

## People &amp; Places

## Taking a world view of water

Eric Sproles, a hydrologist, studies how nations share river resources

By ERIC MORTENSON  
Capital Press

Water connects people. Oregon hydrologist Eric Sproles has an expression for it: "The great unifier."

But access to fresh water — the use and control of life-giving river basins — also is a flash point in multiple parts of the world.

In Africa, 11 nations share the greater Nile River basin. Ethiopia is building the Grand Ethiopian Renaissance Dam on the Blue Nile, a major tributary. Sudan and Egypt are downstream, and are heavily dependent on the Nile. Ethiopia is changing the basin's flow dynamics as it seeks to generate electricity and to store water for irrigation.

Sproles, who lives in Eugene, Ore., has a keen interest in the world's social and political flows. He was a co-author of a report, commissioned by the United Nations, that examined multiple river basins where trouble brews among countries that share them.

The research team's report, called the Transboundary Waters Assessment Programme, said potential flashpoints include the Middle East, Central Asia, the Ganges-Brahmaputra-Meghna basin chiefly shared by rivals India and China, and the Orange and Limpopo basins in southern Africa.

Those regions and others in Asia, South America and Europe share similar problems: increasing populations and rising demand for water. Nations that share a river basin and don't collaborate on development, irrigation and allocation may find themselves butting heads with upstream or downstream neighbors.

"The really important point



Courtesy of Centro de Estudios Avanzados en Zonas Áridas

Oregon hydrologist Eric Sproles worked in Chile from 2014 to 2016. This photo was taken at an elevation of 13,100 feet at the headwaters of the Elqui River watershed in north-central Chile, where a team was installing a groundwater monitoring well to study the connections between snowmelt and groundwater.

of this is that countries don't go to war over water," Sproles said. Rather, some nations might use water as leverage in regional disputes, and in some countries water shortages or other problems can escalate internal strife.

He said an example of the latter in Venezuela, which has seen street protests against the socialist government over food shortages. A Washington Post article attributed the unrest to "farm nationalizations, currency distortions and a government takeover of food distribution."

Meanwhile, Venezuela and other parts of northern South America have been gripped by drought for several years.

"In Venezuela, there's an undercurrent of conflict," Sproles said. "A lot of it is over economics and natural resources, and it begins to deal with it. It will be a flash point in the not-too-distant future."

The lesson for the Pacific Northwest, particularly agriculture, is to count ourselves

lucky, Sproles said. Dams on the Snake River remain a point of contention, but the region doesn't have base-level problems such as ethnic tensions to hinder cooperation.

"The Columbia River system is not perfect but it functions really well in terms of hydrology, flood prevention and water for irrigation," he said. "The fact that the U.S. and Canada can sit down at the table and renegotiate a treaty, along with the tribes, speaks to the resilience of this region."

"For agriculture, that's huge," he said. "Farmers want to reduce their exposure to vulnerability. We have wet winters and dry winters, but in August and September there's water for irrigation. That is not the case everywhere."

On other topics, he said artificial groundwater recharge makes sense in the Pacific Northwest. In such projects, water is pumped from rivers during high winter flows and allowed to percolate to the underground aquifers that many farmers in Eastern Oregon and Idaho rely

on for summer irrigation.

"Think how much water moves out of the system in the winter months," he said. "If you can retain it, you don't have to build more dams; it allows kind of a cushion (against drought)."

Aquifer recharge requires a lot of electricity because the water has to be pumped twice — into the ground and back out — but the Pacific Northwest has relatively cheap power for such projects, he said.

Sproles believes the western U.S. could benefit by adding more flexibility to our system of water rights. He doesn't advocate taking away rights, but said holders ought to be more free to sell allotments they aren't using.

Regarding water infrastructure, Sproles said the U.S. is relying on facilities built in the 1930s and during the post-war 1950s boom. We should make sure our dams can withstand an earthquake, he said.

We also remain vulnerable to a return of drought, he said. "What happens if 2015 is



## Western Innovator

Eric Sproles  
Hometown: Eugene, Ore.

**Professional:** Consulting hydrologist; contract employee with Oregon State University and works half-time with the Western Association of Fish and Wildlife Associations.

**Deeper dive:** Describes his work as the interface of science and policy. Worked on international project to examine potential trouble spots in "transboundary" river basins — ones shared by multiple nations.

**Key recent work experience:** Spent three years as a hydrologist with the Centro de Estudios Avanzados en Zonas Áridas in Chile.

**Education:** Ph.D. in water resources science, Oregon State University; master's degree in geography, University of Oregon; bachelor's degree in Latin American Studies, Florida State University.

**Family:** Wife, Katie, and two daughters "who miss empanadas (pastries filled with meat or vegetables) and their Chilean friends, but are just fine without the earthquakes."

not the bottom of the barrel?" he asked.

Sproles describes his hydrology work as "the interface of science and policy." His expertise includes using satellite imagery to calculate river basin trends. He and his family returned to the U.S. this past year after he worked for Chile's Centro de Estudios Avanzados en Zonas Áridas, the Center for the Advanced Studies of Arid Zones, from 2014 to 2016.

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We want to publish corrections to set the record straight.

## Livestock guardian dogs are a breed apart

By JAN JACKSON  
For the Capital Press

SALEM, Ore. — Livestock guardian dogs are worth their weight in gold to a rancher. They are intelligent, loyal and brave in keeping predators at bay.

But guardian dog breeders warn that the large dogs are also easily bored, bark a lot and have minds of their own.

If you don't like all of those traits, guardian dogs are probably not for you, says Ann Snyder, who has worked guardian dogs on her Central Oregon ranch for more than 10 years.

"I couldn't afford ranching if I didn't have the dogs protecting my sheep and meat goats from cougars and coyotes," Snyder said. "However, these dogs dance to a different drummer and they are not perfect for everybody. Choosing the breed or cross breed that best suits your situation and doing the research it takes to know how to raise them is critical."

For instance, she said,



Bing Bingham/For the Capital Press

Livestock guardian dogs stay with the livestock and protect them from predators.



Jan Jackson/For the Capital Press

Ann Snyder has worked guardian dogs on her Central Oregon ranch for more than 10 years.

many people don't realize that it takes two to three years for guardian dogs to mature.

In the meantime they are barking, roaming and very

face full of porcupine quills we couldn't get close enough to help her either," she said. "There is a fine line between bonding with them and letting them work as independently as they need to work. It takes a lot of patience and commitment on your part."

The dogs have many uses.

Tom Upjohn, a sheep producer in Burns, Ore., keeps two guardian dogs in the mountains with his herders.

Susie Wilson, at Sudan Farms in Canby, Ore., uses a guardian dog and a border collie to keep the raccoons from eating her chickens and ducks.

Deb Hildebrandt uses the Anatolian Shepherds she breeds and sells to protect her goats in southern Oregon.

Guardian dogs have been commonly used elsewhere in the world for centuries, but livestock producers in the U.S. have been using them only since the late 1970s. Of the dozen or so breeds available, USDA lists the Great Pyrenees, Komondor, Akbash and Anatolian Shepherd and

Maremma among the most popular.

Breeds used by Oregon producers interviewed included Maremma, Komondor and Anatolian Shepherd purebreds and Maremma crosses.

Producers emphasize the importance of selecting dogs with the right personality for your needs and buying them from a reliable breeder that sells dogs from two working parents.

"It is also important to check into your own zoning laws," Snyder said. "If you have neighbors who are not tolerant of hearing them bark, it's not going to work. I keep two because it helps keep down the bored/lonely barking. It is also easier for a coyote to distract one dog than it is two."

Guardian dogs cost \$300 to \$2,000, depending on whether they are puppies, adult dogs or trained.

"The real issue is, if you don't have knowledge and commitment on your part, you are looking for a wreck," she said.

## Calendar

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### Saturday, Aug. 5

Left Coast's Run for the Oaks, 8 a.m.-1 p.m. Left Coast Cellars, 4225 N Pacific Highway W, Rickreall, Ore. All proceeds from the race, food and wine sales for the day will be devoted to the Oak Savanna Restoration Project. 10K Trail Run: \$60, start time 9 a.m. 5K Trail Run/Walk: \$50, start time 9:15 a.m. Registration includes complimentary wine tasting; free Patagonia Capilene T-shirts; finishers receive a GoVino wine glass; music, awards and snacks. Left Coast Cellars has over 100 acres of

ecological compensation areas and 70 acres of old growth oak forest. Our goal is to restore the forest to a native oak savanna. We have partnered with the U.S. Fish and Wildlife Service. Website: http://leftcoastcellars.com/

### Saturday-Sunday Aug. 5-6

Mother Earth News Fair. 9 a.m.-6 p.m. Linn County Expo, 3700 Knox Butte Road E., Albany, Ore. The Mother Earth News Fairs are fun-filled, family-oriented sustainable lifestyle events that feature dozens of practical, hands-on demonstrations and workshops from the leading authorities on renewable energy, small-scale agriculture, gardening, green building, green transportation and natural health. Cost: \$15-50. Website: http://www.motherearthnewsfair.com/oregon/

47th Annual Great Oregon Steam-Up. 7 a.m.-6 p.m. Powerland Heritage Park, 3995 Brooklake Road NE, Brooks, Ore. Packed with vintage power, this annual event celebrates the steam power, machines and people who drove Oregon agriculture, logging, transportation and more from the 1800s through early 1900s. Get up close to the team-power farm machinery, vintage trucks, antique cars, logging gear and a working steam sawmill. Kids of all ages will enjoy train and trolley rides, daily parade, huge flea market, traditional tractor pulling, machinery demos, threshing and quilt show. This year the featured makes are Aultman-Taylor and Rumely. General admission \$12, children under 12 are free. Website: http://www.antsiquepowerland.com/html/steam-up.html

### Wed.-Sat. Aug. 9-12

Skagit County Fair. 10 a.m.-10 p.m. Skagit County Fairgrounds, 479 W. Taylor St., Mount Vernon, Wash. Website: https://www.skagitcounty.net/Departments/Fair/main.htm

### Tuesday-Thursday Aug. 15-17

Future Farm Expo. Pendleton Convention Center, 1601 Westgate, Pendleton, Ore. The Expo has a new name and a program more ambitious than ever. The Future Farm Expo 2017 will now span three full days and feature outside technology demos in addition to its tradition of world-class presenters and exhibitors. Growers, processors, crop consultants, service providers, and technologists are all invited to connect and share knowledge. The 2017 Expo will cover topics such as ground sensors, crop imagery, data use, precision irrigation, robotics, automation, soil sci-

ence and more. Website: http://www.futurefarmexpo.tech/

### Friday, Aug. 18-Sunday, Aug. 27

Western Idaho Fair, noon-11 p.m. Western Idaho Fairgrounds, 5610 Glenwood St., Garden City, Idaho. Website: http://www.idahofair.com/

### Thursday, Aug. 17

Stream Restoration Workshop. 8 a.m.-4:30 p.m. Federal Building Meeting Room, corner of Seventh Street and College Avenue, St. Maries, Idaho. Those wishing to participate should pre-register at the University of Idaho Extension office in Benewah County by Aug. 11. Registration is limited. A \$20 registration fee covers resource materials and refreshments. For registration questions, contact the UI Extension office at (208) 245-2422. Website: www.uidaho.edu/extension/forestry