

TAHOE:
**STATE
OF THE
LAKE**
REPORT
2021

CLARITY

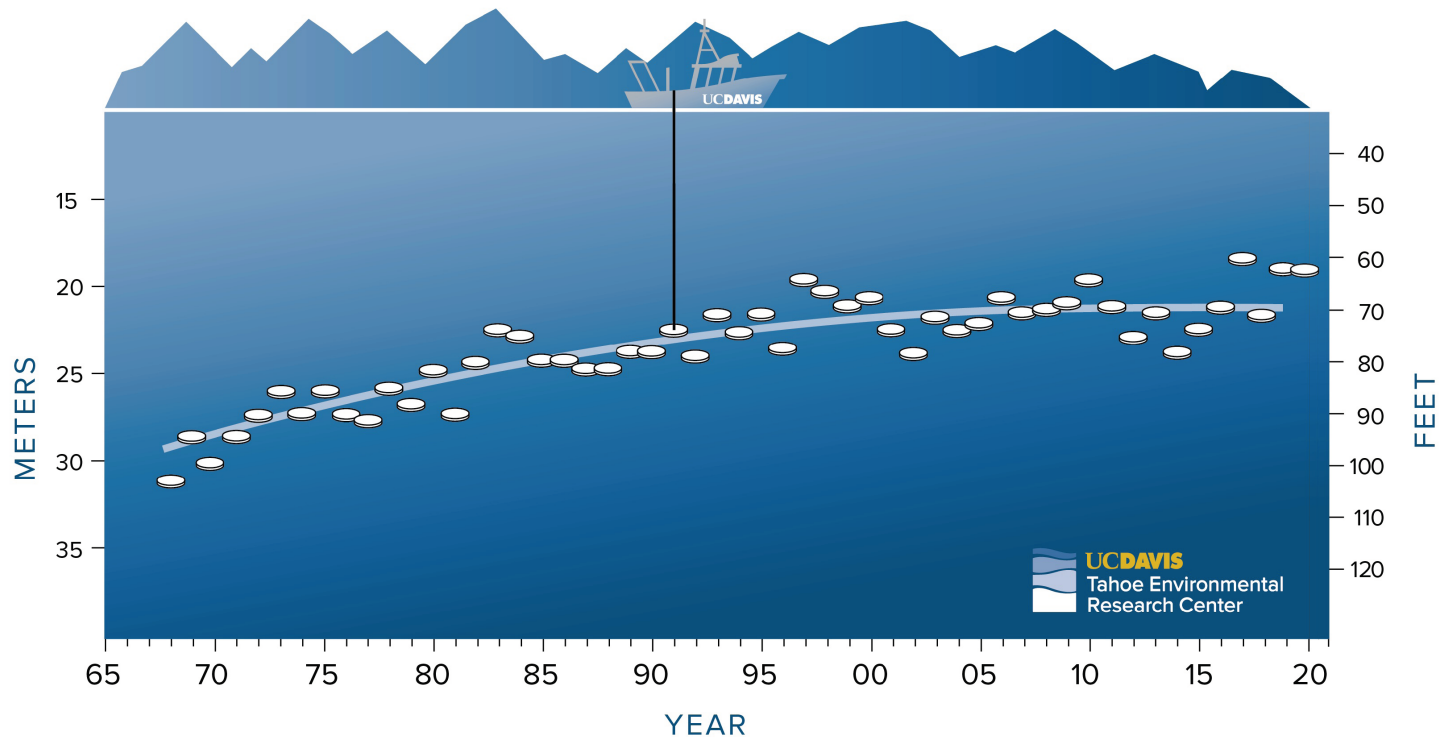
Annual average Secchi depth

Yearly since 1968

The Secchi depth is the depth at which a 10-inch white disk, called a Secchi disk, remains visible when lowered into the water. In 2020, the annual average Secchi depth was 63.0 feet (19.2 m), almost unchanged from the previous year and reflective of the near-constant values that have been attained over the last 20 years. The greatest individual value recorded in

2020 was 81.2 feet (24.8 m) on February 12. The lack of complete vertical mixing of the lake in 2020 is the main reason for this low maximum clarity value. The poorest clarity reading was 50.8 feet (15.5 m) on May 15. The clarity in 2020 was the result of a combination of factors including the absence of deep mixing of the lake, above average stream loads,

algal blooms, and the impact of lake stratification. While the average annual clarity is now better than in earlier decades, it is still short of the clarity restoration target of 97.4 feet (29.7 m) set by federal and state regulators, a goal agencies and the Tahoe Basin community continue to work toward.



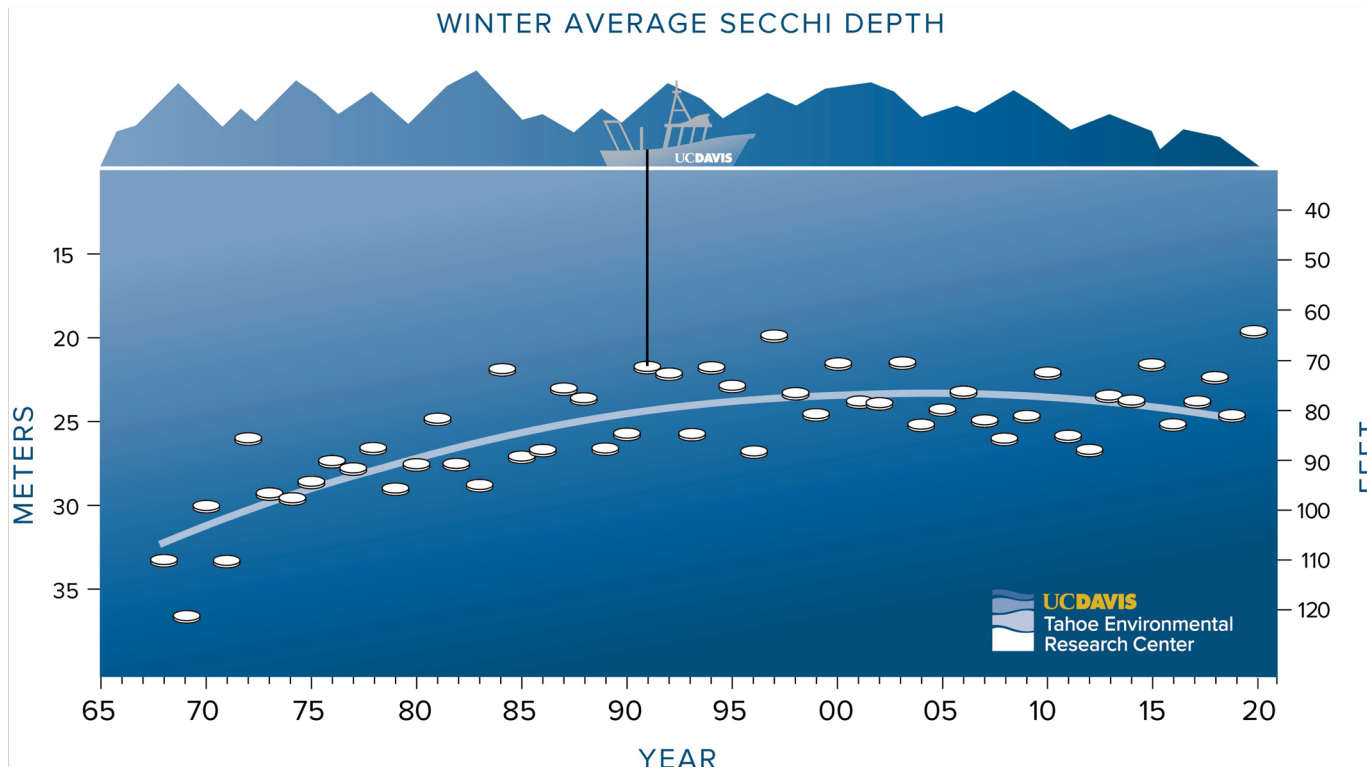
Winter Secchi depth

Yearly since 1968

Average winter Secchi depth was 64.0 feet (19.5 m), based on seven readings between December 2018 and March 2019. No readings were taken during March

due to COVID-19 restrictions. This was the lowest winter clarity on record, and was 17 feet lower than the previous year. Winter precipitation was below the long-

term average and such conditions would typically be expected to yield higher clarity values. The reasons for the low values are still not fully understood.



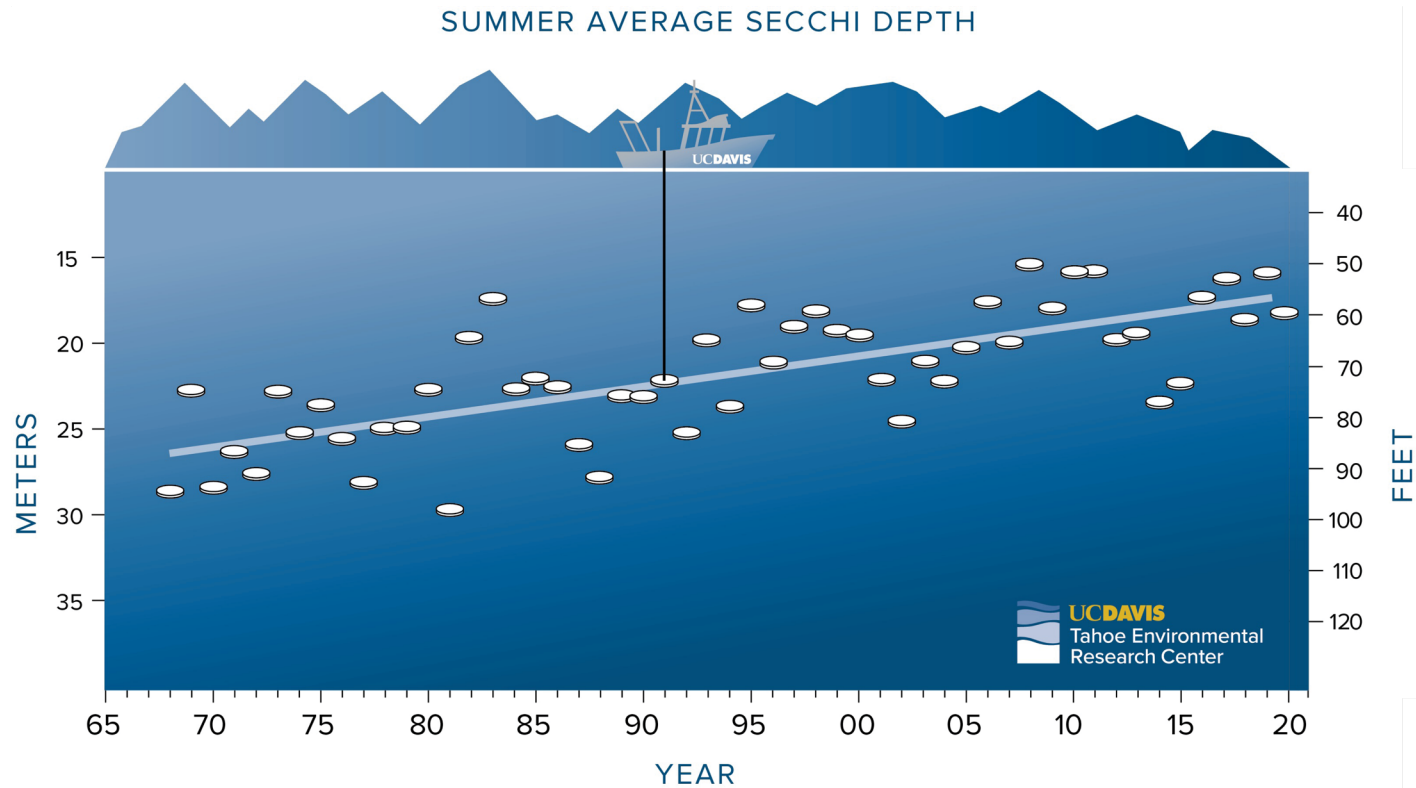
Summer Secchi depth

Yearly since 1968

Summer (June–September) clarity in Lake Tahoe in 2020 was 59.1 feet (18.0 m), an increase of over 6 feet from the previous year. This is significantly above the lowest summer value of 50.5 feet in 2008. Summer is typically the season of

poorest clarity. The long-term summer trend is dominated by a consistent degradation. In the past two decades, scientists have observed a divergence in winter and summer clarity. In the winter months, lake clarity values have tended

to stabilize while in summer, clarity continues to decline. The cause of this divergence is currently under review, but factors related to changing lake stratification and food web changes are believed to play important roles.



Individual Secchi depths

2018, 2019, 2020

Here, the individual Secchi depth readings from the Index station on the west side of the lake for 2018, 2019, and 2020 are plotted. Secchi values can be seen to sometimes vary considerably over short

time intervals. This figure makes clear the abnormal winter conditions for 2020 when the absence of deep mixing did not produce the usual winter clarity improvement.

