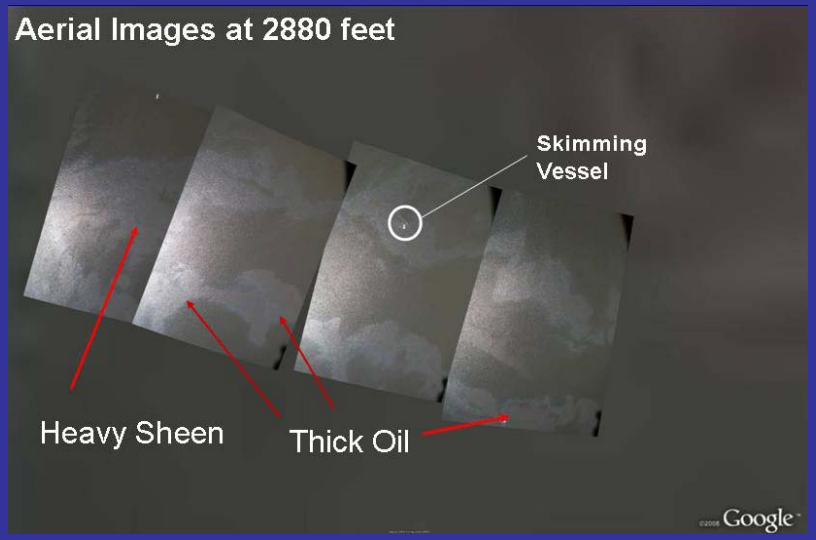
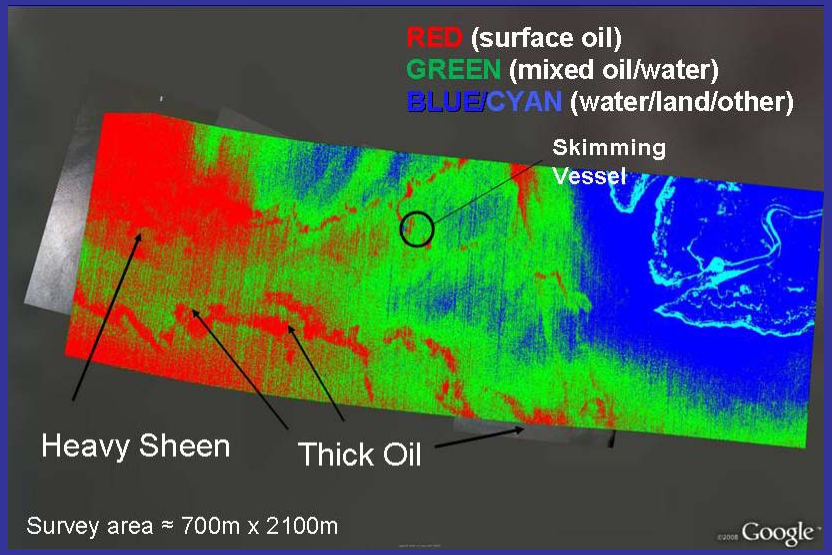
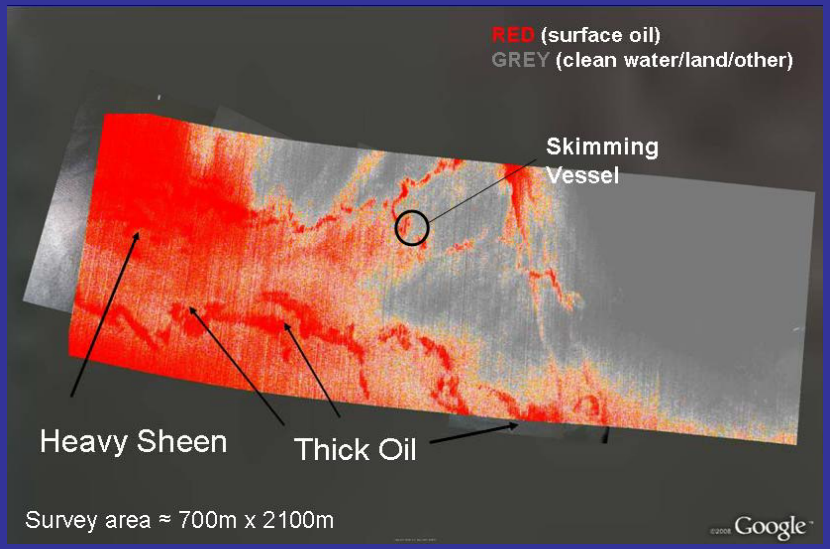
- The US EPA ASPECT Program is the Nations only 24/7 Airborne Chemical, Radiological, and Situational Awareness Remote Sensing Aircraft. The program uses a suite of sensors including an Infrared multi-spectral imager, a high speed Fourier Transform Spectrometer (FTIR), a high throughput gamma ray spectrometer, and a high resolution digital aerial camera to collect data valuable to the response community.
- ASPECT deployed to the BP oil spill for 98 days (28 April to 3 August)
  - Conducted 86 survey flights,
  - Processed 4.5 TB of data including 14,000 aerial photos, 2,100 infrared images
  - Analyzed more than 2,500,000 remote sensing chemical scans
- ASPECT provided direct support to EPA Regions 4 & 6. Air monitoring using chemical remote sensing technologies (VOC emissions from oil and in-situ oil burns. No significant detections were measured.
- ASPECT remote sensing technology clearly discriminated oil from water. New algorithms were developed to enhance this capability for both an open ocean and near shore scenarios.
  - ASPECT mission evolved into collecting, processing, and reporting oil contamination locations to the respective unified command structures.
- All data was posted in an open source fashion on Google Earth and was accessed by over **1 million viewers worldwide**.



Aerial Photograph



Unsupervised Classifier Algorithm



Supervised Classifier Algorithm

These images show how ASPECT IR sensors were used to detect and locate oil on water. The aerial image above illustrates the limitations of a standard photograph in determining the coverage and characteristic of oil on water. The classification images to the right show how the developed algorithms using IR imagery enhance discrimination between sheen and recoverable thick oil. This information generated ASPECT oil-spotting reports.