

Watershed Connections

Delivering News from the Carson River Watershed Community

Photo by Juan Guzman

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Monarch Butterflies in the Carson Valley and Beyond

By Duane Petite, The Nature Conservancy

The Nature Conservancy teamed up with the Monarch Joint Venture, the University of Minnesota Monarch Lab and the Southwest Monarch Study group in June to host a two-day Monarch workshop at the Conservancy's River Fork Ranch preserve in the Carson Valley. The free public workshop was made possible by a generous private donation coupled with funding from the United States Fish and Wildlife Service.

FUN FACTS:

- The average weight of a Monarch Butterfly is 0.5 grams; that's about the same weight as a paper-clip!
- Monarch AA186, tagged and released at River Fork Ranch, was later spotted in a Santa Cruz colony on Monterey Bay.

The funding also supported the purchase of native milkweed seed from local seed company, Comstock Seed. The milkweed seed was planted to enhance monarch habitat at River Fork Ranch and in the schoolyard habitat area at Gardnerville Elementary School, as well as the Conservancy's McCarran Ranch preserve on the lower Truckee River.

Monarch butterflies depend on milkweed as a nectar source and because it is the only plant species on which they lay eggs. Scientists suspect that declining numbers of milkweed plants

across North America is part of the reason that monarch populations have declined by as much as 90 percent over the last two decades.

River Fork Ranch is a designated Monarch Waystation for migrating monarchs and offers a great site for a workshop focused on basic monarch biology, the monarch annual cycle, citizen science monitoring programs and butterfly tagging techniques. Images from the recent workshop at River Fork Ranch including photos of citizen scientists tagging monarchs are posted on flickr at <https://flic.kr/s/aHskaEZMN7>. To learn about upcoming workshops, check the events section at <http://monarchjointventure.org/>. For more about the monarch monitoring project at River Fork Ranch visit www.nature.org/carsonmonarchs.



Monarch tagged and released at River Fork Ranch
Photo by Duane Petite

2015 Markleeville Creek Day – Highest Turnout Ever!

By Nicole Lutkemuller, Alpine Watershed Group

The Alpine Watershed Group held its 16th Annual Markleeville Creek Day on Saturday, September 12, 2015. **Seventy** volunteers from Northern California and Nevada divided into eight project groups to help with river cleanups and restoration projects throughout the Upper Carson River Watershed. The work completed in one day by our amazing volunteers resulted in:

- 600 feet of stream bank stabilized on Shay Creek and the West Fork of the Carson River;
- 1,000+ willow stakes planted on the West and East Forks of the Carson River;
- 210 native species planted at OHV restoration sites on the East Fork;
- 800 pounds of white sweet clover removed from banks along the East Fork;
- Over 500 pounds of invasive weeds removed from Grover Hot Springs Meadow;
- Native plant demonstration garden installed at Grover Hot Springs State Park;
- 165 pounds of litter removed from our creeks and streams!



California Conservation Corps member volunteer during Markleeville Creek day, planting willows along the East Fork Carson River.

Photo by Shane Fryer.

We would like to thank our local partners that helped lead Creek Day projects. Our deepest thanks go to Alpine County, Alpine-Upper Carson Weed Management Area, Alpine Garden Club, California Conservation Corps, California State Parks, Carson Water Subconservancy District, Friends of Hope Valley, and the Washoe Tribe of Nevada and California. This event

was made possible by significant grants from the Carson Water Subconservancy District and Patagonia. Other supporters include the Alpine County Chamber of Commerce and Douglas Disposal Inc.

Alpine Watershed Group greatly appreciates all of the community support that helped to make Markleeville Creek Day 2015 the biggest turnout ever! More photos of the event can be found on the [Alpine Watershed Group's Facebook page](#).



Volunteer briefing at Markleeville Creek Day, highest turnout to date.

Photo by Nicole Lutkemuller.

New Faces at the Washoe Environmental Protection Department

By Norman Harry and Michelle Hochrein

Norman Harry is the new Environmental Director for the Washoe Tribe of Nevada and California. As a member of the Pyramid Lake Paiute Tribe, Norman has been involved with a variety of historic water issues and Tribal government program management for the past 30 years. Norman served three terms as the Tribal Chairman for the Pyramid Lake Paiute Tribe, and has received numerous awards for his work in environmental and Tribal leadership, including *Peacemaker of the Year* and an *EPA Outstanding Environmental Achievement Award*. He volunteers with

"In our traditional ways, we are taught to acknowledge and respect the gifts that sustain all life, which are the water we drink and the air we breathe, the plants, foods and medicines. Traditional or not, as human beings, we all share the same responsibility for protecting and ensuring these most sacred gifts that sustain life are protected for our children, their children and the next seven generations and beyond. If we work together, with this concept in mind, we will be successful and that will be our legacy for life."

- Norman Harry 2015

the Lahontan Audubon Society during

the Annual Christmas Bird Count; the Sheldon Antelope Refuge conducting annual conservation work; and with the Pyramid Lake Environmental Youth Camp.

Norman's goal is to utilize his vast experience to benefit and strengthen tribal programs and governmental relationships. He is an advocate for capacity building to protect and enhance the Tribe's natural resources for the benefit of the Tribe, Tribal members, Tribal communities, and the Carson River ecosystem. Contact Norman at 775.265.8682 or via email at

norman.harry@washoetribe.us.



Michelle Hochrein is the new Program Coordinator for the Washoe Environmental Protection Department. Originally from Quincy, CA, Michelle has a B.S. in Landscape Architecture from Cal Poly, San Luis Obispo and a M.S. in Geography from University of Nevada, Reno (UNR). At UNR she studied conifer seedling development on the east slope of the Carson Range. Most recently, Michelle was a plant ecologist with Otis Bay Ecological Consulting, where she designed and supervised restoration and revegetation projects along rivers, wetlands, and springs. Previously, she worked with both the Washoe County Parks Department and the Nevada Land Trust, assisting with fire restoration projects and invasive species treatments and mapping. Michelle is responsible for implementing Tribal environmental programs and collaborating with local stakeholders and landowners on joint interests. Contact Michelle at 775.265.8689 or michelle.hochrein@washoetribe.us.



BLM Transfers 5000 acres to Carson City

By Ann Bollinger, Carson City Parks, Recreation, and Open Space Department

Carson City recently acquired 5,000 acres for open space, parks, and public purpose in a land conveyance from Bureau of Land Management Land (BLM). The conveyance was authorized in the Omnibus Public Land Management Act (OPLMA) of 2009 and includes lands throughout the North and East sides of Carson City.

The OPLMA identified conditions of the land conveyance including a perpetual conservation easement to protect, preserve, and enhance the conservation values of the land. Approximately 3,500 acres – consisting of the Ambrose Carson River Natural Area, Prison Hill Recreation Area, and Silver Saddle Ranch – are subject to the terms of a conservation easement. Key conservation values identified in the easement are undeveloped open space including Carson River floodplain and customary agriculture; natural characteristics including riparian and upland vegetation, and wildlife habitat; land management benefits for flood control and fuels reduction; passive recreation areas including trails and trailheads, historical resources including existing ranch structures; and active recreation areas specifically, the motorized vehicle use area at the south end of Prison Hill.

To protect the conservation values, the conservation easement identified allowable activities and uses on the lands. Allowable passive recreation activities include fishing, birding, nature observation, hiking, running, mountain biking, equestrian riding including horse drawn wagons and carriages, non-motorized boating, geocaching, swimming, and picnicking. Allowable uses may include environmental education, running and equestrian events, private weddings and parties, and music concerts. Specifically prohibited activities are organized sports requiring dedicated, constructed fields or courts, Off Highway Vehicle (OHV) use except in designated areas, over-night camping unless approved as part of an event, golf courses, hunting, disc golf, paint ball games, and hot air balloons. The prohibited events include: fairs & carnivals, cars shows, rodeos, and motorized events (other than OHV events at the south end of Prison Hill).

With the addition of Ambrose Carson River Natural Area, Prison Hill Recreation Area, and Silver Saddle Ranch, the Carson City Parks, Recreation, and Open Space Department is now managing more than 5,300 contiguous acres along the Carson River. There are trails throughout the area and by the end of the year, a pedestrian bridge will be completed linking the Empire Ranch Trail to Riverview Park. When the water is higher, the Carson River Aquatic Trail Map (<http://www.carson.org/Modules/ShowDocument.aspx?documentid=13983>) offers a unique opportunity to traverse by watercraft from Silver Saddle Ranch into Lyon County. For a map of BLM land conveyance to Carson City Open Space, visit: <http://www.cwsd.org/wp-content/uploads/2015/09/Map-BLM-conveyance.pdf>, and more information contact Ann Bollinger at 775.283.7337 or email abollinger@carson.org.



The Red House at Silver Saddle Ranch, Carson City Open Space.

Photo by Nancy Santos.

Marlette Water System Update

By Jerry Walker, Marlette Water System; Austin Osborne, Storey County; and CWSD staff

CWSD staff and board members recently enjoyed a tour of a portion of the Marlette Water System to learn about recent updates to the system and how their two person crew keeps this 140 year-old system supplying water to Virginia City, Gold Hill, Silver City, and Carson City. Originally built in the late 1870s, the [historic Marlette Water System](#) transported water using a series of flumes and a siphon from the Sierra's to supply Comstock residents and mining operations. The inverted siphon was designed to withstand approximately 800 lbs. per square inch of pressure and allows water that descends from the Sierra, to traverse Washoe Saddle separating Carson City and Washoe Valley, and climb 1,526 feet toward Virginia City.

The State of Nevada has owned the Marlette Water Company and the 5, 378 acres on which it operates since 1963. At the time of purchase, the State installed a diesel pump at Marlette Lake and hastily laid pipeline to Hobart Reservoir to ensure water supply during dry periods. This pipe and pump replaced a collapsed tunnel that previously gravity fed water from Marlette to Hobart Reservoir. In 2001, replacement of the diesel engine and pipe was funded by the Environmental Protection Agency. A 10 year, multi-million dollar project ensued eliminating the need for the lakeside pump and for diesel to be trucked in during dry periods.

Since completion of the project in 2009, the two-man crew of the Marlette Water System has been busy! Here are some of the highlights of the continuing improvements that we learned about on our tour:

- Establishment of a Rehabilitation and Replacement Plan (R & R Plan),
- Installation of telemetry to remotely operate system,
- Water rates increase to provide for ongoing infrastructure costs and hire a third employee,
- Replacement of air-boxes in Vicee Canyon water line to Carson City and installation of six new air-relief valves to increase flows in the system,
- On-going diversion metering and pond cleaning to track meter flow from portions of the system and improve water quality downstream,
- Cleaning of the Diversion Dam pond and adding an aeration unit at Hobart Reservoir this fall to help solve a variety of water quality problems at the reservoirs, and
- As part of Nevada Department of Transportation's (NDOT) future widening of I-580 at Washoe Saddle, the design and replacement of a section of the siphon pipe 10' below I-580 to enhance the integrity of the siphon.



Hobart Reservoir

Storey County is responsible for maintaining and improving the inverted siphon from the Lakeview Saddle east to the Five Mile Reservoir, and the pipeline to the Storey County treatment plant in Virginia City. Here are some highlights of their efforts to date:

- Installation of 15 new automated air release valves at siphon and pipeline high points to Virginia City improving constant pressure across the siphon,
- Rehabilitation, aeration and increased capacity improvements at Five Mile Reservoir,
- Rehabilitation and increased capacity at Divide Reservoir for municipal and fire water storage,
- Future plans to replace sections of the pipeline from the Five Mile Reservoir to Virginia City, and,
- Working with Marlette Water System staff to map the siphon line easement. The map will help educate current property owners to avoid building on top of the easement, and will be provided to Washoe County and Carson City building department staff to ensure building doesn't occur in the utility easement.

Hats off to the State of Nevada Marlette Water System crew and Storey County staff for their hard work to provide pristine water to our watershed communities!



Volunteers Battle Bull Thistle at Invasive Species Awareness Day

By Nicole Lutkemuller, Alpine Watershed Group

On July 29th the Alpine Watershed Group, with support from the Carson Water Subconservancy District and Alpine Upper Carson Weed Management Area, hosted an Invasive Species Awareness Day at Grover Hot Springs State Park, California.

The goal of the day was to build awareness about the problems caused by invasive plant species. Agencies from throughout the Carson River watershed attended and discussed their current programs for controlling invasive species. Volunteers and agency partners then tackled a large infestation of Bull Thistle above the hot springs pools.

Over 2,000 pounds of bull thistle were dug-up and hand-pulled by 30 volunteers in three hours! Plans for the native plant demonstration garden (recently installed as part of Markleeville Creek Day-See

article page 2) were introduced as part of the event.



Volunteers and agency personnel remove massive quantities of bull thistle from above Grover Hot Springs. Photo by Shane Fryer.



Shane Fryer of Alpine Watershed Group and Judy Wickwire of Friends of Hope Valley bag bull thistle. Photo by Courtney Walker.

Alpine Watershed Group thanks all of our partners for making this event a success including: Alpine-El Dorado County Department of Agriculture, Alpine Garden Club, Alpine-Upper Carson Weed Management Area, Carson Water Subconservancy District, California State Parks, Nevada Department of Agriculture, US Forest Service, and the Washoe Tribe of California and Nevada.



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USDA and Partners Celebrate Clean Water and Groundwater Protection

By Kelly Clark, USDA Rural Development

Last April, the United States Department of Agriculture (USDA) Rural Development Nevada celebrated Earth Day two days early with its regional water partners in Dayton, honoring Lyon County's commitment to the environment as work began there to remove 491 septic tanks, replacing them with a waste water collection system.

"We commend Lyon County for planning ahead and fixing a problem before it became an emergency," said Sarah Adler, Nevada Director for USDA Rural Development. "This project will protect groundwater while providing clean drinking water that is vital to human health."

Homes in the subdivisions are currently using separate septic systems. Increased nitrate concentrations in the area's public drinking water production and some private wells were reported in 2008-2009. Historical water quality data has confirmed that nitrate concentrations have been increasing toward the maximum level allowed by the State of Nevada Bureau of Safe Drinking Water Regulations. Excessive nitrates in drinking water can adversely affect children's health, sometimes causing "blue baby syndrome," a condition in which infants are unable to absorb oxygen.

In the fall of 2013, USDA Rural Development approved \$11.9 million in grant and loan funds to Lyon County to construct the waste water collection system for 491 homes currently on septic tanks in the Dayton Heights and Mark Twain areas near Dayton. Lyon County has conducted extensive public outreach over the past year and a half to educate the community members about the project and work recently started to remove septic tanks.

Adler noted that "it was a regional partnership of state, local and federal agencies that worked together to bring this project to fruition." Other funding partners included the State of Nevada Revolving Loan fund (\$2.5 million), the US Army Corps of Engineers (\$352,500), the State of Nevada's Community Development Block Grant (\$158,500), the Carson Water Subconservancy District (\$15,000), and Lyon County (\$57,500). The total project cost is \$14.9 million.



Construction begins to remove 491 septic tanks in Lyon County. Photo courtesy of Farr West Engineering

Adler noted that over the past 45 years since the first Earth Day, on April 22, 1970, USDA Rural Development Nevada has invested more than \$156 million in rural communities with 141 water projects like this one to protect groundwater and human health. Of that total, \$103 million was through Water Environmental Protection (WEP) loans and \$53 million was in WEP grants.

"These are significant projects for all of Nevada. I am very proud that our agency is participating in the success of rural America with projects that support both the environment and the people who live here," Adler said. The project will include the installation of 39,650 linear feet of new sanitary sewer mains, 71,292 linear feet of sewer lateral lines as well as the abandonment of 491 separate septic systems. Farr West Engineering is the project engineer with Q&D Construction as contractor.

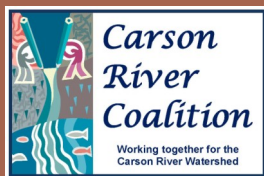
Editor note: In addition to the Lyon County project, USDA Under Secretary Lisa Mensah recently announced that Storey County will receive over \$13 million in loan and grant funds to replace more than 13 miles of sewer pipe and repair the community septic system in the Virginia City and Gold Hill areas. These projects are both beneficial to water quality in the Carson River Watershed.

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October 6, 2015: CRC Carson City Open Space Tour

Carson City, NV. Register now, space is limited! <http://www.cwsd.org/calendar/>

October 10-11, 2015: Alpine Aspen Festival

Alpine County, CA. <http://www.alpinewatershedgroup.org/>

October 16, 2015: Carson River Watershed Snapshot Day

School learning and stream monitoring. http://ndep.nv.gov/bwqp/snap_carson.htm

October 19-20, 2015: Nevada Water Resources Association Fall Symposium Reno, NV. <http://www.nvwra.org/2015-fall-symposium>

October 21, 2015: Carson River Coalition Main Meeting

9am-1pm, Carson City Community Center. <http://www.cwsd.org/calendar/>

October 26-27, 2015: Medusahead Symposium

Sparks, NV. <http://nvwma.org/events.html>

October 28-29, 2015: Nevada Weed Management Association Conference

Sparks, NV. <http://nvwma.org/events.html>

November 1—7, 2015: Flood Awareness Week. Check out <http://www.Nevadafloods.org> for event details to learn about flood preparation. Tentative dates in the following areas:

11/1: Carson City

11/4: Lyon County

11/2 & 11/5: Douglas County

11/6: Churchill County

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<https://www.facebook.com/carsonriver>



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