

TAHOE: STATE OF THE LAKE REPORT 2018

CLARITY



UC DAVIS

Tahoe Environmental
Research Center

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Annual average Secchi depth

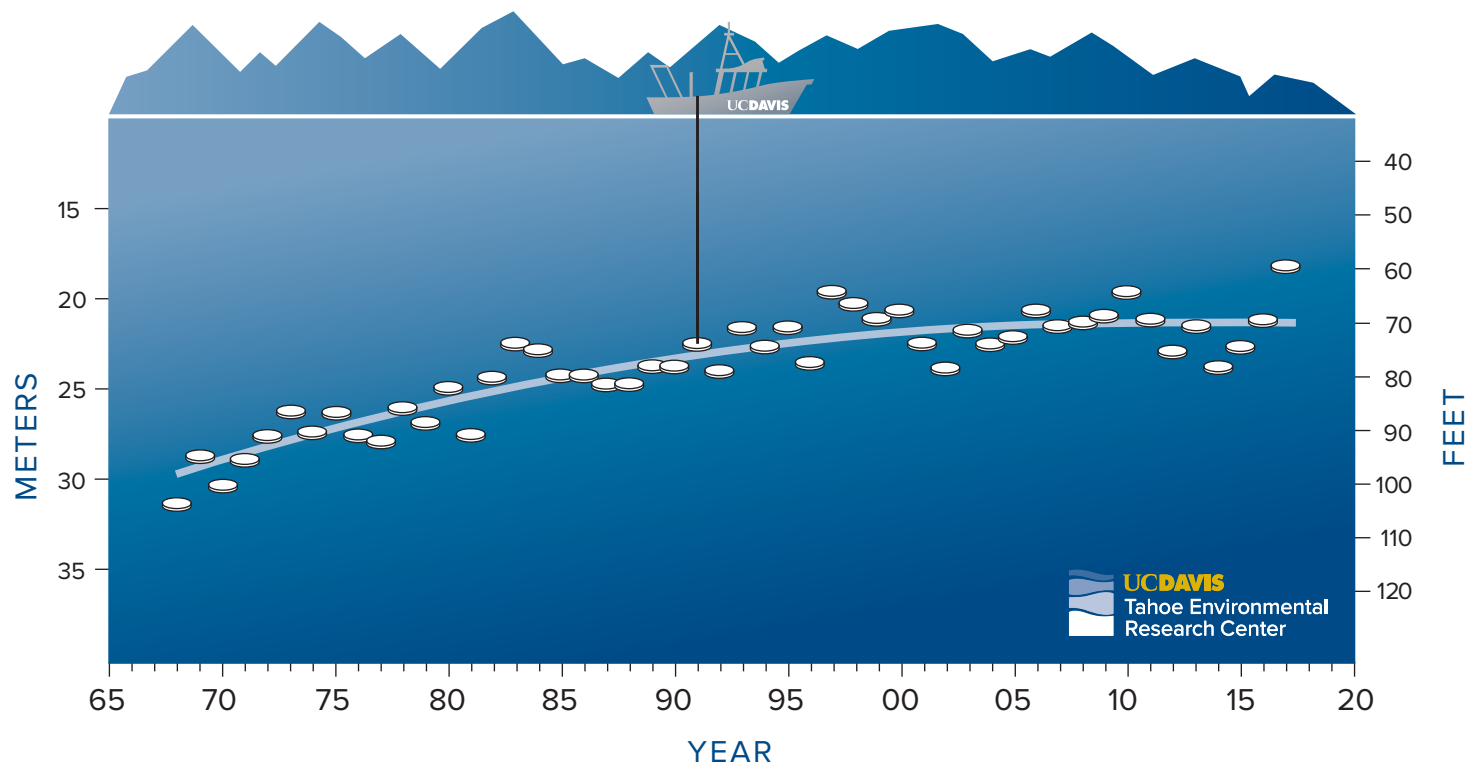
Yearly since 1968

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 2017, the annual average Secchi depth was 59.7 feet (18.2 m), a 9.5 feet decrease from the previous year. This was the lowest value recorded historically at Lake Tahoe, however, as detailed in the

Special Section on 2017 Lake Clarity, the year was highly anomalous and this extreme value does not represent a departure from the trend of the last two decades. The highest individual value recorded in 2017 was 90.2 feet on March 9, and the lowest was 47.6 feet on October 17. The decline this year is largely

attributable to the record wet winter that followed the five-year drought. A change in the timing of snowmelt and lake warming also played a role. The clarity restoration target of 97.4 feet was set by federal and state regulators, a goal agencies and the Tahoe Basin community continue to work toward.

ANNUAL AVERAGE SECCHI DEPTH



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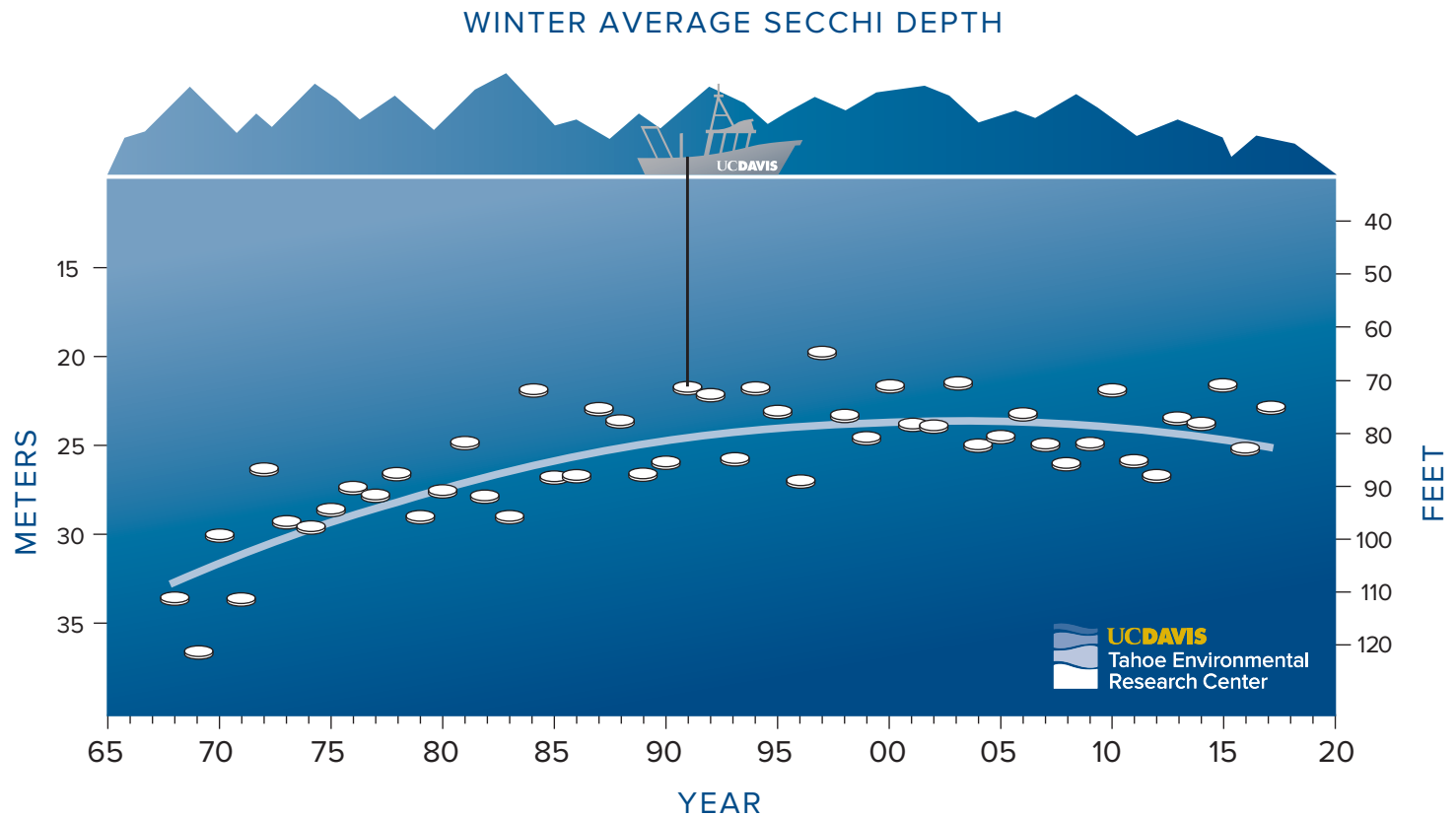
Winter Secchi depth

Yearly since 1968

Annual winter (December-March) Secchi depth measurements from 1968 to the present indicated that winter clarity at

Lake Tahoe declined, although not to its lowest level. In 2017, winter clarity decreased by 7.0 feet. The winter average

of 76.4 feet (23.3 m) was still above the worst winter average, 65.6 feet (20.0 m), seen in 1997.



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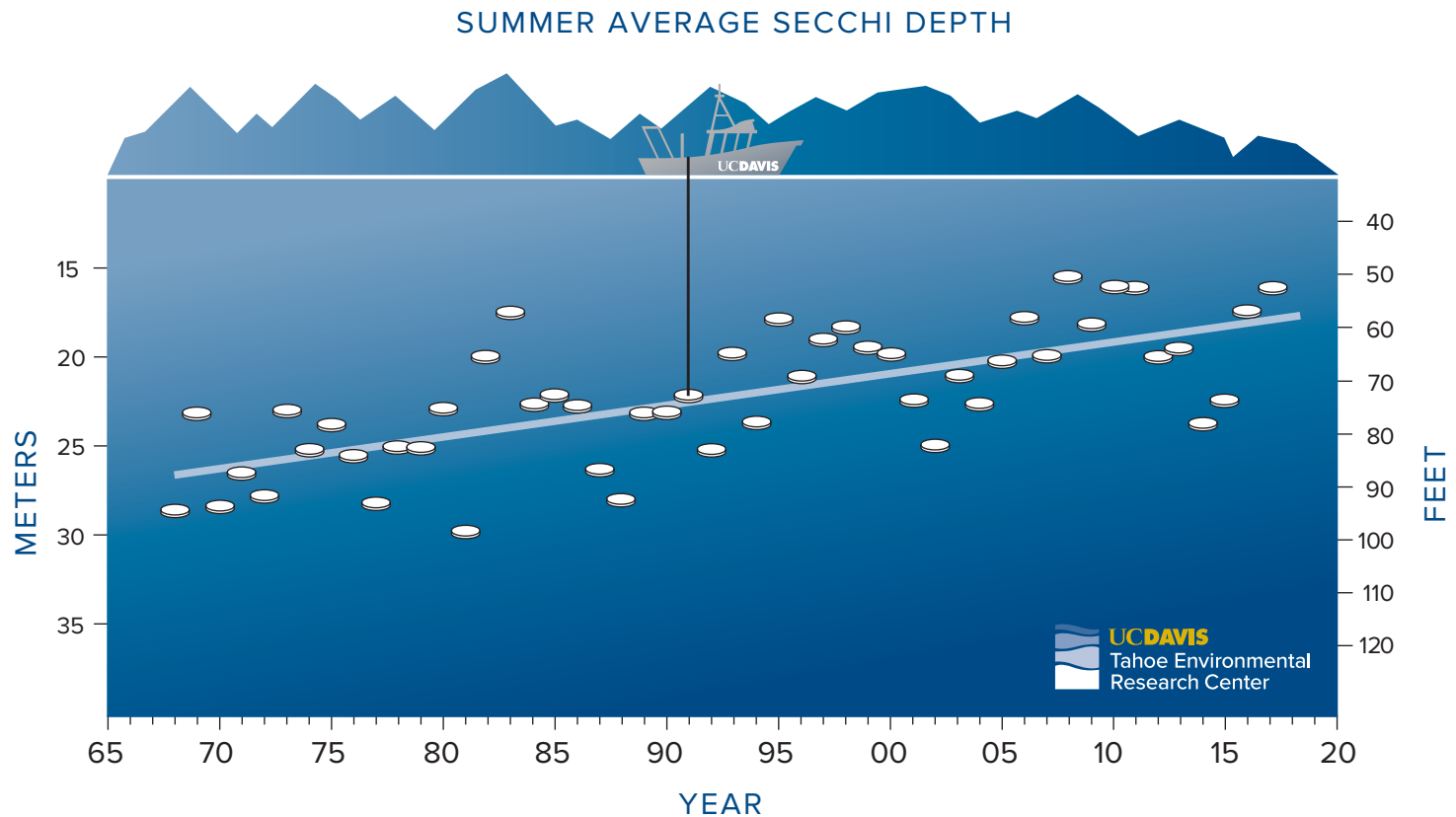
Summer Secchi depth

Yearly since 1968

The 2017 summer (June-September) clarity in Lake Tahoe in 2017 was 53.5 feet (16.3 m), a 2.9 feet decline from

2016. The summer trend is dominated by a consistent long-term degradation but punctuated with a noticeable 10-15 year

cyclic pattern. The drivers behind the ongoing decline in summer clarity are an active area of research.



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Individual Secchi depths

2015, 2016, 2017

In the figure below, the individual Secchi depth reading from the Index station on the west side of the lake for 2015, 2016, and 2017 are plotted. 2017 can be seen to deviate from the usual pattern of improving clarity between September and

December. Instead, the clarity in 2017 remains consistently poor during this period.

Secchi values can be seen to sometimes vary considerably over short time intervals. This is evident on March 9

and March 23, 2017 where the Secchi depth changed from 90 feet to 62 feet respectively. Such short-term variability is common in lakes. The sudden change is often due to episodes of strong wind.

