

September/October 2022 Nevada Drought Impacts Summary Report



October 27, 2022

Nevada Drought Response Committee:

Nevada State Climate Office

Nevada Division of Water Resources

Nevada Division of Emergency Management



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DROUGHT SUMMARY FOR TASK FORCE REPRESENTATIVES

SUMMARY

Overall, summer was wet in Nevada due to heavy monsoon rains in the Southwest that even fed thunderstorms in northern Nevada. Rains were spotty, which is common for summer thunderstorms. Many parts of the state remained wet through September, as well. Tropical cyclone Kay brought rain to the southern part of the state early in September. An early-season winter-type storm delivered rain and colder temperatures to northern Nevada. While normal to wet conditions led to some improvements, particularly for range vegetation, it wasn't enough to resolve three-year deficits. As of the October 16, 2022, the U.S. Drought Monitor shows almost all of Nevada in Severe (D2) to Extreme (D3) drought, reflecting the longer-term deficits.

Impacts reported in September and October included:

- As of October 3, 2022, Lake Mead's storage volume was 28 percent of the lake's capacity with a surface elevation of 1,045 feet above mean sea level.
- Ongoing concerns about reduced groundwater levels in portions of southern Nevada.
- Concerns about reduced surface water availability for wildlife and range livestock on public lands.
- Fire restrictions on public lands remain widespread across Nevada.
- Boating access to Lake Mead, Lake Tahoe, and Lahontan Reservoir are limited by low water levels.
- Ongoing drought conditions are or may impact the ability of reporting organizations to carry out routine operations, such as road maintenance and ecosystem restoration.
- Ongoing water hauling actions for livestock and wildlife throughout the state.

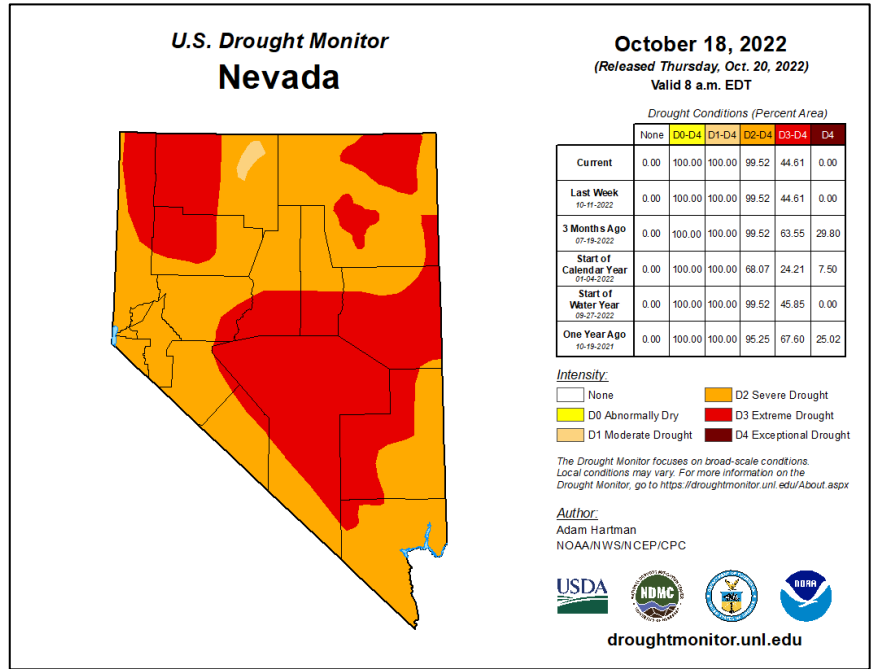
METEOROLOGICAL STATUS AND OUTLOOK

Current Status

The entire state of Nevada remains in drought, as reflected in the U.S. Drought Monitor (Fig. 1). Drought conditions are expected to continue through December (Fig. 2). Detailed information about current drought status is available at

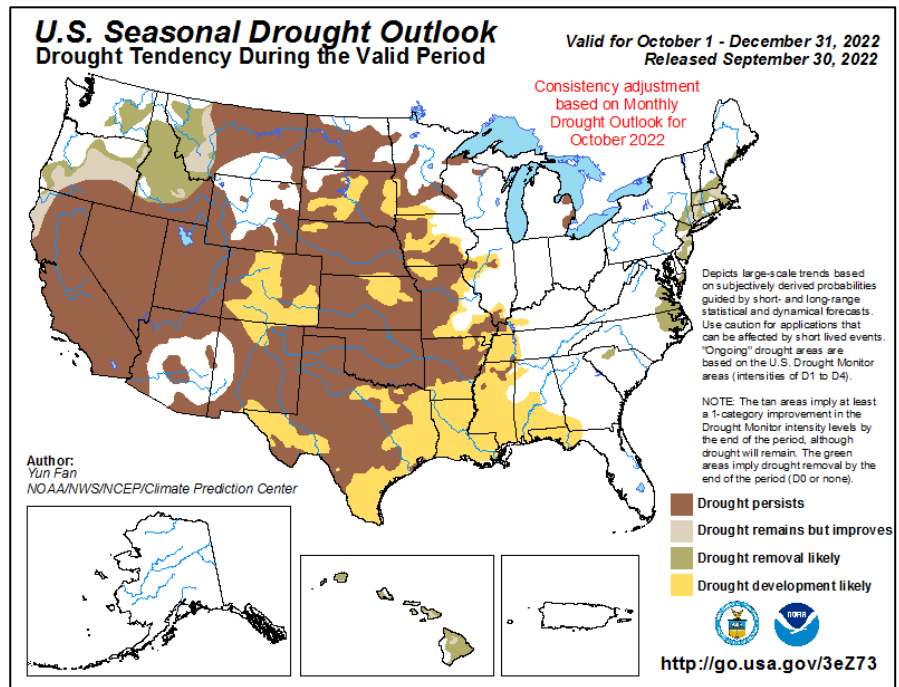
LivingwithDrought.com. Updates are typically posted early each month. Archived reports are available through the University of Nevada, Reno [ScholarWorks database](#).

Figure 1. US Drought Monitor Map and Conditions for Nevada



Source: <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NV> To learn more about drought categories, visit <https://droughtmonitor.unl.edu/About/WhatistheUSDM.aspx>

Figure 2. U.S. Seasonal Drought Outlook



Source: <https://www.cnrfc.noaa.gov/droughtInfo.php>

As of April 8, 2022, all counties in Nevada were eligible for USDA disaster-related emergency assistance programs triggered by the Drought FAST TRACK process. By June 16, 2022, all Nevada counties had received USDA Secretarial Disaster Designation as primary natural disaster areas due to recent drought. These designations were made based on the Drought-FAST TRACK process. This process includes Fast Track Secretarial disaster designations for severe drought, which provide for a nearly automatic designation when, during the growing season, any portion of a county meets the Severe Drought (D2) intensity category for eight consecutive weeks or a higher drought intensity value for any length of time as reported in the U.S. Drought Monitor.

Drought Coordination

The Nevada Drought Response Committee¹ continues to request monthly updates from the state's Regional Drought Impact Task Force representatives on the status of drought impacts at regional and local levels. Representatives include water system operators, farming and ranching organizations, irrigation districts, Farm Service Agency, Bureau of Land Management, National Weather Service, and fire and wildlife management agencies. Regional Drought Impact Task Force participants are asked to prepare and submit answers to questions regarding drought impacts. Responses to the drought impact questions are summarized in this report.

The questions posed were as follows:

1. How is your community/organization/etc. affected by drought?
2. What were those impacts?
3. What local plans are already activated?
4. What resources are needed now or may be required if the drought conditions worsen or are prolonged?
5. Any additional comments you'd like to share?

Drought impacts will also be assessed based on reports from the Condition Monitoring Observer Reports (CMOR, <https://droughtimpacts.unl.edu/Tools/ConditionMonitoringObservations.aspx>) tool developed by the National Drought Mitigation Center and from updates posted on state, federal, and tribal websites.

SURFACE WATER IMPACTS

Streamflow was variable in September with streams being close to normal around the Truckee, Carson, and Walker Rivers, much below average along the Humboldt, and trending fuller than usual in southern Nevada. Reservoirs located in, or serving, Nevada had variable levels of storage in September (Appendix A, Tables 1 -5).

Southern Nevada Water Authority (SNWA) reported the following surface water impacts:

- As of October 3, 2022, Lake Mead's storage volume was 28 percent of the lake's capacity with a surface elevation of 1,045 feet above mean sea level.
- Lake Powell's storage was at 25 percent of capacity and elevation of 3,530' that same day. The observed inflow in the Colorado River system over the past 23 years is the lowest in recorded history dating to 1906 and among the lowest in the past 1,200 years.

The Truckee Carson Irrigation District reported:

- The 2022 irrigation season started with the Truckee Carson Irrigation District Board setting the water allocation at 70%. As the season progressed, they were pleased to hear reports of a highly efficient runoff thanks to the wet storms that occurred in late 2021. This caused the board to adjust the allocation to 85% for all users. Then, another upward adjustment was made to 100% for the Truckee Division only. It is anticipated that the irrigation season will come to an end near the end of October.

¹ The Nevada Drought Response Committee consists of representatives from the Nevada State Climate Office, Nevada Division of Water Resources, and Nevada Division of Emergency Management.

Reservoir storage statistics from the Natural Resources Conservation Service (<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/nv/snow/waterproducts/reservoirs/?cid=nrcseprd958817>) and the Bureau of Reclamation (<http://www.usbr.gov/lc/region/g4000/weekly.pdf>) and water year flows to date from the California Nevada River Forecast Center can be found in Appendix A, Tables 1 -5 at the end this report. (<https://www.cnrfc.noaa.gov/?product=flow2dateWY>).

ENERGY IMPACTS

The Colorado River Commission of Nevada (CRCNV) relies on hydropower generation from various sources within the Colorado River Basin to meet the energy needs of our customers (Appendix A, Table 6). As reservoir elevations decline, the efficiency to generate hydropower also decreases.

The CRCNV receives approximately 20% of the output of hydropower generation at Hoover Dam, 18% of the output of Parker-Davis Dam, and 2% of the output of the Salt Lake City Area Integrated Projects (SLCAIP) in the Upper Colorado River Basin.

Each of the CRCNV's contractors (Appendix A, Table 6) has a unique load and resource mix. Thus, the percentage of their supply mix attributable to hydropower will vary by contractor.

- For example, NV Energy's Hoover resource is used to meet approximately 2% of its resource needs, so the impact of declining hydropower generation on NV Energy is very small. On the other hand, Lincoln County Power District #1 relies heavily on Hoover generation to serve its electrical load so a decline in Hoover has a significant impact.

Reported impacts from CRCNV include:

- Since 2000, US Bureau of Reclamation (BOR) states that Hoover powerplant has experienced a net reduction in hydropower generation of about 20%.
- Each 10-ft decline in Lake Mead elevation reduces Hoover's generating capacity by about 50MW.
- In FY2023, Hoover's capacity is projected to be 1,285 MW, approximately 62% of the plant's rated output of 2,074 MW.
- The most probable Lake Mead elevation at the end of calendar year 2023 is expected to be 1,021'. The minimum power pool elevation for generation at Hoover Dam is estimated to be 950'.

AGRICULTURE IMPACTS

Ongoing agricultural impacts include reduced forage activity, reduced range water availability, and reduced water deliveries.

- Moisture from the North American Monsoon, tropical cyclone Kay, and an early northern storm fed precipitation across the state in August and September. This moisture has promoted some vegetative growth and improved stock water availability. The U.S. Drought Monitor continues to show severe to extreme drought conditions across Nevada. (Bureau of Land Management)
- Continuing drought conditions on public lands are resulting in low availability of forage and water sources for livestock and wildlife, increased dry fuel loads, and increased soil erosion. (Bureau of Land Management)
- The Bureau of Land Management (BLM) reported the following steps are being taken in response:
 - BLM offices are continuing to work with permittees to determine potential changes in livestock use for this grazing season. BLM is working with permittees to identify options and incorporate more flexible management solutions (e.g. non-use or shortened grazing periods) where possible.

- BLM has been coordinating with other Federal and State agencies, tribal governments, local stakeholders, and permittees to address resource concerns, identify potential solutions and strategize management actions.
 - Drought management workshops for permittees and the interested public are being planned for this December in conjunction with the Nevada Department of Agriculture.
 - BLM staff continue to conduct field drought investigations on allotments and herd management areas to track drought conditions.
 - BLM is authorizing water hauling actions for livestock and wildlife, including for wild horses, and conducting wild horse gathers throughout the state.
 - BLM utilizes reports from the National Weather Service, U.S. Drought Monitor, Desert Research Institute, National Integrated Drought Information System, and information from NOAA/NIDIS webinars to track drought conditions statewide.
 - BLM permittees may need help from other agencies, such as the USDA-Farm Service Agency and the USDA-Natural Resources Conservation Service, for funding related to drought conditions, installation of conservation practices, and emergency relief.
- In northeastern Nevada it has been hot and dry, there has not been much relief. The Humboldt River through Elko has no flow and most, if not all, of the major tributaries are not even flowing out of the mouth of the canyon that they originate from. The South Fork of the Humboldt is the only tributary that is making it to the confluence of the main stem. (NDWR Staff, Elko)
 - Ranchers are having a hard time bringing cattle back to their ranches due to the lack of stock water and most are still having to haul water. Most of the haystacks in the area are all bought hay, just like last year. Agriculture producers are hoping we have a good winter this year! (NDWR Staff, Elko)

WATER SYSTEM IMPACTS

Ongoing lower groundwater levels in southern Nevada are impacting some groundwater wells. Several groundwater-dependent communities in Southern Nevada, including small and rural systems, continue to experience water-level declines in local aquifers. (SNWA)

- Groundwater levels at the two Blue Diamond water supply wells have reached the lowest level observed in the past 20 years. A development moratorium is in place, and a Corp of Engineers grant has been obtained for an exploratory program and backup water supply well. A site location for the backup well is being pursued. The existing system emergency action plan is being reviewed and updated.
- Two wells in Kyle Canyon are currently in the “concerned” operating range. At this range, water supplies from the aquifer are being used at a rate consistent with the wells’ ability to recharge naturally. Area residents are urged to adhere to mandatory watering restrictions designed to help stabilize well conditions. Under the Concerned operating range, outdoor irrigation is limited to one day a week in spring and fall and two days a week in summer.

In southern Nevada, continuing low water levels in Lake Mead have led to numerous conservation and planning actions.

- On August 24, 2022, the SNWA joined other Colorado River municipal water users in signing a Memorandum of Understanding that commits the parties to substantially expanding existing conservation efforts, reducing demands, and expanding reuse and recycling of supplies. Notably, participating agencies will work to achieve a 30 percent reduction in nonfunctional turf in their respective service areas. The SNWA is coordinating with other wholesale and municipal water providers in the Colorado River basin that have expressed interest in joining the effort.
- Basic Water Company’s (BWC) Lake Mead intake became inoperable as Lake Mead elevations declined. BWC halted diversions from Lake Mead on July 1. The Las Vegas Valley Water District and City of

Henderson entered an interlocal agreement allowing COH to provide water service to BWC for use at the Black Mountain Industrial Complex (BMI Complex) through a separate temporary potable water service agreement between BWC and COH. Since the execution of the agreement, BWC filed for bankruptcy, citing an inability to access its Colorado River supplies from Lake Mead. This filing has not influenced water supplies for the BMI Complex, and a long-term solution for providing water to the BMI Complex will need to be identified.

In December 2021, the SNWA adopted a new conservation goal of 86 gallons per capita per day (GPCD) by 2035. To support goal achievement, the SNWA:

- Adopted a resolution supporting a prohibition on the installation of new irrigated turfgrass and the installation and use of spray irrigation systems in new development in the service areas of SNWA's purveyor members, except in parks, schools, and cemeteries.
- Adopted a resolution supporting a moratorium on cooling and heating mechanisms that consumptively use water in all new developments and establishments within the service area of SNWA's purveyor members, except for single-family residences.
- Adopted a resolution supporting a reduction of golf course water budgets from 6.3 acre-feet of water annually per irrigated acre to 4.0 acre-feet of water annually per irrigated acre for all golf courses that use Colorado River water effective January 1, 2023.
- Adopted a resolution supporting limiting the surface area of new single-family pool construction to 600 square feet.

The SNWA also approved an Implementation Plan for the Removal of Nonfunctional Turf in Southern Nevada. The plan supports the implementation of Assembly Bill 356 (AB356), which prohibits the use of Colorado River water to irrigate nonfunctional turf by the end of 2026. (SNWA)

The SNWA is working with its member agencies to update rules, ordinances, and codes to reflect policy changes. (SNWA)

WILDFIRE IMPACTS

According to the National Interagency Fire Center, Nevada is predicted to have normal significant wildland fire potential from October through January due to time of year, cooler temperatures, higher fuel moisture, and less daylight. As of October 3, 2022, Nevada has had 479 fires totaling 59,212 acres with the largest fire being the Wildcat Fire (21,429 acres) in northern Elko County. On October 1, 2022, fire restrictions were reduced in southern Nevada and lifted in western Nevada. (Bureau of Land Management)

The National Significant Wildland Fire Potential Outlook from the National Interagency Fire Center for Outlook Period – October 2022 through January 2023 can be accessed on their website.²

WILDLIFE IMPACTS

Ongoing concerns about limited forage and water resources. The North American Monsoon provided some needed precipitation but did not eliminate concerns.

The BLM is taking the following steps to reduce drought impacts on wildlife.

- BLM is working with Nevada Department of Wildlife on flexibility to provide water to support wildlife.

² Predictive Services, National Interagency Fire Center, National Significant Wildland Fire Potential Outlook, published October 1, 2022, https://www.predictiveservices.nifc.gov/outlooks/monthly_seasonal_outlook.pdf

Given the low availability for water on public lands, it's important for water sources to be available for wildlife use, particularly when a permittee is in non-use status and not grazing livestock on an allotment.

- BLM has been coordinating with other Federal and State agencies, tribal governments, local stakeholders, and permittees to address resource concerns, identify potential solutions, and strategize management actions.

The Nevada Department of Wildlife's (NDOW) fish hatchery relies on Colorado River water for operations. NDOW made operational changes to address an anticipated water service disruption due to the impact of declining Lake Mead water levels on their intake facilities in Lake Mead. As a result, NDOW curtailed Colorado River diversions and halted fish hatchery operations in January 2022. The fish hatchery is an important producer of razorback sucker and bonytail for the Lower Colorado River Multi-Species Conservation Program (LCR MSCP), which is working toward the recovery of these endangered fish in the Lower Colorado River Basin. (SNWA)

- Nevada lawmakers recently approved \$3.1 million to contribute toward replacement of the water supply line to NDOW's fish hatchery. The Bureau of Reclamation also announced that it is contributing \$8.9 million to the pipeline project. These funding source combined are sufficient to fully cover the estimated project cost of \$12 million. (SNWA)

The Nature Conservancy (TNC) reported their conservation properties in the Nye County Oasis Valley TNC Preserves are impacted by the drought.

Impacts reported by TNC include:

- Drought impacts through vegetation stress, and less water availability for aquatic and semi-aquatic species such as the Oasis Valley Speckled Dace and Amargosa Toad, along with increased pressure on their fencing by wild burros.
- Less plant recruitment on upland portions of restoration areas, fencing damage from burros seeking water and forage, and fewer/smaller breeding pools for toads outside of perennial spring flows.
- Wild burro round-ups to reduce environmental pressure from overgrazing, fencing assistance, riparian habitat protections.
- Resources that may be needed now or may be required if the drought conditions worsen or are prolonged include wild burro round-ups to reduce environmental pressure from overgrazing, fencing assistance, and riparian habitat protections.

RECREATION IMPACTS

Fire restrictions

Currently, there are fire restrictions in place over much of the state. Full details are available at <https://www.nevadafireinfo.org/restrictions-and-closures>.

Boating

- Many Lake Mead boat ramps are closed, or launching is at your own risk due to declining water levels. (<https://www.nps.gov/lake/learn/news/lakeconditions.htm>)
- At Sand Harbor, due to low water levels, the boat ramp is closed for the season.³
- Lahontan State Recreation Area Silver Springs & North Shore Marina boat ramps closed for the season.⁴

OTHER IMPACTS

Routine maintenance and ecosystem restoration activities are being impacted.

³ Nevada Division of State Parks, retrieved October 20, 2022, from <http://parks.nv.gov/parks/lake-tahoe-nevada-state-park>

⁴ Nevada Division of State Parks, retrieved October 20, 2022, from <http://parks.nv.gov/news/boat-launch-at-silver-springs-closed-due-to-low-water-levels>

- BLM activities and actions may be impacted, such as curtailing road maintenance to reduce dust emissions. Previous wildfire and rangeland restoration activities, such as seedings, may be impacted due to lack of soil moisture resulting in reduced germination, loss of vegetative cover, and potential increase in wind erosion. (Bureau of Land Management)

RESOURCES

The Farm Service Agency (FSA) has the following programs available to assist agricultural producers in response to the ongoing drought:

- Livestock Forage Disaster Program (LFP)
- Emergency Livestock Assistance Program (ELAP) - Assistance for water hauling expenses and to cover feed transportation costs due to drought
- Emergency Conservation Program (ECP)
- Noninsured Crop Disaster Assistance Program (NAP)
- Emergency Loan Program (EM)
- Primary Loan Servicing for existing FSA farm loan borrowers in the form of payment deferrals or loan restructuring

Additionally, the [U.S. Small Business Administration \(SBA\)](#) offers disaster assistance in the form of low-interest loans to businesses, nonprofit organizations, homeowners, and renters located in regions affected by declared disasters. SBA also provides eligible small businesses and nonprofit organizations with working capital to help overcome the economic injury of a declared disaster. Eligibility for SBA disaster assistance requires one to be in an SBA-declared disaster area or named in an SBA Disaster Declaration by the Secretary of Agriculture.⁵ The [Check Disaster Declarations](#) tool can be used to locate disaster areas by state and territory.

APPENDIX A. TABLES

Table. 1 Lake Tahoe and Truckee River Basins

Reservoir storage as of end of September 2022		
<i>Lake/Reservoir</i>	<i>% Capacity</i>	<i>% Median</i>
Lake Tahoe	5%	18%
Boca Reservoir	43%	87%
Prosser Reservoir	38%	84%
Stampede Reservoir	49%	71%
Previous Water Year Flow (Water Year 2022)		
<i>Gauging Station</i>		<i>% Average</i>
Truckee River at Farad		80%
Water Year Flow to Date (October 1, 2022 through October 20, 2022)		
<i>Gauging Station</i>		<i>% Average</i>
Truckee River at Farad		68%

⁵ Refers to an SBA Disaster Declaration due to Designation by the Secretary of Agriculture. Current Declared Disasters, retrieved October 20, 2022, from <https://disasterloanassistance.sba.gov/ela/s/search-declarations>

According to the U.S. Geological Survey (USGS) gage 10337000 Lake Tahoe At Tahoe City CA, the lake elevation for Lake Tahoe on October 20, 2022 sat above the natural rim of the lake at 6,223.09 feet.⁶

Table. 2 Carson River Basins

Reservoir storage as of end of September 2022		
Lake/Reservoir	% Capacity	% Median
Lahontan Reservoir	6%	22%
Previous Water Year Flow (Water Year 2022)		
Gauging Station		% Average
West Fork Carson River at Woodfords		61%
East Fork Carson River near Markleeville		67%
East Fork Carson River near Gardnerville		71%
Carson River near Carson City		56%
Carson River near Fort Churchill		52%
Water Year Flow to Date (October 1, 2022 through October 20, 2022)		
Gauging Station		% Average
West Fork Carson River at Woodfords		54%
East Fork Carson River near Markleeville		32%
East Fork Carson River near Gardnerville		60%
Carson River near Carson City		18%
Carson River near Fort Churchill		2%

Table. 3 Walker River Basin

Reservoir storage as of end of September 2022		
Lake/Reservoir	% Capacity	% Median
Bridgeport Reservoir	19%	80%
Topaz Lake	22%	104%
Previous Water Year Flow (Water Year 2022)		
Gauging Station		% Average
West Walker River below Little Walker River, near Coleville		64%
East Walker River near Bridgeport		42%
Water Year Flow to Date (October 1, 2022 through October 20, 2022)		
Gauging Station		% Average
West Walker River below Little Walker River, near Coleville		52%
East Walker River near Bridgeport		35%

⁶ U.S. Geological Survey National Water Information System: Web Interface, retrieved October 20, 2022, from https://waterdata.usgs.gov/usa/nwis/uv?site_no=10337000

Table. 4 Humboldt River Basin

Reservoir storage as of end of September 2022		
<i>Lake/Reservoir</i>	<i>% Capacity</i>	<i>% Median</i>
Rye Patch (lower Humboldt)	4%	28%
Previous Water Year Flow (Water Year 22)		
<i>Gauging Station</i>		<i>% Average</i>
Marys River above Hot Springs Creek near Deeth		36%
Humboldt River near Elko		10%
Humboldt River near Carlin		13%
Humboldt River at Palisade		15%
Humboldt River at Comus		7%
Humboldt River near Imlay		1%
Martin Creek near Paradise Valley		64%
Water Year Flow to Date (October 1, 2022 through October 20, 2022)		
<i>Gauging Station</i>		<i>% Average</i>
Marys River above Hot Springs Creek near Deeth		29%
Humboldt River near Elko		7%
Humboldt River near Carlin		18%
Humboldt River at Palisade		49%
Humboldt River at Comus		0%
Humboldt River near Imlay		0%
Martin Creek near Paradise Valley		80%

Table. 5 Colorado River

Reservoir storage as of October 17, 2022		
<i>Lake/Reservoir</i>	<i>% Capacity</i>	<i>Elevation (ft amsl)</i>
Lake Mead	28%	1,045

Table. 6 Colorado River Basin Customers

CRCNV Direct Retail End Use Customers	Wholesale Utility Customers	Water and Waste Water Customers	NV Energy (bundled customers of NVE with Hoover D allocation from CRCNV)
Basic Water Company	Nevada Power Co. dba. NV Energy	Southern Nevada Water Authority	College of Southern Nevada
Lhoist	Lincoln County Power District No. 1	City of Henderson	Clark County School District
Olin Chlor Alkali Products	Boulder City	City of Las Vegas	Nevada Department of Administration
TIMET	Overton Power District No. 5	City of North Las Vegas	Nevada Department of Corrections
Borman Specialty Materials	Valley Electric Association	Clark County Water Reclamation	Nevada Department of Transportation
		Las Vegas Valley Water District	University of Nevada - Las Vegas