

Low Elevation Aerial Photography (LEAP)

Low elevation aerial photography (LEAP) is a cost-effective technique for obtaining high resolution, digital aerial photographs, ideal for mapping small reaches or areas with abundant canopy cover where traditional aerial photography taken from a fixed-wing aircraft is not feasible.

How does it work?

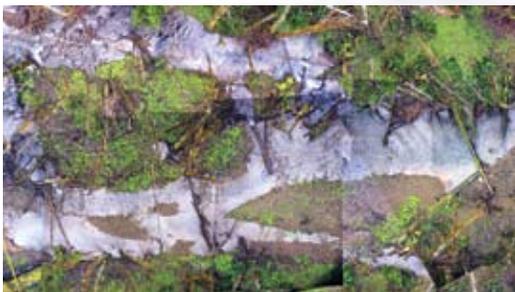
Photographs are taken with a remote-controlled digital camera suspended from a compact airborne device (e.g., balloon, blimp, or kite) at an altitude less than 100m, and then digitally corrected using surveyed ground control points. The corrected composite basemap is ideally suited for a wide range of applications where high-resolution, spatially accurate planform imagery is required for detailed field mapping and analysis of environmental conditions.

Why use LEAP?

Spatially accurate planform imagery provided by LEAP can allow you to easily document existing conditions, and develop a base map from which to identify locations or assess these conditions. LEAP also allows you to develop a time series of images to evaluate trends. The methodology is repeatable and cost-effective and is compatible with image processing and spatial analysis typically done in ArcGIS.

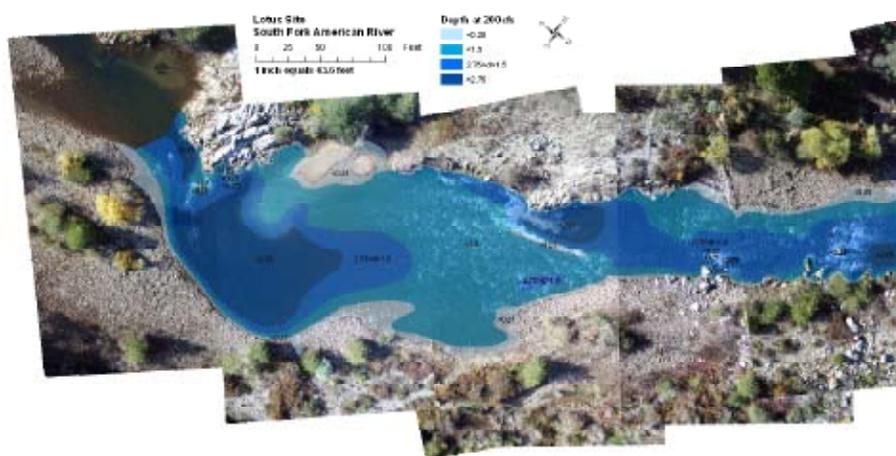
Project: Assessing success of boulder placement in Rock Creek, OR

Population modeling based on field habitat conditions determined that enhancing habitat in Rock Creek (a tributary of the Umpqua River) would provide greater benefit to the overall salmon population than constructing fish passage over a dam and opening up 1.4 miles of historically available habitat. To assess spawning gravel retention



behind placed boulders within Rock Creek, we used LEAP to photograph the reach where boulders were placed.





Project: Fish habitat assessment and flow recommendations for the South Fork American River, CA

LEAP was used on the South Fork American River to provide base maps for field delineation of fish habitat parameters such as depth and velocity. The data were then combined using GIS to create high-resolution, site-specific maps of fish habitat in the river.

Project: Assessing riparian vegetation change in Owen's Gorge, CA

LEAP was used in the Owens Gorge to help understand how riparian vegetation changes in response to low-frequency flood flows in the gorge. When combined with ground surveys, these photos can be used to qualitatively assess vegetation change over the near and long term.



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