

TMWA Board Meeting

Wednesday, April 17, 2013

Press Clippings

March 14, 2013 through April 10, 2013



*Ann Matya (Desert Heights Elementary School)
2010 Poster Art Contest – Third Place, Grades K-3*

Skyfall: A talk with Nevada's cloud-seeding expert

<http://lasvegascitylife.com/sections/news/skyfall-talk-nevada-s-cloud-seeding-expert>



James Tilley. COURTESY PHOTO.

Interview by LAUNCE RAKE

Jeff Tilley joined Nevada's Desert Research Institute in February as its director of weather modification. In his new job, Tilley will design and operate the institute's cloud seeding program.

It augments snowfall in mountainous regions that supply water to Nevada. One target is the mountains of the upper Colorado River basin, which provide runoff to the Colorado River, which in turn supplies Las Vegas with 90 percent of its drinking water.

DRI scientists estimate that annual augmented snow water has averaged 64,000 acre-feet during the last 15 years. That's about 21 billion gallons, or enough to supply 64,000 households (of four people each) for a year. DRI's seeding operations in Nevada are funded by the Southern Nevada Water Authority, the Bureau of Reclamation, the Western Regional Water Management Fund and the Truckee Meadows Water Authority.

What are the basics of cloud seeding?

Cloud seeding takes several forms, depending on the types of clouds that are being seeded. The types of clouds seeded are usually a function of the goal of the sponsors of seeding operations.

The overall goal of Nevada water authorities is to increase the amount of water that can be stored within reservoirs, groundwater and other types of storage. As a result, seeding activities focus on wintertime precipitating clouds. Such clouds typically contain significant numbers of suspended supercooled water droplets (liquid water at subfreezing temperatures) and quite small numbers of tiny particles (called ice nuclei) that serve as sites where ice crystals form and grow to become snowflakes.

When we seed these wintertime clouds, we introduce large numbers of particles that can serve as ice nuclei. That allows for the supercooled water to turn into ice crystals, which then grow into snowflakes large enough to precipitate to the ground.

How promising have the results been?

At DRI, we conservatively estimate that the amount of additional water mass generated by our seeding efforts averages 10 percent of what might fall without any seeding. Thus, we would add 30,000 acre feet of water to a drainage basin that might otherwise receive 300,000 acre feet without seeding.

What motivated you personally to get involved in this avenue of research?

I like to see science efforts benefitting society in tangible ways. During the past decade more of my research has focused on cloud processes as well as finding better ways to predict cloud and precipitation systems. The extension to cloud seeding efforts came very naturally, especially after participating in a cloud seeding project in Saudi Arabia several years ago.

Are there opportunities to scale up the program for bigger results?

The opportunities are really only limited by the available funding from various sources. With adequate funding, we could conceivably perform seeding on most mountain ranges in Nevada that are wide enough (more than 25 miles wide) and reach sufficient altitudes (8,500 feet or higher).

What is the goal of the cloud-seeding program? Is it expected to produce real results, in terms of increased precipitation and water into the Colorado River and Sierra Nevadas, or is the focus on research?

Our program, with the exception of one project in Wyoming, is considered operational in that getting real results is the focus. We would like to be able to do more research to optimize our efforts, but we cannot do that research at the current levels of funding.

In a similar vein, do you see yourself as a researcher, primarily, or as an engineer of the weather?

I consider myself an applied meteorologist and as such, I wear multiple hats, all of which really lead to an eventual societal gain. There are engineering aspects to the operational program, but, where possible, science research plays a role, as well. My goal as the new DRI weather modification director is to try to expand the research elements of the program such that (1) we can optimize our efforts and make them even more cost-effective; and (2) the research into cloud and precipitation systems can be applied to improve our understanding and prediction of the Earth climate system which we, as mankind, both inhabit and modify.

Is global climate warming a real phenomenon, and is it driven by anthropogenic forces?

The evidence for a warming climate on the whole since industrialization has continued to mount, and it has become generally accepted by most in the atmospheric-science community that the warming is real and not an artifact of the data analysis. However, because the climate system, and its components (atmosphere, ocean, sea ice and land) are dynamic, nonlinear systems separately and in the whole, one cannot expect warming to be easily depicted by a continuous linear trend. This also clouds (pun intended) the assignment of part, or all, of this warming to anthropogenic forces. We know enough about atmospheric chemistry to know that the "greenhouse effect" is a real process that can affect the climate as postulated, but it is not the only process operating. A longer data record than we currently have is required to definitively attribute a specific percentage, or all, of the real warming trend to anthropogenic forcings. Until then, we can say anthropogenic greenhouse forcings exist and are one mechanism that is operating to modify the present climate.

There has been quite a bit of discussion in the popular media about "hacking the planet,"

about the idea that we as humans have made massive changes to our environment, and so we need to consciously intervene. Isn't that what you and your colleagues are doing? And is this the future for mankind on Earth?

While cloud seeding represents a conscious effort to modify the weather, one can't necessarily consider it a response to other changes that may or may not have occurred at the hand of mankind. Even without any anthropogenic climate forcings, humans may well have chosen to dwell in desert climate zones and put stress on water resources, and cloud seeding would still have been done. Whether this is the future for mankind is not for me to say ... it depends on the interaction of future climates with socioeconomic patterns and forcings that are difficult to predict over time.

Isn't there an inherent danger in muddling with the weather? That is, weather and climates appear to be huge systems. If we change one thing, be it more snow in the Rockies or a butterfly's wings in the Amazon, isn't there the possibility of unforeseen consequences?

While it is true that the atmosphere and the climate system are nonlinear, chaotic systems, there are many aspects of atmospheric behavior that, on certain scales, can be considered more deterministic and linear — an aspect that was not presented well in the movie *The Butterfly Effect*, which helped to popularize chaos theory. Modern cloud seeding operations work on a small enough scale that the behavior is more deterministic and linear, such that the largest positive impacts are local.

Cloud seeding seems to be an expensive fix for the water problem.

Cloud seeding is actually much less expensive and [more] cost-effective, compared to the alternatives, than is sometimes believed.

DRI's cloud seeding efforts cost an average of \$12 per acre-foot. By contrast, water authorities' costs to deliver water range from \$70 to \$100-plus per acre-foot. Desalinization plants cost hundreds of millions to build and operate; Saudi Arabia has built several in the past but has now turned to seeding operations, since they cost two to three orders of magnitude less per year to operate. Pipelines are also much more expensive to maintain than seeding operations and ultimately don't add water to the system, they simply redistribute it. Voluntary conservation efforts are difficult to be effective due to nonuniform compliance, while mandatory conservation costs more per capita in terms of enforcement costs, fines and potential negative economic consequences to the community (individuals and businesses leave or are deterred from entering the community due to prohibitive costs). Of course, one could simply say that people shouldn't live in areas where water resources are scarce, but it's too late for that.

Cloud seeding has demonstrated itself as a cost-effective approach to water management, as can be testified to by communities in Nevada (e.g., Reno, Carson City, Elko, Battle Mountain, Winnemucca) that have benefited from seeding operations.



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This article may be read online at:

<http://www.newsreview.com/reno/content?oid=9422755>

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High, and dry

By Bruce Van Dyke

It was just two years ago. The Sierra Nevadas were positively pounded with frozen water. Snowpacks were hyper healthy. I remember that bounty of the winter of 2010/2011, not in terms of skiing fun, which I'm sure was titanic, but in terms of summer drives on highway 120 from Lee Vining up over Tioga Pass into Tuolumne Meadows. Yosemite was just bursting at the seams with water, leaking all over itself, and it was a marvel to behold. It was one of those fantasy times, that August 2011, with rivulets trickling, brooks babbling, creeks gushing and rivers churning, all flowing into one another, doing their circulatory thing. It was all drippy and sloshy and gooshy—unsafe for crocs/sneakers!

Driving along Highway 395 this past week, that all seems like a long time ago. Like two years ago. Man, we're lookin' at a dry one this year. The mighty Southern Sierra, the tallest mountain range in the lower 48, the monstrous wall of granite that takes the most brutal, drenching, stormy haymakers that roll in from the Pacific, and then shakes itself off in the sunsoaked morning that inevitably follows and dares to say, "Is that all you got?"... Well, those peaks just don't have much going for them this season. Pretty dang lean scene, snow-wise. And the fantastic White Mountains, that hefty range directly east of Bishop, home of the world's most impressive garden of the some of the planet's oldest plants, the bristlecone pine, and capped by the peak called White Mountain King, which tops out at 14,264 feet, only 231 feet shorter than famous Mt. Whitney, which looms from the other side of 395 west of Lone Pine. The Whites this year are downright brown with about as much snow as your average Lemmon Valley back yard.

Which, you know, sorta sucks. I mean, it's looking like a big summer for chapstick and cracked earth and water cops. Oh sure, we may still catch a break and get a few

good rainstorms in April/May. You never, after all, know. I just got the feeling during my drive that we in The West are very much like a guy who lives, hydrologically speaking, from from paycheck to paycheck. But then, that's been our reality for longer than we care to admit.

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OK, I think it's now officially a trend, not a fad. More and more people cancelling their landlines and opting to go with their smart phones only. I understand. It's a good way to reduce the monthly nut. I get it.

But man, I just can't pull that trigger. There's still something superior about talking on the landline. It's just better. Must be that satellite lag in the cell phones? Or somethin'. But it's just more of a stress to chat on the cell. So like an old geezer who blathers on endlessly about the days of 50-cent gas and 10-cent stamps, I just gotta keep that landline.

•

Sierra snowpack is subpar for second winter in a row (watch video)

Written by Jeff DeLong

Apr 01

rgj.com



Snow surveyors Dan Greenlee, left, and Ed Blake check the water content of the snow near the Mt. Rose Highway summit Monday morning.

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Snow surveyors Dan Greenlee, left, and Ed Blake check the water content of the snow near the Mt. Rose Highway summit Monday morning. / Photo by Tim Dunn/RGJ

Tahoe City precipitation, January through March

• 2013: 2.68 inches.

1• 976: 3.62 inches, previous driest record.

Average: 16.3 inches.

Source: National Weather Service.

The traditional snow season ended Monday with the mountain snowpack at only a little more than half of where it should be for this time of year, with a second dry winter setting the stage for another summer of drought.

After a hefty December for snowfall had hopes high for a big winter, nature turned off the tap. January through March was the driest on record for the three-month period dating back more than a century in Tahoe City.

“It’s pretty sad, a pretty sad ending,” Dan Greenlee, a snow surveyor for the U.S. Natural Resources Conservation Service, said of conditions Monday. April 1 is typically considered the date at which the snowpack is at its peak and the time at which runoff and water supply forecasts for the coming summer are based.

Greenlee Monday conducted his final snow survey for the year at a site at Mount Rose-Ski Tahoe, finding 6 feet of snow with 30 inches of water content. That’s a snowpack there of about 83 percent of average for the date and one of the better readings found across the region.

On average, Greenlee said, the Sierra snowpack is between 50 to 70 percent of where it should be on April 1. The Lake Tahoe Basin’s snowpack Monday was “a pretty dismal” 52 percent of average.

“It’s real similar to last year, a little worse at Tahoe and Truckee,” Greenlee said.

Without a doubt, it’s a big letdown after December produced a snowpack at nearly 200 percent of average in places.

“We were up here three months ago talking about what a great year it was, how wonderful it was, what a spectacular start to the year it was and it’s just been downhill since,” Greenlee said. “It’s just been a pretty bleak year.”

Runoff from melting snow this spring and early summer is expected to be less than half normal on the Truckee River and in the Lake Tahoe Basin, Greenlee said.

The situation is decidedly worrisome for Nevada ranchers who struggled through an exceedingly dry summer of 2012 and are now poised for a repeat performance. Some projections estimate that Fallon-area ranchers and growers might expect only about 70 of normal water supplies, said Doug Busselman, executive vice president for the Nevada Farm Bureau.

“It doesn’t look real good right now,” Busselman said, adding that he’s hopeful some rain showers will come, allowing grass to grow for livestock grazing.

“I don’t know how many more of these kind of winters and summers we can stand,” Busselman said.

Truckee Meadows Water Authority workshops begin in April

*Written by Staff report
Mar 31*

rgj.com

Join Truckee Meadows Water Authority's conservation staff for free workshops and tours this year.

Prepare for the upcoming seasons with TMWA's Irrigation System Start-up on Wednesday or April 9. Both hourlong workshops start at 5:30 p.m. at TMWA's offices, 1355 Capital Blvd. in Reno.

TMWA's conservation specialists will take participants step-by-step through the process of properly preparing their irrigation system for the summer months.

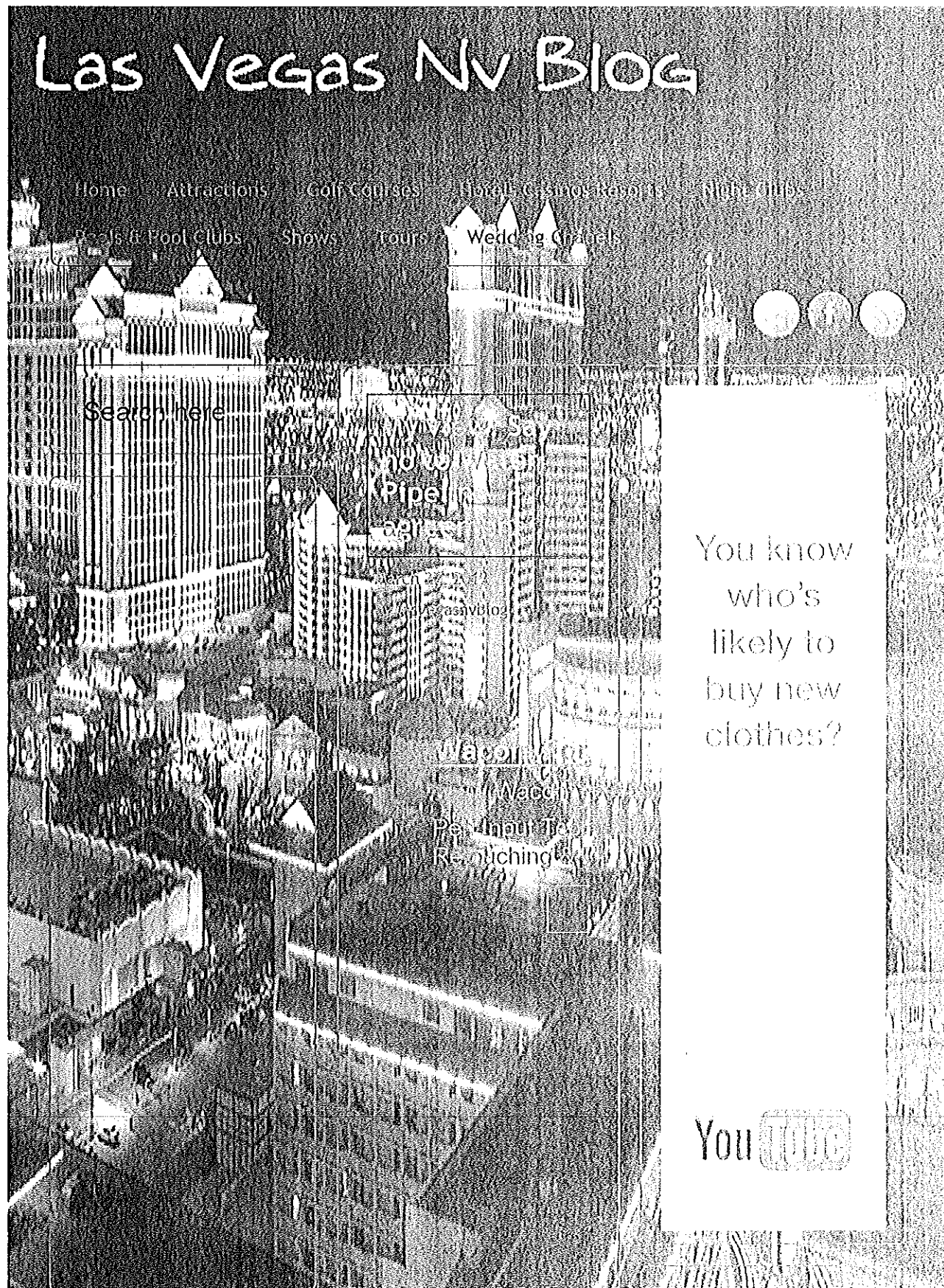
On April 13, attend the Landscape Planning and Design Workshop from 9 a.m. to noon. Learn how to plan and design water-efficient home landscaping. Participants will learn how to create a site-analysis diagram of their home grounds, develop a program for their needs and create a conceptual landscape plan.

In celebration of Arbor Day, participate in a self-guided tour April 26 covering multiple locations at which participants can see noteworthy trees in our area. Participants can then join a group discussion at 3 p.m. at Rancho San Rafael Regional Park.

Participants may start whenever they want and take as long or as little as they want. The tour should take anywhere between one and three hours. Participants can then join a group discussion at Rancho San Rafael Park at 3 p.m.

All workshops are free and open to TMWA customers. Space is limited and reservations are required for all events. RSVP to conservation@tmwa.com or by calling 775-834-8290.

For more information about water-efficient landscaping and conservation or TMWA's workshop series visit www.tmwa.com or www.tmwandscapeguide.com.





<http://www.lasvegasnblog.com/2013/03/my-view-say-no-to-water-pipeline-agreement/>
My view: Say no to Water Pipeline agreement

A cow grazes near a fence in the - valley. Snake Valley aquifer water sharing agreement under consideration by NV & Utah officials. Monday, Oct. 19, 2009. Photo by Scott G Winterton Deseret News.

Scott G. Winterton, Deseret News

Enlarge photo»

As almost every Utah resident knows, we have suffered the - nation's worst air pollution for long stretches during much of this past winter. Our pollution has brought us national & international scrutiny from The New York Times, the - Wall Street Journal, Yahoo News, Huffington Post, Associated Press -- Reports & all the - national TV networks, in addition to the - Fox Business Channel. Even during an average year, most of the - biggest cities in Utah rank in the - top ten worst cities in the - country for acute spikes in pollution. In January, over 200 physicians & health care professionals signed a letter asking Gov. Gary Herbert to declare our air pollution a public health emergency. Nonetheless, Utah's governor & Legislature finished the - recent session without passing any meaningful air pollution bills.

But our air pollution is not limited to winter inversions. Nothing speaks to in that more than what is waiting on Gov. Herbert's desk right now, for a thumbs up or thumbs down, which he has stated he will donate by April 1. I'm referencing to the - Las Vegas/Snake Valley Water Pipeline agreement. If he signs, he will set in motion what is likely the - worst ecological/public health disaster in Utah's history. His closest advisor has-been publicly making the - case for him to sign, & he seems poised to do so, unless massive citizen opposition is mounted. For Deseret News readers who might consider becoming part of in that opposition, here is the - back story:

Many years of time ago, Las Vegas NV decided to push for growth they knew could not be sustained with the - water available to them. As reported in the - Las Vegas NV Sun, the - LA CA Times, Bloomberg News & Channel 8 TV Las Vegas NV News, "Sin City" crafted a deliberate strategy to grow beyond their Colorado River water allowance, making a high stakes gamble -- it comes natural to them -- in that they could force neighboring states and/or other parts of NV in to giving up their water. They were excoriated by the - national press, yet then proceeded to quietly

assemble the - water rights for a \$15 billion dollar “straw” to drain the - ancient aquifers under central NV & western Utah & ship the - water to their resorts, fountains & golf courses.

It turns out in that farmers, ranchers & Goshute Native Americans bravely making a living in the - desert of the - Northern Great Basin must survive on the - same water in that Las Vegas NV intends to plunder for economic growth. The wildlife & native vegetation moreover need in that water to survive. If they disappear, the - West Desert will be transformed in to the - Sahara Desert, a source of eternal, choking, deadly dust storms. And in that is absolutely what has happened after water diversion projects in Owens Valley, California & the - Aral Sea in Uzbekistan.

Scientists not employed by Las Vegas NV warn in that an area the - size of the - state of Vermont would be denuded of native vegetation, the - water table will drop hundreds of feet, springs will dry up, the - greasewood plant — — the - critical anchor for keeping desert surface soil intact — — will disappear, rural communities will be devastated, & massive regional dust storms will ensue & never stop.

The \$15 billion dollar “straw” is only a one time source of water. Once the - aquifers have been depleted, in 50 years of time they’ll have an even worse water deficit than they have now, 'cause Las Vegas NV will be even bigger, yet with no more water than when they started. Long term, it is a recipe for disaster for both NV & Utah.

One of the - main aquifers in that Las Vegas NV wants lies under Snake Valley which straddles the - Utah/Nevada border. NV must have Utah’s permission to start siphoning in that water to Las Vegas. It is in that permission in that sits on Gov. Herbert’s desk. It is in that permission in that thousands of diverse individuals & groups have filed comments in opposition to.

Utah residents have only a few days left to tell the - governor in that he does not have our permission to let Las Vegas NV smother us with dust from the - West Desert. Utahns are not willing to die for the - sins of Las Vegas.

Brian Moench is the - president of Utah Physicians for a Healthy Environment & a member of the - Union of Concerned Scientists.

Original Source here [Cached]

Denver Water approves mandatory watering restrictions because of drought

Denver Post staff/The Denver Post
Posted:

DenverPost.com

On Monday, Denver returns to a low-water lifestyle that many haven't experienced in more than a decade.

The Denver Board of Water Commissioners on Wednesday declared a Stage 2 drought, with mandatory restrictions on lawn irrigation, hotel laundry, car washing and other nonessential uses.

Residents may water lawns only twice weekly. Restaurants can serve water to customers only when asked. Lodging establishments can wash sheets for long-term guests no more frequently than every four days, unless the customer makes a request.

Cars may be washed only by using a bucket or a hand-held hose equipped with an automatic shut-off nozzle. Fleet and commercial vehicles may be washed only once a week.

Water-watchers say this drought is worse than in 2002, the last time Stage 2 restrictions were enacted.

"We've had two years in a row," said Denver Water spokeswoman Stacy Chesney. "In 2002 it was pretty bad, but then the blizzard of 2003 came."

Other municipal water providers, like Aurora Water and Colorado Springs Utilities, are expected to also decide on Stage 2 drought restrictions. The city of Castle Rock on Wednesday extended its water restrictions by a month, to last June 1 through Sept. 30.

About 16 billion gallons of water must be conserved by Denver Water customers by next spring to prevent going into Stage 3 drought, which would ban all turf watering, except on high public-use areas.

This month's snowfalls did not slake the drought — an additional 7 feet of snow would be needed in the mountains by late April, Denver Water CEO Jim Lochhead said.

The state's reservoirs have not been full since July 2011. Snowpack in the South Platte and Colorado River basins, Denver's main water sources, are at 59 percent and 73 percent of average, respectively.

Denver's water cops will begin to issue fines to scofflaws, starting at \$250.

Under the restrictions, single-family homes with addresses ending in even numbers may water Sunday and Thursday. Single-family homes with addresses ending in odd numbers may water Saturday and Wednesday. All other properties can water Tuesday and Friday.

Lawn irrigation is prohibited between 10 a.m. and 6 p.m.

To encourage conservation, temporary drought pricing will begin on June 1, boosting bills by about \$6 a month for people who don't conserve.

The first 6,000 gallons used each month by single-family residences will not be subject to drought pricing. About 70 percent of homes use 18,000 gallons each month in summer.

Denver Water also is asking customers to think before turning on the tap.

While mandatory restrictions allow for twice-weekly lawn watering, once a week could be enough in April, typically a cool month with some rain and snow.

And while April is a good month to set up automatic sprinkler systems, the utility advises hand-watering dry areas of the lawn can save precious water.

Opinion

Wednesday, April 10, 2013 | Last Updated: 03:32 pm

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Say no to Las Vegas

Snake Valley has no water to share

First Published Mar 27 2013 01:01 am • Last Updated Mar 27 2013 01:01 am

Gov. Gary Herbert needs to be ready to use every tool in the kit to fight the designs of Las Vegas water merchants to start draining the border-straddling Snake Valley. But the agreement he is being pressured to sign, which supposedly protects Utah's interest in that area's water, is less a weapon than a white flag of surrender.

The governor should not sign.

Las Vegas, the city that's never slaked, is supplied by the Southern Nevada Water Authority, an agency that exists for no other purpose than to ensure that a city that sits in the middle of a desert never lacks for dancing fountains and green golf courses. It is pushing for the acquisition of water rights, rights of way and other permits and agreements that would help fill a proposed \$15.5 billion, 300-mile, pipeline

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with water drawn from the north and east.

The agreement SNWA has set before Herbert is portrayed as a "water sharing" agreement concerning groundwater in the Snake Valley, an aquifer that ignores political subdivisions and sits on both sides of the Utah-Nevada border. But calling it an agreement to share water in an area where there is not enough water to share makes no sense, and should tip us off to the dangers that lie ahead if Utahns were to ratify the pact.

Some of Herbert's top advisers, including Mike Styler, director of Utah's Department of Natural Resources, are recommending that Utah sign because the deal includes promises from SNWA that it would delay its quest for Snake Valley water rights and agree to a system of monitoring wells that would, in theory, require the faucet to be shut off if it can be shown that the groundwater supply is being drained faster than it is being regenerated.

But the area in question is so arid that it would be hard to imagine that any significant drawdown would not amount to "mining" this limited resource. And there is no way that SNWA could be expected to simply stop its consumption once begun, no matter what the monitoring wells might say.

Even without factoring in the impact of global climate change, any substantial removal of water from the Snake Valley is likely to cause a stark change in the area's ecosystem. A 21st century dust bowl, with clouds of particulates rising to foul the air as far away as Salt Lake City, is a very real likelihood.

For SWNA, or for Utah, to fight over their "share" of the water in the Snake Valley ignores the fact that disrupting the delicate balance of the area threatens a major environmental disaster.



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Before Watching This Video. Important Info For Nevada Residents
by CogburnLawOffices on YouTube

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Water a life-and-death issue for Snake Valley Agreement » Herbert poised to make pivotal decision regarding water sharing with Nevada.
By Brian Maffly

| The Salt Lake Tribune

First Published Mar 27 2013 01:01 am • Last Updated Mar 27 2013 01:22 pm

Garrison » The Snake Valley doesn't have a lot of trees. Looking across this expanse bordered by some of Nevada's highest mountains, it's not hard to see where the earth gives up its groundwater. Look for trees and willows.

Natural springs lace parts of the valley, nurturing a local economy based mostly on agriculture. Groundwater spells the difference between prosperity or bust for dozens of ranching families scraping a living along the Utah-Nevada state line.

"It's the limiting factor here," third-generation Snake Valley rancher Dave Baker says. He lifts the lid on a box covering a spring. Inside the box, equipment measures the stream's outflow as part of a Utah Department of Natural Resources monitoring program intended to guide future groundwater development here.

Baker points to springs like this to illustrate the fragility of the arid environment and how wet spots like this function as "a canary in the coal mine."

"It shows how vulnerable we are," he says. "We are the first ones to be impacted."

Interstate standoff » This life-giving stream emerges from the same hidden resource Las Vegas wants to tap to feed the gambling metropolis' future growth. The Southern Nevada Water Authority (SNWA) is securing the necessary approvals to obtain water rights in Snake Valley and four nearby Nevada valleys, build a 285-mile pipeline that could cost up to \$15.5 billion and fill it with thousands of acre feet of water sucked from aquifers.

The proposal has prompted a multi-year standoff between the nation's two driest states, which are also among its fastest growing. Directed by Congress, Utah and Nevada drafted an agreement four years ago to divide Snake Valley's water equally and install safeguards to prevent overtapping the groundwater.

Gov. Gary Herbert intends to decide by April 1 whether to sign the agreement. At meetings in the West Desert communities of Eskdale and Partoun last week he and top aides explained to skeptical residents why this agreement could serve their best interests.

"I would say no [to the Las Vegas pipeline] in a heartbeat, but I can't do that. The agreement is a step in the right direction," Herbert said. "I can't stop the pipeline. That's a decision [Nevada] will make independently of us."

- UTA considering abolishing its police department
Published Apr 10, 2013 03:27:02PM

- **BYU football: Boise State football game moved to Oct. 25**
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- **College football: Colorado QB out for season with torn knee ligament**
Published Apr 10, 2013 03:19:03PM
- **Hike of the week: Davis Creek trail**
Published Apr 10, 2013 02:38:32PM

No one has worked as hard as Baker's 73-year-old father, Dean, to thwart what many are calling Las Vegas' "water grab." But now the Bakers believe Herbert's signature on the agreement could offer the best chance to stop the pipeline, or at least contain the damage it might cause.

Without the agreement Vegas could be free to seek the Snake Valley water rights and develop them without consideration of the environment or Utah's concerns, the elder Baker told his neighbors last week.

But many others, including Millard County commissioners and environmentalists, fear the agreement cedes Utah groundwater to Las Vegas that cannot be removed without dire consequences to both the land and its residents.

Is the water there? » The agreement specifies that 132,000 acre feet can be extracted each year, but several observers believe that number is a political fiction and the actual water available could be far less. (An acre-foot, or 326,000 gallons, can support two to four homes annual water use.)

If Herbert signs the deal, the SNWA would agree to wait 10 years before applying for the water rights.

Critics say the agreement gives Las Vegas the green light to send up to 35,000 acre feet south each year.

But if it becomes evident that Vegas' pumping is harming the environment or "mining" the aquifer, then the water authority would be required to mitigate the damage and reduce its withdrawals, the governor and his advisers assured EskDale residents last week.

"That's absurd. [Las Vegas] would spend billions on a water project and then just turn it off?" responded Zach Frankel, of the Utah Rivers Council.

Frankel's group is part of a consortium imploring the governor to not sign the agreement. In a joint statement, the environmental groups said the agreement could set in motion a project that could wreck Snake Valley's desert ecosystems, devastate its ranching communities, and send clouds of dust into the Wasatch Front's already dirty airshed.

But water authority officials say such opposition is based more on ideology than facts. The bi-state agreement is "extraordinarily protective" and guarantees the water rights of existing water users, according to SNWA spokesman J.C. Davis.

"I feel badly that they are so concerned about this," Davis said. "There is nothing that our agency can say that will assuage their fears. ... The idea that the water authority, even if we

were inclined to do something environmentally destructive, that we could thumb our nose at state and fed government is preposterous."

A family enterprise » Fred Baker moved his family from Delta to the Snake Valley in 1955 and took over two ranches, including one that already — coincidentally — bore his family name. Today three Baker grandsons — Dave, Tom and Craig, with nine children between them — run the Baker Ranch, which employs 25 tending 1,700 head of cattle and growing hay, alfalfa and corn. The family controls five federal grazing allotments, totalling about 500,000 acres where they winter the cows and produce about 850 calves each year.

In the spring, the ranchers drive their cattle off the federal range to private holdings on productive lands on both sides of the state line near Baker, Nev., and Garrison, where they irrigate with a combination of well, surface and spring water.

For years, the Bakers have rebuffed buyout offers from the water authority, which has amassed water rights in neighboring Spring Valley.


"It's not rational for us to not sell and go away, but that's how we are," Dave Baker says. His youngest son, 20-year-old Clay, intends to return home to ranch after finishing college in Wyoming.

"This is a great place to raise kids. That's the main point of it. They enjoy all the freedom out here and learn to be hard workers and independent," Baker says. "That's why we don't want to sell. My son would disown me if we sold. It doesn't matter how much money we get."

bmaffly@sltrib.com

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By J. Patrick Coolican (contact) 

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Here's the question everyone here at the Legislature is asking: What's Michael Roberson's game?

The question arises because twice in the past two weeks the Republican Senate leader has taken on powerful interests. First, he sprang a surprise when he proposed eliminating the mining industry's protected constitutional tax status and offering a mining tax alternative to the business margins tax that will likely go to the voters in 2014.

Then, he proposed legislation that would have the Public Utilities Commission oversee the Southern Nevada Water Authority instead of its current board of elected officials, who are seen as usually doing the bidding of the water authority. This was seen as a direct attack on the water authority's powerful manager, Pat Mulroy, who has influential allies on the Las Vegas Strip.

So, first he takes on mining and its bevy of lobbyists without much of a heads up to his fellow Republicans and friends of mining in the Assembly, and then he challenges the water boss who is a friend of Big Gaming.

"Too many people in this building play it safe," he told me.

Roberson said he thinks the mining policy is the right one, and it helps that a tax increase on mining has widespread support among voters in the south.

On water, his legislation is a response to the water authority's rate hike last year, when small and medium-sized businesses (read: Las Vegas Metro Chamber of Commerce) thought the game was rigged against them in favor of residential and big (meaning Strip) water customers.

"I wanted at the very least to start the discussion," he said. He said the board's elected officials are too often being spoon-fed data and analysis from the water authority and the utility commission would be better suited to regulate water. "Water is scarce. If rates will continue to go up, we need an open and fair process" for future rate increases and other important water policy issues, he said.

Here in the capital, not much is taken at face value, so no one believes that Roberson's just doing what he thinks is best for his constituents, and/or that he's trying to find common ground with Democrats because he wants to get things done and make sure Carson City doesn't become like Washington, D.C. After all, last session he was a conservative bomb thrower.

I asked a bunch of experienced lobbyists, longtime observers of the process, and no one quite knows what he's up to.

"I'm not sure I can gauge anything that he's doing," said one.

Another, who is one of the most hardened cynics of all — and I know a few — is baffled that Roberson is being so aggressive, grabbing headlines when everyone knows it's the inside game that matters. And when it comes to the inside game, he's angering a) his own party, b) Democrats who are embarrassed that he's stealing their issue, mining, and c) Mulroy.

My best guess is that he wants to establish some populist, pragmatic bona fides to help Republicans begin the long process of broadening their base beyond white men in a state that looks increasingly diverse and Democratic.

Roberson told me he wanted to be "crystal clear that I won't support cuts to education," which is the kind of talk pleasing to all those parents who live in his suburban Henderson district. He's up for re-election in 2014, but, of course, he says that's not on his mind.

But there's another aspect of electoral politics he may need to consider: a primary challenge.

"He wasn't here when Ann O'Connell lost to Joe Heck," a lobbyist noted to me dryly, referring to the conservative state senator who lost a Republican primary after she crossed the gaming industry.

"Could a Tea Partier run to the right of him?" the lobbyist asked. "I should think."

This sounds to me like an unsubtle message that the senator may need to watch his back.

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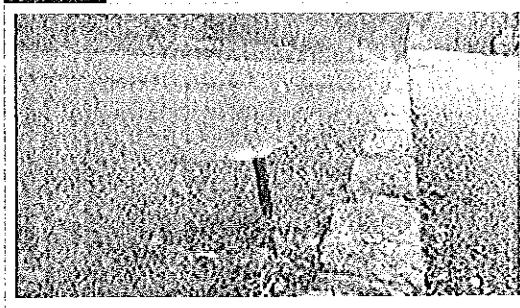
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TMWA offers free workshops on irrigation

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RENO, Nev. (KARNV & MyNews4.com) -- Truckee Meadow Water Authority is offering free workshops on irrigation systems.

TMWA's Irrigation System Start-up will be held on Wednesday, April 3 or and Tuesday, April 9. Both hour-

long workshops start at 5:30 p.m. at TMWA's offices located at 1355 Capital Blvd. in Reno. TMWA's Conservation Specialists will take participants step-by-step through the process of properly preparing their irrigation system for the summer months.

On Saturday, April 13, attend the Landscape Planning and Design Workshop from 9:00 a.m. to noon. Learn how to plan and design water-efficient home landscaping. Participants will be shown how to create a site-analysis diagram of their home grounds, develop a program for their needs and create a conceptual landscape plan.

In celebration of Arbor Day, Friday, April 26, participate in a self-guided tour covering multiple locations at which participants can observe some of the more noteworthy trees in our area. Participants can then join a group discussion at Rancho San Rafael Park at 3:00 p.m.

All workshops are free and open to TMWA customers. Space is limited and RSVPs are required for all events. RSVP to conservation@tmwa.com or call 834-8290.

For more information about water-efficient landscaping and conservation, TMWA's workshop series please visit www.tmwa.com and www.tmwalandscapguide.com.

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Nevada goes all in on 'big data'; move to impact local economy

Written by Jason Hidalgo
Mar 24

rgj.com

Ah, yes, those pesky, pushy marketers.

Thanks to the advent of sophisticated data-crunching technology, the private sector has succeeded in categorizing and compartmentalizing consumers into neat little pockets based on their buying behaviors and spending habits.

For many folks, being a statistic in such prized data sets used to be their most immediate connection to huge and complex clusters of information known as “big data.”

Like Kevin Bacon, however, the degrees of separation between these large data sets and people keep shrinking. These days, anyone with a Facebook account already is part of an ongoing experiment involving the use of big data.

Big data’s influence is only going to get, well, bigger.

Long the domain of well-funded researchers, private companies and the federal government, the sophisticated use of massive data clusters is now starting to get play within states and cities as a tool for driving policy and economic development.

This includes Nevada, which has ramped up its stake on this increasingly popular destination on the information superhighway.

Thanks to a slew of data-crunching initiatives — including new high-profile projects backed by technology heavyweights such as IBM, the Silver State now is betting big on big data.

If everything goes as planned, data sets will play a huge role in decisions that affect the lives of every Nevadan, from economic development and the creation of new communities to access to that “high-quality H2O” Bobby Boucher keeps raving about in the movie “Waterboy.”

“Big data isn’t just a trend; it is the future,” said Stephen Wells, president of the Desert Research Institute. “It has the potential to fundamentally change our economy and the way we do scientific research (as well as) the way we live.”

Data democratized

Big data basked in the spotlight at the start of the new millennium when scientists successfully mapped the human genome. The feat, which required sequencing the 3 billion base pairs that comprise the human DNA, took about a decade to complete.

Fast forward to 2011. The computing grid for the Large Hadron Collider successfully gathered data from 400 trillion proton-proton collisions in just 180 days. The collider is now being credited for the potential discovery of the Higgs-Boson or “god particle,” a key find in explaining the origins of the universe.

Despite all the potential behind big data, cost historically has been a major barrier to its widespread adoption. Thanks to the rapid pace of technological advancement, however, advanced data sets are now in reach even for the traditional have-nots.

“You have higher speed networks and faster computing and storage has also become so cheap,” said Tom Jackman, director of the Center for Advanced Visualization, Computation and Modeling at DRI. “You have all this convergence of technology that makes the timing quite right for (more widespread use) of big data.”

The beneficiaries include state and local governments. Already rabid collectors of all kinds of information from population growth to public infrastructure, local agencies can use big data to take their analysis to the next level, said Maureen McKissick, strategic development administrator for the city of Reno.

“We have an enormous amount of data but didn’t have any intelligent methodology on how to use them,” McKissick said. “We just had no analytic way to take all that information and make it tell us what we need to know.”

It’s a phenomenon often described as “too much noise, too little signal” in data circles, McKissick said. It’s also the driving force behind Reno’s selection as one of 100 recipients for the IBM Smarter Cities Challenge.

In addition to receiving a \$400,000 grant from the technology giant, the city will receive support from IBM to put together a database with relevant information on metrics such as transportation, real estate and utilities to help policymakers make data-driven decisions.

“In most cases, you don’t even need to create new sets of data,” McKissick said. “You just need to harness what you already have.”

Commercializing research

Nevada’s big data initiatives got another boost this month after its Board of Examiners approved a contract with IBM that lays the groundwork for the state’s first Center of Excellence. The center will specialize in water-related research, including water quality and resources.

Gov. Brian Sandoval quickly lauded the approval, noting the state’s expertise in environmental research.

“We have good scientists here already, but we didn’t have anywhere near the computer power that we’re going to have now,” Sandoval said. “This will be important for workforce development in the state ... and create opportunities for commercializing some of the research being done here.”

Big data also is playing a big role in another Silver State project, the Nevada Climate Change Portal.

Tied to a long-term climate monitoring network for the Great Basin, the portal uses archived and real-time environmental information to provide geospatial data — which applies analytical tools on geographic data — to the public.

Although both projects have a research bent, they could open opportunities in the “new economy” that Nevada has been trying to build since the great recession. Water issues, for example, will become a big factor in the future as the growing global population puts a strain on the resource.

“It puts us at the forefront of the water conversation ... and addressing the national and global challenges that lie ahead,” Wells said. “It’s also a chance for Nevada to transform itself from a follower into a leader, and accessing global markets through the partnership with a leading and globally respected multinational (company like IBM).”

The next resource

One of the more personal impacts of big data, however, is in shaping communities.

Even before the arrival of the Smarter Cities and Center of Excellence projects, local agencies already were kickstarting their own big data initiatives.

Following Nevada’s emphasis on a collaborative approach to economic development statewide, the Truckee Meadows Regional Planning Agency was at the forefront of two projects revolving around the use of large data sets.

One is its Data Viewer project, which takes business information and overlays it on a map to create geospatial data to potentially identify business clusters. These include information on which businesses are here and where they are located, what sectors or industries are represented in the area, and potential supply chain options — important data when attracting businesses to the region.

The second is the Industrial Land Needs Analysis project, which is being done in conjunction with the Regional

Transportation Commission, the Western Regional Water Commission and the Economic Development Authority of Western Nevada.

The project especially is useful for answering questions related to development and planning. Examples include figuring out if the region has the appropriate amount of land available for the industries it is trying to attract and what it would take to get those up to the levels the area needs.

“We actually have never done an industrial land-needs analysis before, so this is something entirely brand new,” said Kim Robinson, executive director of the Truckee Meadows Regional Planning Agency. “We’re a big fan of data-driven decisions and making sure all the players making those policy decisions are as well-informed as possible.”

That kind of factual backup is invaluable when making decisions on issues that directly affect the community, McKissick said. Approving new developments or deciding allocations for public infrastructure, for example, can often lead to emotionally charged debate.

“Right now, when we make decisions, we look at things based on what we understand but don’t look beyond that in a proactive way,” McKissick said. “This gives us facts so we’re operating on the basis of data and not assumptions. This is all information we’d like to know ourselves.”

Skeptics might dismiss some of the Nevada projects revolving around big data as “pie in the sky” talk. Not jumping on the big data train now, however, can have serious consequences for the state’s economic future, Jackman said.

In 2011, the McKinsey Global Institute released a widely cited report that called big data the next frontier for innovation, productivity and competition. Jackman agreed, describing it a disruptive force that can fundamentally change markets.

“Big data is a resource, and right now we’re underusing it,” Jackman said. “Essentially, big data will create a new digital divide, and you’ll either be on the right side or the wrong side. It’s really important for Nevada to be on the right side of that divide.”