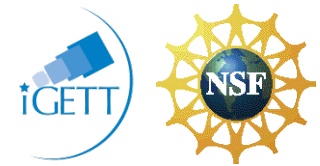


# Quantifying Land Cover Change in Maine



**Topic:** Land cover change detection

**Problem Statement:** How can Landsat Data and ENVI Image Analysis support quantitative assessment of land cover change in Downeast Maine?

**Level:** Intermediate / Advanced

**Software:** ENVI, ArcGIS, Spatial Analyst

**Description:** Change detection is an important tool in many remote sensing applications, allowing us to compare satellite data from different times to assess damage from natural disasters, understand the ways humans alter the land, and characterize climatic and seasonal changes. In this exercise, students follow a complete work flow to document land cover change. Starting with Landsat images of Downeast Maine from two time frames, the exercise walks students through the process of subsetting data, converting digital number to radiance then reflectance, filling scan line gaps, calculating NDVI, creating a layer stack for analysis, performing a difference map, and then quantifying changes. Students also learn key concepts in ArcGIS/ ENVI interoperability and explore band combinations.

**Key Words:** Change detection, land cover, NDVI, Landsat

