

A hydroseeder is used to spray a layer of BFM onto a slope.

Bonded Fiber Matrix (BFM) used at Lagoon Creek Bridge

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Bonded Fiber Matrix (BFM) is a Best Management Practice (BMP) used for exposed soil areas subject to erosion that require temporary protection until permanent vegetation is established. It is applied by hydraulic spray equipment (above) and composed of a continuous layer of fibers held together by water insoluble bonding agents called tackifiers. Upon drying, BFM forms an erosion resistant blanket green in color that prevents soil erosion and biodegrades into materials that promote plant growth.

BFM is applied when soil is dry and rain is not expected within 48

hours of application. A winterization plan to install BMPs to prevent eroded soil from entering Lagoon Creek during the Caltrans D3 bridge replacement project on Highway 99 was implemented in November 2020 while the site was inactive.

As part of the plan, BFM was applied to exposed soil at the sloped areas east and west of the existing north, central and south bridges and along the creek banks where erosion could occur. The photo (right) shows the blanket that formed over dry soil on the slope east of the central bridge. BFM effectively controlled erosion during the winter rain events and turbidity and pH measurements of stormwater runoff from the site to Lagoon Creek.

BFM is in compliance with CA Water Board stormwater permit requirements. Vegetation was established and construction activities at the project site resumed at the end of May 2021. ●



Drone Use for Environmental Services



KENT NERHUS

Director of Drone Operations

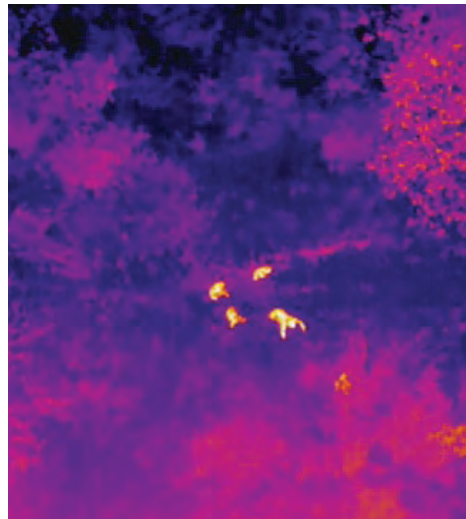
Endemic Environmental Services has been offering drone services such as photography/videography, 2D & 3D mapping, vegetation health surveys, thermal & infrared imaging services and much more. These services have put Endemic at the forefront of drones being used for ecology. For example, drones are very non-invasive to animals on the ground. We have used our drones to locate, identify, and count ground animals such as coyotes, small mammals, and ground nesting birds (photos on top right and below). All of these drone services were conducted unknowingly to the animals on the ground. Drones used in this type of situation allow for surveys to be conducted without harm or destruction to the natural environment.

In addition, Endemic has used drones for 3D mapping, orthonosaic maps, and volumetrics. Our drones can provide critical data to our clients while saving them time and money. Endemic stays ahead of its competition by adapting to the new generation of technological advances to benefit our customers and the environment. Furthermore, Endemic's

use of drones was illuminated by a year long program of assisting in the location of illegal encampments in Fairview Park in Costa Mesa, CA. Endemic used the drones to locate illegal encampments and trespassing (photo in middle row, far right) in the park's wetlands. Our drone program assisted in reducing the number of illegal encampments by over 90% in the park as well as numerous identifications of illegal fishing and trespassing within the park.

Endemic created a presentation for the Costa Mesa city council on the uses and benefits of our drone services.

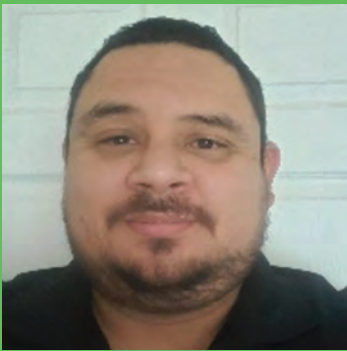
View the full presentation [here](#). ●



Welcome New Team Members!



Jonathan Hintergardt is a wildlife biologist with varied interests in biological resource management. He graduated with a BS in Biology from Cal Poly State University, San Luis Obispo. He is an avid birder and accomplished herpetologist. His past experience includes conducting biological monitoring for the CA high-speed rail project and oil line projects. Jonathan is working with the County of Santa Barbara on their **Floradale Avenue Bridge Replacement Project** located in Lompoc.



Asael Martinez is Endemic's superintendent for hydroseeding and erosion control for the **Green Tree Boulevard Extension Project** for the City of Victorville. This project involves the resurfacing and rehabilitation of this arterial road that includes an overhead bridge over a railroad. Asael is a certified irrigation auditor and has a qualified applications license. He worked and studied at University of Tokyo as an undergrad and completed his agriculture and horticulture science at University of Southern California (USC).



Saarah Munir is an archaeologist with experience in cultural resource management and archaeological collections processing. She completed her MA in Anthropology at Columbia University in New York. She has done archival research using geophysical testing methods, artifact collection and processing in the field, consulted on Section 106 National Historic Preservation Act.

Saarah is working on the County of Santa Barbara's **Floradale Avenue Bridge Replacement Project** located in Lompoc using her experience working with California archaeological resources in both field and lab settings.



Sayed Asif Saadat is Endemic's new Water Resources Specialist involved in doing stormwater pollution prevention reports for Caltrans D3 and the County of Santa Clara's **Alamitos Creek Bridge Replacement** project. He has over 10 years of environmental studies and monitoring experience on domestic and international construction projects. He has experience in developing and implementing innovative solutions to air and pollution control, recycling, waste disposal and hazardous waste spills. His expertise includes coordinating the collection and testing of air, soil, and water samples in known hazardous waste sites, surface and underground water sites, and landfill sites. He has working knowledge of Cal/OSHA regulations, NEPA, the Toxic Substances Control Act, the Community Right-to-Know Act, the Resource Conservation and Recovery Act, the Clean Air Act and the Clean Water Act.

Sayed has a MS in Environmental Science from TERI University in New Delhi and a BS in Agriculture from Kabul University in Afghanistan. Sayed has his QSP and CISEC certifications and is studying to be a licensed PE. ●

President's Corner



BARRY NERHUS

President

The Endemic Team has been working tremendously hard through this past year. Over the past 12 months, Endemic has doubled in size; from Siskiyou to San Diego, Endemic now services counties statewide. This rapid growth creates a constantly changing environment. Adding the 2020 pandemic conditions to this environment, the need for adaptation and teamwork has been critical to our

success. I want to thank the Endemic Team for continuing their hard work and passion that they all bring every day. California is scheduled to open up from the pandemic restrictions on June 15th. I hope this brings our team more opportunities for connection, respite, and inspiration. I am excited to have Endemic non-zoomed social events this summer and celebrate all of the Endemic Team. Their character, skills, and work ethic has created a great company. They deserve to be recognized and celebrated. ●

The Prado Basin, where our team continues their restoration projects