

Air Quality: An interface between environment, climate change and public health

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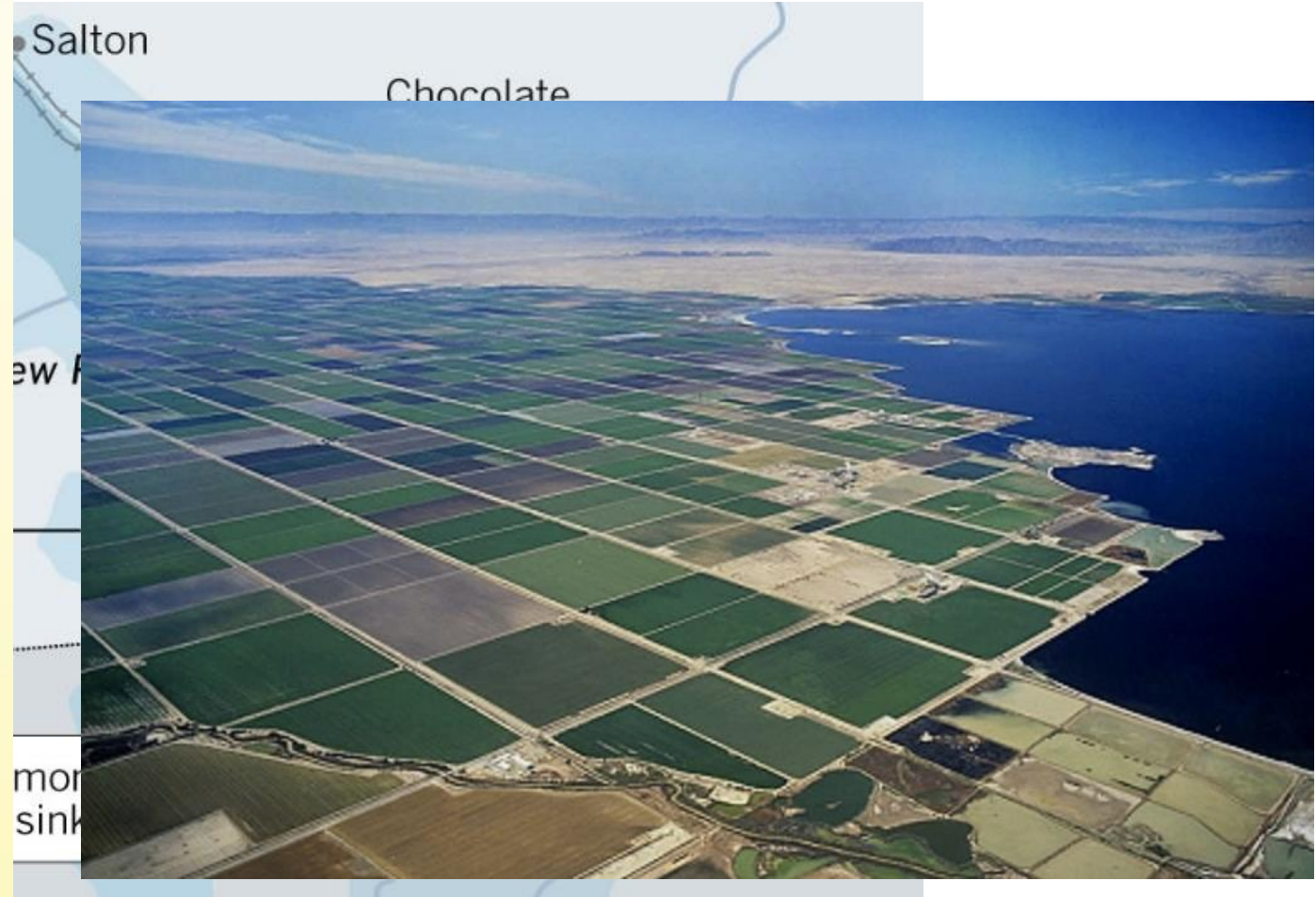
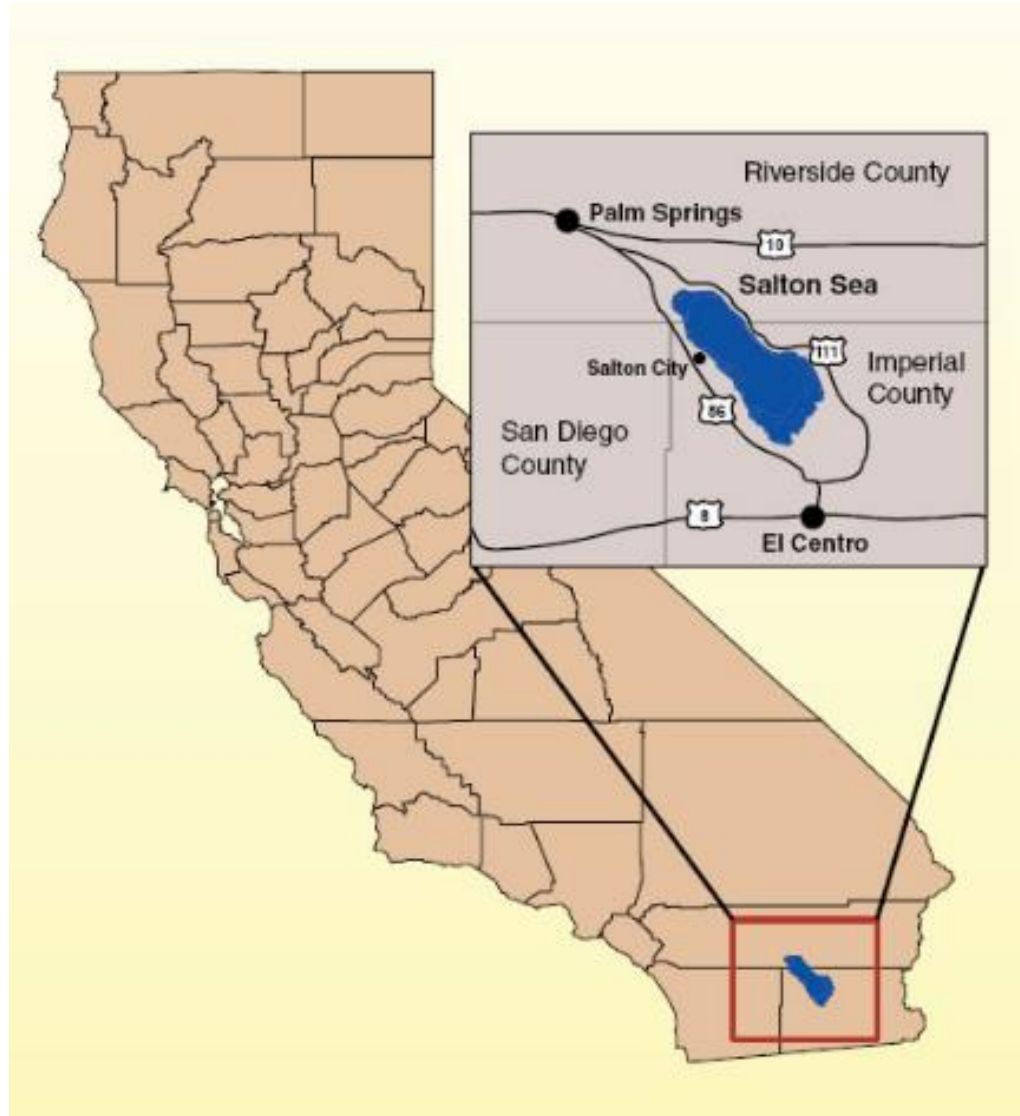
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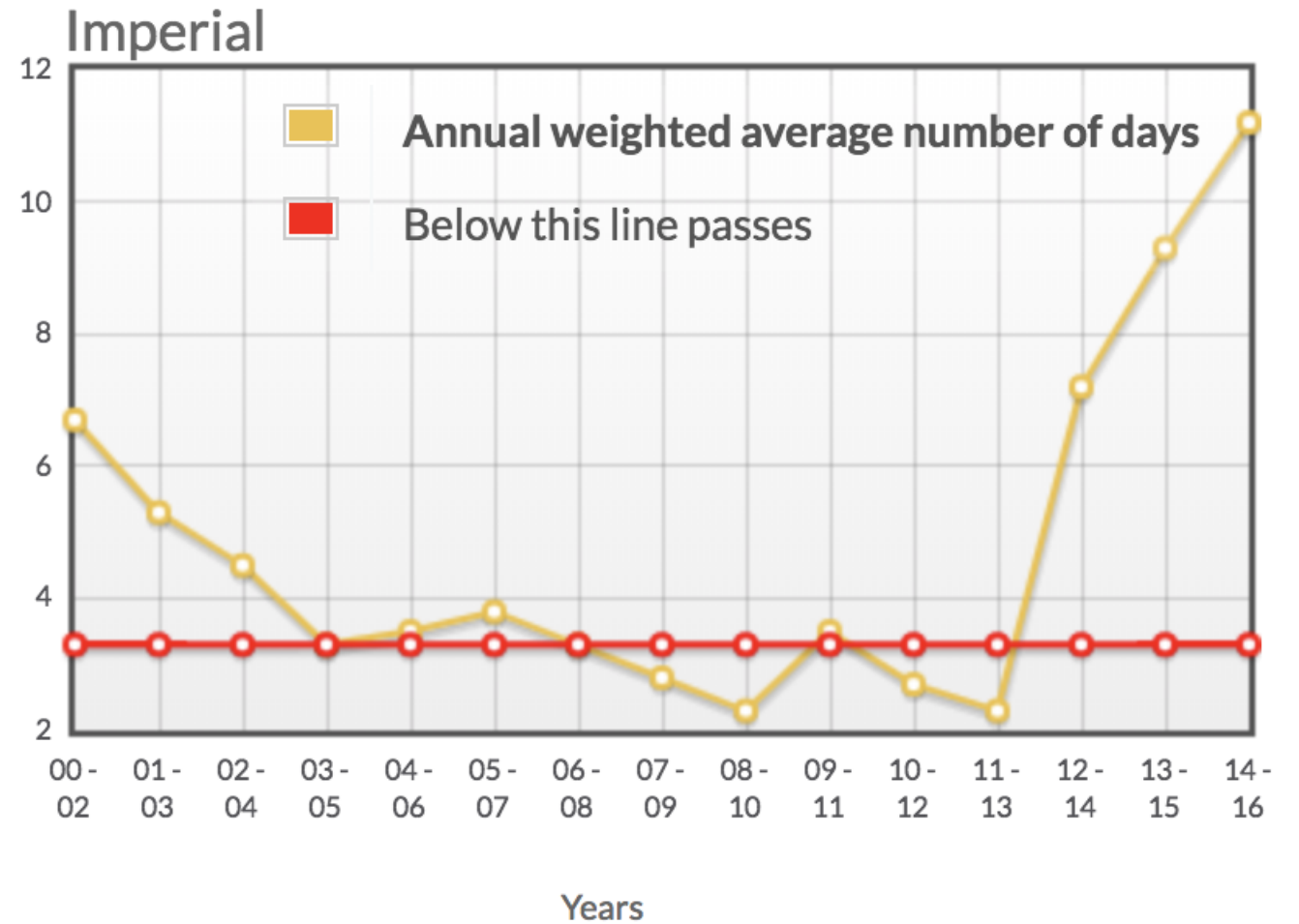
Imperial Valley



Imperial County air pollution levels

2018 air pollution by particulate (PM) level

COUNTY		Average daily density (ug/m ³)
	CALIFORNIA	9.1
1	Kern	40.5
2	Kings	32.8
3	Fresno	30.2
4	Stanislaus	19
5	Madera	17.5
6	San Joaquin	14.5
7	Merced	14.5
8	Riverside	13.0
9	Plumas	11.2
10	Imperial	11.2



What is air pollution?

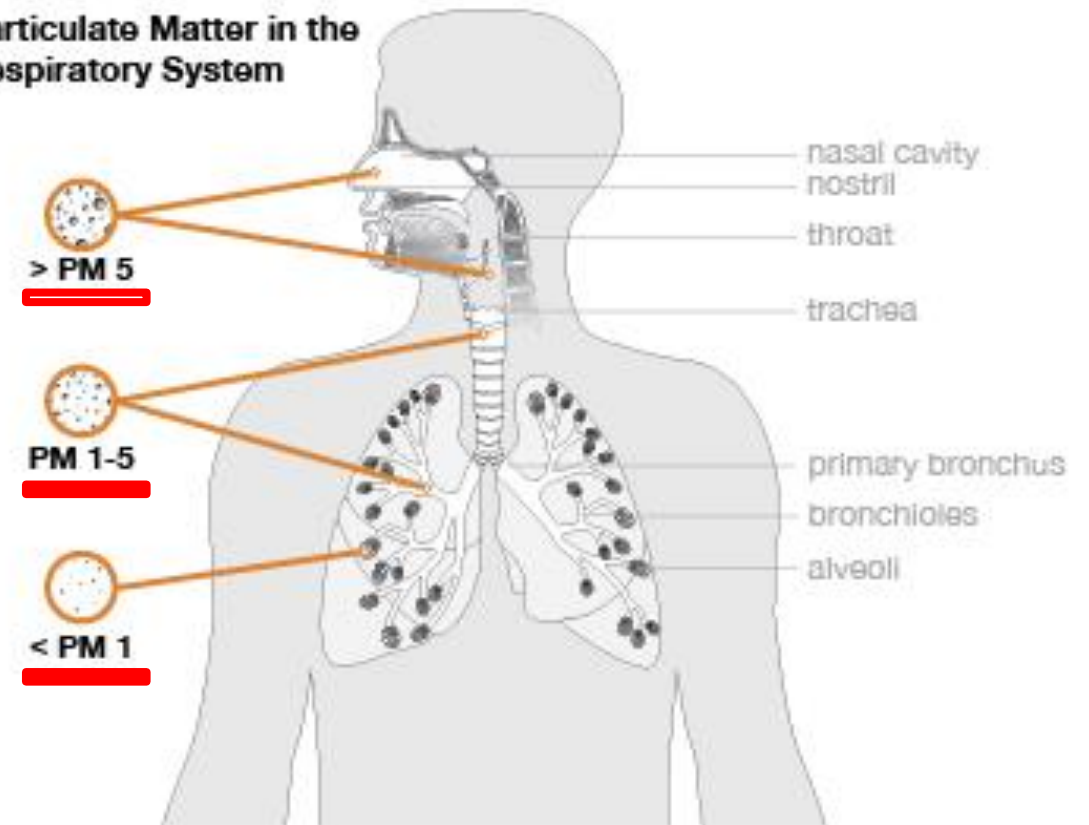
→ liquid, gaseous, or solid particles emitted into the atmosphere (natural or anthropogenic processes)

Particulate Matter: solid and liquid fraction of air pollution

PM Sizes



Particulate Matter in the Respiratory System



Community Partners



Pollution Sources



Salton Sea



factories



desert



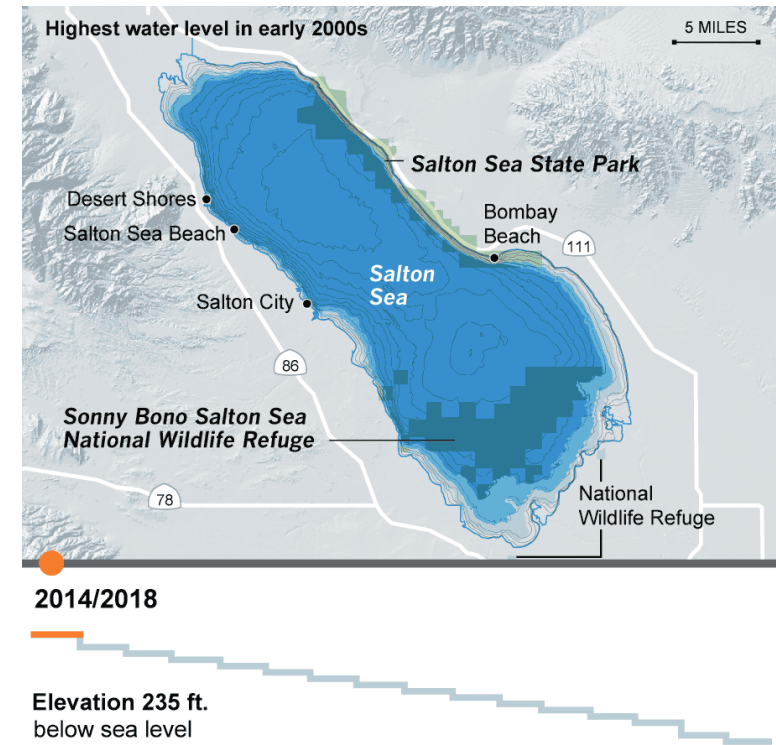
feedlot



agriculture

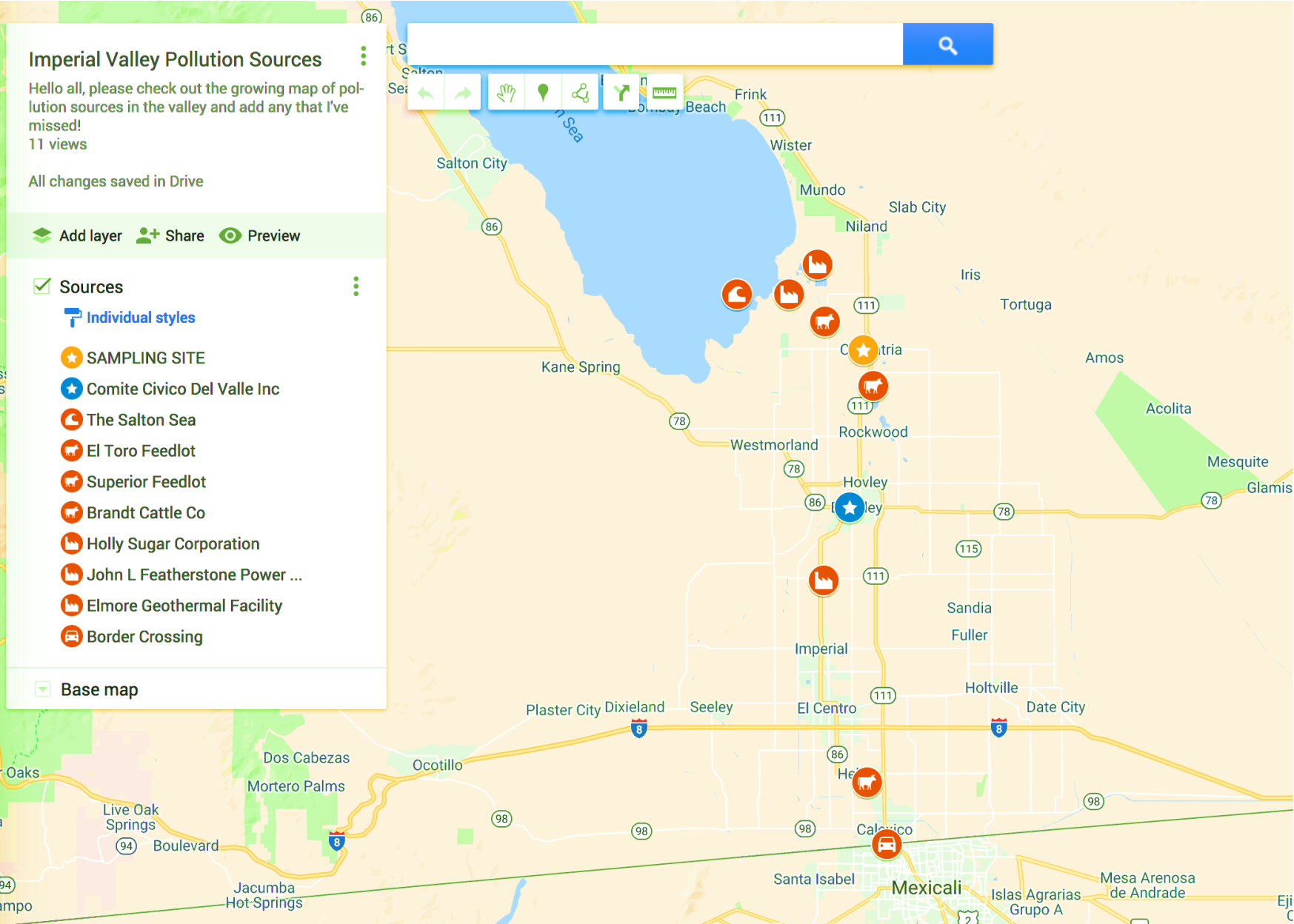


Mexicali



Pollution Map

Created by the community...



Asthma Prevalence

2015 asthma-related ER visits
for children aged 5 -17

COUNTY		Rate (per 10,000)
	CALIFORNIA	73.8
1	Imperial	154
2	Kings	132.8
3	Fresno	132.6
4	Merced	125.6
5	Solano	110
6	Madera	108.8
7	Lake	92.2
8	Del Norte	90.2
9	Kern	89.2
10	Modoc	87.8

2015 asthma-related hospitalizations
for children aged 5 - 17

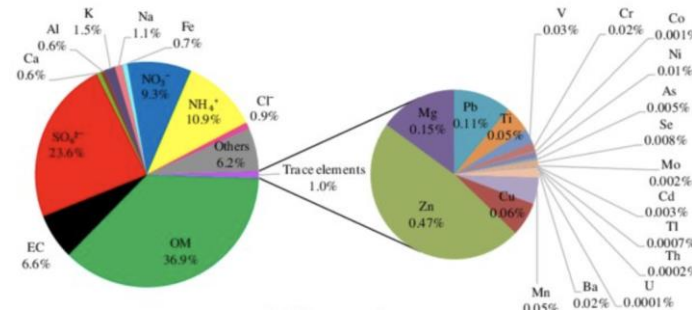
COUNTY		Rate (per 10,000)
	CALIFORNIA	7.1
1	Imperial	18.9
2	Fresno	12.7
3	Alameda	11
4	San Francisco	9.6
5	Sacramento	9
6	Kings	8.6
7	Los Angeles	8.4
8	Monterey	8.3
9	Contra Costa	8
10	Butte	8

How will we collect air samples?

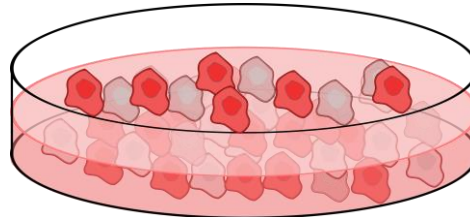


What will we do with the samples collected?

chemical characterization



cell culture screening



asthmatic mouse model



RESULTS: Does Salton Sea PM have more of a potential to exacerbate asthmatic symptoms than other sources of PM in Imperial Valley?

How will students be involved?

Trailer maintenance and sample collection

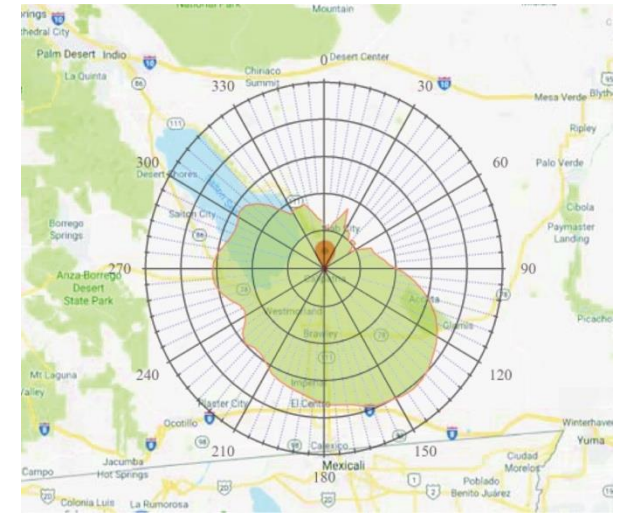


UC Davis laboratory visit



End goals

1. Create a chemical profile of PM in Imperial County
2. Determine if one PM source is more toxic than others
3. Determine if one PM source exacerbates asthma [in a model] more than others
4. Implement this information into existing air quality monitoring
5. Share results with the community
6. Empower the community to share results with others



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