SONOMA VEG MAP

SONOMA COUNTY VEGETATION & HABITAT MAPPING PROGRAM

High-Quality Data for Planning, Conservation and Resource Management

What Is LiDAR?

LiDAR stands for "Light Detection and Ranging." A LiDAR system works in a similar way to sonar or radar by "sounding" light against a surface of interest. Airborne LiDAR – the type of LiDAR collected for Sonoma County – sends out tiny, discrete pulses of laser light that illuminate a given spot on earth for less than 1/100,000th of a second. The pulses of light then bounce back and are recaptured by the aircraft's sensor where the duration of their paths are recorded and analyzed to extract elevation information.

What does LiDAR measure?

When a LiDAR instrument is flown over an area, the data collected provides a comprehensive and detailed picture of the elevation of the earth's surface as well as the height of vegetation, buildings, and other features. The data provides a detailed view of the vertical structure of our environment. High resolution elevation data and forest structure metrics, such as tree height and canopy density, significantly enhance our ability to assess and monitor carbon stocks, document sea level rise, map groundwater and assess vegetation and habitat.

> *"Not only will these data and tools greatly enhance the District's planning and conservation efforts, they will also enable Sonoma County agencies, cities and landowners to map floodplains, conserve wildlife habitat, assess wildfire risk, model stormwater runoff, address climate change, detect landslides, and model sea level rise. The value of these data to Sonoma County and its citizens is immense."*
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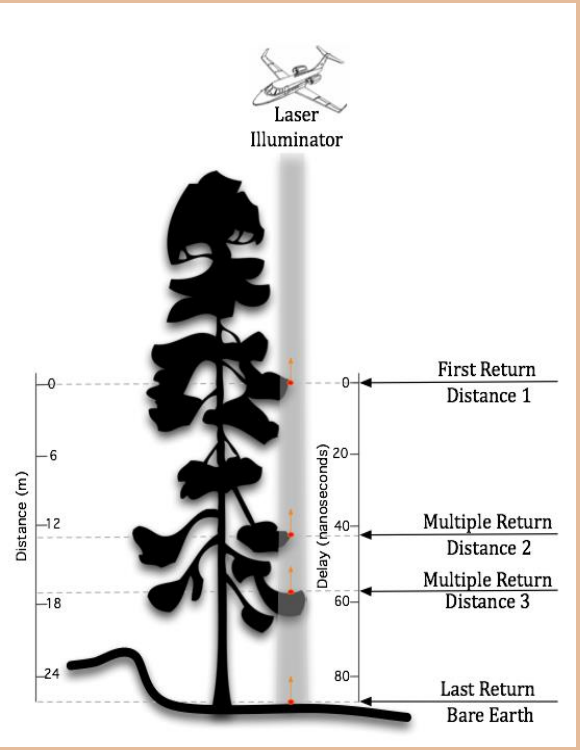
> - Bill Keene, Sonoma County Agricultural Preservation and Open Space District General Manager

Is LiDAR safe?

Yes. Airborne LiDAR systems are regulated by the Food and Drug Administration (FDA) and comply with the FDA's Laser Safety Code. There are a number of requirements that ensure the safety of airborne LiDAR systems. For example, software ensures that light beams are eye safe and don't exceed the minimum necessary output for a given flying height. If the aircraft reaches a low flying height, software automatically shuts down the system for safety reasons. In addition, airborne LiDAR systems prevent a light beam from remaining fixed on a single location.

LiDAR has been collected in eight of the nine counties in the San Francisco Bay Area and myriad places nationwide, including the entire California coastline. LiDAR technology has been widely used commercially since the late 1990s. The LiDAR data collected for Sonoma County will significantly benefit conservation and planning efforts.



LiDAR Facts

- LiDAR stands for "Light Detection and Ranging"
- A LiDAR system works by "sounding" light against a surface. The speed at which the reflected light returns to the sensor is used to measure the surface height of the target.
- Maximum exposure at the ground from airborne LiDAR is infinitesimal and well below the FDA's safety limits.
- The elevation data created using LiDAR significantly enhances conservation and planning efforts.
- For more information, please visit: www.sonomavegmap.org

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