

April 6, 2020

Memo: SAG comments on the temporary closure of Oceano Dunes State Vehicular Recreation Area (ODSVRA) and impacts on particulate matter (PM) emissions

From: The Scientific Advisory Group (SAG)

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Cc: California Air Resources Board (CARB)

Background

In response to the escalating COVID-19 pandemic, the Governor of California ordered the temporary closure of all camping at California State Parks effective March 17, 2020. Soon thereafter, the Governor ordered the full closure of California State Parks to all recreational vehicular traffic effective March 29, 2020. As a part of the California State Parks system, the Oceano Dunes State Vehicular Recreation Area (ODSVRA) temporarily closed to camping and all recreational vehicular uses on the dates listed above. Currently, recreational access to ODSVRA is limited to non-campground and non-vehicular uses of outdoor areas of the ODSVRA, including beaches and trails, with appropriate social distancing among visitors. The sole motivation for these temporary changes is the need to reduce crowding and disease transmission to address the ongoing COVID-19 public health emergency.

The abrupt temporary closure of ODSVRA camping and recreational uses occurred in the midst of a multi-year effort to reduce the emissions of particulate matter (PM) from the ODSVRA. On May 4, 2018, the Hearing Board of the San Luis Obispo Air Pollution Control District issued a Stipulated Order of Abatement (SOA) directing the ODSVRA to adopt a Particulate Matter Reduction Plan to reduce PM emissions by at least 50% within four years. The SOA also established a Scientific Advisory Group (SAG), composed of experts on wind erosion, dust emission, and dune restoration, to advise Parks on planning and monitoring of PM reduction activities. Among the most noticeable PM reduction measures has been the temporary and permanent enclosure of sections of the ODSVRA that were previously accessible for use by off-highway vehicles (OHVs). To reduce the emissions of PM from these enclosed surfaces, Parks has installed, at various times, wind fences, straw bales, vegetation plantings, and other restoration measures to stabilize sections of the dunes against wind erosion. However, it is important to note that such restoration measures will never achieve complete elimination of natural PM emissions at ODSVRA; instead the goal is to achieve significant and sustained PM emissions reductions toward attainment of state and federal air quality standards.

Impact of ODSVRA closure on PM emissions

An ongoing question of public concern is the relative impact of OHV activity versus natural processes on PM emissions at ODSVRA. The abrupt closure of ODSVRA has led some to ask whether, due to the temporary cessation of recreational OHV and camping activity, PM

emissions will be eliminated or substantially reduced to “natural” levels during this closure period. Here, the SAG seeks to address this question.

Regardless of OHV activity, PM emissions will continue at ODSVRA whenever natural wind-blown sand processes are active. As can be seen at analogue dune locations that have experienced minimal OHV impacts, such as the Oso Flaco section of the park, emission of PM dust is a feature of natural dune landscapes subjected to strong winds. But the current state of the landscape within the riding areas of the ODSVRA has been altered by decades of disturbance. As such, the extent of exposed dust-emitting sand surfaces and perhaps the availability of dust sized grains for emissions is greater today than decades ago. Multiple measurement campaigns have revealed that the dune areas subjected to the most intensive OHV activity also tend to produce the highest PM dust emissions. In contrast, undisturbed locations like Oso Flaco tend to emit less PM dust. In short, enhanced PM emissions will continue in OHV-disturbed sections of the ODSVRA even in the absence of OHV activity.

The time required for the dust emissions from the dune sand to reach levels similar to those prior to large-scale OHV activity remains unknown. The dunes, sediments, and vegetation will each require time to reestablish to a new (lower) regime of disturbance. This could be on the order of years to decades, left to nature's devices. Relative to these natural timescales of adjustment, a few weeks or months of temporary OHV restrictions may not be sufficient to result in substantial declines in PM emissions. The dune and beach system is disturbed and will take time to recover. This is precisely why the SAG has been engaging with Parks to pursue environmental restoration activities to accelerate the transition of certain sections of the ODSVRA to conditions that have lower dust emission potential. Even so, this environmental restoration process takes years for implementation and for vegetation plantings to grow to maturity.

Conclusion

It is the opinion of the SAG that the accumulated impact of OHV activity remains a significant contributor to observed PM emissions at ODSVRA, even during this period in which the ODSVRA is temporarily closed to recreational uses. The SAG acknowledges that the Oceano Dunes are a naturally dusty surface that would experience PM emissions even in the absence of human activity, especially during this spring windy season. But the SAG is also clearly aware that decades of OHV activity have fundamentally altered the natural beach-dune landscape, making the dunes significantly more susceptible to PM emissions than they would be in a natural state. The SAG does not expect a few weeks or months of temporary OHV restrictions to substantially alter the balance of human versus natural contributions to PM emissions at ODSVRA. Only through sustained restoration projects does the SAG expect to see a significant reduction in PM emissions. The SAG remains committed to supporting Parks in an adaptive management process for ODSVRA dune restoration to maximize these PM emissions reductions while minimizing impacts on OHV recreational opportunities.

Yours Sincerely,
The Scientific Advisory Group

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