Farming is more complicated today than ever before. Farms are larger. Growers need to conserve soil and water. Different generations have different priorities. And, to top it all off, there are more options for everything, from seed to tractors to precision irrigation machines. How do you deal with it all?

Precision irrigation companies are addressing these challenges by developing new technologies that will make farming easier for everyone involved. While it’s second nature for the Millennial generation and Gen X’ers to use the latest technology as part of their everyday lives and their farming operations, a large number of Baby Boomers have been early adopters, as well.

Technology is Not Just for Millennials

Our irrigation experts at Valley® Irrigation have been around for a while – some since the 1970s. They admit that they are sometimes surprised at the number of growers who are comfortable with technology and the regularity with which they use it.

One such irrigation expert, Jake LaRue, observed, “I was recently presenting at a conference, and I noticed that a large number of older gentlemen were using tablets. I’d be explaining something, and they would be looking it up on their tablets, checking out demos. I guess it shouldn’t be surprising. You have to adapt to succeed, or at least have someone working for you who can use the latest technology effectively.”

Looking Out for Future Generations

Not only do our irrigation experts have years of experience and observations, they also believe that many farming challenges, like new, lesser understood technologies and management practices, remain to be addressed by precision irrigation technology. “There’s still a lot of wasted water out there,” says LaRue. “[We recognize] the need to stay on top of the changes and develop solutions that focus on sustainability while making farm management easier and better.”

Despite these challenges, our irrigation experts are confident that new technology and innovation in farm irrigation will help drive the world forward by not only increasing profitability, but also allowing us to grow more food to keep up with the booming global population.

Irrigation Technology is a Game Changer

There is so much new technology available to irrigators; from the ability to manage irrigation machines at a kid’s ballgame to the capability to water crops exactly when and where it’s needed, it’s hard to argue that irrigation technology is not a game changer in agriculture. These technologies have the power to positively impact two very important resources: time and water.

However, for these powerful technologies to be successful for any one farmer, they must be accompanied by education and support from the factory to the field.

See IRRIGATION, p. 4
Source Water Collaborative Looks at Funding Source Water Protection

Securing clean drinking water is increasingly difficult in the United States. Aging infrastructure, increasing demand, extreme weather fueled by climate change, and rapidly developing landscapes are taxing capacities, driving up cost of water treatment, and posing challenges to the long-term sustainability of our water supply.

The American Water Works Association (AWWA) expects the U.S. will require over $1 trillion in infrastructure investment over the next 25 years to meet anticipated needs, if current funding does not increase. So how do we meet the infrastructure needs to secure our water, given widespread fiscal constraints?

A strong case can be made for source water protection as a flexible, cost-effective component of an integrated water resources management strategy. It is far more effective to prevent or reduce contaminants at their source than it is to treat them at a public water system. Despite the strong economic argument and the many apparent benefits these strategies could provide to water resource managers and the community at large, source water protection is an underutilized and underfunded strategy.

Over the next month, the Source Water Collaborative Learning Exchange will delve into the oft-discussed topic of funding. It will provide resources and showcase a range of case examples that practitioners can use to scope source water protection funding options for their communities. Communities often have more financial options than they think.

The Learning Exchange is also excited to host two separate webinar events. The first, on November 2nd, will focus on the topic of watershed investment programs and will feature a “virtual panel” format, during which presenters will field questions from webinar participants over an extended, one and a half hour session. The second, on November 10th, will provide an overview of new Drinking Water State Revolving Fund eligibilities and feature presentations from successful funding programs from across the U.S. Register at sourcewatercollaborative.org/learningexchange.

The Source Water Collaborative (SWC) was originally formed in 2006 with the goal to combine the strengths and tools of a diverse set of member organizations to act now, and protect drinking water sources for generations to come.

If you are interested in source water protection, have a compelling story or a new resource to share, or if you just want to connect with peers, visit the Source Water Collaborative’s website at sourcewatercollaborative.org.

EPA’s Climate Resilience Evaluation and Awareness Tool (CREAT) is designed for water utilities.

“Water utilities operate on the front lines of climate change and face the challenges of increased drought, flooding and sea level rise. EPA is working to strengthen America’s communities by providing climate preparedness tools like CREAT that local leaders can use to make smart decisions,” said Joel Beauvais, deputy assistant administrator for EPA’s Office of Water.

In its updated version, CREAT presents information in a series of intuitive modules, provides climate change projection data, and presents monetized risk results. CREAT’s climate projection map illustrates future climate scenarios including precipitation intensity for a 100-year storm or the number of days per year with temperatures above 100°F. With this powerful information, utility owners and operators can better prepare for the impacts of climate change.

CREAT was built and updated in consultation with drinking water and wastewater utilities, water sector associations, climate science and risk assessment experts, and multiple federal partners. The tool has been used by a number of communities in their adaptation planning efforts. For example, Manchester-by-the-Sea, Massachusetts used CREAT to better understand the vulnerability of its wastewater infrastructure and operations while the city of Houston, Texas used the tool to better understand the vulnerability of its surface water supplies.

To access CREAT or to learn more about water sector climate readiness, visit EPA’s Climate Ready Water Utilities Initiative at epa.gov/crwu.

Free Fall Training Series from the Private Well Class

The Private Well Class (www.privatewellclass.org) is gearing up for a free fall training series for environmental health professionals and others who serve well owners.

A free webinar will be held on November 7 from 1:00 - 2:30 p.m. CDT on well basics for environmental health professionals. The webinar will provide an introduction to groundwater, well construction, water quality, and well
effectively engage private well owners, how to develop a program for outreach to well owners, and best practices for managing a well owner program.

This workshop is approved for 4.0 NEHA Continuing Education credits and three dates (same material) are available: November 30, December 12, and January 6.

For more information about these opportunities, or to register for the webinar or workshop, please visit www.privatewellclass.org/calendar.

The November 7th webinar provides the foundation for an upcoming 4-hour online workshop: Private Well Assessment and Outreach for Environmental Health Professionals. The workshop will cover the use of a new assessment tool for the evaluation of private well vulnerability to contamination and best practices for well owner outreach.

Participants will learn private well fundamentals, how to assess a private well using the assessment tool, how to care best practices. Information on how to find local experts and sources of additional free training will be included.

The webinar will begin with a short presentation covering the most common questions, followed by plenty of time to answer participant questions. Questions may be submitted after participants register or live during the webinar. The event has been submitted for pre-approval of 1.5 National Environmental Health Association (NEHA) Continuing Education Credits and will be recorded.

GROUNDWATER IS MAGICAL!

Once upon a time, preschoolers were learning about groundwater at a Groundwater Foundation education event. Through fun, dirt, and mud, they discovered how groundwater is hidden deep in the ground and learned that even though it’s hidden, we all need it for our homes, our plants and animals, and to grow our food. “As the kids squirted water into the dirt and watched it trickle down into the ground, I wondered if the message was trickling into their minds as well,” said Groundwater Foundation President Jane Griffin. Did they get the message about groundwater and how important it is?

The next morning Griffin’s phone rang with a call from the mother of a preschooler at the summer camp. She tells her how her daughter, Ava, came bursting in the door the night before, proclaiming, “I know a secret, and Mommy, it’s an important secret!” With wide eyes, Ava continued, “There is water in the ground, and it is magical!”

This story sticks with Griffin for two reasons: 1. The message did trickle down in Ava’s mind, and 2. Because Ava was right on target – groundwater is magical!

Here’s where YOU come in. Becoming a Groundwater Foundation member sparks the magic discovery of groundwater for more kids like Ava. Membership supports free mobile apps that help people understand groundwater and their potential impact on it; tools and resources for educators of all types to share the groundwater magic; and the mission of educating people and inspiring action for groundwater.

Become a member today and make magic happen. Visit www.groundwater.org.
With greater knowledge comes greater yield

The birth of the World Wide Web brought about a very cool thing: the sharing of knowledge at incredible volumes and speeds. In 2015, irrigation industry leaders came together to form irrigation.education, an interactive, easy-to-use online resource for irrigation best practices and training. This free educational website is available to anyone interested in learning about farm irrigation theory and benefits, water application, technology advancements, service troubleshooting and more.

Irrigation.education

As a sponsor of this educational resource, Valley Irrigation fully believes in empowering our growers to learn as much as they can about newer irrigation technologies in order for them to be as successful as possible. After all: With knowledge comes power.

Don’t forget about data security

A hot topic nowadays is data security and privacy. Without your data, these new irrigation tools won’t work their best for you – it’s an essential piece for you to successfully adopt new technologies. So, that being said, what exactly is “data security and privacy”? Just another buzzword like “unicorn” or “Pokémon”? Hardly. We just mentioned that education and knowledge are the keys to the empowerment castle, so let’s take a moment for us to educate you a bit more on what it means to secure your data and privacy and why it’s so important to discuss.

Let’s think of data security as a farm. Inside your farm are chickens, goats and cats. Outside the farm lives a pesky, hungry coyote. What do you do? You’d protect all of your animals from the coyote by doing whatever you can.

In the real world, the chickens, goats and cats are your data. You should take preventative measures to ensure that the coyote (or hackers, unwanted parties, etc.) doesn’t take hold of your animals. Here are some tips on helping make sure that your data remains secured:

1. Locate and read the “terms of use” within the software application or website, typically found at the bottom of the page. By reading the “terms of use,” you will know exactly what the application or website can take from you, in regards to your data and privacy.

2. Place your data on a secure website behind encrypted firewalls. In this case, a username and password will be required to access the data. Typically, these sites will begin with “https:” in their website address (URL), rather than “http:”

3. Know who has the authority to approve the sharing of your data and who has access to your data. Data sharing can be good or bad. Most growers benefit by sharing the data with their trusted advisor, but it is important to understand if your specific data is shared or sold to others without your knowledge.

4. Understand what value the data could provide to your operation. Value can come in various forms, such as better insights into productivity, cost savings, more efficient use of labor, simplified record keeping, etc.

5. Taking control of your data security and privacy is an essential piece to adopting new irrigation technologies. Data is an asset that will only grow in value in the years to come, like your time and available water. Taking preventative action now may result in a fruitful future for both you and those who succeed you.

We’re proud of our growers. Can you say the same about your operation? Take a closer look at new irrigation technologies today and start building a better world with us.

About the Author

Kelly Cox is the Global Digital Marketing Manager for Valley Irrigation in Valley, Nebraska. She joined Valley Irrigation in 2008 where she shares her love of Web and all things digital marketing with her colleagues and the Valley dealer network. Reach her at kcox@valmont.com.

It’s a great time to be a farmer

Some may disagree with this statement, but today is a great day to be a farmer. Yes, the agriculture industry is not in the greatest shape, available freshwater is dwindling, and everyone is walking around someone else’s private property with their phones and tablets trying to “catch them all.” BUT, now is the time when farmers can and will make a difference.

• They have the power to grow more food with less water, helping solve two challenges.

• They have the ability to spend more time with their family and friends through adoption of new irrigation technologies.

• They have an expansive library of information to help them better understand their vocations, share knowledge, and gain education.

• They have available easy-to-use tools to help them keep their data private and secure.
Nebraska State Senator Tom Carlson is the 2016 recipient of the Maurice Kremer Groundwater Achievement Award from The Groundwater Foundation. Senator Carlson will be presented with the award at the joint Nebraska State Irrigation Association and Nebraska Water Resources Association Conference on November 21 in Kearney, Nebraska.

The Kremer Award is presented annually by The Groundwater Foundation to an outstanding Nebraskan who has made a substantive contribution to the conservation and protection of Nebraska’s groundwater.

“Senator Carlson’s work ethic and deep passion for our state’s most important natural resource, groundwater, is reflected in his accomplishments during his tenure as a State Senator,” said Groundwater Foundation President Jane Griffin. “Our state has benefited from Senator Carlson’s deep passion for our natural resources. On behalf of all of us at the Groundwater Foundation I am honored to recognize him with the Kremer Award.”

The Kremer Award is chosen annually by a selection committee appointed by The Groundwater Foundation’s Board of Directors. It is named for Senator Maurice Kremer, who spent 20 years in the Nebraska Legislature where he was best known for his contributions toward protecting the state’s water resources, earning him the nickname “Mr. Water.”

“During his two terms in the Unicameral, Senator Carlson was a leading proponent and tireless advocate for legislation to improve the sustainability of Nebraska’s water resources,” said selection committee member Don Kraus from Central Nebraska Public Power and Irrigation District.

Senator Carlson actively sponsored and championed LB 1098, which established the Water Sustainability Fund in 2014 to guarantee a future for Nebraska’s stressed water resources. Through his efforts, almost $30 million dollars were accumulated to finance water sustainability research in Nebraska in 2015/2016 and will finance water sustainability research into the future. He also worked on legislation related to the Republican River Sustainability Task Force and the extension of funding for the Riparian Vegetation Management Task Force.

“Senator Carlson’s leadership was indispensable during the design and implementation of the Water Sustainability Fund,” said W. Don Nelson, former aide to Nebraska Governors Tiemann, Exon, and Kerrey and State Director for U.S. Senator E. Ben Nelson. “He can bring reason and calm to the most tempestuous of policy discussions. Most importantly, he is incapable of telling a lie.”

Carlson was elected to the Nebraska Legislature in 2006 from District 38. As a State Senator, he chaired the Agriculture Committee from 2009 through 2012 and the Natural Resources Committee in 2013 and 2014, and worked extensively on agriculture and water issues.

Carlson earned a B.S. in math from the University of Northern Colorado, a M.S. in physical education from Colorado State, and a PhD from the University of Iowa. He served as a faculty member at Wisconsin State University – Oshkosh and Taylor University in Upland, Indiana, and achieved success as a coach of several collegiate sports teams along the way, including golf, baseball, and football.

He later returned to Holdrege and began working for the Bankers Life Insurance Company, which became the Principal Financial Group, where he was a senior agent and held CLU and ChFC designations.

Carlson is an active member of the Holdrege community, and is past president of a number of organizations, including the Holdrege School Board, Holdrege Area Chamber of Commerce, Holdrege Optimists, Holdrege Rotary Club, as well as the Nebraska Fellowship of Christian Athletes. He and his wife, Margo, have three children and four grandchildren.

Selection committee member and past Kremer recipient Jim Goekel said, “Tom Carlson gets groundwater in Nebraska! He understands the relationship between groundwater and surface water and appreciates Nebraska’s enviable groundwater resources. For his visionary service to Nebraska, Senator Tom Carlson richly deserves the 2016 Kremer Award!”

For more information about the Maurice Kremer Groundwater Achievement Award, visit www.groundwater.org/action/recognition/kremer.html.

**PAST KREMER AWARD WINNERS**

2015: Susan Seacrest
2014: Robert Kuzelka
2013: Ron Bishop
2012: Dayle Williamson
2011: Lee Orton
2010: J. Michael Jess
2009: Vance Anderson
2008: Ann Bleed
2007: Jim Cook
2006: Ed Schrock
2005: Roger Patterson
2004: Darrell Watts
2003: Chris Butler
2002: Eugene Haarberg
2001: Jim Goekel
2000: Wayne Madsen

2019: Karen Haarberg
2018: Tracey Martinek
2017: Sue Shock
2016: Phyllis Reiner
2015: Robert V. Schrock
2014: John F. Dreeszen
2013: Ron Bishop
2012: Ray Loving
2011: Lee Orton
2010: J. Michael Jess
2009: Vance Anderson
2008: Ann Bleed
2007: Jim Cook
2006: Ed Schrock
2005: Roger Patterson
2004: Darrell Watts
2003: Chris Butler
2002: Eugene Haarberg
2001: Jim Goekel
2000: Wayne Madsen

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Leading the Way
by Cindy Kreifels, The Groundwater Foundation

People all around the world are leading the way in groundwater protection. Groundwater Guardian teams, Green Sites, green teams, water professionals, natural resource advocates, and individuals all are making a difference every day in their communities. This movement is awesome! Yet if you look at the headlines, more is needed.

What more can one do, you ask? You can start by learning more at the 2017 Groundwater Foundation National Conference. The conference will be held October 24 to 26 in Boise, Idaho. The theme is Leading the Way – People, Policies, and Practices to Protect and Conserve Groundwater. The conference will provide know-how and inspiration to individuals and municipalities looking for innovative and effective approaches to groundwater management. Insight into applied practices and evolving research will assist attendees in tackling the pertinent issues they and their communities face.

Boise is a vibrant city which offers tradition, innovation, and natural beauty, with a keen eye on sustainability. The conference will take advantage of many of the great things the city has to offer to provide a fun and meaningful experience for conference attendees. So mark your calendars and plan to attend the 2017 National Conference.

Come early or stay late and take advantage of enjoying all Boise has to offer. From history to culture and recreation to food and beverage, Boise has something for everyone.

The History
Are you a history buff? History comes alive in Boise. Trek through time with a visit to the Oregon Trail which passed just south of Boise where it crossed the Snake River. The Boise State Capitol building features many displays and educational exhibits about the history of Idaho. The old Idaho penitentiary is a state historic site where you can experience Idaho's territorial jail. The Idaho Anne Frank Human Rights Memorial is an educational, inspirational, and contemplative park inspired by Anne Frank's faith in humanity. And, of course, there is a wide variety of museums including the Idaho Historical Museum, the Idaho Museum of Mining and Geology, the Idaho Military Museum, and the Basque Museum & Cultural Center.

The Culture
Whether you are into ballet, music or theatre Boise has you covered. Check out schedules for Ballet Idaho, the Boise Art Museum, Boise Philharmonic, Boise Contemporary Theater, the Performing Arts Academy, and the Idaho Dance Theater. You’re sure to find something to your liking. Or just check out all of the public art on the streets of downtown Boise as you stroll around this one-of-a-kind city.

The Recreation
Hiking, biking, fishing, hockey, football – Boise has it all. For hiking and biking you can hang out in Boise on the 25 mile Boise River Green Belt – a tree lined pathway that follows the river through the heart of the city and provides many scenic views or head out of town to the Boise National Forest for 2 million acres covered in trails. Can’t bring your bike? No worries! Boise has a Green Bike system – just rent a bike and away you go. Surrounding the Boise area are the Boise River, the Payette River, and the Snake River – take your pick for a great day of fishing. Boise is also home to great sports, and is home to the Idaho Steelheads hockey team and the Boise State University Broncos.

If birds are your thing, be sure to check out the World Center for Birds of Prey. They are doing remarkable research and work to ensure the survival of many species.

Food and Beverage
If you are a food connoisseur then hit 8th street in downtown Boise. Whether you are hungry for Asian, German, Indian, Mexican, or just need a good steak or hamburger – you will find something to hit the spot. Beer is your thing – great! With 19 microbreweries in and around Boise you are sure to wet your whistle. You prefer wine – Boise has that covered as well! With 25 wineries within 32 miles of Boise you will be able to make a toast to the wonderful groundwater that made your drink possible.

Long-time Groundwater Guardian
And if a conference dedicated to groundwater and all of the wonderful attractions aren’t enough to attract you, come to learn more about one of the first and longest active Groundwater Guardian communities. Boise has been designated every year since 1994 – the year the program began. They can’t wait to share all they have accomplished to protect groundwater in this beautiful city.
King of the Awesome Aquifer Kits
Steve Sim Managed the Assembly of Thousands of Groundwater Education Kits
By Jennifer Wemhoff, The Groundwater Foundation

Steve Sim scrutinizes the completed Awesome Aquifer Kit in front of him.

- Tubing - check.
- Gravel - check.
- Food coloring - check.
- Clay - check.
- Rubber bands - check.

However, this wasn't one of the thousands of Awesome Aquifer Kits he helped coordinate and assemble. This was a special kit, just for him. After 14 years of overseeing the assembly of these valuable groundwater education tools, Steve recently retired from Community Alternatives of Lincoln, Nebraska, the subcontractor used by The Groundwater Foundation to produce the Awesome Aquifer Kits and JUGS (Just Understanding Groundwater).

Community Alternatives is part of ResCare (and stands for Respect and Care), which is the nation’s largest private provider of services to people with disabilities.

The Groundwater Foundation began working with Community Alternatives in roughly 2001 when looking for a low-cost production option for the JUG and short-lived Jungle in a Jar products, and later, the Awesome Aquifer Kits. Partnering with Community Alternatives proved to be the solution, with the added benefit of helping provide jobs for adults with disabilities.

Steve started with Community Alternatives in 1989, and was put in charge of The Groundwater Foundation’s projects in 2002.

In those 14 years, Steve and his team of three to four workers put together 2,800 Awesome Aquifer Kits and 2,600 JUGS.

“I didn’t know it was that many - wow!” Steve joked at a retirement reception held at The Groundwater Foundation’s offices.

So did he learn anything about groundwater after that many kits?

“Oh yeah!” he enthused. “The [kit’s] experiments seem really beneficial for the kids to learn about the use of groundwater and how it is affected by impurities in the environment.” He points out that the kits are a great way to promote the need for groundwater conservation.

“I’m a big believer in groundwater education,” Steve said. He’s long been an avid recycler and environmentalist. He remembers attending an Earth Day rally as a youth alongside his mother.

Steve is originally from Nebraska City, Nebraska, and lived on a farm that had been part of his family since 1876. His background is diverse, with a BA in social sciences and minors in history and geography from Peru State College. He went on to jobs in special education and at the Nebraska State Developmental Center before landing at Community Alternatives in 1989. Along the way he served as a Scout Master for Boy Scouts for 15 years.

For now, Steve is focusing on enjoying retirement. He has plans to do some traveling, mostly to visit family. He plays cards at a local senior center a few times a week, and helps out at the Gathering Place, a Lincoln-based charity that provides meals to those struggling with hunger. He may pursue a part-time job in the next couple years.

Indirectly, Steve has helped bring groundwater education to thousands of youth across the country. He looks back on his time at Community Alternatives and his work with the groundwater education kits fondly.

“The best part of my job was putting together the kits and working with The Groundwater Foundation,” Steve said. “It felt like I was doing something for the environment.”

Steve also recently became a member of The Groundwater Foundation. Why? “Just seeing how much the kits help the kids,” he explained. “We have to preserve the aquifer.”

JOIN OR RENEW! WWW.GROUNDWATER.ORG/ACTION/MEMBER.HTML

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Large Precipitation Events Key to Recharging Groundwater Supplies

Large precipitation events that occur about every 10 years are a critical source of recharge for replenishing groundwater resources, according to a new study by the U.S. Geological Survey and the Bureau of Reclamation.

Groundwater is a vital source of water in the western U.S., and will be increasingly important with continued population growth and climate variability. Understanding the role of these large recharge events in replenishing aquifers and sustaining water supplies is crucial for long-term groundwater management.

This is one of the first studies in the region to investigate the effects of climate on groundwater resources. USGS scientists identified and analyzed large, multi-year, quasi-decadal groundwater recharge events in the northern Utah portion of the Great Basin from 1960 to 2013. Researchers evaluated groundwater levels and climate information and identified five large recharge events with a frequency of about 11 to 13 years. Findings show these events provide a significant amount of groundwater recharge and storage across the northern Great Basin, causing water levels to rise in aquifers.

Megadrought Risks Soar as Atmosphere Warms

As a consequence of a warming Earth, the risk of a megadrought – one that lasts more than 35 years – in the American Southwest likely will rise from a low chance over the past thousand years to a 20 to 50 percent chance in this century. However, by slashing greenhouse gas emissions, these risks are nearly cut in half, according to a Cornell-led study in Science Advances.

If climate change goes unabated – and causes more than a two-degree Celsius increase in atmospheric temperature – megadroughts will become very probable, said lead author Toby Ault, Cornell professor of earth and atmospheric science.

“It’s because the projected increase in atmospheric demand for moisture from the land surface will shift the soil moisture balance. If this happens, megadroughts will be far more likely for next millennium.”

Ault explained a natural “tug-of-war” governing the surface moisture balance between the precipitation supply (rain) and evaporation (transpiration). But he cautions that increases in average regional temperatures could be so dramatic – more than 4 degrees Celsius (7.2 degrees Fahrenheit) – that evaporation wins out. This, in turn, dries out the land surface and makes megadroughts 70 to 99 percent likely.

“We found that megadrought risk depends strongly on temperature, which is somewhat good news,” Ault said. “This means that an aggressive strategy for cutting greenhouse gas emissions could keep regional temperature changes from going beyond about 2 degrees Celsius (3.6 degrees Fahrenheit).”

This lower average warming figure cuts the megadrought risk almost in half, he said.

These tug-of-war scenarios could very well play out in the American Southwest, according to tree ring and geologic records. During sequences of exceptionally dry years, those rings tend to be relatively narrower than in wet years, Ault said.

“Megadrought risks are still likely to be higher in the future than they were in the past,” he said. “Hence, efficient use of water resources in the drought-stricken American Southwest are likely to help that region thrive during a changing climate.”

Ault’s co-authors include Justin S. Mankin and Benjamin Cook, both of the NASA Goddard Institute for Space Studies, and Jason E. Smerdon of Columbia University. The National Science Foundation supported this research.
Water Awareness for the Weeki Wachee Hernando County, Florida Raises Awareness to Protect Its “Little Spring” by Sara Brock, Groundwater Foundation Intern

Sewn on top of the Floridan Aquifer System, Hernando County, Florida (located west of Orlando and north of Tampa) is home to a first order spring that discharges over 73 million gallons of clear, fresh water each day. Residents receive 100% of their daily water usage from the Weeki Wachee Spring which, somewhat ironically, translates from its original Seminole into “little spring.”

Alys Brockway, Hernando County Utilities’ Water Resource Manager and long-time leader of the local Groundwater Guardian (GG) team, is not a Florida native. In fact, many of the people she interacts with, personally and professionally, are transplants from all over the country who have moved to Florida for its sun, sand, and notable absence of extreme winter conditions. Alys recalls with some amusement that most conversations she enters starts with “Where are you from?” This exciting collision of micro-cultures results in a community that is constantly growing and changing to accommodate the water needs of its residents and tourists. For Alys, it requires a consistent effort to ensure locals, businesses, and visitors understand the needs of the karst geography and aquifer under their feet.

The program began in 2002, bringing together representatives from the major water interests within the county to bring attention to water resource protection. In 2003, the Hernando County Groundwater Guardians hosted their first Groundwater and Springs Education workshop for local government leaders. The goal of this bi-annual workshop is to bring in experts in hydrogeology, groundwater protection, springs, conservation, and Florida’s geology to meet with and present to decision makers in Hernando County. What began as meetings between local conservationists, businessmen, miners, developers, and residents has transformed into a full-day event anticipated by community leaders well in advance. Excitement surrounding the Hernando County conference quickly spread to neighboring counties. The 8th biannual workshop, to be held in the spring of 2017, should draw around 200 elected officials and interested parties from at least three counties, as well as resident viewership during the broadcast of the event on local TV channels.

The GG team now looks for a way to maximize their outreach not only to the up-and-coming millennials, but also to those who still are discovering how to navigate social media. Team members regularly attend Homeowners Association meetings and send out fliers with tips to save water inside residents’ water bills. The team’s next task is to rework their website (www.hernandocounty.us/utils/groundwater/index.asp) to include more frequently updated posts, downloadable educational materials, and links to their social media accounts that users can like, follow, and share.

Despite the very visible growth of the GG program, Alys still says that the true measure of their success is in the people who express a new interest in their conservation efforts or conferences. This community stands out in coming together to educate themselves and other Florida residents on water protection. The Groundwater Foundation provides a national symbol of recognition to a community who has always wanted simply to care for its local “little spring.”
True or False?
The earth’s soil, sand, and gravel act as a natural filter, preventing some potential contaminants from reaching groundwater.

Water that falls on the ground and flows to a surface water body is called:
A. Recharge
B. Evaporation
C. Runoff
D. Discharge

True or False?
Groundwater flows at different rates based on the type of material.

Groundwater that flows naturally from underground onto the land’s surface or into a body of water is called a:
A. Spring
B. Lake
C. Recharge point
D. Whirlpool

What type of pollution can be traced to a specific point, such as a pipe, ditch, or tunnel?
A. Nonpoint source pollution
B. Point source pollution
C. Litter

True or False?
Contaminated surface water can eventually enter groundwater and contaminate it.

How much water is used to brush your teeth, with the faucet turned off?
A. 5 gallons
B. Less than 1 gallon
C. 3 gallons
D. 10 gallons

What is the main source of groundwater recharge?
A. Condensation
B. Discharge
C. Precipitation

True or False?
One cubic foot of water contains over 10 gallons.

Which use withdraws the most groundwater per day in the United States?
A. Communities
B. Industry
C. Recreation
D. Irrigation

True or False?
Private wells should be tested once every five years and is the responsibility of the health department.

A __________ is porous material (rock, soil, etc.) in an aquifer through which water passes freely as it moves through the ground.
A. Impermeable layer
B. Permeable layer
C. Sponge