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Oceano Dunes: Assumptions and Indifference meet Science in San Luis Obispo County

by Will Harris, Geologist

South of Pismo Beach, shoreline car camping is yours for ten bucks per night. Ride the surf—or waves of sand—for the same ten dollars.

Oceano Dunes, established during Jerry Brown's first run as governor, set aside 1,500 acres for camping and off-highway vehicle (OHV) recreation within the 18,000 acre Guadalupe Nipomo Dunes complex. It quickly became one of the state's most popular parks, a model of affordable coastal access, particularly for those looking to escape the heat and bad air in the San Joaquin Valley.

But now, nearly half the park is gone. And more recreational land is being cleaved away as public funds—\$25 million and counting—continue to be spent propping up a con game where the park's manager, the California Department of Parks and Recreation (DPR), is both shill and the mark.

In 2010, the San Luis Obispo County Air Pollution Control District (SLOAPCD) said the park and OHV recreation were causing PM10 particulate pollution on the Nipomo Mesa (Mesa), a semi-rural area two miles east of the park.

PM10 is a generic term. It refers to any airborne particle that is 10 microns or less in diameter (note, a droplet of fog is about 10 microns across). Instruments used to measure PM10 detect dust, smoke, water vapor—even sea salt in the air—as the same generic thing: particles suspended within a known volume of air.

But the SLOAPCD was specific: The PM10 on the Mesa was from dust blowing off Oceano Dunes. And ever since, DPR has spent millions trying to stop the wind from blowing, the dunes from forming, all based on the premise—an assumption—that Mesa PM10 is dust from the park's dunes. That assumption is incorrect.

A three-year investigation by the Scripps Institution of Oceanography (Scripps) demonstrated that [just 14% of the Mesa PM10 consists of dust](#). And because the 14% dust content is a regional measure of PM10 that is two miles away from the park, something less than 14% of the Mesa PM10 consists of dust coming from Oceano Dunes. Further, the SLOAPCD believes that dunes with OHV recreation emit just that much more wind-blown dust than the dunes outside the park. That “extra” amount of dust emission is what the SLOAPCD is trying to

regulate, or in their own words: [“After all, the goal is to get emissions down to what they’d be in the absence of OHV activity, not to reduce emissions to zero.”](#)

But the land sacrificed by DPR, and the money and effort spent, have been for nothing. Worse, DPR knows this—they paid for the Scripps investigation—and is doing nothing. DPR knows the SLOAPCD assumption is false, and that that assumption is foundational to other SLOAPCD lies that created a health-scare hysteria in the Mesa community and beyond. Yet DPR continues to comply with SLOAPCD demands, continues to spend millions in public money, and continues to sacrifice hundreds of acres of public recreational lands. For nothing.

Agitation and Regulation

Backed by a 2010 report with [“well over two million data points,”](#) the SLOAPCD’s accusation that Oceano Dunes was the source of Mesa PM10 resonated with layperson logic. There’s a crust on the dunes, they said, akin to desert salt flats, and that when OHVs break the crust, fine particles of dune sand are exposed and lofted by the wind to the Mesa. They said higher PM10 readings on the Mesa correlated with increased OHV activity at Oceano Dunes. And they reasoned that because the sand grains are mostly composed of the silica mineral quartz, much of the dune dust and therefore the Mesa PM10 [“occurs in the form of highly toxic crystalline silica...representing a significant public health threat that must be abated.”](#)

But these claims all assume that the Mesa PM10 is dust from the dunes. And despite their report and its two million data points, the SLOAPCD never tested the Mesa PM10 for dust content. They never determined how much of the PM10 consisted of tiny bits of rock and soil presumably from the dunes. Nonetheless, all of it seemed plausible, particularly because a regulatory agency pointed the finger of blame.

Bolstered by a vocal cadre of Mesa residents, as well as local and state agencies echoing their PM10 claims, the SLOAPCD made haste to regulate the park and DPR. In 2011, they crafted Rule 1001, known as the [“Dust Rule,”](#) as a means to [fine DPR \\$1,000 per day](#) for violations of the state’s PM10 standard as measured on the Mesa.

Resistance meets Indifference

Back then, I and other experts saw the [deep flaws](#) used to justify the Dust Rule. The entity that had managed the park, the Off-Highway Motor Vehicle Recreation Division (OHMVR Division) of DPR, used our work to push back on SLOAPCD claims. Additionally, an OHV enthusiast group [successfully sued the SLOAPCD](#) regarding permit authority the air district claimed under the rule. The SLOAPCD had to payout nearly \$400,000 to the group.

But note, this was DPR’s fight, yet DPR did not file the suit. That was an early signal to the SLOAPCD that DPR would do little officially to object to PM10 claims made against Oceano Dunes.

Under a DPR reorganization effort initiated in 2015 and known as [Transformation](#), the OHMVR Division's management authority was [siphoned](#) by DPR. And while work that disputed the SLOAPCD's claims continued, DPR, once fully under Transformation in 2018, did nothing when given [proof](#) that the SLOAPCD lied. Even when the SLOAPCD admitted their silica claim was a "[red herring](#)," when DPR had every right to declare fraud, DPR sat on its hands.

Hearing but not Listening

So despite technical shortcomings and a legal setback, the SLOAPCD did not give up. In 2017, they issued a Notice of Violation against DPR for "exceeding the PM10 concentration limits" defined in the Dust Rule, among other complaints. To its credit at that time, the OHMVR Division disputed the violation notice. That led to a months-long proceeding in late 2017 and 2018 by the Hearing Board of the SLOAPCD, a five-member "[quasi-judicial body](#)" for resolving disputes with the air district.

It did not go well for the OHMVR Division, perhaps because at least one board member—a former director of the SLOAPCD—was [perceived as biased](#). But also because by that time the [director of DPR and her chief deputy assumed direct roles](#) in Oceano Dunes/SLOAPCD managerial decisions. Behind closed doors, without involvement of OHMVR Division technical staff, they agreed to the SLOAPCD's next and far more aggressive effort to subjugate DPR and Oceano Dunes: Stipulated Order of Abatement No. 17-01 (SOA).

Stipulated Order of Assumption

Under the SOA, DPR is to "[eliminate emissions in excess of naturally occurring emissions](#)" from Oceano Dunes by reducing wind-blown dust from the park, thereby reducing "mass emissions" that contribute to violations of the state's PM10 standard on the Mesa. To devise strategies to do this, the SLOAPCD appointed a team of specialists known as the Scientific Advisory Group (SAG). Each SAG member—there are seven—has some expertise relevant to sand dunes, air quality, or botany. Based on investigations and analyses it undertakes, the SAG dictates to DPR the measures to take to meet the obligations of the SOA. And State Parks foots the bill for their services.

Embedded in the SOA is the SLOAPCD's assumption I mentioned earlier, that the Mesa PM10 is dust from Oceano Dunes. So one might think that the SAG's first order of business would be to determine if that assumption was true. They did not.

Instead the SAG used custom computer models to simulate PM10 lofting from the dunes to the Mesa, models that assume 100% of the PM10 is dust.

More than 700 acres of plastic fencing, hay bales, and vegetation plots have been placed within Oceano Dunes based on the computer modeling. The intent of these measures is to halt the emission of dust via the natural dune-formation process called [saltation](#).

As of March 2023, DPR has spent more than [\\$25.2 million](#) on the SLOAPCD/SAG/SOA dust-reduction effort. Yet violations of the state PM10 standard on the Mesa have only increased (see Chapter 7 of this [document](#)).

The Meaning of 14%

Though the OHMVR Division was losing its authority to effectively manage Oceano Dunes due to the DPR Transformation process, investigations it authorized which disputed SLOAPCD claims continued.

A 2018 report demonstrated that with regard to Mesa PM10 there was “[no evidence of a realistic pulmonary \(inhalation\) risk with respect to crystalline silica](#).” Another showed that marine [phytoplankton are a contributing source to the PM10](#).

And in 2019, a three-year investigation to determine the proportional amount of dust in the PM10 began. Dr. Lynn Russell, atmospheric chemistry professor at Scripps, headed that study.

Her work, which was ultimately [published in the academic journal Atmospheric Environment](#), shows that under worst-case scenario conditions, when the prevailing wind is strong and the Mesa PM10 readings are at their highest, only 14% of the Mesa PM10 consists of dust. That effectively invalidates the SAG’s computer modeling, and with it, all SAG rationale used for sacrificing and unnaturally covering 700-plus acres of Oceano Dunes.

What’s more, that’s a regional measure taken on the Mesa, two miles from the park. That means something less than 14% of the PM10 is dust from the dunes. Further, it means that what the SLOAPCD has been targeting—that “extra” amount of saltation-derived dust that theoretically emits from dunes where OHV recreation has occurred and ends up as PM10 on the Mesa—has to be vanishingly small, if it exists at all.

In other words, the Scripps 14% dust findings refute the idea that Mesa PM10 is dust from Oceano Dunes and obliterate the SLOAPCD’s accusation that the PM10 is due to OHV recreation in the dunes.

The Wrong to Remain Silent

The SLOAPCD is ignoring the Scripps findings, which given the air district’s previous duplicity, is easy to see why. Admitting error now, after years of accusation without proof and forcing millions of dollars of DPR expenditures, is to admit fraud. The SAG, in getting paid millions for not asking the right questions, is complicit, so it too is ducking. And both of them have [yet to quantify](#) the fundamental target of the SOA: “emissions in excess of naturally occurring emissions” theoretically due to OHV recreation.

As for DPR, it is also ignoring the Scripps work even though it paid more than \$600,000 for the investigation.

Why is it not forcing the issue? Doing so now would spotlight DPR's managerial incompetence, particularly under its "Transformation" restructuring, and it would showcase DPR's waste of more than \$25.2 million in public funds.

So instead, it is sidestepping the Scripps 14% dust findings. [DPR representatives have told the public](#) that state regulations do not allow the picking and choosing of things in the PM10, that according to the SLOAPCD, DPR is responsible for all of it.

That's akin to someone accepting a speeding ticket from a known crooked cop though his radar gun confirms she has been sitting on her front porch sipping coffee all morning. It's also incorrect, as this [1997 letter](#) from the California Air Resources Board confirms.

Meanwhile, DPR continues its costly allegiance to the SLOAPCD despite having all it needs to show the air district the door. The Scripps 14% dust findings provide the justification for DPR to walk away from the SOA, stanch the bleed of public money, and reclaim the recreational acreage taken by the various SAG/SOA projects. The Scripps work can also provide the technical basis for DPR to legally recoup the \$25.2 million spent to appease the SLOAPCD and its false premise that Mesa PM10 is dust from Oceano Dunes. But DPR does nothing, demonstrating its unique brand of executive incompetence that prevents it from effectively managing and defending the recreational lands in its charge.

End

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