

# USGS RETIREES

NEWSLETTER No. 198

February 2023

*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

Fellow Members:

I hope everyone had a wonderful holiday season. The upcoming Reunion in Tucson celebrating the 50<sup>th</sup> Anniversary of our Organization should be a good time for all attending. I know we're all looking forward to seeing colleagues, sharing experiences during and after work life, sharing plans, and participating in the tours.

The newsletter includes two very interesting articles: 1) Brief History of the Our Retirees' Organization; and 2) Ukraine Part II Geohazards. This year's Hydrologic Technician scholarship announcement has been sent to the Water Science Center offices and we look forward to having excellent applicants as we did last year. We do not have many Hydrologic Technician members in our organization. Hydrologic technicians form the foundation of almost everything we do in the USGS from data collection and analysis to research and development—yet they are not well-represented in our organization. To help increase membership, we formed an Ad Hoc Committee on Enhancing Involvement by Hydrologic Technicians in the USGS Retirees' Organization to generate a list of priority practical action items that could enhance future participation in the Organization by Hydrologic Technicians through their retirements or as an Affiliate Member during their career. The committee has completed its final report and it has been unanimously approved by the Board. Several recently retired Hydrologic Technicians have volunteered to help with implementing the plan and in actively recruiting Hydrologic Technicians. Many thanks to Kevin Oberg for identifying potential volunteers.

The Reunion is only a few weeks away and the Retirees Board and I look forward to seeing you and participating in what we hope will be an enjoyable and enlightening experience.

**Bill**

### Updates for Directory needed by March 31, 2023

The 2023 Members' Directory will be distributed in May. If your mailing address, email address, or phone number has changed in the last few years, please let us know. If the listing for your significant other is inaccurate, please let us know. If you know of the passing of any member, significant other, or non-member who was eligible to have been a member, please let us know. The directory is distributed in print or pdf format. The quarterly newsletter is distributed in print or pdf format or as a link. If you want a format different from what you last received, let us know. Send updated information and requests to [wrdrretirees2014@gmail.com](mailto:wrdrretirees2014@gmail.com) or USGS Retirees, P.O. Box 280, Herndon, VA 20172. Thank you!

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## **Brief History of Our Retirees' Organization**

Herb Freiburger and Dick Engberg

The USGS Retirees' Organization was formed in 1973 under the name WRD Retirees by a group of retired hydrologists from the then Water Resources Division (WRD) of the U.S. Geological Survey (USGS). Because of its importance to the history of the Retirees Organization, the authors of this article begin with a brief history of water activities in the USGS.

The study and evaluation of the Nation's water resources by the USGS began only a few years after the USGS was created on March 3, 1879, by President Rutherford B. Hayes. By 1884, the USGS was training individuals as hydrographers and in 1889 the National Streamgaging Program was initiated with the installation of the first gaging station on the Rio Grande at Embudo, NM. It was not until 1894, however, that there was a Congressional appropriation for streamgaging. That same year the Hydrographic Division of the USGS was created. In 1902, the study and evaluation of water resources became an even more important function of the USGS with the creation of the Hydrographic Branch. This included not only the Hydrographic Division for streamgaging but also the Division of Hydro-Economics for water quality as it related to agriculture and industry. This organizational structure continued with some minor reorganization and name changes until 1949, at which time, the WRD was created with three separate branches for surface water, groundwater, and water quality. With numerous offices in every state, this organization was not very different than the organization as it was set up in 1902, but it did create the name WRD.

Between 1957 and 1966 Chief Hydrologist Luna Leopold built and implemented a significant reorganization designed to facilitate combining the three branches at the District (state) level under one District Chief who reported to Division Headquarters. This reorganization culminated in the creation of four Regional Hydrologist positions, with District Chiefs then reporting to the Regional Hydrologists, who in turn reported to the Chief Hydrologist. During this time, Dr. Leopold also created and instituted the National Research Program (NRP) in hydrological sciences. With three regional centers, the purpose of the NRP was to provide a broad-spectrum program of scientific research and long-term integrated studies related to water resources and environmental problems.

There were two more reorganizations between 1966 and the present (2023). The first was in 1996 when the Biological Resources Division (BRD) was created through a compromise between Congress and Secretary of Interior, Bruce Babbitt. Secretary Babbitt had previously created the National Biological Survey (NBS) by merging the research arms of two Interior agencies, the U.S. Fish and Wildlife Service and the National Park Service. Congress and Babbitt agreed to moving the NBS into the USGS by creating the BRD.

The second reorganization of the USGS began about 2000 and culminated in about 2017-18. The main result of this reorganization was the emergence of five environmental Mission Areas: Water Resources, Natural Hazards, Ecosystems, Energy and Minerals, and Core Science Systems. These Mission Areas were created by reconfiguring the 100-year-old Divisions (Water Resources, Geologic, Mapping) as well as the more recent BRD into "areas" of current-day environmental and technical interests. During this reorganization, many of the scientists within the former WRD were assigned to other Mission Areas. It soon became apparent to the WRD Retirees' Organization that to attract future members, it would need to reach out to Mission Areas other than the Water Mission Area. Thus, in 2015, the name of the organization was changed to USGS Retirees to better align with the organization of the USGS. However, since 2015, coordination with the other Mission Areas, including the already established Geology and Mapping retiree organizations, has vacillated. To sustain membership, we will need to do more. This will be discussed in our final 50<sup>th</sup> Anniversary article in the November 2023 newsletter.

Many of the individuals who began their careers about the time WRD was formed in 1949 were retired or nearing retirement age in the early 1970's. The WRD was like a second family to these individuals, and they did not want to lose track of their work colleagues and friends after retirement. George E. Ferguson, USGS, is universally regarded as founding the WRD Retirees in the early 1970's. Looking back, it is no surprise he would lead a venture of this sort to start a retirees' organization as his leadership abilities and organizational skills were second to none. As good as those abilities and skills might have been, he was just as good a

listener. In the late 1960's, when he was nearing retirement, he began hearing that recent USGS retirees were voicing dismay that they had limited ways of knowing how their former co-workers and friends from the USGS family were doing. One of those retirees, George H. Taylor, a former Regional Engineer from Nebraska and cohort of George Ferguson's, urged Ferguson to think of a way to remedy the situation. Ferguson took the message to heart and over the next several years discussed the situation with many of his USGS friends. Together they developed a preliminary plan of action.

In the spring of 1973, George Ferguson, Ken Love, and Joe Wells, recent retirees, took step 1, meeting with Roy Hendricks, Chief Hydrologist, and several members of his staff to determine the degree to which the Survey and the WRD might give support to the development of a retirees' organization. Hendricks not only gave his blessing to the idea of a retirement organization (step 1), but also named Joe Cragwall, then Assistant Chief Hydrologist for Operations, as his liaison with the planned organization (an unanticipated step 2). The naming of Joe Cragwall later proved to be a huge factor in the success of the WRD Retirees. Having obtained the approval from Roy Hendricks, Ferguson put together a workgroup to design the makeup of the proposed Retirees organization and determine the needs it would fulfill.

At the end of 1973, the first newsletter (Fig. 1) was sent to roughly 200 potential members. The first of several polls was included, asking retirees if the newsletter fulfilled some of their needs. The answer was a gratifying "yes." Along with the poll, a request was made for potential members to send a dollar in to defray the costs of postage and other initial costs. The response to the request was overwhelming and the workgroup continued to guide the activities of the WRD Retirees from 1973 through 1975. They also produced a directory of the 221 first-time members, followed in 1974 by a second directory of nearly 300 members, a sign that the retirees' organization was gaining traction. During the same time-period, a constitution and by-laws were developed and approved by the membership. At Joe Cragwall's suggestion, interested WRD employees were invited to become affiliate members of the Retirees. Seeing that the Retirees Organization was beginning to flourish on its own, the workgroup ceased management of the organization in 1975. George Ferguson, who remained, had nothing but high praise for the departing group. In 1984, a letter signed by the first five Presidents of the Retirees' Organization was written to George Ferguson thanking him for all his contributions to the Retirees (Fig. 2).

In 1976, the Retirees began to operate like a business and elected its first slate of National Officers and Regional Directors. Presidents of the organization, to this day under the bylaws, are elected by the membership for 2-year terms. By this time, Roy Hendricks had retired and became a member of Retirees' Organization. He was elected as the first president. Other National Officer positions include Vice President, Secretary, Treasurer and, since 1993, Archivist. Although the Secretary, Treasurer, and Archivist are elected positions, they tend to serve for extended periods of time. Retirees' Presidents from 1976 to the present are listed in Figure 3. Elected Regional Directors represent each of the four regions previously defined by the WRD. Currently (2023), the states in the Retirees' regions (Northeastern, Southeastern, Central, and Western) are located within the regions under the last WRD structure. The USGS Retirees have a "state contact" person in nearly every state. These retirees, along with the Regional Directors, stay in touch with the Retirees' membership and encourage retirees to contribute to the "News of Retirees" section of the newsletter. These state contacts are also the catalysts for the establishment of local meetings or gatherings held in approximately 40 locations across the country.

Presently, the Retirees are in the early stages of establishing liaison positions in the Water Science Centers (WSC). These are current USGS employees with knowledge of WSC personnel, functions, and programs, who can keep Retirees' leaders informed about upcoming events in the WSC and (or) upcoming retirements and deaths of current or former employees so they can be included in the Retirees' newsletter. Dues for members of the USGS Retirees is \$10 per year—a bargain for which members receive a quarterly newsletter and an annual directory of members. The biennial Retirees' Reunion is open to all.

In 2006, the Retirees initiated a competitive program to offer scholarships to hydrologic technicians. At that time, the USGS indicated a shortage in its ability to hire Hydrotechs and the Retirees responded with the scholarship program, which has become more and more popular. The scholarship program will be discussed in more detail in the August 2023 Anniversary issue of the newsletter. The newsletter and, to a lesser extent, the reunions have been the highlights and the most important aspects of the Retirees in accomplishing its mission of "Assisting its members in keeping in touch with one another and with the activities and USGS employees." Each issue of the newsletter contains a message from the president, news of retirements,

memorials, photographs from local and state retirees' groups, articles of interest, and photographs from reunions past and upcoming. A popular section of each newsletter continues to be the "News of Retirees," where members share information about themselves.

Putting a good newsletter together each quarter takes immense teamwork between the writers of articles and the editor of the newsletter, then even more teamwork between the editor and the editing team. We have been very fortunate, in the last 50 years, to have great retirees step up and volunteer for these jobs. George Ferguson was the editor for 13 years. Although retired, he also led and wrote volume VI of the History of the WRD. Other editors were Porter Ward, Bill Schneider, Jim Biesecker, Charles Nethaway, Dan Fitzpatrick, and currently Jeff Stoner. The layout editors, in order, were Ruth Malone, Dotty West, and Merilee Bennett. Merilee recently retired for a second time from 10 years of service to the Retirees. During her tenure, she served very ably as acting Editor in addition to her normal job after the unfortunate passing of Jim Biesecker. Celso Puente stepped up after the death of Charles Nethaway. Our newest layout editor is Joanne Taylor. There are and have been several editorial folks at the regional levels, who have volunteered their services as editors of articles for the newsletter.

While the newsletters have been in existence since 1973, the reunions did not begin until October 10, 1981, when Walt Durum (3<sup>rd</sup> Retiree President) and his wife, Win, hosted a lunch at the Cosmos Club (Engineer's Club) in Washington, D.C. About 45 Retirees, employees, and their spouses attended. At that luncheon, Walt suggested the Retirees sponsor a USGS Founding Day the following year to celebrate the anniversary of the October 2, 1888, Congressional signing of the Irrigation Act of 1888 which authorized the first water resources activities of the USGS. This was approved and the planning began. On October 2, 1982, the Retirees sponsored "The Founding Day Celebration" at the USGS National Center in Reston, VA. About 130 employees and retirees attended. Director Dallas Peck, Chief Hydrologist Phil Cohen, and the 4th President of the Retirees, Milt Hackett, among others, spoke in the auditorium. Because retirees came from several different states—CA, CO, FL, NM, NC, and TX--this gathering was considered the first reunion of the Retirees. The next five biennial reunions were held in Denver, Baton Rouge, Seattle, Orlando, and Williamsburg. The reunions have continued to be held at 2-year intervals ever since, except during the roughest Covid years, 2020–2022. This year's reunion in Tucson, AZ, will be the 20<sup>th</sup> in the history of the Retirees.

As has been discussed above, to make the Retirees Organization functional, a small group of retirees were put in place on a 2-year rotating elected basis. For example, there is a leadership team, a small team to manage the newsletter aspect of the mission, an ad hoc team to head up and bring about the 2-year reunion, as well as some available staff for various other tasks that need to be dealt with throughout any given day or year. The fact that the mission of the Retirees' Organization has been accomplished by these rotating teams of people for half a century is amazing, as every person involved has been and is 100 percent volunteer. There have been literally hundreds of retirees who have stepped up over the years on a volunteer basis to keep the organization moving forward. All funding, including Scholarship funds, have come from nominal membership dues and contributions.

In the 1990's, the Retirees' Organization established the "WRD Retirees Lifetime Award" for recognition of many years of distinguished and loyal service to the Retirees. For unknown reasons, the award was seldom used. In 2017, the award was resurrected and given a higher priority. This recognition, now called the "George Ferguson Award," will be presented to future recipients at subsequent reunions. The physical award is a prestigious plaque and a narrative commending the individual for efforts on behalf of the Retirees. Recipients are listed in Figure 4.

We hope you found this article to be informative about how this great organization was founded and how it has weathered the test of time. We think it has a bit of a unique side to it as well as bringing a definite family atmosphere. We hope the USGS Retirees' Organization will continue for a long time to come.

"THE WRD RETIREE"  
NEWSLETTER NO. 1 FALL, 1973

Over 200 retirees of the Geological Survey's Water Resources Division have already indicated a desire to participate in an organized effort toward better communication with each other and with the Survey. Those of us (the undersigned) who comprise the temporary work group, believe that this interest expressed by about 40 percent of all retirees provides an adequate base for an effective retiree organization.

We have prepared the enclosed directory as a first step because of the interest you expressed. Your suggestions regarding format and coverage will be helpful in improving later editions. As noted in the introductory statement of the directory, the current addresses of many retirees still are not known to us. Efforts to get these from the Civil Service Commission were unsuccessful because so many of the retirees have annuity checks sent to a local bank and this becomes the address of record.

Although the directory includes a number of retirees who helped strengthen the Survey's early role in hydrology, we were impressed with this query raised by Royal W. Davenport on his returned questionnaire: "I wonder if anyone would predate me? I joined in 1910.... and was sent to Oregon because I was a farm boy and could use horse teams". If Davie holds the record among us for early Survey hydrographic service - and we believe he does - who has the next earliest e.o.d. date?

Had we prepared this first directory a year ago, it would have included a number of fellow retirees who remain an inseparable part of our reflections on career friendships and accomplishments. In memoriam: Delmar W. Berry, Verle M. Burtis, Max H. Carson, Arville Gustafson, J. Holloway Morgan, Barney S. Peterson, William C. Rasmussen, Robert C. Reinhardt, William O. Smith, ~~Minor B. Stankovic~~ and Adrian H. Williams. (We acknowledge that our records are incomplete.)

The WRD organization chart - updated and printed by the Division for our directory - gives a general view of present structure and leaders as the Survey gets settled in its recently occupied new headquarters at Reston, Virginia. You will note that Joe Cragwall's name is missing. Joe, until recently Assistant Chief Hydrologist for Operations (and liaison man to WRD retiree organization), is now Assistant Director for Programs. Walt Hoffman, assisted by Ray Abrams, succeeds Joe as our WRD contact.

Our next step will be to develop an organizational charter and present it for your comments or approval, probably in the next newsletter. As many of you have advised, we will keep it simple! Once formally organized, we can enjoy such advantages as more favorable postal rates - and group travel rates, should the aspirations of some of you materialize.

Although our organization should have a name, we assure you that the one shown above is for interim use only. Give us your ideas. In considering names, we are mindful that we will not be representing all the retirees of the Division - only those who have chosen to participate. Although our members will have close personal ties with former associates still with the Survey, our organization has no official status and WRD legally cannot provide financial or "in kind" assistance. However, we have had the enthusiastic support of the Chief Hydrologist and his staff throughout this formative period and assurance of a continuing interest.

Some have asked if our organization would duplicate objectives and activities of other retiree groups such as the American Association of Retired Persons. We believe that our goals - better communication within a group that has a strong residual interest in a specialized field - are unique and make us independent of other associations. Many of our participants are likely members of other groups.

The dollar bill that practically everyone of you enclosed with your returned questionnaire has helped build a fund that has been adequate to cover costs of the canvas of retirees and the preparation and mailing of the directory and this newsletter. The unused balance will take care of anticipated expenses to some time beyond the end of this calendar year.

Work Group Members:

John Adamson  
Walt Durum  
George Ferguson  
Art Frazier

Warren Hastings  
Charles Morgan  
Roy Oltman  
Joe Wells

**Figure 1. First Newsletter (1973)**

The following letter to George Ferguson forms the frontispiece to the bound volume of "WRD Retirees" Newsletters.

September 27, 1984

Dear George:

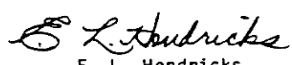
One of the great benefits of working for the Geological Survey is the sharing of a spirit of "family" -- a valuable benefit that, until recently, could not be carried into retirement. Fortunately, with the advent of the Retirees' Newsletter in 1973 the traditional Survey spirit of family lives again for retirees of the Water Resources Division.

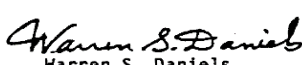
The Newsletter tells us where our friends are and what they are doing, and it keeps us informed on current staff and program of our old outfit. Each issue is eagerly awaited.


George, as Editor of the Newsletter you successfully led the revival of the family spirit among retirees. Now, after more than a decade, the WRD Retirees membership has increased nearly fourfold, with a corresponding increase in size and distribution of the Newsletter. The retirees and your many friends in the Division convey to you their thanks and affection, with continuing appreciation for your dedicated and creative efforts.

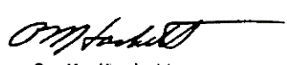
Keep up the good work!

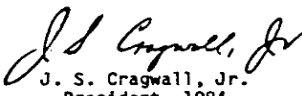
Sincerely,

  
E. L. Hendricks  
President, 1976-77

  
Warren S. Daniels  
President, 1978-79

  
Walton H. Durum  
President, 1980-81

  
O. M. Hackett  
President, 1982-1983

  
J. S. Cragwall, Jr.  
President, 1984-

**Figure 2. Letter Thanking George Ferguson (1984)**

**Years**

1976-1977  
1978-1979  
1980-1981  
1982-1983  
1984-1985  
1986-1987  
1988-1989  
1990-1991  
1992-1993  
1994-1995  
1996-1997  
1998-1999  
2000-2001  
2002-2003  
2004-2005  
2006-2007  
2008-2009  
2010-2011  
2012-2013  
2014-2015  
2016-2017  
2018-2019  
2020-2021  
2022-2023

**Presidents**

E. L. "Roy" Hendricks  
Warren Daniels  
Walton Durum  
O. Milton Hackett  
Joseph Cragwall, Jr.  
Gerald Meyer  
Robert Beall  
Russell Langford  
Porter Ward  
Thomas Buchanan  
Donald Thomas  
William Mann, IV  
Robert Schoen  
Thomas Yorke  
James Blakey  
James Biesecker  
Richard Engberg  
Herbert Freiburger  
Clarence "Andy" Anderson  
Ethan Smith  
James Kircher  
James Stark  
Pete Anttila  
William "Bill" Carswell

**1990's**

Sumner Heidel  
Robert Beall

**2002**

Bill Schneider  
Porter Ward

**2006**

Bill Boning  
Jack Pickering  
Loren Young

**2010**

James Biesecker  
James Blakey  
John Musser

**2018**

Clarence "Andy" Anderson  
Merilee Bennett  
Thomas Yorke

**Figure 4. George Ferguson Awardees**

**Figure 3. Presidents Serving the USGS Retirees' Organization**



*Editor's note: This is the second of two articles describing USGS technical assistance to Ukraine. The first article was published in the May 2022 issue of our Newsletter.*

## **Geology, Energy, and Mineral Resources of Ukraine**

Submitted by Paul Hearn

### **Historical Overview**

Ukraine joined the Soviet Union in 1922, together with Russia, Belorussia, Azerbaijan, Armenia, and Georgia. For much of its history it has been a major source of wheat and other grains to Russia and surrounding countries. During Stalin's drive to collectivize agriculture in the early 1930's, Ukrainian farmers were forced to give up their farms and their supplies of grain were confiscated. The resulting Holodomor famine of 1932-33 killed an estimated 6-8 million people, 4-5 million of them in Ukraine.

After regaining its independence when the Soviet Union broke up in 1991, Ukraine declared itself a neutral state, forming a limited military partnership with Russia and other former Soviet countries while also establishing an agreement with NATO in 1994. In 2013, mass protests and demonstrations known as the Euromaidan erupted. These events resulted in a new government being formed, followed by Russia's annexation of the Crimea in 2014 and the subsequent fighting against Russian-backed separatists in eastern Ukraine. Ultimately, this culminated in the Russian invasion of February 2022. Since then Ukraine has continued to seek closer economic, political, and military ties with the West (particularly NATO) amid the ongoing war with Russia.



Source: Grid Arendal. Topographic Map of Ukraine. Authors: Philippe Rekacewicz, Emmanuelle Bournay, UNEP/GRID-Arendal. <https://www.grida.no/resources/5330>

## **U.S. Geological Survey Cooperation with Ukraine**

Authorized by the Organic Act of 1879, the U.S Geological Survey (USGS) has a long history of assisting other countries with assessing and responding to floods, earthquakes, landslides, volcano eruptions, and water-supply and water-quality needs. In the late 1990s and early 2000s, the USGS was involved in several assistance programs in Ukraine, funded by the State Department's U.S. Agency for International Development (USAID).

From 1998 to 2002 USGS hydrologists, working closely with their Ukrainian counterparts, installed six satellite-linked stream gaging stations in the Tisa River basin in western Ukraine. Preceded by discussions to explain how the gages would be linked by satellite to USGS servers, and to satisfy Ukrainian concerns, these telemetric gages were the first to be installed in the former Soviet Union.

In addition, USGS geologists assessed landslide risk in the western Carpathian Mountains, where runoff from snowmelt often caused major ground failures and flooding. Support was also provided to other projects, such as the effort by the Environmental Research Institute of Michigan (ERIM) to install a satellite receiving station in Kyiv and establish the Ukrainian Land and Resource Management Center (ULRMC). The ULRMC's goals were to promote the use of remote sensing and GIS technologies to aid in environmental and natural resource management. The center was active until the early 2010s, and serves as a good model for future development.

The USGS team consisted of:

- 1) Randall Updike, Chief Scientist, Geologic Hazards Team, Golden, CO.
- 2) William Savage, Senior Landslide Engineer, Geologic Hazards Team, Golden, CO.
- 3) Jonathan Godt, Research Geomorphologist and Geographic Information Systems (GIS) Specialist, Geologic Hazards Team, Golden, CO.
- 4) Gregg Wiche, District Chief, WRD, Bismarck, ND.
- 5) Paul Hearn, Office of International Geology, Reston, VA
- 6) Verne Schneider, WRD International Hydrology, Reston, VA
- 7) Nick VanDriel, NMD EROS Data Center, Sioux Falls, SD

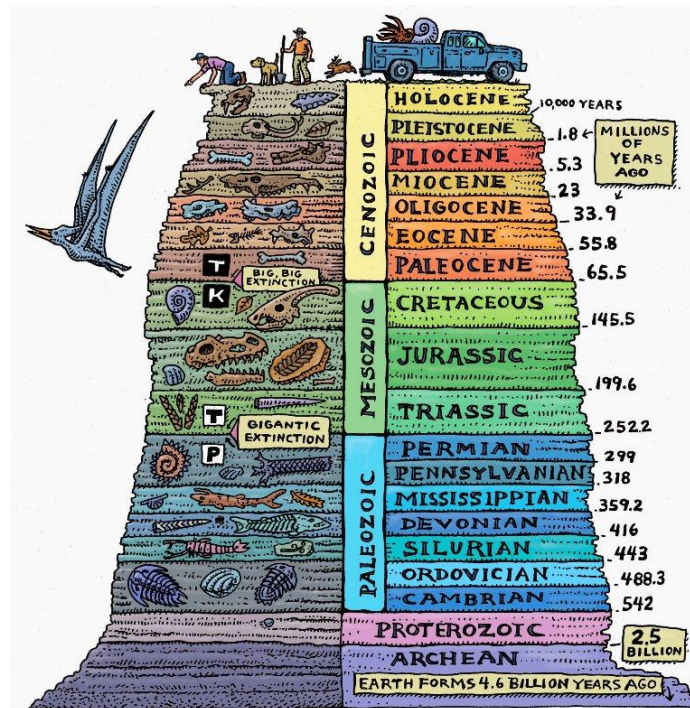
## **Ukraine Geography**

Ukraine is the second largest country in Europe after Russia, which borders it to the east and north-east. Ukraine also shares borders with Belarus to the north, Poland, Slovakia, and Hungary to the west, Romania and Moldova to the south, and has a coastline along the Sea of Azov and the Black Sea. It covers about 230,000 mi<sup>2</sup> (600,000 km<sup>2</sup>), with a population of about 43 million. The nation's capital and largest city is Kyiv. While the official language is Ukrainian, most people are also fluent in Russian.

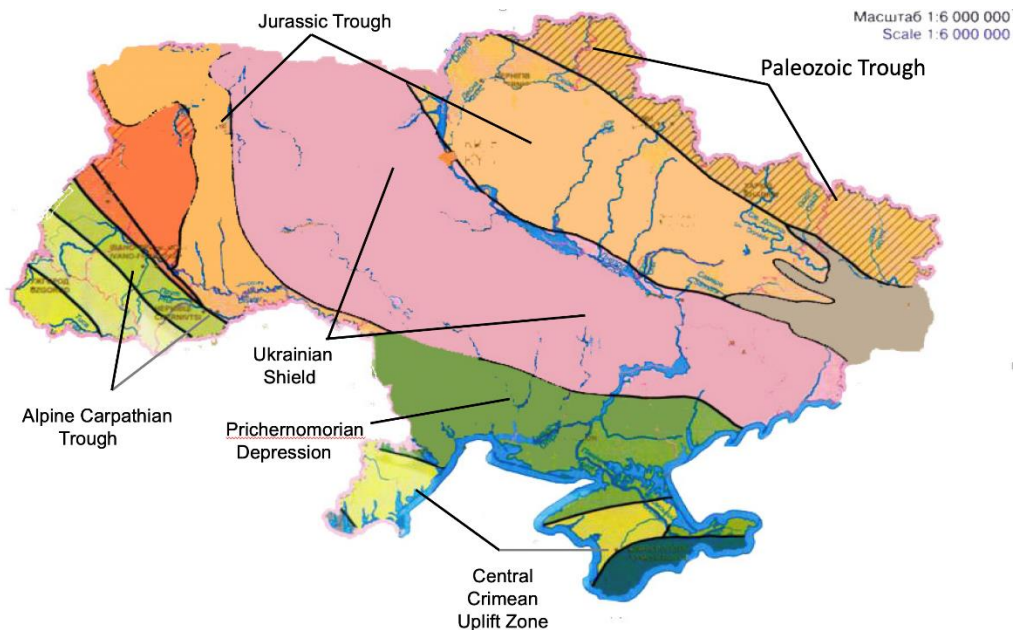
Located on the East European Plain, Ukraine is a relatively flat country, with maximum elevations of the Carpathian Mountains in the west reaching 6,762 feet (2,061 meters) and 5,069 feet (1,545 meters) and in the mountains of the southern part of the Crimean Peninsula. Ukraine is most comparable in size to the State of Texas. To the south is the Black Sea, where the port city of Odesa is located. The Sea of Azov separates Crimea from Russia and eastern Ukraine. Separating the country roughly in half is the Dnieper River.



## Geology



Cartoon showing geologic timescale (Artwork © Ray Troll 2022)



Simplified Geologic Structures Map of Ukraine  
(Source: Regional Information Center "Carpathians. <http://carpaty.net/?p=22919&lang=en>)

The oldest rocks in Ukraine are part of the Ukrainian Shield, forming more than 2.5 billion years ago in the Precambrian. Extensive tectonic evolution and several mountain building events during this time fractured the crust into numerous blocks, horsts, grabens, and depressions. Ukraine was intermittently flooded as the crust down-warped during much of the Paleozoic, Mesozoic, and early Cenozoic, before the formation of the Alps and Carpathians defined much of its current European topography. Lastly, Ukraine was impacted by Pleistocene glaciations within the last several hundred thousand years.

### **Energy, Mineral, and Agricultural Resources**

Roughly 80 percent of Ukraine's oil, natural gas, and coal production is from the Dnieper-Donetsk region. Oil and gas deposits have been found in the Neogene of the Pre-Carpathian Foredeep, the Paleozoic of the Dnieper-Donets depression and in the Oligocene of the Prichernomorian Depression. Large coal reserves are situated in the Dnieper Lignite Basin, Donetsk Basin and Lvov-Volyn Depression. Additionally, Ukraine has combustible black shale and peat deposits.

Ukraine also has one of the largest supplies of recoverable rare earth minerals in Europe. Rare earth elements including cerium, yttrium, lanthanum, and neodymium are critical to the production of microchips, computer memory, and permanent magnets. Rare-earth elements are also used in smart phones, digital cameras, computer hard disks, fluorescent and light-emitting-diode (LED) lights, flat screen televisions, computer monitors, and electronic displays.

The Proterozoic Ukrainian Shield hosts iron ore deposits in the Krivorozhsky Basin, while iron ore is also found in the Neogene Prichernomorian Depression. Manganese ores are found in Oligocene rocks on the southern slope of the Ukrainian shield and titanium is found in magmatic and alluvial deposits. Tungsten, molybdenum, vanadium, nickel, cobalt and chromium occur on the shield as well. Mercury deposits in the Donetsk Basin are hosted in Carboniferous sandstones as well as in the Transcarpathian Trough and Crimea, while copper is found in Permian rocks in the Donetsk Basin).

Also known as the breadbasket of Europe, crops make up about 73 percent of Ukraine's agricultural outputs. The primary crops grown are wheat, barley, soybeans, sunflowers, and corn. Worldwide, Ukraine was the fourth largest exporter of corn and barley and the sixth largest exporter of wheat in 2021.

(Source: Canadian Broadcasting Corporation (CBC) <https://www.cbc.ca/news/politics/natural-resources-ukraine-war-1.6467039>)

## RETIREMENTS

**Chauncey Anderson writes:** Friends, colleagues, and the extended USGS family: It has been an honor to work with you over the last 32 (almost) years. I will be retiring at the end of December and



while I don't question that decision, and have no doubt I'll keep busy, it is of course bittersweet. But lest you thought you were completely rid of me, I will maintain a partial presence for the next year or so, to help transition some of my existing studies and tasks to the great next generation of fantastic USGS scientists and the rest of our team that help make our work so rewarding. A guest speaker for a USGS course once said, "When the bluebird of opportunity flies through your window, don't swat it!", and I've found science in USGS to be rich in opportunities, and following various opportunities turned into a

pathway for a career. Somehow an initial nutrient and algae TMDL study, where in 1991 I deployed the HIF's new "minimonitors" to get hourly DO, pH, and temperature data gave way to an opportunity to work with a new technology called "sondes". Somehow studies with sondes gave me the opportunity to rewrite the USGS NFM Chapter on turbidity around 2004, which led me to working on suspended sediment surrogates, which led to opportunities to work on river responses to removals of Marmot (2007) and Condit (2012) dams, which provided an opportunity to work with great scientists as part of the Powell Center's synthesis project on Dam Removals, and also on the removal of 4 dams on the Klamath River (2009-2022) and other work in that compelling basin. Additional opportunities presented themselves, which I didn't swat, and that allowed me to work in some of Oregon's most beautiful river basins and in National Parks across the country. I was fortunate to spend almost 20 years as part of the USGS Amphibian Research and Monitoring Initiative and work with great, fun herpetologists and scientists on diverse problems for amphibians, such as cattle grazing, detecting eDNA for the amphibian chytrid fungus disease, and effects of oil development on wetland ecosystems. And somehow, I had the opportunity to become a Water Quality Specialist and work with some of the best water-quality scientists across the country. The breadth of the work that we do at USGS, and the quality of our science, still makes me shake my head in wonder. I even had the "opportunity" to respond to Hurricanes Katrina and Rita, in 2005, as part of a program to put temporary "blue roofs" on damaged houses, a monthlong detail that was arguably one of the most satisfying of my career. I mentioned the USGS family, and I do mean that we're a family. A common thread is that fellow USGS scientists and staff are welcoming and eager to help, with little need for introduction. At conferences, all that was ever really needed was the "USGS" logo or letters on a name tag to allow me to talk to fellow scientists I'd never met previously. When starting new studies, I've been able to ask advice from researchers or lab analysts or field staff anywhere in the country, and all with a common understanding of what we're about. It has been great to be able to watch new employees blossom as they take on bigger and more complex studies and become rock stars in their fields. I've met scientists retired since about the time I started who are eager to talk about USGS and who still contribute in their fields. All of this is part of what makes the USGS a great agency to work for and, in the end, a family. So, I owe a huge thanks to all of my colleagues for tolerating me, educating me, exchanging ideas with me, laughing with me, and sometimes listening to me. It's been a great ride, and I hope to be able to continue the adventures with you beyond the USGS. With gratitude and smiles.



**Dr. Cindi Barton**, Director of the USGS Washington Water Science Center (WSC), retired on December 31, 2022, after 38 years of service to the USGS. Cindi has served as the Center



Director of the Washington WSC for the last 25 years. During Cindi's impressive tenure with the USGS she has made important contributions to the Water Mission Area and to the entire organization. For many years, Cindi has served as the Chair of the U.S. Sections of both the Osoyoos Lake and Columbia River Boards of Control of the International Joint Commission. As long-time USGS Case Manager for the Department of the Interior Upper Columbia River/Lake Roosevelt Natural Resource Damage Assessment site, Cindi skillfully recruited and integrated scientists to conduct the novel research that was

needed to evaluate the impact of mining waste on ecosystems in the area. Cindi's career with the USGS began conducting USGS water-quality research in New Jersey, Pennsylvania, and the Chesapeake Bay. Cindi then moved on to lead the Michigan WSC, where she developed and guided innovative research related to environmental contamination in the Great Lakes, drinking water availability, and the effectiveness of bioremediation. Cindi has been a major force behind the development and application of USGS Fundamental Science Practices, which help ensure that USGS publications meet the highest standards of scientific quality and integrity. Please join me in congratulating Cindi on her retirement. Cindi will be missed by her many friends and colleagues.

**-James D. (Dar) Crammond, Senior Science Advisor, USGS Northwest-Pacific Islands Region**

**Jonathon "Jon" Dillow**, Hydrologist, retired on December 31, 2022. Jon spent his entire 30-year career in the Maryland-Delaware-DC (MD-DE-DC) Water Science Center (WSC). Jon earned a BS



in Civil Engineering from Drexel University, Philadelphia, PA, in 1989, and in 1995 was awarded a MS in Civil Engineering. Jon's career with the USGS entailed a strong mix of multidisciplinary technical work as well as work in several different types of supervisory/ management assignments. His first project assignment in 1992-1996 was an update of flood frequency equations for both MD and DE streams, followed by a statistical simulation of peak flow hydrographs in MD. In later years, he repeated the flood frequency effort using more up-to-date data as well as more up-to-date analytical techniques. Then Jon was part of a team effort of USGS and

cooperator personnel from the MD Geological Survey and the "Maryland Water Monitoring Council," which was and still is a highly successful committee that evaluated the adequacy of the existing streamgaging network and also explores alternate sources of funding. In 1999, Jon worked with the U.S. Army at several sites in MD, one of which involved determining optimization of groundwater withdrawals to enact their cleanup process. He then was a project leader/member on several projects which entailed evaluating groundwater flow and nitrate loads to the Coastal Bays of MD which are adjacent to the Assateague Island National Seashore. Throughout his career, Jon performed most duties of a surface-water hydrologist, including making high-flow discharge measurements, flagging high-water marks, computing and reviewing indirect measurements, selecting "n" values of streams, computation and reviews of surface-water records, and participating in the design and construction of streamgaging facilities. During the period 2010-2020, Jon was the WSC Data Chief. At different times during the period, 2020 and 2021, Jon was the Acting Deputy Director for the MD-DE-DC WSC, supervisor of one of the studies sections in MD, and took a half-time assignment as Acting Data Chief for the Washington State WSC, a job that was done totally virtually, from about 3,000 miles away, something that had never been done before. He was highly successful in the endeavor which included preparing all cooperative funding agreements for cooperating state agencies, a huge task in the Washington WSC which has many cooperators in a data program that is approximately 8.0 million dollars. During 2021-22, Jon worked with Water Mission Area staff and numerous Federal partners across the country to develop an update of technical priorities for the Federal Priority Streamgage (FPS) Network. Jon ended his career in 2022 as the Surface-Water Specialist for the MD-DE-DC WSC. He excelled at

accomplishing the above projects and supervising others and has had a fulfilling technical career with the USGS. We thank Jon for the multitude of fine work he accomplished, and for keeping up the good name and tradition of the USGS. We wish him the best of luck and happiness, as well as good health in retirement.

**-Edward Doheny and Herb Freiberger**

**Glenn Doonan:** We (Oklahoma-Texas Water Science Center) wish to make the bittersweet announcement that Glenn Doonan retired December 30, 2022. Please join me in congratulating Glenn on a long and fulfilling career and wish him the best as he moves into retirement. After 38+ years, 5 different operating systems, millions of emails, numerous computer room AC failures and an impossible number to count “have you tried rebooting?” responses, Glenn has decided to hang up his keyboard for good. Right out of high school, Glenn started with the USGS in Atlanta, GA, in 1981 processing data for the Water Use Program. After graduating from Georgia Tech in 1985 (where he sent his very first email) he moved into the IT world full-time. In Georgia, he started working with PR1ME minicomputers then, after a delayed DIS-II procurement, Data General Workstations. He taught classes on Unix and FrameMaker and served on several “SWAT” teams that provided IT assistance to other centers around the region. In 2002, seeking greener (though sometimes browner) pastures Glenn transferred to the Texas WSC in Austin, TX. There he worked with Solaris and led the Center’s migration to the current Active Directory infrastructure. He worked through several Microsoft OS versions and with the occasional MacOS. He served on the Bureau Windows Technical Support helping local users and other IT Specialists around the country. After retirement Glenn plans to continue to travel and will enjoy having to carry only one phone.

**-Meghan C. Roussel, USGS, Oklahoma-Texas Acting Center Director**

**Michael Griffin,** Center Director for the Ohio-Kentucky-Indiana Water Science Center (OKI WSC) has decided to retire after 37 remarkable years at USGS. Mike has made a major impact on the



USGS over the years and his leadership has moved the USGS forward substantially. I've known Mike for several decades - he has been an absolute pleasure to work with and we will miss his leadership and scientific expertise. I am happy for Mike and his family. I know he likely will get some more time on the golf course! Mike began his career with the USGS in Louisville, KY, on March 6, 1985, as a Hydrologic Field Assistant (HFA) after graduating from Murray State University with a BS in Geology.

After six months of diverse work including some serious time entering groundwater well data into the Ground-Water Site-Inventory (GWSI), Mike was hired permanently as a Hydrologic Technician for the USGS KY District. Mike has spent the last 37 years passionately contributing to the USGS mission and has been lucky enough to gain experience in the three major water science disciplines. His work in the groundwater discipline included working at the Maxey Flats low-level radioactive waste disposal site, learning how to drill observation wells and understanding a complex groundwater system while monitoring the site’s many trenches after the site was closed. In 1987, Mike joined the USGS National Water-Quality Assessment (NAWQA) Kentucky pilot study and the National Stream Quality Accounting Network (NASQAN) program to help collect water-quality data to better understand the status and trends of Kentucky’s surface-water quality. Mike completed his first report as a lead author while working as part of the NAWQA team. Following his water quality efforts, Mike spent most of his early field career in the surface-water discipline as he started learning the importance of real-time continuous monitoring while taking on the role of a hydrologic technician “streamgager.” USGS streamgagers are a very important position within the USGS. “These people are my heroes for collecting our high-quality data and I am glad I was part of that group for seven years.” Mike went back to school in 1992 and took physics and calculus classes required to be a Hydrologist. Mike, as a Hydrologic Technician, gained valuable understanding of the importance of high-quality data that USGS collects, which helped him to become a better project chief. Mike ran several projects, including being one of the first USGS employees to enter the world of hydro-acoustics. After a few years as a project chief, including working on a complex study of sediment deposition and erosion on the



lower Ohio River at the Olmsted Locks and Dam project, Mike decided to move into the world of management. In 1998, Mike was selected as the Data Chief and Assistant Director for the KY District. As the KY Data Chief, Mike got to work with one of USGS's most important assets, its partners and cooperators. This was an enjoyable time in Mike's career as he helped convert all Kentucky's surface-water sites to real-time (adding satellite telemetry) and led the effort to make Kentucky the first USGS office in the country to be 100-percent "high-data rate." This meant that all active surface-water sites were now transmitting USGS's valuable and important data to the public and our partners hourly. This was major improvement from the previous 4-hour transmission efforts and the National Weather Service, and the U.S. Army Corps of Engineers were very happy as this helped them to complete their mission much more efficiently. In 2007, Mike went back to school on his own time and completed a Master of Business Administration (MBA) degree from Sullivan University with a focus on leadership. Mike continued improving and advancing the technologies for the data section. In 2010, the IN and KY WSCs were merged as a "Commonwealth Center." Mike was selected as the Deputy Director for Kentucky and worked under the leadership of Bill Guertal, the first INKY WSC Director. In late 2013, Mike was selected as the INKY WSC Acting Director. In 2014, he was selected as the new Center Director, and he fully merged (one organizational chart and one set of financial books) of the two states into the INKY WSC that consisted of four offices. In 2017, Mike was asked to include the Ohio WSC under his leadership. This included adding two additional offices in Ohio into the merged center model. In July 2017, Mike became the Director of the Ohio-Kentucky-Indiana WSC (OKI WSC). During the last part of 2020 and early 2021, Mike took an 8-month detail to the USGS Director's office to work on the USGS CONOPS team and lead a BASIS+ Consistency Team. In 2021, The OKI WSC added another field office in Fort Wayne, IN, on the campus of Indiana University-Purdue University (IPFW) bringing the OKI WSC total to seven offices with two being on university campuses. Mike led a diverse workforce of scientists, IT and Admin staff, and a young energetic group of field technicians that make the OKI WSC a desired place to work. Mike has the distinction of working in 5 regions (Southeast, Northeast, Midwest, Midcontinent, and the North Atlantic-Appalachian) while never leaving Louisville, KY. According to Mike, "One important thing about me working for this great organization was getting to work with some very talented people from all over the country. It has been an honor and a pleasure to work with all of you over the years. Your high-quality science and dedicated support of the USGS is making a difference and I am proud to have been a small part of what has been achieved!" The good news is that Mike plans to return to help the Region on a few items and help transition the new Center Director! Please join me in congratulating Mike on his outstanding career at USGS! **-submitted by Kalob Blodgett, Chief of Staff, Great Lakes Region on behalf of the late Scott Morlock, Midcontinent Regional Director**

**Ralph Haefner:** After 36 years with the USGS, Ralph Haefner retired on December 31, 2022!

Ralph started with the USGS in 1986 after earning his BS and MS degrees in geology from State University of New York at Oneonta and Bowling Green State University, respectively. His first three years with the USGS were spent on Long Island, New York where he worked on groundwater data collection, well drilling, and water-quality sampling. During his time in New York, he also became interested in the use of geographic information systems to address hydrologic problems. In 1990, Ralph transferred to Columbus, Ohio to focus on groundwater issues throughout the state. He started working towards his Ph.D. at The Ohio State University in 1993 while working full time at the USGS and completed his degree in 1998. His dissertation work (and 11-year project at the USGS) focused on acid-mine drainage and trace-element geochemistry at a reclaimed coal mine where coal-combustion byproducts were used to remediate poor soils and raise the soil pH. The byproducts also contained arsenic, selenium, and boron. Understanding the fate and transport of these elements was important towards using this material in coal mine reclamation. Around this time, he also became a board member and, ultimately, the president of the Water Management Association of Ohio. In 2006, Ralph became the Groundwater Specialist in the Ohio District and supervised the Groundwater Section until 2014 when he transferred to



Lansing, Michigan to assume the Deputy Center Director position. In his 9 years in Michigan, he oversaw data operations across the Upper Midwest Water Science Center and served as an inaugural member of the Center's Senior Management team. Throughout his career, Ralph enjoyed meeting with project partners and was very involved with program development spanning a wide variety of hydrologic topics. He also enjoyed working closely with programs under the U.S. EPA's Great Lakes Restoration Initiative. Ralph would like to thank all the people who helped him along the way. At home, his wife Suzanne and family supported his every move (including pursuing a Ph.D. with three-year old and a newborn at home and many nights away doing field work). At work, support came from numerous people in the beginning and continued through the end. Ralph acknowledges that he could not have succeeded without the USGS co-workers, managers, and good friends that he made along the way. Ralph will return as a volunteer Scientist Emeritus for the short term to finish up some project work. In retirement he plans on improving his golf game, wetting a fishing line, camping, gardening, and, of course, spoiling his three grandchildren in Ohio. He and Suzanne plan on staying in Michigan for the foreseeable future.

**-John Walker, Director, Upper Midwest Science Center**

**Greg Koltun:** After 42+ years with the USGS, Greg Koltun is retiring from the Ohio-Kentucky-Indiana Water Science Center (OKI WSC) on December 30, 2022! Please join me in



congratulating him on an amazing and impactful career! Happily, Greg plans to continue contributing his work on a few projects as a scientist emeritus. Greg joined the USGS in 1980 at a time when the USGS was staffing up nationwide to assess the impacts of coal mining on stream water-quality. In addition to being the District/WSC's surface-water discipline specialist since the late 1980s, Greg has worked on a wide variety of projects dealing with topics in hydrology, hydraulics, computer applications and modeling, sediment and nutrient transport, statistics, water use, microbiology, and water quality. With all his work he brought thoroughness, professionalism, and teamwork which has made him invaluable. His ability to speak clearly on complex topics and calm demeanor made him someone everyone wanted to work with. Greg was an early adopter of emerging technologies throughout

his career. He created the first internal and public Web pages for what was at that time called the Ohio District. He was instrumental in the installation and operation of Ohio's first acoustic-velocity-based gage in 1991 and in the purchase of Ohio's first acoustic Doppler current profiler (ADCP) in the mid-1990s. At a time when paper maps were the standard, he realized the power of geographic information systems (GIS) and used them to determine basin characteristics, which in turn could be used to help estimate streamflow statistics at ungaged locations on Ohio streams. He went on to lead projects that created and later enhanced Ohio's StreamStats application. Greg was coordinator and long-time instructor for the USGS Sediment Records Computation class and taught applied hydrology for several years in the Civil Engineering Department at the Ohio State University. He used his understanding of hydrology and hydraulics along with his ability to code to help develop the Graphical Constituent Loading Analysis System (GCLAS) that has been used by the USGS since about 2001 to compute loadings of sediment, nutrients, and selected other contaminants in streams. More recently, he completed work to correct and update the Culvert Analysis Program (CAP) that is used to compute peak discharges at culverts by indirect methods. Greg has been one of the superstars in the Ohio and OKI WSCs and he will be missed. Congrats Greg and glad you will be around for a while more. - **Jeff Frey, Director, Ohio-Kentucky-Indiana WSC**

**Robert R. Mason, Jr. P.E., "Soon to be Retiree!" writes:** Dear Survey Friends and Colleagues, I have decided to retire. My last day with the Survey will be 12/31/2022. Working for the Survey has been the highlight of my professional life. For me, the only thing I find more professionally satisfying than being employed to apply scientific knowledge and engineering skill in the service of others, has been partnering with other scientists who are equally committed to such work. The old Survey motto, Earth Science in the Public Service, is a high calling that I have been privileged to

share. My fondest memories span the gambit: cleaning muck from stilling wells, chasing floods, standing in streams while looking at water flowing over hydraulic controls and trying to ascertain what happened to the control since I was last there, tripping over an alligator, forgetting to put the plug into the boat drain before cruising down the river (twice), getting a problem code to run, improving a statistical fit, successfully communicating the magic of streamgaging and flood science, listening to hydro-techs while doing technical reviews, helping with Bulletin 17C, strategizing high-level programmatic dilemmas and budget proposals (and cuts and hiring freezes), connecting with the 20-somethings at OMB, briefing Congressmen (I once briefed four in one meeting as Delaware River Master), representing the Survey on interagency committees and councils, and leading the US delegation to the 2016 WMO Commission on Hydrology meeting in Rome, Italy. Many occurred in the field, one while standing on a frozen river in Alaska. Most occurred in stuffy conference rooms. All involved working with phenomenal Survey people. I have been lucky, and I am luckier still because I know it. I have benefited enormously from the guidance and encouragement of all who supervised, managed, motivated, and developed me and who helped grow my professional interests and leadership skills. (We all need that.) I have benefited, both while in the field and at HQ, from the scientific knowledge and expertise of local, regional, national, and even, international Survey technical specialists and experts, and from the passion of colleagues and subordinates from across the country who shared their insights and ideas with me and who helped me improve mine. I have benefited from administrative professionals who made my work life easier and more efficient and who's knowledge of proper procedure over these 40 years likely helped keep me out of jail. Thanks to all. I have benefited from colleagues, collaborators, and cooperators from other agencies here and around the world who sometimes funded the work and offered me opportunities to help them better manage scarce water, mitigate and respond to water hazards, and understand the big picture. More than anything, I have benefited enormously from my upbringing in an agency culture that valued, encouraged, and rewarded entrepreneurial enterprise and innovation, and that, commonly, forgave when I acted first before asking for permission (Admiral Grace Hopper, -U.S. Navy, told me to), and rarely held grudges. I would not have fitted as well in any other agency. Yes, I am grateful. There is no excessive modesty here when I say that the only thing that I brought to the equation has been a willingness to work rather long hours. The rest has been graciously supplied--dumb luck, committed colleagues, great leadership, and my family's (wife, Heather, and son, Robi) near-endless patience. Of course, the Survey that I am retiring from is not quite the Survey that I first joined. But I am immensely proud of the Survey that we have been building. I am particularly proud of the advancement of those who I once supervised and with whom I now collaborate. (I will miss you.) And I am greatly enthused by the raft of recent hires who are bringing in fresh energy and talent. I know that they, and all of you, will continue to improve and expand the Survey. You will do both me and yourselves proud. Thanks for a great career, Survey Friends. Take Care.

**Dr. Michael Meador:** Please join me in congratulating Dr. Michael Meador on his retirement after more than 32 years of service to the USGS. Mike has been a valued colleague, friend, and mentor to many fellow scientists over the course of his career. Fortunately for us, he has decided to stay on as an emeritus scientist in 2023 to finish up a few key projects. Mike's contributions to aquatic ecology have been numerous and impressive, and his adventurous, wise, and humorous spirit have helped his team members through many challenging assignments and expeditions. **In Mike's own words:** I still remember sitting in my office at the University of Oklahoma and seeing the job announcement for a stream ecologist position working on fish and habitat as part of the new USGS NAWQA Program, a position to be located in the then North Carolina District office in Raleigh. As a fish guy interested in streamflow and water quality, it sounded too good to be true. Many of my college and work colleagues would ask me, "How did you get that job?" (with varying emphasis on "you" and "that job"). I would answer, "I don't know, just lucky I guess." And I was. Very lucky. Through the course of the NAWQA Program I was able to work with a lot of people to study fish, water quality, and stream habitat nationwide. I've been able to sample streams in nearly every state. Throughout my USGS career I've had the opportunity to work on studies that included fish,

macroinvertebrates, algae, water quality, streamflow alteration, geomorphology, contaminants, wildfires, and much more. But the best was meeting and working with all the amazing, talented people along the way, throughout the USGS. I'm extremely grateful. I'll never forget the times we spent and all that you taught me. It was an honor and privilege to work with you. Thank you. I'm looking forward to spending more time working on genealogy research (during daylight). I'm also looking forward to more time volunteering, fishing (without electricity), hiking, and travelling. Most importantly I'm looking forward to spending more time with family and friends. See ya around. P.S.: "I once had a conversation with someone about the practice of a long retirement email being sent out only for the retiree to show back up in the office." As he told me, "How can we miss them if they never go away?" Sorry J.G., but I'm coming back emeritus.

**-Jeni Keisman, Ph.D. Chief, Hydrologic Impacts Branch, Catonsville, MD**

**Cheryl Partin:** Please join me in congratulating Cheryl Partin on her retirement and for her service to the USGS. After 30 years with the USGS, and as a cherished member of the Arizona Water Science Center family, Cheryl has decided to retire. Her last day was December 30, 2022. Cheryl started working part-time for the USGS in 1992, becoming full time a few years later. Over her 30 years, she has seen many changes. Before the Internet and NWISWeb, she prepared many data reports, monthly reports, data requests from the public, lab budget reports, and worked on the annual Databook. Cheryl has been a long-time Water-Quality Database Administrator for the Arizona WSC (previously the Arizona District). For many years she worked closely with the Arizona Department of Water Resources (ADWR) on the database portion of the statewide groundwater-quality Basic Data program. There she honed her skills in GWSI and QWDATA. She assisted in the Lower Colorado River well inventory project for two years, inventorying and measuring wells in the field, and learning even more intricacies of GWSI. In doing so, she provided critical information for Reclamation to use in managing the ever-more-critical Colorado River. Cheryl participated in NWIS testing in Denver for many years. She recently worked with the Aquarius Samples Integration Project (ASIP) team and Reference List Management Systems (RLMS) in preparation for the upcoming Aquarius Samples (AQS) release. She also enjoyed putting her database skills to work to fill in for the Water-Quality DBA in the MD-DE-DC WSC. In retirement, Cheryl has plans to spend more time with family and friends, try out pickleball, garden, travel, and read, and finally clean out that garage! She thanks all who crossed her path and shared their knowledge and good humor! And we thank her – thank you Cheryl!

**-Jim Leenhouts, Center Director, Arizona WSC**

**Bobby Richards:** After 45 years with the USGS and U.S. Department of Agriculture (USDA), Bobby Richards has decided to retire from active Federal service on December 30, 2022. Bobby started as student trainee with the USDA Soil Conservation Service at the Coffeerville, MS, field office during the summer of 1978. Upon graduation from Mississippi State University with a B.S. in Agricultural Extension and Education, Bobby was transferred to the Batesville, MS, field office as a Soil Conservationist in January 1979. He served in this capacity until he resigned from this assignment to attend the U.S. Army's Military Police Officers Basic class, graduating November 1979. Bobby started with the USGS in January 1980 on a temporary appointment as a Hydrologic Field Aid in Jackson, MS. He was converted to a Hydrologic Technician on a permanent part time appointment in May 1980. He was recalled to active duty in September 1980 and assigned to Redstone Arsenal where he served as Military Police Officer until his release from active duty in September 1982 and returned to the USGS in Jackson, MS. He was assigned to the Groundwater Unit of the Data Section where he was responsible for the collection and analysis of groundwater data, the maintenance of data recording equipment, groundwater data collection field trips, preparing groundwater well data for inclusion in a national water well data base, and the collection of water samples to understand the quality of groundwater resources. The U.S. Army mobilized the 1181<sup>st</sup> Transportation Terminal Unit (TTU), of which Bobby was a member and served in port operations for Operation Desert Shield, Saudi Arabia. He also served in Antwerp, Belgium. In July 1991, Bobby resumed his duties with the USGS. Beginning in 1996, Bobby was involved with the construction of groundwater monitoring wells for the Mississippi Embayment National Water Quality Assessment Program (NAWQA) and the Mississippi Tennessee Ag Well Program in



2010. Bobby has also been involved in the location and development of groundwater wells for a variety of water quality projects for the USGS Lower Mississippi Gulf Water Science Center (LMGWSC). In 2017, Bobby was asked to assist the Baton Rouge office of the LMGWSC in making quarterly water level measurements at 83 well sites located in the Florida Parishes of Southeast Louisiana. He has also been responsible for repairing damage to these wells caused by weather or other means, for maintaining data integrity, and locating replacement wells as needed. While conducting this last trip (Oct-Nov 2022), he acquainted his replacement with well owners and water system operators and trained new hires in the collection of water level data and water quality samples using a variety of instruments and methods. Over his 45-year career, Bobby has seen many technological changes in the way the USGS collects and analyses hydrologic data. Bobby was active in U.S. Army Reserves for 28 years beginning with his commissioning as a 2<sup>nd</sup> Lieutenant in 1978 until his retirement in 2006 as a Lieutenant Colonel, while at same time being employed with the USGS. His military awards include the following: Meritorious Unit Commendation (Army), Army Superior Unit Award, Meritorious Service Medal, Joint Service Commendation Medal, Army Commendation Medal, Army Achievement Medal, Army Reserve Components Achievement Medal with Gold and Bronze Oak Leaf Clusters, National Defense Medal, Armed Forces Reserve Medal with M and Hourglass Devices, Army Service Ribbon, Overseas Service Ribbon (Army), Army Reserve Components Overseas Training Ribbon. In retirement Bobby has plans to travel, catch up on his reading, take wood carving classes, and community service. On behalf of the LMGWSC, please join me in congratulating Bobby on his retirement!

**-Rodney R. Knight, Director, USGS LMGWSC (edited)**

**Vic Stricklin:** Vic Stricklin retired on December 31, 2022, after 38 years of service including 33 years as a supervisor. Vic graduated from the University of Alabama in August 1984 and joined the USGS as a Hydrologic Technician in the Alabama District (Tuscaloosa Office) a month later. Vic spent a couple of years learning the details of collecting surface-water, water-quality, and groundwater data before converting to a Hydrologist position in 1986. Vic went on to serve as a project chief for three years before being selected as the Field Operations Chief for the Tuscaloosa Office in 1989. He served as the Field Operations Chief of the Tuscaloosa Office for 26 years during which he developed strong relationships with local, state, and Federal cooperators in Alabama, co-authored 25 Water Data Reports and several other data reports, and served on several Office of Surface Water Technical Reviews. Since the creation of the Lower Mississippi-Gulf Water Science Center (LMGWSC), Vic's responsibilities continued to expand. From 2015 to 2019, he served as the Field Operations Chief for both the Tuscaloosa and Montgomery Field Operations Units. In 2019, he was selected as a Data Chief with center-wide duties and then finished his career as the Data Chief for the Southeast area (AL and MS) of the LMGWSC. During retirement, Vic is going to continue working on his golf game, spoiling grandkids, and traveling with his wife, Dennise, of 38 years. Please join me in congratulating Vic on his retirement.

**-Rick Treece, USGS Retirees State Contact, and Rodney R. Knight, Director, USGS LMGWSC**

**David Sumner:** It is with a heavy heart that I announce David Sumner, the Center Director of the Caribbean-Florida Water Science Center, retired at the end of December 2022. Dave's excitement and enthusiasm for science is inspiring, and as such, he has been an excellent mentor and leader and will be greatly missed. Dave attended college in his hometown of Atlanta at the Georgia Institute of Technology, graduating with BS (Applied Physics) and MS (Geophysical Science) degrees. He began his USGS career as a Hydrologist in Jackson, MS, in 1982, leading groundwater simulation efforts in the Mississippi Delta, the Mississippi Gulf Coast and New Orleans. In 1987, Dave transferred to the USGS North Dakota office, authoring a study on unsaturated flow simulation of water beneath artificial recharge basins. In 1988, Dave began pursuit of a doctoral degree at the University of California, Davis, in parallel to his return to the USGS in Orlando, FL, in 1991. Dave received a PhD in Soil Science in 1996. In Florida, Dave continued work on recharge basin





studies before redirecting his efforts toward evapotranspiration research. He initiated a State of Florida network of evapotranspiration stations and a satellite-based evapotranspiration product –efforts that have been multi-decadal and continue to the present day. In 2014, Dave moved into Studies management with eventual progression to Center Director in 2018, leading USGS Water activities in the combined Florida, Puerto Rico, and U.S. Virgin Islands domain. Of particular note is Dave's work in recent years in Puerto Rico and the Virgin Islands. Dave's commitment to providing science in underserved areas is making a real difference in the development of much needed program to help inform sustainable and resilient solutions to numerous water resource challenges. In retirement, Dave hopes to indulge more fully in family, Mother Nature, and smelling the roses. We wish him the very best in his future endeavors!

**-Holly Weyers, Regional Director, Southeast Region**

**Mark Werley:** After 39 years of dedicated public service, Mark Werley has decided to retire effective the final day of 2022. Substantially owing to Mark's leadership, the Arizona Water Science Center has



long maintained an IT Section that provides outstanding customer service with strong adherence to IT security requirements and specifications. Mark's influence is woven through the fabric of the Center, and we will miss him! Mark began his association with the USGS in 1982 as a GS-2 part time Student Trainee Hydrologic Technician in the Yuma Arizona Field Office. During that early era of the Amdahl mainframe computer, punch cards, and the WATSTORE database, Mark wrote several programs to make his own data entry duties easier. Many of these programs were taken up by other offices and technicians. Eventually he wrote programs to automate the generation of Yuma's monthly report, a huge labor savings for that office. After recognition of his computer skills, and a tumble or two into the

Colorado River, Mark was converted to a Computer Clerk in 1986. This included transferring to the Tucson Arizona main office, where he could complete his BS in Management Information Systems at the University of Arizona. Following graduation, Mark was hired on as a full time Computer Specialist in 1988. This began a long and steady progression of his career — eventually becoming the lead Supervisory IT Specialist in Arizona. Besides his local duties, he participated in several national teams. He wrote code for the NWIS/ADAPS system that replaced WATSTORE. He joined and was a long-time member of the Bureau-wide Technical Support Team (BWTST), testing and documenting new systems and software for the Bureau. He participated in several "SWAT" exercises, where teams from BWTST aided local offices with their IT issues. Over the years he learned, became expert in, and forgot more computer systems and programming languages than most people can name. Most recently he has participated in IT Reviews of many USGS offices for the Associate Chief Information Officer. Although Mark enjoyed his national work, his primary focus has always been on the local employees he supported in collaboration with his employees. His philosophy has been to make sure the technology serves the needs of the technicians and scientists using it, and never blocks or inhibits their work. Policies, especially in the name of computer security, have been particularly vexing to remediate. This philosophy forms the basic culture of the Arizona Technical Support Team IT Section he created and managed. In retirement, Mark is looking forward to spending more time with his home and family life. He has a son who's a freshman in high school and a nationally ranked gymnast. Mark is greatly anticipating watching and participating in the progression of this young man's career and life. Please join me in congratulating Mark on his impending retirement!

**-Jim Leenhouts, Center Director, Arizona Water Science Center**

## MEETINGS AND GATHERINGS



**Nevada Retirees** meet on the first Wednesday of the month and at different times have had 15 different retirees attend.

On December 7, 2022, attendees included: **Left, front to back:** Jim Crompton, Steve Berris, Claudia Monroe. **Head of the table:** Margret Bunch; **Standing:** Kerry Garcia and Hugh Bevans. **Right, front to back:** Keith Halford, Jon Nowlin, Nyle Pennington, Larry Smith

### North Carolina Retirees “Coffee Hour”

**North Carolina Retirees** met in person on November 15, 2022, for a “Coffee Hour.” This was the first meeting for the NC Retirees since the Covid-19 Pandemic began. We enjoyed the opportunity to visit and welcome some of the newer retirees and hear everyone’s news. During this visit the NC Retiree Representative torch was passed from Gary Garrett to Jeanne Robbins.



**Chairs, left to right:** Jeanne Robbins, Ron Coble, Gloria Moore  
**Standing, left to right:** Jodie Eimers, Robert Mason, Callie Oblinger, Douglas Harned, Jerad Bales, Bernice Allen, Terry Middleton, Geoff Cartano, Tom Cuffney, Jerry Ryan, Nelson Williams, Becky Deckard, Harold Eddins, Cathy Hill



### Virginia Retirees (Two lunches reflected)

On November 7, 2022, **Reston Retirees** again met at Temporary Road Park in Reston. Laura Gemark spoke on "Determining Late Holocene Paleoclimate of the Arctic Ocean from Microfossil Ecology and Geochemistry." Laura is a climate researcher in the Florence Bascom Science Center in Reston. She specializes in paleoclimate of the Arctic by studying ostracode and foraminifera ecology and geochemistry. She has participated in 8 expeditions to the Arctic Ocean to collect microfossil samples whose analysis allows her to reconstruct Quaternary climate history.



On December 5, 2022, **Reston Retirees** moved indoors for the first time since the start of COVID. We met in a conference room at USGS. In keeping with our December tradition, we did not have a speaker, but rather shared stories from our USGS careers. You have to be there to hear the stories, but fun to note that Will Stettner brought a hardback copy of Bulletin No 302, The Areas of the United States, The States, and the Territories, 1906. All 10 pages of it.



**Standing:** Tony Meunier, Kathleen Gohn, Joanne Taylor, John Gray, John Repetski, and Will Stettner. **Sitting:** John Keith, Cathy Hill, Kate Flynn

## NEWS OF RETIREES

**Terri Arnold writes:** I retired last November at age 55 to begin my encore career. It is never too late to learn new things. May 2022, I graduated with honors and earned an AAS in Veterinary Technology. I passed the VTNE national licensing exam and am now a licensed Veterinary Technician. I am working at two vet clinics part time and am helping teach the Laboratory Animal Nursing class for the community college program from which I just graduated. I enjoy meeting new people and caring for their pets; however, it is an emotionally and physically challenging job. As a Veterinary Technician I get to be nurse, phlebotomist, anesthetist, x-ray tech, laboratory tech, pharmacist, and so much more. I am having the time of my life!

**Mark Brigham writes:** One year of retirement—how did I do? Astonished by costs of hiring out a deck replacement, I took on the task myself (with help from a neighbor). It was a big project for someone of my limited carpentry skills, but I'm pleased with the results; and the money we saved funded some travels. Judy and I took our first-ever trips to Hawaii & Costa Rica. We also traveled to Houston & Galveston Island, and midwestern destinations including Door County, WI and Lake Superior's North Shore & the Gunflint Trail in Minnesota. Daughter Hadley and I completed a 6-day bicycle & camping tour of the North Shore. I was fortunate to guest crew the Pride of Baltimore II from Two Harbors, MN to Marquette, MI; favorable winds allowed us to slip in an unscheduled sail to Isle Royale National Park for some evening hiking & an overnight stay. Left: Mark & Judy Brigham, easing into retirement at Old Lahaina Luau on Maui.



**Jim Peters writes:** Barbara and I are still living the good life in the woods along a beautiful canoe stream in the Shenandoah Valley near Winchester, VA. But we are also aware that maintaining our 54-acre piece of heaven is getting a bit more difficult to take care of each year. We are exploring alternative living situations in Winchester as well as considering a move to Seattle to be closer to our daughters. For now, we're trying to stay healthy physically and emotionally, the latter being more difficult when we watch the evening news. I'm beginning to think it might be a good time to grow old!



***USGS New York District retiree completes World Ironman Triathlon:***

On October 6, 2022, Margaret "Peggy" Phillips, retiree (hydrologic technician) from the Troy, NY, office, competed in the World Triathlon Ironman Competition. The race took place in Hawaii and was centered in Kona. It consisted of a 2.4-mile ocean swim, a 112-mile bike ride, and a 26.2-mile run on the highway through old lava fields. This was Peggy's sixth full Ironman race: she competed in Lake Placid four times, then qualified for the World Champion racing event in Cambridge, MD. Her finish time at Kona was 16:56:33, just under the cutoff time of 17 hours.



**Nelson Williams** announced at a recent North Carolina Retirees 'Coffee Hour,' that after nine short years of dating, he married his sweetheart, Rosemary, on October 29, 2022!

## MEMORIALS

**James A. Basler, 81**, beloved husband, father, and son, was called to his eternal resting place on December 5, 2022. He was born on December 11, 1940, to Rev. Ervin C. and Linda M. Basler. With his family, James moved to Longmont, CO, in 1956, and graduated from Longmont High School in 1959, afterwards he attended Ottawa University and University of New Mexico. In 1962, James married Kathleen Kersten and began his career as a Hydrologist in the USGS where he worked until he retired in 1996. James had many hobbies and interests including stamp collecting, model railroading, and assisting as an adult leader in the Boy Scouts. After his retirement, James turned his stamp collecting into a small business. James was preceded in death by his parents, and a sister and a brother. Soon after James' death, his sister, Mary Davidson also passed away. He is survived by his wife Kathleen; his two sons, and his sister.



**Steve Richey writes:** I worked with Jim in the early part of my career with the USGS. As I recall, Jim's work was mostly groundwater monitoring, and geophysical testing and logging. I remember Jim Basler, Jerry Mercer, and Jim Hudson telling stories of their work in the 1960s or early 1970s on Eniwetok Island where nuclear bombs had been tested. One story was they were playing volleyball on the beach when the MPs told them to leave because there were chunks of plutonium in the sand! I believe they might have also taken part in some of the hydrologic studies pertaining to Project Plowshare tests in New Mexico, such as Project Gnome.

**Ruth Gail Deike (nee McDuffee), 87**, has left the building. She passed away in Nelson County, Virginia on November 5, 2022, one day before her 88th birthday. Known as "Mama Porcupine" to her



closest friends, she embodied the hard exterior but soft interior. Her tenacity, and stubbornness and chutzpah stood her in good stead to climb the Matterhorn as a young woman, make her way successfully through the male dominated world of Geology and raise two kids on her own. She was under five feet tall but Lord help you if you stood in her way. Her inner core was composed of incredible creativity, boundless energy and a desire to answer the question "why?". She constantly commented that she "was always crazy busy." Her passion for Geology teaching led her to create an Earth Science education program upon her retirement in 1996 from the USGS. One of her favorite adages was "Always have three points of support" – a reference to her days caving, sailing, and rock climbing. In life, in her wake, she left a trail of Hershey's Kisses wrappers (she readily admitted to a chocolate "addiction"), downy feathers floating in the breeze (from her trademark, duct tape patched Patagonia vest) and colossal smiles. She touched thousands of lives, and has given all of them memories of a feisty woman from Long Island who convinced so many to never give up living, learning and caring. Her wisdom, compassion and generosity will be sorely missed by all those who met her. Ruth's children, grandchildren and great grandchildren, and all who knew her will hold her spirit in their hearts and keep her memory alive. There will be no service. Ruth will be laid to rest at Thornrose Cemetery in Staunton, VA, at some point in the future.

**Ike Winograd writes:** The obituary provided by Ruth's family is a wonderful and touching summary of this remarkable woman. It only devotes a few words to Ruth's major K-16 educational contributions via the "Rock Detective" company that she founded after retirement from USGS. Google "Ruth Deike and Rock Detective" and one finds an abundance of entries lauding her educational contributions, including pictures of Ruth at work. For example, the following paragraph from LinkedIn:

The Founder, Executive Director, and ongoing creator of Mysteries for Rock Detective Geoscience Education is geologist, Ruth Deike. She holds a Master of Science Degree in Geology and Mineralogy from George Washington University, and developed the original program from a rich background gleaned from 30 years as a research earth scientist with the U.S. Geological Survey (USGS). Her



research focus has been geologic and chemical relationships between water and rocks in many natural environments. In designing the Rock Detective program, Ruth was motivated by a desire to share the excitement of research with K-18 teachers and students. Her energetic educational work includes several videos for teachers on earth science in urban environments and the seashore, and over nearly two decades she has taught the program, 'Become a Rock Detective', to thousands of eager students. In 2001 the Maine Science Teachers Association presented her the Philip Marcoux Award for having a significant impact on science education in Maine. Details of her scientific publications can be found on her website: <http://www.ruthdeike.org>.

Her work is being carried on by others as can be seen by just entering "Rock Detective" on Google. Ruth's contribution to K-16 introduction to geology may be hard to quantify, but undoubtedly has been immense. Not only was she a wonderful colleague, friend, and geologist, she was delightful to work with and her enthusiasm boundless.

**Judy Salvo writes:** Thank you so much for letting me know. Ruth was a dear lady and good friend. I'm so saddened hearing this. She was so dedicated to educating youth. Her "Rock Detective" kits were so creative. She was brilliant, enthusiastic and so gifted at imparting her extensive knowledge of geology. She designed and made a life-size limestone cave (with bats) for our [USGS] open house one year for children to go through. It was a huge hit! Later it was donated to a science museum in Harrisburg, PA. They were delighted to receive it. I still tell her hilarious story about when someone gave her a young donkey and she took him to McDonalds in her fastback car. Imagine looking at the car next to you in the parking lot and seeing a donkey. I'd be rubbing my eyes to make sure I wasn't imagining things. And, he began braying as he wanted her French fries not the salad she bought him. She moved to Maine and opened a home for needy girls. She was a kind and delightful person. I hope she didn't suffer. I will never forget Ruth.

**Geoffrey Ward Freethey, 77**, a friend, mentor, builder, designer, scientist, outdoor enthusiast, and a quiet leader with a "less talk, more action" type of spirit died on February 13, 2022, just 18 days



after being diagnosed with cancer throughout his body. The short time was a blessing because he suffered only a short time, but very hard on Sandy and his friends. As many of you know, Geoff was quite a guy! He had such a variety of interests and talents. Born in Denver, CO, November 22, 1945, he grew up in Barr Lake, a rural area near Brighton, CO. His varied skills started as a teenager with his first job helping feed and milk thousands of cows next door at his friends' dairy. Then there was a brief stint laying rails on the railroad. Geoff's parents decided to homestead in Alaska near Talkeetna, so off they went on a big adventure, building a cabin, clearing the land to "prove up" the homestead. Geoff attended the University of

Alaska in Fairbanks, but returned to Colorado State University for his MS Degree in Groundwater Hydrology. This is when Geoff met Sandy who was taking a Geology 101 class taught by Geoff's roommate. One thing led to another, and Geoff and Sandy were married in 1970 on top of Flagstaff Mountain in Boulder, CO, serving Geoff's favorite cherry pie instead of wedding cake. The Vietnam War Draft Board wanted Geoff, but he was able to finish his degree, deferring to join Officers Training Program and went into the Chemical Corp. You may be thinking Agent Orange, but no, as a 1<sup>st</sup> Lieutenant, Geoff was in charge of designing a building to destroy and incinerate Russian Wheat Rust near Ft. Beale in California. It was a secret mission during the period when the Soviet Union and the United States agreed to diminish weapons and chemical warfare. While in Marysville, Geoff and Sandy explored a lot of northern California. After two years of service they headed to Lincoln, Nebraska, where Geoff had a job doing water studies at the University. Leaving Nebraska Geoff entered his life long career with the USGS–Water Resources Division doing groundwater hydrologic studies starting in Anchorage, AL. He and Sandy commuted 1.5 hours to a remote site near Palmer, AL, building a house. First, they lived in a 10'x10' shed, then built the two-story garage with electricity, but no plumbing. They got water in a 55-gallon tank from the fire department water station where they enjoyed the Northern Lights while filling the tank. They took baths in the galvanized tub. It was quite the adventure for the young couple. However, Sandy

wasn't fond of this lifestyle, and the house never got built. They transferred from the cold, grey skies of Alaska to the frying pan of Tucson, AZ. After exploring lots of AZ and NM they started coming to Moab and Cedar Mesa on vacations. Leaving the heat behind, they transferred to Salt Lake City and were there for 18 years. Geoff was an important mentor to many of the young guys joining the USGS. Meanwhile they were very active rafters, floating most of the rivers in CO and UT, and many of the big rivers in the West: Salmon, Rogue, Klamath, Owyhee, Selway and the Grand Canyon reach of the Colorado. Along with rafting there were many hikes into the desert searching for rock art and ruins; all these trips were joined by many friends. Geoff started mountain biking while in Salt Lake, bringing his USGS friends to Moab to do the standard runs: White Rim, Slickrock, Kokopelli, Gold Bar Rim and Porcupine. In 2001 Geoff retired, they moved to Moab and built their dream house. They joined "Trail Mix," the Grand County Non-Motorized Trails Committee in 2008 and were part of a great group who conceived, scouted, and built 150 miles of singletrack mountain bike trails working with friends at the BLM for trail approval. As many of you know, Geoff did most of the computer work to design the "*you are here*" map signs that you see on every trail. Then he went out and installed them. Geoff and Sandy have enjoyed many road trips and jeep trips exploring the far reaches of the United States and have travelled many parts of the world during their 51-year marriage. No kids, various cats, and lots of good times. They have always been surrounded by friends and family and have had a great life. Sandy confides, "I am in a state of shock, not believing that Geoff, my partner, my love is gone from my life and from this community. We learned of Geoff's cancer diagnosis 18 days before his death. But that is a really short time to endure the ravages of cancer." A celebration of Geoff's life may be planned for a future date.

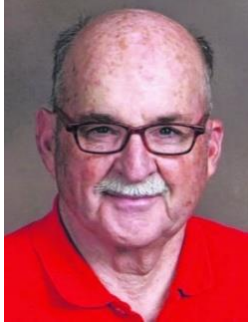
**Dorothy E. Geurin, 95 (wife of USGS Retiree Jim Geurin)** passed away on December 19, 2022.

**Sara Avalon James, 81 (wife of USGS Retiree Ivan James)** died unexpectedly on December 9, 2022, in Colorado Springs, CO. Sara was born in San Francisco, CA, on August 4, 1941, to



Mr. and Mrs. David A. Coleman. While her father was in military training, she grew up in Holton, Kansas, graduating from Holton High School with the class of 1959. An avid reader and musician, Sara began playing the organ for the Holton Methodist Church at the age of 15 and continued as a church organist for the remainder of her life. She majored in business administration, minored in mathematics, and studied the organ during her time at the University of Kansas. Graduating after 3.5 years, she began working as an actuarial assistant and computer programmer for Security Benefit Life in Topeka, Kansas. She continued as a homemaker and organist until 1978 when she returned to George Mason University to complete her course work to become a Certified Public Accountant, passing all parts of the exam on her first try in 1980, and then began work for small public accounting firms. In the late 1990s she took a nine-month course, Leadership Program for Musicians, under the guidance of Dr. Austin Lovelace. Sara joined P.E.O. International, a women's philanthropical and educational organization, at age 18, and continued her service to the organization in many different chapters as she followed her husband's career transfers, serving as officer in many chapters and as a State Officer in Massachusetts. She had a strong commitment to women's education and also supported food programs for the less fortunate. She had also been a long-term member of The American Guild of Organists serving as a chapter treasurer. She enjoyed choral singing, and, for a number of years belonged to The Hymn Society, attending a number of its annual conferences with her husband. Sara liked antiques and for some years has had a small business in them. She had great fun going on antiquing trips with friends and her treasured daughter-in-law, Tina James. Sara enjoyed traveling, especially European river cruises and visiting cathedrals and European markets. She read widely, particularly enjoying authors Dick Francis and Louise Penny. She was an unselfish, loyal and supportive friend to many and will be dearly missed by family, friends, and neighbors. She is survived by her husband Ivan Charles James II, her two sons, and her three grandsons, and her two sisters. She was preceded in death by her parents and her sister.

**Von Eugene Miller, 75**, passed away December 20, 2022, at Mercy Hospital in Iowa City, IA, with his wife Pamela by his side. During his battles with dementia and Progressive Supranuclear Palsy, he remained strong and determined to be independent until the end. Von was born April 15, 1947, in Washington, IA, to Sylvanus and Eula Jean (Figgins) Miller. He grew up in Kalona and graduated from Mid-Prairie High School in 1965. After graduation, Von moved to Iowa City where he met and married Pamela (Loney) and raised their two children. While attending the University of Iowa, Von began his 37-year career with the USGS in the Iowa District. Starting his career as a Hydrologic Technician, Von later became the senior Hydrologic Technician in the Iowa City office; running a field trip, assisting others with construction, flood measurements, and working records. His expertise and dedication to quality led him to become Chief of the Iowa



Sediment Laboratory where he worked to upgrade equipment, streamline functions, and improve quality assurance procedures. His last assignment was as Automated Data Processing Systems (ADAPS) database administrator. Von was often the first person in the office each morning to monitor the status of Iowa's statewide real time data network. His constant network review and quick response to potential problems allowed the IA District to achieve a lost record average of less than 2 percent. As ADAPS database administrator, Von helped assist and train field personnel to work surface water records in a more efficient manner resulting in accurate real time data. Following his retirement from the USGS, Von was generous with his time and talents. He worked part-time as a courier for Hills Bank, but really focused his passion for helping people while volunteering for Habitat for Humanity and serving 25 years as an adult leader on mission trips with the First United Methodist Church and the Appalachia Service Project (ASP), leading many housing projects for low-income families. He was also a dedicated blood donor achieving a 16-gallon donor status. Von is survived by his wife of 50 years, Pamela, his son and daughter, and three grandchildren.

**Stan Sauer, 85.** Friends and colleagues will be saddened to hear Stanley "Stan" P. Sauer passed from this life on October 11, 2022. Services were held October 17, 2022, at Zion Lutheran Church,



Fredericksburg, TX. Stan's family has deep roots in the German communities of Central Texas being one of the founding families of Fredericksburg, TX, in May 1846. Stan was an Eagle Scout and served in the U.S. Army in Korea 1955-56 before returning home to marry his high school sweetheart, Virginia Koennecke in 1957. Stan and Virginia had a wonderful marriage of 61 years before Virginia passed in November 2018; the Sauers have 3 wonderful and loving daughters, 12 grandchildren, and 10 great-grandchildren. Stan attended the University of Texas (UT) at Austin receiving his BS in Civil Engineering in 1963; additional graduate studies at Colorado State University; and his MSCE and PhD from UT in 1969. Stan had a varied and distinguished career with the USGS Water Resources Division (WRD) from 1962-1993 serving in both field research and management. Stan and Virginia enjoyed assignments in TX (field and research Hydraulic Engineer), VA (Research Hydraulic Engineer, Surface Water Branch), MS (Chief, Gulf Coast Hydrosience Center, GCHC), TN (District Chief) and Headquarters (Assistant Chief, Office of Surface Water and Regional Hydrologist, NE Region). He retired back to his beloved Double "S" Ranch in Doss, TX. Stan also served as the Delaware River Master overseeing the allocation of surface water amongst adjacent states in the Basin. At the peak of his career, Stan received the Distinguished Service Award, the highest honor of the Department of the Interior. Stan's technical career with WRD included important research in Watershed Hydrology (Part of his UT PhD dissertation), Concho R. TX Reservoir (Statistical Analysis), Streamflow Characteristics, SW/GW Dynamic Model (Pinder GW model/SW component). His management career began as Chief, Gulf Coast Hydrosience Center (GCHC), then District Chief, TN, Asst Chief, OSW, and NE Regional Hydrologist---an exceptional career path. Stan was a Life Member, American Society of Civil Engineers, member of the American Geophysical Union, and a

registered Professional Engineer in TX. His resume included more than 20 authored or coauthored water-resources publications and journal articles. Above all, Stanley “Stan” P. Sauer was a devoted family man and a friend to all who knew him.

**Marshall Jennings writes:** My association with Stanley goes back more than 60 years, perhaps his oldest WRD colleague. I always knew him as Stanley, but I know he liked “Stan” in later life. I remember very well when Stan and I first met: I was a new hire with Austin USGS and reported for duty in 1961. After processing I was led back to my workspace. There I met Stan, who at that time was a student employee. I shipped out of Austin for assignments in North Texas later in 1961, but we stayed in touch. In 1967, we both were accepted for Graduate School at Colorado State University (CSU), Ft Collins, CO, and our wives, Virginia and Margie and the Sauer and Jennings kids became TX expatriates and friends --- his three daughters and my two sons! Stan and I carpoled and attended classes together in the amazing environment of the international program of Hydrology and Hydraulics at CSU! I moved to Headquarters in 1967 and Stan returned to the Austin District where he completed his PhD in Civil Engineering. In 1968, I got a call from Stan saying he wanted to transfer to Headquarters would I help him find a rental house ---- he became my neighbor and carpool buddy and later the Sauers built a house in our Fairfax, VA subdivision! We had a wonderful technical group in the Surface Water Branch and strong interaction with WRD Districts with colleagues Vernon Sauer, Dan Bauer, Stan and I. Stan joked that we were a Consulting Firm he called “Sauer, Sauer, Bauer, and Jennings”! Those were good days and led to GCHC southern Mississippi with Stan as Chief, GCHC. Stan soon moved on to TN and back to VA as his career developed – but we stayed in touch. Stan and Virginia finally retired back to TX in 1993 and he spoke at my retirement party in December 1997. We stayed in touch and visited from time to time. Sadly, Virginia passed in November 2018 and my Margie passed in October 2020. The last time I saw Stanley was May 30, 2022 when we had lunch in Fredericksburg, TX, and I gave him a copy of *The German Settlements of the Texas Hill Country* by Jefferson Morganthaler, in recognition of the 175th anniversary of the founding of Fredericksburg, Stanley’s family being founding families. We planned to get together but health issues and Covid intervened so texting and occasional phone calls had to suffice. Stephanie, Stanley’s oldest daughter called me when he passed. Stanley had a reserved personality in contrast to my sometimes “off the wall” ebullience; he was always kind and understanding and would just smile at my outlandishness! I considered him like an “older brother in WRD” (he was about a year older) and look back on our friendship and collegueship with great pleasure.

**Stan Sauer’s daughters write:** On behalf of our whole family, we want to express our deep gratitude to the USGS family for the many ways you are helping us celebrate and honor Dad’s life. The USGS was truly family to Dad as evidenced by the lifelong friendships that were formed. To see the continued connections nearly 30 years after he retired is truly remarkable and speaks to the quality of people he was so fortunate to work and share life with. We are especially grateful to Marshall Jennings for the wonderful summation of Dad’s career and stories from the early years we’ve never heard before. These remembrances will give his children, grandchildren, and great children a treasure to keep for years to come. Thanks to so many of you who have sent cards, memorials and left messages. Each one has comforted and helped us and we look forward to hearing even more remembrances in the days to come. With deep appreciation from Stan’s daughters, Stephanie, Lori, and Sharon.



**Paul Schuster, 59**, passed away peacefully in his sleep during the night of October 31, 2022, in his home in Westminster, CO. Paul was born in Camden, NJ, on September 8, 1963. He lived a robust and adventurous life in his 59 years on this planet. After receiving his degree from Rutgers University in New Jersey, Paul worked for the USGS as a hydrologist for 36 years and had recently retired in December 2019. His work took him to many amazing places like the Grand Canyon, Wind River Range, WY, Florida Everglades, many years on the Yukon River in Alaska, China, Greenland, France, the list goes on! His research was influential in creating change for the better. His publications have been often cited and will live on far beyond his life. Paul was also a fierce advocate for the planet and had been sounding the alarm on the devastating effects of climate change for decades. His adventures continued outside of work as well. He spent many days and nights on the trails and rivers of Colorado and Utah.



Paul was part of an adventurous fraternal group known as the Nordic Warriors who together conquered mountains and paddled many miles on the Green River in Utah. His adventurous endeavors also included a life dedicated to great food. Paul was an accomplished cook who was never afraid to try something new. His food was often sourced from his incredible garden where he grew tomatoes, basil, peppers, corn, spices, and so much more. He gained much of his knowledge from his preceding family members and passed these recipes to his children and grandchildren as well. Paul loved the outdoors, he loved his family, and he loved good company. Paul saw the goodness in everyone and always just wanted to talk. Paul had friends all across the globe and really loved his time with the indigenous friends he worked with out of Alaska. Friendships meant the world to Paul and we are all so glad to have him in our lives. Paul leaves behind a large group of loving family members including his parents, his brothers, his son and daughter, three nieces, and his two grandchildren. He inspired and shaped so many people in his life and even though his family is left with an enormous void, they are so lucky to have had him in their lives. A celebration for Paul was held on December 3, 2022.

**Bob Hirsch writes:** Paul F. Schuster, a retired Research Hydrologist and an active USGS scientist emeritus started his career with the USGS in the New Jersey District of the Water Resources Division. He moved to the National Research Program Aqueous Crystal and Dissolution Kinetics Project, led by Mike Reddy in Arvada, CO, in 1987. The project moved to the East Campus of the University of Colorado, Boulder, in the early 1990s where Paul spent the remainder of his USGS career. In 2001, Paul became the field operations chief on the USGS water quality assessment of the Yukon River and its tributaries. He was responsible for field logistics and coordination with Canadian and U.S. Federal agencies for water quality data collection from the Yukon River headwaters in British Columbia, through Yukon Territory, and Alaska to the Bering Sea in western Alaska. Paul's work on the Yukon River and its tributaries led to the establishment of the Indigenous Observation Network, a collaborative community-based water-quality network and partnership with the Yukon River Inter-Tribal Watershed Council and Indigenous Communities of the Yukon River Basin. Paul continued his work in the Yukon basin afterwards, mostly focusing his effort on quantifying the storage of mercury in permafrost, its potential release to inland waters upon permafrost thaw, and the potential effects of that release on the Indigenous subsistence fishery. He also continued his contacts and collaborations with Indigenous communities located along the Yukon River. In addition to establishing a community-based water-quality program with the Yukon River Inter-Tribal Watershed Council and Alaska Native villages along the Yukon River, in 2009 he spearheaded the Active Layer Network to monitor permafrost in the same communities that collected water samples. This project continues today and collectively, the water-quality monitoring, and active layer network is known as the Indigenous Observation Network. Towards the end of his career, Paul also worked closely with the students at St. Mary's High School in the village of St. Mary's Alaska to monitor the community's drinking water source, Alstrom Creek, in a project that was funded by the U.S. Department of Education. In 2010, Paul and other USGS colleagues studying the water quality of the Yukon River along with members of the Yukon River Inter-Tribal Watershed Council, received the DOI Partners in Conservation Award for their



community-science partnership. In 2019, Paul and his colleagues received the James R. Balsley Award for Excellence in Technology Transfer for their work training community members in water-quality monitoring as part of the Indigenous Observation Network. Paul was perpetually enthusiastic about science and communicating USGS scientific findings with the public. His work involved many hours of building trust and friendships with the Indigenous people of communities along the Yukon River in Canada and Alaska. Paul was effervescent when interacting with communities, and his passion for his work and aquatic chemistry overflowed when hearing stories or observations from the field. Paul would stay up late through the night exchanging stories with community members about their experiences in the field and their knowledge of the Yukon River. Paul always made the extra effort to connect with these communities by thinking up new projects, sleeping on school floors, and touring the landscape with villagers on the backs of their snow machines over the frozen tundra. Let's hope that Paul is reflected at points within the aurora looking down on the Yukon River Basin inspiring curiosity and camaraderie. Paul was a great scientist, eternally curious and inquisitive, fond of reminding us that "everything is chemistry." He was also a great friend and a beloved son, brother, father, and grandfather. He will be missed by many.

**William "Bill" Russell Stokes, III, 85**, of Sautee Nacoochee, GA, passed away on November 15, 2022. He was born on December 3, 1936, in Fitzgerald, GA, to the late William Russell Stokes, Jr. and Elizabeth Harbuck Stokes. After high school, Bill attended Georgia Tech and worked as a co-op student for the USGS, graduating from Georgia Tech with a B.S. in Civil Engineering. Bill began his career with the USGS Surface Water Branch, in Georgia. He worked his entire career in Georgia retiring in 1999 with 45 years of service, as the Data Chief of the Georgia District. Bill also served in the National Guard. In 1962, he was ordained as a deacon in the Baptist church and also taught Sunday School. Bill is survived by his wife, Mary Frances Fulford Stokes, 3 daughters, a sister, 2 brothers, and several grandchildren and great grandchildren. Memorial services were held Sunday, November 20, 2022, at the Barrett Funeral Home in Cleveland, Georgia. A video retrospective on Bill's life, including many photos of his work career in Georgia, is available at:



<https://www.barrettfh.com/obituary/william-stokes-iii>

**Jeff Armbruster, Bill's former District Chief, writes:** Bill was a good man, a dedicated public servant, but even more important, a true servant of Christ. Requiescat in pace--may he Rest in Peace.

**Lamar Sanders writes:** Bill was a true friend and brother to me beginning with field work together on a Small Drainage Area Project in 1964 in Georgia. He co-oped at Georgia Tech and the USGS about 4 years before I did the same thing. He did stream gaging, collected water quality data, worked on projects, and became Data Chief of the Georgia District. Here is an example of the kind of friend he was to me: About 15 years ago, I was utterly devastated because my wife had a stroke in Charleston, SC, from doctors piercing her heart with a pacemaker and incompetent follow up care. Bill Stokes and Marvin Franklin drove 5 hours from Atlanta to Charleston and 5 hours back in one day to visit, which meant the world to me! Here are a couple of our many funny USGS stories: In 1965 or so, he and I had to delineate the boundaries of our small drainage areas on aerial photographs because topographic maps had not been made for South Georgia at that time. We also had to verify crop covers and such on the aerial photographs. I was a little gun shy about trespassing on farmland, because around that time, I was trespassing on a farmer's land, heard a shot, and a bullet from a military carbine came by my head. I later heard the farmer had shot his own brother for messing with his still. At one of my culverts near Ashburn, GA, after I had discovered maybe 20 empty sugar bags tossed in the creek by moonshiners, there was a large steel gate upstream from the gage, with signs saying no trespassing, keep out, posted, etc. on it. I begged Bill not to climb the gate and trespass, but we did anyway. When we got about ¼ mile down the road in the woods, sure enough, a pickup truck came slewing back and forth down the

road. An older fellow in blue overalls and wearing a straw hat with an orange sun visor in the bill got out of the truck. Being drunk, he said, "Hey, you fellers want a drank?", and pulled out a jug of moonshine that looked like urine. We said "Thank you anyway sir, but we can't drink while working!" and we took off for our truck!" Working for the USGS was a really good job for us! On the small drainage area project in 1965 or so, we also had to use barometer/altimeters to get stream bed elevations to get the slope of the stream. MY job, which I enjoyed, was to hack my way through briars, jungle, redbugs, mosquitoes, ticks, and snakes to get an elevation of the stream with my barometer, and then do it again at another spot. BILL'S job was to smoke a cigar, sit on the head wall of the culvert, and write down the barometer reading every 15 minutes to record atmospheric pressure change. Near my culvert near Sycamore, GA, was an old house where a poor mentally disabled man lived. When I got back to Bill, the poor man was walking away. I asked Bill what he said, and Bill said "Best I could understand, he said I had a good job!" Even though disabled, the man could identify a good job when he saw one, and he was right!

**Eric F. Vowinkel, 70**, passed away on October 25, 2022, in New Brunswick, NJ. Born in Phillipsburg, he was raised in Belvidere in his earlier childhood before moving with his family to Bound Brook, where his heart remained throughout his life. He moved to Metuchen, NJ, in 1980. Eric attended Cook College at Rutgers University as an undergraduate where he played for the Lightweight Football team and received his varsity letter. He graduated with a BS in 1974. He continued at Rutgers, earning a MS in 1978 and a PhD in Environmental Science in 1997. Following his USGS career, Eric became a professor in the Cook Campus Department of Environmental Sciences in January 2016. Eric worked in the USGS New Jersey office from 1979-2013, a 34-year long career. He served in the Hydrologic Studies Section, the Geohydrologic Studies Program, and was Chief of the Environmental Studies Program from 1995-



2000. Throughout much of Eric's career, his research focused on investigating the relation between land use, and surface and ground-water quality using the premier USGS databases. His many projects were funded through a variety of Federal and state sources and assisted in the development of tools for protecting water quality and drinking water. He was a liaison with USEPA Region 2 for various hydrologic studies from 2004 through 2010. He also participated in the National Water-Quality Monitoring Council and served as USGS co-chair of the Methods and Data Comparability Board. Eric was involved in several local professional organizations. He was a member of the NJ Chapter of the American Water Resources Association, and served as President in 1997. He served for 13 years as a liaison between the USGS and Rutgers University to encourage sharing of expertise, to develop joint proposals, and to promote understanding and use of USGS databases. He was a member of the Science and Technical Advisory Committee under the Partnership for the Delaware Estuary from 2009-2013. He also served one year on the Board of Directors of the Mid-Atlantic Regional Association of Coastal Ocean Observation Systems to facilitate their usage of real-time monitoring data to link watersheds and estuaries from Cape Cod, MA to Cape Hatteras, NC. He loved playing golf, attending Rutgers Football games, and rooting for the NY Giants. He was inducted into the Bound Brook High School Hall of Fame in 2014. He was a member of the Frank Burns Memorial Scholarship and the Rutgers Football Letterwinners Association. In addition, the USGS NJ Water Science Center successfully nominated Eric for the New Jersey Section American Water Resources Association 2022 Peter Homack Lifetime Achievement Award for advancing Water Resources in NJ. His family accepted the awarded for him at the December 2022 section meeting. Eric is predeceased by his parents and a sister. He is survived by a daughter and her husband, two sons, and their mother, two grandchildren, two sisters, two brothers-in-law; and many nieces and nephews.

**Gary Paulachok writes:** I came to know Eric during my time in the New Jersey District, 1982-87. He was a respected, energetic colleague and a good friend. Eric's professional legacy will live on through his many original contributions to the understanding of New Jersey's water resources. His untimely passing was heartbreaking and a stark reminder of just how fragile life is.

**Janice Ward writes:** I am saddened to hear of Eric's sudden passing. I remember when I arrived in New Jersey in 1986, Eric was very welcoming, always quick to tell or participate in a joke, and very personally invested in his work. He took great pride in his continuing education and work with Rutgers. He was enthusiastic and dedicated to his work and to his family. My warmest condolences to his family.

**Eric Evenson writes:** I have known Eric Vowinkel during my entire career with the USGS from 1992 to 2018, and further into both of our retirements. We shared a first name and we always had a good chuckle about that when anyone yelled "Eric" in the halls at the New Jersey office! Eric was a frequent participant in all USGS events, even into retirement, and I was saddened with his passing. Professionally, he is best remembered for his strong focus on environmental statistics and water quality. He was enthusiastic about work and extremely proud to be a USGS scientist. He was always the first to point out how USGS science could benefit a situation involving hydrology. I am thankful for his contributions to the science and I will miss his good-natured friendship.

**Suzanne L. "Sue" Webb, 83**, of Berryville, VA, loving wife (spouse of Wayne Webb), daughter, mother, grandmother, great-grandmother, sister, aunt, and friend, went to her final rest, peacefully on March 21, 2022, at home. Born on August 13, 1938, in Nanty-Glo, PA, Sue was the daughter of the late Joseph Lee Tripp, Sr. and Ruth Ann Carnahan Tripp. In addition to taking care of her family, Sue worked as an administrative assistant in Pennsylvania, Maryland, and Virginia until she retired in 1997. She took great joy in spending time with her family and friends, especially grandchildren and other young people. Sue was an active member of Duncan Memorial United Methodist Church; the National Active and Retired Federal Employees Association; and the Light and Lively Red Hatters of Winchester, VA. She also enjoyed bowling and monthly gatherings to play Bunco. Those remaining to celebrate Sue's life include her husband of 59 years, Wayne, three children, six grandchildren, and five great grandchildren.

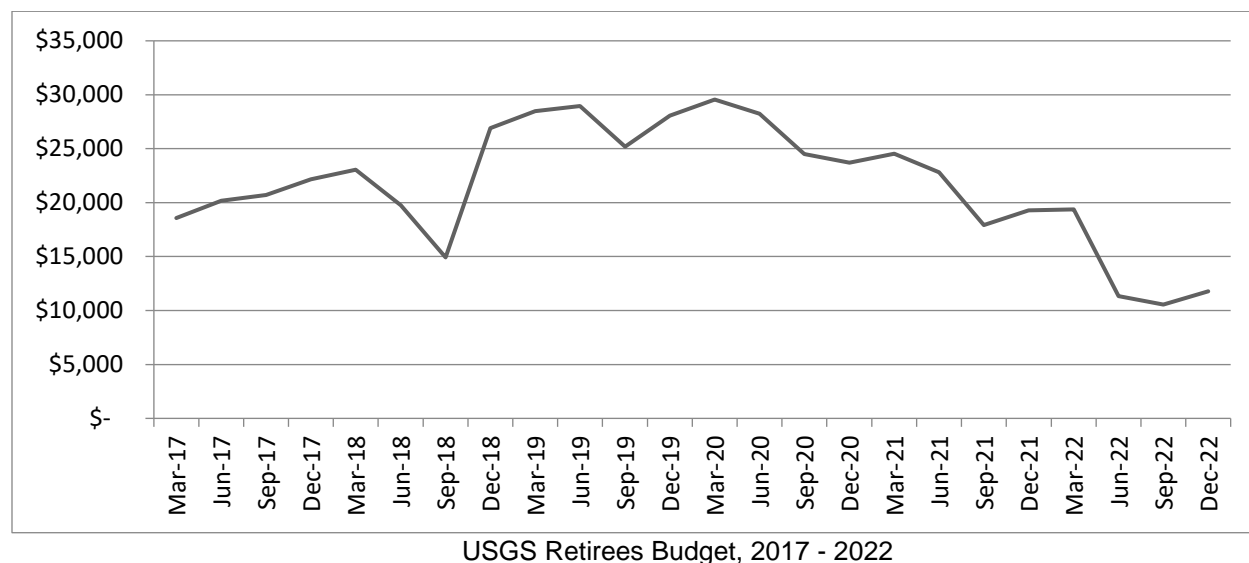


**Derryl Kent White, 80**, of Pryor, OK, passed from this life on October 26, 2022, in Tulsa, OK. He was born on July 3, 1942, in Grandfield, OK, to Roland and Jessie (Baugh) White. The middle son of three boys, he was raised 10 miles from Grandfield working the farmland raising cotton and wheat and attending Apeatone and Chattanooga Schools. Derryl received his Associate Degree at Cameron College, then transferred to Oklahoma State to study civil engineering. On February 27, he married Sherry Patterson in Stillwater, OK. They were married for 57 years. His college plan to be a civil engineer halted when he began working for the USGS Water Resources Division. Measurements of surface and ground water, and testing the quality of water kept him outdoors and traveling the state. He supervised the Tulsa office for over 15 years, retiring in 1995. He started his own company contracting jobs for the Corp of Engineers; then retired again. Aging parents drew him back to the country and he spent lots of time developing the 1,500-pecan tree orchard planted originally by his dad. He was a farm boy at heart and loved family and country life. He was never convinced to finish his 3 and a half college credits to receive his BS in civil engineering degree. He chose happiness and what he enjoyed over money, credentials, or prestige. Derryl loved family and time watching his daughter and son play sports through college. It became even more exciting seeing his grandkids excel in sports and academically. Teaching Godly Christian values to his family and modeling those values to anyone he met was always his first priority in life. He leaves behind a wonderful legacy and will be dearly missed by all who knew and loved him. A funeral service was held on Sunday, October 30, 2022, at the Church of Christ in Pryor with Pastor D.J. Castoe officiating. He is survived by his wife, Sherry, his son and his wife; his daughter and her husband; and three grandchildren.



## TREASURER'S REPORT, FOURTH QUARTER 2022

Treasurer Cathy Hill reports the organization had \$11,780 at the end of the fourth quarter, 2022. Special thanks for contributions above dues to Robert Jarrett, Jodie Eimers, Greg Wiche, Tom Yorke, Pat Tucci and Zelda Bailey, Roger White, Stephen Curtin, Stephen Grady, Lenny Konikow, Al Rutledge, and Joseph Gorman. Many thanks for your generosity. These contributions are a great benefit to our Scholarship fund.



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### DIRECTORY

#### NEW MEMBERS

**Buck, Sr., Kenneth (22) (Terri)** – Manassas, VA  
**Erbland, John (22) (Pamela)** – Myrtle Beach, SC  
**Gray, Brian R. (22)** – Holmen, WI  
**Haefner, Ralph (22) (Suzanne)** – Okemos, MI  
**Perlman, Howard (20) (Lorna)** – Alpharetta, GA  
**Sauer, Jennifer S. 'Jennie' (22)** – LaCrosse, WI

#### AFFILIATE LIAISON

**Lambrecht, Jason (NE)** – replaces Bob Swanson  
**McFarland, Bill** – no longer affiliate liaison for Oregon  
 Vacant – Oregon affiliate liaison position  
**Wilson, Gary (MO)**

#### DIRECTORY CHANGES

**Ackerman, Daniel J. (09) (Charlotte)** – new email address  
**Briggs, John C. (01)** – new address  
**Cornwell, Judith (94) (Richard)** – new address  
**Dillow, Jonathan J A 'Jon' (22)** – new email address  
**Larson, Eileen (S) (Jerry D.)** – new email address  
**Roberts, John W. (16) (Aileen)** – new address  
**Schiffer, Donna (14)** – new email address