, working on groundwater and surface-water modeling projects, and was the first to bring GIS capabilities to Illinois. In 1987, Linda moved to Washington DC to work for the U.S. Army Corps of Engineers, Dredging Division, where she was promoted twice as a Civil Engineer. In 1989, she returned to work for the USGS in Towson, Maryland, where she functioned in an Area position as the Mid-Atlantic Programs Reports Specialist, Program Officer, and Publications Section Chief, serving Maryland-Delaware-DC, Virginia, and West Virginia. In 1993, Linda became Director of the USGS Nebraska Water Science Center, where she received a Superior Service Award for the excellent job she did in turning Nebraska into a financially healthy Center. During that time, Linda was on a Headquarters Team to develop a template for Workforce Plans, and was on two Headquarters Review Teams. In 1997, she became Director of the New Mexico Water Science Center, where she worked with Federal, State, local agencies, and Tribes to grow the program, and brought in work such as wildfire-related debris-flow modeling and flood-warning systems into the State. Linda successfully dealt with a Class Action Suit against the USGS. She reorganized the Center based on technical areas (surface water, groundwater, and water quality), and turned New Mexico Water Science Center into a happy, scientifically robust center, where people want to work.

NEWS OF RETIREES

Briane Adams wrote: "Enclosed please find a check for the retirees' dues for three years 2014-2016."

Andy Anderson wrote: "The position of WRD Retirees Secretary is one of the most closely held secrets in this organization. Now that I have been Secretary for several months, I have come to understand the importance of what Bill Boning did over the past eleven years. The number of important details that need to be kept track of: maintaining records to send to the Newsletter, a data base for the team that puts our annual Telephone Directory of Retirees together, and records of incoming dues that are sent to our Treasurer for depositing into our account. I must have logged in 400 checks in January and February alone, and they still come in every month. I have to keep track of new and affiliate members, deaths and/or deletions from the system. And I am always ready to provide this information in a timely manner to the people who need it. I am still on the learning curve as Secretary and trying to learn how to use a new computer system. What really makes much of this happen is the information that you, our members, provide to us. We need to be kept up to date on all the happenings that you can provide, whether it is by email, short written notes, or your news and articles. I am learning this job, but it's a whopper. Bill really deserves a lot of thanks for his many years of service. Thanks, Bill!"

Zelda Bailey and Pat Tucci wrote: "spent much of the spring travelling. In April, we spent two weeks on a mineral and fossil tour of Morocco. We had a great time, collecting and buying some beautiful specimens, as well as seeing some fantastic scenery. The people there were friendly and inviting, and we ate some great food. Later that month we participated in the USGS Karst Interest Group workshop in Carlsbad, New Mexico. In May, we drove to visit our daughter in Medford, Oregon. She had bought an old house in March and needed help organizing, cleaning, and painting. We spent two weeks there, and then spent a week in Steamboat Springs on our way home. We are planning on attending the reunion in Maine.

Gil Bertoldi wrote: "Attached is my check for dues. Please use \$20 to pay for 2014 and 2015, and use the rest for the scholarship fund. Hope all is well with everyone. Farming has kept me busier than the proverbial 'one-armed paper hanger'. Best of luck to all!"

Bill and Shirley Boning report "that they have sold their home and are scheduled to move to Ashby Ponds in September. Ashby Ponds is a retirement facility in Northern Virginia. The house was put on the market about April 15 and it sold in a week! The buyers wanted possession by end of May so we had a lot of rapid down-sizing to do! There were some items that we did not want to give up yet so we rented a storage unit, in addition to putting our household goods in the mover's storage. The condo at Ashby Ponds is in a new building which is not yet finished, so we drove to Washington State where we have a condo. We will be living here until we return to Virginia in mid-September. Our drive west was uneventful - we took our time and did a bit of sight-seeing along the way. We spent a couple of nights with Bill's sister, several nights with other friends, and twice we spent two nights at time-shares. Shortly after moving to our condo at Ashby Ponds, we will head north to the WRD Retirees reunion. We are looking forward to this gathering and seeing friends we have met during the Survey years. See you in Portland!"

Gary Bradford wrote: "Please allow me to quit the WRD Retirees Directory. I am a bit before all of that information. I retired in 1982, and not much in it is familiar. I understand that aging changes the brain. At my age 90 years, I seem OK, but know I am changing, and we WWII's are dwindling. I am sorry to hear of the passing of Bob Schneider. I drafted a number of his FHS and OIA report maps. Bob was very nice and a real gentleman. I don't recall all of the countries, but I believe they were Brazil and Israel, and others. I learned much from these interesting guys, while drafting their international maps (a real education). Please let me know if I owe any dues."

Ann Beam wrote: "I'm still enjoying a busy life at Springmoor Retirement Community. Am glad to see some warmer weather arriving and I'll be going to Topsail Beach with my daughter and her family, and enjoy fishing in their boat. Am enclosing a check to catch up on my dues."



Bob Burchett reports "that he and his family held three Celebrations of Life for Libby in May. One each in Austin, Nashville and Kingsport, TN. Attendance ranged from over 100, 50 and 75 respectively. A good time was had by one and all including Libby. While in the Nashville area Bob enjoyed a canoe trip with his daughter Gwyn and son Sean. As Bob paddled by the Harpeth River at Kingston Springs gaging station he noted that the Tennessee District or now called Science Center has come up with a new way to bring in funding (see photo). The beautiful old concrete gage had advertisements spray painted on its' walls and another sign hanging from its' walkway. Maybe the money was placed in the coop program so that Tennessee also received matching funds. WOW!

NEWS OF RETIREES

Denzel and Dorothy Cline wrote: "We didn't go traveling in the southwest part of our country this winter because of the poor health of my wife Dorothy. Our oldest daughter's family lives in Cannon Beach, OR and we made several trips there. We did go last June to Palo Alto, CA to see their oldest son graduate from Stanford Law School. He is now doing environmental work with a law firm in San Francisco. Come this June all 5 of their kids will have graduated from college, the last being the twins—a boy and a girl. We hope to have a family get-together at Discovery Bay, WA in August to celebrate our upcoming 60th wedding anniversary in September. Thankfully, at 85 years old, I'm still in pretty good health."

Mike Dorsey wrote: "Please find enclosed a check to cover my dues for 2013-2017."

Isabelle Halley des Fontaines (Steven Goldstein) wrote: We have moved to a cottage, at [Westminster Canterbury of the Blue Ridge](#) on Pantops Mountain, in Charlottesville, VA. It is a beautiful continuing care community. We have a very spacious 2100 s.f. cottage with a one car garage with a beautiful view. We feel very fortunate and are looking forward to many years of enjoyment. 2013 was a busy year for us. In August Steve was inaugurated into the [Internet Hall of Fame](#); and, in October, I went to Australia with my long-time friend Lari. We had a wonderful time. You can view our trip at: <http://www.leescornerfrench.us/Sites/2013.Australia/Welcome.html>.

John Gray wrote: "Another subject, I might suggest starting a "dumb things we did" section of the newsletter, or some similar title. As Tom knows well, I could fill a book with mine alone (maybe best example was me 'taking' 7,200 volts on top of a gaging station near Rockford, IL, Oct. 22, 1979). If you're inclined to take up this offer, I'll write one up for the next directory, and even include a photograph."

Beverly Josefson wrote: "Sorry to be late with renewal of newsletter, but old age is catching up with me! I am enclosing \$32 (for 2 yrs. renewal, plus contribution of \$12). Although the names I recognize are getting fewer and fewer, I still like to receive it. You people do a great job and deserve a lot of thanks!!!"

Vance Kennedy wrote: "California has water problems in the Sierra foothills, as well as elsewhere, as a result of a 3rd year of drought. Average rainfall in the foothills is a little over a foot, so there is little recharge. In the last few years there has been tremendous expansion of deep well drilling (600 ft. plus or minus) with the well diameters up to 16 inches and production of as much as 2500 gallons per minute. The water is used to supply mainly new almond trees in the foothills, which are extremely profitable and require 3.5 feet of irrigation water per year. The land is quite hilly and is ripped before planting. I have been sitting in on a County-appointed political committee (as a non-member) whose job is to suggest solutions to the water problems. It is extremely frustrating and is like seeing an oncoming environmental disaster happening with no means of stopping it. California has no groundwater laws, and farmers have an extreme view of private property rights. They can pump as much water as they want under their own land. It is a classic case of 'Tragedy of the Commons' where everyone draws from a common source with no one being responsible for bad effects. The prospect in the foothills is for massive erosion and wiping out of the ranching practices of the past. Small landowners will lose not only their water at reasonable depths but the value of buildings. No environmental reports are required prior to drilling and very expensive and time-consuming lawsuits are impossible for small landowners. It is a very educational experience in real politics. The people in charge of the 'study' are knowledgeable and well-intentioned. But politically they would offend the rich farmers and lose any cooperation. The State has the power to do something, but there is so much money already invested in trees no one wants to remove a 'gold mine'. I think what is going on should be studied by other states as an example of how not to do things. Personally, at 91 years old, I am very definitely slowing down and am having trouble maintaining my small farm. Fortunately I have family nearby which is a great help. The newsletter is most interesting, but many of my generation have, unfortunately, moved on to their 'reward'."

Jerry and Cora Jean Leenheer wrote: "Sorry this is so late—this is to put us two years ahead."

Dorothy Maltby wrote: "Enclosed are my dues for 2014-2015, plus a donation. Thank you for all your hard work on the newsletter. I enjoy reading it. Thank you again."

Jessie Richardson wrote: "Thank you for the copy of the WRD Retirees Telephone Directory, Edition 40. This letter is to inform you that my husband, Donald Richardson, died November 17, 2013 in Gig Harbor, Washington. The following is an account of where he served the Survey (*the information provided can be found in the 'In Memoriams'*)."

Al Rutledge wrote: "Anne and I have been living the good life in eastern Carolina. We live on the Intracoastal Waterway and enjoy many things such as boating, but most of all we simply enjoy the view! I've managed to pursue some of the things I planned for retirement such as reading and various artistic pastimes like drawing. We both get to the gym a lot so

NEWS OF RETIREES

that's keeping us active. We just got back from our third biking vacation with a tour company called VBT. This one was in Tuscany, and wow it was beautiful. That's a short summary but I wanted to say Hi to all my friends in the WRD Retirees! Thanks very much for sending the updates about the WRD Retirees. It's always a pleasure to read."

Don Schaefer wrote: "Enclosed are my dues for 3 years, plus \$10 for you to use as you see fit. Keep up the good work!"

Dwight Tanner wrote: "thank you to those handling the organization and newsletter duties, and hello to all retirees. I retired from the Oregon Water Science in December 2012. Since then I have been teaching sometimes at a small college and volunteering at a science museum. I travel with my wife to Japan (her home), to the Midwest (my home), and around the western mountains and coasts. Portland is a great place to hang – many aspects of the TV show "Portlandia" are actually pretty true. So come visit or get in touch (my contact info has not changed)."

Jack and Judy Weeks report that they spent the month of March in Australia touring and visiting friends and relatives. You may have heard about the Qantas planes that bumped wings on the tarmac in LAX on February 27. One of those planes was being moved to the gate to load us for the trip to Melbourne. Needless to say, our flight was cancelled. They got us on a plane to Sydney and after a layover there we caught a domestic flight to Melbourne which turned the 14-hour trip into 20 hours. We made it a little late, although our luggage didn't show up till the next day. While in Australia, we visited Melbourne, Adelaide, and the Gold Coast in Queensland and northern New South Wales. Judy is Australian and we had not visited her relatives since 2009, everyone was glad to see us. The highlight of our trip was a drive along the Great Ocean Road which was built following WWI to rehabilitate and provide work for returning service men. They built a road along the south coast of Australia between Geelong and Warrnambool, a distance of 170 miles. Much of the two lane road hangs spectacularly along the limestone cliffs and shoreline, much like Highway 1 in California. Now there are many resort communities along the track which are very popular and crowded during summer. The coastline is very rugged and in a stretch of water known as the shipwreck coast, the limestone has been eroded by relentless waves leaving pillars of rock standing alone in the sea, monuments to the power of the ocean. The area is now Twelve Apostles National Park. We spent one night at Port Campbell near Twelve Apostle so that we could view the area in the evening as well as the morning light. It is even more impressive than the pictures you may have seen. If you're going to Australia, put this on your bucket list!!

We are excited about the WRD Retirees meeting in Portland, ME, and we are looking forward to catching up with all our friends from USGS. See you there!!

Clarence T. Welborn reports "that the quarterly TX Retirees Meeting was held on July 16, 2014.

MEETINGS AND GATHERINGS

Get in Touch With Your Colleagues Without Leaving Home!

Tim Smith, President
WRD Retirees

As we finished up the Directory for this year, it became clear that the local meetings and gatherings “needed something.” Some had been cancelled completely. If you think about this, maybe it’s not too surprising, especially where there are few members in a state, and the driving distances are considerable. A two-hour drive to a lunch may not be something to look forward to. While the usual meetings should be continued, something more seems to be needed.

So, what to do? The Directory gives phone numbers and emails for everybody so maybe that can be helpful. Nowadays just about everyone has some kind of smart phone, or equivalent, and contacting people electronically has become commonplace. What if you could talk to a group of your colleagues without leaving home? As it turns out, you can do exactly that by opening an account on Free Conference Call (see <http://freeconferencecall.com>). Please consider doing this as a supplement to face-to-face meetings, as a way to keep in touch. This should be especially important for the District (State) Contacts and Regional Directors, but certainly can be done by any member who wants to stay in touch with colleagues. You can schedule calls anytime with those you select.

What do you talk about? Well, there are always business matters, which is helpful to keep the Retirees running smoothly. But you can find some colleagues nearby who may want to join you for lunch. Or, perhaps you can ask the Water Science Center Director for your state to give you a talk on current events at the USGS. Or, you might want to talk about trips or other events in your lives, or plan to do things together. Give it some thought, and enjoy!

By the way, we would like to hear what you come up with, so feel free to contact us at wrdretirees@usgs.gov.

IN MEMORIAMs



Fred C. Boner, 87, a World War II Navy Veteran, passed away on July 25, 2013. He is survived by his wife Nancy, three children, two stepchildren, four grandchildren, five great-grandchildren, and two great-great-grandchildren. "As a Civil Engineer working for the US Geological Survey for over 40 years he was one of the finest examples of a dedicated public servant" as quoted by his former boss Robert MacNish. He loved golfing, playing bridge and collecting stamps. Everyone who knew Fred loved him. What a void he has left! We will never forget the gentle, kind and caring person he was. A Memorial Service was held on August 7, 2013.



Margaret Counts, 90, of Conyers, Georgia, passed away on April 25, 2013. Memorial services were held at Epiphany Lutheran Church in Conyers. A native of Grand Island, NE, Mrs. Counts was born November 13, 1922 to John and Martha Meinecke. She married Harlan Counts on September 22, 1945, in Grand Island while Harlan was in the Air Force. When Margaret passed away, they had been married 67 years. Harlan is a WRD Retiree who retired in 1980. He began his USGS career in 1949 in the Arkansas district as a hydraulic engineer. In 1956 the Counts moved to Georgia where Harlan was in charge of the Saltwater Encroachment Project of Savannah and South Carolina. He pioneered the use of current meters to determine the water yielding zones within the Ocala Limestone Aquifer. In 1961 he became District Engineer of The Ground Water Branch District Office in Atlanta. In 1965 when Georgia became a combined District, Harlan was named the Assistant District Chief. In 1979 Harlan transferred to the Southeastern Region to head up the Southeastern Coastal Plain RASA Project and in 1980 he was named the Regional Ground Water Specialist. Between 1980 and 1982 he served as Groundwater Specialist (WAE) under Regional Hydrologist Jim Cook. Margaret is survived by her husband, Harlan; a sister; and numerous nieces and nephews.



G. Wayne Curtis, 82, died on November 13, 2013, ending his courageous battle with Alzheimer's disease in Urbana, IL. He was born on August 23 1931, to John Wesley and Jessie Curtis in Champaign, IL. Wayne grew up on a farm west of Champaign that had been settled by his grandfather after the Civil War. He graduated in 1949 from Champaign High School, where he lettered in wrestling. Wayne served in the U.S. Navy's Amphibious Forces from 1951-1954 during the Korean War, traveling throughout Japan, Korea, Indochina (Vietnam), the Philippines and Alaska. On June 15, 1958, he married Martha Pearl Monical in Champaign, IL. Wayne later graduated from the University of Illinois in 1958 with a B.S. in Agronomy before beginning his 40-year career as a hydrologist with the U.S. Geological Survey. Wayne was a lifelong member of the First United Methodist Church of Champaign; a Masonic member and Master Mason; he enjoyed the outdoors as an avid sportsman; and, held a deep feeling of stewardship for farmland throughout his life. Perhaps the only hobby that could draw him indoors was working on the family's genealogy. He was preceded in death by his parents, a sister and a brother. Survivors include his wife Martha, his two children; and five grandchildren. Funeral services were held on November 18, 2013 at the Morgan Memorial Home. Memorials may be made in Wayne's honor to the First United Methodist church of Champaign, the Champaign County Farm Bureau Foundation or the Champaign County Nursing Home Auxiliary.



Frank T. Hidaka, 95, passed away peacefully on February 6, 2014 in Renton, WA. Frank was born on November 19, 1918 in Seattle, WA. He worked 33 years for the US Geological Survey's Water Resources Division. He began his career as a Hydrologist in Tacoma, WA, and then became district chief of the Hawaii/South Pacific region and then the Nevada region where he retired in 1979. Frank and his wife, Teresa, then moved back to the Seattle area. He is survived by his five children and four grandchildren. He is preceded in death by Teresa, his wife of 62 years, a granddaughter and grandson. The funeral was held on February 13th, in Renton, WA.

Franklin D. King died on April 14, 2014 at the age of 80. Frank grew up on a farm in southern Alabama. He began his adult career with the Alabama Highway Department soon after graduating from high school. He joined the U.S. Geological Survey in 1955, and was assigned to the Montgomery, Alabama Office. Shortly after joining WRD, he was transferred to the Cullman, Alabama Office, and not long after his transfer to Cullman he was drafted into the U.S. Army where he served for about two years at Fort Knox, KY. After his tour of duty with the U.S. Army, Frank returned to WRD at the Montgomery Office. While working out of the Montgomery Office, Frank joined the U.S. Air Force Reserve in Montgomery. He was reactivated during the Berlin Airlift of 1961-62, and was on active duty for about one year. In 1979 Frank was transferred to the Williamsburg, Kentucky Field Office as Chief Technician in charge of that office. He served in that capacity until his retirement in 1989. After his retirement from WRD, he returned to his ancestral home where he enjoyed gardening and visiting with his children and grandchildren. He was preceded in death by his wife Mary King. He is

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survived by six children, eleven grandchildren, twenty great grandchildren, and one great-great grandchild. Funeral services were held on April 16, 2014 at the Joquin Baptist Church. Memorials may be made to Joquin Baptist Church, or The American Cancer Society, or to any mission fund.

-Notification received from John C. Scott



Hugh I. Kennedy died June 3, 2014 in Cheyenne, WY. Hugh was born February 26, 1934, to Alta and Sherman Kennedy in Warners, NY, and was the youngest of seven children. He graduated from Warners High School, attending Syracuse University for two years before enlisting in the Air Force in 1955. After six years in the service, he returned to Syracuse, earning a BA degree in 1963. A year later, he earned a Master's degree from the University of Northern Colorado in Social Studies Education. Hugh taught economics and U. S. History in Worland, WY, for eight years. He retired from the U.S. Geological Survey in 1994 with 29 years of service. In 1957, Hugh married Effie Lou Wade in Walden, CO; and divorced in 1979. They have five children. Hugh re-married in 1979, Florence Brown. They had no

children. Hugh is survived by his wife, Florence; his son, four daughters and their spouses; twelve grandchildren; one great-grandchild; two step-children; three step-grandchildren; and four step-great-grandchildren. The family extends appreciation to CRMC ICU and Rehab units. Services were private.



Norman J. "Norm" King, 88, of Lakewood, died August 27, 2013. He was born to the late George S. King and Florence Mattie Thiel on April 28, 1925, in Lambert, MT. His family relocated to Butte, MT where he attended the Butte public schools. After graduating from high school with honors, Norm attended the Montana School of Mines in Butte from 1944 to 1948, receiving a degree in Geological Engineering, with honors, and was elected to Sigma Xi and Phi Kappa Phi, Honorary Engineering Societies. After graduation, Norm joined the USGS in Lakewood, CO. Over his 33 year career with the USGS, Norm was highly regarded as a leader in the field of geohydrology. Norm retired in 1980 in Lakewood. At the time, he led the Environmental Impact Study, West-Central Colorado Coal Project. In addition to his engineering degree,

Norm later earned a Master's degree and was a professional licensed engineer in the state of Colorado. He married Beverly J. Moran of Sidney, MT in 1952, and they lived in UT, WY, Washington, D.C. and finally in Lakewood. Norm is survived by Beverly, his wife of 61 years; his children: daughter and son-in-law Mary and Don Boughton, daughter Judith King, son and daughter-in-law Raymond King and Lynn Murphy; four grandchildren; three siblings and their spouses; brother-in-law; and numerous nieces and nephews. He was preceded in death by his son David King, his parents, and five siblings. Norman was happiest with a fishing pole in his hands, whether in Alaska or the lower Forty-Eight. He also loved to "spin a yarn" about his youth in Montana during the Great Depression and his expeditions during his years with the USGS. If Norm could leave any parting advice it would be, "**Be mindful of our planet; we have only one, and we are doing our best to destroy her.**" Private services were held at the family home in September 2013. Memorial contributions may be made to Collier Hospice, 3210 Lutheran Pkwy., Wheat Ridge, CO 80033.



Leslie B. Laird, 87, peacefully passed away on January 9, 2014 and went to heaven to meet Jesus and be reunited with his father Walter B. Laird, mother Mary E. (Bostwick) Laird, and brother William Frederick Laird. Les was born on October 14, 1926 in Springfield, OH and grew up in Columbus, OH, graduating from West High School. He left Columbus for U.S. Naval Air Force pilot training during World War II. After the war, Les returned home and attended Ohio State University, where he earned a Bachelor of Science degree in Chemistry. He accepted a job with the U.S. Geological Survey in Columbus that later led him to

Portland, OR as the District Chemist; Tacoma, WA as the District Chief; Atlanta, GA as the Regional Hydrologist over nine southeastern states; Reston, VA as the Assistant Chief Hydrologist for Research and Technical Coordination; and then back to Tacoma. Les had the philosophy to hire the very best and then train them to be all they could be. He mentored many into being excellent District Chiefs. Les could always be trusted; he was more interested in what was best for WRD than for himself. During his 37-year career with the USGS he was awarded the Meritorious Service Medal and the Distinguished Service Medal from the Department of the Interior. Les was a life member of the American Chemical Society, where he served two terms as the Chairman for the Division of Environmental Chemistry. In retirement, Les enjoyed cruising and fishing the Northwest's waters, elk hunting, and travelling the world. Les's greatest accomplishments were being a faithful Christian (serving on many Lutheran church councils across the country); being a loving husband to Thelma, his wife of over 63 years; being a wonderful father to his children, Annmarie, James (Janice), and Stephen (Terrie); being a devoted grandfather to Ryan McGonagle (Michelle), Kathleen McGonagle, and Jacob Laird; a great-grandfather to Audrey McGonagle; and a true friend to many. A funeral service was held at 1:00 pm on Thursday, January 16, 2014 at St. Mark's Lutheran Church, 6730 N 17th Street, Tacoma, with burial following at Haven of Rest Cemetery, 8503 SR 16 NW, Gig Harbor, OR.

-Published in News Tribune (Tacoma, WA) on Jan. 14, 2014

-Published in The Columbus (OH) Dispatch on Feb. 2, 2014

IN MEMORIAMs



Arthur C. "Clint" Lietz, 70, passed away on January 25, 2014, in Miami, FL. Art was born on January 5, 1944, to Art and Grace Lietz. He spent many summers with relatives in Lyons, KS. Clint graduated from Miami Jackson High School in Miami, FL, in 1962. Clint joined the USGS in the early 1960s as a hydrologic technician performing measurements on the rivers of south Florida for his entire career. He retired in 2006. Many of his colleagues remember him as a caring person who mentored them through their careers. Clint was the author or co-author of dozens of reports regarding the waters of South Florida, contributing to SOFIA, the South Florida Information Access - Data Exchange program. His last publication in the year he retired was "*Lietz, A.C., and Meyer, M.T., 2006, Evaluation of emerging contaminants of concern at the South District Wastewater Treatment Plant based on seasonal events, Miami-Dade County, Florida, 2004: U.S. Geological Survey Scientific Investigations Report 2006-5240, 38 p.*" To leave comments or make contributions, please contact Funeraria San Jose, 4850 Palm Ave, Hialeah, FL 33012.



Douglas (Doug) D. Nebert, 51, of Newport, OR passed away on May 31, 2014, in a plane crash in Toledo, OR. His granddaughter, Zoey Wahl, 4, also did not survive the crash that seriously injured her mother, April Gleason, of Seattle, WA. Doug was born on August 15 1962 to Myrna and Daniel Nebert of Portland, OR. He received his Bachelor of Science in Environmental Science from Evergreen State College, and a Master of Science Degree in Geography from Portland State University. While still a student, Doug's future career was influenced by his internship with the U.S. Geological Survey. During his 30-year career, Doug grew into what has been described as the "Geospatial Pioneer" for his foundational work in modern geospatial information systems. Doug was known nationally and internationally for his expertise, technical ability, and dedication to building cooperative relationships, integrated technical solutions, and development of spatial data infrastructures. His role in the geospatial community, both in the US and internationally, was primarily to help others advance their own capabilities. Doug served as the vice-Chair of the Global Spatial Data Infrastructure (GSDI) Technical Committee and was one of the driving forces behind the Association's SDI Cookbook, including its launch as an online wiki; he was Senior Advisor, Geospatial Technology Association member of the Federal Geographic Data Committee (FGDC) where he had also served in the past as Geospatial Team Lead at Recovery Accountability and Transparency Board, USGS Representative to the Technical Committee at the Open Geospatial Consortium (OGC), NSDI Clearinghouse Coordinator at USGS and Hydrologist. In 2005, Doug received OGC's highest award, the Kenneth D. Gardeis Award for his significant personal and professional contributions to advancing the OGC's community, and for his leadership in advancing geospatial interoperability and open standards globally. A number of organizations have established sites and blogs where expressions of sympathy, condolences and stories can be shared.

- Digital Coast Blog (http://csc.noaa.gov/geozone/doug_nebert/)
- Open Geospatial Consortium (OGC) Blog (<http://www.opengeospatial.org/blog/2038>)
- Group on Earth Observations (http://www.earthobservations.org/art_201406_doug_nebert.shtml)

He is survived by his wife Dee, two sons, a daughter, a granddaughter, his mother and father, stepparents, and loving in-laws. Doug's family has said that for people who want to express their thoughts, sympathies and condolences to the family, please send these to: Ms. Dee Nebert and Family, c/o Tye Lodge, 4925 NW Woody Way, Newport, OR 97365. Dates for the Memorial Services to celebrate Doug's life were currently scheduled for July 5th in Newport, OR; and August 16th in Reston, VA. The family has instructed that if anyone would like to make a contribution, they wish that donations be sent to two different charities in Doug's and his granddaughter Zoey's honor. Donations can be made in Zoey's name to the Teddy Bears for Kids program by

http://www.theodoreroosevelt.org/site/c.eIKSIdOWliJ8H/b.8090883/k.6F4B/Teddy_Bears_for_Kids.htm and in Doug's name, donations can be made to the Young Eagles program by <https://www.eaa.org/en/aaa/aviation-education-and-resources/aaa-youth-education/aaa-young-eagles-program> .

-Memoriam was consolidated from several sources



Donald Richardson, 78, passed away peacefully on 11/17/2013 in the loving presence of his family. He was born in Tacoma, WA, on 4/28/1925. He graduated from Stadium High School, and went on to earn an engineering degree from the University of Washington. Don joined the USGS in 1948 in Portland, Oregon, under the leadership of Kenneth Phillips measuring surface water primarily in Eastern Oregon. He transferred in 1952 to the Hawaii District working on the Island of Kauai. In 1955, he transferred to the USGS offices in Washington DC, where he stayed until 1957, then transferred to Sacramento, CA working under the leadership of William Dean. In 1957 he moved to Tacoma, WA, Surface Water Section, where Don worked under Fred Veatch until 1965. He then transferred to the Glaciology Section, under Dr. Mark Meyer, as a hydrologist. Don retired from the USGS in 1973. In all those years we enjoyed the fellowship of other USGS members, and to the end he continued to meet monthly with other USGS retirees. Don contracted Mesothelioma, apparently during his service in WW II in the Navy, and died at home after a short illness.

-Memoriam was provided by Jessie Richardson

IN MEMORIAM



James D. Simmons, 87 of Tallahassee, died Saturday, September 21, 2013. James was born April 5, 1926 to James and Olivia (Smith) Simmons in Ash, NC; and, moved to Tallahassee in 1966 coming from Raleigh, NC. James was a Korean War Army Veteran and was also a retired engineer with the Department of the Interior, U.S. Geological Survey with over 25 years of employment. James was united in marriage to Juanita on January 4, 1946 in Ash, NC. James is survived by his wife who resides in Tallahassee, FL; his sons, Stephen (Beverly) Simmons and Barry Simmons, and his three grandchildren. James is preceded in death by his parents and his sister. Funeral services took place at Culley's Meadowood Funeral Home, Timberlane Chapel. Interment took place in Meadowood Memorial Park.

NL164S (Supplemental)

For those of you who receive the electronic version of the newsletter, we have some stories this time from Dick Engberg and Jim Daniel. If you choose to just view the newsletter on the website (<http://wrdretirees.org>), you can read the supplement there too if you look up the August 2014 newsletter. I won't spoil your fun by telling you the content ahead of time, but just watch out for flying ducks, and decide how you would address a movie star! We are all active or retired federal employees; therefore we are now including information from the National Active and Retired Federal Employees (NARFE) association. See <https://www.narfe.org>. NARFE is one of the few organizations that communicates with Congress to inform them about the needs of federal employees.

-Tim Smith

EQUATORIAL MONUMENT PLACED INACCURATELY

Submitted by: Richard Sanchez

The material below is part of a text I wrote entitled Ecuador: A Nation Living Precariously on the Pacific Ring of Fire. The Spanish version of the book is currently under review for publication in Ecuador

Every year thousands of tourists flock to the town of San Antonio de Pichincha about 18 km (11 miles) north of Quito to visit the equatorial boundary referred to as the Mitad del



Figure 1. Tourists straddling the equatorial boundary at the Midad del Mundo Monument.

Mundo Monument. This 30-meter tall monument is 7 km west of where French astronomers originally measured the equator in the 1700's using survey instruments. By straddling a yellow line running east-west from the foot of the stone obelisk monument, countless tourists over the years have had their photos taken believing they were standing in the northern and southern hemispheres. Regrettably for the tourists, this Midad del Mundo monument is not situated on the equator. The equator's true position ($0^{\circ} 0' 00''$) applying global positioning system survey equipment (using 1984 World Geodetic System) lies approximately 200 meters (656 feet) north of the monument.

To the east-north-east of the Midad del Mundo Monument, is a hill known as Mount Catequilla. On this dome-like summit is a low semicircular wall. The original stone wall built with mortar by pre-Inca astronomers in the 10th century coincides with the equatorial line and its axial inclination of 23.5° which is the inclination of the Earth's rotational axis with respect to its orbital plane.

More intriguing still, how these pre-Inca astronomers determined the position of the equator more accurately than the French astronomers and how did they determine the arc of the sun's shadow when the Earth tilts between the winter (December 21st) and the summer (June 21st) solstices--a movement of exactly 23.5 degrees relative to the equator.

EQUATORIAL MONUMENT PLACED INACCURATELY

Unlike the French, the indigenes had the advantage of being in the right place at the right time. Living along the equator permitted their eventual understanding of the changes in shadows with the movement of the Earth's orbit around the Sun. They patiently followed all these movements in determining where the sun crosses the plane of the earth's equator two times a year and day and night are of equal length. During these two equinoxes they observed that the sun did not project any shadows at noon because it is at the highest and most perpendicular point above the horizon. Likewise, during the summer and winter solstices they observed how the oblique rays of the noon sun cast shadows southward and northward, respectively, at their maximum length and at right angles. These astronomical observations permitted the indigenes to develop calendars for farming, festivals, and rituals. More recent studies have revealed this knowledge also influenced decisions concerning politics, war, and trade.

Similarly to Catequilla, other world archeological sites are placed in relation to the solstices and to directions based on astronomy. The most of these sites were placed in a radiating pattern and mark the routes with precise astronomical angles. The calendar ring of the Wyoming Bighorn Mountains in the United States marks the summer solstice with the rising of the Sun in a line with two piles of rocks or cairns. The 28-spoke wheel is 24 meters wide, with the central cairn for a hub and six others around the rim. Sighting along different sets of cairns, Amerindians observed the summer solstice sunset and the positions of three rising stars. These ancient monuments provide a solar calendar for planting crops. At Stonehenge, England the Sun rose over a stone marker to pinpoint the summer solstice. Inside the circle of stone blocks, people held ceremonies to salute the sunrise and to pray for a season of good crops.

Prof. Rodrigo Erazo Rodriquez and other Ecuadorians believes the answer points to the existence of a sophisticated pre-Incan civilization of indigenous astronomers in the equinoctial Ecuadorian Andes (personal conversation, February 9, 2010). Erazo Rodriquez theories have already led to the discovery of several new archaeological sites in and around Quito dating back to 1,500 BC, some 3,000 years before the Incas conquered what is now Ecuador (Erazo Rodriquez, 2009). Now his findings are forcing archaeologists to look afresh at other ancient Andean sites, including the huge and impressive pyramid complex at Cochasqui.

NOTE: Rick Sanchez was a senior physical scientist with the USGS, Reston, VA. He retired in 2006 and continued work under the USGS Scientist Emeritus Program. In his earlier years with the USGS he worked for the WRD District Office in Albuquerque, NM--he attends their meetings and luncheons when in Albuquerque.

NEW MEMBERS AND DIRECTORY CHANGES

New Members—August 2014

Johnson, Joel D. (12) -- 2236 El Cejo Circle, Rancho Cordova, CA 95670 (H) 916-363-7224, (cell) 916-893-1879 – addr, phone
Larsen, Matthew (14) -- Unit 9100 Box 0948, DPO, AA, 34002-9998 – addr
Schiffer, Donna (14) – dms_456@yahoo.com – corrects spelling of last name, email (home addr unchanged)
Stoner, Jeffery (?) -- j.stoner@comcast.net, 763-783-3138 & (cell) 651-808-5795 – email, phone
Weiss, Linda (14) -- 10401 Theresa Pl., NE Albuquerque, NM 87111, 505-296-3613 lsweiss@comcast.net -- addr, phone, email

New Affiliate – August 2014

Dion, Norm – npdion@comcast.net -- email

Directory Changes – August 2014

Brown, Glenda E. (12) – 1426 Cypress Court, Lafayette, CO 80026 – corrects addr
Bush, Peter (10) -- 3118 SW 153rd Dr., Beaverton, OR 97003, 512-565-5012 – addr, phone -- email OK
Cheng, Ralph T. (07) -- ralphtcheng@gmail.com – email
D'Angelo, Irma (10) -- Dominick – add husband's name
desFontaines, Isabelle Halley (04) (Steven Goldstein) 84 Bishops Ridge Drive, Charlottesville, VA 22911, 434 972-3145 ihdf@pobox.com – addr, phone, email
Gannon, Mrs. William 'Ellie' (W) -- 1928 W. Michigan Drive, Harlington, TX 78550 -- addr
Gray, John (14) -- johnrobertgray77@gmail.com – email
Grossman, Herbert (94) -- candleherb@yahoo.com – email
Huber, Leonard (99) -- 902 West 13th Street, Yankton, SD 57078 -- addr
Hutchison, Norman (88) -- nehutch@verizon.net – email
Johnson, Toni M. (08) -- 34805 Capstan Ln., Lewes, DE 19958 -- addr
Jorgensen, Donald (95) -- donjorgensen8@gmail.com – email
Kilpatrick, F.A. 'Fritz' (86) --122 Peyton Rd., Sterling, VA 20165, 703-928-5166 – addr, phone
Kresch, David L. (08) (Janice) – **New WA state contact** -- 253-752-2246
jandavekresch@harbornet.com – phone, email
Nagel, Clinton D. (09) -- 1385 Golden Gate Ave., Boseman, MT 59718 – addr
Pendleton, Mrs. Alvin F. 'Donna' (W) -- Ashby Pond, 21160 Maple Branch Terrace, Apt 143, Ashburn, VA 20147-- addr
Pond, Jimmy G. (05) -- 247 Rainbow Drive #14765, Livingston, TX 77399 -- addr
Physical address: 47 Mountain Laurel, Brackettsville, TX
Swift, Charles (08) -- blueboy@harbornet.com -- email
Treseder, Deborah 'Debi' (09) 7910 W. 8th Avenue, Lakewood, CO 80214 – addr
Wakelee, Robert (11) -- 1001 Armisted St., Winchester, VA 22601-675, 540-678-4964 – addr, phone
Wall, Mrs. Robert 'Regina' (W) -- 501 North Allen Ave., Unit 604, Richmond, VA 23220 -- addr
Zorgorski, John (14) -- jzfoshsd@gmail.com -- email

Deletions From Directory – August 2014

Bradford, Gary (82) – SEP
Broom, Marilyn (W) – SEP
McGreevy, Joan (W) -- SEP

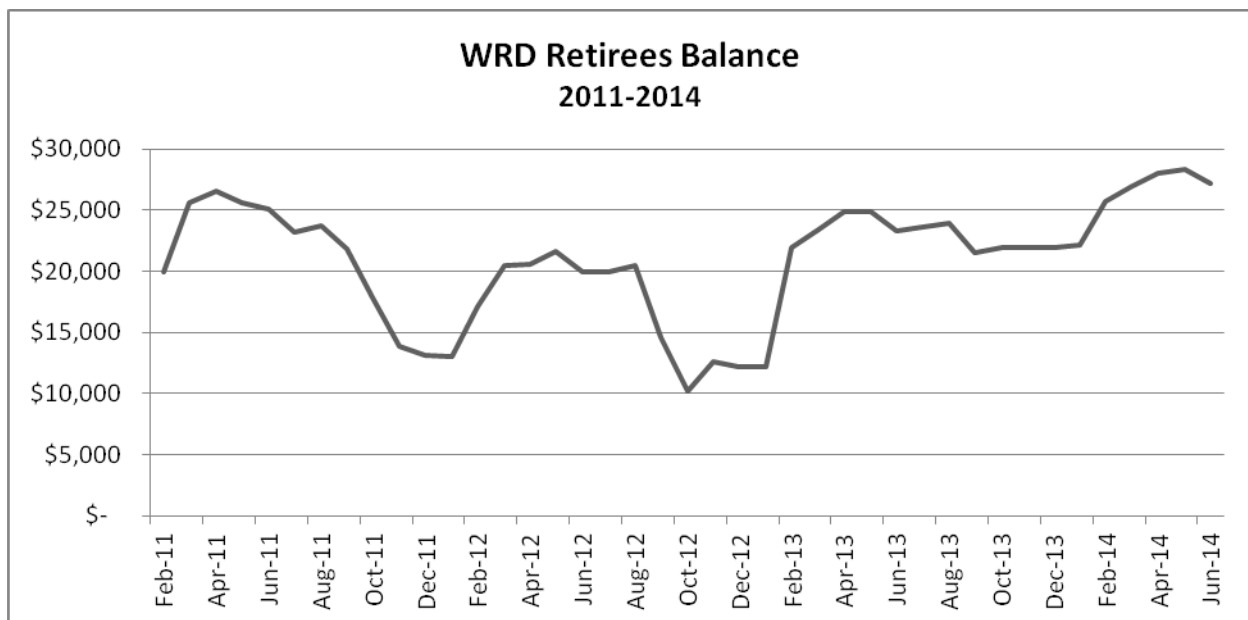
TREASURER' S REPORT, SECOND QUARTER 2014

Treasurer Celso Puente reports that the organization had \$27,190.03 in its treasury at the end of the second quarter for calendar year 2014. Receipts for the quarter were \$1,112.70 from dues and contributions from 30 members. Distributions for the quarter were \$1,967.95, including the cost for the printing of the WRD Retirees Newsletter and the Directory. During the quarter, a total of \$402.00 in contributions above dues was received from 16 members.

Special thanks for contributions above dues go to:

Charles Nethaway, Dolores G. Stoner, Mrs. Wayne Hammond, David Madril, Gilbert Bertoldi, Della Laura, Roger White, Perry Olcott, Beverly Josefson, Marion Hines, Dorothy Maltby, Terry Perkins, Donald Schaefer, Deanna Walth, John E. Moore, and Irwin Kantrowitz

TREASURY GRAPH THROUGH JUNE 2014



HYDRO-TECHNICIAN SCHOLARSHIP STATUS

A committee meeting has been scheduled for August 5, 2014, to review and rate applications submitted by Science Center students for consideration of Hydro-Technician Scholarship funds. The Science Centers and winners will be notified immediately and the November newsletter will contain pictures of the award ceremonies.