

THERMAL IMAGING SOLUTIONS

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ANALYZE
ANSWER

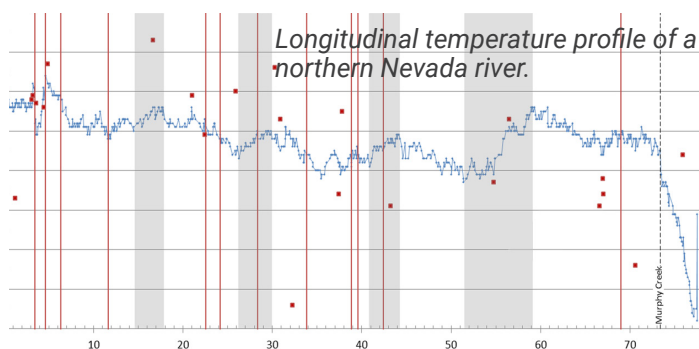
NV5 EDGE

NV5 offers over 20 years of experience and expertise in collecting, processing, and interpreting thermal infrared (TIR) imagery for a breadth of applications.

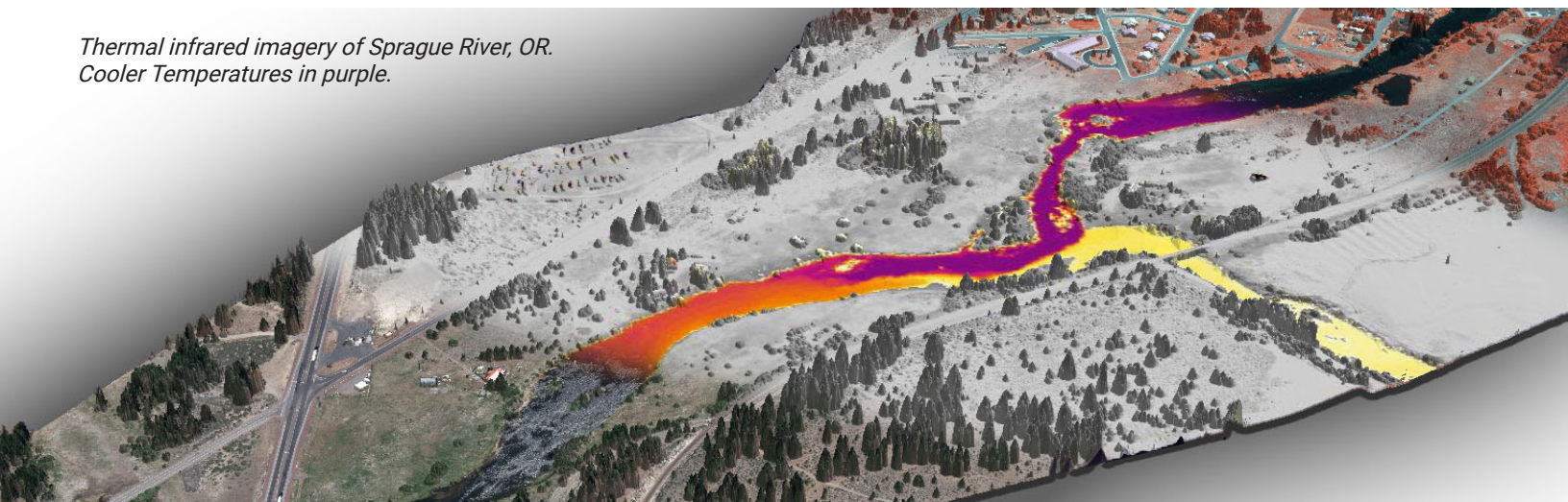
Thermal data can be used to accurately depict the distribution of temperatures of any landscape at high-resolution across broad spatial scales – data of a scope and caliber which is unattainable using traditional ground-based monitoring techniques.

Our project design focuses on optimal timing and resolution to maximize thermal contrast, ensuring accurately detected features or patterns of interest. Once acquired, emitted radiance is converted to radiant temperatures and geo-rectified to create continuous mosaics. TIR imagery is easily integrated or co-acquired with other types of remote sensing data, such as lidar or spectral imagery, to provide supplementary information

that will aid in the interpretation of the causes or effects of thermal patterns.

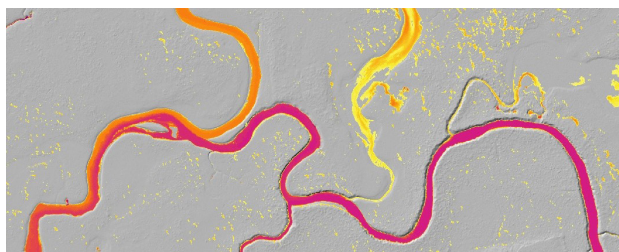


*Thermal infrared imagery of Sprague River, OR.
Cooler Temperatures in purple.*



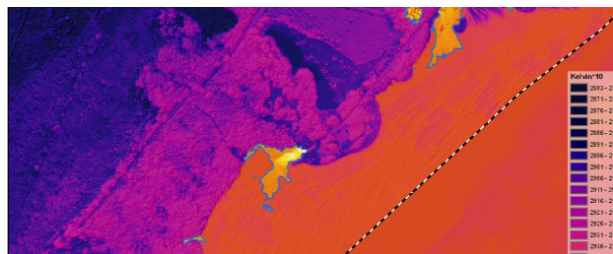
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APPLICATIONS



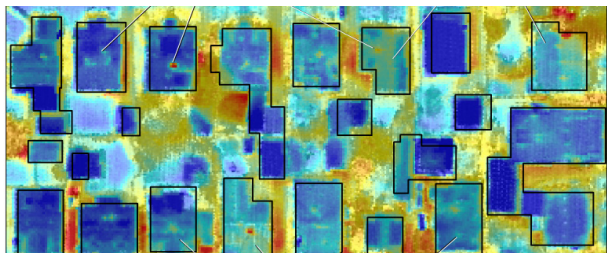
STREAM TEMPERATURE DYNAMICS

Thermal infrared imagery allows for accurate evaluation of the structure and dynamics of water temperature at reach and watershed scales, pinpointing the locations and thermal influences of point sources, tributaries, and surface springs. These data allow researchers and engineers to identify and prioritize conservation and restoration opportunities within aquatic landscapes.



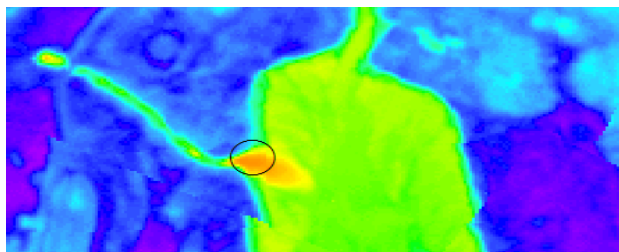
GROUNDWATER INFLUX

A significant portion of water in streams and rivers come from hidden groundwater sources. Airborne TIR imaging can reveal these critical inputs and give resource managers and planners the ability to understand and quantify the spatial and temporal dynamics of groundwater sources in unprecedented detail.



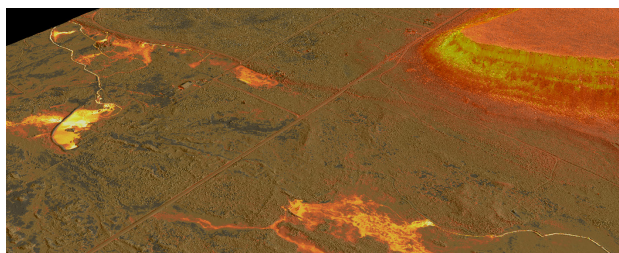
URBAN & FACILITY ENERGY MONITORING

Thermal imaging solutions can give real-time insights into heat loss from buildings, pipeline integrity, industrial machinery degradation and electrical overloading of utility lines. Monitoring heat dissipation from buildings has aided conservation initiatives focus on effective means of reducing greenhouse gas emissions from urban centers.



ILLICIT DISCHARGE DETECTION

TIR imagery helps industry, regulators, planners and environmental watchdogs detect, map, and characterize pollution inputs that would be otherwise concealed or go unnoticed. With additional data layers in a GIS, spatial analyses can inform on the potential impacts of discharge as well as mitigation or prevention strategies.



GEOTHERMAL ENERGY EXPLORATION

TIR remote sensing can be used to detect and map the surface expression of geothermal and hydrothermal features such as hot springs, geysers, fumaroles, and heated ground that may be important sources of renewable energy. Data are collected at night during coolest ambient temperatures, to maximum thermal contrast between heated features and the surrounding landscape.