



Walker

The delicate
intersection of
water, science and
a way of life

Story by John Trent '85/'87, '00M.A. • Photos by Jean Dixon



Lake

The drive from Las Vegas to Reno in January 1969 was interminable for the young Nevada State Assemblyman.

There was much on Harry Reid's mind as he left southern Nevada that morning, headed out on a long, solitary drive for Carson City and the beginning of that year's session of the Nevada State Legislature.

Reid, still in his 20s, had left hesitantly that morning. He was leaving his wife, Landra, and their two young children behind, at home. There was also the matter of his Las Vegas law practice and how he would manage it, living for the next 120 days out of a cramped room at the Frontier Motel.

Continues on page 26

“I remember I had a lot on my mind during that drive,” recalls Reid, now majority leader of the United States Senate.

Reid remembers the endless stretches of sagebrush, the vast sameness of the land that made the loneliness well in him even more strongly.

And then, just after cruising through the small northern Nevada town of Hawthorne, Reid’s thoughts were broken. A massive lake rose like a mirage from the desert floor.

Reid couldn’t believe his eyes. Years earlier, during the late 1950s, he had traveled on a school bus from his hometown in Henderson, Nev., for the state baseball championships, and had passed the same spot.

The lake hadn’t registered then.

Now, though, the sight of Walker Lake pulled something deep from within Reid.

“I thought, ‘My land, I can’t believe this,’” Reid says. “This lake . . . it’s just like it shouldn’t belong. But it did belong. Nature had put it there, and it was quite a sight to see.”

As Reid notes, 18-mile-long, 6-mile-wide Walker Lake has always been a bit of an anomaly. It is one of only six desert terminal lakes in the United States with a fresh water fishery, and one of only three — Pyramid Lake and Summit Lake are the others — in Nevada. It is the terminus for the Walker River watershed, whose ebbing and rising flows upstream from the lake have helped support the agricultural communities in the Smith and Mason valleys for more than 100 years.

And therein lies the problem, at least as far as the health of Walker Lake is concerned. Walker Lake is rapidly disappearing. The lake’s level has declined 145 feet since 1882, with increased salinity that has major implications for the wildlife that the lake supports, including a once thriving fishery, as well as thousands of



breeding and migrating water birds.

The solution seems easy enough: Get more water into Walker Lake.

Yet how can this be accomplished without irreparably damaging the agricultural economies of Walker’s upstream communities, such as Smith Valley and Yerington? How can this happen so that the economic viability of the neighboring Walker River Paiute Tribe as well as the residents of Hawthorne, can also be enhanced?

It is one of the most difficult dilemmas Nevada has, one that is emblematic of a larger debate throughout the country regarding water and how use of this most precious of Western resources can be maximized in a time of uncertain precipitation and global climate change.

“From the get-go, throughout the West, the problem has been over-allocation. That was how the agricultural economy of the West was able to develop,” says Jim Thomas, research professor at the Desert Research Institute. Thomas has studied the Walker Basin watershed for nearly 20 years. “Unfortunately, irrigation seems like it always ends up in the crosshairs of this debate. It will always be a complicated issue for the West, because it’s mixed with the needs of different users and producers, as well as the roots and values of all these people.”

In an effort to solve the Walker dilemma,

the Nevada System of Higher Education has embarked on an 18-month, \$70 million study of the Walker Basin. The project, sponsored by Reid (D-Nev.) and co-sponsor Nevada Sen. John Ensign (R-Nev.), has been authorized and funded through a congressional appropriation. Research by the University of Nevada, Reno and DRI is limited to \$14 million of this figure, with the rest set aside for the acquisition of water rights from willing sellers.

Research done by University and DRI scientists will explore the best means to get water to Walker Lake while maintaining a strong economy and improving the ecosystem of the Walker Lake watershed. It will involve developing a watershed and decision-support model and will evaluate economic impacts of water purchases, low-water use drought-resistant crops, water conservation, in-stream health of the Walker River, as well as sediment and salt delivery to the lake.

“Decades of litigation involving Walker hasn’t solved many of its problems,” Reid says. “In Congress, we’ve worked to save Nevada’s two great terminal lakes, and we’ve managed to save Pyramid. We’re taking the same approach with Walker. Walker is very, very important, and it’s important to keep it healthy, keep it alive. A healthy Walker Lake speaks well of Nevada . . . an unhealthy Walker Lake doesn’t speak well of our state. We have some of the finest scientists in the world at UNR and DRI, and their comprehensive research is going to provide critical information that will not only help improve the health of Walker Lake, it will help sustain the local economy.”

The appropriation also includes funding for acquisition of water and/or water rights from willing sellers at fair market value for approval from the U.S. Bureau of Reclamation. The acquisition program will be reviewed in an

Environmental Impact Analysis under the National Environmental Policy Act.

“We are striving to do all of this in the most open and transparent manner possible,” says Nevada System vice chancellor Dan Klaich, noting that a stakeholders committee group of 16 individuals serving as representatives of agencies or organizations in the Walker Basin as well as members from other Nevada communities and statewide agencies, has met three times since December.

“The Walker research projects are on a very fast track,” adds Thomas, who is serving, along with Mike Collopy, director of the University’s Academy for the Environment, as coordinator of the research end of the effort. Thomas received his Ph.D. from Nevada in 1996. “We’re very pleased with how it’s moving along, and we anticipate having some research results in a year. What distinguishes this project from previous work at Walker is how this project isn’t just looking at potential scenarios if water rights could be leased or purchased.

“Now we’re looking at providing the best information to help efficiently move water into the lake — and this is just as important — while also providing information to have a strong economy in the basin. This isn’t just about getting more water to the lake now. It’s a big-picture approach that hopefully will leave everyone and everything much stronger.”

Adds Collopy: “It’s also very important to both the University and DRI that the research

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conducted by our faculty provide objective data that contribute meaningfully to the lively debate that accompanies discussions of water use and whatever policy decisions are ultimately developed. Our faculty and students are interested in helping the ecologies and economies of the state of Nevada.

“We hope that those who live and work in the Walker River Basin understand that we are committed to providing the most reliable and helpful information.”



John Snyder, shown with daughter Alexandra, 13, and son, Darwin, 7 in his home outside of Yerington, can trace his roots in the Mason Valley back more than 100 years. The onion and alfalfa producer says of his life: “But it’s the quality of the living that we like so much.”

TO BETTER UNDERSTAND what is at stake, you take the drive on Highway 95A, past Fernley and toward Yerington, stopping at one of the onion farms, neatly framed with cottonwoods, not far from Wabuska.

You meet John Snyder. He is 49, a father of seven, a grandfather of two. He has held his face to the high Mason Valley sun for most of his life, working the nearby onion and alfalfa fields that have been part of his family for more than 100 years. He is an unassuming man with a kindly voice that is as measured and meaningful as a church hymn — a voice perfect for telling stories. Even when he sits still, listening to a visitor talk across the kitchen table in his home outside of Yerington, Snyder radiates a deep sense of contentment.

“Bless All Who Enter” reads a sign above the kitchen.

“One of the greatest things this type of life teaches you is patience,” Snyder says. “You have to have patience. You plant and you hope that conditions are right to get a good crop, and you hope that prices are good for a good market. Most of the time, it’s just eking out a living. But it’s the quality of the living that we like so much.”

Snyder has led a diverse life. He’s never strayed too far from an agricultural life, though he earned a degree in engineering from Cal Poly San Luis-Obispo, and worked

for a time for the Walker River Irrigation District as an assistant manager, as well as for the Lyon County School District as its information technology director.

From 1998-2002, Snyder and his wife, Cindy, and two of the couple’s three children lived in Quito, Ecuador, directing a children’s home. The experience was so rewarding, the Snyders adopted four children from the home, three of whom were special needs children. Two of the children — Michelle, 6, and Elita, 2 have passed away due to complications from their disabilities.

Today, happily, Snyder counts his biological children, Steven, 27, Sarah, 25, Jonathan, 23 — as well as his adopted children from Ecuador, Darwin, 7, and Alexandra, 13 — as part of the great bounty that his life has given him. Alexandra, with glossy dark hair and a beaming smile that could launch a thousand ships, suffers from severe cerebral palsy. But, Snyder adds, Alex is your typical teenager in almost all other respects.

“She loves to talk on the phone with her friends,” Snyder says, smiling as he sighs the

Continues on page 28

universal father's lament of having a teenage daughter. "Sometimes you can't get her off the phone."

Snyder realizes that he could be the last in a long line of ranchers and farmers from his family. Youngest son Jonathan works on the farm but will soon be putting his degree as a youth pastor to full-time use. Snyder's 2,000 or so acres could be in completely different hands at some point in the future.

"I care about this valley a great deal," he says. "I know there are many court decisions that are giving preference to environmental issues, but they're placing the rights above the livelihood of the people, and I don't think that's right. So I see (changing the agricultural lifestyle) as very detrimental to this community, and this valley."

Yet, as strongly as Snyder feels about the value of agriculture and its place in the mix of the diverse elements in the Walker Basin equation, he realizes that it is important to listen. To hear out what the researchers have to say, to read their findings and then decide what the best course of action might be. To learn potentially valuable lessons that can help an industry that on its own — aside from the issue of the health of the lake — is evolving and facing challenges. To that end, he has been working with the Nevada Small Business Development Center to determine the economic impact and to help mitigate the impact caused by losses of water for area agricultural interests.

"The more I thought about it, the more I considered it, I thought it would be good to have someone from within the valley, who knows this culture, to help with this project, so there is some understanding," Snyder says. He adds with a chuckle, "Certainly some of the people that I've talked to in the valley are very apprehensive, and think I've gone over to the dark side. But after talking to them, they understand that I do have the interests of this valley, the interests of agriculture, first and foremost."

He is intrigued by what he has heard and learned so far.



Staci Emm, a native of Schurz and a University of Nevada Cooperative Extension educator who has studied the attitudes of the residents of the Walker Basin, from the agricultural interests upstream to those who live near Walker Lake. Her conclusion: "There is a lot of common ground." To Emm's left is the white house where her grandfather once worked the land of Schurz.

AGRICULTURE ECONOMICS professors Tom Harris and Kynda Curtis hold dual appointments in the College of Agriculture, Biotechnology and Natural Resources and University of Nevada Cooperative Extension. They, along with Cooperative Extension

educator Staci Emm, a native of nearby Schurz, are in the midst of a study with clear implications for Snyder and others like him along the Walker River.

"We're looking at current cropping and watering strategies, as well as potential alternative cropping and watering strategies," explains Curtis, a friendly, brisk-speaking native of Alaska, who has been at the University for four years. "The goal is to put this information into economic models to give people an idea of how they might be able to change their irrigation strategy or change their cropping regimen and still remain profitable. We're trying to give people ideas on how they can improve what they're doing."

The first part of the study has been a survey that has been sent to more than 300 landowners up and down the Walker River watershed. Curtis has been amazed by the response: 55 questionnaires returned in little more than two weeks.

"I was afraid that people would be reluctant to be give up some of this information, but evidently we were clear that this is going to be

used for educational purposes," she says, noting that she and her colleagues have a list of about 300 alternative crops that will probably be pared down to "five or eight that would be marketable, that would work in the Walker Basin."

"Most ag producers are environmentally conscious," Curtis says. "It's very important to them that their land remains usable, which means maintaining the quality of the land. We're hoping that our study, which looks more at the supply side of the water than the demand side of the water, will help give people some options so if the water diminishes, they will still be able to maintain their way of life and their business, and maintain their land in a useful state."

Harris, who has taught at Nevada for more than 20 years and, in Curtis' words, "knows everybody in this state" because of his easy-going personality and pleasant West Texas drawl, likens a study like this to the stock market, and diversifying one's portfolio.

"It's a hot-button issue, that's for certain," Harris says of water and Walker. As is his

Walker Basin research projects to gather storehouse of data

By John Trent '85/'87, '00M.A.

custom, Harris quickly moves from the realm of the personal to that of the business model — where there is usually little or no hot-button to press. “What we want to do more than anything else is give the people who live and work there a whole range of economic alternatives ... what they can expect, for example, given the variability of prices and potential variability in yields with reduced water to Walker River and the use of low-water crops. We need to help them understand how things might go in a good year, and we need to help them understand how things might go in a bad year. Maybe the information will be more telling for a bad year, I don't know. Then they'll have a full distribution of returns, and then they can decide what they want to do.”

Emm, who graduated from Mineral County High School in Hawthorne, and then from the University before joining Cooperative Extension, based much of her master's thesis on a study of attitudes in the Walker Basin.

Emm laughs quickly, but has a thoughtful demeanor. As she strides through the agricultural fields of Schurz, she still maintains much of the athletic fluidity that distinguished her during her playing days on state championship girls basketball teams in Hawthorne in the early 1990s. Quick as a cat, she is under and through a barbed wire fence. Then, she patiently waits as two visitors from the city awkwardly turn the same graceful movement into a teetering-on-disaster limbo line.

Like Snyder, Emm's family can trace its roots in the area back through the generations.

“My grandfather was born on a ditch bank in Smith Valley,” she says, touring part of her family's holdings on the Walker River Paiute Reservation in Schurz. She points to a tiny white house in the distance. “On my dad's side, his grandmother was one of the Indians who was relocated to the Yerington Reserva-

There has already been one “first” associated with the Walker River Basin research effort, and it occurred in the spring.

Scott Tyler, professor of hydrogeology, and one of the principal investigators on a research project to develop a hydrologic decision-support tool to help guide water right acquisitions, is using a series of fiber



Photo by Jean Dixon

University hydrology researcher professors Mark Walker, left, and Scott Tyler discuss cable testing to be used in environmental monitoring of area lakes and rivers, including the Walker Basin.

optic cables that were deployed from the center of Walker Lake in August.

In an earlier test-run at Lake Tahoe, the Distributed Temperature Sensor instrument — consisting of optical fiber that is able to receive temperature information at all points along the installation — Tyler was able to show, for the first time ever, clear evidence of internal waves at the thermocline boundary that resulted from storms and high winds the day before the deployment. The thermocline is the underwater boundary between the sun-warmed top water mass and a colder bottom water mass.

Data collected from studies such as Tyler's will be critical in capturing important relationships between such factors as climate, water (both in the lake and in river stream flows and ditches), groundwater pumping and irrigation practices.

“We're very fortunate that there are

places where the two research institutions, DRI and UNR, fit together very well, and bring a lot of expertise to the table,” says Jim Thomas, research professor at the Desert Research Institute, who is serving, along with Mike Collopy, director of the University's Academy for the Environment, as coordinator of the research end of the effort. “DRI is taking the lead in watershed modeling and is also working, in Scott's case, with groundwater modeling. And then there are areas where the University is taking the lead: alternative crop schemes, agricultural economics and socioeconomic factors. This project has been a perfect fit for the University and DRI to handle.

“The bottom line is we're providing a great deal of unbiased information. It's the essence of good science: providing the unbiased information so the decision-makers can make the best decision possible.”

Other research projects include:

- Socioeconomic, political and environmental analysis of land and water rights acquisitions in the Walker River ecosystem;
- Alternative agriculture and vegetation management;
- Plant, soil and water interactions;
- Assessment of the importance of water acquisitions to the health and in-stream environment, aquatic ecology and Total Dissolved Solids loading to Walker Lake;
- Development of recommendations to maximize water conveyance and minimize degradation of water quality in Walker Lake due to erosion, sediment transport and salt delivery;
- Economic analysis of water conservation practices for agricultural producers;
- Formulation and implementation of economic development strategies to mitigate economic and fiscal dislocations;
- Development of a water rights GIS database and associated demographic, economic and property databases of the Walker Basin;
- Wild horse and burro marketing study.

Continues on page 30

tion. My grandfather came here because he wanted to own the land — that's how the family ended up here. They actually lived over there, in that little white house."

Emm, who lives on a road leading to the back side to Walker Lake, within calling distance of her parents' 100-acre property, says that there are actually many more similarities than differences between the disparate Walker interests.

"The majority of water rights holders have been in this basin for generations," she says. "So you know that their personal and economic decisions are going to be very difficult for them to make because their lives have got a lot of basin history and culture behind them.

"I think there is common ground," Emm continues. "There is a lot of common ground. I think there are solutions, but I think we need

to look at this as a kind of huge puzzle, and it's going to take a little time to fit all of the pieces of the puzzle together."

Near Yerington, only about 20 minutes away from Schurz but in some ways an entire world away, Snyder nevertheless echoes Emm's words.

"I'm cautiously optimistic about the project," Snyder says, "as long as people's minds stay open and we aren't forced to do anything that we don't want to do, I think we can figure out a hopeful solution, a potential solution."

Not long after, a Grant Smith Construction truck pulls up near Snyder's front door, to dump 10 yards of sand for Snyder's active 7-year-old son, Darwin, to play on. Darwin, with great glee, is on top of the pile before it even has a chance to settle.

"Darwin, you're not getting any of that sand

in your shoes now, are you?" Snyder asks.

Darwin grins at his father. He continues to frolic, kicking sand everywhere. Norman Rockwell couldn't have painted a more expressive or poignant picture, with a father watching his son tearing up and down the pile of sand like a small, joyful tornado, at home in the community where his family has farmed for generations.

It is a sight that clearly belongs in the Walker Basin.

Just as the sight of a healthy lake — the kind of blue desert jewel that took the breath away from a young freshman Assemblyman nearly 40 years ago — clearly belongs in the Walker Basin.

Perhaps both can continue to belong in the Walker Basin ... forever. 



The stark beauty of Walker Lake captured the attention and imagination of U.S. Sen. Harry Reid nearly 40 years ago when he was a young Nevada State Assemblyman. Today, thousands still flock each year to fish, photograph and experience the large desert lake.