

Forest Fire detection Using NDVI and Tasseled Cap Techniques

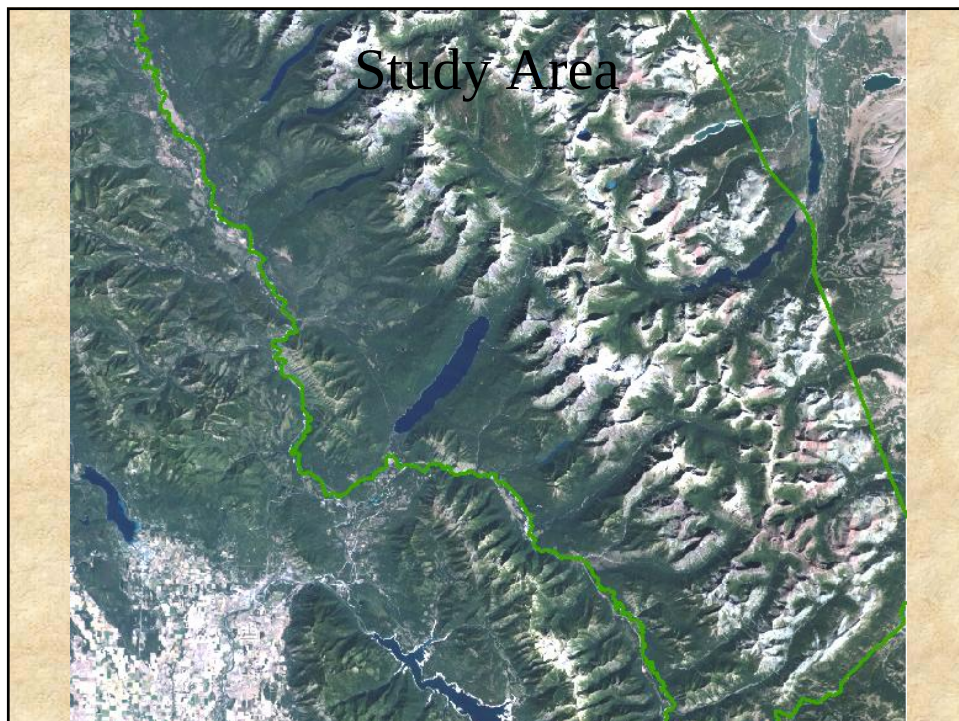
Don Brown

Project Objectives

- Use change detection techniques to clearly define areas that have undergone forest fires.

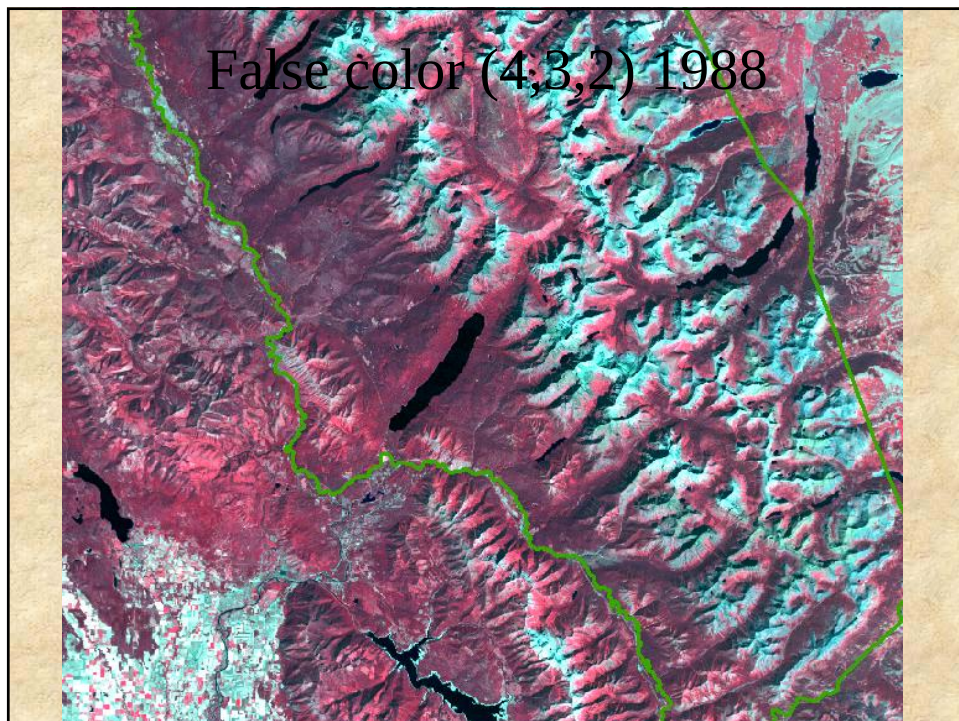
Study Area

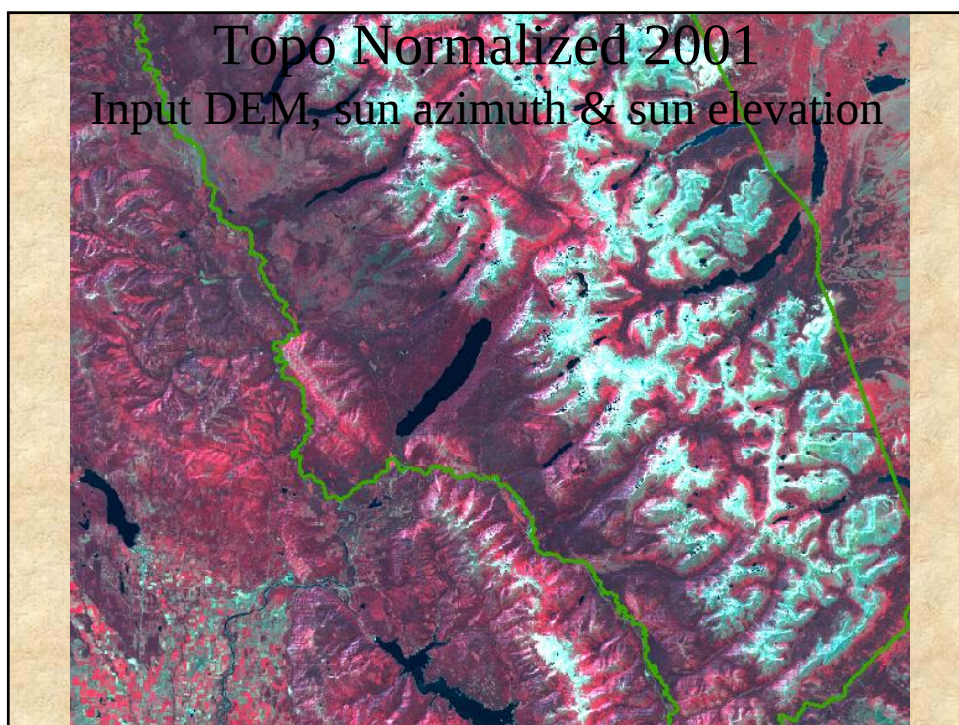
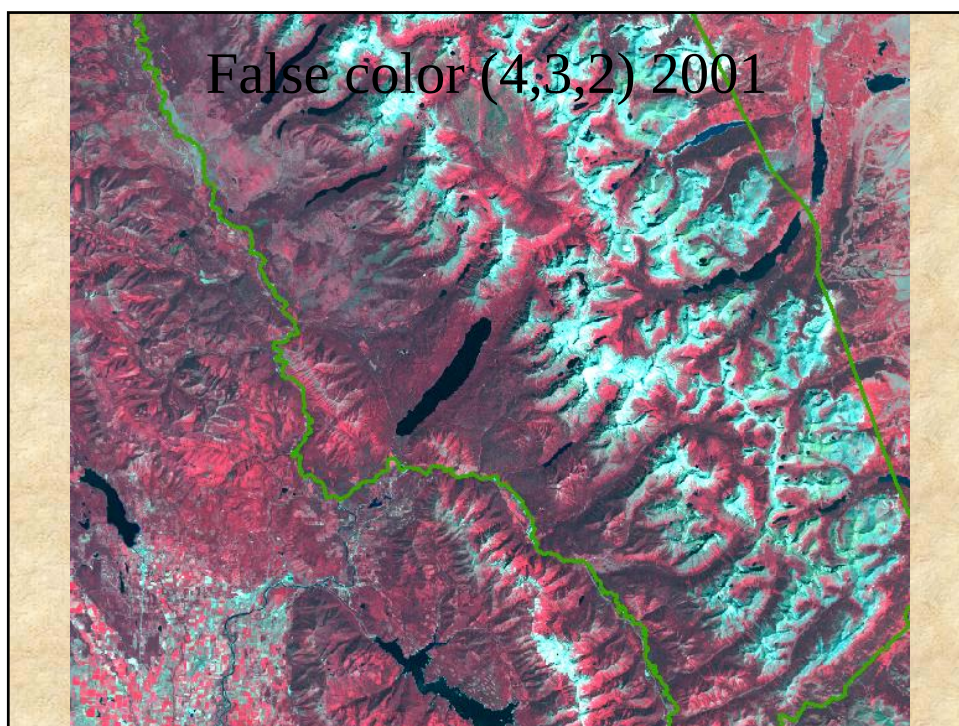
- Glacier National Park, Montana
- Available forest fire history data
- Data produced from GPS field data are assumed to be spatially accurate to within 5-15 meters.
- GPS data collected while flying above the fire perimeter is dependent on the topography, the weather conditions the day of the flight and the skill of the pilot. Accuracy should be considered 'Resource Grade', generally accurate to no better than 10 - 20 meters.

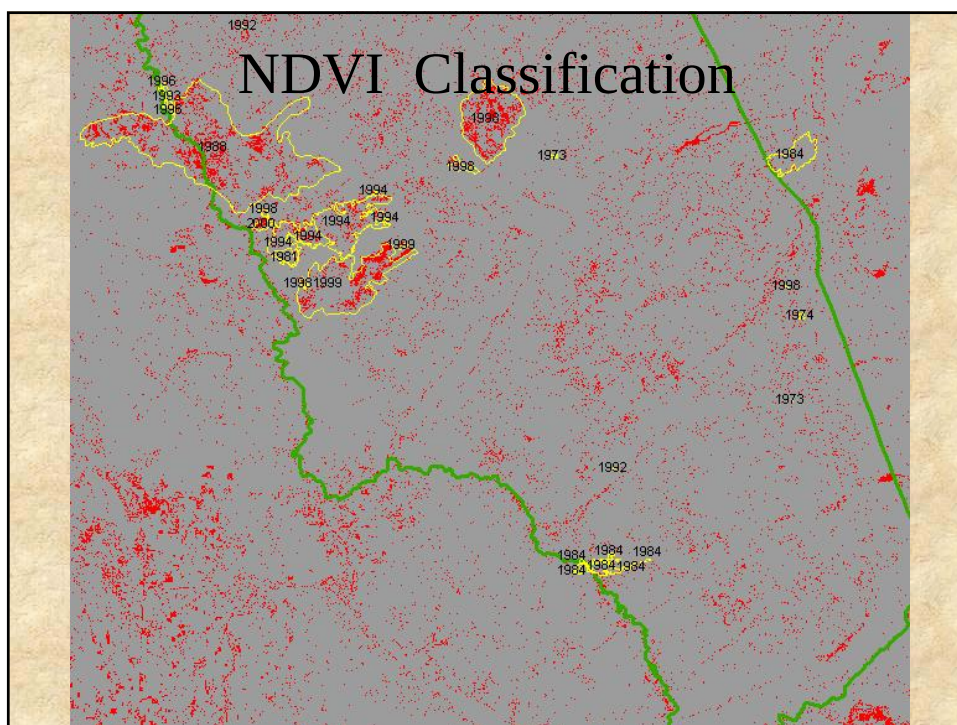
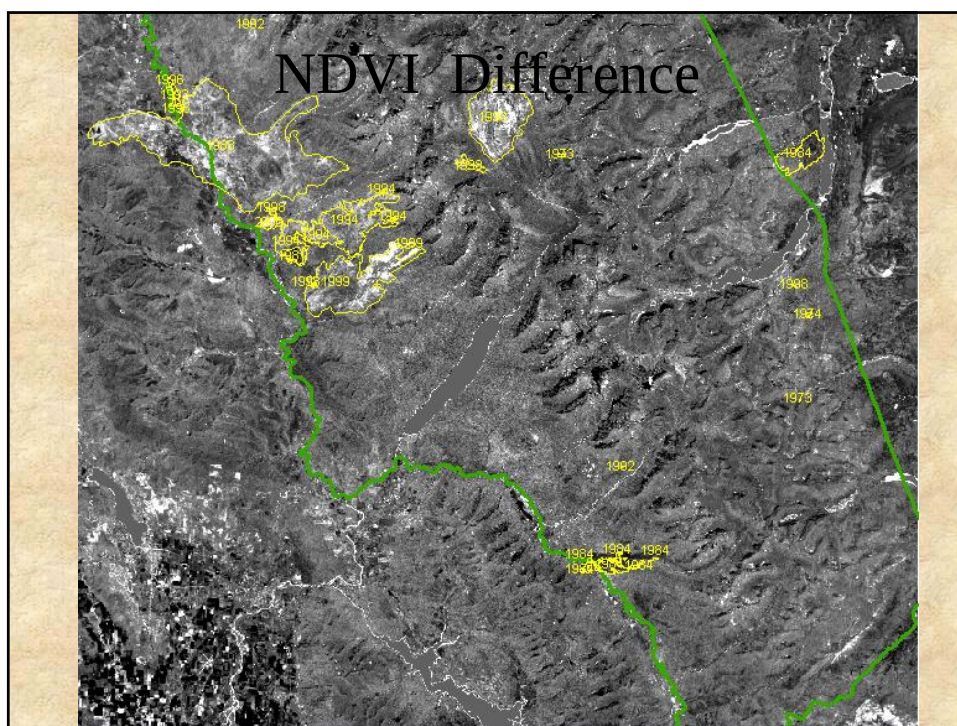


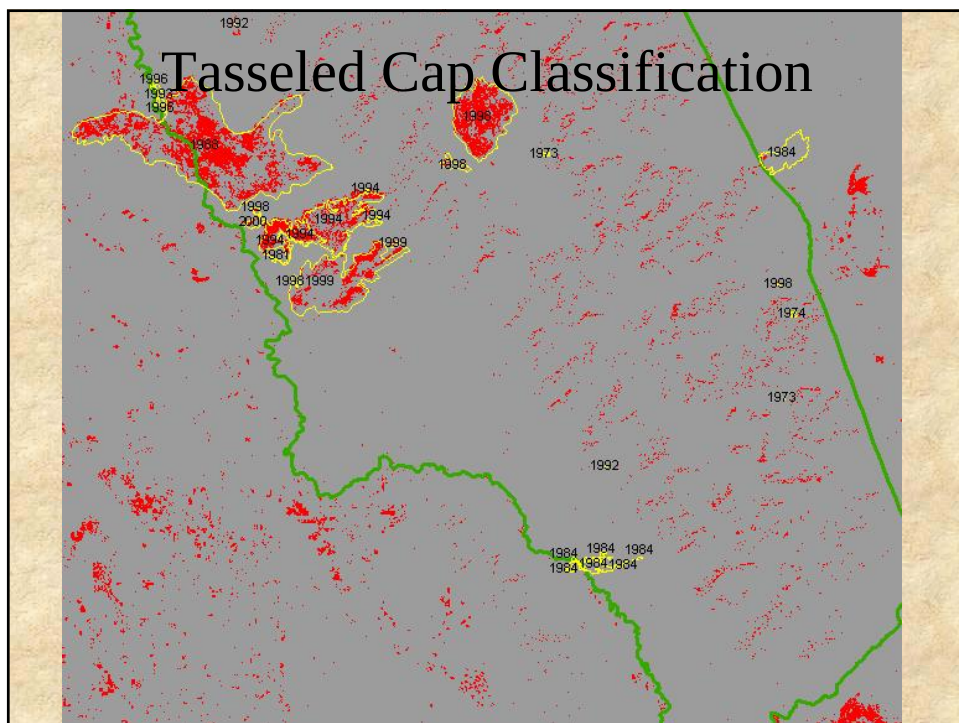
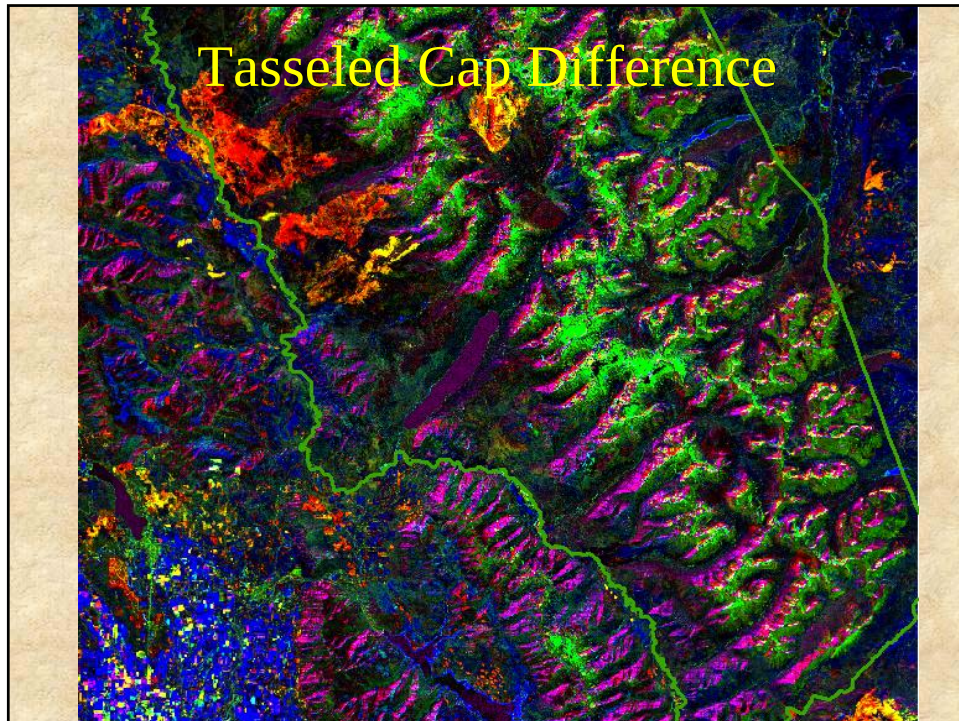
Data

- Landsat
- Image 1:
 - August 28 1988
- Image 2:
 - July 7 2001
- Glacier National Park past forest fire perimeters and park boundary.



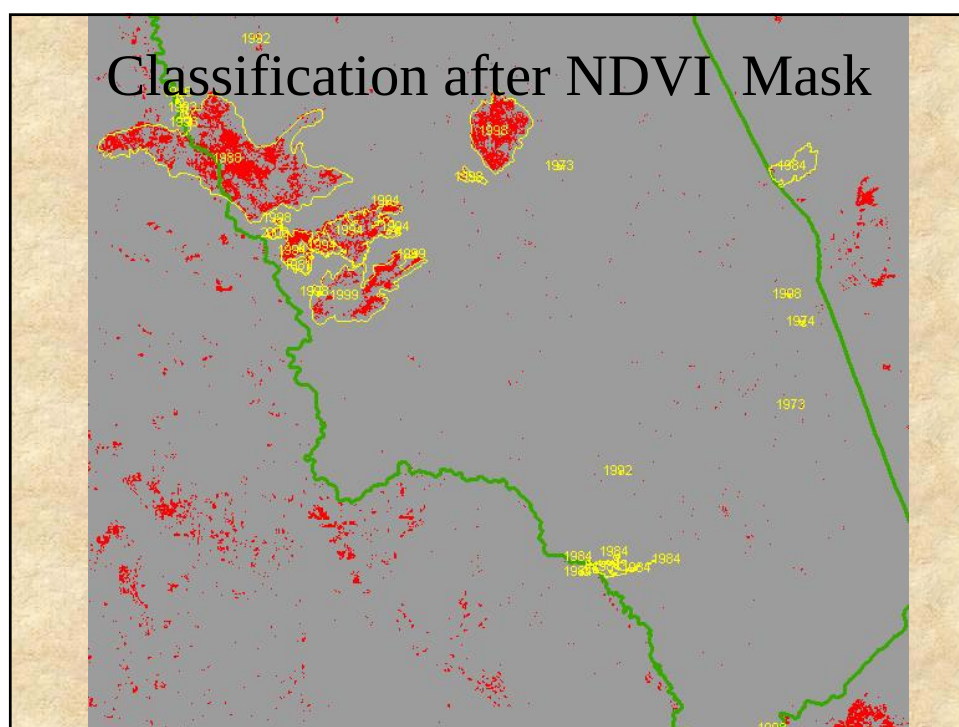
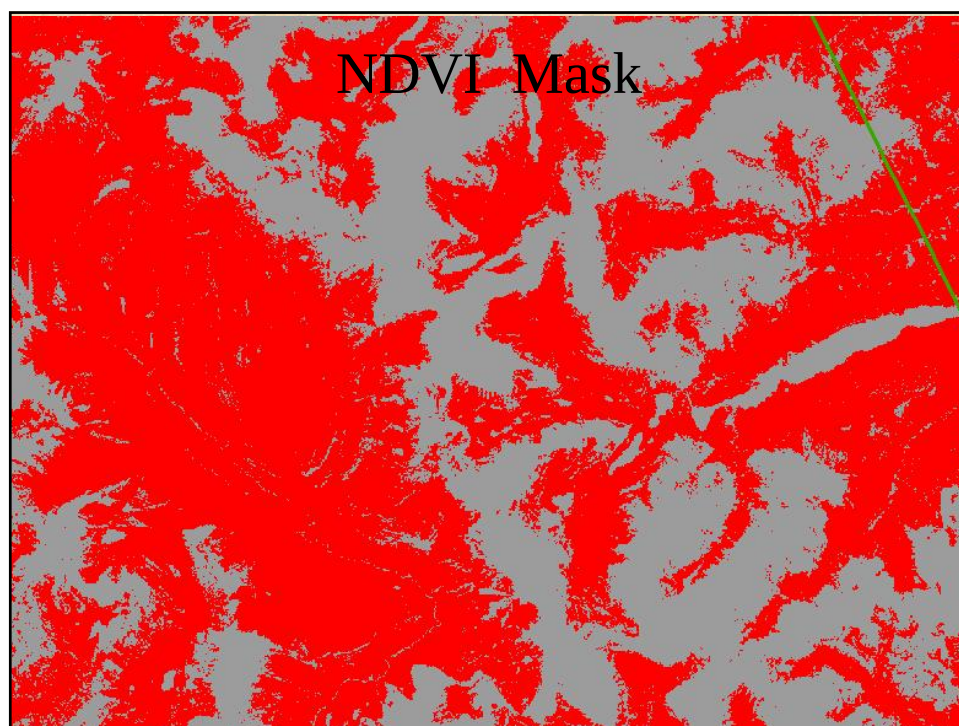


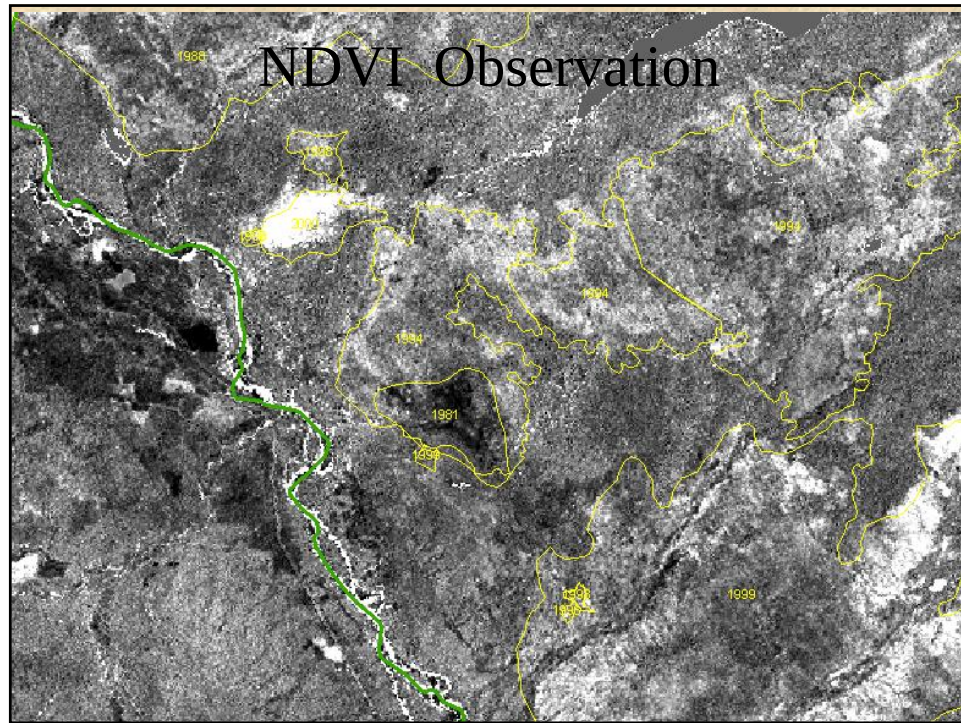




[illegible]

A close-up photograph of a textured surface, possibly a rock or coral, with the word "Shadows" written in white text at the top center. The image shows a complex, organic pattern of light and dark areas, with a green line running diagonally across the right side.





Conclusions

- Could be improved with image to image radiometric normalization. (Lab 4)
- Could be improved with images captured right before and after fire.
- Tasseled cap worked better than NDVI
- This technique could be applied when you already know the general location of where a forest disturbance took place.
- Could be more accurate, cheaper, faster than field GPS data collection.