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Grape Creek marks the boundary between the alluvial aquifer (green area) and the relatively dry, older alluvium and fractured rock areas.

Healthy future flows from sustainable water use

From our start, San Isabel Land Protection Trust has worked to protect land, water and wildlife. Increasingly, our focus turns to water. Why water? Why now?

Water is the lifeblood of the land and all who depend on it. It determines whether natural and human communities can be sustained in healthy and economically viable ways.

It also is a diminishing resource that continues to increase in value – particularly to those who live outside our region. Colorado’s Front Range population from Denver to Pueblo will increase 32 percent between 2020 and 2050, according to the State Demography Office, a division of Colorado’s Department of Local Affairs. The Colorado Springs metro area population is expected to grow 45 percent between 2020 and 2050.

Add to that the complexities of geology, hydrology, state water law, economics, politics and aesthetics, and you can see that water planning raises hard questions with few easy

“ We all share responsibility to use water wisely – to the benefit of the land and the water’s many users, both here and downstream. ”
—Linda Poole

answers.

Wendell Berry – author, farmer and cultural critic – wrote, “If we want to save the land, we must save the people who belong to the land. If we want to save the people, we must save the land the people belong to.”

Linda Poole, San Isabel’s executive director, notes, “The same can be said of water.

“We all share responsibility to use water wisely – to the benefit of the

land and the water’s many users, both here and downstream,” Linda says.

San Isabel views its role in this developing debate as multi-faceted. It includes:

- Finding, developing and sharing the best available science and information.
- Convening collaborative conversations to resolve issues while strengthening our environment, community and economy.
- Fostering regenerative land practices.
- Focusing on the long term. Our conservation easements are held in perpetuity.
- Securing funding to accomplish all of the above.

Water has come to the forefront recently due to the Upper Arkansas Water Conservancy District’s proposed water augmentation plan and its potential impacts on Custer County,

Please turn to Page 4 ...

From our Executive Director

The courage to change is key to our regenerative future

As a little kid on a ranch in Washington's Okanogan Highlands, I stalked blue-tails, my name for western skinks. It didn't take much of a fright – just corner them, loom above for a moment too long – and one lizard became two.

The bright turquoise tail twitched and flashed, holding my gaze, while the dull brown half skittered off almost without notice. Skinks are territorial, so I could return over the summer – more cautiously, so as not to scare the skink into another drastic action – to watch the boxy brown lizard magically regrow another lovely tail.

As a kindergartener, I was surprised to see my mom's face turn white when I held up the bloody mess of my ring finger, with most of the tip in the cole-slaw thanks to a fascinating kitchen gadget with a surgically sharp blade that I wasn't supposed to touch. Yes, there was a lot of blood, with bone shining through underneath, but I was unconcerned. If skinks could regrow their tails, surely my finger would grow back, maybe even bright blue.

Skinks escape predation by sacrificing their tails. Regenerating a tail takes work, but it is also a path back to wholeness. With time, my fingertip regrew, though incompletely, with a wonky fingernail, and sadly, not blue.

The difference between the skink's tail and my fingertip was regenerative capacity. Skinks have it, humans not so much. Wikipedia says, "Regeneration is the process of renewal,



Linda Poole

restoration and growth that makes genomes, cells, organisms and ecosystems resilient to natural fluctuations or events that cause disturbance or damage. Every species is capable of regeneration, from bacteria to humans."

Good news, that. Droughts, catastrophic fires and floods, and the relentless growth of thirsty cities impact our landscapes and lives more with each passing year. For people who love wildlands and wildlife, these feel like dire times, the type of times, to take a page from the skink's book, to sacrifice much of our corpus to save the essential bits. But the lesson of the skink to me is not to cut and run, but to regenerate.

So just what is regenerative conservation? Google has zero hits on the term, so maybe I made it up. But this emergent direction in conservation extends far beyond my genesis. Regenerative conservation is the process of rebuilding relationships for resilience to challenges, both present and unforeseen. It seeks integrated, durable solutions for human and natural systems to adapt and thrive when tested by such things as climate change, economic upheavals and increasing human populations.

How to do this? Some foci for success are strategic collaboration with diverse groups; biodiversity within fully functional ecosystems; adaptive management; entrepreneurial approaches that reward and strengthen conservation; best available science, including both place-based knowledge and cutting-edge innovation; and perhaps above all, courage.

Change is hard. It takes courage to change the way we care for the land. But to quote Larry Vickerman, "Do we have the courage to do nothing and suffer the consequences?"

San Isabel has the courage to change. We are evolving from preservation to conservation to regeneration. This is crucial work, and we need your help. Please consider volunteering, donating and otherwise joining us on this hero's journey to regeneration. Thank you for all you do to help us ensure that nature and people thrive for generations to come!

From our President

Time-honored practices, with new science, can revitalize soils

We hear the term regenerative agriculture frequently these days. But what does it really mean?

The process is based on several principles that highlight how it is possible to restore fertility to farm and ranch soils by rebuilding organic matter and fostering a diverse population of organisms that naturally occur in the soil. For the past 50 to 60 years, production agriculture has been mining organic matter (carbon) from the soil through too much tillage, overuse of synthetic fertilizers and heavy use of chemical herbicides and pesticides.

According to Rattan Lal, soils professor at Ohio State University, the world's cultivated soils have lost between 50 percent and 70 percent of their original organic matter. The repercussion is loss of natural fertility, loss of water-holding capacity and greater erosion. But worse, organic-matter-depleted soils depend more and more on synthetic inputs to produce crops. It is an unsustainable cycle that has been repeated all over the world. It was called the Green Revolution!

Modern agriculture wants to focus on new technology to solve our crop and livestock problems. Buy more and more inputs to grow a crop so the agribusiness giants can lock in profit, while the producer struggles with a market system that is more manipulated every year. There is great value in re-establishing some time-honored farming practices and coupling that with new knowledge, especially about soils.

In much of San Isabel's service area, crop ground comprises irrigated hay and pasture ground. These are mostly perennial plant systems that do not require annual tillage. A major problem with these systems is using heavy synthetic fertilizer to increase production. Through complex interactions of inorganic nitrogen, the salt-based carrier and soil microbes, the organic matter of soils is depleted



Larry Vickerman

rather quickly. This in turn makes the soil dependent on more synthetic nitrogen to continue to raise a decent crop. My father observed this phenomenon back in the late 1960s and early 1970s when he first started using synthetic nitrogen. Once you used commercial fertilizer, you were committed to using it annually as the fertilizer compromised your soils' natural fertility.

Dr. David Johnson, soil scientist at New Mexico State University, notes, "... in the early 20th century came the Haber-Bosch process for manufacturing nitrogen fertilizers. Before 1940, you could produce six units of food energy for one fossil fuel unit. Now it takes 10 units of fossil fuel energy to produce and deliver one unit of food energy, even though the solar energy to grow the plant is free."

In addition to its impacts on long-term fertility, a lack of organic matter severely inhibits the formation of soil structure, which in turn lessens water-holding capacity. Once you lose water-holding capacity, you need more frequent irrigation to produce the same crop. Soils are much more drought resistant when holding higher organic matter.

So what can we do to make our irrigated pastures and hay meadows

more sustainable? One promising technique is inoculating hay and pasture grounds with compost. The Marin County Project applied a half-inch of compost to a cattle pasture and documented the following results:

- Areas where compost was applied sequestered 900 pounds of extra carbon (organic matter) per year compared with control plots where no compost had been applied.
- Grass growth on composted plots increased 25 percent to 50 percent compared with control plots (no fertilizer, no compost).
- Compost-treated pasture retained 2,800 more gallons of water per acre, making the pasture more drought resistant.
- The study predicts the carbon effects from a single application of compost could continue for upwards of 30 years based on five years of data collection. So one application over the long term could greatly increase production versus annual applications of synthetic nitrogen.

Drawbacks to applying compost are myriad in rural areas, especially the cost of freight and the difficulty in applying large bulk materials. The answer may be in local production of compost. Another method is diversifying the plant community in pastures and meadows by over-seeding with a variety of annual and perennial cover crops that can help relieve compaction with deep roots, as well as introducing various legumes to increase nitrogen fixation.

The one constant in all of these scenarios is using animals to graze and help incorporate residue and other organic matter into the soil. Manure and urine coupled with hoof action is nature's form of organic matter enhancement. Whatever the method, reducing input costs while improving water efficiency of soils will make any producer more money.

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San Isabel Land Protection Trust is a nationally accredited 501(c)3 nonprofit, nonpartisan

conservation organization working with landowners to protect land and water in southern Colorado. To date, we've protected nearly 41,000 acres, 174 water rights and some 133 conservation easements.



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Water

... Continued from Page 1 southern Fremont County and the surrounding area. Concerns about the plan have galvanized the community, prompting many to attend grueling meetings on technical water issues. But there are broader issues to be addressed.

More than a month before the district's plan came to light in December 2018, 21 past and present San Isabel leaders identified water as a critical issue in our region's conservation and economic future. The 2018 drought hammered home that point.

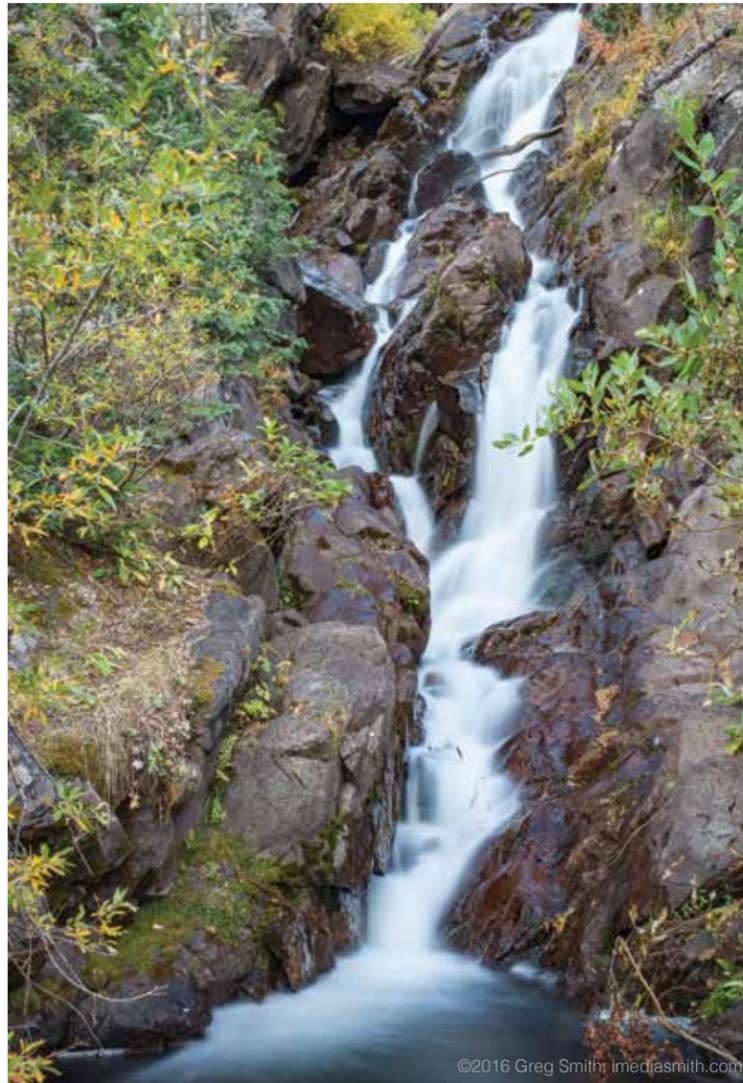
So at San Isabel, we want to focus on the big picture: the future of water throughout the region.

With that goal in mind, San Isabel has launched its new Sustainable Water Program with the hiring of hydrologist Valda Terauds (see On the Move, page 5). Valda has three decades'

experience in water resources and environmental management. As she attended meetings on the augmentation plan, she immediately recognized the need for science-based, informed decision-making.

"Hydrology, water rights and water laws are complex," Valda says, "and people need to understand the real impacts to their lives, their communities and our shared aquifer in this uniquely beautiful valley. Understanding often leads to action. A thriving, sustainable community relies on our ability to manage water, which underlies all."

Linda points to the nexus of agriculture and conservation and innovation and age-old wisdom as the core of sustainability. "Our work revolves around integrating regenerative agriculture and cost-effective conserva-



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Middle Taylor Creek tumbles down from Hermit Basin.

tion. Time-tested stewardship practices can be honed and advanced by the cutting edge of innovation. Landowners should be rewarded for – or at least be able to afford – conservation," she says.

Planning our water future also involves the economics of water and zoning decisions, the role of irrigation in maintaining the aquifer, the effects of overstocked forests and the impacts of fire and flood. We are planning land-care projects, such as piñon-juniper thinning, riparian restoration and targeted grazing management, which will be implemented and monitored for effects on hydrology and economics.

San Isabel is assessing and addressing science needs when it comes to water. We are reaching out to people in the region, sharing information

about how water works in alluvial versus fractured-rock systems, and we are delving into alternative water strategies, such as ways to reduce the negative impacts of buying and drying up irrigated ranchland. We also support community leaders seeking local, sustainable solutions for water supplies and wastewater treatment.

Keeping water on the land is essential, and to match the changing conditions, we need a suite of options to ensure success. For the Wet Mountain Valley, the solutions we seek will protect private property rights – in this case, the right to sell or lease water – while also creating opportunities to keep water nourishing agricultural lands and streams. We and others in Colorado's land trust community are working through proven means, such as conservation easements, to tie water to the land in perpetuity. We also are looking at alternatives to

buy-and-dry, such as flexible short-term leases to share water when supplies are adequate in our headwaters.

In all we do, our goal is to strengthen community members to be skilled, empowered stewards of the precious water that flows off the Sangre de Cristo and Wet mountains. As the first stewards of that lifeblood, we have options, responsibilities and rights that we must use with wisdom and a clear focus on the vibrant future we seek for our children and grandchildren.

Learn more:

Hydrologist Valda Teraud offers insights on the proposed augmentation plan at bit.ly/aquiferissues.

San Isabel board president Larry Vickerman weighs in on the lack of openness and science in the proposal at bit.ly/planproblems.

On the Move

San Isabel Land Protection Trust welcomes to our staff hydrologist **Valda Terauds**, who will lead our Sustainable Water Program. Valda has 33 years' experience in water resources and environmental management in public and private sectors. She has worked on regional water planning, water rights, water contracting, and water and wastewater reuse strategy development. Valda has managed hydrographic surveys to establish surface and groundwater rights in over-

allocated stream systems and groundwater basins in the Southwest. She has a master's degree in Hydrology from the New Mexico Institute of Mining and Technology and a bachelor's degree in Biology from Catholic University. She and her husband, John, live in the Wet Mountain Valley, where she gardens, rides dressage and participates in community theater.

We welcome to the San Isabel Board of Directors **Annie Overlin** and **Steve Oswald**.

Annie, the sixth generation of a Bent County, Colorado, ranching family, is raising the seventh generation on a small farm in Beulah. She works for Colorado State University Extension Service, covering 39 counties as the Peaks to Plains Regional Range Management Specialist. Annie previously ran a consulting business



Photograph by Linda Poole

Wayne Ewing (left), Charles Proctor and Shannon Proctor plant willows in April along Texas Creek on their protected property, Mile 66 Ranch, in the Wet Mountain Valley. The new willows will improve wildlife habitat, water quality and aesthetics. New fencing, built with support from the Natural Resources Conservation Service, helps protect the stream from excessive use by livestock.

in environmental permitting and restoration of upland and wetland systems, and she also worked as a rangeland restoration ecologist at the University of Nevada-Reno, with joint responsibilities for federal lands at the Bureau of Land Management and for private lands with the Natural Resources Conservation Service. Annie has a bachelor's degree in Botany from CSU, and a master's degree in Animal and Rangeland Sciences from the University of Nevada-Reno. To San Isabel, Annie brings verve, a keen mind and fierce commitment to creating a vibrant future for youth and the land.

Steve and his wife, Nancy, live on a ranch that has been in Nancy's family for more than 70 years. After 12 years ranching in British Columbia, they returned to the family ranch in 1991. Augmenting decades of practical ranch experience, Steve is an avid

learner on topics ranging from carbon ranching to creating profitable, biodiverse and beautiful landscapes through holistic principles. Steve and Nancy's management epitomizes regenerative practices designed for resiliency to the challenges of the 21st century. Their innovative grazing and forestry programs, direct marketing of grassfed beef, and low-tech riparian restoration projects increase the sustainability of their operation while also demonstrating that conservation, including easements,

helps ensure long-term viability of agricultural operations throughout Colorado.

And we bid farewell to board members **Chris Skagen** and **Blake Osborn**. Chris stepped up to serve as executive director while our search for a new executive director was underway, bringing thoughtful, informed guidance to San Isabel.

Blake has been instrumental in shaping our land care program, especially around forestry, fire and floods. Thank you, Blake and Chris, for your energy, dedication and leadership while serving on our board.

Water is our lifeblood. Help us ensure we enjoy thriving land, water and communities in the San Isabel region. Donate today at [SanIsabel.org!](http://SanIsabel.org)

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In 2015, as San Isabel Land Protection Trust celebrated our 20th anniversary, we turned to a group of visionary supporters to lead us toward a bold future. Evergreen Giving Club members answered our call.

Evergreen Giving Club members ensure the financial sustainability of our land trust – now and into the future – by donating \$1,000 or more each year. They are committed individuals, families and businesses who want to protect working ranches and farms, water and wildlife. Most importantly, they have made a profound difference in our work and our ability to respond to a changing conservation world.

John and Pat Fechner, who joined the Evergreen Giving Club that first year, said, “We give to the San Isabel Land Protection Trust because we believe in its mission. San Isabel does a great job of working with the landowner.

They guided us through the process of putting our land in a conservation easement, and they continue to provide us resources and information as we maintain and improve our land. The land trust has been a source of support and encouragement for us, and we want to help keep them financially sound so that others may enjoy the same benefits they have provided us.”

Won't you join your friends and neighbors in helping to keep this region wild and beautiful, with abundant wildlife, productive agriculture, flowing water and thriving rural communities? Become a member of the Evergreen Giving Club today!

For more information, contact Janet Smith, development director, at janet@sanisabel.org or 719.783.3018.

Thank you to our Evergreen Giving Club members, whose names you see listed on this page in green.

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To see the complete list of our wonderful supporters, please go to bit.ly/sanisabelthanks.

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With a planned charitable gift to San Isabel Land Protection Trust, you can play a part in protecting some of Colorado's most important lands and water for future generations, while also meeting your financial goals. Please let us know if you have already included San Isabel in your estate plans.



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To learn more about the run or San Isabel Land Protection Trust, visit hardscrabblerun.com or SanIsabel.org.



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... helps communities, water and wildlife thrive.

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Friday & Saturday, Sept. 27 & 28, 2019

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