

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION Division of Boating and Waterways I Off-Highway Motor Vehicle Recreation Division I Office of Historic Preservation

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## California State Parks Responds to Fish Die-Off in Malibu Creek and Malibu Lagoon

Local scientists are looking into what may have caused the death of approximately 2,000 striped mullets in the past week

SACRAMENTO, Calif. – California State Parks and The Bay Foundation, supported by local fish and wildlife experts, are assessing the cause of death for an estimated 2,000 striped mullet (*Mugil cephalus*) over the last week within Malibu Lagoon and lower Malibu Creek. Large groups of live individuals have also been observed schooling throughout the lagoon. Fish death has largely been limited to the striped mullet, no impacts to the special-status southern California steelhead trout (*Oncorhynchus mykiss irideus*) or tidewater goby (*Eucyclogobius newberryi*) have been observed.

The cause of the mortality is unknown, but recent high water temperatures associated with the recent heat wave may be a prime culprit. High temperatures can decrease the available dissolved oxygen levels in the water or promote increased algal or bacterial growth. Temperatures in the Creek and Lagoon were recently documented at around 27-28° C (80-82° F), which is believed to be the upper limit at which striped mullet can survive. Salinity and dissolved oxygen levels collected during the day were normal for this time a year, and were about eight parts per thousand and three to nine milligrams per liter (mg/l), respectively. Striped mullet are generally tolerant of low oxygen and a wide range of salinities.

Prior to the Malibu Lagoon restoration in 2012-13, smaller fish die-offs occasionally occurred within Malibu Lagoon and are not unusual for estuaries, lakes, marinas and similar areas. The circulation and dissolved oxygen levels of the lagoon post-restoration have significantly improved compared to pre-project conditions and provide higher quality fish and wildlife habitat.

Striped mullet are a common species in coastal lagoons and estuaries south of Point Conception and have been found north into Oregon and within the Salton Sea. Locally, the mullet move seaward to spawn in early to mid-winter, and very small juveniles can be common in the creeks and lagoons around late December to February. Striped mullet feed on muddy bottoms on organic debris, diatoms, bacteria and microinvertebrates. In natural areas, it is generally preferable to leave carcasses onsite for native wildlife to use for food, and add to the natural fertility of the soil and water. State Parks staff has decided to remove the dead fish in the main lagoon, however, due to their numbers, and in consideration of adjacent residents and the visiting public. State Parks staff began removal efforts over the weekend, and will continue to monitor the situation.

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