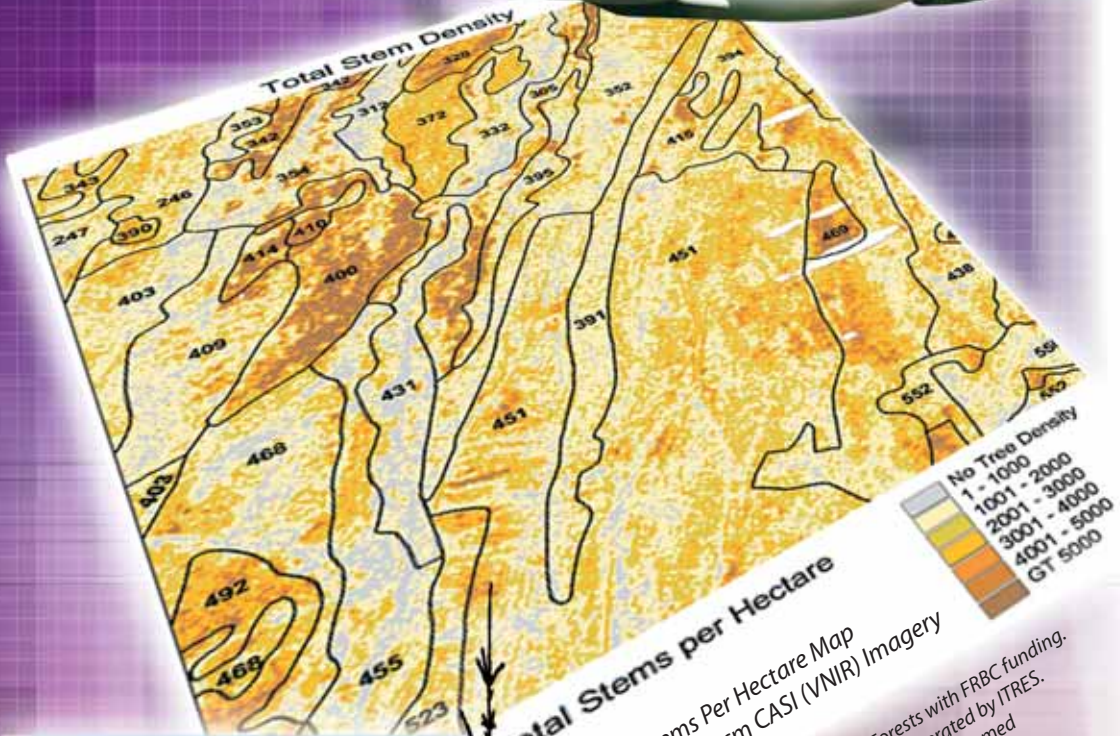


# ITRES Applications

Airborne Hyperspectral Mapping

## Forestry and Hyperspectral Seeing the Forest *and* the Trees



Total Stems per Hectare Map  
Based on 60 cm CASI (VNIR) Imagery  
Project sponsored by BC Ministry of Forests with FRBC funding.  
Data acquired, processed, & products generated by ITRES.  
Hyperspectral analysis and classification performed  
using ENVI/IDL and proprietary techniques.



- Stem Counts and Density for Stocking & Regeneration Assessments
- Conifer Species Mapping
- Forest Health (e.g. Root Rot, Beetle Attack)
- Gap Assessments & Crown Closure



# ITRES Applications

## Airborne Hyperspectral Mapping

### +120,000 Hectares of Forest Covered Hyperspectrally

The ITRES Applications Group has acquired, processed, and delivered high resolution hyperspectral image map and database products for over 120,000 hectares of commercially forested lands. In collaboration with the British Columbia Ministry of Forests (funding by FRBC) we have developed robust and proven proprietary image analysis procedures and production workflows that optimize the strengths of our sensors, which include their flexible spectral and spatial resolutions, wavelength region coverage, high signal-to-noise characteristics, and geometric precision.

### Operational Flexibility

Our map and database products used by operational commercial and government foresters have been operationally proven since 1995. The physics-based algorithmic approach to analysis that we use incorporates neural network and texture analysis, and is resistant to

variable illumination, atmospheric, and seasonal conditions, greatly extending our operational data acquisition window. This, in addition to using our wide-array imagers such as the CASI-1500 (1500 pixel swath), enables us to image more ground, faster, and more economically than our competitors.

Interested in a similar project? Contact ITRES for further information by telephone, e-mail at [info@itres.com](mailto:info@itres.com), or visit us on the web at [www.itres.com](http://www.itres.com).

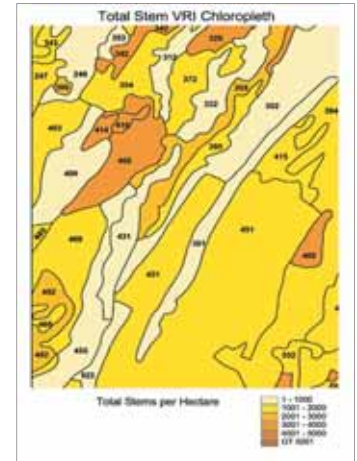
### Forest Health Mapping for *tomentosus* Root Rot *Analysis performed using ENVI/IDL & Proprietary Techniques*



True Color CASI Image

Mean Spectra of Isolated Tree Crowns

Forest Health Classification



Total Stems per Hectare  
Chloropleth Map



Conifer stem segmentation and counts using 60 cm CASI (VNIR) imagery under complex illumination & atmospheric conditions. Image analysis using ENVI/IDL.