

Understanding impact of Santa Monica breakwater on circulation

Tracer release FAQ



UCLA
Coastal Flood Lab



What tracers are we using?	We will release three tracers by the middle of the breakwater: rhodamine WT and two organic tracers (ground grass carp and synthetic DNA). All three tracers are safe for you, for wildlife, and for the environment. Rhodamine WT , distinct from other types of rhodamine, is often used as a passive tracer for water studies. Take a look at US Fish & Wildlife using rhodamine WT here !
How long will the water stay pink?	The rhodamine WT tracer will dye the water pink, but you will likely only be able to see the color for a few hours. However, our sensors will be able to pick up the dye's fluorescence for much longer, so we can continue to track where the dye, and therefore the water that carries it, travels.
What are we trying to understand?	Over four tracer releases in September, we are understanding how the Santa Monica Pier breakwater impacts water circulation around it.
Why is the breakwater there?	The rocks you see in front of the pier today used to form a wall, allowing boats to dock in the calm marina behind it. Over the years, storms knocked down the breakwater to its current height.
What are some impacts the breakwater might be having on its environment?	The breakwater may be: <ul style="list-style-type: none">• acting as an artificial reef• impacting water quality for swimmers at the beach by preventing waves from flushing water away• widening the beach in front of it by reducing waves
How are we surveying wildlife living at the breakwater?	Our primary method is environmental DNA (eDNA) - we take a sample of seawater and sequence the DNA in it to understand what species are living there. By using organic tracers in our study, we can better understand how far the DNA from the breakwater can travel and therefore better understand our survey data. Learn more about eDNA here !

