- draft -

Salton Sea Air Quality Assessment

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Pacific Institute

for the

Salton Sea Authority

November 14, 2024

About the Institute

The Pacific Institute is a global, non-partisan water think tank that combines evidence-based thought leadership with active outreach to influence local, national, and international outcomes and impacts in water resilience. Our vision is to create a world in which society, the economy, and the environment have the water they need to thrive now and in the future.

MIP Salton Sea Air Quality Assessment

- Implementing Partner: The Pacific Institute
- Description: The objectives of the Institute's new Salton Sea air quality assessment are to identify and analyze relevant research on dust emissions, air quality, and related public health outcomes in the Salton Sea region and identify significant data and research gaps, resulting in a synthesis report; identify best management practices and innovative solutions to address these air quality challenges; and communicate the current state of the science and knowledge gaps in these areas to policymakers, SSMP, and stakeholders.
- Location: Data will be compiled from recent studies and reports from areas immediately adjacent to the Sea and surrounding areas.
- Timing: No new data collection is scheduled.

- Source: 2024 MIP Annual Work Plan

Salton Sea

Group Library

Recently Added Items

Title	Added By	Date Modified
Imperial County 2018 State Implementation Plan (SIP) For The...	katherinehalama	11/12/2024, 09:22:03
Low to Zero Concentrations of Airborne Bacterial Pathogens a...	katherinehalama	11/5/2024, 14:28:31
Salinity effects on the growth, mortality and shell strength...	Michael Cohen	11/1/2024, 12:42:47
Lessons learned from the Salton Sea: Potential impact of dus...	Michael Cohen	11/1/2024, 12:23:26
A Balloon Mapping Approach to Forecast Increases in PM10 fro...	Michael Cohen	11/1/2024, 12:07:12
Geology of the Northeast Margin of the Salton Trough, Salton...	Michael Cohen	11/1/2024, 11:44:29
Air quality and wheeze symptoms in a rural children's cohort...	Michael Cohen	10/29/2024, 12:21:17
NUTRIENT CYCLING IN THE SALTON SEA	Michael Cohen	10/22/2024, 10:51:15
Imperial Sand Dunes | Bureau of Land Management	katherinehalama	10/21/2024, 16:44:47
GENERAL REQUIREMENTS FOR CONTROL OF FINE PARTICULATE MATTER ...	katherinehalama	10/17/2024, 15:27:53

See all 938 items for this group in the Group Library.

The Salton Sea library includes journal articles, reports, conference proceedings, book chapters, dissertations and theses, and other publications, across a range of disciplines, related to the Sea. The library includes most "Salton Sea" results from Google Scholar; other entries, including agency reports, will continue to be added as time permits.

We thank Karen Duran, Juan Murillo Perez, and Kaila Hernandez of the Water Resources Institute for compiling these bibliographic entries. We gratefully acknowledge funding support from the Bureau of Reclamation for the development of this library.

Please report incorrect entries, bad links, or other errors to saltonsea@pacinst.org. Let us know if we missed a publication that should be included.

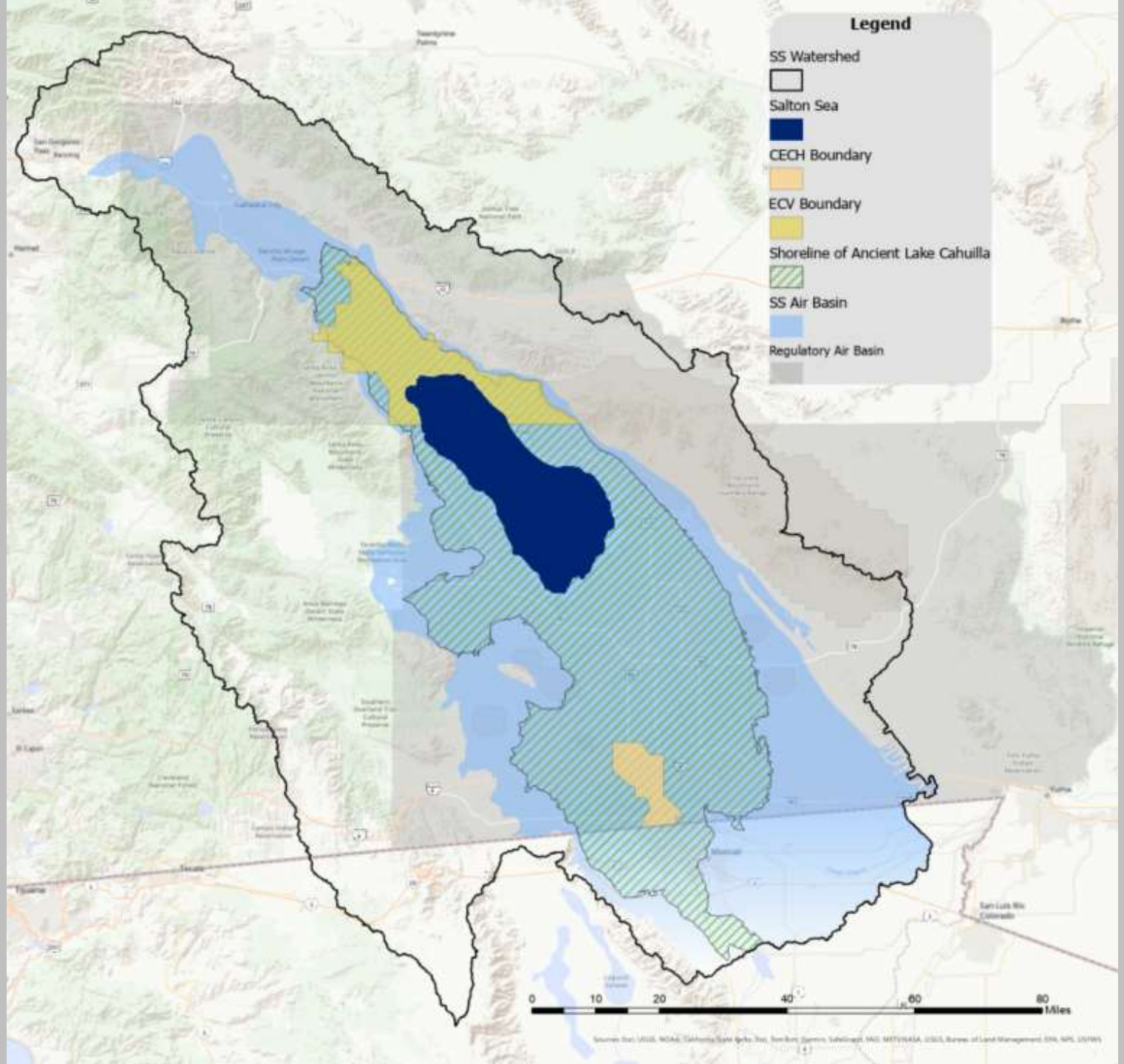
Owner:Michael Cohen
Registered: 2023-03-21
Type: Public
Membership: Closed
Library Access: You can only view

Log in or Register to join groups

Members (18)

Journal Articles in the Salton Sea Zotero Library

Years published	Total number of journal articles	Number of articles focused on air quality and related topics	Number of articles focused on regional public health
Before 2014	239	10	2
2014 - 2024	273	49	33


Legend
SS Watershed
Salton Sea
CECH Boundary
ECV Boundary
Shoreline of Ancient Lake Cahuilla
SS Air Basin
Regulatory Air Basin
0
10
20
40
60
80
Miles

Air Quality factors

- Physical – particle size
- Chemical – elements such arsenic, lead, etc.
- Biological – LPS and other potential contaminants (UCR)

Phase

- Solids
- Liquids/aerosols/sea spray

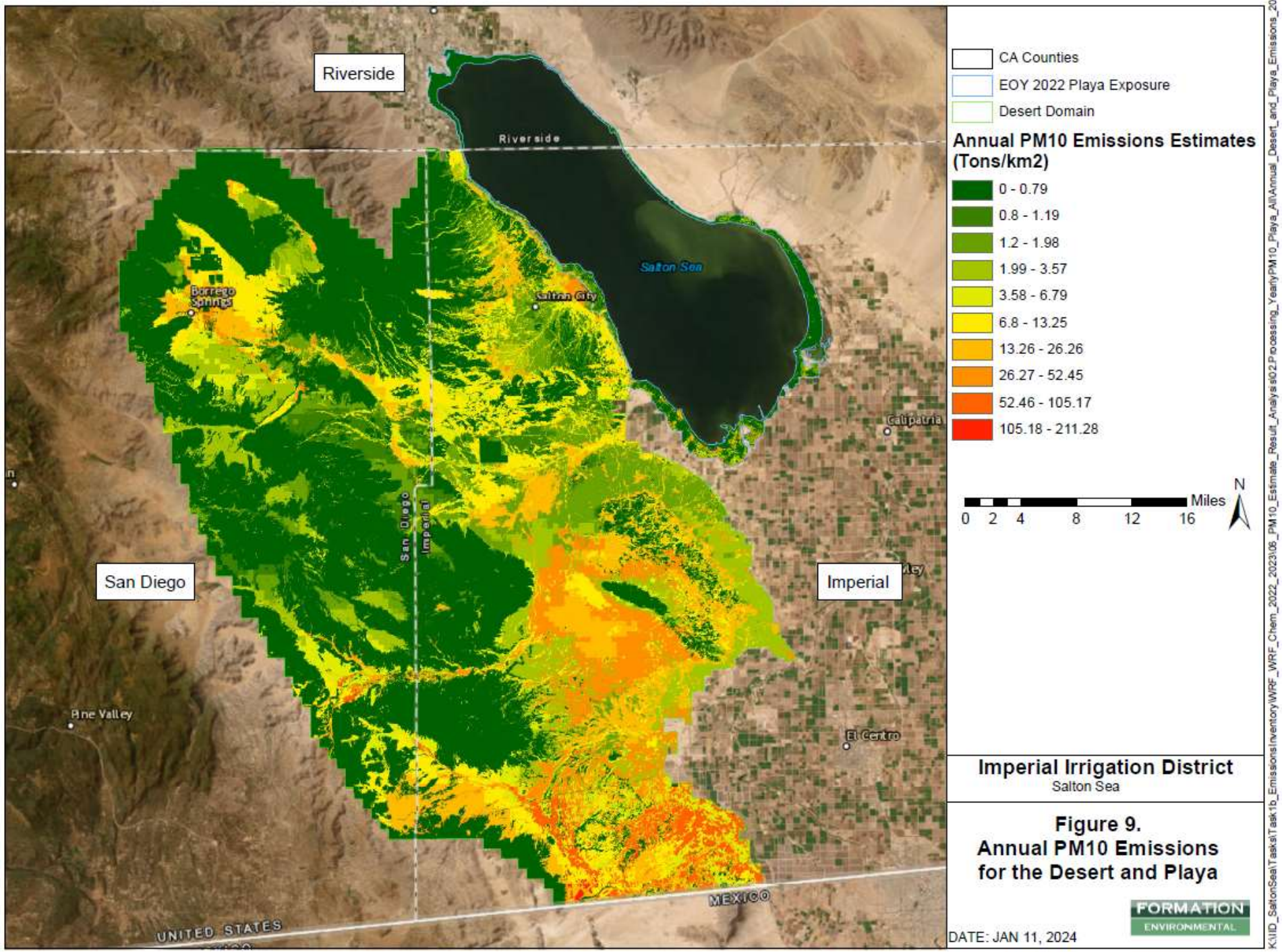
} (Both can be “particles”/PM)

- Gases (hydrogen sulfide, ozone)

Stationary vs Mobile

PM2.5	2012	PM10	2012
Fugitive windblown dust	14.86%	Fugitive windblown dust	72.79%
Unpaved road dust	0.79%	Unpaved road dust	20.21%
Farming operations	0.12%	Farming operations	2.93%
Mineral industrial processes	0.18%	Other	1.29%
Aircraft	0.00%	Construction and demolition	1.02%
Managed burning and disposal	0.01%	Paved road dust	0.72%
Paved road dust	0.75%	Managed burning and disposal	0.49%
Construction and demolition	3.08%	On-road motor vehicles	0.23%
On-road motor vehicles	1.16%	Aircraft	0.14%
Fuel combustion	0.51%	Food and ag industrial processes	0.10%
Other	0.81%	Fuel combustion	0.08%
Food and ag industrial processes	0.00%	Mineral industrial processes	0.01%
Trains	1.01%	Off-road recreational vehicles	0.00%
Farm equipment	0.06%		
Cooking	3.46%	Total PM10 Emissions (tons)	**106,719**
Fires	72.16%		
Off-road recreational vehicles	0.00%		
Metal industrial processes	1.04%		
Total	100.00%		
Total PM2.5 Emissions (tons)	**14,504**		

Inventory of PM Emissions in ICAPCD



22/23 Emissions Estimate

Desert: 30,267 tons PM_{10}
Playa: 320 tons PM_{10}

Desert: 82.92 tons/day
Playa: 0.876 tons/day

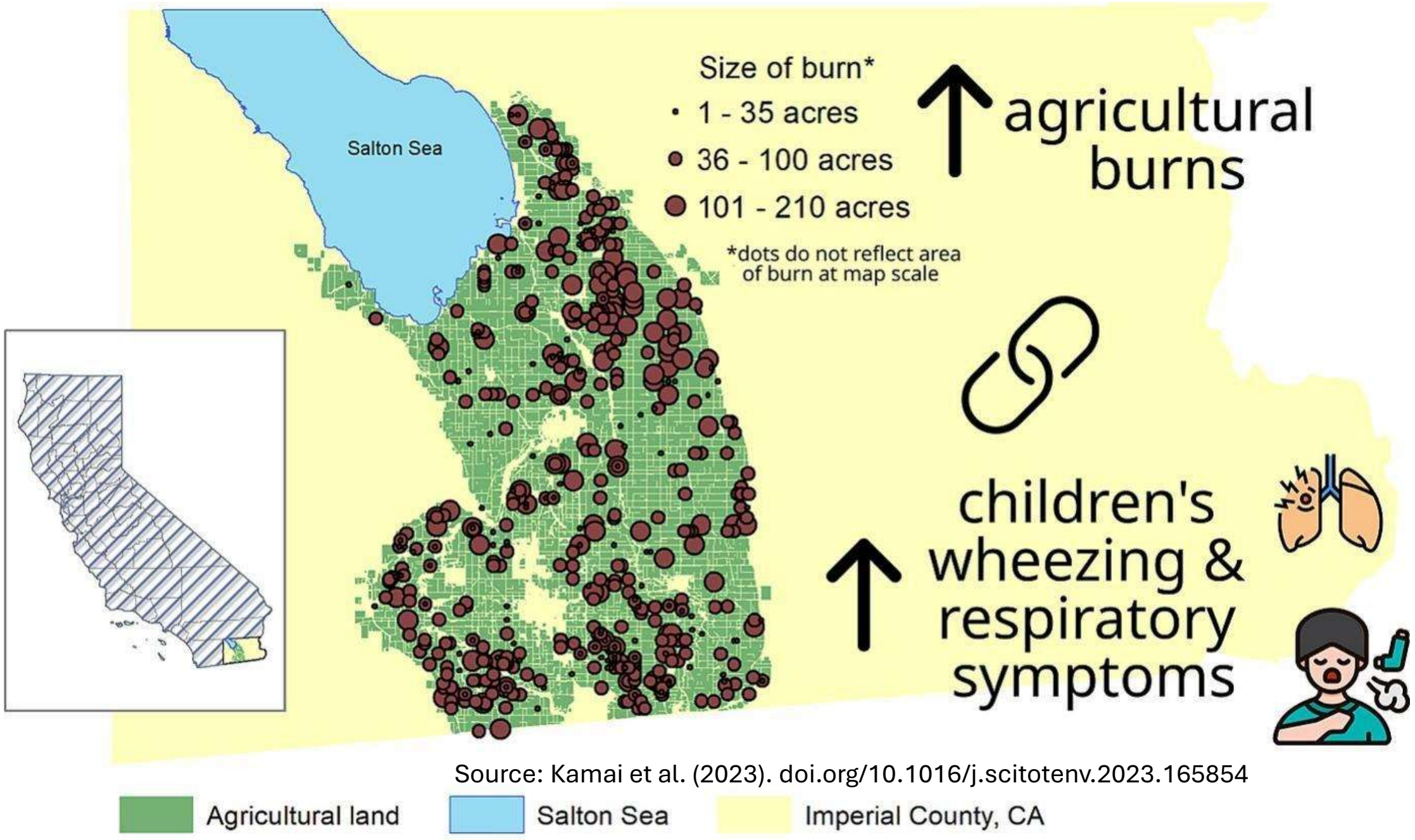
Desert: 7.28 tons/km^2
Playa: 2.64 tons/km^2

2012 ICAPCD Inventory: 106,719 tons PM_{10}

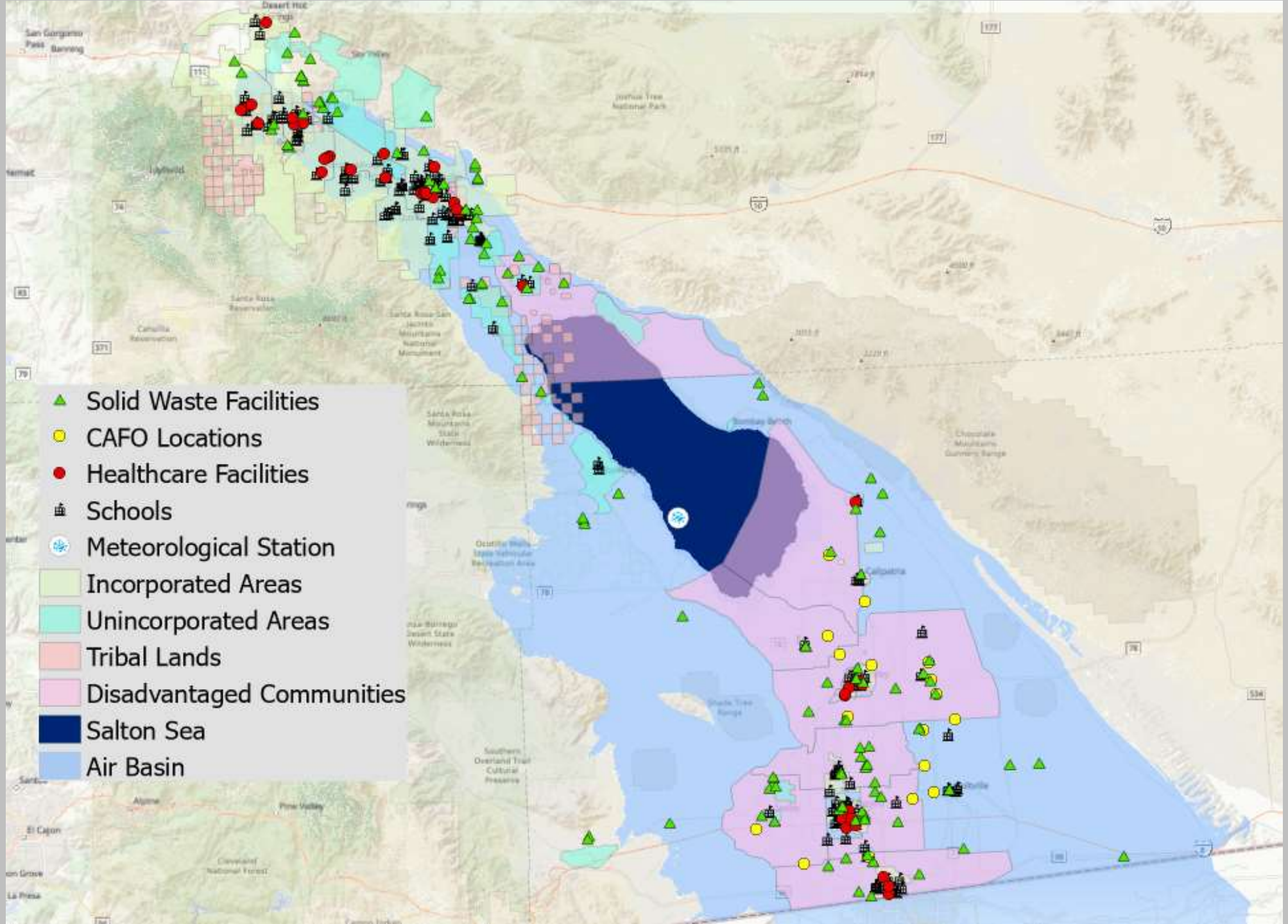
Blowing Dust on N. Gene Autry Trail, April 25, 2024

Image: Shutterstock

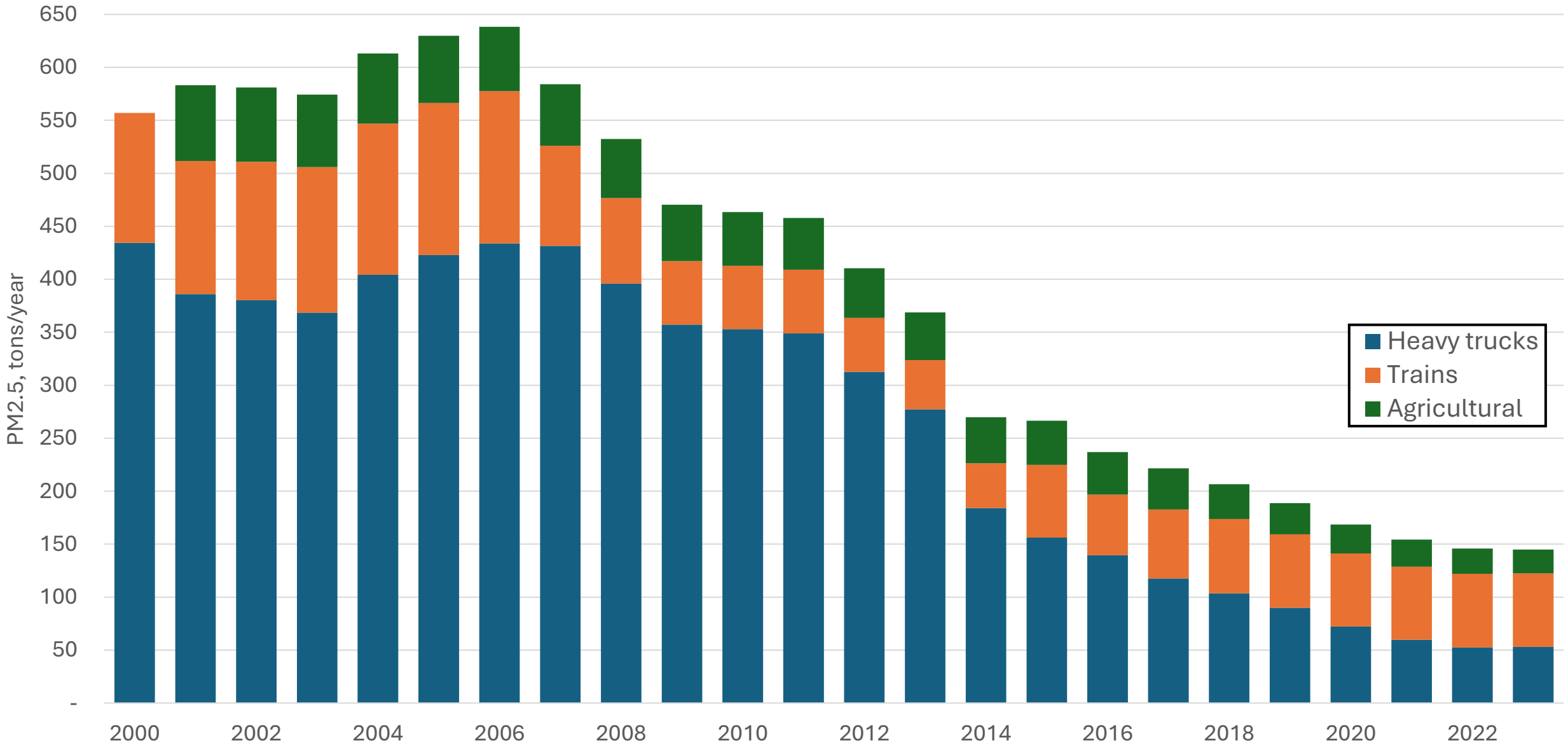
Permitted agricultural burns in Imperial Valley, 2016-2019.



Source: Kamai et al. (2023). doi.org/10.1016/j.scitotenv.2023.165854


Solid Waste Facilities
CAFO Locations
Healthcare Facilities
Schools
Meteorological Station
Incorporated Areas
Unincorporated Areas
Tribal Lands
Disadvantaged Communities
Salton Sea
Air Basin

Annual PM2.5 Emissions from diesel vehicles in the Salton Sea Air Basin.



Source: CARB Mobile Source Emissions Inventory

Pediatric Hospitalization Rates for Asthma and related conditions, by county.