

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

PRESIDENT'S MESSAGE

Happy New Year Members!

Once again, a new year has my wife Joyce and I enjoying the warmer weather of the Central Gulf Coast of Florida. We arrived on January 2 and will stay until the middle of March. Although the year did not have a good start with the January 6 insurrection at our National Capitol, I am optimistic 2021 will be a vast improvement to the previous year. With COVID-19 vaccinations becoming available, we should get substantial relief from the pandemic and some resemblance of normality to our lives. With the new year your Retirees' Officers will be reviewing and establishing priority actions from the Organization's strategic plan. One of the priorities to address is to increase attendance at biennial reunions, starting with our next reunion in Tucson on March 10-12, 2022. We will also continue efforts in maintaining our viability. I am pleased to report that recently we made significant progress toward that effort by assuring that all USGS employees who retire obtain information on our organization and a membership application form. USGS Human Resources will now include an information flier and application form with their retirement packages.

Last December Sandy Williamson requested to be replaced as our Western Region (WR) Representative due to personal, local, and, especially, business conflicts preventing him from adequately fulfilling his regional representative duties. Sandy and his wife Deb are owners of a boating company and are experiencing substantial growth, requiring more of his time. Sandy is hopeful to again be active in the operations and activities of our Organization in a few years. I appreciate Sandy's service and sincere interest in USGS Retirees and thank him for his contributions to the Retirees' Board and retirees in the Western Region.

In response to Sandy's request, I am pleased to announce that Pat Tucci has agreed to be the WR Representative while continuing to serve as the State Representative for Arizona. Pat started his USGS career in Indianapolis in 1976 as a Hydrologic Technician and soon converted to a Hydrologist working on various ground-water projects and models. He transferred to Tucson in 1978 to work on the Southwest Alluvial Basins RASA program and began working on borehole logging and surface geophysical methods in addition to ground-water models. He also worked on projects in the Miami subdistrict office (1982-84) and Nashville District Office (1984-89). In 1989 he transferred to San Juan, Puerto Rico to head up the District's modeling unit and eventually becoming the studies section chief. He then transferred to Denver in 1992 to work on the Yucca Mountain Project. While in Denver he also was involved with the Borehole Geophysics Advisory Group, the ICOM, and the International Hydrology Program, where he worked on projects in Ethiopia, Jordan, Abu Dhabi, and Bangladesh. In 2006 he became the Ground Water Specialist for the Central Region. He retired from USGS in October 2007. Our Organization and, especially WR retirees, will benefit from Pat's enthusiasm and competence.

I hope you enjoy this issue of our Newsletter. The major science article edited and submitted by Norm Grannemann is on the USGS Great Lakes Ecosystem Restoration Initiative. Tim Smith provides an article on the 1964 Flood in the Pacific Northwest, and Bob Hirsch describes some of his mentoring of young USGS scientists. As always, you are encouraged to submit articles on your personal activities for the "News of Retirees" section and current or past science articles.

Pete

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MEETINGS AND GATHERINGS

The Reston, VA - Bring your own lunch and chair gathering.



Our Monday, **November 2nd** meeting was very windy, so we gathered under the pavilion at Temporary Road Park in Reston. We forgot to take a picture. Attendees included Ken Lanfear, Lee De Cola, John Keith, Tony Meunier, Debbie McLean, and Kate Flynn.

Waiting till Thursday **December 10** (instead of our usual Monday) worked well, we had a nice day for lunch and a good turnout. We were happy to have Jack Fischer join us all the way from Pennsylvania. Joanne Taylor (who has since retired,) Robert Mason (affiliate,) Ken Lanfear, Lee DeCola, Dave Morganwalp, John Gray, Cathy Hill, Tom Yorke, and Kate Flynn were also there.

John Gray is flanked by Jack Fischer (under stop sign) and Tom Yorke outside Glory Days Bar and Grill, 2 miles south of the National Center in Reston, on December 10. Jack and Tom hold a sign intended for John's no-show wife. John enjoyed the time spent conveying his endless wisdom to his geriatric pals."



NEWS OF REIREES

Zelda Bailey & Pat Tucci: We just celebrated our 3-year anniversary of moving to Sedona and are still enjoying it. Like everyone else, however, we've had to adjust to these pandemic times. Sedona was lucky, in that we've had relatively few Covid-related cases and deaths, despite all of the visitors that we get here all year long. Our planned trips to Australia and South America were cancelled, and any trips were limited to travel by car. We did get to Colorado for a couple of weeks this summer, and it was a welcome break from the record-breaking heat and drought that we had this summer. While trying to stay somewhat isolated, we spent (mostly) productive time at home. Zelda's gotten back into painting and has continued to work with our garden. Pat used to play guitar and sing at open-mike nights and jam sessions several times a month, but that has been almost non-existent since March. To help make up for it he's spent a lot of time in his recording studio and posting video clips of songs on Facebook. Of course, home improvements and repairs are on-going. Our mineral business, GEOdyssey, is on a forced hiatus, because most gem and mineral shows were cancelled after the big Tucson show in February. We had good intentions of trying to increase our internet presence, but amazingly time got away. We're not making any big plans for the coming year, except to try and do a long road trip to the Pacific northwest. We continue to be in good health and spirits and hope that you all are as well.

Phil and Patrice Carpenter write: We are sheltering still – not going South this year. Maybe next. Will write a good update later. Best of holidays and life continuing on.

Ralph Clement writes: I wish to extend a sincere 'Thank You' to all of the leadership in Reston and Herndon and all the Districts who have helped us to realize that retirement is really a joyous time in our lives.

Joan Ferguson writes: Thank you for all you do to keep us in touch! Hopefully we'll all be together again soon.

Norm Grannemann writes: Thank you. We are holding our own during COVID. Best to all

Eugene Hampton writes: Hope all is well with you folks.

Terry Katzer writes: Keep up the good work. Really enjoy the newsletter.

Jack Kume writes: I have received the Directory and several newsletters. Thanks a lot. I really appreciate getting them. Thanks to all the volunteers who put these copies together. I am in my twenty-fifth year of retirement. Quite an amazement!

Linda Meadows writes: Thank you for continuing to provide the newsletter to retirees and others. Thank you again for all that you continue to do. Blessings

Joe and Kaycee Moreland write: Thanks to all who keep us old folks informed. We really enjoy reading about the lives of old friends. I had a couple of stents placed in my heart and left leg. That finally convinced me that 64 years of smoking had to stop. So far, so good. Kaycee and I are frustrated about the COVID effects on our travel plans. Would like to spend more time with grandchildren and great-grandchildren. Hoping the COVID vaccine helps.

Fred Paillet writes: Just in the unlikely case that anyone is actually interested, see the link to our book published late 2019. It's sold out for now and is tied to the Ozark region, but unique in being my first ever publication without a single equation. <https://www.ozarksociety.net/foundation/foundation-books/>

Ozark Forest Forensics, Fredrick Paillet and Steven Stephenson

This book interprets our natural surroundings in a way that enhances a simple walk in the scenic deciduous woodlands of the Ozark Mountain region. Explanations go beyond trees and their habitat to include other diverse subjects: the leaf litter beneath a hiker's feet, strategies used by wildflowers for pollination and seed dispersal, diseases that can ravage our forests, and forces active in the landscape that impact conservation efforts. Simplified line drawings demonstrate specific points of interest in a way that visually cluttered photographs cannot do. Includes: 163 line drawings, a list of species used in the text, a glossary, and a reading list.

Jim Putnam writes: I enjoy the news in the newsletter. Hope all is well.

Ron Rathbun writes: At my age, I am only paying for one year at a time. The funds are for the scholarship fund. I was quite impressed with the bios of the young people we are supporting. They all expressed a great interest in working with USGS. Thanks for all that you do for the Retirees.

Stan Sauer writes: **(Note to Cathy Hill, Retirees' Treasurer)** Greetings from Texas! I appreciate very much, all the work that you do to maintain the financial and membership records of the organization. Thanks as well for all that you and the

other officers do to prepare the newsletter to keep us all informed, as well as all the other work to keep the organization strong and moving forward! I would appreciate receiving a hard copy of the latest retiree directory if possible. It is much easier for me to keep up with the changes that are published in the newsletter with a printed copy in hand. Regarding news, it has been a quiet year here with most activities dominated by the pandemic playing havoc with the world's population. I have managed to keep up with some WRD friends by phone but have really missed the usual in person contacts. Hopefully the COVID-19 pandemic will be past history soon so the delayed reunion can be held as scheduled in March 2022. The Newsletter has been so important in keeping up with former WRD associates! I enjoyed reading about the 7 Hydrologic Technicians receiving scholarships this year - such a great program. Best wishes to all and thanks again to all the retirees that work so hard to maintain our organization and keep us informed. Sincerely yours,

Lindsay A. Swain writes: We have moved again. After spending 18 years doing consulting in California after leaving Indiana, we moved this year to Colorado. Mainly because my 2 married daughters and families moved here first and we followed. Being as Lakewood, CO marked the beginning of my WRD career, after 50 years, I have returned to the scene of the crime. Still want to stay in touch with great folks I got to work with from Hawaii, Colorado, California, Virginia, Indiana and the 19 Northeastern Region. So glad you have continued this organization so we can keep in touch.
(reference Directory for information)

Lee Trotta writes: Good news from the Provinces, I'm using my COVID incentive check to update my membership. A cardiac arrest took me out-of-commission for a while back in December, but luckily someone who knew CPR walked up at the movie theater and I'm back on my feet again. Recuperation plus the onset of the COVID pandemic slowed my marketing for my most recently published children's book 'California Cheese' (available on Amazon). I've been writing poetry lately and positing it on my Facebook marketing page 'Florida Cheese'. Our Sheboygan theater company asked me to write 'thank you' songs for several of our sponsors, so I produced 7 music videos. Living in Sheboygan we are situated between Kettle Moraine State Park and the Lake Michigan shoreline, so Beth and I take frequent hikes to break up the isolation. Hanging in there!

Michael Yurewicz writes: We hope all are healthy and safe. Cindy and I maintain a very small "covid bubble" of family and miss the social connections with retired friends. We continue to play pickleball, but just play outside and between ourselves. We finally found and bought the second home we have been looking for. Although Reston VA is a wonderful setting, we wanted to spend time at a mountain getaway, and found it in Nellysford, VA in the Stoney Creek community. The home is at 1,500 feet, is completely wooded, has views of the valley, yet close to pickleball courts, and outlets for the bounties of local farms. The nearby community center offers varying and vibrant opportunities to stay healthy and wise. The home will be a wonderful setting to have family and friends spend time with us. We will split time between our home in Reston and Nellysford. Special thanks to all the folks who put these newsletters together, the membership directories, and reunions. It is very sad to read of the passing of former colleagues. I hope USGS personnel today continue to feel they are blessed to work for the USGS as I was during my career from 1972 – 2014.

Dues Received since last November's Newsletter:

Thanks for keeping your membership current. Since November's newsletter, \$1,900 in dues and \$420 in contributions have been received from the following 49 members. (Kate Flynn, Retiree's Org. Secretary)

Daniel Ackerman	George Harlow	Carolyn Norton
Greg Allord	Mary Hill	Fred Paillet
Steven R. Anderson	Arthur Horowitz	Thomas Pierson
Leslie Arihood	Leonard Huber	Barney Popkin
William Bauersfeld	Harvey Jobson	Jim Putnam
Richmond Brown	Robert Joseph	Ron Rathbun
Philip Carpenter	Terry Katzer	Gerald Rockwell
Ralph Clement	Neil Koch	Harry Rollins
Rebecca Deckard	Thomas Kraemer	Roger Rumenik
Lois J. Douglas	Jack Kume	Richard Sanchez
Edward Duffy	Jim LaBaugh	Stanley Sauer
Thomas Edwards	Randell Laczniak	Ray Schaffranek
Max Ethridge	Denis LeBlanc	Marc Sylvester
Joan Ferguson	Jeff Martin	Dwight Tanner
Kerry Garcia	Debbie McLean	Chester Thomas
Norman Grannemann	Linda Meadows	Lee Trotta
Eugene Hampton	Joe & Kaycee Moreland	David Voelker
Elinor Handman	Donna Myers	Paul Woods

Sustaining Involvement in Hydrologic Analysis **by: Robert Hirsch**

I've been enjoying my retirement staying involved in hydrology. This past year I finished serving on the National Academy's Water Science and Technology Board Committee on the New York City Watershed Protection Program. I got to work with about a dozen top-notch water scientists and engineers from all over the US. We produced a very comprehensive report for New York City's Department of Environmental Protection. It was a great opportunity to keep my data analysis skills sharp and write about the importance of data analysis. I hope that the staffs of many drinking water utilities will use our ideas to help guide them on how to keep track of the quality of their raw water supplies.

One thing that happens pretty frequently these days is that I get e-mails from young hydrologists in USGS Water Science Centers, looking for advice on how to analyze the trends in USGS streamflow and water quality data sets. These contacts usually start because they are using the EGRET software and want to find the best way to apply it to their project. EGRET is an open-source software package, in the statistical programming language called "R". EGRET stands for "Exploration and Graphics for RivEr Trends" which I co-wrote with Laura DeCicco (an engineer in the USGS Water office in Madison, Wisconsin). Since we released EGRET in 2015 it has been downloaded by people all over the world over 39,000 times and we know that it has been used in the production of over 100 published scientific papers. Here are some of the mentoring or collaborative relationships I've been involved with in the last couple of years.

I'm working with Eric Morway in the Nevada WSC on developing a mass balance and trend analysis for mercury contamination on the Carson River, with a focus on Lahontan Reservoir. There is a great deal of mercury that is a legacy of mining in this watershed. We are quantifying the trends in mercury entering the Reservoir and also what is leaving the Reservoir. The good news is that mercury loads have been decreasing, due to remedial action, but the bad news is that more and more of the mercury is methylating due to interactions with the organic rich wetlands at the edges of the reservoir. We have developed a new statistical model of methylation as a function of changes in reservoir level.

I worked with Lauren Zinsser, a hydrologist in the Boise, Idaho office. She recently published a Scientific Investigations Report "Trends in Concentrations, Loads, and Sources of Trace Metals and Nutrients in the Spokane River Watershed, Northern Idaho, Water Years 1990-2018." Working with Lauren we developed a new way of showing that concentrations of many of the metals have been declining as a result of the Coeur d'Alene mining district Superfund project. In particular we were able to show that these declines are continuing up to the present time. As the sources get remediated, we showed that the declines in metal concentration are roughly exponential.

One of my first project assignments when I came to the USGS in 1976 was on the River Quality Assessment Program, Yampa River Project. So, I was delighted to get some inquiries from Natalie Day, a Biologist with the Grand Junction office of the Colorado Water Science Center. She had questions about how to describe trends in streamflow and trends in phosphorus concentrations in the Yampa River and other rivers on the western slope and Colorado Plateau. Her work is still in draft form, but it appears to show some upwards trends in P concentrations in these rivers. What is so interesting is that there really isn't a good hypothesis for any land-use or point-source changes that might be driving these trends. However, changes in atmospheric inputs to the snowpack and soils (driven by increased wildfire and increased desert wind erosion) may be a possible driver. The changes seem to be causing increased algal densities in the Yampa that may be detrimental to fish habitat.

My list could go on to mention other involvements in interesting trend projects related to salinity decreases in the entire Upper Colorado River Basin, and nutrients trends in the Chesapeake Bay watershed and Lake Erie basin. These projects involve many young USGS scientists. It is so satisfying to be drawn into interesting work with these eager and dedicated young USGS scientists. My hope is that I've provided some skills to the next generation.

Everywhere I give a talk I always start or end it with what has become my "mantra." It comes from Ralph Keeling, son of David Keeling (founder of the Mauna Loa CO2 observatory): "The only way to figure out what is happening to our planet is to measure it, and this means tracking changes decade after decade and poring over the records." My work over the last dozen years, and now in my post-retirement mentoring, is aimed at encouraging the next generation of USGS scientists to be unrelenting in their efforts to "pore over the records" and to tease out the story of our changing (water) world.

If anyone is curious to know more about these things, I look forward to hearing from you at rhirsch@usgs.gov or rmhirsch49@yahoo.com.

RETIREMENTS

Sharon (Sheri) Alcalde, Program Analyst, Budget Support Team, Office of Planning and Programming, retired on December 31, 2020. Sheri began her 40-year federal government career on Capitol Hill to supporting two Congressmen. She joined the Energy Research and Development Administration (ERDA), which later became the Department of Energy, working in the Solar Applications Division as a secretary to the Division Chief. She remained there until moving to Herndon, VA in 1979 where she accepted a position at the USGS and later the Minerals Management Service. In 1987, Sheri left Department of the Interior and accepted a position as administrative assistant to the lead engineer at NASA on the Space Station Freedom Program. After 24 years of federal government service, she resigned her position from NASA in 1995 and began working in the private sector with Northrop Grumman and Orbital Sciences. Sheri later joined UUNET, a subsidiary of WorldCom, until its closure in 2001. Sheri then accepted a position as property manager at a property management firm in Fairfax, VA. In 2005, she took a position within the USGS in the Acquisitions and Grants Office. Sheri joined the Office of Water Information in 2007 to assist with the Advisory Committee on Water Information (ACWI). For 12 years, while ACWI was active Sheri provided valuable administrative and logistical support to the internal and external ACWI Subcommittee Members. Along with supporting ACWI, in 2017, she also joined the Budget Support Team, Office of Planning and Programming (OPP). Over the last 3 years we have appreciated the financial support she has provided to the team, OPP Program Coordinators, and other OPP staff. Although she will be missed by the Program and the Budget Support Team her retirement is well deserved. Sheri is moving to New Bern, NC to enjoy long walks along the Nuese River, devouring fresh sea food, and relaxing on the beach with her husband. Congratulations to Sheri. Here's wishing her all the best in her retirement.

-Robert L. Joseph, Director of Planning and Programming, USGS Water Resources Mission Area, Austin, TX
-Carise D. Barbour, Coordinator for Water Resources, Reston, VA added the following: Many of you received Bob's email announcing Sheri's retirement, but wanted to share some additional information. In recognition of contributions Sheri Alcalde has made to the Headquarters Water Mission Area and the USGS, we will be presenting Sheri with USGS Plaque.

Patricia Bergstrom, Administrative Officer -- retired on August 30, 2020 from the National Water Quality Laboratory, DFC, Lakewood, CO.



Kelly Boespflug retired on December 31, 2020 after more than 43 years with the USGS. Kelly began his career as a full-time Hydrologic Technician in October 1977 in the Dickinson office of the USGS North Dakota District (that office was closed in 1991) after working for a brief time as a student. Kelly was part of the early growth of a strong streamgaging program in North Dakota at the time. He was also involved in data collection for several large projects including the Coal Hydrology Study and a large surface water modeling study where he did various water-quality and sediment sampling, groundwater well drilling and sampling, streamflow and meteorological monitoring. In 1983, Kelly moved to the Grand Forks office of the North Dakota District. In Grand Forks, he was heavily involved in the streamgaging program and many projects over the years. Kelly was the lead technician on the Red River of the North NAWQA study (Cycle 1) from 1992-95. His expertise was used on many other projects including water quality, sediment, surface water, and groundwater studies. During his time in Grand Forks, Kelly was also involved in 7 out of the top 10 floods of 138-year record in the Red River of the North basin (measured in Grand Forks). With all his experience, Kelly played a crucial role for USGS in mentoring and training a generation of new hydrologic technicians and hydrologists in field techniques and the art of streamflow records. His guidance, experience, and positive influence will be greatly missed. In retirement, Kelly looks forward to more hunting and fishing, spending more time traveling with his wife Reyne and enjoying many moments with the rest of his family including 2 sons, a daughter, and 10 grandchildren. If you want to reach Kelly after December 31, his email is klb@gra.midco.net.

Please join me in congratulating Kelly on his fantastic career and contributions to USGS and wish him well in the next chapter of his life!

-Eric T. Volkman, Director, USGS Dakota Water Science Center

Daniel ‘Dan’ Bright is retiring after more than 37 years with the USGS! While the Nevada Water Science Center will suffer the loss of his skills, knowledge, and commitment to our work, we are excited to see him get to spend more time with family (especially his new grandson, Heath) and on hobbies. Dan's last day as Deputy Director will be December 31, 2020. We expect to celebrate his career this spring when we are able to meet in person again. (*Being relatively new to the Center, I asked Dan for some help with a bio. describing his career—I didn't change a word.*) With many stops along the way, Dan started his career with Geologic Division in Menlo Park as a summer student intern in 1979, but he spent most of those 37 years with water science centers at San Diego, Henderson (Las Vegas), and Carson City, and close to a decade of time on two tours in the Middle East with the International Programs Office. Desert hydrology and water availability studies were a common thread throughout most of Dan's career from project hydrologist in San Diego, studies chief in Henderson, program coordinator in the United Arab Emirates, and to his current position as Deputy Director, Nevada WSC. Dan holds a B.S in Geology from San Jose State University, and a M.S. in Geohydrology from San Diego State University. Highlights of Dan's USGS journey include the diverse areas and cultures experienced along the way – offshore drilling in the Bering Strait, drilling in the post-eruption landscape around Mt. Saint Helens, and exploratory drilling and groundwater data collection in the remote sand dune areas of the United Arab Emirates (UAE) and Oman. Groundwater studies along the beautiful California coast, and at the otherworldly landscape of the Nevada National Security Site north of Las Vegas. A best day with the USGS – collecting groundwater data in the full-bloom cut-flower fields of Lompoc, CA; a worst day with the USGS – being stoned, literally, by veiled women in a small and very remote village in Oman (certainly more to that story). Dan is particularly fond of the studies he worked on during two tours in the United Arab Emirates, including the Emirate's first hydrologic atlas and developing the first Emirate-wide water-quality monitoring network. Dan 'has been blessed' to work at a job he enjoyed throughout his career because of the interesting science, challenges, and variety of duties; but most importantly, because of the support, mentorship, and friendship he received from many wonderful colleagues in California, the UAE, and Nevada. He hopes that younger generations of USGS scientists are so blessed and have careers with few hardships and regrets. Dan is looking forward to spending more time on his beloved Triumph Scrambler, fly fishing and hiking in the Sierra Nevada Mountains, and traveling...all of which will happen after completing promised home landscaping to-dos. A wonderfully fulfilling USGS journey that would not have occurred without the support and energy from his wife, Cristy, of 42 years who agreed to and encouraged each new adventure.

-Jill Frankforter, Center Director, Nevada Water Science Center



After 37 years of exceptional service, **Sandy Dickerson** retired at the end of 2020 calendar year! Sandy started her career in 1983 in the Jacksonville, FL field office. There she helped publish the Annual Data Report (ADR) for 12 years, among other administrative and database related duties. Sandy then transferred to Orlando where she has spent the last 25 years of service in the Data Section continuing her duties on the ADR and other database activities. Sandy has always been the person you could go to and ask for help with the assurance of 100% effort. No one in Orlando knows how to ship anything because Sandy always does it for them. Her pleasant demeanor and limitless smiles will certainly be missed. Please join me in congratulating Sandy on her 37-year career and wishing her much happiness and well-deserved rest

ahead.



Barb (Scudder) Eikenberry retired on October 30, 2020 after 39 years with the USGS as a hydrologist. Water has been the common thread throughout her life and career from the oceans to the Great Lakes. After getting a B.A. in aquatic biology from the University of California-Santa Barbara in 1979, she headed to graduate school at Moss Landing Marine Laboratories near Monterey, CA. While there in 1981, she began a graduate student appointment with the USGS in Menlo Park, CA, and she completed a master's degree studying copper toxicity and fish development. She joined the Wisconsin Water Science Center (now part of the Upper Midwest Water Science Center) in 1989 to work on ecological and tissue contaminant aspects for the NAWQA pilot studies. From 1992 to 2012, Barb was the lead biologist for the Western Lake Michigan Drainages study unit of NAWQA and it took her all

around the Upper Midwest and to both US coasts. After NAWQA, she continued working on studies that focused on the importance of aquatic organisms as indicators of water quality. Barb had the good fortune to work at a job she enjoyed for decades because of the variety, challenge, and many wonderful colleagues. She hopes younger generations of USGS scientists will have the same good fortune, embrace challenges with the help of colleagues, and have careers with few regrets. Although she plans to return to the USGS as an emeritus scientist after she retires, she is looking forward to spending more time with family and friends, getting outdoors, playing music, and taking photographs, among other things. Barb's email is barb.eikenberry@gmail.com if you want to contact her after about midday October 30, 2020. Please join me in congratulating Barb on her many remarkable achievements with USGS!

-John F. Walker, Director, Upper Midwest Water Science Center



Chris Ellison retired on December 31, 2020 from the Wyoming-Montana Water Science Center (WY-MT WSC) as the Water-Quality Section Chief after 12 years with the USGS. Prior to his USGS career, Chris served 25 years in the U.S. Air Force. Chris began his USGS career in 2008 with the Minnesota WSC in Mounds View, MN after completing a PhD in Rangeland Ecology, University of Wyoming. In the spring of 2009, Chris began working in Fargo, ND with Joel Galloway and Dennis Evans on a project collecting sediment samples (suspended-sediment, bedload, point samples) on the Red

River of the North. He immediately became interested in using sediment samplers and developed sediment-related projects throughout Minnesota. Chris transferred to the WY-MT WSC in 2016 as the Water Quality Section Chief. He supervised 10 staff and continued to develop new sediment and surrogate projects in Wyoming and Montana. His work on the Shoshone River in Wyoming helped the Wyoming Department of Environmental Quality understand sediment transport in rivers controlled by dams and influenced by irrigation operations. He also developed a surrogate project using acoustics to forecast metal contaminant concentrations in real-time for one of the largest Superfund regions in the United States. Chris authored or co-authored 11 reports in 12 years and is currently working on a report for the Grant-Kohrs Ranch National Historic Site, a National Park Service Unit in Montana. In retirement, Chris plans to continue working part-time with the USGS on an NDAA appointment and hopes to continue developing sediment-related project work at a smaller scale. He plans on floating the Smith, Yellowstone, Marias, Jefferson Rivers, and White Bluffs region of the Missouri River in Montana over the next several years. He and Carolyn will travel to Alaska (with granddaughters in tow) next summer and follow that up with a trip to the dark side (east of the Mississippi) to catch up with family. They hope to spend lots of time exploring the U.S.

-John Kilpatrick, Director, USGS, Wyoming-Montana Water Science Center

It is with mixed emotions that we share that **Donna Francy** retired after more than 28 years with the USGS! The Ohio-Kentucky-Indiana Water Science Center will miss her immense skills, knowledge, and commitment to our work. We are happy she will have more time with family; particularly with her new first grandbaby). Donna's last day as Supervisor of the Ecosystems Section will be December 31. We will be organizing a get together to celebrate her career this spring when we are able to meet in person again. Donna started with the USGS in 1990 as a hydrologist in Columbus, OH as part of the regional MESA study that assessed pesticides in ground water. It was her skills in laboratory methods which helped in the development and expansion of the Ohio Water Microbiology Laboratory. The Micro Lab people have been leaders in microbiological studies in the USGS including the NAWQA program and now that has added new molecular methods. Her strong attention to detail led her to becoming the Water-Quality Specialist for the Ohio Water Science Center and all water-quality studies were improved because of her input. One of the highlights in Donna's career was developing the NowCast tool which allows real-time water quality and modeled variables to identify periods of potential E. coli contamination in swimming areas. The NowCast effort started as a local project but has developed into a regional program with sites in Indiana, Ohio, Pennsylvania, and New York. The Great Lakes NowCast has grown to incorporate the pressing issue of Harmful Algal Blooms for Lake Erie but also for inland drinking water reservoirs and intakes. Over the last few years Donna took on supervision of the Ecosystems Section in the newly merged Ohio-Kentucky-Indiana Water Science Center and the challenges of having staff in multiple offices, which is an added hurdle for communication and team building. Donna successfully handled these challenges while mentoring many young staff in the art of program development, understanding the science, and effectively communicating the results.

-Michael S. Griffin, Director, OH-KY-IN Water Science Center



Celeste Journey retired on October 31, 2020 after 27 years with the USGS. Her USGS career began in 1992 when she was hired as a hydrologist in the Tuscaloosa, Alabama office, while finishing her M.S. in geochemistry at the University of Alabama. She worked on and helped develop program for a wide range of scientific studies and data collection projects, mainly focused on water-quality issues. In 2001, Celeste accepted the position of Water-Quality Specialist in the Columbia office of the South Carolina Water Science Center. In this position she had the benefit of working one-on-one with Investigative and Data Sections staff and with the WSC as a whole to improve water-quality data collection and handling techniques, assess new equipment or approaches, and expand water-quality aspects of programs. Celeste has worn many other hats in South Carolina, including project leader of cooperative water-quality projects with the SC Department of Transportation on stormwater quality and with municipalities on water quality in drinking water reservoirs. She also had the opportunity to work with other talented scientists on a range of Department of Defense, National Park Service, and Toxics Substance Hydrology studies on passive remediation of chlorinated solvent contamination in groundwater, mercury cycling, and fate and transport of contaminants of emerging concern (CECs). Celeste served as South Carolina project contact for the National Water Quality Assessment (NAWQA) from 2001 to 2019 whose role expanded from coordinating annual surface-water and groundwater trend monitoring to coordinating Source Water Quality Assessments (SWQA) of surface-water and groundwater, the South Carolina portion of the Mercury Topical Team study (2006-2011) and then Southeastern Stream Quality Assessment (SESQA) of the Regional Stream Quality Assessment (RSQA) study in 2014. She continued working with the RSQA through 2020. These studies provided opportunities to work with USGS colleagues in new, exciting locations throughout the nation, from the Adirondacks to the Pacific Northwest. She was very thrilled and truly proud to receive a Superior Service award for her SESQA coordination efforts. As a final career challenge in 2017 to 2019, Celeste served as acting Assistant Director for Hydrologic Investigations in South Carolina. **On a personal note, Celeste adds:** Throughout my challenging, rewarding, fulfilling JOURNEY (*Ha Ha! I got a million of 'em*) with the USGS, I am ever grateful to have worked with and been mentored by tremendously talented, inspiring, and supportive colleagues, who I also consider my friends. I am truly honored and proud of my time with the USGS and thank my colleagues who have made my career the fun and exciting one that I hold dearly in my heart. As I head out the door, I am in awe of the talented and enthusiastic new employees being hired into the USGS, especially in the South Atlantic Water Science Center, and know the future of the USGS will be amazing because of their contributions. I don't plan to totally disappear - I plan to work at some level as emeritus, still drop off Krispy Kreme donuts from time to time to the office (because everyone deserves a sugar buzz), and still be part of the *Mardi Gras* lunch celebration so, *mais cher, laissez les bon temps rouler!* After retirement, I am really looking forward to having the time to spend mucking around outdoors, whether gardening, biking, hiking, canoeing, or fishing. I also want to put a dent in the pile of books on my bookshelf, to visit Karen's and my families who are spread out from Louisiana to Michigan to Washington state, and to travel to many of the places on our bucket list. I plan to spend more time on baseball games, school recitals, and swim parties with my grandchildren and lunches with my (superhero nurse) daughter and volunteering in my free time. *Au revoir, mes amis!*

-Vic Engel, PhD, Center Director, South Atlantic Water Science Center



Bob Kimbrough finally called it a career on December 31, 2020 after 34+ years of dedicated service to the USGS. Bob will be missed by everyone in the Colorado WSC, but we wish him well as he pedals his way through the Colorado Rockies. Best wishes Bob, for a long and happy retirement! From 1986-90, Bob served as a Hydrologic Technician in Bismarck, ND and Lakewood, CO. Becoming a hydrologist in 1990, Bob spent the next decade conducting interpretive projects that included studying the occurrence of pesticides in streams, nutrient and trace element cycling in reservoirs, and assessments of surface water quantity and quality in various geographic settings in Colorado. In 2000, Bob accepted a position with the Washington Water Science Center in Tacoma, WA where for the next decade he managed a multi-million-dollar monitoring program that provided critical data for

frequent flooding events in western Washington, and for managing surface waters of the Columbia River Basin in eastern Washington. For the past 8 years Bob has directed the Colorado Water Science Center's hydrologic

monitoring program working with over 90 cooperators, an annual budget of \$8M, and “an awesome staff of 45 Hydrologic Technicians.” Coordinating the verification and analysis of major floods in Washington and Colorado and assisting the International Joint Commission with managing surface waters shared by Canada and the United States, earned Bob the Department’s Meritorious Service Award in 2014, reflecting his dedication to the goals of the USGS and Department of the Interior. Bob indicates he will be forever grateful having had the opportunity to serve with the USGS for over 30 years, while along the way not only getting paid for driving to field sites, but for also traveling by foot, helicopter, snowmobile, skis, snowshoe, raft, canoe, outboard skiff, horseback, mule train, and bicycle (Michigan Ditch!). Those of you who know Bob can probably guess how he’ll be spending his time in retirement! No celebration of Bob’s years of service are planned right now, but we will have a good sendoff for him sometime next summer when we can all get together.

-David P. Mau, Center Director, Colorado Water Science Center, Denver, CO

John Nimmo, Research Physicist in the Water Mission Area Earth Systems Processes Division, is retiring and transitioning to Scientist Emeritus status on November 2, 2020, after 38 years with the USGS. John began his USGS career in 1981, part-time with the National Research Program while a graduate student at the University of Wisconsin. In 1983 he received his Ph.D. in physics, specializing in porous-media physics, and was hired full-time into the NRP at the Menlo Park Center. His early career emphasized laboratory experimentation and method development, especially as applied to aquifer recharge and low-moisture conditions at semi-arid locations in the western US. Over the decades he broadened this emphasis to include field experiments, theoretical development, and model formulation, applying them to contemporary water-resource challenges such as aquifer recharge, hazardous-waste disposal, aquifer vulnerability, ecohydrology, and stormwater management. Highlights of his research include the Steady-State Centrifuge Method for measuring unsaturated hydraulic properties accurately over a large moisture range, the Source-Responsive model for unsaturated zone preferential flow, and the Episodic Master Recession method for rapid-response aquifer recharge and streamflow. He has achieved great satisfaction in working with many scientists in the Water Science Centers, achieving much through research partnerships that teamed his fundamental understanding and innovations with the tremendous site-specific and problem-specific knowledge of his collaborators. His field sites have included various locations in the Mojave Desert, a soybean field in Mississippi, a restored forest in Hawaii, farmland in the hills of central Pennsylvania, a suburban development in Maryland, eroded hillsides in California, and major hazardous-waste sites in Idaho and Nevada. He has always felt that pursuing a wide diversity of methods and applications enhances scientific creativity and provides a large toolbox for approaching new problems. In 2015 John was elected Fellow of the Soil Science Society of America, in recognition of his advances in the knowledge and understanding of water flow processes in the unsaturated zone. (Side note: at the ceremony he received the award from Carolyn Olson, then SSSA President, now USGS Emerita.) John greatly enjoys being a teacher and mentor, over the years working with many grad students, postdocs, visiting scientists, and student interns. He has given lectures and short courses at numerous research institutions, for example as Visiting Professor at the China University of Geosciences in Wuhan. As emeritus, he plans to continue research, especially on the prediction and quantification of preferential flow, and to write reviews and commentaries on unsaturated zone processes and their practical impacts. He hopes to develop new collaborations and teaching opportunities while continuing investigations with his USGS colleagues. He plans to pursue these ambitions with less pressure than in the past, and with his wife Elsa looks forward to having more time for recreation, traveling, and being with friends and loved ones. Please join me in congratulating John on his many remarkable achievements with USGS!

-Lori Sprague, Director, Earth Systems Processes Division (Acting)

After 43 years of service **Mike Norris** will be retiring at the end of December. **Pre-USGS era:** While at Colorado State University working towards a BS in Forestry Watershed Management, I was able to obtain a position with the U.S. Forest Service doing sediment sampling. My supervisor, Lela Chavez, was one of the first female hydrologists in the U.S. government. During the winter months I was invited to work with R.J. Schmidt of the Rocky Mountain Forest and Range Experimental Station. RJ was a world class blowing snow expert, who took me to study sites over 14,000 feet to obtain data. He also taught me to use computers, which few knew how at that time (1977) and became a major influence on my total entire career. **Colorado era (1978 to 1990):** Following graduation I moved to Lakewood CO as the USGS has an office there. I was pleased that they were excited that I had computer experience and knowledge. My first USGS supervisor was Randy Parker who gratefully took me under his wing and taught me about watershed modeling. I had the

opportunity to work with George Leavesly in the NRP who was working on his PhD with the Precipitation Runoff Model System. I used the model to get my Masters' degree (1981) by developing a model component on snowmelt runoff. From 1979 to 1980, I assisted on several investigations collecting data, surveying in the Yampa River (including sleeping on a sand bar), data analyses, computer programming, and computer modeling of oil shale mining on streamflow in western CO. I was converted to Hydrologist in 1980 and until 1990 I was Project Chief for numerous hydrologic investigations including a major Air Force Installation Program study at the Air Force Academy. I was grateful to have the opportunity to work with Sherm Ellis, an ex-Marine and a great human being, who died shortly after retirement. I also received support from Dave Lystrom and Jim Blakey. I had the opportunity to participate in another major study, which became a predecessor to NAWQA. This was done simultaneously in Colorado and Ohio, to evaluate the comparability of water quality data collected by various agencies using different methods for collection and analyses to determine if these data could be aggregated into a single data base for regional assessments. This project was of great value to the USGS and included Dave Rickert, Bill Wilbur, Donna Myers, Jan Wren, Tom Chaney, Callie Childress, and me. I also worked on a watershed modeling investigation in potential oil-shale development areas to predict streamflow to extend streamflow records, determine the transferability of critical model parameter values to other basins, and to estimate unknown climatic variables; investigation to determine the effects of coal mining on water quality; and a hydrologic description investigation to use existing information to describe hydrology of a large region.

Massachusetts Era (1990 to 1998): I transferred from Colorado to Massachusetts to be the Studies Chief and was promoted to the Associate District Chief in 1995. I had direct supervision of up to 65 hydrologists, engineers, geologists, chemists, ecologists, biologists, technicians, and temporary staff. Mike Yurewicz and I performed as a team on the management of the WSC. In addition, others such as Kevin Dennehy, Bob Lent, Denis Leblanc, Chris Waldron, Gene Parker, in addition to others I can't remember at the moment (including Peter Church, RIP). We made many significant achievements, including an increase in program size from about \$3M to over \$7M, an increase in staff from 30 (1 PhD) to 65 (10 PhD's), a decrease in number of overdue reports from 27 to 0 and a substantial decrease in the number of reports returned for editorial or technical issues. This role was one of most my satisfying.

HQ Era (OSW Chief from 1998 to 2003): I was selected by Tom Yorke to be the Assistant Chief of the Office of Surface Water and we moved to Reston VA. It was an exciting learning experience to be part of the national leadership for the USGS's surface-water program including quality assurance of field operations, contacts with scientists and managers in other government agencies, private industry, and academia. I was proud to represent the Division, Bureau, and Department on technical and advisory committees as an expert on USGS programs and policies as they relate to program implementation and the development of new programs and projects. In addition, it was satisfying to plan, develop, and implement national level programs and activities especially the NSIP. I greatly enjoyed meeting executives from both the USGS and other agencies. Robert Mason and I worked very well together, and he was always there if I needed some support. Then Tom retired (2001). Bob Hirsch asked me if I would be the acting Chief of the Office of Surface Water. I gladly agreed – neither of us knew the role would be for two years. Or that I would not have an assistant. Or that the National Streamflow Information Program would be rapidly developing.

NSIP Coordinator (2003 to 2015): I returned to New Hampshire as the full time NSIP Coordinator—my most satisfying job in the USGS. I communicated with other federal agencies, professional agencies, and state and local agencies about nearly all aspects of streamgauge networks. I was the principle advocate, and USGS spokesperson for the National Streamflow Information Program and the streamgauge network including to Congress, mass media, and regional and national organizations. I worked hard to maintain the ongoing liaison, internal and external to the USGS, with leaders in the field to develop a high-quality scientific program responsive to user's needs, is based on best science and technology, and is efficiently operated. I enjoyed assessing the USGS streamgaging network and allocating federal appropriations to support critical streamgages. I was proud to provide an umbrella and National direction for the USGS streamgaging program (Total funding in 2015 \$170 million). And finally, I had great pleasure to represent the USGS on interagency, national, and international technical and advisory committees dealing with streamgaging.

Environmental Impact Statement Era: In 2015 I became the manager of the Environmental Impact Statement Program. My responsibilities include overseeing and coordinating technical reviews for the DOI by USGS Mission Areas of environmental reports prepared by other Federal agencies. On average I look at about 1,000 environmental assessment reports per year submitted to the USGS from the DOI and it was my responsibility to assess which of those may require a more thorough review by experts from the five technical Mission Areas. It is my responsibility to set a deadline for receipt of the comments, to consolidate

all comments, conduct a policy review, and prepare official transmittal correspondence for consideration and signature by the USGS Director or designee. **Publications:** Though not as many as some, I have published 30 documents during the last 43 years even though most of the years were in management. **Family Era Lifetime:** I would never have become as successful as I have if it wasn't for the support, input and love from my wife Debbie, my oldest son Anthony and my youngest son Joseph. Thank you, Deb! I look forward to canoeing, bike riding, hiking, wood working, volunteering, and photography.

-William Guertal writes: With the COVID situation, a formal retirement event could be delayed for time in the new year.

Hello colleagues and friends of **Al Pietroniro!** (who collaborated with many USGS scientists). As you know, Dr. P will be leaving Environment and Climate Change Canada (ECCC) in 2021 for "retirement" and a new job in academia. We are sad to see him go and will miss his important and committed contributions to Environment Canada, the National Hydrological Service, and the Water Survey of Canada. We would love your help in wishing him well in the future, especially in his new role as Professor and Chair in Sustainable Water Systems in a Changing Climate at the University of Calgary. Digital best wishes to Al expired in December 2020. Other plans for some physical gifts for Al to be delivered in the new year are also underway. His official retirement is not until later in 2021, at which time we will evaluate if an in-person celebration might be possible. Please feel free to forward this message to others who you think might want to add their well wishes.

Thank you, David Harper, Gillian Walker, Jamie Smith, Malcolm Conly and Josee Prevost



For the Arizona Water Science Center, 2020 ends with the retirement of one of our longest serving employees – **Rebecca Ramirez**. After 40 amazing years of service, Becky has finally decided that the time has come to pursue passions and pursuits outside of the Center and in the Tucson community. Becky started with the USGS in 1980 in a one-year on-the-job training position with the Youth Conservation Corps making a whopping \$1.92/hour! Her first task was entering knee-high piles of green and red (we used to call them the Christmas Tree forms) site files into GWSI as part of our IT Section. The following year she was hired into a permanent position as a Computer Assistant (and hopefully a higher salary!). Becky stayed with the Computer Section for 18 years and then, looking for new challenges and opportunities, transferred into the

Administrative Section in 1997. She assumed the role of contracting officer and over time assumed more and more responsibilities and skills, eventually advancing to Budget Analyst. Becky is an invaluable member of our team (yeah, that part of Becky retiring has me sweating....). What we'll all appreciate and remember Becky for far more than contracting, budgets, and Admin skills is the cohesiveness and fun that she brought to the Center. Our self-appointed "Morale Officer", Becky was quick to organize parties and potlucks. She also had an inside track to the Tucson piñata market and provided nearly indestructible and seasonally-appropriate piñata creations to office celebrations. Somehow, among all this, she also found time to serve as the USGS representative to the Southern Arizona Hispanic Employment Program (HEP). Thank you for your service and your smiles Becky, we will all miss you! Jim

-James Leenhouts, Center Director, USGS Arizona Water Science Center, Tucson, AZ



Steve Robinson retired on December 31, 2020 after more than 33 years with the USGS. Steve began his illustrious career as a full-time employee in September 1987 in the Dekalb office of the USGS Illinois District after working as a contract student from 1985-87. Steve was involved in maintaining the streamgaging network in the Illinois District and was involved in several projects including monitoring remediated superfund sites and data collection for the Upper Illinois River NAWQA Study Unit. In the middle of a massive flood in the Red River of the North Valley in North Dakota and Minnesota in May 1997, Steve decided to move to the middle of the devastation and become the Field Office Chief for the Grand Forks office of the North Dakota District. As a reward, Steve got to spend a day

(including breakfast) with Bob Hirsch and Gordon Eaton as they visited the area to observe the extent and damage caused by the flooding. Little did Steve know that the 1997 flood was merely the beginning of his experiences with massive floods in North Dakota. While Field Office Chief, Steve was also involved in the Committee on Hydrology for the International Red River Board and continued his involvement until the end of his career. Steve was promoted to the Data Chief for the North Dakota Water Science Center, Bismarck office,

in October 2003. There, Steve oversaw a strong streamgaging, groundwater, and water quality monitoring network for the Center. During his time as Data Chief (and other roles), Steve experienced 6 out of the top 10 floods of 138-year record in North Dakota (Grand Forks station). Steve also traveled to Southeast Asia to participate in a USAID project to assess water resources and share information with the countries of Thailand, Cambodia, and Vietnam. Steve played a critical role in the massive flood of 2011 on the Missouri River where Steve and other staff met with key officials, including Governor Mike Hoeven, to evaluate possible impacts of the rising flood waters on the Cities of Bismarck and Mandan. Steve also was fortunate enough to participate in and helped guide the merger of the North Dakota and South Dakota Water Science Centers into the Dakota Water Science Center. Steve moved to the role of Deputy Director for the Dakota Water Science Center in January 2017, where he provided key leadership for the newly merged Center. In retirement, Steve looks forward to NOT working with BASIS+, perfecting his woodworking skills, and spending more time with and testing the patience of, his wife Beth. If you want to reach Steve after December 31, his email is sbgrobinson@gmail.com.

-Eric T. Volkman, Director, USGS Dakota Water Science Center

Terry Schertz writes: After almost 40 years with USGS Water, I have decided it is time to sign off. Friday, Oct. 30th will be last day! I procrastinated writing this because I had no idea how to talk about 40 years without it being long (and boring)! I finally decided to just use the bullet lists I had been collecting. I think there is enough in the bullets to connect with those of you who shared these with me and, hopefully, to make you laugh!

- 1980s Texas: QW Unit; SAS; computer cards (seriously); Superbrain; ASR and bottle labels program; Lake Granbury storm; Barton Springs swimmer; trends; corner office
- Trend Analysis; ESTREND: data gaps; detlims; zero values; itty bitty plots; tons of Texas data
- BQA: storing QC data in NWIS; 1992 QC sample design workshop
- QC Field Sample Design and Interpretation class: Middle Earth study; the wizard; QC songs; 25 + classes
- Phoenix (Water-Quality User Group): user requirements; TESTING; testing fine jar; NWIS 4.1 (!)
- BQS: moving; reflection pools; Ocala shutdown and NFQA; LTMDLs; lab std. dev.; lab evaluation
- Galveston Water-Quality Conference: the vendor shrimp boil; the illegal lunch; the rock band practice
- Office of Water Quality: QW Gang; 40+ WSC reviews; oil spill; MS floods; Hurricane Sandy; so many memos
- Texas again: SW?, DMT agendas; QW Days; 2015 Floods; construction crew; flood gages; TX Water Day (man down); Harvey; SW!!; 5 Title changes; SQA

I realize that it may only be my retired colleagues who would 'get' some of these acronyms and experiences! In closing, I have always been idealistic about the work we do in Water, but it has most definitely been the people that made it worth the years. It has been an honor to work with so many dedicated, creative, hard-working, fun colleagues as we tried to craft new tools and directions for this agency. It is you I will miss the most. All the best,

-Forwarded from: Tim H. Raines, P.E., Director, Oklahoma-Texas Water Science Center

Verne Schneider retired on August 1, 2020 and remains as Emeritus Scientist.

Verne was Chief of the USGS International Water Resources, which included development and management of water resources programs in the Middle East, Africa, Central and South America, and Asia in support of U. S. Government and United Nations agency programs. Recent projects included support for water resources monitoring in Afghanistan and Nepal; groundwater studies in the Costa Rica, Iraq, Ethiopia, Kenya Jordan, and Abu Dhabi; and transboundary water issues in the Middle East. He was the USGS member of the Department of State Interagency Water Working Group. He also served as the Executive Secretary of the U. S. National Committee for the UNESCO IHP; a Member of the WMO Commission for Hydrology; and served as the USGS liaison for the IAEA Isotope Hydrology Program. He was a member of IAEA Standing Advisory Group for Nuclear Application (SAGNA) for SAGNA 14, 15 and 16. He holds a BSCE degree from Valparaiso University and a PhD degree from Colorado State University. Dr. Schneider's expertise is in water resources monitoring and assessment, hydraulic and hydrological engineering, and instrumentation for monitoring the hydrological cycle.

Jim Bennett writes: I met Verne when we were fellow graduate students at Colorado State in Fort Collins during the period 1964-68 where he was Sherwin Shen's right-hand man on several surface water scale modeling projects at the Engineering Research Center. During those years, Verne met, courted, and married

Donna, a student at what was then Colorado State Teacher's College in Greeley. After graduation and marriage, Donna taught for a couple of years at a small rural school west of Loveland. At about the same time in 1968, Verne, Harvey Jobson, Raul McQuivey, and I completed our Ph D endeavors at CSU and Carl Nordin, then the Chief of the WRD research program in Fort Collins managed the miraculous feat of hiring all of us to WRD. I stayed in the project office at the ERC until 1972 while Verne transferred to the Surface Water Branch in Arlington Towers. It wasn't long until we learned that WRD was going to establish a branch of the Branch at Bay St. Louis MS and that Verne was to be Roland Carter's point man in establishing the facilities there.

Verne's science specialty at NSAS's Mississippi Test Facility was the model flood plain where the floods were generated by the pumps that earlier had supplied the cooling water for the stands where the moon rocket engines had been test fired. When I arrived in late 1972, Verne and Donna led a thriving social life that was extremely welcome to the foreigners from the North. Several years later we welcomed the Schneiders to our neighborhood in Reston. Verne, I marvel at and thank you for your 52-years of devoted duty to WRD.

Paul Hearn writes: In October 1998 Hurricane Mitch devastated Honduras, Nicaragua, Guatemala, and El Salvador, killing some 11,000 people. USGS was given \$14 million by USAID to provide for the installation of flood-warning stream gages, mapping landslides, assessing the health of shrimp farms and other biological resources, delivering digital topographic maps and aerial photography to key municipalities, and training for local agencies to manage these efforts in the future. Verne was co-manager of the relief effort, providing oversight and guidance for the over 200 USGS employees involved in the effort from 1998 to 2001.

Jack Fischer writes: Verne Schneider and I were colleagues in USGS Headquarters for much of the 1980's and '90's. The positions we held during that time lead us to interact daily, often meeting in my office or his. In my office, we generally conversed seated, like gentlemen. In his, not so much. It wasn't that Verne was not a gentleman; he certainly was and is. It was just that there was hardly space to stand in his office, let alone sit. Verne never met a piece of paper he didn't like. He valued any document that came in through his door, eternally. That is, he kept them all, everyone, once in, never out; nothing escaped. Papers ended first in filing cabinets. When cabinet drawers began to bulge ominously, teetering stacks formed on his desk, then on chairs, counters and, yes, finally on the floor. In addition to his leadership role and many achievements at the USGS, Verne has made substantial contributions in the community. Just as one example, many are unaware of the long evenings, weekends, and summer weeks he spent mentoring young boys and men as a Boy Scout leader. A lot of local boys are on a straight path in life today because of Verne's influence on their life. One week, years ago, Verne and I found ourselves in Paris, representing the USGS at some international water resources conference. It was spring and the Paris weather was classic—bright sunshine, blue skies, light breeze, warm spring air. Young, moony-eyed couples were sharing croissants at colorful, umbrellaed sidewalk cafes and strolling together along the Seine. Romance was in the air. During breaks, Verne and I were out there in the middle of all that, asking each other "What the heck am I doing here with YOU?! In the office, I relied on Verne as an always reliable source of advice and counsel. One had to ask, of course. Verne held his thoughts and opinions close, seldom volunteered. But, on more than one occasion, I recall being very glad I asked. It was the same with his sense of humor. It wasn't evident, wasn't out there; so, it was unexpected when it appeared. One had to listen carefully and watch closely to catch the twinkle in his eye, always there just below the surface. So, here's to Verne Schneider, a quiet, understated, circumspect, colleague, friend and internationally respected professional hydrologist. Congratulations on a long and successful career, Verne. And thank you for your loyal service to the U. S. Geological Survey, the organization we love and cherish.

Mark Smith retired from the USGS on December 31, 2020 after a very successful career. He and his expertise will be sorely missed by the Observing Systems Division, his colleagues in the Hydrologic Networks Branch, as well as by Water Science Center employees he has supported over his 32-year career. Mark graduated from Colorado State University with a master's degree in civil engineering hydraulics in 1988. He joined the USGS in 1989 as a hydrologist and surface-water specialist in the Wyoming District (aka Water Science Center), working 6 years in the Cheyenne and Riverton offices. He then moved to Lakewood, Colorado in 1994 to serve as surface-water specialist for the Colorado District and project chief for the Rocky Flats Surface-Water Monitoring Program. From 1999 to 2003, he coordinated USGS surface-water activities in response to Hurricane Mitch flooding in Central America and the 2001 earthquake in El Salvador. In 2003, he became regional surface-water specialist for 15 states in the central U.S., and from 2011-2017 was a member of the Water Science Field Team. Following the Water Mission Area reorganization in 2017, he served as a hydrologist in the Observing Systems Division, Hydrologic Networks Branch, where he provided surface-water

technical support to headquarters and WSCs around the country. Over the course of his career, he assisted with the USGS response to major floods in Fort Collins, CO (1997), Central America (Hurricane Mitch, 1999), Dominican Republic and Haiti (2004), Colorado Front Range (2013) and Puerto Rico (Hurricane Maria, 2017). Mark returned to USGS as Emeritus this month to help the Caribbean-Florida WSC finalize a report on Hurricane Maria flood measurements. Mark did not want any fanfare surrounding his retirement, but anyone wanting to pass along congrats and well wishes can reach him at his USGS email address

(mesmith@usgs.gov) while he is in an Emeritus role. ***From Mark: "I truly appreciate the opportunity I've had to work with, and learn from, so many of you over the course of my career."***

-Janice M. Fulford, Director, Observing Systems Division, Water Mission Area, Office of Chief Operating Officer, Stennis Space Center, MS

Nancy Wydoski, Budget and Financial Specialist– retired on September 30, 2020 from the National Water Quality Laboratory (NWQL), DFC, Lakewood, CO.

Merilee Bennett writes: I had the privilege of working with Nancy from 1993 until my retirement in 2006 (13-years). Nancy was the best assistant anyone could ask for. Any assignment she took on was done thoroughly and correctly. Those individuals within the NWQL (staff, project chiefs and lab chief) on more than one occasion commented on her professionalism, her helpful nature, and the quality of her work. Nancy worked through the years of neglected procurement files to bring the lab's outstanding commitments to a zero balance; she organized the multiple years of administrative documents according to Bureau standards, and most of all worked with the IT staff to enhance the lab's billing program. All this while doing her day to day duties. I probably didn't tell her this enough, but Nancy 'thank you' for your support.

MEMORIALS



Anna C. Borlin, 86, passed away on October 29, 2020. She was born on June 29, 1934 in New York City, NY. Anna was given a full artist scholarship to the esteemed Pratt Institute in Manhattan after high school. To the chagrin of her parents, she promptly gave the scholarship away to a kid named "Joey" down the block whom she was sure needed it more than her. Her whole life was about giving to others in need - she was generous to a fault. She was an excellent student winning an award as a senior in high school for "outstanding character, leadership, scholarship and service". A talented artist, she attended Pratt and studied art for a time until she met her future husband, Jerry Borlin. They had six children and were married for twenty-five years. After their divorce, Anna always worked very hard to take care of her family as a single mother often working two jobs. She waitressed at several restaurants including The San Clemente Inn and Ben Browns, but her primary career - the one that gave her much pride - was at US Geological Survey where she was a cartographer until she retired. She always loved this job and made many great friends among her co-workers that are still like family to her. Anna was deeply religious in her Catholic faith and was a special minister of the Eucharist among other special certifications. She was a member of the order of the Carmelite Sisters whom she supported through gifts and prayers. She volunteered at St Vincent De Paul thrift store helping the less fortunate. She was especially passionate about her work with autistic children well into her retirement years. She touched and brought love and kindness to innumerable lives. She is now with her parents Catherine and Alexander Iannuzzi, her sister, and many family members who went before her. Anna is survived and missed by her sister and brother and her 6 children and 16 grandchildren and their spouses/partners, her 18 great grandchildren, and 2 great-great grandchildren.

Doris I. Nelson Buswell, 92, (widow of retiree Grant Buswell) of Helena, MT died Tuesday, July 19, 2016 of natural causes. Born on January 1st, Doris liked to share with others that she was the first baby born in Helena in 1924. She was a graduate of Helena High School in 1941 and worked for the telephone company for many years following high school. Doris married Grant W. Buswell on December 1, 1951. They raised a family of six children together on a small ranch outside of Helena where they also raised Arabian horses. Doris and Grant retired to Polson, MT in 1971 where they enjoyed a happy life at Crystal Springs, their home on Flathead Lake. Doris loved being an active volunteer in the schools and community. She was a proud member of the Montecahto Club in Polson and Kiwanis in Lake Havasu, AZ, her long-time winter home. Doris was preceded in death by her parents Effie and Ernest Nelson, her husband Grant, a son and daughter, a brother and sister. Doris is survived by a sister, three daughters and a son, eight grandchildren and seven great grandchildren. Doris's family would like to thank the staff at Touchmark who loved and cared for her for 9 years and Rocky Mountain Hospice who cared for her during her last weeks. A family memorial service was held in Polson, MT.



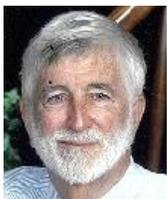
Darrell D. Dorminey, 85, of Chula, GA passed away on November 26, 2015, at Southern Care Assisted Living in Tifton. Born April 25, 1930 in Berrien County, Darrell was the son of the late Alton Baker Dorminey and Kathleen Jones Dorminey. He graduated from Tifton High School in 1948 and was a veteran of the United States Air Force. He began working with the USGS in 1953 and retired in 1990, where he was a hydrological technician and also served as office chief. He enjoyed carpentry, camping, and riding motorcycles. Darrell is survived by his wife of 61 years, a son and daughter, and two grandchildren and their spouses. His funeral service was held on November 29, 2015, in the Chapel of Bowen-Donaldson Home for Funerals with Dr. Wayne Roe officiating.



John R. George was born in Detroit MI on October 6, 1931. He died at age **89** on November 6, 2020 in Denver CO. He is survived by his wife Lee and missed greatly by numerous friends and colleagues. What follows is summarized largely from a professional autobiography that covers the years from 1956 to 1978 of John's USGS career span of 36 years. John had at least 15 authored or co-authored publications during his career. John George earned a BS in Geology from Michigan State University in 1953 and immediately commenced an enlistment as a communications officer in the U.S. Air Force where his final duty station was Johnson Air Force Base in Japan. On completion of his enlistment, he was hired by the

USGS WRD as a Physical Science Aide, GS 6 in the PA District where he concentrated on water quality and sedimentation studies. On being promoted to GS 7 in 1958, he assumed the designation of Geologist. John rose rapidly through the ranks and as a GS 11 was named Geologist in charge of the Harrisburg Subdistrict Office in 1961. While continuing to study and report on sediment data from the Susquehanna River Basin, he cooperated with a project at Pennsylvania State University attempting to develop a model for coarse bed material transport. As a GS 12 in 1964, he was assigned to lead the Atlantic Coast Area Recruiting (ACR) Team with duties to visit area universities for interviews. No particulars are available, but this writer remembers that a number of notable hires for WRD were made as a result of these efforts. In 1966 as a GS 13, John transferred to ACR Headquarters in Arlington VA as Staff Assistant for Water Quality and Sedimentation activities. In 1968 John George was named to succeed Abe Cameron as District Chief in Georgia, a position that he held until 1980. In addition to or as a part of the many and varied duties of a District Chief, he participated in several other notable activities. As part of a 1972 PL 92-500 review of a Soil Conservation Service plan to channelize 100 miles of the Alcovy River in north central Georgia, John and Harold Golden produced an analysis that effectively caused the cancellation of the proposed project. Other such projects which were carried out in the southeastern US generally resulted in geomorphic disasters. John was active in the American Water Works Association and he was named the chairman of its board of trustees in 1972. In 1974 he was named to the steering committee for the Chattahoochee Intensive River Quality Assessment which was headed by Rod Cherry from 1974 to 1979. WRD headquarters activities conducted during this period included sitting on the Water Quality Branch Sedimentation Advisory Committee and a four-month detail as acting Assistant Chief Hydrologist for Scientific Publications and Data Management. In 1978, under the Intergovernmental Personnel Act, John served for 5 months as the acting Georgia State Geologist. During that time, he interviewed and hired the next State Geologist. In 1980, John moved up the road to become the Southeastern Region Program Officer where he served with Bob Dingman and Jim Cook until 1986 when he transferred to Denver. In Denver, John replaced the retiring John Monis as Assistant Regional Hydrologist for the Central Region and there he worked with Jim Blakey until his own retirement in 1992.

This writer interacted with John George on committees and training primarily concerning the sedimentation activities of WRD from the late 1960's through the 1980's and remembers him as a hard-working, perceptive, and fun-loving person. John was simply fun to be around, and the writer apologizes for how impersonal the above narrative reads, as it doesn't completely serve justice to John's character. –Jim Bennett



John J. 'Jack' Hickey, 84, Gulfport, FL died April 9, 2020. As a young man, Jack worked as a carpenter which enabled him to pay for his college education and instilled in him a love of working with his hands, which continued throughout his life. As an adventurous and deeply independent man, Jack joined the Naval Reserve in 1957 and was called to active duty in the U.S. Navy during the Korean war. After serving as a Machinists Mate Third Class aboard the USS Moale (DD693) he was honorably discharged March 1962 and received the National Defense Service Medal. His fascination with the beauty of the natural world, especially in his travels out West, began his love for and fascination with Geology. He graduated with a Bachelor of Science in Geology, with high distinction, from the University of Arizona in 1962 and was a member of Phi Kappa Phi. Jack continued his education to earn a Master of Science in Hydrology in 1964. Having found a career that he loved, Jack joined the USGS in as a Research Hydrologist, where he worked until he retired in 1991. Jack had an illustrious career with the USGS, where he authored or co-authored 52 publications and reports and presented 20 papers at national scientific meetings. In 1978 he was awarded the Best Paper of the Year award by the Journal of Ground Water and was elected as a Fellow in the Geological Society of America in 1988. In 1990 Jack was selected as one of only three US Geological Survey Water Resource Division scientists to travel to the Soviet Union to participate in cooperative research with Russian hydrogeologists. From 1993-1994 he was elected as the President of the Southeastern Geological Society. Jack continued to write papers, work as a consultant, and expand his knowledge throughout his life. His fascination with how things worked naturally led him to further study physics and advanced mathematics and took great joy in learning new things. Throughout his life Jack loved the water and enjoyed canoeing, sailing, and spent many evenings at the beach trying to capture the elusive green flash with his camera. A brilliant man with great wit and an infectious laugh, Jack was a man of true faith who was able to reconcile his scientific and religious beliefs. He was not a gambling man but took Pascal's wager and is surely now reaping those rewards. As a devote Roman Catholic, Jack found solace in Catholic Doctrine and lived a simple and fulfilling life. He found great joy in his family, his faith, good wine, and debating everyone around him. He saw the beauty of the natural world and enjoyed

astronomy, cycling, the beach, sunsets, and driving fast cars. One of the unique ways he expressed his love for people was to tell them that their existence brought him happiness. His existence certainly brought great happiness to those who knew him. Jack is survived by his brother and sister, his four children, as well as 8 grandchildren and 2 great-grandchildren. He was preceded in death by his parents Margaret and John, and his brother The Reverend Joseph M Hickey. His funeral was held at St. John Vianney Catholic Church, St Pete Beach on November 24, 2020.



Marjorie 'Margie' Evon Jennings, 82, wife of USGS retiree Marshall E. Jennings, passed from this life at her home in Dripping Springs, TX on October 11, 2020 at 1:47am, while holding the hand of her husband, Marshall. Margie Jennings was born in San Antonio, Texas, October 22, 1937 and met Marshall at Spring Break, 1959 while she was a student at Trinity University in San Antonio, and he was a Civil Engineering student at University of Texas, Austin, TX. Marshall fell deeply in love with Margie and they were married for 60 years, one month and nine days. On the day of their 60th anniversary, Marshall wrote her a note, "My Darling Margie, when I think of our love and life together these 60 years, my heart soars! Happy Anniversary, Love Always, Marshall" Margie was a secondary school teacher with her M.S. in Education from the University of Southern

Mississippi; she taught at schools in TX, VA, and MS, retiring in 1999 with 31 years in Education. She enthusiastically followed her husband on his USGS assignments in Texas (Austin, Wichita Falls, Shamrock, and San Antonio); Graduate Studies at Colorado State University, Ft Collins, CO; Headquarters USGS; Bay St. Louis, MS; and finally back to Austin. The Jennings have two sons and five grandchildren. Marshall can be reached at marshallandmarge@aol.com and 512 738 5569 cell/text. May God bless the reader! Services were held on October 15, 2020 at the Thomason Funeral Home, Wimberley, TX. Marge's final resting place will be at Coker Cemetery, San Antonio, TX.



David C. 'Dave' Madril, 80, passed away on December 26, 2020 in Billings, MT. He was born on April 4, 1940 in California. Dave retired from the U.S. Air Force after a 26-year career NCO and was proud of his military service. He traveled the world extensively and considered himself fortunate for that experience. He served his country in Europe during the Cold War and Vietnam. He was present in Berlin on the day the Berlin Wall was erected in 1961. About ninety percent of his military career was spent in Europe, finishing his career as a master Sargent. After retirement he was a civilian contractor in the Middle East establishing U.S. military war time medical assets for use in the event of a military mission requirement. He began his 3rd career with the USGS as an administrative officer serving in California, Virginia, Colorado, and Montana. Dave was very instrumental in the

coop building in collaboration with Sacramento State University in California. He helped establish the USGS Northern Rocky Mountain Science Center at Montana State University in Bozeman, MT and retired in June 2003 after it was firmly established. In fact, he deserves most of the credit for that event happening. In Bozeman he sponsored 2 international high school exchange students and took part in the Gallatin County Big Brother Sister/Program. He continued public service by volunteering with the Colorado National Monument, in Fruita, CO, the Billings Police Department, Billings Chamber of Commerce Visitor Center, and Yellowstone Country Sheriff's Office. An avid fan of high school cross country, track, and volleyball, he traveled throughout the Pacific Northwest in support of Billings athletes. This travel enabling him to pursue his hobby of photography. He truly felt there were only a few remaining items on his "bucket list." Dave is survived by his 3 children (Jack, Jim, and Danielle) and 3 grandchildren (David and Rachel who are Jim's kids and Danielle's daughter Nathalie). Dave was a friend of many and his impact on us will always be remembered.

Elaine Gockel writes: Dave loved good food, so he usually knew where the best restaurants were in towns he visited. I took a lot of flak for hiring him because of his being ex-military, but Dave over-came everyone's objections. I had some wonderful employees during my career. He was tied with 2 Iowa girls that I still hear from and are great people in their own rights. I was blessed with working with the 3 of them. I have never been able to put one over the other two. I doubt many people have been as lucky in their work life as I was. I will miss Dave terribly.

Alan Rankin writes: Dave was a Manager in the true sense of the word - he didn't try to be the knowledge source on all issues, but he wanted to either have people on staff (or knew of people in the organization he could contact). Dave's networking skills were legendary, the interactions between USGS Admin Offices across the country expanding dramatically due in part to Dave's efforts in this regard. For me, Dave was a mentor and a dear

friend - on a personal level, he helped me navigate through many of life's transitions. When Covid allows, I will go out and have a drink in his memory - and hope he'll have a drink with me when we meet again!



Celso Puente, Jr., 79, passed away on December 10, 2020, the Puente family lost their beloved husband and father. Celso was born on December 8, 1941 to Celso and Andrea Puente in San Antonio, TX. Celso began a distinguished 40-year career in the Water Resources Division of the USGS in 1965 where he held multiple positions with increased responsibility across the United States. He was passionate about being a hydrologist/geologist and was always fascinated by topics such as geology, space, genealogy, and political science. While balancing a full-time job, raising four children and being a loving husband, Celso also attended the University of Texas, graduated from St. Mary's University and was an active volunteer, helping Hispanic immigrants learn English and assimilate into their new environment. Celso's passion for his work was only surpassed by the love and dedication he had for his wife and family. He married his childhood sweetheart, Maria, on January 23, 1965 and they promptly started a family together. Celso was thrilled to be a part of his eight grandchildren's lives and relished hearing about their lives and accomplishments. When they were around or the topic of conversation, Celso always had something loving to say. Celso put great emphasis on the importance of family and taking care of each other and this will live on in those he loved the most. During his final days, his only concern was for the wellbeing of his wife, children, and grandchildren. While his family is heartbroken by their loss, they will always be thankful for their memories of Celso, the love he gave them and the foundation and example he provided as a husband, father, brother, grandfather, mentor, and friend. We will miss him every day, though we know he will always be alive in our hearts. The family would like to say a heartfelt thank you to the doctors and nurses at INOVA Loudoun Hospital who provided Celso with such compassionate care during his final weeks. We will be honoring Celso's life with a private family service on December 19, 2020 but plan to hold a formal memorial service in the Spring when it's safer for those that loved him to gather together. We'll provide more information on that service as we get closer to the spring. Celso is survived by his wife of 55 years, Maria C. Puente, his four children and their spouses, as well as his brothers and their spouses. And by his eight grandchildren. Celso was predeceased by his mother, father and first-born son, Demetrius Patrick Puente.

Members write about Celso:

Bill Shope: Celso will be missed very much. I never had the honor to work with him, but I enjoyed his friendly smile and his pleasant disposition. He never missed a chance to say hello and ask how I was. If there were many more like him, this world would be a much better place. Rest in peace good friend. I'm sure you left many good memories with all that were fortunate to know you. His extended family in and out of the USGS were very lucky to have him.

Harvey Jobson: I add My Praise of Celso.

Jim Devine: I want to add my praise of a person of true quality. I always knew if Celso approved it was good to go. It was a privilege to have known him.

Katherine Lins: Celso was always one of those rare people, humble and kind as well as professional and well respected for his knowledge. It was a pleasure to know and work with him. I'm sure it is a great loss to his family.

Becky Phipps: Life well lived, Celso.

Robert Mason: Yep! Celso was always cheerful, helpful, committed and an amazingly hard-working guy. He will be missed.

Dick Engberg: So sorry to hear of Celso's passing. He was a prince.



Patrick D. Smith, 74 of Leesburg, VA, passed away peacefully at home on Saturday, July 25, 2020. Patrick was born Tuesday, December 4, 1945 in Fairfield, OH. He was the son of the late Gordon J. Smith and the late Elizabeth M. (Baugh) Smith. Patrick worked for the USGS and as part of the International Bilateral Programs within WRD, Patrick was assigned from 1987 to 1989 to project headquarters in Al Ain, United Arab Emirates (UAE) and contributed to the Abu Dhabi Groundwater Project. He retired in 1998. Patrick was a life-time member of the Leesburg Moose Lodge. He is survived by his daughter and one granddaughter. Interment will be in Culpeper National Cemetery, Culpeper, VA at a later time.

USGS Great Lakes Restoration Initiative Science Highlights **by Jon Hortness, Great Lakes Program Coordinator**

The Great Lakes Restoration Initiative is one of several multi-agency ecosystem restoration programs such as the Everglades, Chesapeake Bay, and San Francisco Bay and Delta.

The purpose of the Great Lakes Restoration Initiative (GLRI) is to accelerate efforts to protect and restore the largest system of fresh surface water in the world, and to provide additional resources to make progress toward the most critical long-term goals for this important ecosystem. By adding GLRI resources to federal agency base budgets and using the combined resources to work with nonfederal partners to implement protection and restoration projects, GLRI federal agencies continue to accelerate progress toward achieving long-term goals. Specifically, GLRI funding allows USGS to implement science actions that provide our management partners and other stakeholders with the information and tools they need to determine best steps and actions to take to restore the Great Lakes ecosystem. These actions also help to support the joint U.S./Canada Great Lakes Water Quality Agreement (GLWQA) and other federal, state, tribal and municipal agreements and strategies already in place.

GLRI contributes to and leverages the broad portfolio of USGS science across the Great Lakes. For example, Great Lakes fisheries management is an area where USGS provides critical science and monitoring to support decision making. The USGS operates a fleet of five large research vessels (RVs): Kiyi, Arctictus, Sturgeon, Muskie, and Kaho; one RV for each of the Great Lakes to support multi-jurisdictional recreational and commercial fisheries, tribal harvest, allocation decisions, and fish stocking activities worth about \$7.0 billion annually. USGS fisheries research and monitoring is executed using appropriated funding outside of GLRI, but the programs complement one another toward the goal of a healthy Great Lakes fishery.

All GLRI funding is included as part of appropriations to the EPA budget. USGS (and all other GLRI agencies) receive funds from EPA through interagency agreements. Since the inception of the GLRI in 2010, USGS has received approximately \$219M in GLRI funding (about \$20M per year) to perform over 300 individual projects. Ten of the main USGS Great Lakes activities are listed below.

Assessment of Nutrient and Toxic Contaminant Loading to the Great Lakes

Restoring Great Lakes water quality is essential to protecting public health and to supporting economic growth in the region. Science-based information is needed to ensure safe drinking water and recreational waters free of Harmful Algal Blooms (HABs) and toxic contaminants. With GLRI funding, the USGS monitors water quality (phosphorus, nitrogen, chlorides, sediment, and other contaminants) in rivers across the Great Lakes basin. USGS uses statistical analyses and modeling to provide managers and stakeholders with a more accurate picture of what types and how much of these contaminants are making their way into the Great Lakes. This effort began in 2012 and partners with EPA, NOAA, Heidelberg University, and six Great Lakes States.

Support and Evaluation of Coastal Wetland Restoration Projects

Great Lakes coastal wetlands provide habitat for recreationally and commercially valued fish, offer a refueling station for migratory birds, improve water quality, and generate recreational opportunities for the public. GLRI projects to restore coastal wetlands are guided by information and decision support tools created by USGS and its many collaborators. USGS research on national wildlife refuges and other wetlands throughout the Great Lakes basin support management efforts to achieve landscape-scale conservation goals. By working closely with land managers, USGS identifies and initiates studies of high-priority research topics including the creation of fish spawning and nursery habitat, increases in fish recruitment, improvement of water quality, and increases in food production for migratory birds. This effort began in 2010 and partners with EPA, USFWS, University of Michigan, and New College of Florida.

Edge of Field Monitoring

Nutrient and sediment runoff that enters rivers and streams from agricultural lands can contribute to the growth of Harmful Algal Blooms (HABs) and have other negative water quality impacts. USGS scientists have worked closely with NRCS staff to evaluate sources and potential reductions of nutrients and sediments delivered from agricultural areas across the Great Lakes basin. USGS is currently monitoring edge of field sites at 8 locations across five states (WI, MI, IN, OH, and NY). This monitoring provides relevant information to agencies evaluating the impacts of agricultural Best Management Practices through a combination of monitoring and modeling. This effort began in 2013 and partners with NRCS, EPA, and five Great Lakes States.

Asian Carp

As a member of the Asian Carp Regional Coordinating Committee, USGS works with international, federal, state and municipal agencies to combat the spread of Asian carp into the Great Lakes. With funding through the GLRI and Agency appropriations, USGS' scientific expertise supports prevention, provides early warning of the potential presence or movement of Asian carp (by analyzing water samples for Asian carp DNA), improves monitoring, deterrence, and control activities within the Illinois River basin and the Great Lakes. USGS scientists work closely with managers to provide the best available science to help inform Asian carp management decisions and help protect economic interests of the region, including Great Outdoors recreation activities. This effort began in 2010 and partners with EPA; USFWS; USACE; the States of IL, MI, and OH; and the Great Lakes Fishery Commission.

Coregonine Restoration Science

USGS leads a multi-Agency effort, in collaboration with other federal agencies, to facilitate a comprehensive program for restoring native coregonines (whitefish and cisco) in the Great Lakes. This is accomplished through projects that meet the needs of the Council of Lake Committees. Results from these efforts help fishery managers make more informed decisions related to hatchery, stocking, harvest restrictions, and other long-term planning efforts. This effort began in 2016 and partners with USFWS, BIA, Tribes, eight Great Lakes States, and the Great Lakes Fishery Commission.

Invasive Phragmites Control

Current methods (e.g., repeated herbicide, burning, flooding) to control this invasive grass are resource intensive and not species specific. USGS is conducting research on innovative control strategies targeting the plant at the genetic level (e.g., gene silencing) and the relationships with bacteria and fungi that help the plants take over wetlands, beaches, and recreational areas. The goal is to develop more sustainable landscape-level control solutions. This effort began in 2011 and partners with USACE, University of Michigan, Tulane University, Louisiana State University, Wayne State University, and the Great Lakes Commission.

Harmful Algal Blooms (HABs)

USGS is characterizing the life cycle of HABs, their associated toxins, and the genes responsible for cyanotoxin production. This work is enhancing the ability of Great Lakes decision-makers to help prevent, prepare for and respond effectively to HABs when they occur. USGS is also focused on new 21st century science and technologies to help address this critical issue. This effort began in 2015 and partners with EPA and NOAA.

Scientific Support for Restoration of Savannas

Savannas were a dominant habitat type in western Great Lakes region but today are rare in that region. Under GLRI, USGS is working with NPS to establish best management practices for restoring oak savannas emphasizing methods for restoring ground layer vegetation, which historically was among the most diverse vegetation communities in the country. This effort began in 2017 and partners with NPS and Michigan State University.

Conserving Native Bees of the Great Lakes Basin

USGS is taking a lead in producing a model to better understand how to prioritize restoration activities to benefit native bee communities in the Great Lakes Basin. These projects include a better understanding of native bee distributions, factors affecting native bee nesting, the effects of landscape connectivity on bee community composition, and the effects of habitat change caused by beech bark disease on native bee communities. This effort began in 2019 and partners with NPS, USFWS, USFS, and NRCS.

Invasive Zebra and Quagga Mussel Control

USGS is leading the way on investigating the use of carbon dioxide and low-dose copper for controlling dreissenid mussels at strategic locations across the Great Lakes. Results will inform managers about the potential for use in control efforts in high-value habitats, such as spawning reefs. This effort began in 2011 and partners with USFWS, NPS, NOAA, and the Great Lakes Fishery Commission.

For those who may want to know more about this program, we have provided the link to the Water Science Center's Great Lakes Restoration Initiative: [Edge-of-field monitoring: Great Lakes Restoration Initiative \(GLRI\) \(usgs.gov\)](https://www.usgs.gov/edge-of-field-monitoring-great-lakes-restoration-initiative)

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Submitted by: Norm Grannemann

NEWS NOTES ON SUSTAINABLE WATER RESOURCES

Christmas Flood

Provided by: Tim Smith

<https://www.usgs.gov/news/christmas-flood-1964>

“The [Christmas flood of 1964](#) encompassed about 200,000 square miles, or roughly the size of France, resulted in 47 deaths, left thousands homeless and caused more than \$540 million (\$3.9 billion today) worth of damage. Areas in Oregon, Idaho, California, Washington and Nevada experienced record-breaking floods caused by three storms between Dec. 19 and Jan. 31. Agencies from [federal, state and local governments will commemorate](#) the 50th anniversary of the Pacific Northwest 1964 Christmas flood starting Dec. 10.”

Flood Awareness

“During this holiday season, the 1964 Christmas flood reminds us that flooding is a national problem and can happen anytime, anywhere. According to the [National Weather Service](#), over the past 30 years, nationwide annual flood damages averaged \$8.2 billion with 89 fatalities per year.”

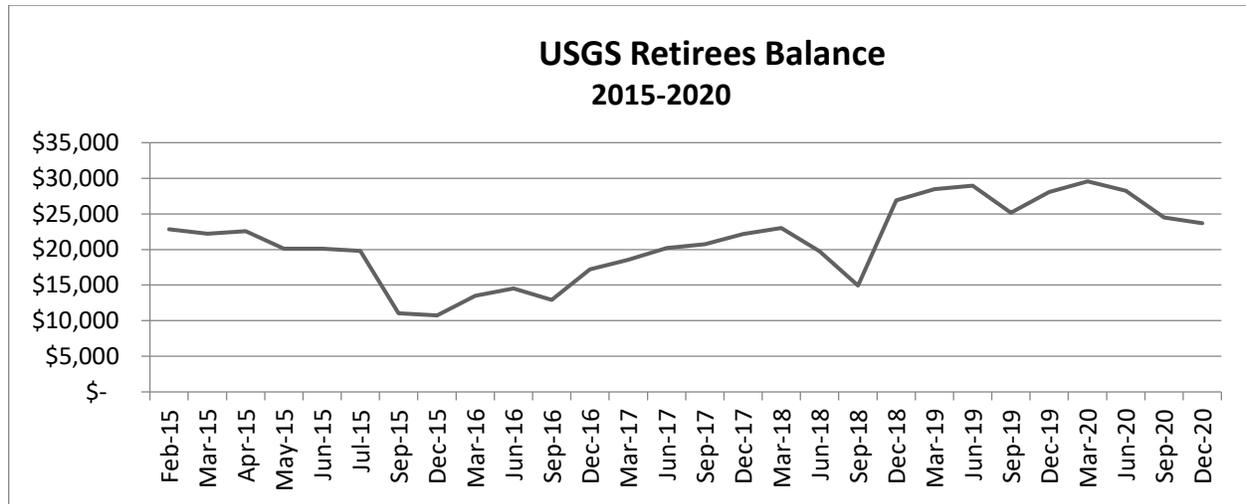
“The Christmas flood of 1964 was driven by a series of storms, known as [atmospheric rivers or “pineapple expresses](#),” that battered the region producing as much as 15 inches of rain in 24 hours at some locations. The combination of heavy rain, melting snow, and frozen ground caused extreme runoff, erosion and flooding.” “It was a classic rain-on-snow event,” said Marc Stewart a hydrologist for the U.S. Geological Survey. “In addition to the rain, there were already several inches of water from the melting snow, so it was a big runoff event across a wide area.”

“The flood caused record-breaking peak streamflows, transported large amounts of sediment, and inflicted extensive flood damage. However, in many areas storage in reservoirs and operation of flood-control facilities prevented far greater damage.”

TREASURER'S REPORT, FOURTH QUARTER 2020

Treasurer Cathy Hill reports the organization had \$23,712 at the end of the fourth quarter, December 2020.

Special thanks for contributions significantly above dues to Barney Popkin, Ron Rathbun, Michael Mallory and Jim Putnam. Many thanks for your generosity. These contributions go directly to the Scholarship fund.



EXPENSES	2018	2019	2020
Qrtly Newsletter	1,790	1,260	1,369
Directory	1,502	1,295	1,100
Pizza incentive	47	0	0
PO Box Rental	134	136	140
State Corp Comm. Renewal	25	25	35
Scholarships	8,700	4,001	6,816
Award plaques for reunion	264	0	0
Convert old VCR tapes to CDs	0	203	437
STEP lunch thank you	0	116	0
Annual Adobe license	155	155	155
TOTAL EXPENSES:	\$12,617	\$7,191	\$10,052
Not included: \$2,000 to the 2020 Reunion Committee Historically we have gotten these funds back after the Reunion			

DIRECTORY

NEW MEMBERS

Campbell, Bruce G. (20) (Karen W.) – 219 Governors Grant Blvd, Lexington, SC 29072, (c) 803-727-9035, brucecampbell5050@gmail.com

Diehl, Tim (17) (Sita) – 5729 Elder Place, Madison, WI 53705, (h) 608-233-4357 (c) 615-330-0755, thdiehl@bellsouth.net

Horton Jr., J. Wright (20) (Beverly) – 1552 Kingstream Circle, Herndon, VA 20170-2752, (c) 703-999-9476 (h) 703-437-6263, wrighthorton@gmail.com

Journey, Celeste A. (20) (Karen) – 436 Cindy Street, Batesburg-Leesville, SC 29006, (c) 803-480-3151, celestejourney@gmail.com

Krizman, Teresa L. (21) – 1367 Quitman St., Denver, CO 80204, (c) 303-522-1252, krizmanter@msn.com

Risser, Dennis W. (19) (Jennifer) – 1695 Detwiler Drive, York, PA 17404, (h) 717-767-9458 (c) 717-758-0826, drisser1670@comcast.net

Swain, Lindsay A. (02) (Sue) – 5538 S. Kirk Circle, Centennial, CO 80015, (c) 714-496-2825, LINDSAY_SWAIN@sbcglobal.net

Taylor, Joanne (21) – 10901 Thanlet Lane, Reston, VA 20191, 703-477-6027, jc-taylor@comcast.net

Van Metre, Peter C. (20) (Barbara Mahler) – 4502 Avenue G, Austin, TX 78751, (c) 512-698-6719, pcvanmet@gmail.com

AFFILIATE LIAISON

Arkansas James Petersen james_petersen@usgs.gov (w) 541-737-1963

Hawaii Vacant

DIRECTORY CHANGES

Blanchard, Steve (11) (Julia) – 6537 W. Cedar Branch Way, Tucson, AZ 85757 addr

Buswell, Doris (S) – per family request remove from Directory – passed in 2016

Douglas, Lois J. (94) -- 208-297-4741 cell

Eimers, Jo Leslie 'Jody' (17) – joleslie98@gmail.com email

Erdmann, David (95) (Gladys) -- dgerdmann@gmail.com

Ethridge, Max (18) – 844 Woodbriar Lane, St. Charles, MO 63303 addr

Irwin, George A. 'Tony' (95) (Carol) – requested to be removed as a member and from the directory

Kraemer, Thomas F. (11) (Jo) – 371 Davisville Road, E. Falmouth, MA 02536 addr

Ludwig, Betty (S) – requested to be removed as a member and from the directory

Martin, Jeffrey D. 'Jeff' (19) (Kathy) – jdmjdmjdm@gmail.com email

Montanus, Ralf F. (10) – requested to be removed from the directory

Paillet, Fred (02) (Helen Davis) – (c) 479-966-5601 phone

Rollins, Harry C. (01) – 800 W. Azeele Street #514, Tampa. FL 33606, 813-251-6828 addr phone

Schaffranek, Raymond W. 'Ray' (07) – 12503 Donahue Road, Glen Allen, VA 23059

REGIONAL DIRECTOR

Western Patrick 'Pat' Tucci ptucci@sprintmail.com 303-898-9674
(replaces: Sandy Williamson)