



*We commend all of our water users for their heroic support, awareness and meaningful water conservation efforts through recent years.*

## CHAPTER 16

# Drought Impacts Reach Far and Wide



**Although Californians have experienced drought before – they are a recurrence given the state’s Mediterranean climate** characterized by warm, dry summers and mild winters – the four-year period between fall 2011 and fall 2015 was the driest since record keeping began in 1895. The drought was worsened in 2014 and 2015 with the two hottest years recorded in the state’s history.

1976 drought.

The National Weather Service defines a drought as a deficiency in precipitation over an extended period resulting in water shortages that cause adverse impacts on vegetation, animals and people. The implications of drought are significant. The primary source of the state’s water supply is precipitation in the form of rain and snow. Most importantly, the Sierra Nevada mountain range accumulates snowpack during the winter that slowly melts in late spring. This natural pattern allows for runoff to flow downstream and fill reservoirs for consumptive and environmental use throughout the summer. In fact, Sierra snowpack stores about 65 percent of California’s total water supply and historically can be categorized as California’s largest natural reservoir.



During a drought, Scotts Flat Reservoir shows much shoreline on May 15, 2015.

In January 2014, NID water storage remained near normal for the time of year, but there was virtually no snowpack falling to replenish it. The District already had been very conservative with water releases to save as much water in storage as possible and prepare for a dry, hot summer and dire prolonged conditions. Carryover water storage, the amount of water carried over in reservoirs from season to season, remained a key part of NID's plan. The Stage II drought conditions specified that no less than 75 percent of average carryover storage would be saved for 2015. That would be about 110,000 acre-feet of water remaining in NID's 280,380 acre-foot-capacity system.

California Governor Jerry Brown declared a statewide drought emergency on January 17, 2014, and the state legislature allocated billions of dollars to provide drought relief and improve water management. In light of the extremely dry conditions and the lowering water storage levels, NID also took immediate actions to ensure adequate supplies throughout the summer months and longer.

The District enacted immediate water conservation measures for customers, and Directors authorized staff to implement initial portions of the District's Drought Contingency Plan, which specifies five stages of actions to be taken when available water supplies drop below certain levels. A Stage 1 alert could allow normal water operations while a

Stage 5 critical water shortage emergency would require water use reductions of 35-50 percent.

The District called for a voluntary 20 percent water use reduction by all NID water users, convened a citizen Drought Hardship Committee, froze all new or increased sales of winter irrigation water, and limited the water available for fire department practice drills and flow testing of fire hydrants. The record-low snowpack in 2015 in the Sierra Nevada was unprecedented. In some portions of the region, snow water levels were measured at just 5 percent of the historical average.

In the grips of drought, NID turned to novel ideas to ensure reliable water delivery during the drought and into the future. Large infrastructure improvements, regionalization of water systems and innovative projects were proposed and completed.

The District worked with community partners to educate the public about the impacts of drought and encourage customers to make conservation a way of life. For example, in a school education program launched in 2014, the District joined with the Placer County Water Agency and the cities of Grass Valley and Nevada City to underwrite "The Great Water Mystery," a program conducted by the South Yuba River Citizens League (SYRCL). The program featured "Detective Drizzle," who visited K-8 schools in Nevada and Placer counties and taught students about the importance of water conservation.

### Centennial Water Supply Project is proposed

It was in 2014-15 that NID leaders began to revisit a water storage concept that dated to the District's formative years. A potential reservoir site, located on what was then the Parker Ranch along the Bear River between what are now Rollins and Combie reservoirs, was first identified in a 1926 report to the NID Board of Directors by founding NID Engineer Fred Tibbetts. The Parker Reservoir site was selected by Tibbetts as his first choice for a reservoir. He noted that additional government funding could be available if the reservoir collected and trapped hydraulic mining debris, an idea that could have limited the buildup

that would be seen in years to come. Parker Reservoir was not built during the District's formation, as the focus was placed on the upper mountain division. The plan was again shelved in the 1950s as NID leaders turned their attention to the Yuba-Bear Hydroelectric Project and construction of Rollins Reservoir, again saving the Parker site as a future option.

In the 21st century, NID's dependence on the mountain snowpack for water storage against the backdrop of a warming climate signaled the need for lower division water storage that could better capture rainfall and snowmelt runoff. In August 2014, the District filed with the State Water Resources Control Board to exercise its water rights on the Bear River.

Board Director Nick Wilcox noted, "Climate change is shrinking the snowpack, our largest reservoir, and NID must adapt and plan for the future. The solution of mid-elevation storage could capture runoff from rain and snowpack runoff from higher elevations."

The proposed Centennial Water Supply Project would consist of a 110,000-acre-foot reservoir. The body of water would extend upriver from just above Combie Reservoir to two miles downstream of Rollins Dam (west of Colfax). In total, the reservoir would be just over 6 miles long, and would span the Placer and Nevada county line within the District boundaries.



In addition to water storage, the reservoir would provide wildlife habitat and low-impact recreational activity, including pedestrian trails, swimming, kayaking and a 5 mph maximum speed on the reservoir. District analysis pointed to economic, environmental and social benefits that included improved water supply reliability, enhanced groundwater recharge, managed flows for aquatic species protection and enhanced carbon sequestration. District documents further noted the project would provide a 6-mile-long firebreak with enhanced water resources to support local food production. Overall, the project would improve water supply reliability for NID's treated and raw water customers into the future.

The site, with most of the land in public ownership (NID on the Nevada County side and the State of California on the Placer County side)

Bowman Lake





Although crews faced challenges to keep icy waterways flowing in February 2016, NID welcomed the end to the drought.

was seen as worthy of further study. Planning and land purchases commenced, and local opposition began to take shape as the effort moved forward.

Facing opposition by some residents and environmental organizations, the Board voted in 2019 to limit spending on the project and turned its attention instead in updating the Raw Water Master Plan. The Plan for Water (formerly called the Raw Water Master Plan) is designed to be the District’s planning tool that will help guide

NID’s capital improvement decisions related to its water system over the next 50 years. The plan will project ranges of potential water demands and supplies, future conditions relating to regulatory and land use needs, and the potential effects of climate change. In developing the plan, NID seeks to align water resource decision-making with community values and district operational needs. When complete, the plan will show how a variety of future water supply and demand scenarios could be integrated to ensure the community enjoys the same high-quality, reliable water system it has now.



Remleh "Rem" Scherzinger

### Infrastructure projects improve the reliability of NID water systems

While the drought endured, NID was at work on infrastructure projects to bolster its water delivery system and ensure customers were getting their water as efficiently as possible.

For example, in June 2014 the NID Board of Directors awarded a \$2.5 million contract to Pacific Gateway Constructors, Inc. for construction of a new pump station on the D-S Canal above Nevada City. This would allow water to be pumped uphill to the Cascade Canal system and across Deer Creek to the Snow Mountain Canal system, improving backup supplies for each area.

The District also built a key intertie near Brunswick and Idaho-Maryland roads. This connection of the E. George and Loma Rica treated water systems would provide for backup water supplies to areas as far as Chicago Park and Alta Sierra.

NID also began to fund its “Backbone Extension Program” to expand the main treated water system and also a more localized Waterline Extension Program for neighborhood improvements. The program proved to be very helpful to residents between Alta Sierra and Lake of The Pines in areas with large parcels and failing water wells. By 2015, mainline extensions began to connect the areas.

A significant planning project continued downstream in Placer County as NID worked with agencies and residents of the Lincoln area where homes were replacing farms and ranches and demand for treated water was increasing in areas that NID had supplied with irrigation water. A creative partnership between NID, PCWA and the city of Lincoln helped facilitate water supply availability in the area.

### Post-drought: conservation as a lifestyle

High hopes for a return to “normal” precipitation continued as the 2015-16 season approached. NID officials noted the relationship between water supply and growing concerns about climate change; it was reported that the previous winter’s average minimum daily temperature at Bowman Reservoir was 32.1 degrees, the first time it had been above freezing in at least 120 years.

At last, the 2015-16 precipitation year turned out to be wet and would begin to ease local and state drought concerns. In May 2016, the State Water Resources Board suspended its mandatory statewide 25 percent reduction in urban water use, and communities began to set their own conservation standards after a wet winter and a year of enormous savings in urban water use.

Locally, the precipitation year ended with 79.92 inches of rain and snow, or 116 percent of the 130-year average. As snowpack runoff continued, NID on July 11 reported its reservoirs were at 93



percent of capacity and holding 116 percent of average storage for the date.

General Manager Rem Scherzinger took pen to paper in a column, “Recovering from the Drought,” as the District rebounded from a lengthy four-year dry spell in spring 2016: “After four years of drought, it’s not an easy or balanced recovery and, unfortunately, it appears that NID customers could be called upon to conserve serious amounts of water.”

Scherzinger wrote: “We commend all of our water users for their heroic support, awareness and meaningful water conservation efforts through recent years. These efforts have allowed the District to achieve or nearly achieve the ... conservation requirements handed down by state water regulators. ... Water conservation is here to stay and we are doing our part to operate our water systems as efficiently as we can and offering help and assistance to our customers in their efforts to save water. Thank you once again for helping all of us through the difficult four-year drought.”

After serving NID for 7.5 years, the general manager gave his notice in July 11, 2020. Assistant General Manager Greg Jones was named interim general manager. ■

The Combie Reservoir Sediment and Mercury Removal Project team members were honored as winners of the prestigious 2018 Small Project of the Year award, presented by the American Society of Civil Engineers, Sacramento Section.