

## Chapter 3 – Drought

Droughts are a fact of life in virtually any climate and it is important to develop plans to reduce their impacts. Defining a drought can be difficult, since it is not a distinct event such as a flood, fire or hurricane. Instead, many complex factors act and interact with the environment to create a situation where water supplies are not replenished normally. Drought affects Southern Nevada through consecutive years of below average snow pack in the Colorado Rocky Mountains. During years of drought, this below average snow pack results in below average runoff to the Colorado River, the source of approximately 90 percent of the water delivered by SNWA and its purveyor members in Southern Nevada.

The estimated natural flow of the Colorado River is already highly variable, as seen in Figure 3. The blue bars show that the natural inflow of the Colorado River has ranged from about 5 million to nearly 24 million acre-feet annually, and that consecutive low-flow and high-flow years occur. Figure 3 also shows that the average flow of the Colorado River during the period of 2000 to 2004 has been the lowest five-year average flow since record-keeping began in 1906.

Figure 4 shows the relationship between runoff in the Colorado River and the water levels of Lake Mead (given in terms of sea-level elevation). This figure demonstrates that above average runoff in the Colorado River generally leads to rising Lake Mead elevations, while below normal runoff generally leads to falling Lake Mead elevations. As a result, Lake Mead's surface elevation has declined significantly (approximately 90 feet) in response to the past five years of below normal flow on the Colorado River.

Figures 3 and 4 underscore the most challenging aspect of drought conditions: no one can tell when they will occur or how long they will last. Projections indicate that it will take several years of above average snow pack in the Colorado Rockies to abate the current drought facing Southern Nevada. Even if the drought ends, several years of significantly above normal runoff will be needed for Lake Mead water levels to recover.

The ultimate goal of the Drought Plan is to define appropriate steps to meet these drought challenges in a coordinated, regional fashion, while ensuring the preservation of local control and oversight by each affected community. For the purposes of drought management in Southern Nevada, the SNWA will use four water supply conditions: (1) **No Drought**, (2) **Drought Watch**, (3) **Drought Alert** and (4) **Drought Critical**.

Declaration of a drought condition by the SNWA will not be tied to any single factor, but will take into consideration such relevant information as Lake Mead water levels, the community's conservation response, projected water demands, and other pertinent issues. Recommendations regarding drought level declarations will be formulated in partnership with the SNWA member agencies. The SNWA Board of Directors will then assess all of

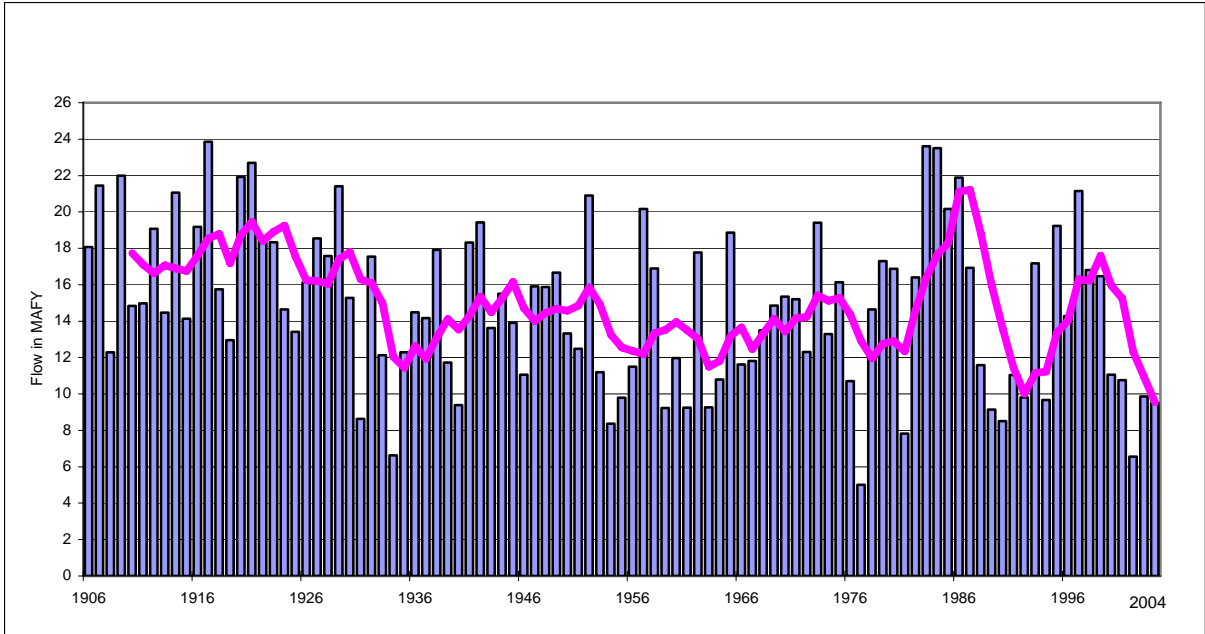
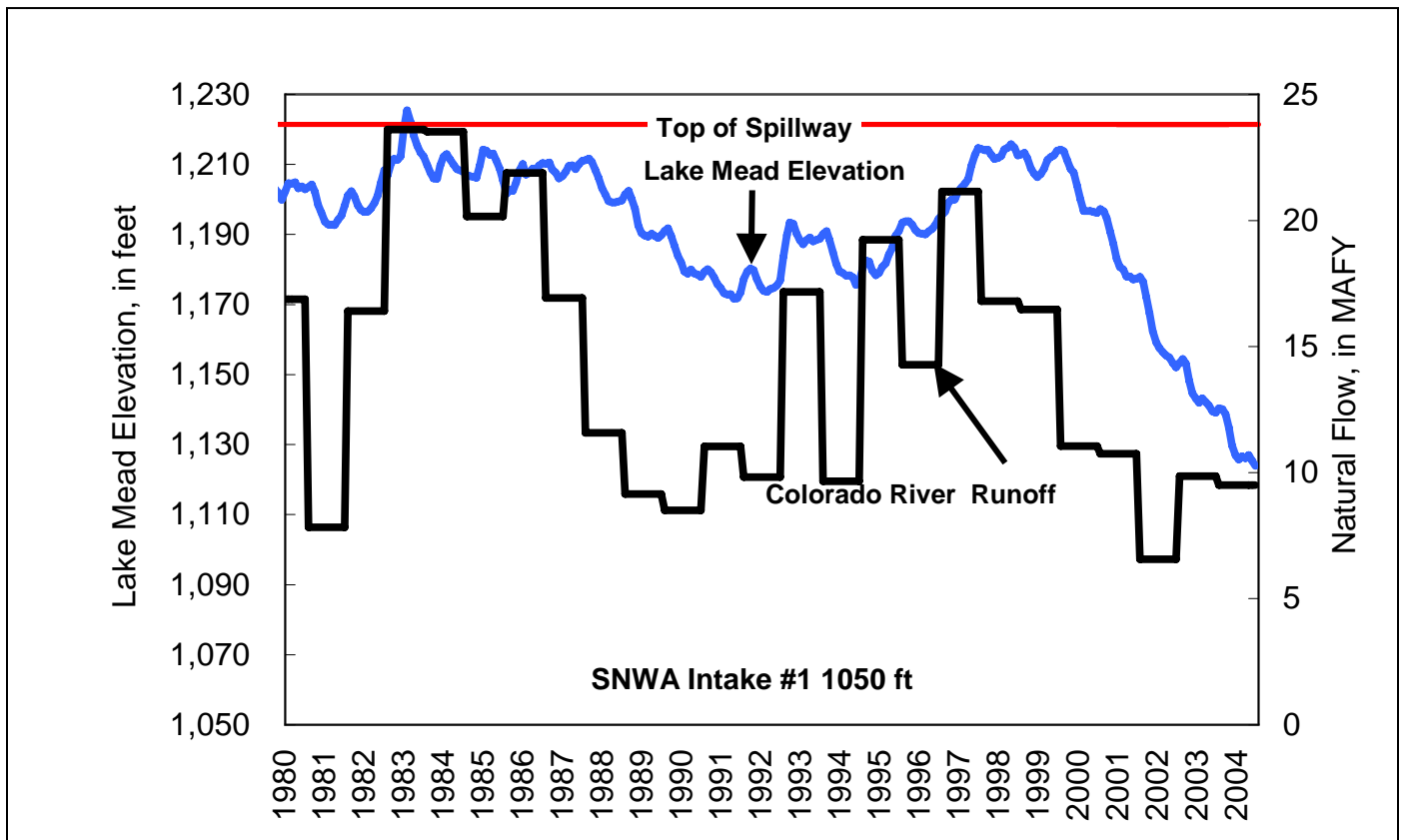


Figure 3. Natural flows at Lee's Ferry, Actual and Five -Year Running Average

Figure 4. Historical Lake Mead Elevations



these factors prior to declaring a drought condition or when determining whether to elevate or lower a drought condition.

To assess water supply conditions, the SNWA will monitor the Bureau of Reclamation “Annual Operating Plan for Colorado River System Reservoirs” and forecasts of Lake Mead’s surface elevation to examine the likelihood of reductions in Colorado River water available for use in Nevada and to identify other factors that may influence the availability of Colorado River water in the next two years. The Bureau’s updated forecast is available at [www.usbr.gov/lc/region/g4000/24mo.pdf](http://www.usbr.gov/lc/region/g4000/24mo.pdf).

The declaration of a drought stage by the SNWA Board requires the member agencies to address immediate drought response needs. Because droughts differ in length and intensity, the SNWA Board will make periodic assessments and work with its member agencies in determining declarations. If drought conditions worsen, more restrictive measures may be required. The goal of the SNWA and its member agencies is to balance measures to preserve a limited water supply while utilizing the limited supply for the greatest benefit of the community.

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