

# Daily Temperature Readings Show Bay Is Not So Chilly

By Jack Rannells

The ocean is to cast lines (or bottles) into.

To paint. To photograph. To decorate telephone books with.

To wonder at.

To live by. Dream by. Drive by. Tan by.

Certainly, for Santa Cruzans the ocean is for almost anything. Except swimming in.

"Get me in there? Not with a team of wild mermaids," snorts the typical localite (when vacationers are out of earshot).

Chilling temperature is the reason most often cited.

Is fair Monterey bay being bum-rapped?

Daily temperature checkups by two public agencies—the city and the state division of parks and beaches—indicate there is at least room for debate.

These charts prove beyond doubt that Monterey bay (and ocean) is no Persian gulf, where temperatures steam up to a tepid 96 degrees (Fahrenheit).

But they also show it is no arctic ocean (28 degrees), as the shoreward groans would tab it.

Readings taken at Natural Bridges State park during the past five years show a high-low from 62 to 49 degrees.

City figures, taken from greater depths below the wharf since April, indicate wider fluctuation—from 39 to 70.

Currently, both stations are recording marks in the low 50's (Tuesday: Natural Bridges, 52.3; wharf, 55.)

You wouldn't pour your bath water at this temperature.

But looking at it another way, you would have been warmer in Monterey bay than on Pacific avenue at any time during that cold snap early this month. Air temperatures trudged up to peaks of 49 or 51 degrees while the moderate sea hovered at 53 or 54 'round the clock.

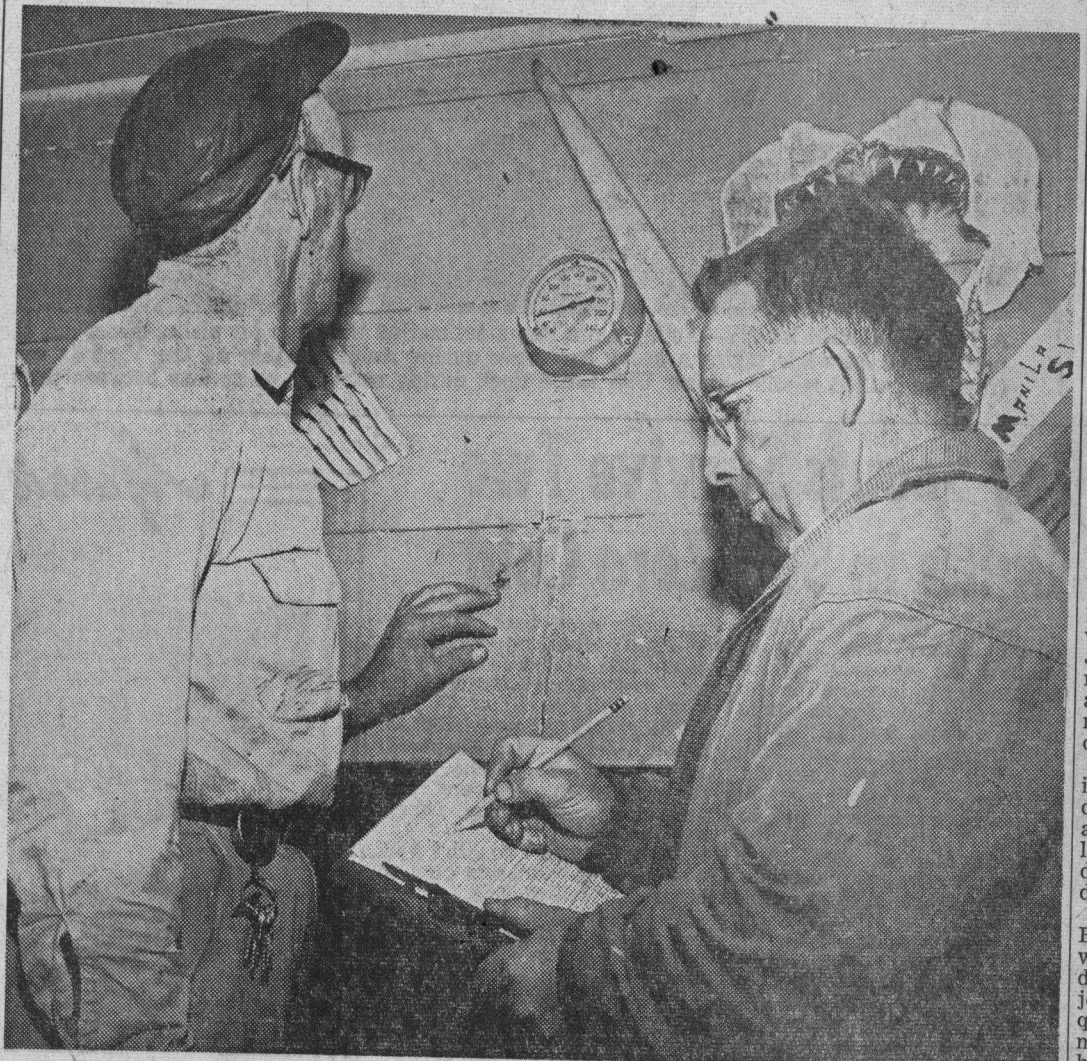
The official readings are taken at 8 bells each morning.

A ranger at Natural Bridges clambers out on the archway and tosses a bucket over the side, immersing it at one-foot depth for a minute. This changes the metal to water temperature, according to Bob Perkins, park supervisor.

Filled, it is pulled up by rope, and a sensitive thermometer provided by Scripps Institute of Oceanography is dropped into the water and left for two minutes. Then, still submerged, it is read.

Natural Bridges is one of 23 stations between Puget Sound and La Paz which sends the daily reading and remarks on flotsam, survey drift bottles, and other

## Wide Range In Waters Near Wharf



Vieux Rawls, owner of the wharf aquarium, reads water temperature and Santa Cruz Wharfinger Howard Bethel jots it down. Water temperatures

are taken at 8 a.m. daily. Sea water for the aquarium is drawn from 10-foot depth, passing a thermocoupled thermometer in the line. Bethel reports temperatures ranging from 39 to

70 degrees, with widest fluctuation in October. Manila shark jaw which appears ready to decapitate Bethel is an exhibit in the aquarium.

unusual observations to Scripps at La Jolla.

The information is used in current analyses.

It also is provided to Hopkins marine station at Pacific Grove for marine life studies.

Perkins said lowest temperatures normally occur during February, with the highest from July through early September.

"But this year, our coldest water came on April 20," Perkins said. In typical, consistent graduations, the temperature dipped to the low of 50 degrees. Coldest reading other than that spell was 52-even on January 3.

The 1961 high was 60.98 on July 21.

Perkins said temperatures this year are about two degrees below comparable dates last year, possibly indicating a shift in warm currents of the past three years.

Wharfinger Howard Bethel has been taking readings only since April and does not have comparative data. However, figures to date provide interesting variation from the Natural Bridges surfline readings.

Bethel takes his data from a gauge in the wharf aquarium. Water constantly is being pumped up from 10-foot depth. It passes a thermometer in the line, thermocoupled with the gauge to give continuous readings.

Day-to-day fluctuations — both up and down—indicate that clouds of warm and cold water swirl through the bay to the lee of Lighthouse point.

These probably are related to the warm and cold water "pockets" familiar to swimmers and body surfers.

Bethel said the fluctuations from day to day are most pro-

nounced in the early fall, when evenings and many days take on a chill.

Temperatures as low as 48 and as high as 70 were recorded by Bethel during October. (Natural Bridges readings were stratified in the 58's).

Temperatures have ranged only five or six degrees during most months, Bethel said.

A number of forces affect Monterey Bay temperatures. Not the least of these are the very currents Natural Bridges rangers are helping to identify.

J. B. Phillips, marine biologist at Hopkins, said there generally are three "current seasons" here.

"There is a cold water period in the spring. Northwest winds blowing along the coast cause a depression and cold waters from below fill it," he said.

The California drift of the Japanese current exerts its influence in the fall. Basically warm, it is cooled to varying degrees in passing the Bering sea.

"Sometimes in winter we get a warm current—the Davidson current—from the south," Phillips explained.

The Santa Cruz side of the bay

is warmer than Monterey because of the greater expanse of "shelf" on this side, Phillips said.

Other things affect the ocean temperature.

"Generally, when the tide is out, temperatures run a little colder," Perkins said. "Rain warms it up some."

Force and direction of wind, clouds, and their height all have minor effects on the heat absorption or cooling of the water.

Then there is the effect of the ocean water on man.

"In water 68 degrees or higher a person could live indefinitely," said Hospitalman First Class Don Stiefbold of the naval reserve center.

Nazi "guinea pig" experiments indicated humans can survive a minimum of 53 minutes and maximum of 106 minutes in water from 35 to 54 degrees.

Cottardo Stagnaro Sr., grandfather of the mid-wharf fishing and restaurant clan, and Stephen Ghio reportedly survived more than three hours clinging to the keel of their capsized sailboat between Santa Cruz and Capitola in 1903 or 1904.

Countless other have survived

## Check At Natural Bridges



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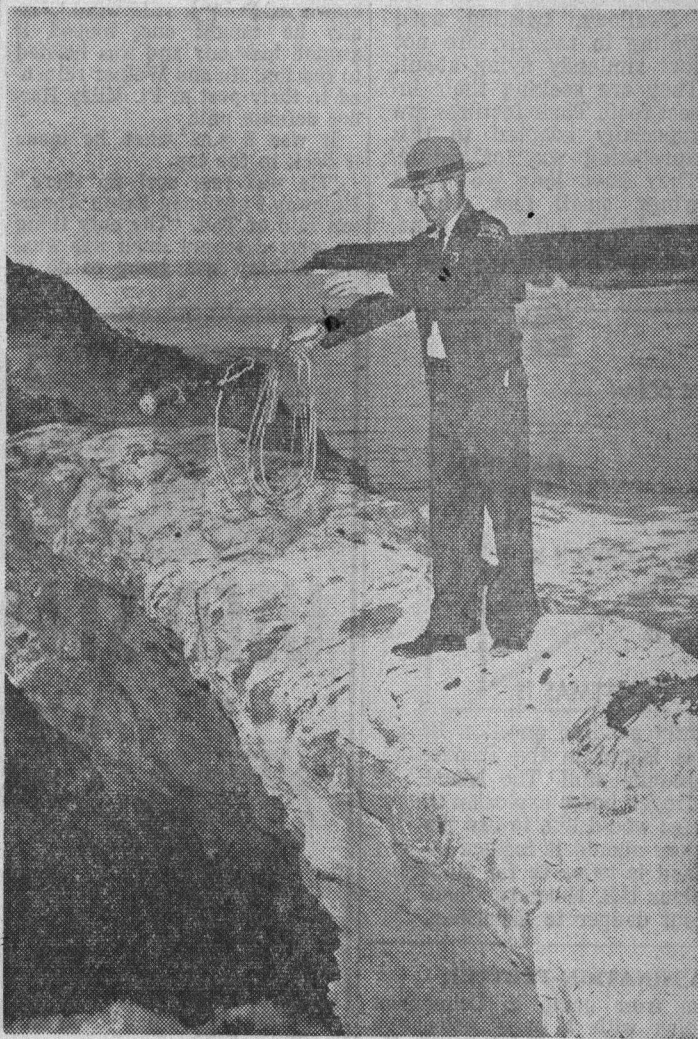
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## Check At Natural Bridges



Ranger Bob Perkins tosses a metallic can from the natural bridges arch as a preliminary step to daily water temperature reading. The Natural Bridges staff records temperatures to assist Scripps Institute of

Oceanography and Hopkins Marine station in current and marine life studies. Surfline temperatures range from 49 to 62 with the extremes generally in February and July-September.