

Salton Sea Air Quality Mitigation Program



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Salton Sea Air Quality Mitigation Program

Comprehensive, science-based, adaptive program

- Proactively detect, locate, assess, and identify options to mitigate dust emissions from exposed Salton Sea playa





Estimate Emissions

Objectives:

- Where and when dust emissions occur?
- How much dust is emitted?
- Where does the dust plume go?
- Which areas of the playa should be prioritized for dust control?





Map Playa Exposure

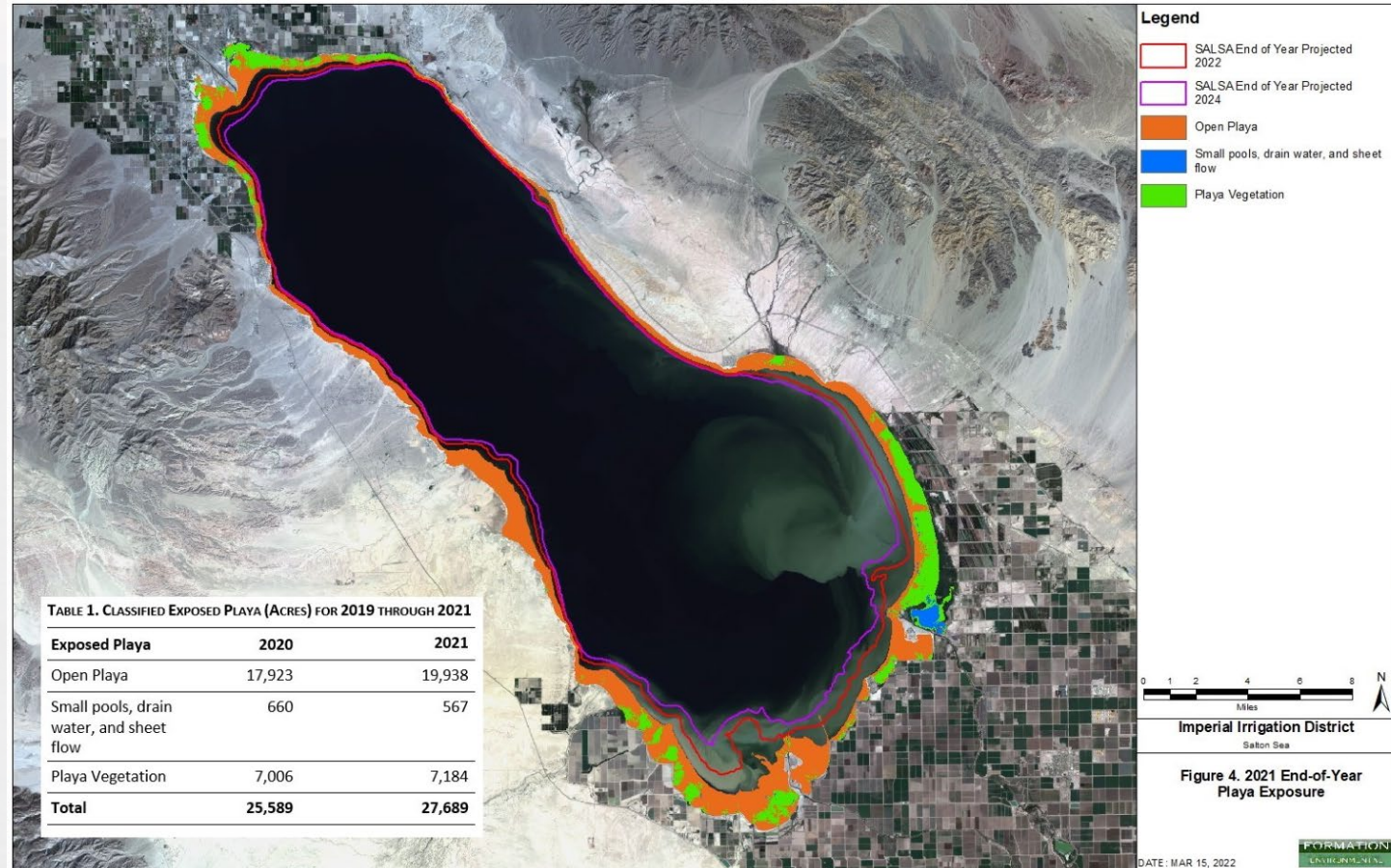
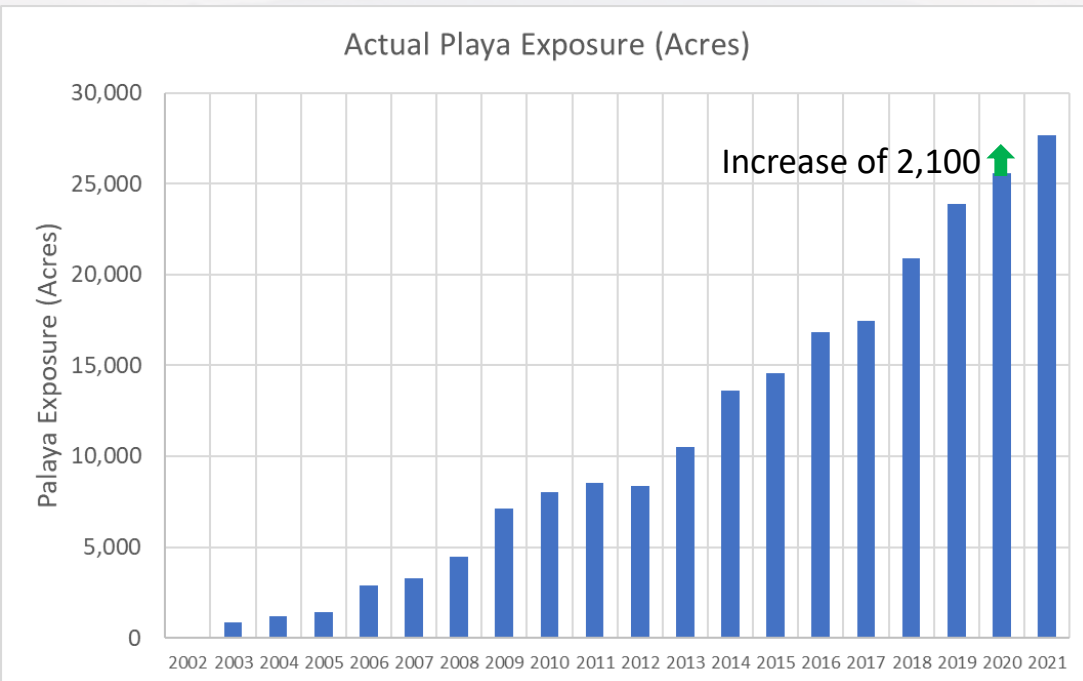


TABLE 1. CLASSIFIED EXPOSED PLAYA (ACRES) FOR 2019 THROUGH 2021

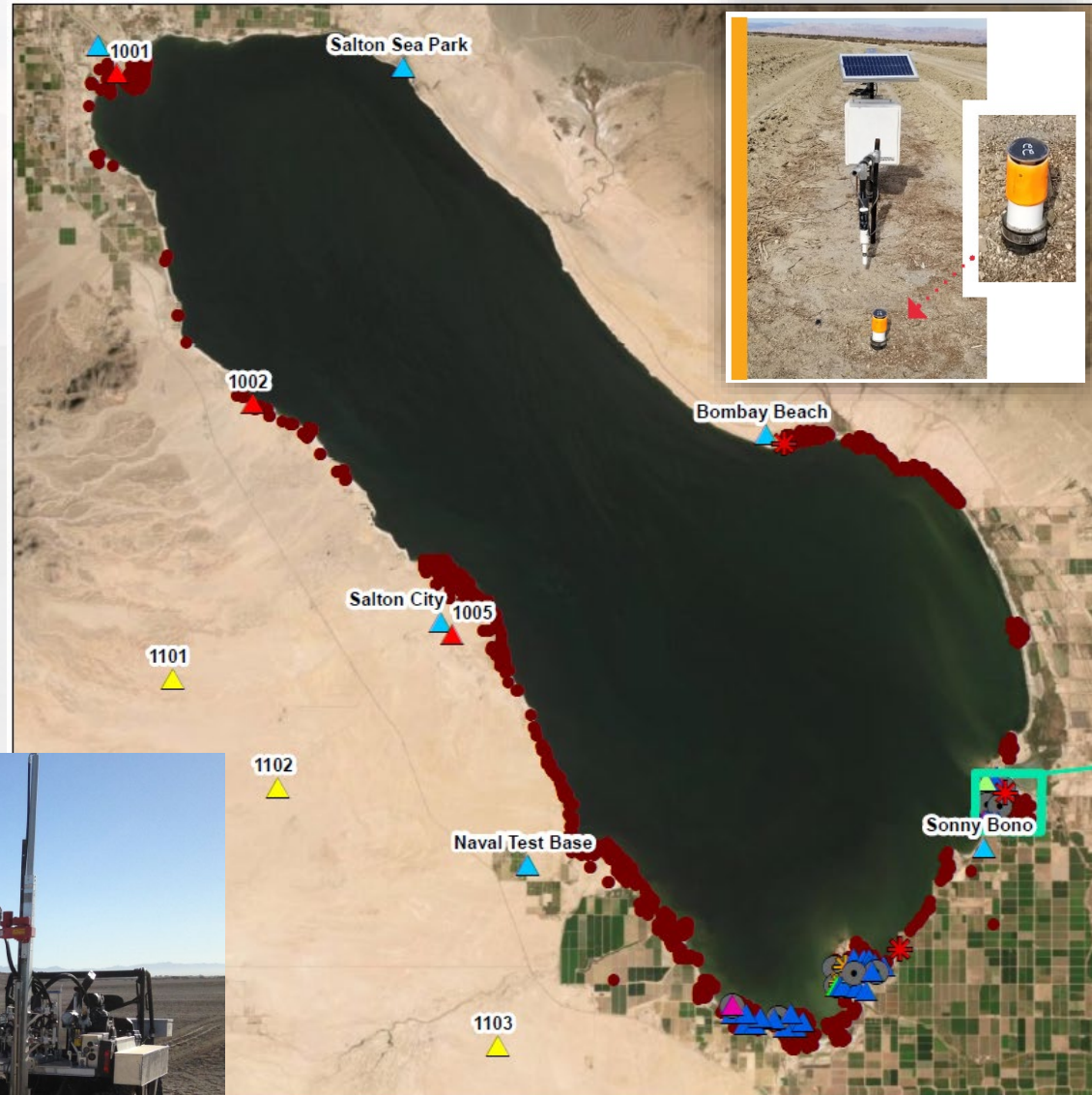
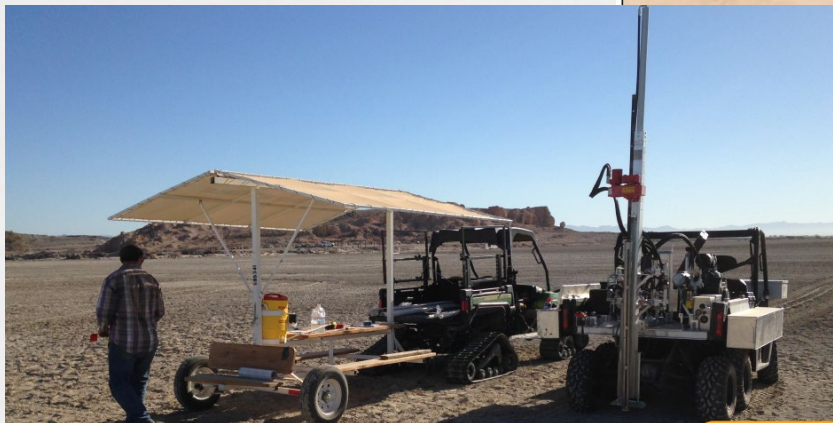
Exposed Playa	2020	2021
Open Playa	17,923	19,938
Small pools, drain water, and sheet flow	660	567
Playa Vegetation	7,006	7,184
Total	25,589	27,689

Characterize Playa Surfaces



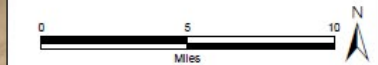
PI-SWERL:

- 3610 Playa measurements
- 1220 Desert measurements
- Sand motion: 45 CSC, SANTRI, SENSIT
- Surface Condition: 4,830 measurements
- Soil Moisture: 500 measurements
- Soil Cores: 1,500 soil cores



Instrument Locations

- ▲ CSC + Sensit
- ▲ CSC + Sensit + SANTRI1
- ▲ CSC + Sensit + SANTRI2
- ▲ CSC Only
- ☀ Mobile Roundshot
- PM10
- ✳ Stationary Roundshot
- PI-SWERL measurement locations



Imperial Irrigation District
Salton Sea

Figure.
PI-SWERL and Sand Flux Instrumentation

DATE: MAR 17, 2021

FORMATION
ENVIRONMENTAL

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Measure and Model Wind & Dust Emissions



AIR QUALITY MONITORING STATIONS

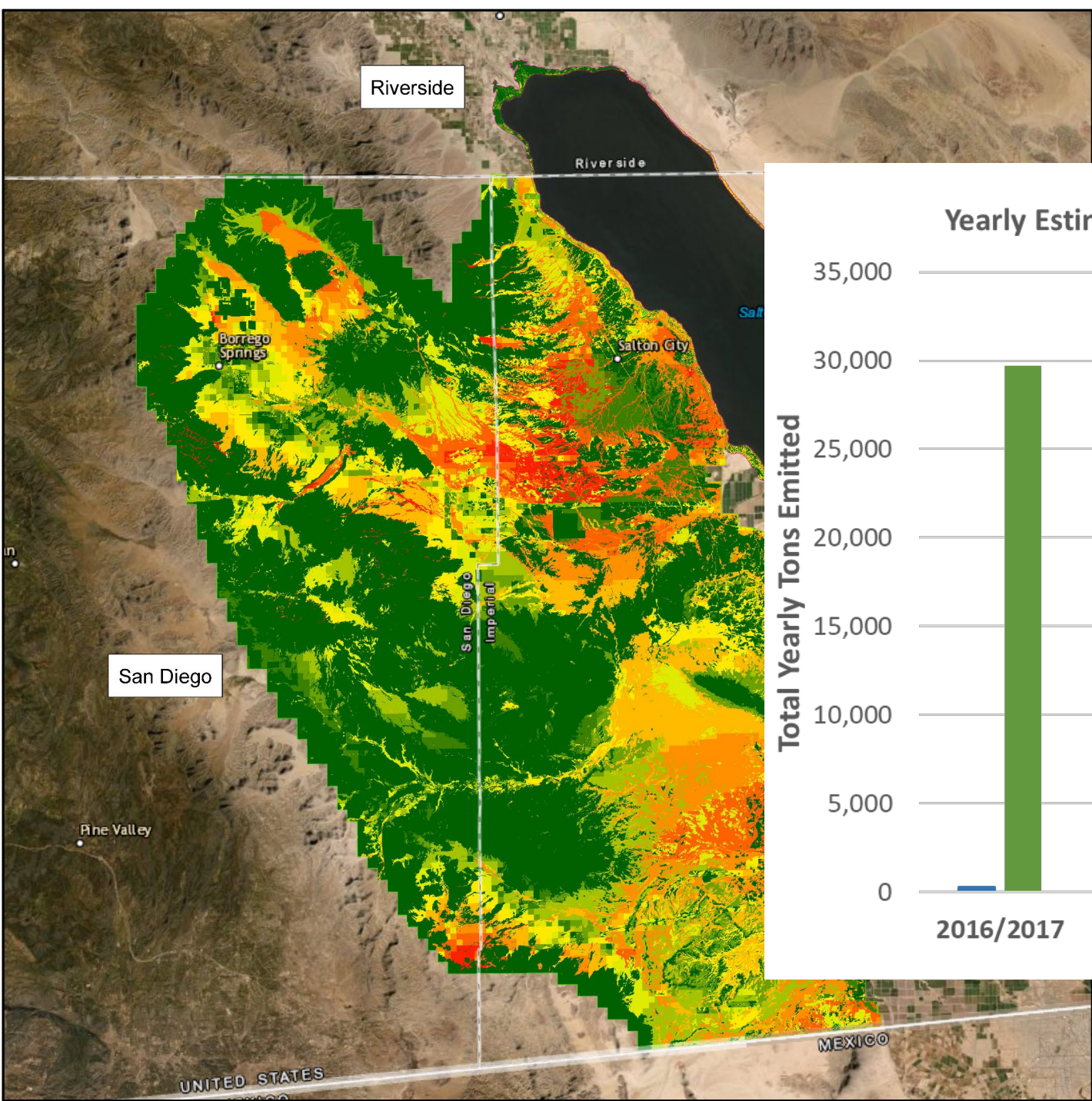


METEOROLOGICAL TOWERS



360-DEGREE CAMERAS

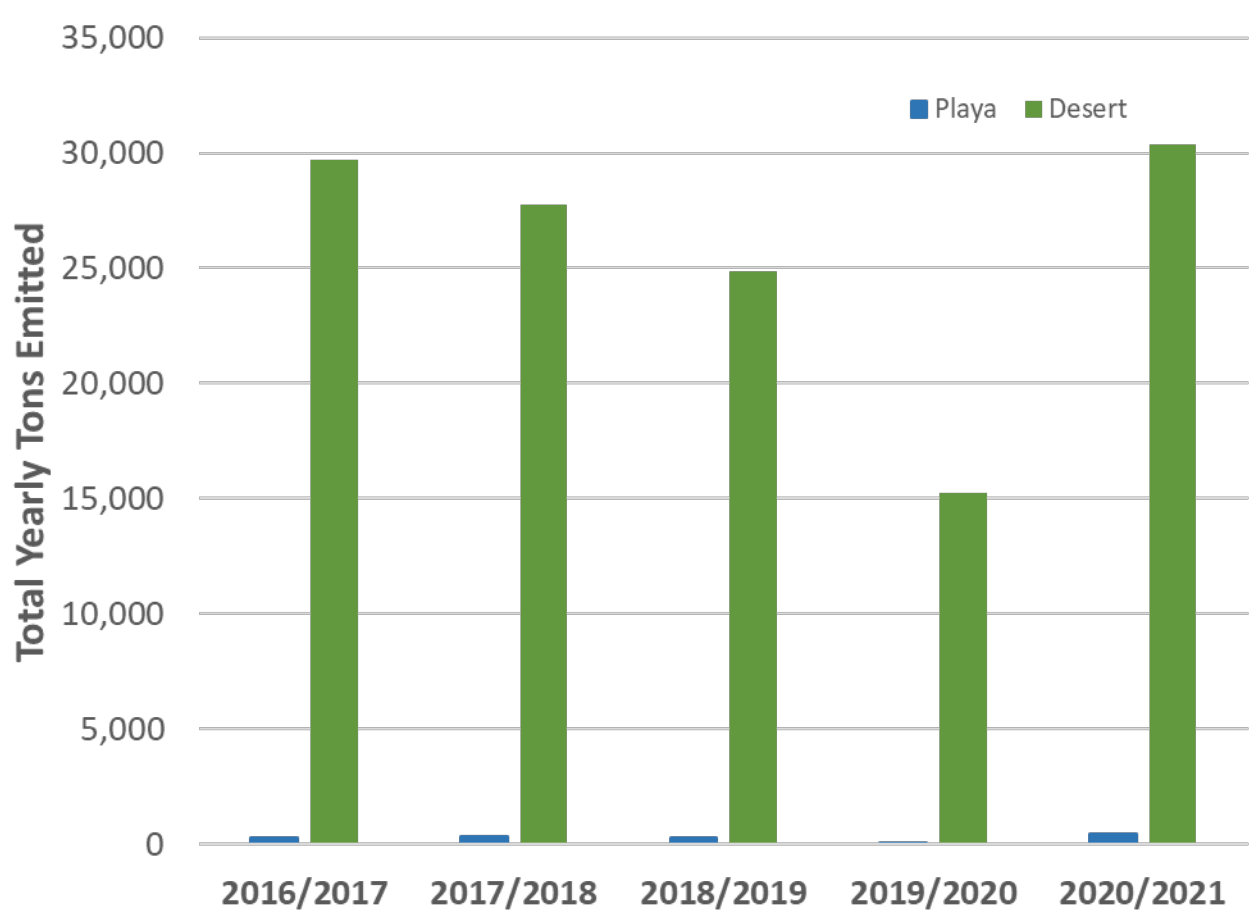




CA Counties
 Desert Domain
 Playa Domain
Annual PM10 Emissions Estimates (Tons/km2)

and_Playa_Emissions_2020_2

Yearly Estimated Emissions (Playa and Desert)



Annual PM10 Emissions for the Desert and Playa



DATE: FEB 16, 2022

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Reviewers



Name: Amato Evan, PhD; Associate Professor at UC San Diego
Research Focus: Atmospheric Aerosols and Chemistry, Climate Science, Ocean-Atmosphere Interaction, Remote Sensing and Satellite Oceanography, Tropical Meteorology and Oceanography



Name: William Porter, PhD; Assistant Professor at UC Riverside
Research Focus: Cause and impacts of air pollution by applying numerical and statistical models



Name: James King, PhD; Associate Professor at University of Montreal, Canada
Research Focus: Measurements and modeling of aeolian dust emissions processes



Name: Mark Sweeney, PhD; Professor at University of South Dakota
Research Focus: sedimentology and geomorphology; generation, transport, and deposition of dust.



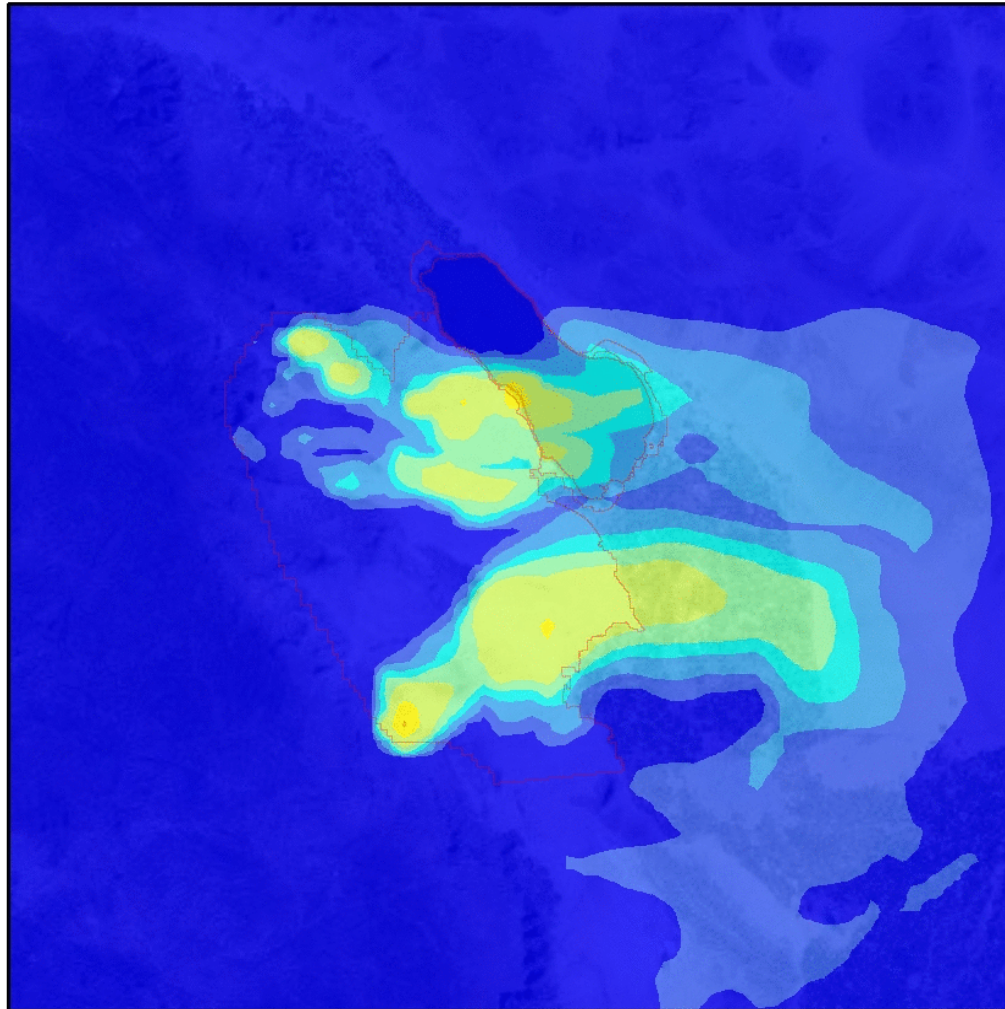
Science and Technology Policy Council

PEER REVIEW HANDBOOK

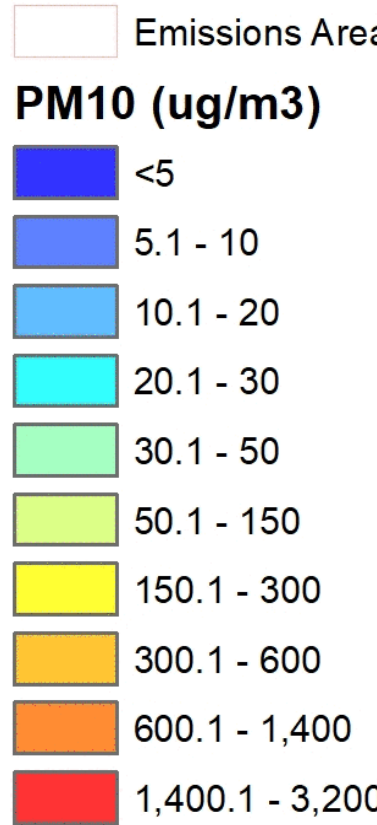
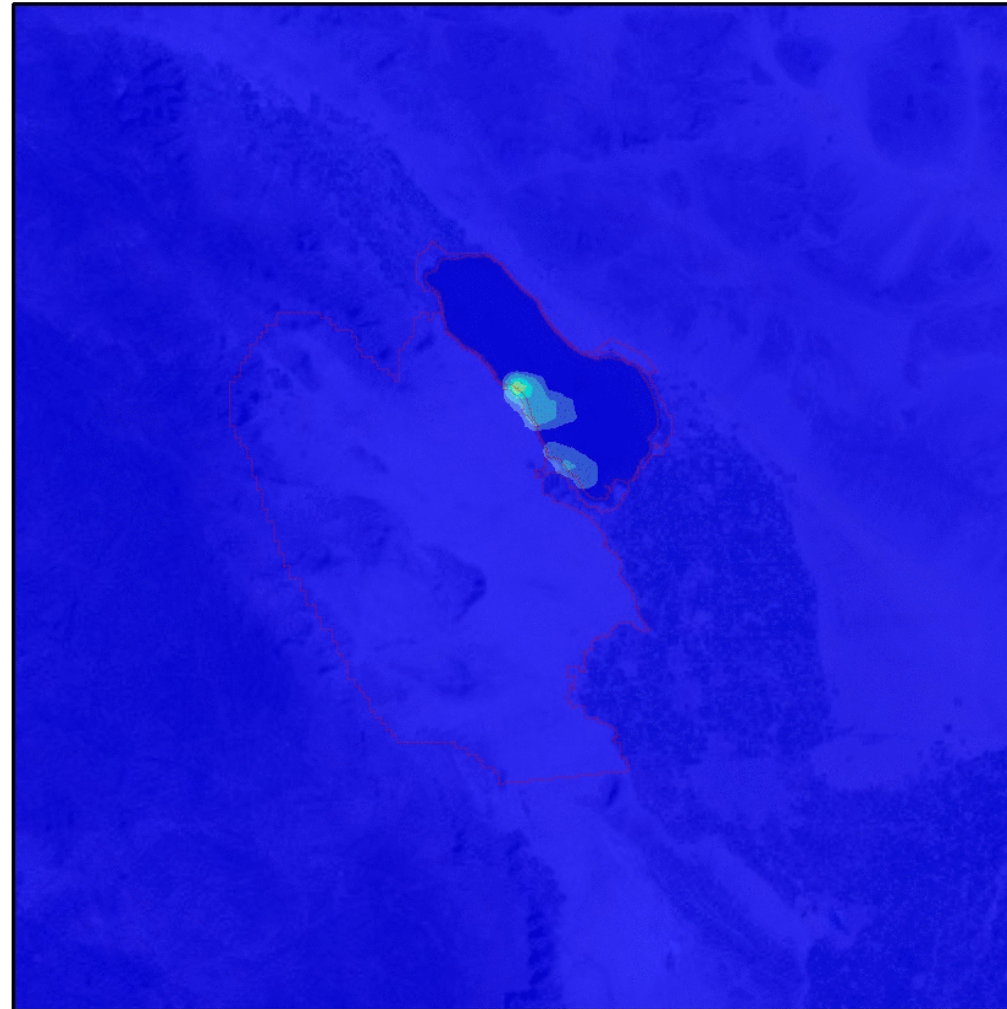
4th Edition

2021-04-21 10:00

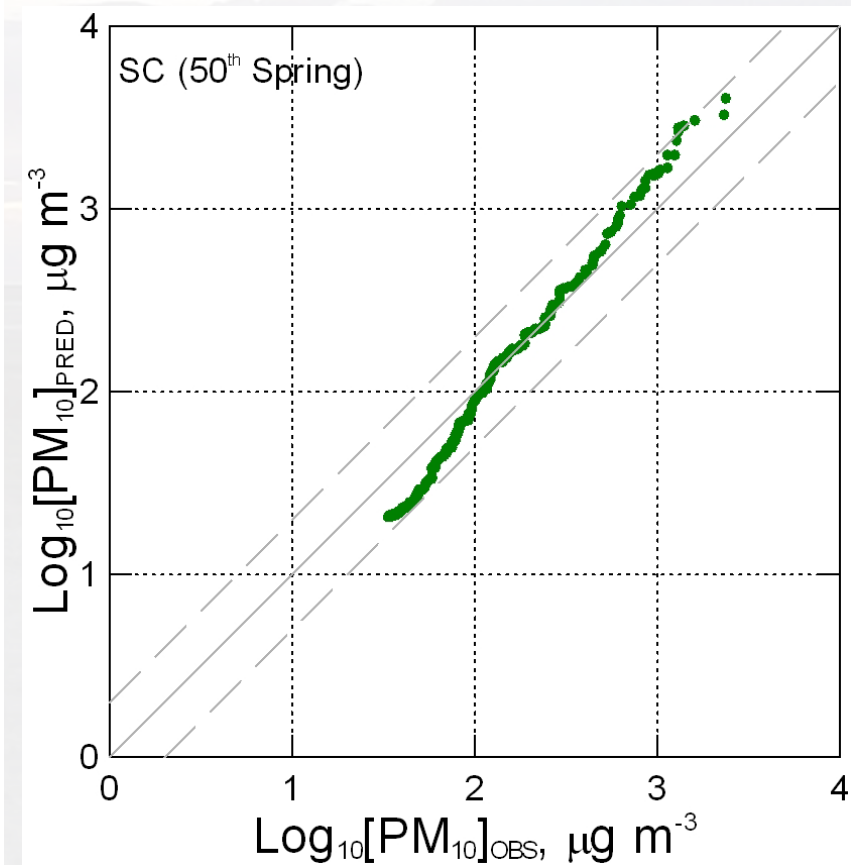
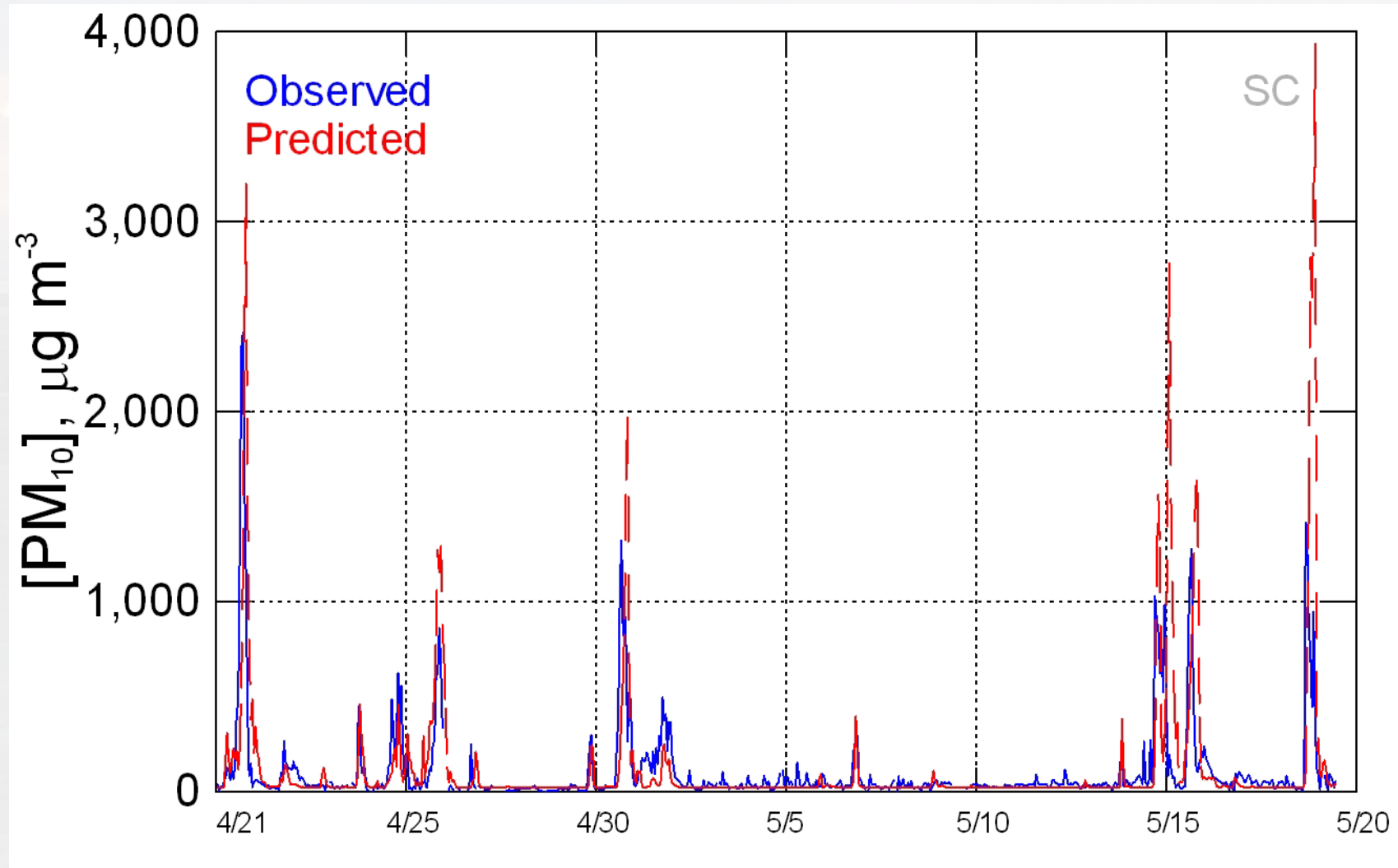
Desert

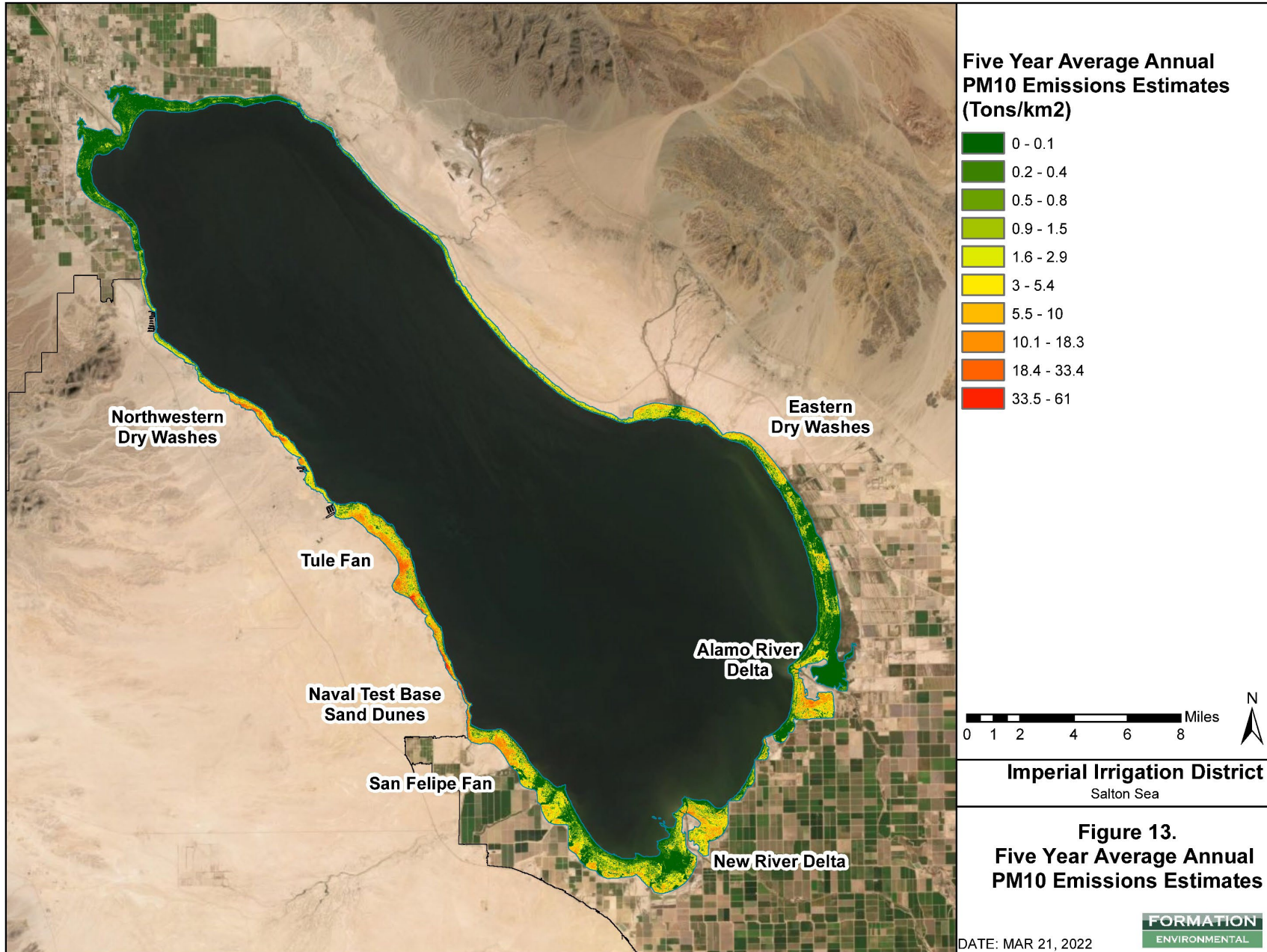


Playa



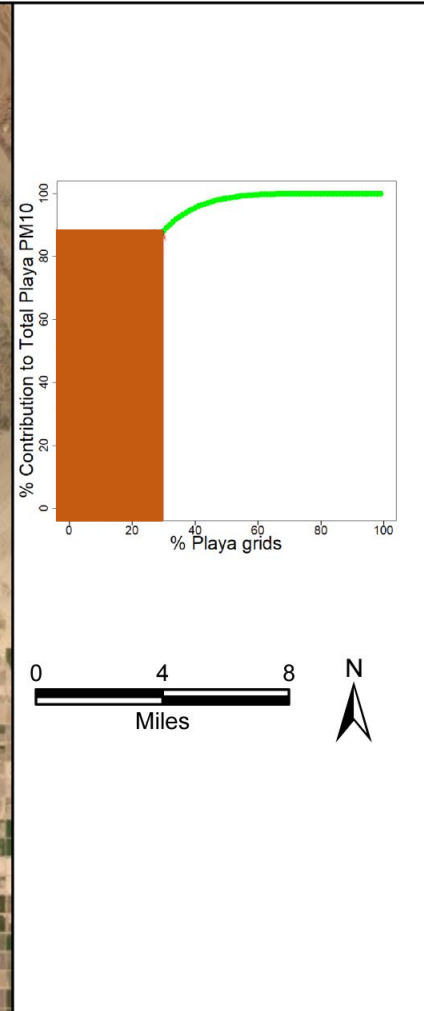
Salton City – PM₁₀





Five Year Annual Average Summary

Total Acreage	23,917
Playa Acreage	17,024
Open Water Acreage	1,006
Vegetation Acreage	5,887
Emissions Estimates	
Tons	243.66
Tons day ⁻¹	0.667
Tons km ⁻¹ yr ⁻¹	2.51



Imperial Irrigation District
Salton Sea

Figure 14.
Ranking of Average
Annual Emissions Estimates

DATE: APR 05, 2022

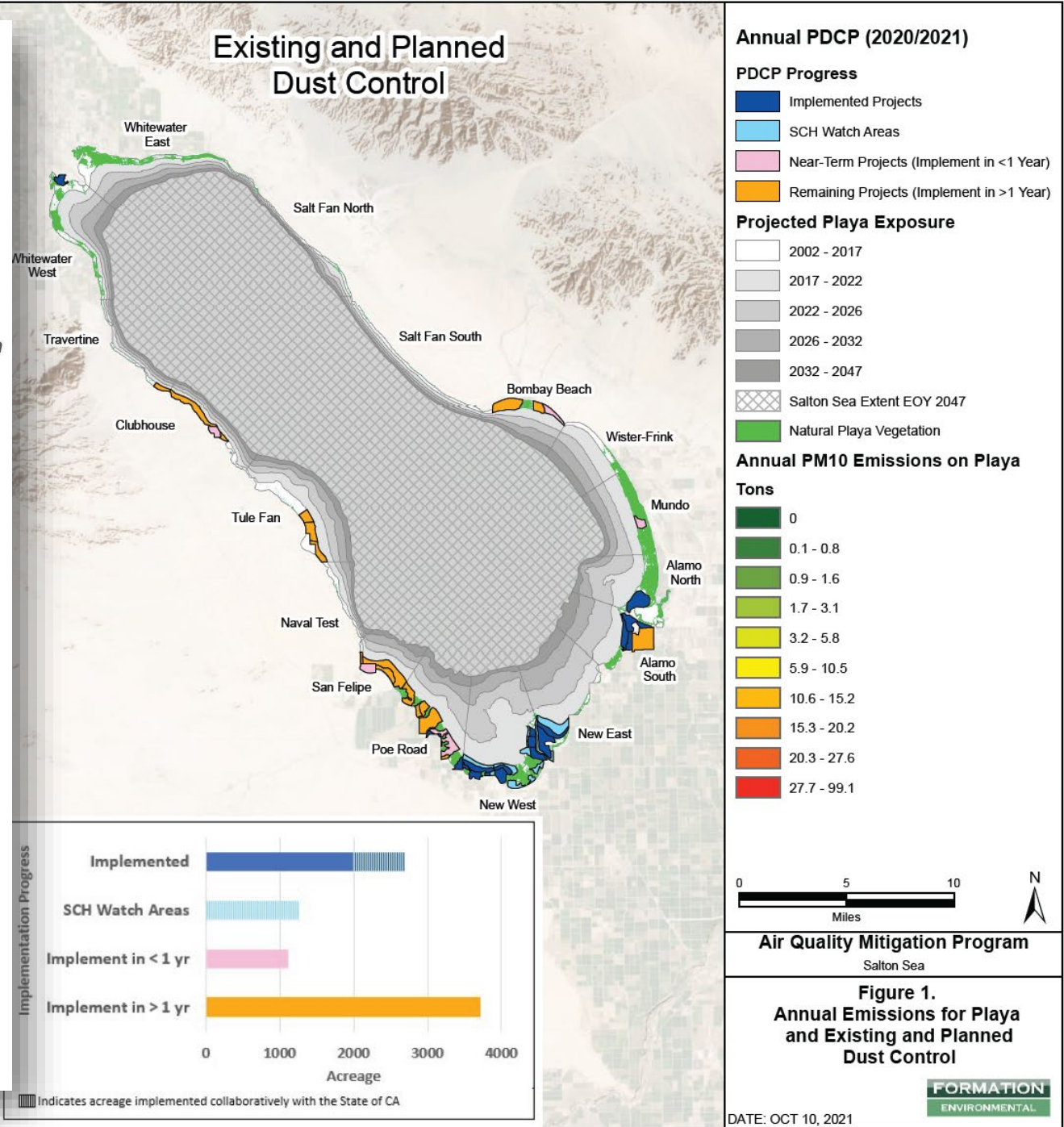
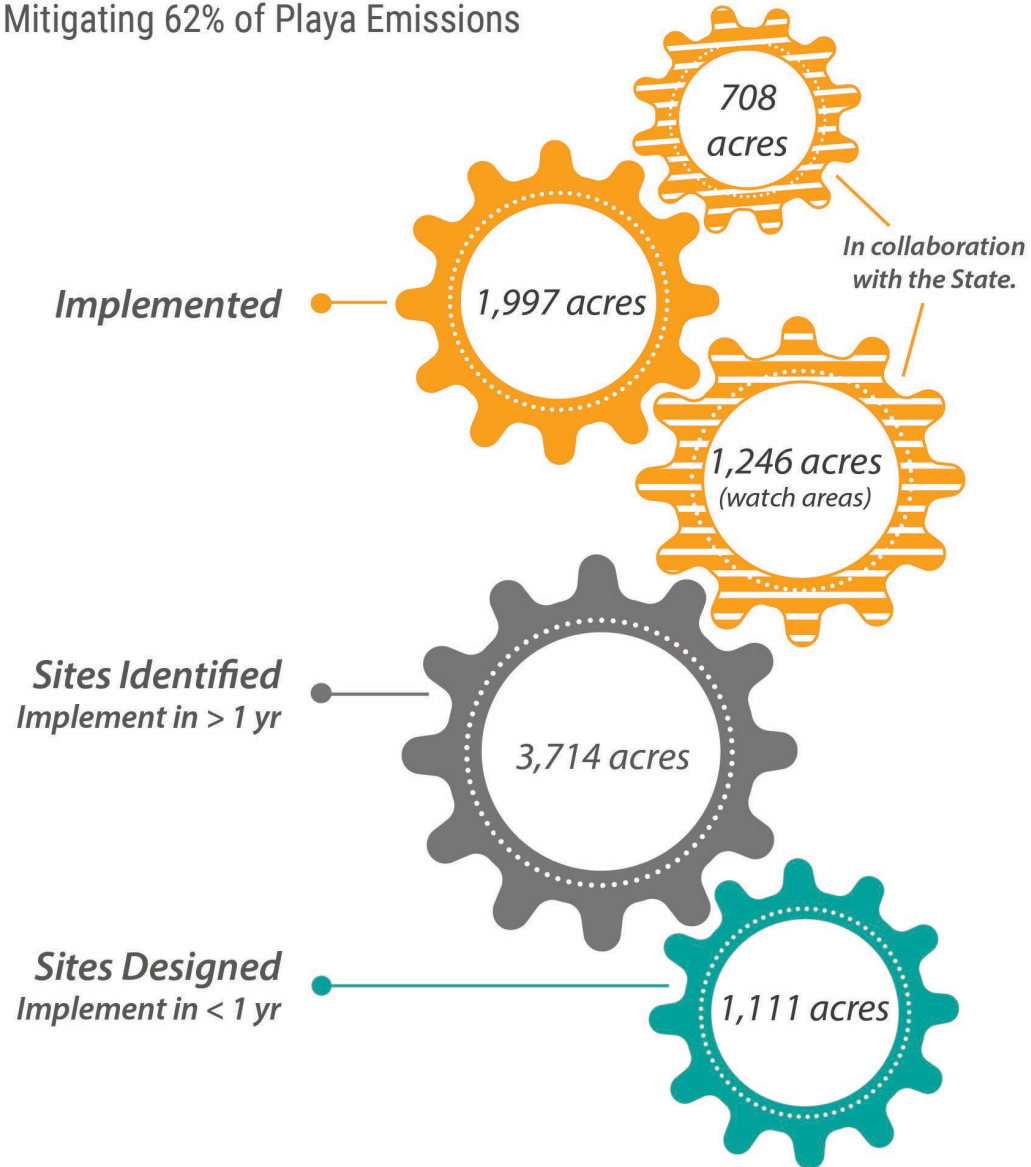


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Playa Percentage	Area (ac)	Percent of Total PM ₁₀ Emissions
5	1,280	32

Implementation Progress

Active Projects
Mitigating 62% of Playa Emissions







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FORMATION

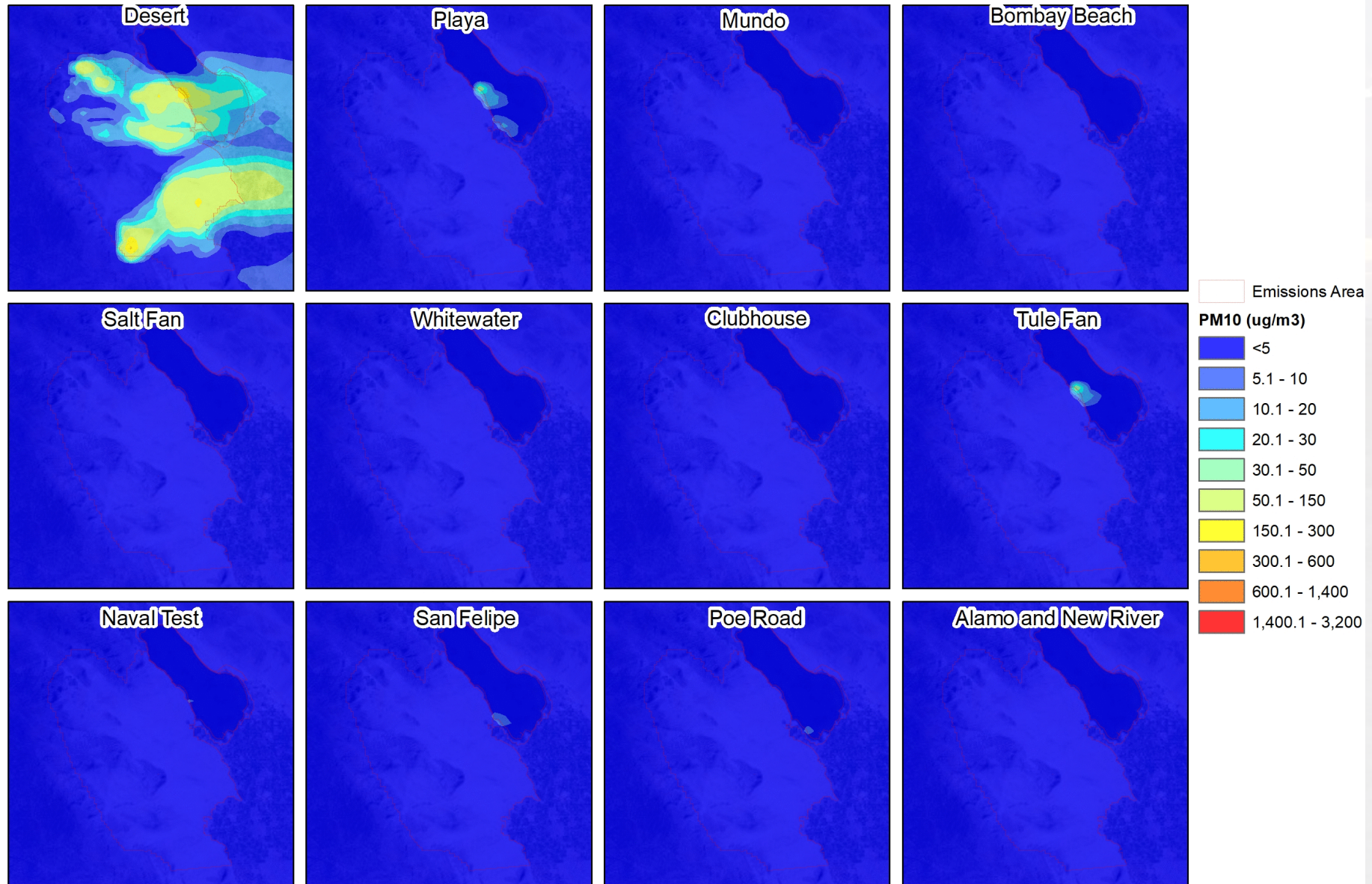
ENVIRONMENTAL

Thank You

Brian Schmid

bschmid@formationenv.com

2021-04-21 10:00



April 21, 2021 - High Wind Event

