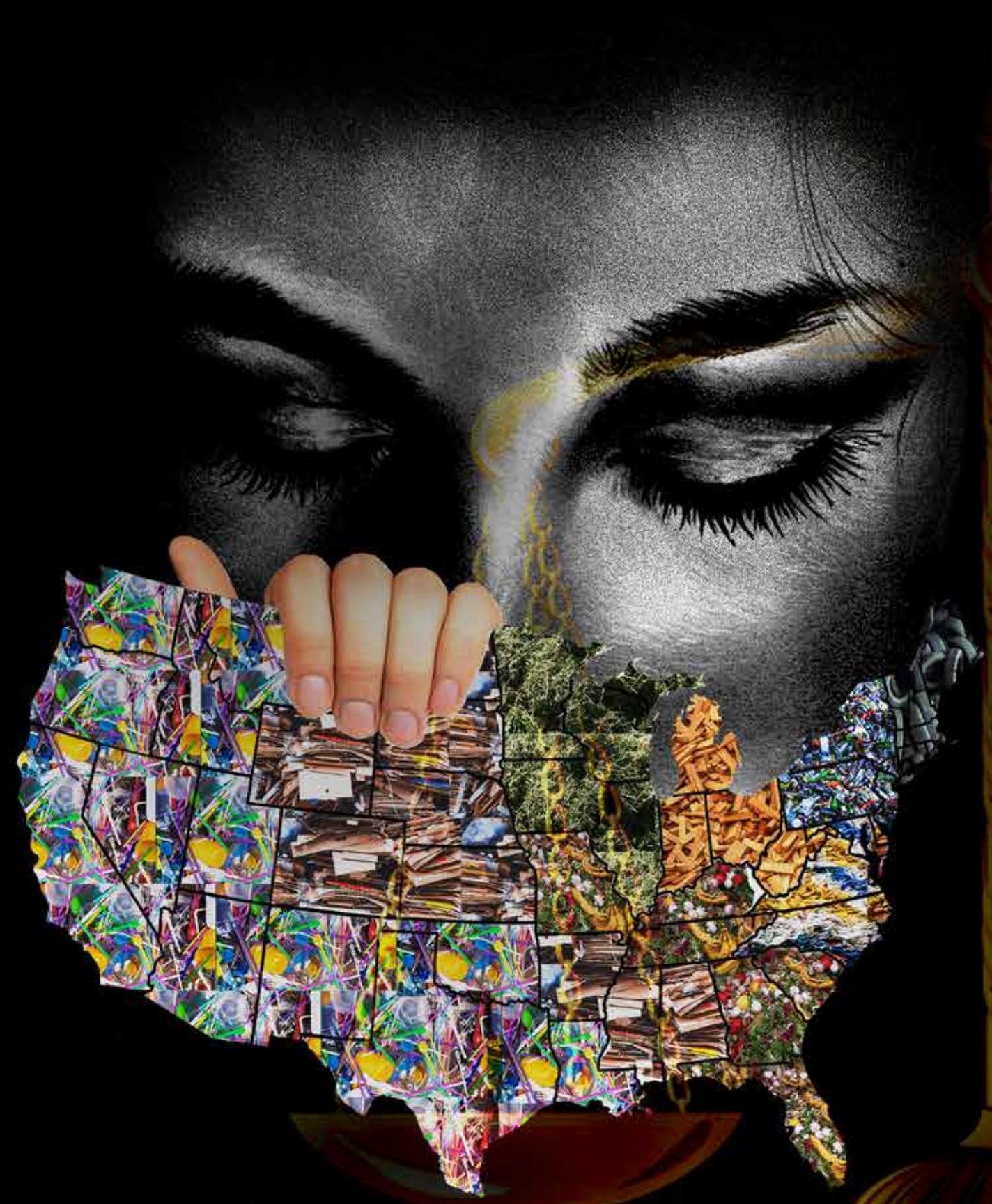


# United Waste



Home to 4% of the worlds population even if it  
produces 30% of the planets total waste

# United Waste

By

ORIANA ABRIL VEGA

ARCH 415

# INTERNET GEOGRAPHY

# 01

## LAND & AIR POLLUTION

Pages 07-16

Description, and location of landfills, and incinerators in the country. How they contribute to climate change by polluting the land and air.

- 07 Methods to Manage Waste
- 08 Landfill Locations
- 09 Closed Landfills
- 10 California: Air Pollution
- 11 Puente Hill Landfill
- 12 Landfills and Incinerators
- 13-14 Incinerators
- 15-16 Landfill and Incinerator Emissions

# 03

## WATER POLLUTION

Pages 23-28

Location of main Ocean Patches, and how debris travels. Plastic pollution is having negative impact on oceans, and endangering sea life.

- 23 World Garbage Patches
- 24 Great Pacific Garbage Patch
- 25 California West Coast
- 26 What happens underwater?
- 27-28 Microplastics

# 02

## EFFECTS

Pages 19-20

Amount of time it takes products to breakdown in landfills.  
Health effects caused by landfills, and incinerators.

- 19 Products Lifecycle
- 20 Landfill and Incinerators Health Effects

# 04

## SOLUTIONS

Pages 31-32

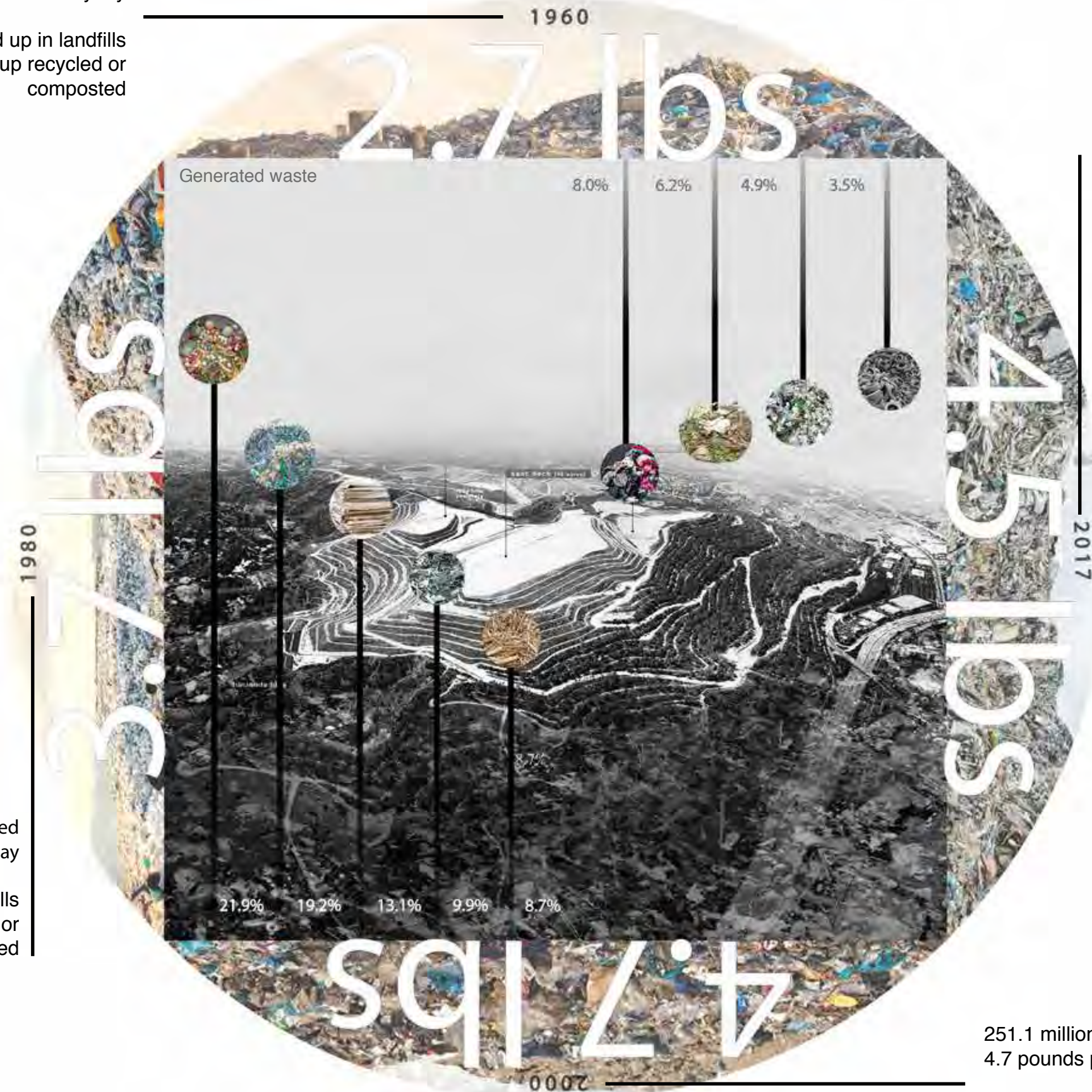
Different ways people can help save the planet from pollution, and climate change.

- 31-32 Reuse, Reduce, Recycle



88.1 million tons of trash generated  
2.7 pounds per person everyday

82.5 million tons ended up in landfills  
5.6 million tons ended up recycled or  
composted



267.8 million tons of trash generated  
4.5 pounds per person everyday

139.6 million tons ended up in landfills  
67 million tons ended up recycled or  
composted

151.6 million tons of trash generated  
3.7 pounds per person everyday

134.4 million tons ended up in landfills  
14.2 million tons ended up recycled or  
composted

251.1 million tons of trash generated  
4.7 pounds per person everyday

140 million tons ended up in landfills  
53 million tons ended up recycled or  
composted



# Waste:

MANAGEMENT HISTORY

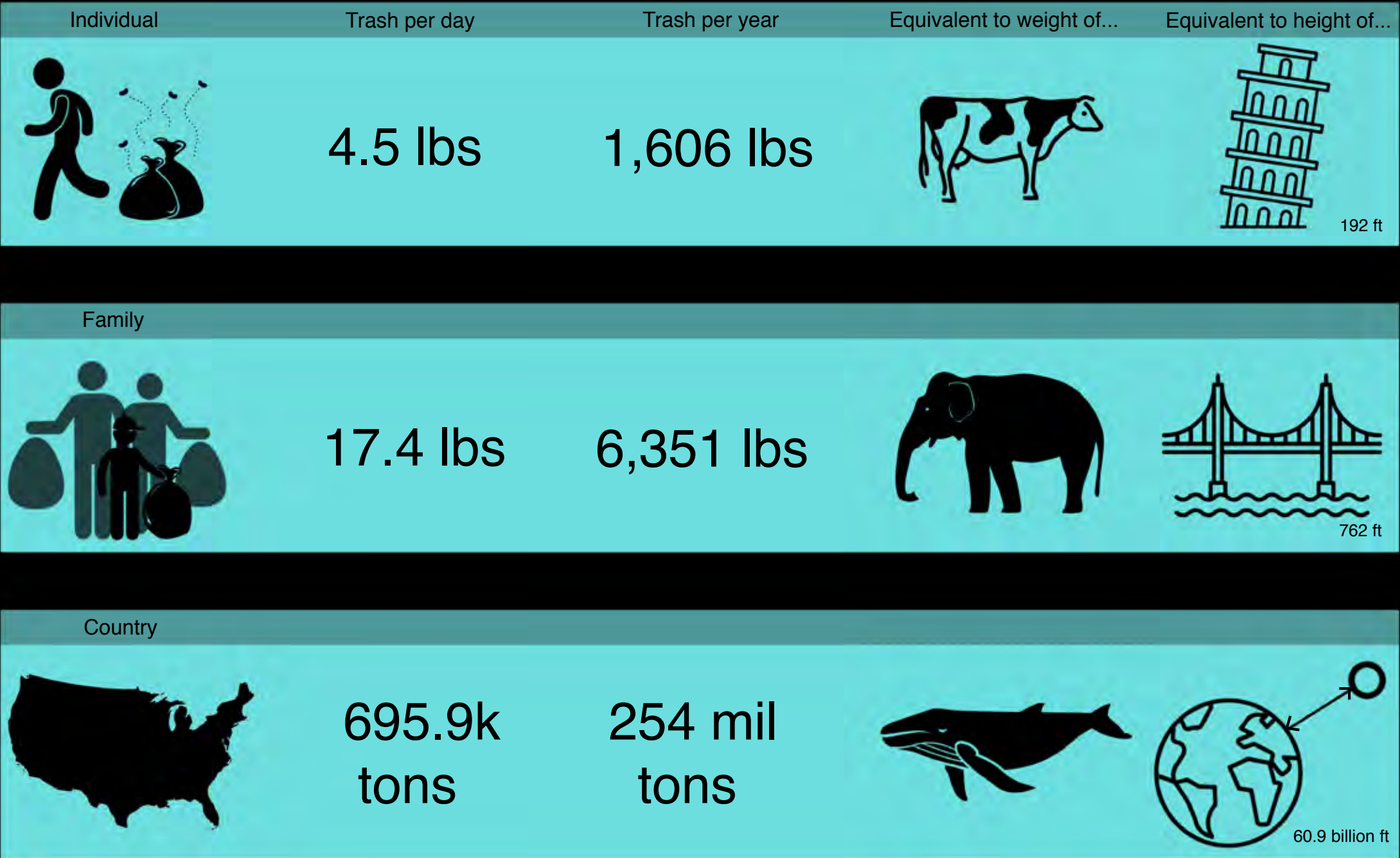
The EPA (United States Environmental Protection Agency) began collecting and reporting data on the generation and disposition of waste in the United States more than 30 years ago. The facts and figures are current from 1960 to 2017.

EPA refers to trash as MSW (Municipal Solid Waste). It includes various items consumers throw away after they are used. These items include bottles and corrugated boxes, food, grass clippings, sofas, computers, tires, refrigerators, etc.

The total generation of municipal solid waste (MSW) in 2017 was 267.8 million tons or 4.51 pounds per person per day.

Of the MSW generated, approximately 67 million tons were recycled and 27 million tons were composted. Together, more than 94 million tons of MSW were recycled and composted, equivalent to only a 35.2%.

In addition, more than 34 million tons of MSW (12.7%) were combusted with energy recovery and more than 139 million tons of MSW (52.1%) were landfilled.

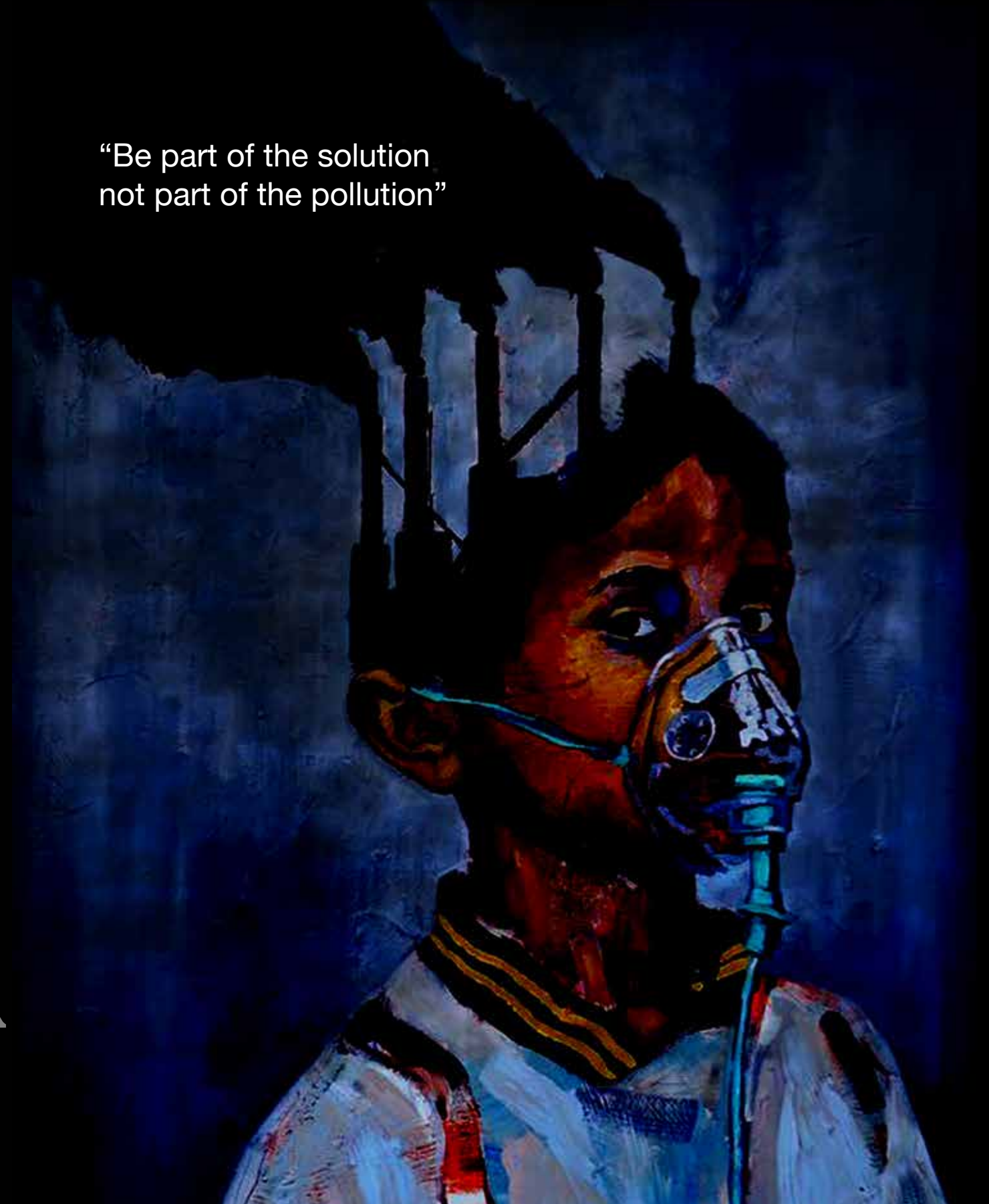


It can be hard to wrap our minds around the impact of our waste in terms of metrics that stretch into the billions.

# CHAPTER 01

# LAND & AIR

“Be part of the solution  
not part of the pollution”





## Burying Under Landfill



Will eventually leak into water supplies  
Communities around landfills drink contaminated water  
Contaminates soil, and the air we breath

## Incinerators



Releasas toxic chemicals  
Produces toxic ash  
Major effect in the environment, and human health

## Decomposing on Top of Landfill



Affects nearby population health  
Not a safe environment to work  
Waste of lands

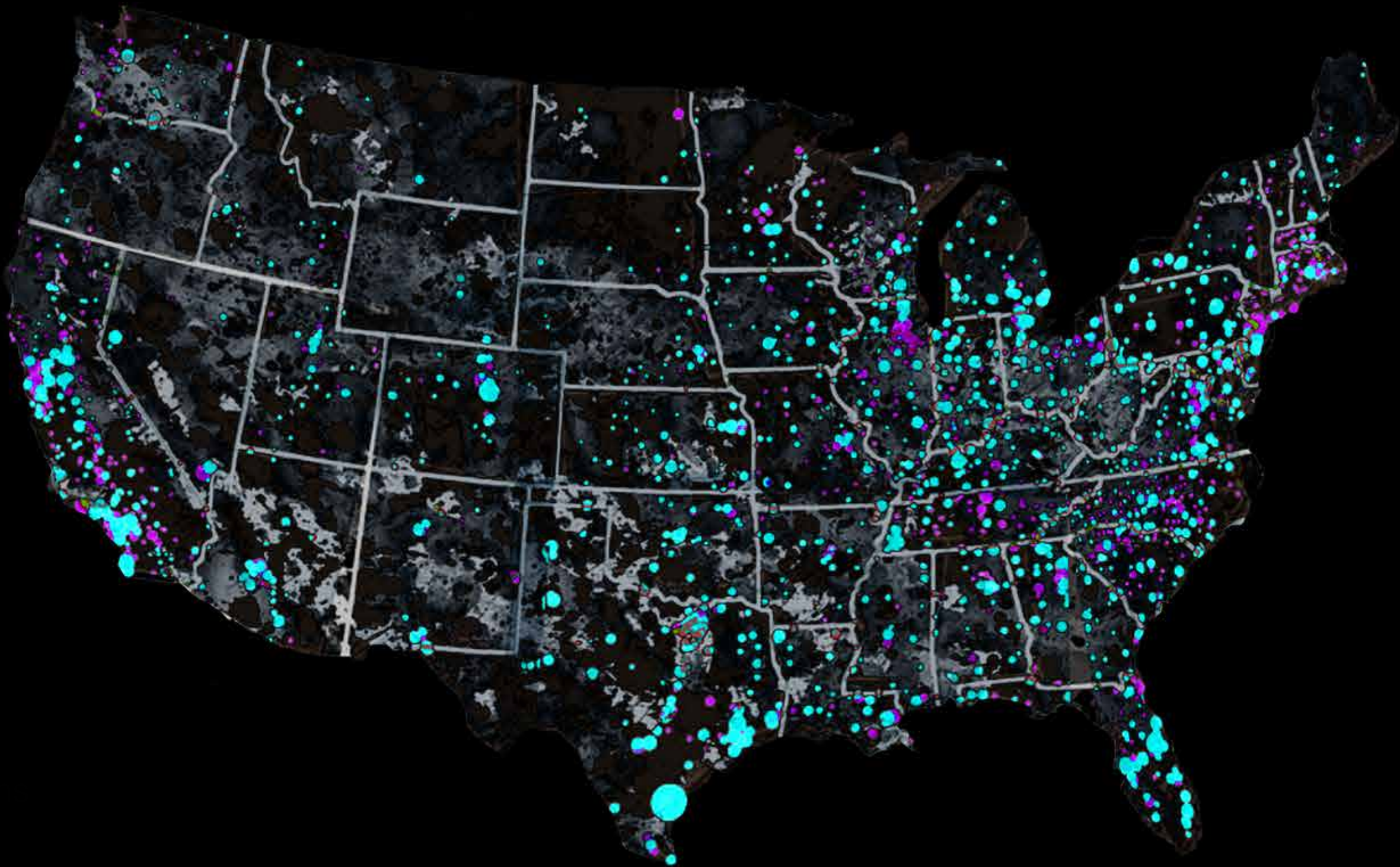


# Landfills

LAND POLLUTION

The majority of trash in the U.S. gets compacted in landfills, then often bulldozed and buried left there to sit. Meanwhile, it breaks down, rots, and leaches chemicals into the soil it's sitting on or surrounded by and it accumulates.

## Landfill Locations





## CLOSED LANDFILLS



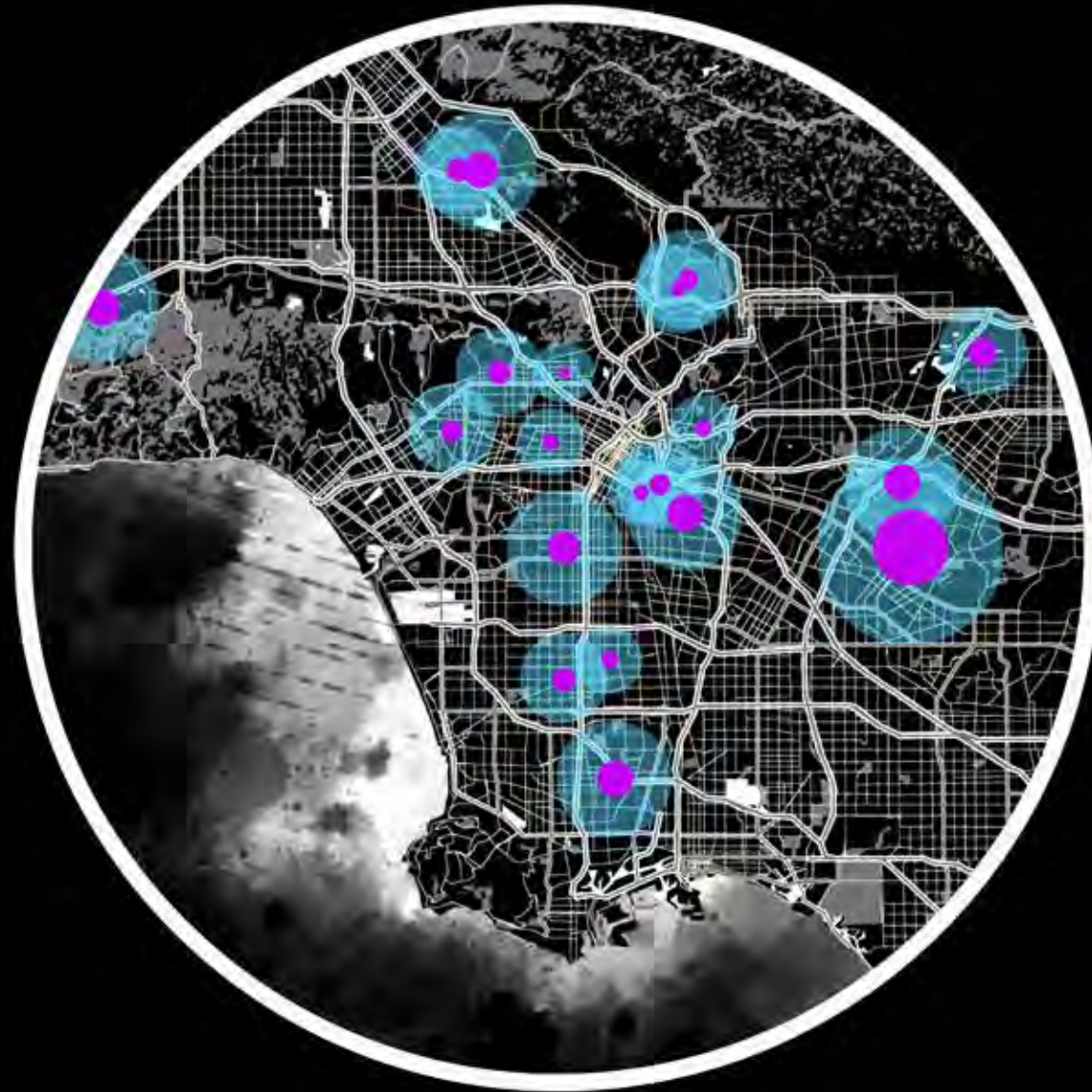
### Turning Trash Into Treasure

Once landfills reach their maximum capacity, and been properly capped, the site can be used for other purposes. Most popular uses are community parks, solar energy projects, wildfire habitats, playgrounds, parking lots, and athletic fields.

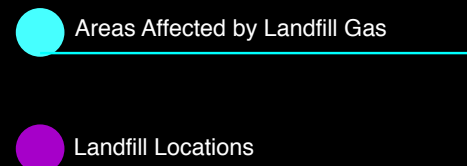


# California

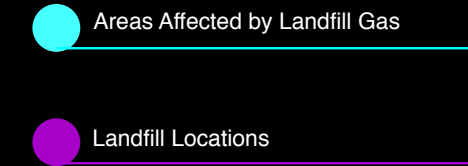
AIR POLLUTION



Los Angeles



San Francisco

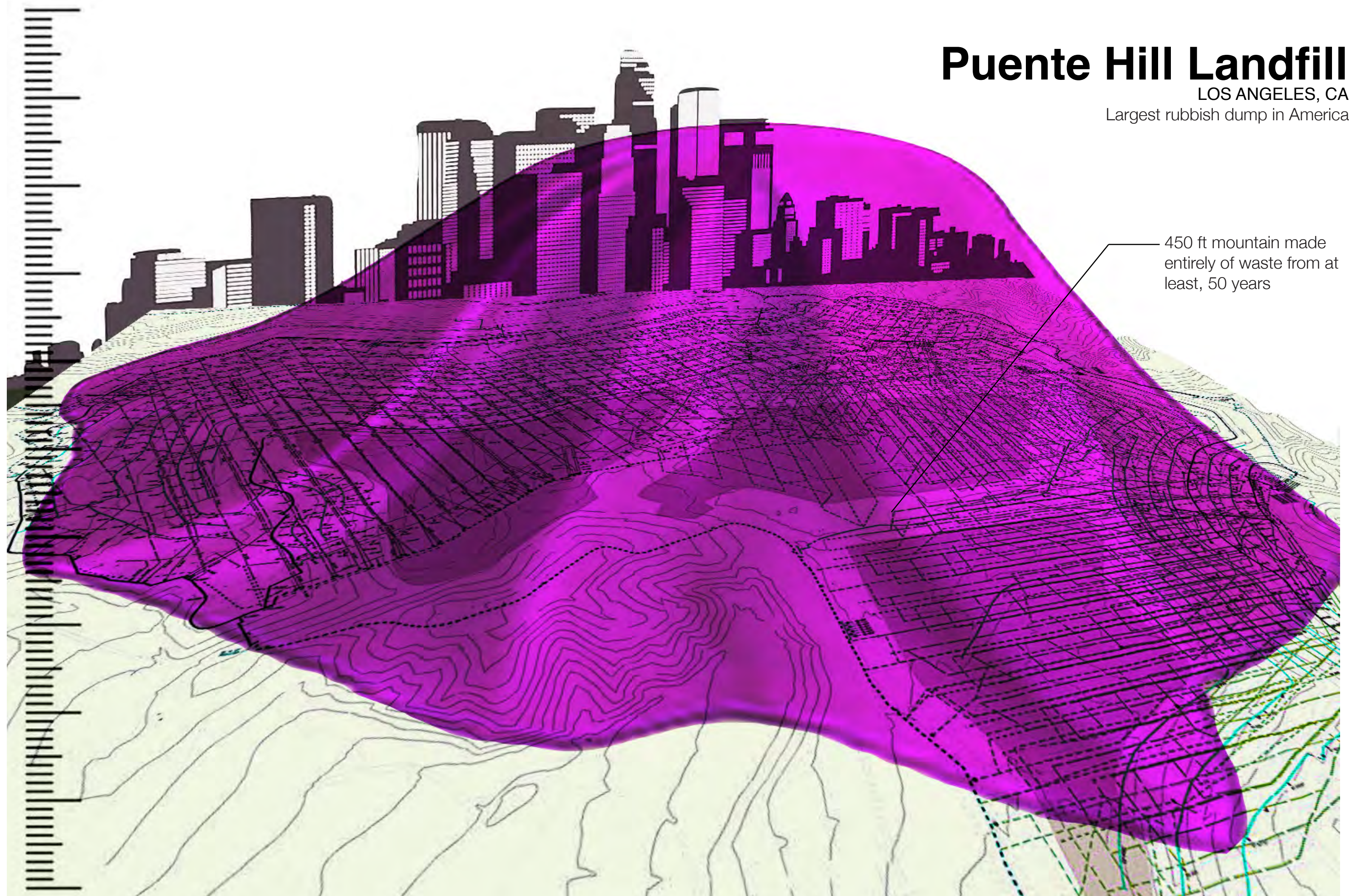




# Puente Hill Landfill

LOS ANGELES, CA

Largest rubbish dump in America









# Incinerators

## AIR POLLUTION

There are 86 incinerators across 25 states in the United States.

They burn about 29 million tons of garbage annually, 12% of the total U.S. waste stream.

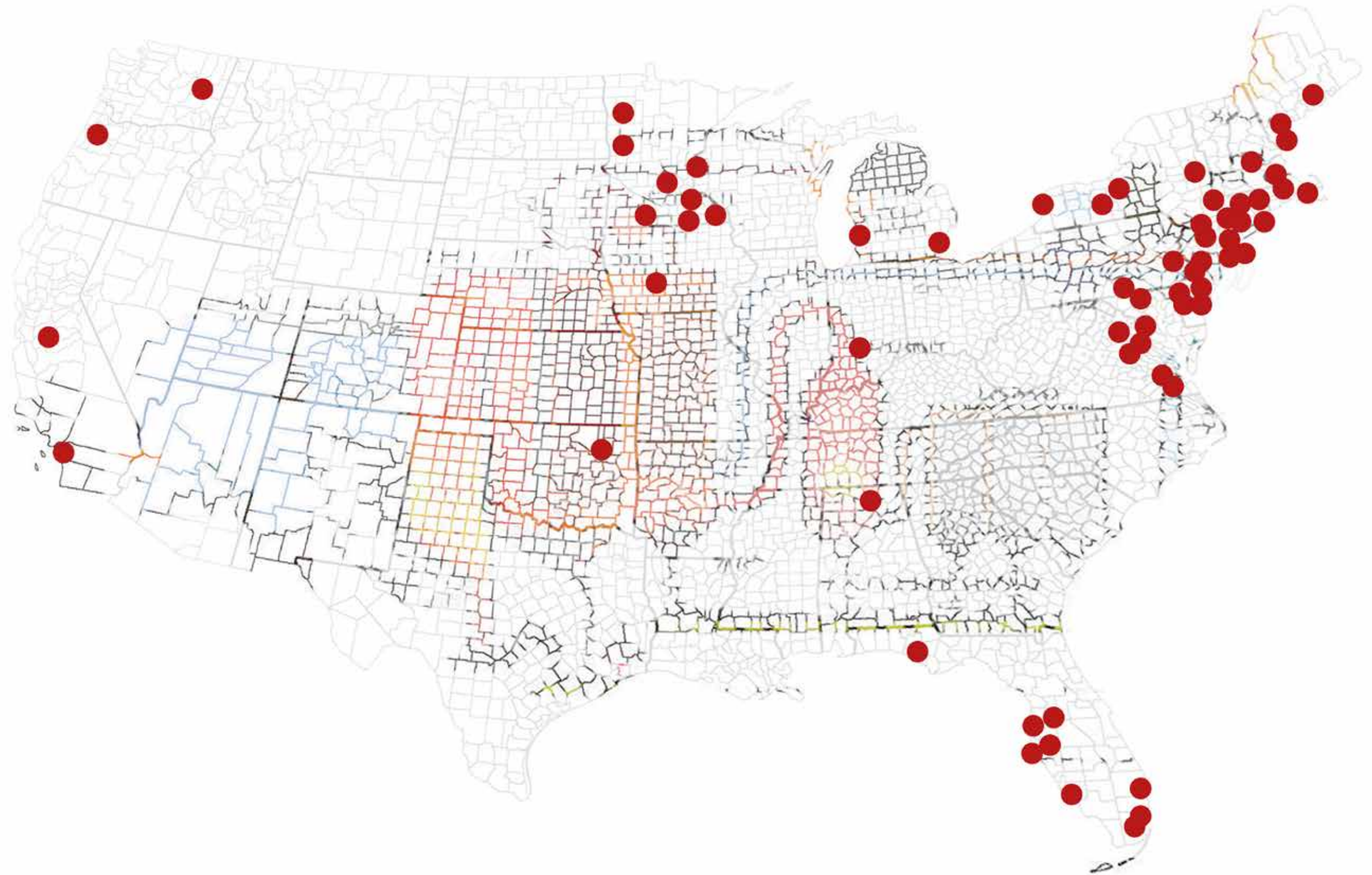
Most incinerators currently operating use the heat from burning trash to produce steam that can generate electricity, and fuel. These systems are sometimes referred to as “waste-to-energy” plants.

Incinerators produced about 0.4 percent of total U.S. electricity generation in 2015, a minuscule share.

Approximately 4.4 million people across the U.S. are exposed to pollution from incinerators. Burning waste produces toxic pollutants that can, even in the most trace amounts, severely threaten human health.

### Incinerator Locations

● Active Incinerators 86









## INCINERATOR EMISSIONS



### **MERCURY**

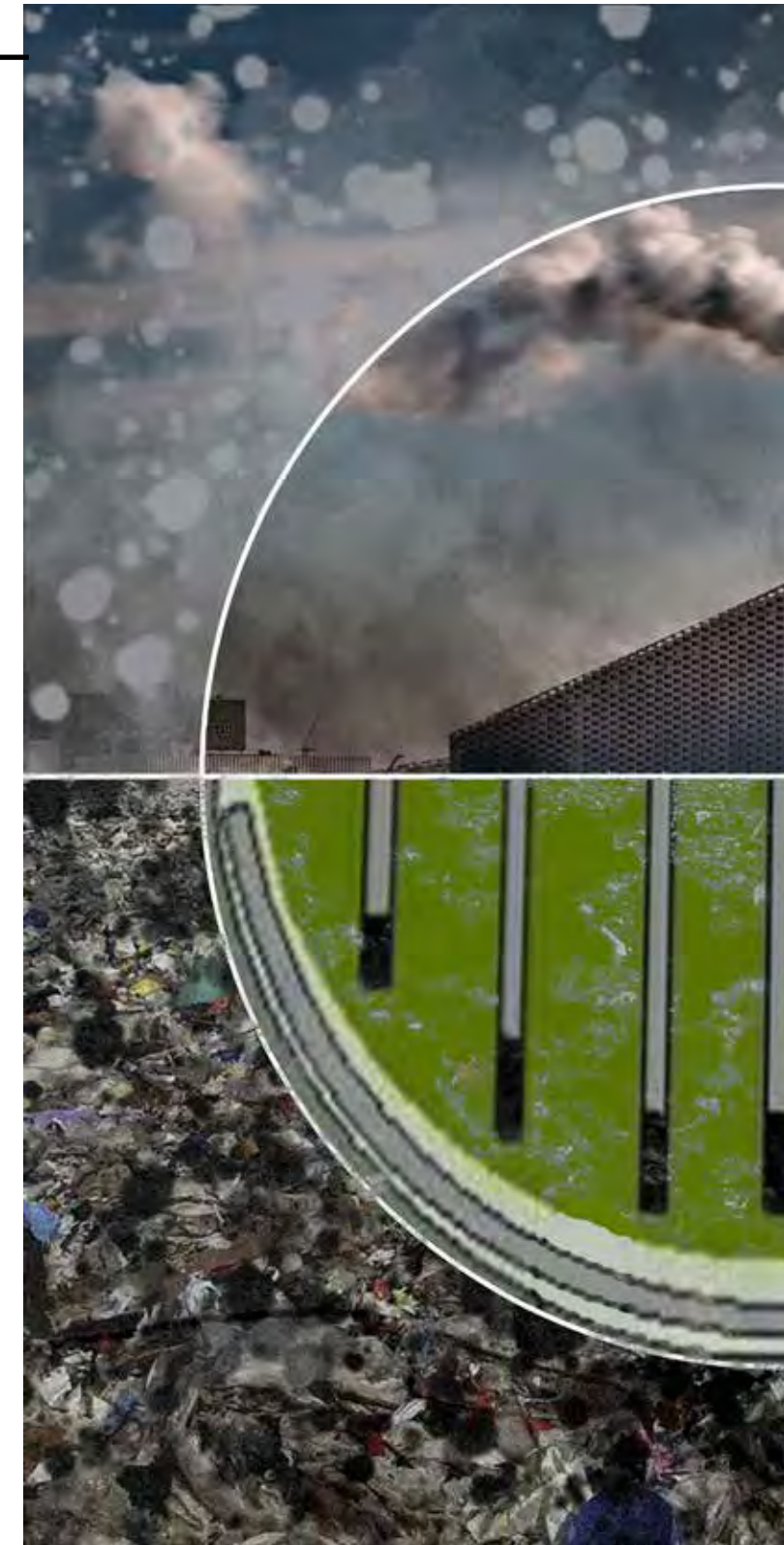
Major concern due to its toxicity and high volatility, exits in emissions if not removed by emission controls.

### **LEAD**

The fly ash incinerators release often contain high concentrations of heavy metals, potential health hazards.

### **ARSENIC**

Arsenic toxicity, present as vapor, depends not only on the quantity but also on its speciation.







### AMMONIA

Responsible for most of the odors at landfills.  
Produced during breakdown of waste material.

### HYDROGEN SULFIDES

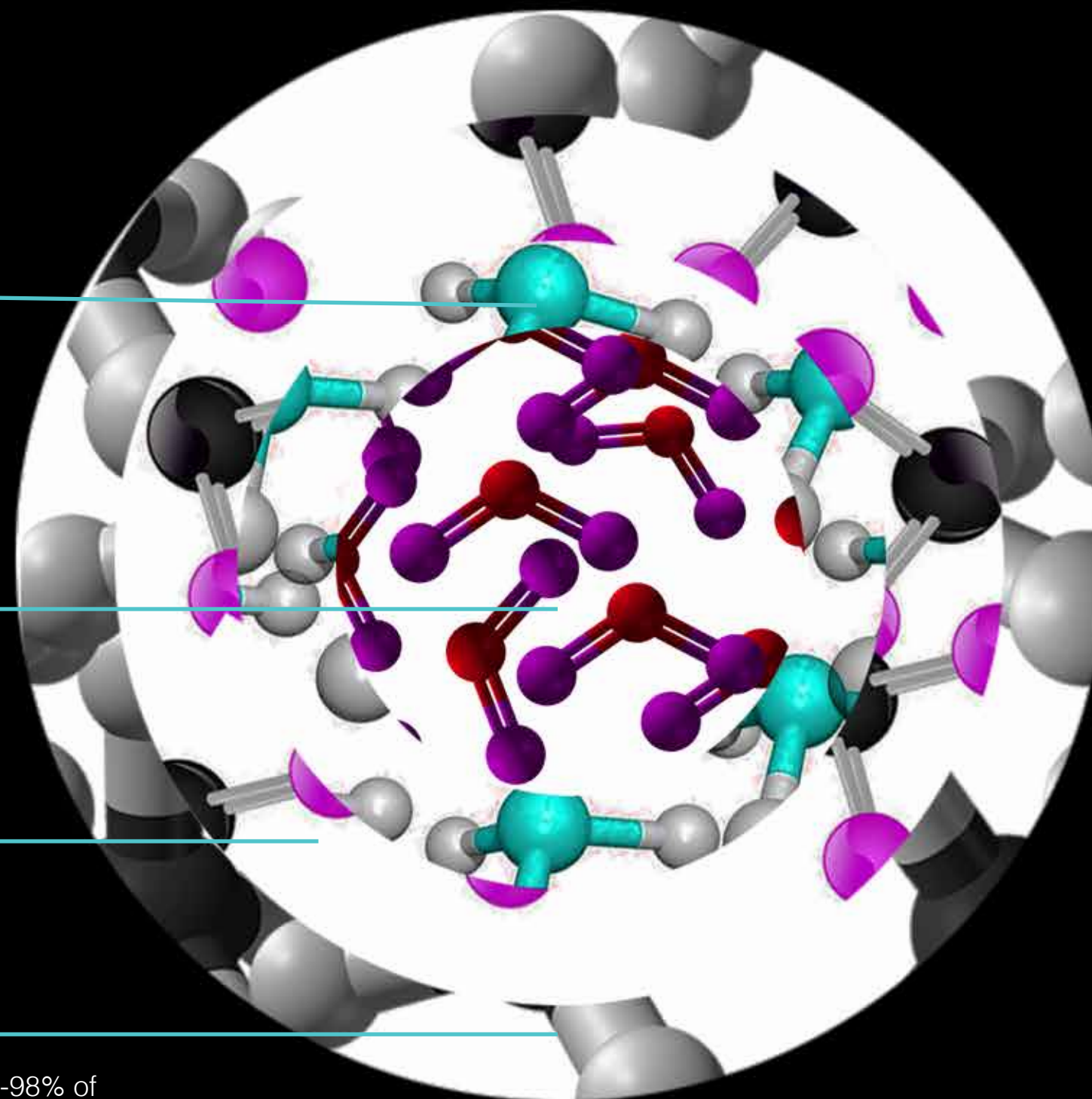
Responsible for most of the odors at landfills.

### CARBON DIOXIDE

Makes up to 90-98% of landfill gas, seeping through the soil into outdoor air.

### METHANE

Makes up to 90-98% of landfill gas, results from the lack of oxygen. Is highly flammable.

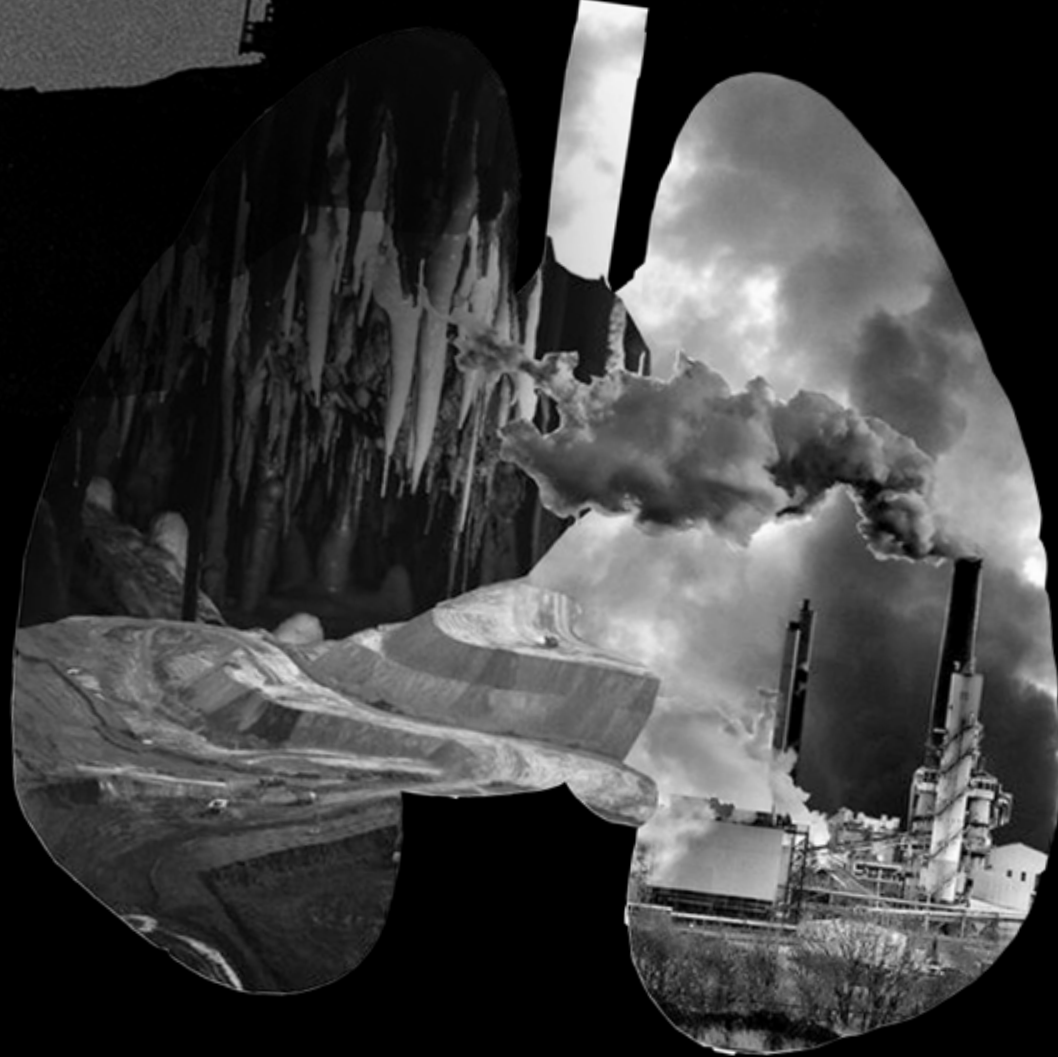


## LANDFILL EMISSIONS

# CHAPTER 02



# EFFECTS

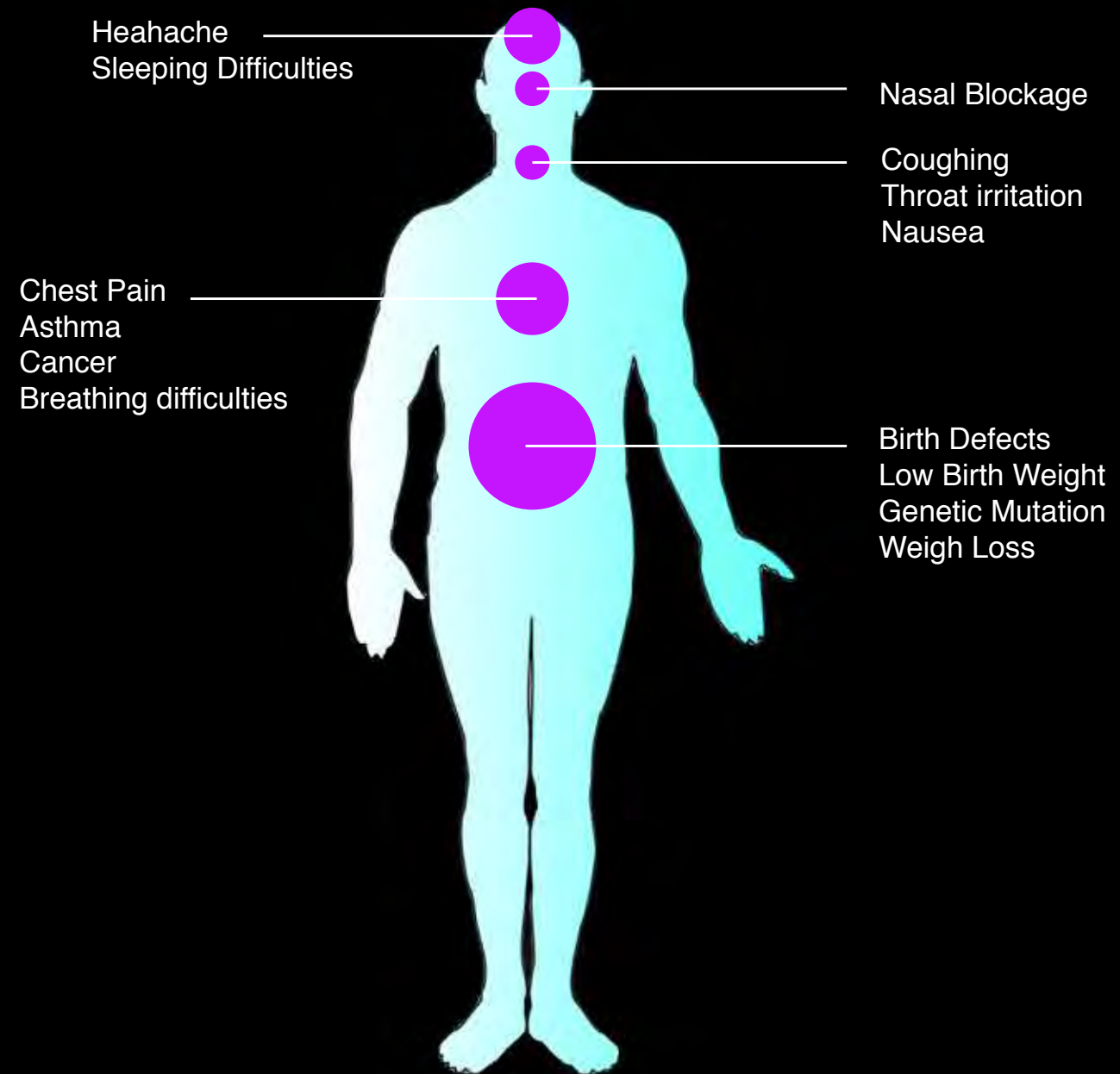


“Nowadays people know the price of everything  
and the value of nothing” -Oscar Wilde

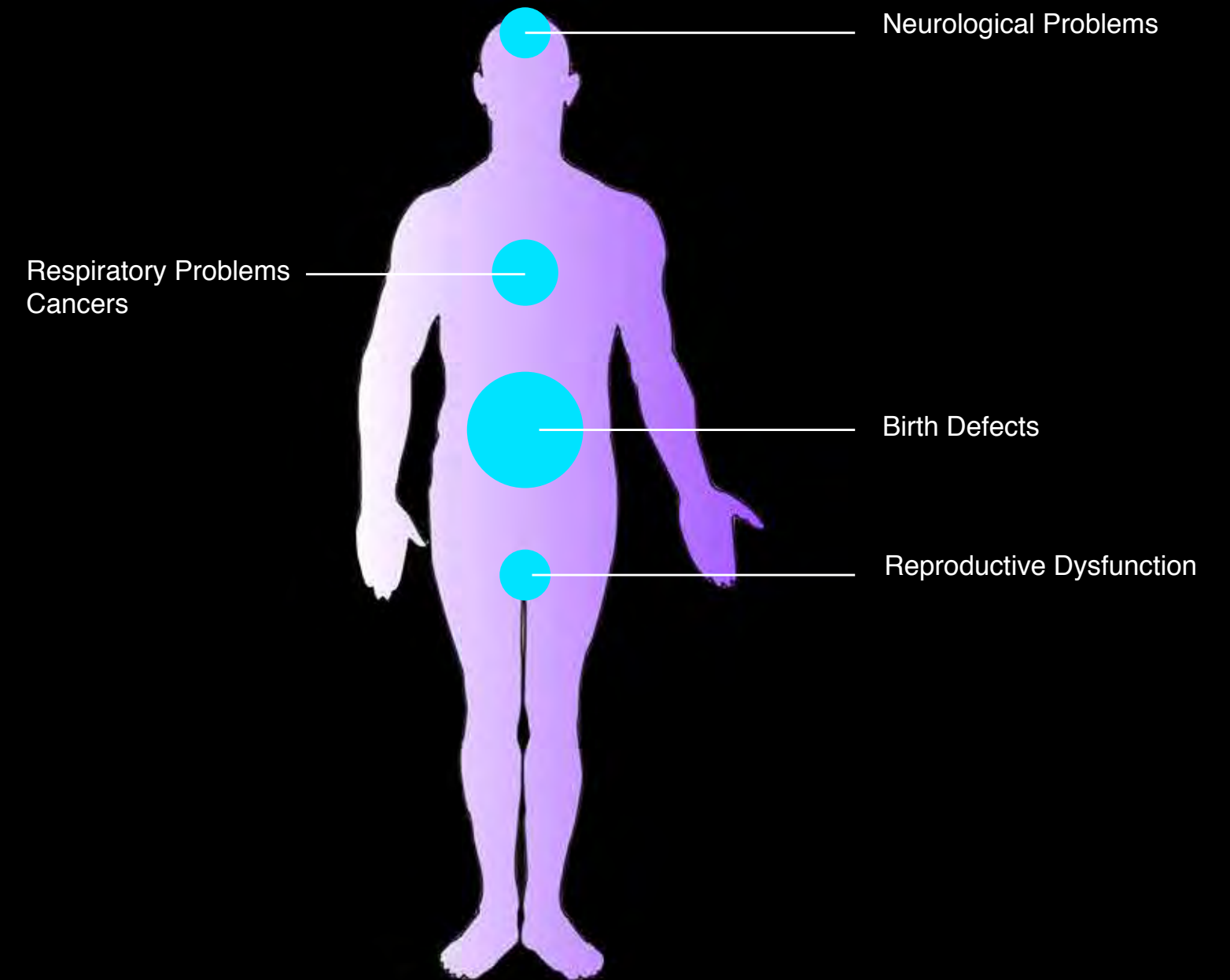




## Landfill Gas Effects



## Incinerators Gas Effects





# CHAPTER 03

# WATER

“Water is the driving force of  
all nature” - Leonardo Da Vinci





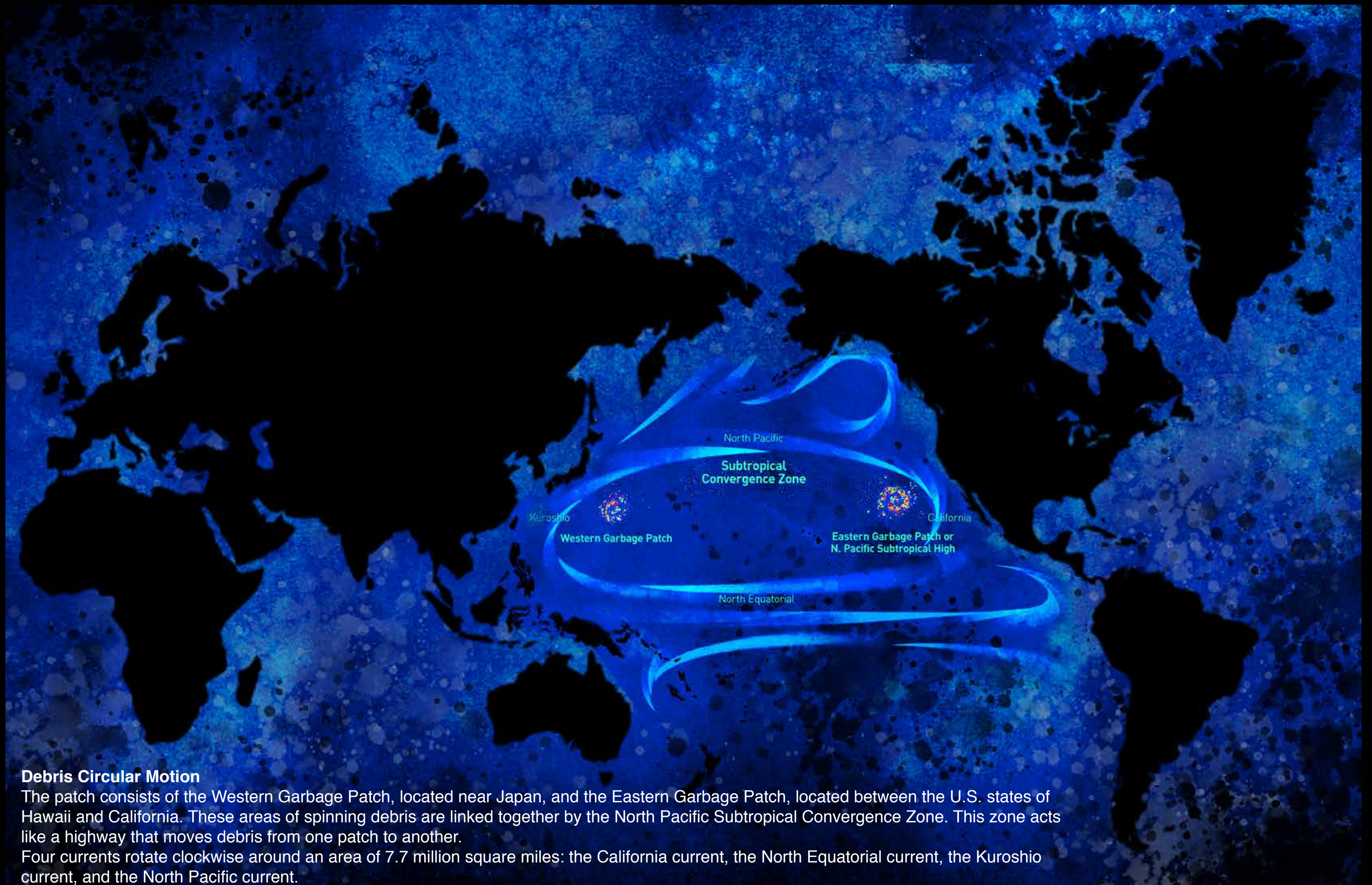


### Plastic Accumulation

Every year, millions of tons of plastic enter the oceans, of which the majority spills out from rivers. A portion of this plastic travels to ocean garbage patches, getting caught in a vortex of circulating currents. If no action is taken, the plastic will increasingly impact our ecosystems, health, and economies.

The **Great Pacific Garbage Patch** covers an estimate of 1.6 million square kilometers.







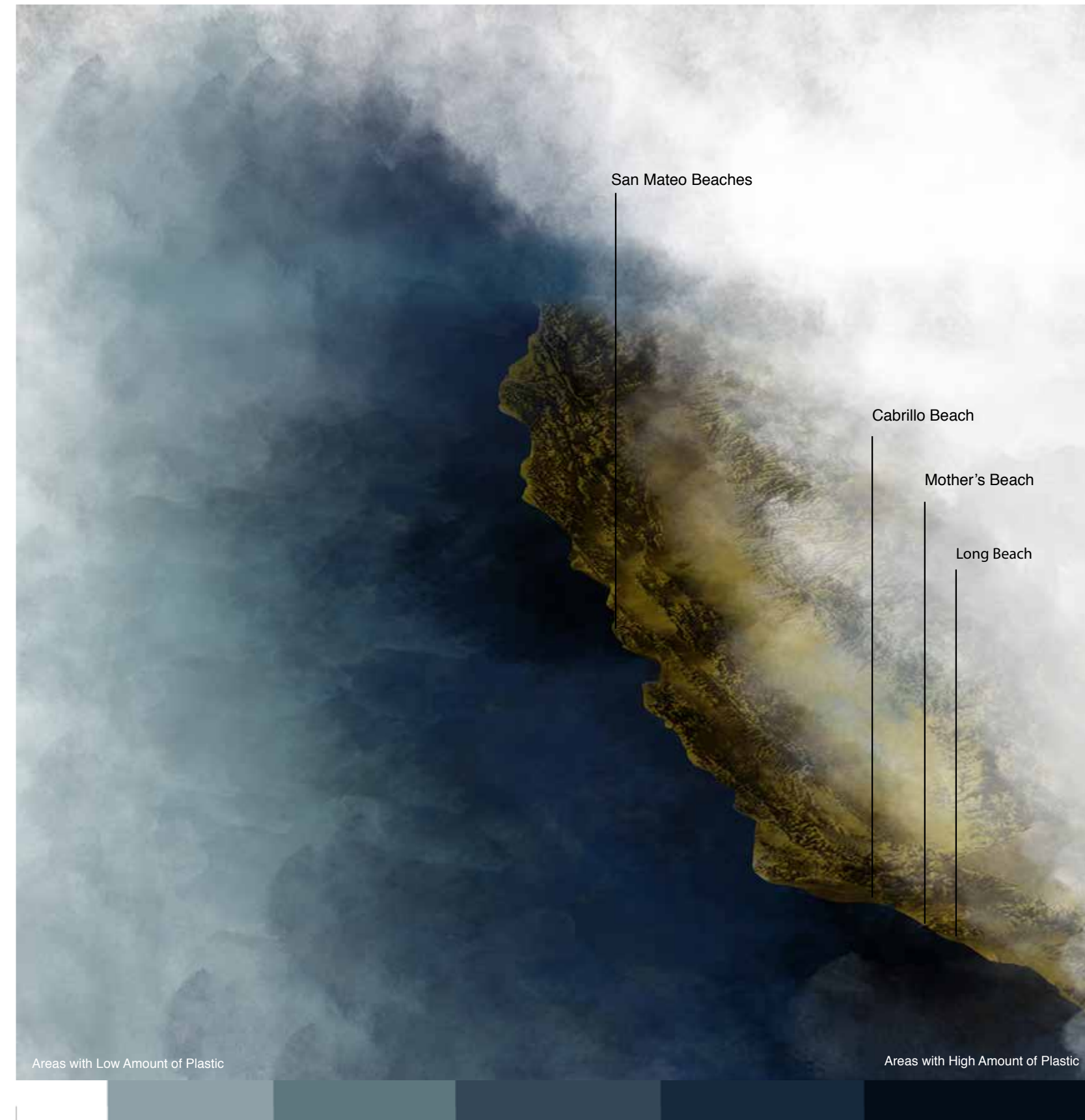
# California

## PLASTIC POLLUTION

Californians throw away 123,000 tons of plastic bags each year, and too many of them end up as litter in the ocean. There are 100 million tons of trash in the North Pacific Gyre.

The debris comes from diffuse sources. The California Coastal Commission reports that 80% of marine debris comes from land-based sources, such as litter that washes from land to the sea. Rain carries plastic litter of all sizes into the ocean through urban creeks and storm drains.

The problem is particularly acute in California. Reports claim that San Francisco Bay appears to have more microplastic pollution than other major water bodies in the US.



**Nothing we use for a few minutes should pollute our oceans for hundreds of years**









Sun rays, salt water and waves  
break down plastics



Plastic breaks off into the ocean

Plastic never decomposes

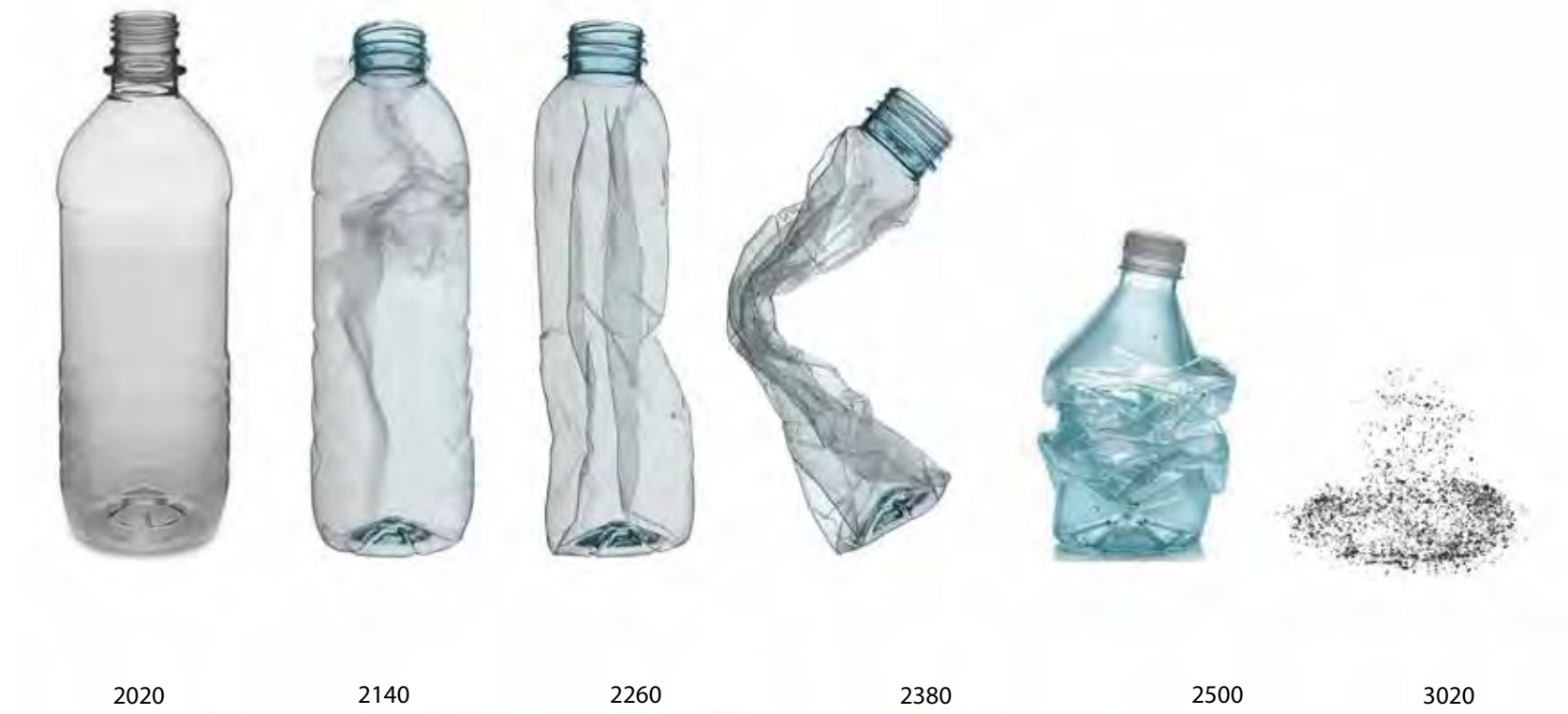
Only breaks down into  
smaller pieces



Fish and other marine life  
mistakenly consume them



Eventually the plastic sinks to the  
floor, harming deep-sea organism



### PLASTIC BOTTLE BIODEGRADE

The average time for a plastic bottle to completely degrade is at least 450 years. It can even take some bottles 1000 years to biodegrade.

### MARINE DEBRIS THREAT

Over 1 million marine animals (including mammals, fish, sharks, turtles, and birds) are killed each year due to plastic debris in the ocean.





# MICROPLASTICS - MICROPLASTICS - MICROPLASTICS

Plastic is the most prevalent type of marine debris found in our ocean. Plastic debris can come in all shapes and sizes, but those that are less than five millimeters in size are called "microplastics."





# CHAPTER 04



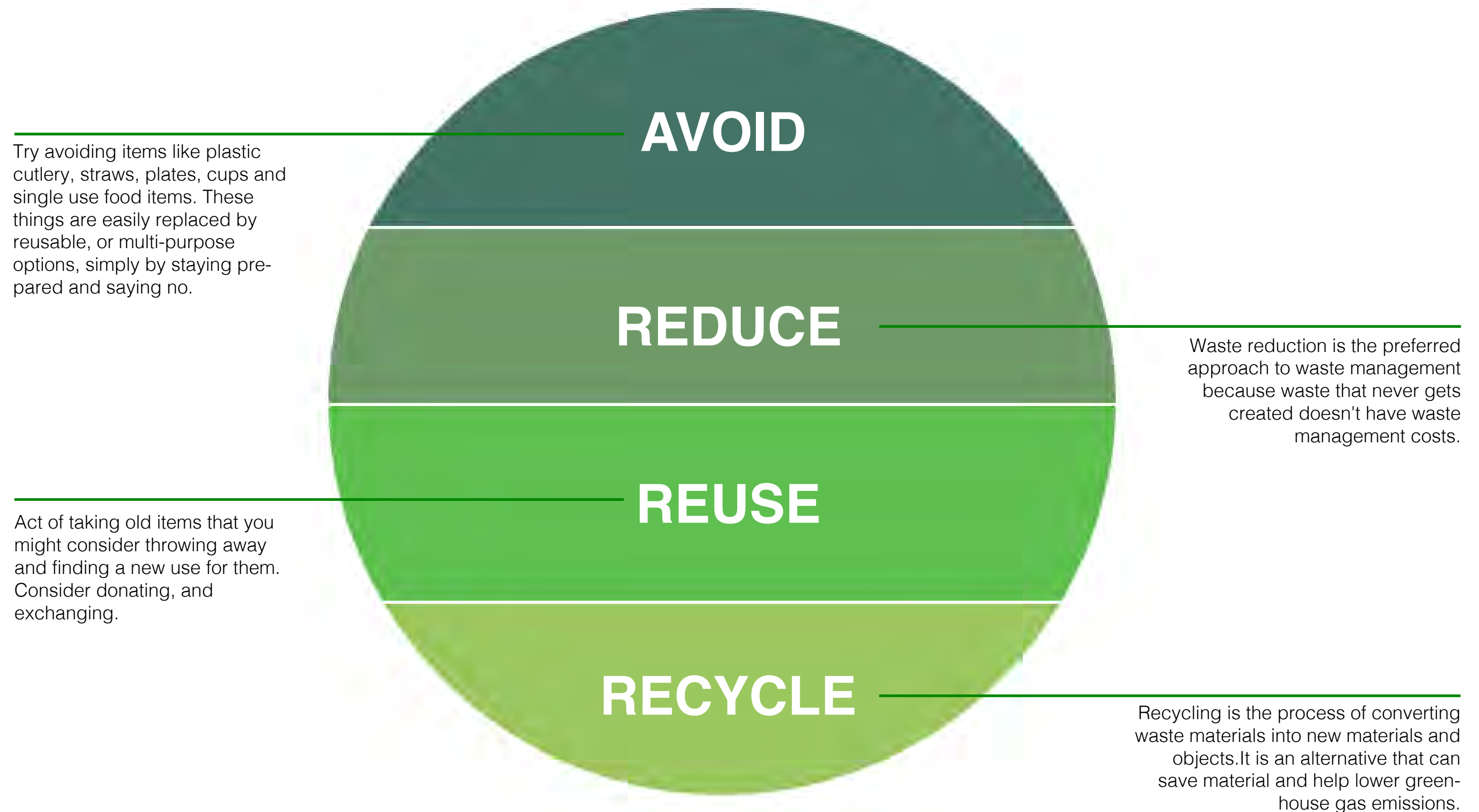
# SOLUTIONS

“When we heal the earth, we heal ourselves” - David Orr





## HOW CAN WE HELP?





## WHAT TO DO



Buy clothing with  
natural materials



Open your eyes to  
the problem



Switch to reusable  
shopping bags



Choose plastic free  
packaging



Learn different ways  
to help



Use reusable cups



Do not use disposable cutlery



Recycle



Choose refillable bottles



WASTE: MANAGMENT HISTORY

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<https://environmentcalifornia.org/programs/cae/keep-plastic-out-pacific>  
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<https://www.madeleineolivia.co.uk/blog/30-ways-to-reduce-your-waste>



