FORESTRY SOLUTIONS

NV5 GEOSPATIAL

ACQUIRE
ANALYZE
ANSWER

NV5G EDGE
NV5 Geospatial offers a unique suite of analytical tools to model individual trees and characterize large-scale forest structure using the idar point cloud and imagery.

NV5 GEOSPATIAL FORESTRY SOLUTIONS

Data from airborne idar surveys can be employed to derive essential forest information over large areas, reducing the amount of time and resources typically dedicated to a traditional field-based inventory.

Our analyses provide valuable tree and stand metrics such as tree height, canopy cover, stem density, and crown area in both forest and urban settings. Incorporating these modeled parameters guide timber management practices, supports habitat conservation efforts, and improves efficiency of ground surveys and research plot placement.

We provide invaluable expertise and consultation on appropriate technology, specifications, accuracy and resolution, and data products for virtually any landscape or application. Our experience and expertise will help match the best technological solution to your forest resource mapping needs.
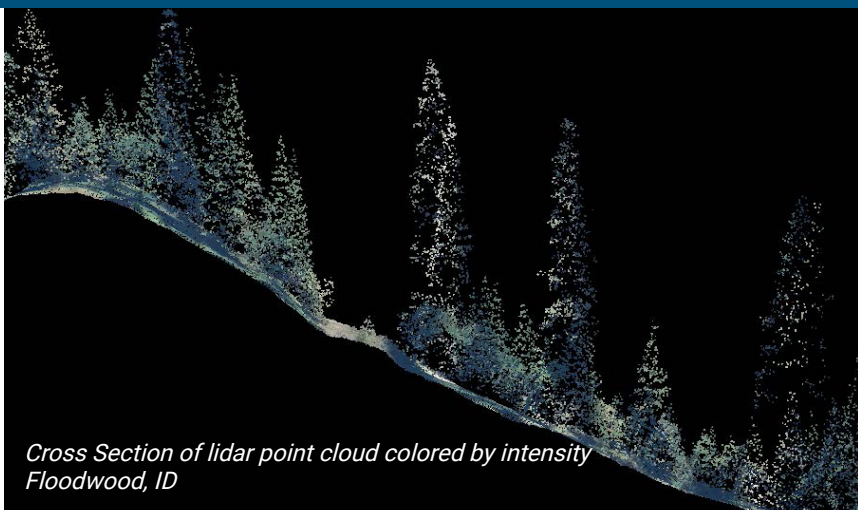
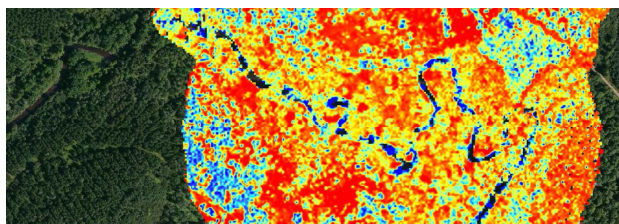*Cross Section of lidar point cloud colored by intensity Floodwood, ID*
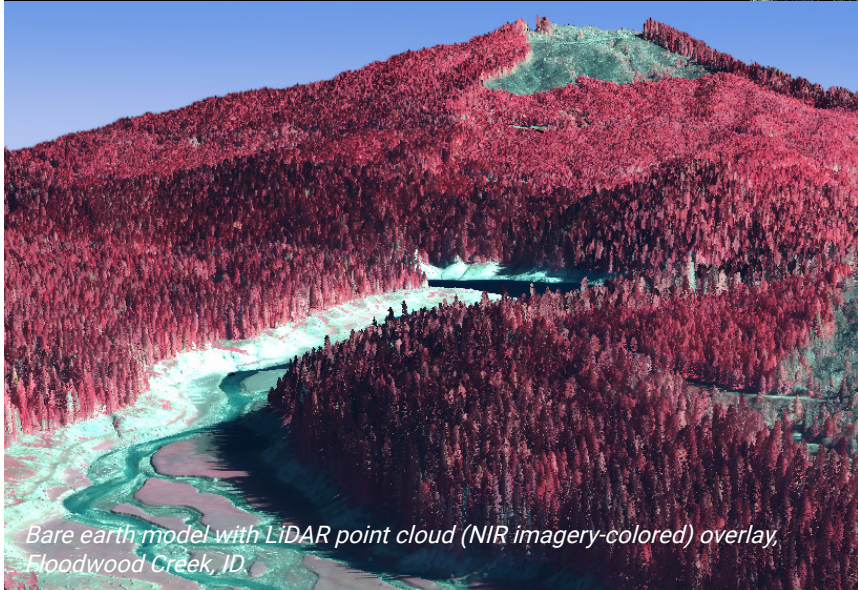
Bare earth model with LiDAR point cloud (NIR imagery-colored) overlay, Floodwood Creek, ID.

Individual tree crown characterization

NV5 GEOSPATIAL

ACQUIRE
ANALYZE
ANSWER

APPLICATIONS

TIMBER METRICS & FOREST STRATIFICATION
Forest structure is measured using lidar to provide tree height and canopy cover assessments, allowing an inventory of stem density, basal area, crown area, volume, and other key variables by individual tree or by stand. These metrics provide more advanced analyses to improve management decisions.
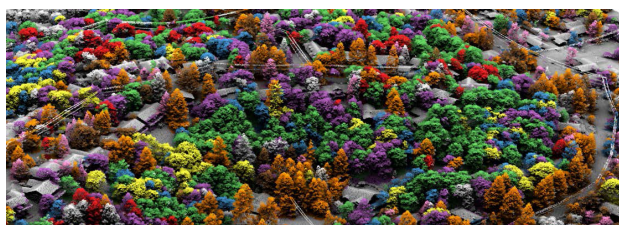
SPECIES CLASSIFICATION & FOREST HEALTH
Our hardwood/softwood classification methodology further characterizes forest structure over vast areas. When evaluated in conjunction with hyperspectral imagery, full species classification and tree health assessments can be achieved.
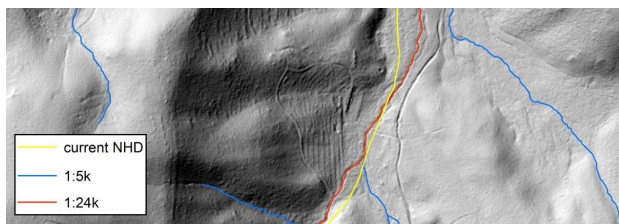
WATERSHED DRAINAGE & OVERLAND FLOW ANALYSIS
Combining models of forest structure with lidar-derived hydrologic modeling aids in understanding how terrain and vegetation affects water movement throughout a watershed. Our data collection technology and analytical tools improve water flow mapping and existing hydrography datasets for more effective watershed management.

current NHD
1:5k
1:24k
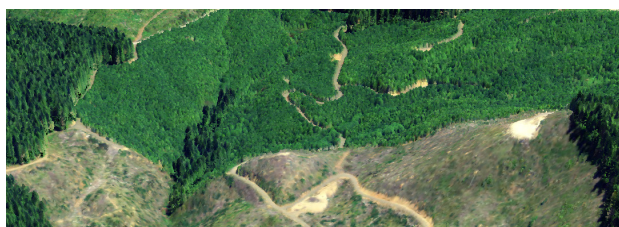
BIOMASS & CARBON ESTIMATION
By exploring complex relationships between lidar metrics and allometry of tree species, forest biomass and carbon content can be quantified. In tandem with ground plot measurements, we develop regression models to estimate forest production parameters of large-scale or global significance.
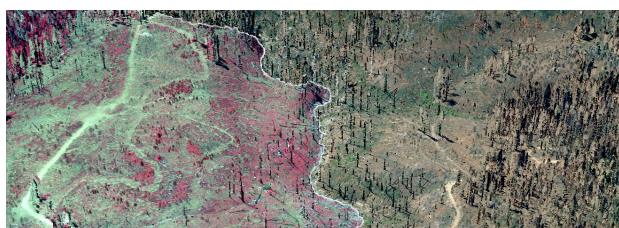
WILDFIRE MODELING
Forest metrics from lidar and imagery provide valuable information for land use/land management practices, fire suppression planning, and fuel loading calculations. High-resolution lidar is instrumental in mapping slope and aspect, as well as road accessibility to better inform wildfire response and recovery.
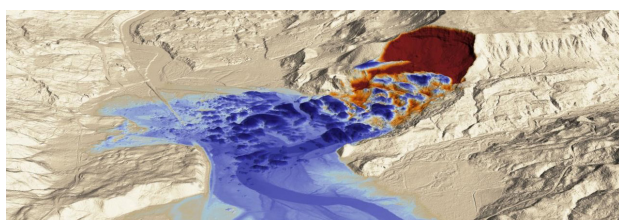
CHANGE DETECTION & LANDSLIDE ANALYSIS
With the aid of recurring surveys and temporal comparisons, our analyses can quantify changes in vegetation growth/removal or in geomorphology to better monitor forest dynamics, and to evaluate and mitigate forest management risks associated with erosion or terrain failure.

For more information or to schedule a meeting contact   nv5g-sales@nv5.com