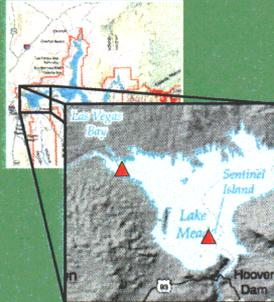


# Near-Real-Time Water-Quality Data for Lake Mead are *Now on the Web* at <http://nevada.usgs.gov/lmqw>

## 1. Introduction

Lake Mead on the Colorado River is the major source of drinking water for over one million residents in the Las Vegas urban area as well as employees and visitors to the Lake Mead National Recreational Area. Water from the lower Colorado River system, downstream from Lake Mead, is a major source of water for over 20 million people in Arizona, southern California, and Mexico. The lake provides water-based recreation for over ten million visitors per year. Lake Mead is listed as critical habitat for the endangered razorback sucker and supports important sport fisheries for striped bass, largemouth bass, and channel catfish. The waters and riparian habitats of Lake Mead also support significant bird populations, including the endangered southwestern willow flycatcher.

To add to our collective understanding of this important water resource, fundamental physical and chemical parameters (temperature, pH, dissolved oxygen, specific conductance, turbidity, and total chlorophyll) are measured at various



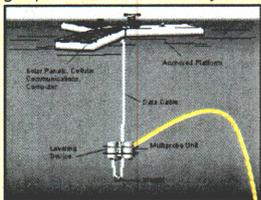
**Figure 1.** The near-real-time water-quality monitoring sites, indicated with red triangles, are located in Las Vegas Bay and near Sentinel Island, Boulder Basin, Lake Mead. The Las Vegas Bay platform was installed in August 2000 and the Sentinel Island platform was installed in January 2002.

depths several times a day at two sites on Lake Mead (fig. 1). These data are now available on the web at <http://nevada.usgs.gov/lmqw>. This project is a cooperative study between the U.S. Geological Survey, the Bureau of Reclamation, and the Southern Nevada Water Authority.

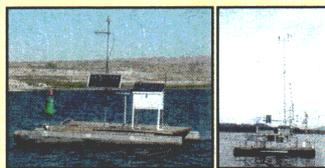
## 2. Equipment and Maintenance

Water-quality parameters at each site are measured with a YSI® model 6600 multiprobe. The multiprobe moves up and down the water column using a variable buoyancy device, or profiler developed by Aprprise Technology® (fig. 2).

Currently (June 2003), water quality parameters at Las Vegas Bay (fig. 3) are measured every 2 meters,



**Figure 2.** Generalized diagram of equipment at the near-continuous water-quality monitoring sites (Top). Close up photo of Aprprise profiler and YSI multiprobe (Right).



**Figure 3.** Photos of the Las Vegas Bay water-quality platform (left) and the Sentinel Island water-quality and meteorological platform (right).

from 3 to 19 meters below the water surface. At Sentinel Island (fig. 3), water-quality parameters are measured every 5 meters, from 5 to 75 meters below the water surface. Profiles are completed every 6 hours at both sites. These data are transmitted daily to the USGS office in Henderson, Nevada, and posted on the web site.

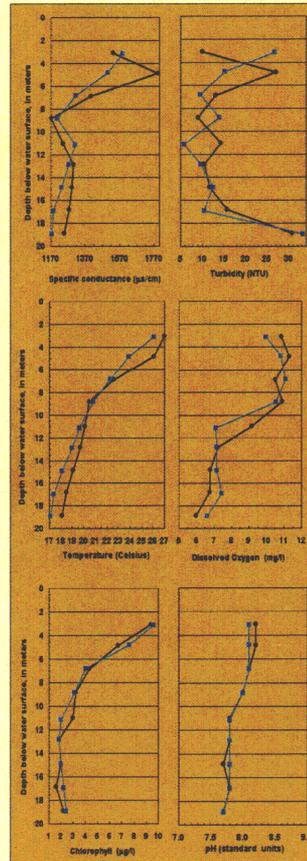
The multiprobes are serviced and maintained according to USGS guidelines for the operation of continuous water-quality monitoring devices (USGS, 2000)

\*Use of product or trade names does not constitute an endorsement.

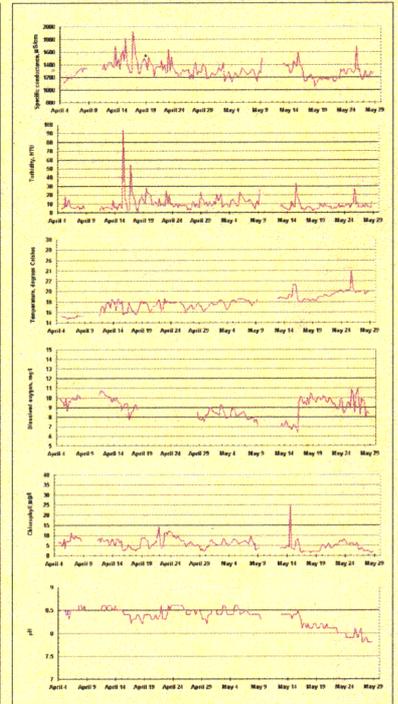
## 3. Data Available on the Web Site

Data on the web site are presented in tabular and graphical formats. Graphical data can be viewed as either profile data (fig. 4) or temporal data (for specific depths) (fig. 5).

Data on the web site are for this water year (2003). Reviewed temporal data prior to the current water year will be available from the USGS National Water Information System (NWIS) database.



**Figure 4.** Example of profile data available on the web for the Las Vegas Bay platform. These data were collected on May 29, 2003, at 0042 hours (black line) and 0600 hours (blue line).



**Figure 5.** Example of temporal data available on the web for the Las Vegas Bay platform. These data were collected at 11 meters below the Lake's surface in April – May 2003. Gaps in the data plots are due to missing data caused by instrument malfunction or due to spurious data that have been deleted.

## 4. Additional Information

The Sentinel Island platform was vandalized on May 6, 2003. The profiler and multiprobe were missing for approximately 3 weeks, but were recovered and are currently being repaired. We hope to have the Sentinel Island site back on line by July 2003.

For further information regarding this project or if you have questions about data on the web site, please contact one of the following USGS personnel:  
 •Craig Westenburg, phone (702) 564-4610, email [cwesten@usgs.gov](mailto:cwesten@usgs.gov)  
 •Ryan Rowland, phone (702) 564-4524, email [rowland@usgs.gov](mailto:rowland@usgs.gov)  
 All data presented on the web are provisional and subject to revision.

Reference  
 U.S. Geological Survey, 2000, Guidelines and standard procedures for continuous water quality monitors: site selection, field operation, calibration, record computation, and reporting, USGS WRIR 00-4252.

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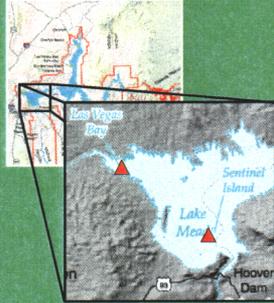
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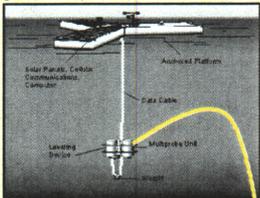
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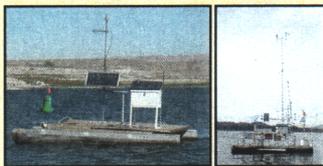
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Water-quality parameters at each site are measured with a YSI® model 6600 multiprobe. The multiprobe moves up and down the water column using a variable buoyancy device, or profiler developed by Apprise Technology® (fig. 2).

Currently (June 2003), water quality parameters at Las Vegas Bay (fig. 3) are measured every 2 meters,



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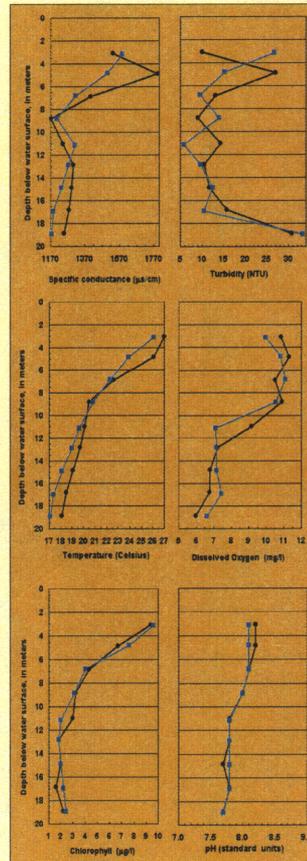
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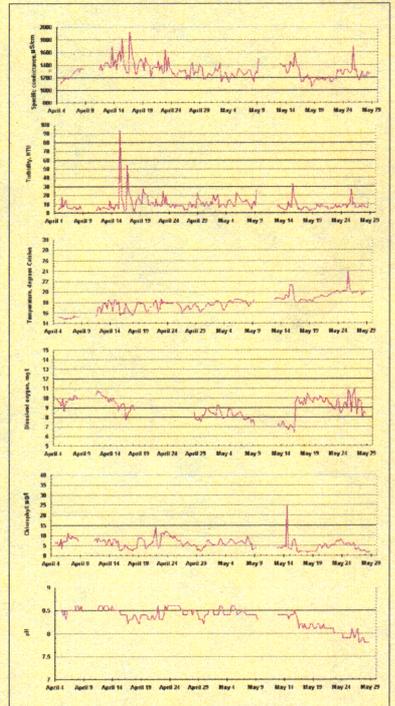
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