

Lordsburg Playa SDS Nature-Based Management Case Study

Lordsburg Playa is a large, generally dry, lakebed located west of Lordsburg New Mexico. The Playa is crossed by Interstate 10, a major road across the south of the United States.

Unfortunately, sand and dust storms from the Lordsburg Playa can lead to the closing of Interstate 10 in an effort to stop accidents and prevent deaths. In fact, there have been a total of 21 dust visibility related fatalities, with the road closed 43 times, since 2012 due to dust events.

The impact of SDS from the Lordsburg Playa on transportation and safety led the New Mexico Department of Transportation to implement a multi-year program to reduce the risk of SDS to travel along Interstate 10. This program is a collaboration of several stakeholders, including the New Mexico Department of Transportation, US Department of Interior Bureau of Land Management, New Mexico State Land Office, New Mexico State University, US Department of Agriculture Natural Resource and Conservation Service, local landowners and others.

The Lordsburg Playa program takes a nature-based approach to reducing the likelihood of SDS events, through:

- Understanding the natural conditions which lead to SDS events, including the landscape, the condition of the ground, and the sources of the dust which can lead to SDS events, and,
- Identifying appropriate technical interventions to address these natural conditions to reduce the likelihood of SDS events.

Understanding of the natural conditions on the playa led to the identification of historical and modern overgrazing as a factor in reducing natural vegetation as well as high levels of erosion which were bringing fine soils into locations on the edge of the playa where they could be taken up in the wind.

The nature-based response was to increase vegetation and reduce erosion, together with limiting grazing to allow a natural wind-resistant soil surface to develop. These may seem like routine measures given that SDS frequently arise in poorly vegetated areas with significant erosion.

However, the project went further and developed a set of interventions which were specific to the natural conditions on Lordsburg Playa including:

- Keyline plowing, a process of digging deep lines in the soil along contours but in a way which does not turn over the soil. These keylines allow rain and run-off to soak into the soil.
- Imprinting the soil, creating small depressions which can catch rainfall, windblown seeds and disrupt wind speeds across the ground to reduce wind erosion.
- Installing one-rock dams and “Zuni Bowls”¹ to slow erosive water flows and reduce the generation of more dust which can be picked-up in the wind.



Tractor with imprinter. Source: Lordsburg Playa Watershed Restoration to Reduce the Severity of Dust Storms on I-10.

¹ See **Erosion Control Field Guide**, <https://quiviracoalition.org/wp-content/uploads/2018/03/Erosion-Control-Field-Guide.pdf>

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These nature-based interventions use the conditions of the playa and occasional rainfall to reduce the risk of SDS. The interventions tend to be relatively low cost when compared to other SDS source management options

The Lordsburg Playa program demonstrates that improving road safety is not only about traffic signs and what to do if driving into an SDS. It is also about using nature as part of reducing the risks arising from SDS events.



Comparison of treated land from December 2020 to July 2021. Source: Lordsburg Playa Watershed Restoration to Reduce the Severity of Dust Storms on I-10

This Case Study is based on the following sources:

- Dust Storm Mitigation & Safety, <https://dustmitigation.nmdotprojects.org/>
- Lordsburg Playa Watershed Restoration to Reduce the Severity of Dust Storms on I-10, <https://dustmitigation.nmdotprojects.org/wp-content/uploads/sites/38/2024/08/NMDOT-Dust-Mitigation-2024.pdf>.
- [Restoring Life to the Lordsburg Playa](#) (2024), Kate Nelson, New Mexico Magazine.
- How are crews working to mitigate dust near a dangerous stretch of I-10?, <https://www.krqe.com/video/how-are-crews-working-to-mitigate-dust-near-a-dangerous-stretch-of-i-10/9978211/>.
- https://dustmitigation.nmdotprojects.org/wp-content/uploads/sites/38/2023/05/2023-05-15-Digital-Dust-Control-Brochure_FINAL.pdf
- Trent Botkin, Environmental Bureau, NMDOT.