ENVI for Environmental Conservation Management

EXELIS

Visual Information Solutions

Many environmental managers and conservation programs are now taking advantage of increasingly available geospatial imagery to address problems that range from monitoring the effects of pollution to identifying optimal locations for planting trees. Traditionally, these challenges have required more expensive, time-consuming visits to the field. Reduced costs and faster results are just some of the benefits that can be achieved by extracting information from imagery.

The ENVI family of image analysis software provides a full suite of tools to address environmental issues related to forests, fisheries, habitats, biological diversity, materials conservation, energy conservation, and other related fields. And, ENVI can be easily customized to solve your unique challenges, making it a highly flexible solution for environment and conservation applications.

ENVI easily integrates into GIS workflows, allowing users to quickly and accurately view, manipulate, process, and analyze imagery. Because ENVI products are tightly integrated with ArcGIS®, you can easily exchange data and layer files between the software packages.

Image Analysis Solutions for Environmental Conservation Management

MAP LAND COVER AND WETLANDS AND DETECT AND MONITOR CHANGE OVER TIME

Land cover and wetlands categories are easily distinguished and classified by processing geospatial imagery using ENVI. In addition, you can use change detection tools in ENVI to detect and assess the areas and percentages of all types of changes, including urban development, deforestation, shoreline erosion, and restoration/remediation efforts.

MAP AND ASSESS FOREST HEALTH AND PROTECTED AREAS

Forest health and the success of protected areas are easily mapped and assessed using ENVI. Feature extraction and classification tools in ENVI can be used to distinguish mature, thinned, cleared, and regenerating forests, while change detection tools can help you assess the state of forests, and other protected areas before and after clear cutting, deforestation, and other environmental conditions.

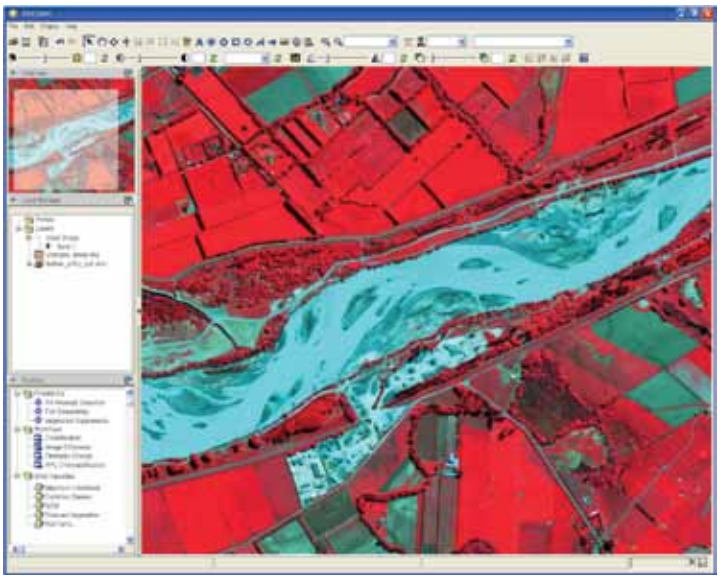

Fig. 1: ENVI helps you create maps of the watering needs of agricultural or landscaped areas.

CREATE INPUT FOR ENVIRONMENTAL MODELS

Data needed as input for environmental models can be extracted by analyzing imagery in ENVI. Information extracted from ENVI can be used for common environmental models such as agricultural sustainability, climate, natural resources management, ecosystems, hazard evaluation, land use change, and more.

An extensive library of vegetation indices and flexible tools for multi-spectral and multi-temporal imagery in ENVI is capable of deriving vegetation and land cover types and parameters. In addition, the feature extraction tool in ENVI will help you create raster or vector vegetation maps.

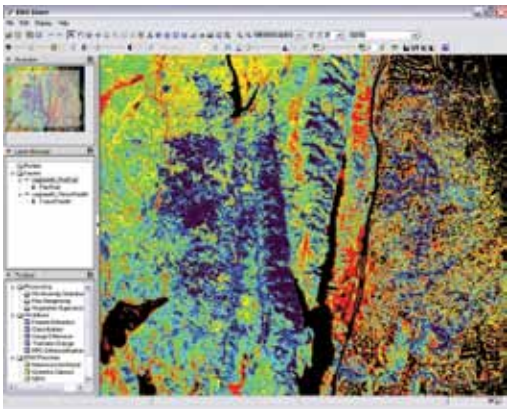

Fig. 2: Information from geospatial imagery analyzed with ENVI is essential to help assess forest health and preserve natural resources.

MAP FIRE HAZARDS OR BURN AREA

Specific tools in ENVI were developed to map the distribution of fire fuels and burn hazards using imagery. ENVI also has additional tools to help you assess and map vegetation damage caused by fires and extreme weather events.

EVALUATE BIODIVERSITY

Use data extracted from multispectral imagery processed in ENVI to estimate biodiversity in ecosystems. Specifically, scientifically-based vegetation indices are included in ENVI to calculate net primary productivity, and biodiversity, both within and across vegetation types.

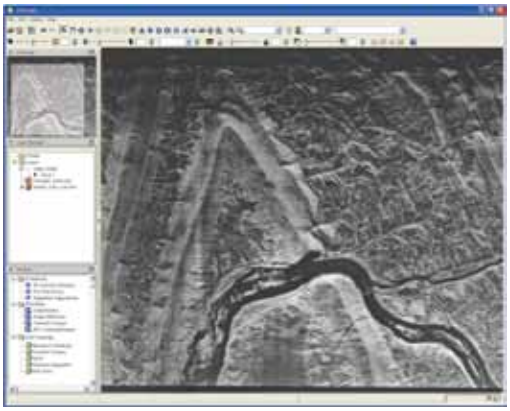

Fig. 3: Radar and data fusion tools in ENVI are especially useful when an area of interest is inaccessible or obscured by clouds in optical imagery.

MONITOR AGRICULTURAL YIELD AND HEALTH

Vegetation indices in ENVI can measure agricultural productivity and identify stressed vegetation from spectral imagery. Additional indices enable you to detect greenness, light use efficiency, canopy nitrogen, dry or dead vegetation, specific pigments, and canopy water content. An agricultural stress tool can be used to find areas of dry or dying crops by looking for signs of poor nitrogen and light use.

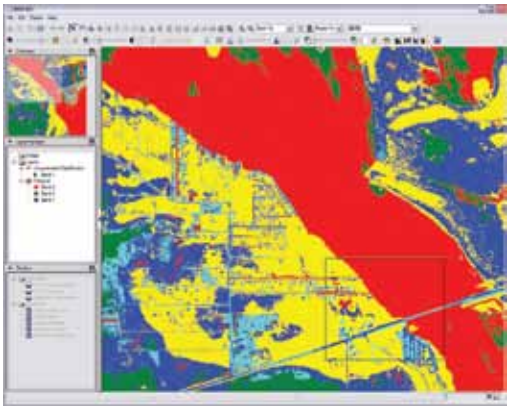

Fig. 4: Land cover mapping in ENVI can be used to measure agricultural productivity and understand vegetation changes over time.

ENVI delivers accurate, scientifically proven processes, so you can easily use geospatial imagery to solve your environmental conservation management challenges.

To learn more about ENVI, ENVI training options, live learning events, and more, visit **www.exelisvis.com/ENVI**, or call **303.786.9900**.

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