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Writing 2

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                                                      A Solution to Beach Pollution

 Santa Cruz is a wonderful city most known for its beautiful beaches. Although this

remains the case, high levels of pollution have deeply affected some of our shores. According to

the *Santa Cruz Sentinel*, “the number of A or B grades given to local beaches from Natural

Bridges State Beach down coast to Rio del Mar Beach during wet weather conditions was

“dramatically lower this past year," with only 3 of 12 locations receiving A or B grades

compared to 10 last year” (Sentinel Editorial Board 1). This water pollution puts the aquatic life

residing in our waters under risk and the bacteria in the water can lead to the sickness of many

people. This bacterium stems from many different sources, but a primary source is from the litter

on our beaches. Our beaches are the natural treasures of our city and we should protect them and

the aquatic life that resides in them; therefore, I propose that taxpayer money should be put aside

to help the city of Santa Cruz post up signs at polluted beaches warning beach visitors of the

consequences of littering and to hire personnel to make sure our beaches are kept clean.

 Our beaches are fundamental to both the economic and environmental wellbeing of the

city of Santa Cruz. Santa Cruz receives a substantial amount of money from tourism. The surf

culture and natural beaches in our city are the primary source of this tourism. According to

TripAdvisor, the top five best things about Santa Cruz are all beach related. This demonstrates

that if we let our beaches get polluted, our city will lose a lot of money from lowered amounts of

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tourism. Santa Cruz also gets a lot of tourism for surfing and a lot of business in the area rent out

board and wetsuits. If our beaches were to get too polluted, surfing in Santa Cruz would go away

leaving us with much less tourism.

Economics aside, our beaches are habitats for thousands of aquatic creatures and the polluting of

these waters can lead to the death of many seals, dolphins and even whales. The littering of

plastic bags on the shores of beaches can lead to devastating occurrences like, “A sperm whale

found dead on a North American beach was discovered to have starved to death because a plastic

gallon bottle which it had swallowed had plugged its small intestine. The animal was full of

plastic material ranging from other plastic bottles to 12m of nylon rope” (Queensland

Government 1). If a plastic bottle can kill a whale, then it can substantially harm most types of

aquatic creatures. Dolphins are an endangered species and there have been many cases of pieces

of plastic being stuck the mouths of dolphins. This can suffocate the mammal and lead to its

death. Phenomena like these examples will become a common occurrence if we let this littering

problem get out of control.

 Currently, Cowell Beach is ranked the number one dirtiest beach in California and it

has been holding this position for the last four years. According to researchers, “...nearly 90

percent of samples during the summer dry period exceeded at least one state bacterial standard at

this location” (Seaver 1). This is worrying, because this beach is located right next to the beach

Boardwalk and is also a popular surfing sport. Having a polluted Beach near a centralized part of

the city can deeply hurt the image of this city. The water pollution is so bad that signs have been

setup warning people about swimming in the water. This pollution partly arises from the

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thousands of people who go to the Boardwalk and litter all over the beach. I personally went to

the Boardwalk beach for 15 minutes and witnessed a horrific amount of plastic all over the sand.

This littering has led to the polluted waters of Cowell beach and analysts say that “the high

bacteria count at the beach can be linked to potential illnesses like stomach flu, ear and

upper-respiratory infections and major skin rashes” (Seaver 1). This beach is frequently visited

by tourists and the fact that it has become toxic is a problem we should be dealing with seriously.

The city of Santa Cruz is attempting to solve the issue and has “been spending money directed to

clean up beach pollution by removing trash, … sweeping the wharf daily with a new street

sweeper, and sifting and raking Cowell and Main Beach regularly” (Sentinel Editorial Board 1).

This is a great start to solving the problem, but it does not stop people from littering on the

beach. This initiative only cleans up after the act and does not actually prevent the littering from

occurring. For this reason, personnel need to be hired and a littering fee should be instated in

an effort to lower the amount of littering on the beach.

 The pollution of Cowell beach endangers human life, wildlife, and our cities economic

wellbeing, and for this reason I propose that personnel is hired to protect this beach from further

pollution. A study was done in Argentina that attempted to measure the effects persuasive and

demonstrative messages would have on littering rates. Four different beaches were visited in 29

days and 102 trials in which the authors, “made an intervention at the beaches which consisted of

a personalized verbal request asking visitors to take their litter to the waste cans” (Cingolani 1).

The conclusion of the study was that, “Littering per visitor was reduced an average of 35% due

to the intervention” (Cingolani 1). A 35 percent decrease is overwhelming evidence that setting

up messages and hiring personnel will solve our littering epidemic. My solution would not cost a

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lot of money and would also create jobs to stimulate our economy. A 500 dollar fine can be set

for anyone who litters on the beach and the hired personnel will enforce this law. These 500

dollars fine will add onto the current fine for littering in general. The hired personnel should also

watch for homeless people and make sure that they do not add to the pollution. There is a large

homeless population near the Boardwalk of Santa Cruz and many of them urinate in the beach

water. Although this may not be a significant source of pollution, many FIBs can be transported

through urine.

 Many people are skeptical of the applicability of this solution to Cowell beach and claim

that the water is polluted because of the wrack (items washed onto the beach from the open sea)
on the shore of Cowell beach. This claim is substantiated from the fact that many beaches around the world have gotten polluted from decomposing kelp causing FIBs (Fecal Indicator Bacteria) to become present in the waters. A dye tracing study was done by the Environmental Engineering department of Stanford University in an attempt to figure out the true cause of Cowell beaches pollution. The study found that, “two separate sources were identified as being dominant, sand for ENT and contaminated groundwater for EC. Wrack was found to be only a minor source, contributing less than 2% of the FIB compared to the dominant sources” (Russell V). This study completely disproves the argument of wrack being a prominent factor in the pollution and demonstrates how complex the problem really is. ENT is a FIB that is found in the sand of beaches through the feces of birds and “can be transported through sand via saturated and transient flow” (Brown 67). For ENT to be transported into the water, the feces must land close to the water. EC, on the other hand, is a FIB that is found in groundwater or a polluted drain.

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This explanation for the pollution makes sense since Researchers have previously linked the pollution of Cowell beach to a “toilet in an apartment building, flushing directly into the storm
drain” (Sentinel Editorial Board 1). From this study, it can be seen that many different factors have contributed to the pollution of Cowell beach. Many of these factors are hard to detect and therefore hard to resolve. It could take years of work to stop the source of the FIBs and it would definitely not be a simple solution. The littering on the beach is the only factor of pollution that

can effectively be reduced cost effectively and for this reason should be focused on first.
 Hiring personnel to monitor beaches and make sure that they are kept in good condition

is a cheap and affordable way for the city of Santa Cruz to stop their beach littering pandemic.

The pollution of Cowell beach is complex and has many factors that contribute to it, but making

sure, that the beach is kept clean is a great step in the right direction. The condition of our

beaches effect our cities tourism turnouts and effect the livelihood of many aquatic creatures

that reside in our shores. Many of these animals are endangered and it is our duty to keep them

safe. The pollution is also found to be dangerous to humans and for this reason Cowell beach is

recommended as a beach to swim at anymore. Our beaches are an important symbol of our city

and the condition we keep them in directly reflects our city as a whole.

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