

MARINE LIFE

SURFING DIRTY

After Woolsey burned through homes and cars, recent rains swept the fire remnants directly into the ocean. *Malibu Magazine* investigates the possible effects on Malibu's marine life.

✍️ written by Brenna Spalding 📷 photographed by Julie Wuellner



As the hills of Malibu recover from the extreme scorches of the Woolsey Fire, a battle against the fire remnants that have washed down into the ocean rages off-shore. The coastal waters in Malibu are speculated to have suffered these past few weeks from major pollutants that could have severe consequences. With a few days of what the Los Angeles County Health Department considers “significant rainfall,” Malibu faces runoff from the burn areas straight into the ocean.

While runoff is not a new concern, in regards to water quality on the coast of Malibu, Graham Hamilton, the Los Angeles Chapter Coordinator of the Surfrider Foundation identifies this runoff as potentially more dangerous due to the recent fires, containing metals and other non natural elements. “When things are normal

and we have a heavy rainfall here in LA, Surfrider [Foundation], along with the LA County Health Department, advises people to stay out of the water for 72 hours” Hamilton says. 72 hours is the basic window that bacteria either perishes or is dispersed by coastal processes. Hamilton continues, “The problem with metals is that they don’t disperse, they just sink to the bottom of the ocean. So it’s difficult to know at what point it will be safe for people enter the water.”

In order to better speculate the effects that the Woolsey Fire has had on Malibu’s coastal waters, Hamilton dives into his own observations. “I’ve been up in Malibu consistently since the fires have been tamped down - more importantly since we’ve had these rain events - and the water is incredibly, incredibly dirty,” Hamilton says. “You can see, from an elevated perspective...it almost looks like patches of the sea surface have been smoked...

When you get down close to the beach actually in the surf zone, you can see dark, ashy sediment in the water." This visible sediment is a concern among those who study the ocean water, but should also be a concern to the public as well.

"Think of all the things in your house, and imagine all of those things are now turned to ash and rain picks up that ash and pushes it straight out into the ocean. That's a lot of s*** to be exposing yourself to." Hamilton says. After checking out the water from a surfer's standpoint, Hamilton says, "I can tell you that the water in Malibu is certainly polluted at the moment. I personally am not surfing in Malibu right now. I've gone up on several occasions to kind of check and see how things look and at several beaches encompassed by the burn area...When the waves break on the shore it's like they exert this plume of scent and you can smell smoke." Surfers in Malibu are encouraged to be mindful during this time of uncertainty and to "Use their best judgement."

Tom Ford, the Executive Director of The Bay Foundation, explains that while they have not had the opportunity to monitor the open ocean potentially impacted by the aerial deposition of ash, they have - in assistance with the National Parks - witnessed deposits of sediment, ash, and particles of burnt wood lining the shores of Malibu Lagoon. "We're going to see additional amounts of organic pollution, organic toxins, and metals in the smoke and ash because of the structural fires" Ford says. In terms of water quality, even low concentrations of metals can be very toxic. "Swimming in that water, consuming animals that live in that water, or drinking that water, those are some of the things that we most closely regulate because we recognize how damaging they can be" Ford says. These toxins, although unpredictable, are concerning for those entering the water. "I don't know what the long-term effects are, but I can imagine they're serious enough to warn staying out of the water," Hamilton says. "With typical runoff, when you get exposed to high levels of bacteria, your symptoms can range from gastrointestinal issues to ear infections...but as far as burn runoff [is concerned], the jury's still out."

Although agencies local to Malibu have not had the opportunity to study direct effects of wildfire on ocean life, a team at University of California Santa Barbara (UCSB) were able to observe and experiment on the ash that entered the ocean during the Thomas Fire in Santa Barbara last year which, in respect to the coast, burned in a remarkably similar geographic region as Malibu's Woolsey Fire. "When we applied for ship time we didn't know there would be a fire, and then two weeks before we were scheduled to go out, the Thomas Fire broke out," Kelsey Bisson, a former graduate student who was a part of the research team

says. The focus of their research was on microbial organisms in the ocean, which Bisson believes to be a crucial part of the ocean's ecosystems. "These microbes eventually will feed things like whales, dolphins and sharks; they form the base of the food web here and everywhere around the world", she says. "Understanding how they might react and adapt their behavior to ash is really important." Bisson's team observed the ash and its behavior in the ocean by measuring different properties of the seawater and comparing their data to previous years. While their results are preliminary, they observed that microbial communities of phytoplankton were growing. "One hypothesis that we have is that ash might be causing some things to grow. Of course, depending on what can grow from the ash, that could be good or bad for the fish," Bisson says.

As for the fish that graze on phytoplankton, Bisson found that ash particles are about the same size as the tiny microbes. "What that means is that animals that might be wanting to eat phytoplankton could mistake ash particles for food and eat that instead," she explains, "We've been doing experiments on if that would affect the health of those animals or not, but we know that they are likely eating ash." Because UCSB was the first and only institution to conduct research on marine life following a wildfire, there is a lot of research still left to be done. "What we need right now is a good metric to identify ash in seawater...and see if that is actually being deposited in high enough concentrations that it will make an impact on the animals," Bisson says. "It's really important, especially because so much of our livelihood and our recreation is centered in the coastal areas around the Pacific Ocean, to understand how the fires might affect marine life, that's huge."

Although the future of Malibu's coastal life is unsure, the community in Malibu is committed to doing all they can to better understand the impact of wildfires on the ocean. "There's going to be a coalition of environmental organizations, including Surfrider, that are going to be conducting long-term water quality testing in the Santa Monica Bay, specifically in Malibu, to understand the long-term impacts of burn runoff," Hamilton says. The coalition will include efforts from Surfrider, LA Waterkeeper, Heal The Bay, and The Bay Foundation. "The focus right now in Malibu is on recovery and I think it's going to be the focus for the foreseeable future, whether that's recovery for homeowners or recovery for terrestrial and marine ecosystems," Hamilton says. "There's just going to be a lot of recovery."

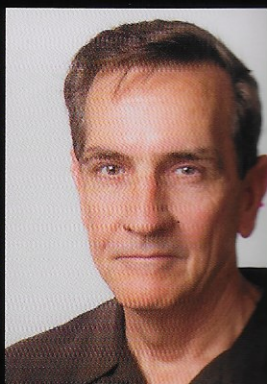
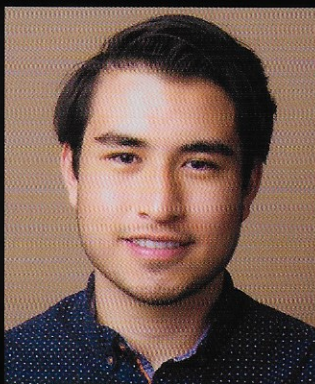
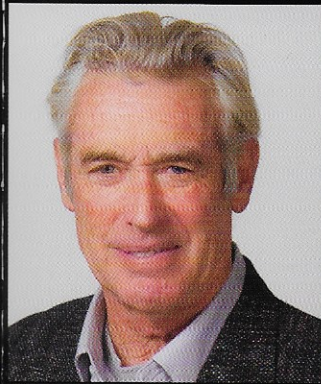
Following the community's focus on restoration, the beaches in Malibu will resurrect to become the same populated and beloved places they've been for generations.

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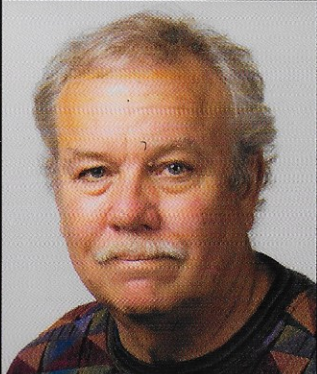
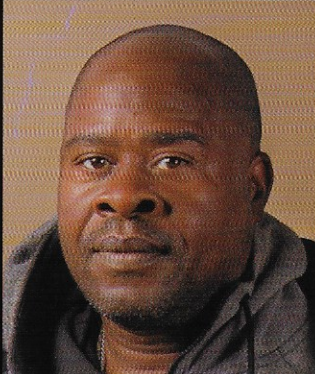
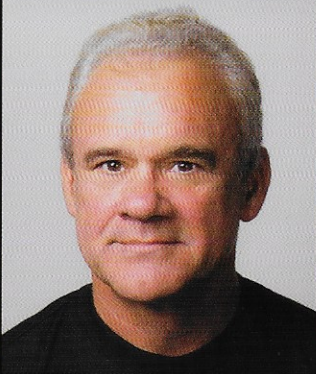
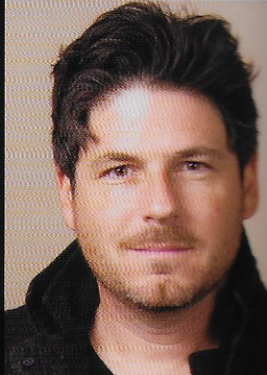
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