ENVIRONMENTAL HEALTH

Importance	We depend on the natural environment for all of the most fundamental necessities for life and health. Environmental degradation threatens the air we breathe, the water we drink, the food we eat, the atmosphere that shelters us from radiation and weather extremes, and the ecological network of species that constitutes our entire life support system.
Definitions	Air Quality: Air pollution is any undesirable substance that enters the atmosphere. Pollutants include various gases and tiny particles (particulates) that can harm human health or damage the environment. Water Quality: Water pollution is any undesirable substance that enters water, whether the water is fresh or salt, surface or underground or elsewhere.
Healthy People 2020 Objectives[3]	- Objective EH-1: Reduce the number of days the Air Quality Index (AQI) exceeds 100. (Target: 10 days) - Objective EH-4: Increase the proportion of persons served by community water systems who receive a supply of drinking water that meets the regulations of the Safe Drinking Water Act. (Target: 91% of persons served by a community to receive safe drinking water) - Objective EH-5: Reduce waterborne disease outbreaks arising from water intended for drinking among persons served by community water systems. (Target: 2 outbreaks per year from community water systems)

AIR QUALITY

Unhealthy air remains a threat to the lives and the health of millions of people in the United States, despite great progress. Air quality continues to improve nationwide, but over 127 million Americans (41%) still live in counties with unhealthy ozone or particulate pollution levels.[1] Ozone (O_3) is an extremely reactive gas and is the primary contributor to the formation of smog. Ozone can cause lung inflammation, even at very low exposure levels. It is estimated that over 3,700 American deaths per year can be attributed to ozone.[1] Particulate matter (PM) pollution refers to tiny solid and liquid particles in the air. Fine particulate pollution increases the risk of death from heart disease as well as respiratory illnesses.

In 2008-2010, Santa Cruz County air ranked among the cleanest counties in the nation for both ozone and particulates.[1] Table 1 depicts the ambient air quality in Santa Cruz County, 2009-2011, compared with state and national standards.[4,5] California is known for its smog, but Santa Cruz County has consistently had lower levels of ozone and particulate pollution than the rest of the state.[5]

Table 1: Ambient Air Quality, Santa Cruz County, 2009-2011, vs. State and National Air Quality Standards[4,5]

	Ozone	Particulate Matter (PM2.5)
Santa Cruz County, 2009-2011*	0.055 ppm	6.2 ug/m^3
California Standards **	0.070 ppm	35 ug/m^3
United States Standards **	0.075 ppm	35 ug/m^3

** Ambient Air Quality Standards: PM = 24 hours, ozone = 8 hours

* Air Quality Measurements in Santa Cruz County, average, 2009-2011

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The U.S. EPA calculates a summary Air Quality Index[6] (AQI), with numerical scores that EPA places into categories: Good, Moderate, Unhealthy for Sensitive Groups, Unhealthy, and Very Unhealthy. Figure 1 shows the percentage of days, from 2002 through late 2012, on which Santa Cruz County fell in the "Good" category. The chart shows a clear improvement over the last decade. Interestingly, the median daily AQI – that is, the score for which half the days of the year were better and half the days were worse – has not varied much or shown any trend during that time. That suggests that what's happening is mainly a reduction in the number of less-than-good days – which is probably the most important health-protection measure.

The city of Santa Cruz generates enough renewable energy to account for 33% of the energy used by the city. Santa Cruz also purchases 13% renewable energy from PG&E. This clean energy keeps dirty fossil-fuel emissions out of the air.

WATER QUALITY

Table 2 evaluates the safety of our beaches in Santa Cruz County, using a letter grade system. Heal the Bay is a nonprofit organization based in Santa Monica. Its Beach Report Card tracks and reports coastline water quality from the Canadian border to the Mexican border.[7] More than 650 beaches are monitored weekly, and assigned a letter grade from A to F. The grades are based on the health risks of swimming or surfing at that location; the worse the grade, the greater the risk of getting sick. All standards are set by the California Department of Health Services' Beach Bathing Water Standards. The beach report card provides grades for both dry and wet weather, to allow a clear analysis of the water quality at any given monitoring location. Water quality significantly drops during and immediately after a storm, because of runoff from land into rivers into the ocean. Grades for dry weather are based on samples collected on days at least three days after it last rained. Grades for wet weather pertain to samples collected on days with rain, or within three days after rain.

Figure 1: Percentage of Days with "Good" Air Quality Index, Santa Cruz County, 2002-2012[9]

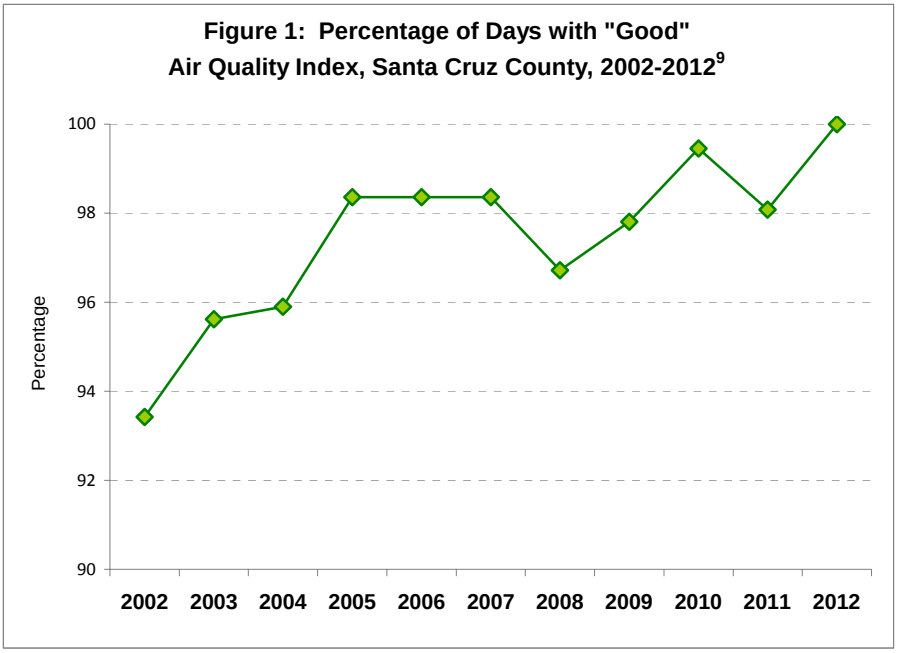

Table 2: Beach Report Card, Santa Cruz County, 2002-2009[7]

	2002		2003		2004		2005		2006		2007		2008		2009	
	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Santa Cruz Main Beach Boardwalk	A	F	A	F	A	F	B	D	A	A	A	D	B	C	A	B
Seacliff State Beach	A	F	B	F	A+	C	A	D	A+	A	A+	B	A	A	A	A
Seabright Beach	A+	F	A	F	A	D	A	F	A+	A	A+	D	A	B	A	D
Twin Lakes Beach	A	F	A	F	A+	D	A	F	A	A	A	B	A+	A	A+	B
Capitola Beach West of Jetty	F	F	F	F	B	F	B	F	C	C	C	F	A	D	C	F
Natural Bridges State Beach	A	F	A+	F	A+	A+	A+	A	A+	A	A+	A	A	A	A+	B
New Brighton Beach	A	F	B	F	A	D	A	F	A+	A	A+	C	A	A	A	C
Rio Del Mar Beach	C	F	B	F	F	F	A	F	A	B	A+	C	A	B	A	B

ENVIRONMENTAL HEALTH

Primary Prevention Activities	**Bike to Work Week** is an inexpensive, healthy, and fun way to encourage exercise, reduce automotive traffic, and reduce air pollution. In 2000, the City of Santa Cruz adopted a **Water Conservation Plan**, the goal of which was to reduce water demand systemwide by 282 million gallons per year in 2010. Through plumbing fixture and appliance rebate programs, technical assistance, regulations, and other strategies, residential and commercial customers have saved over 217 million gallons of water per year so far.
Sources	(1) American Lung Association. *State of the Air 2012*. http://www.stateoftheair.org/2012/assets/state-of-the-air2012.pdf. (2) Land Trust of Santa Cruz County, Our Water. www.landtrustsantacruz.org. (3) U.S. Department of Health and Human Services. Healthy People 2020. http://www.healthypeople.gov/2020/topicsobjectives2020/default.aspx. (4) California Environmental Protection Agency, California Air Resources Board. http://www.arb.ca.gov/adam/topfour/topfour1.php. (5) United States Environmental Protection Agency (EPA), Airdata. http://www.epa.gov/airdata/ad_reports.html. Accessed December 6, 2012. (6) United States Environmental Protection Agency (EPA), Airdata, AQI. http://www.epa.gov/airdata/ad_rep_aqi.html. Accessed December 6, 2012. (7) Heal the Bay, Santa Monica Bay Restoration. Beach Report Card. http://www.healthebay.org.