

Using Satellite Imagery to Detect Hydrocarbons in California and Azerbaijan

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The purpose of this project is to show it is possible to use remote sensing techniques to detect oil seeps and oil spills. Modern remote sensing software was used to process NASA's Landsat 7, ASTER Multispectral Images, and an ESR-2 Radar Image. The ASTER Images were loaded with Band 3 (0.76- 0.86 μm) as Red, Band 2 (0.63-0.69 μm) as Green, and Band 1 (0.52-0.60 μm) as Blue. The ASTER Satellite's 15-m ground resolution and image-enhancement techniques allowed the identification of oil seeps offshore Santa Barbara, California, and the detection of oil leaking from production platforms in the Caspian Sea, offshore Azerbaijan. The enhanced ESR-2 Radar Image was able to detect oil leaking from an offshore platform in Azerbaijan