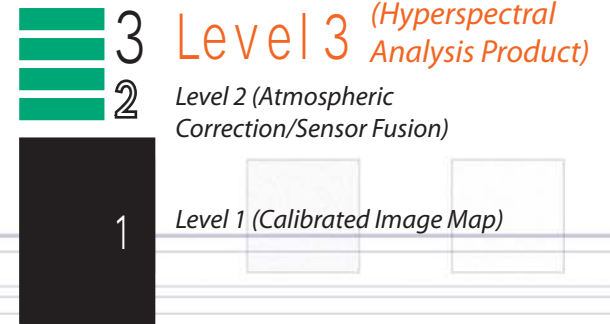


ITRES Applications

Airborne Hyperspectral Mapping

Standard Level 3 Product Hyperspectral Analysis Product



Forest Mensuration

Precision Agriculture

Optical Water Quality

Wetlands/Coastal Analysis/
Noxious Weeds

Target Detection



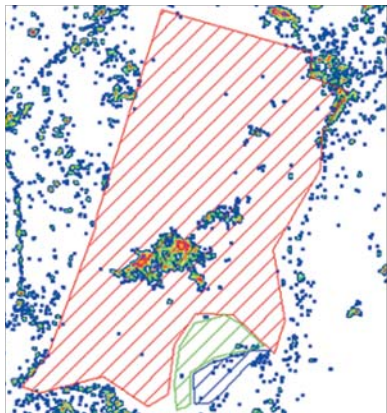
ITRES Applications

Airborne Hyperspectral Mapping



Portion of true color CASI image of wetland (right) and Purple Loost-rife density map (below). Hyperspectral analysis made use of ground truth and spectral separability using Principle Components Analysis (PCA).

Data courtesy Kalamazoo Nature Center. Data acquired, processed, and analyzed by ITRES.



Standard Product Level 3: Hyperspectral Analysis & Data Interpretation

Our **Standard Level 1** or **2** image products are analyzed by our experienced ITRES Analysis Group using standard algorithms or proprietary physics-based techniques that optimize for the strengths of our sensor technologies. These capabilities permit us to extract feature information from imagery containing complex illumination variations between adjacent flight lines or blocks, including those due to cloud and/or orographic shadows.

A partial list of techniques used in the analysis of hyperspectral data from ITRES sensors (CASI, SASI, TASI, and the broadband TABI) include:

- Spectral Library use or generation
- Neural Networking
- Image Segmentation
- Spectral Unmixing
- Linear Correlation Analysis
- Spectral Angle Mapping
- Data Modeling and Feature Extraction

ITRES Sensor Applications

Forestry (Stem counts, species, health, cover)

Agriculture (bare soil - brightness, chlorophyll content, leaf brown pigment, crop vigor - LAI)

Environmental (grassland communities, noxious weed mapping, environmental impact, pipeline right-of-way)

Optical Water Quality & Coral Reef (benthic cover, chlorophyll, total suspended sediment, color dissolved organic matter (CDOM), seagrass, shallow bathymetry)

Wetlands Mapping (submerged aquatic vegetation, near-shore vegetation, algae)

Coastal Zone Mapping (aquatic/shoreline vegetation, land/water interface)

For More Information

Interested in a similar project? Contact ITRES for further information by telephone, e-mail at info@itres.com, or visit us on the web at www.itres.com.