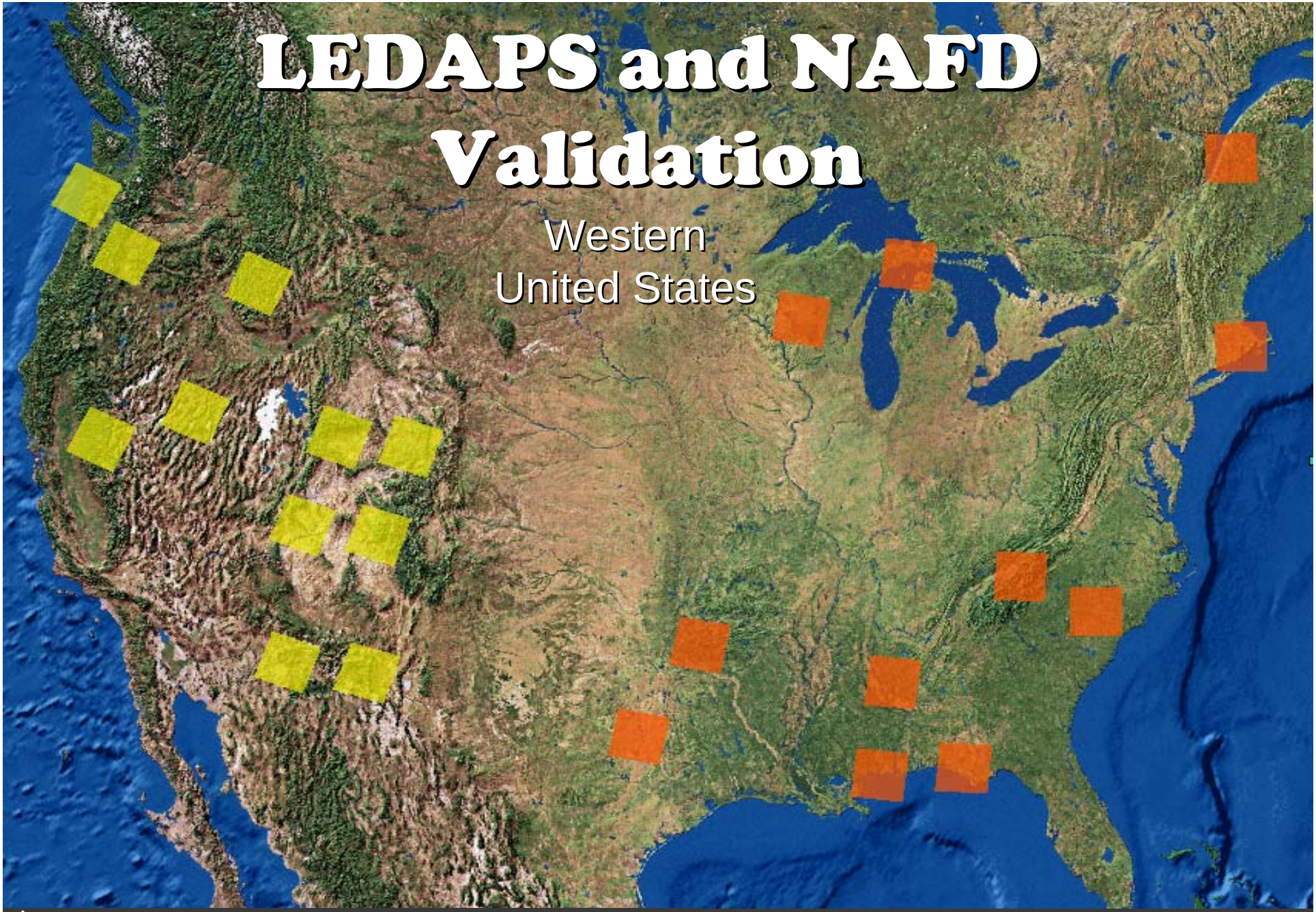
LEDAPS and NAFD Validation

Western
United States



Laboratory for Applications of Remote Sensing in Ecology

A collaborative research lab supported by the USFS Pacific Northwest Research Station, Oregon State University, and external funding.

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Objectives

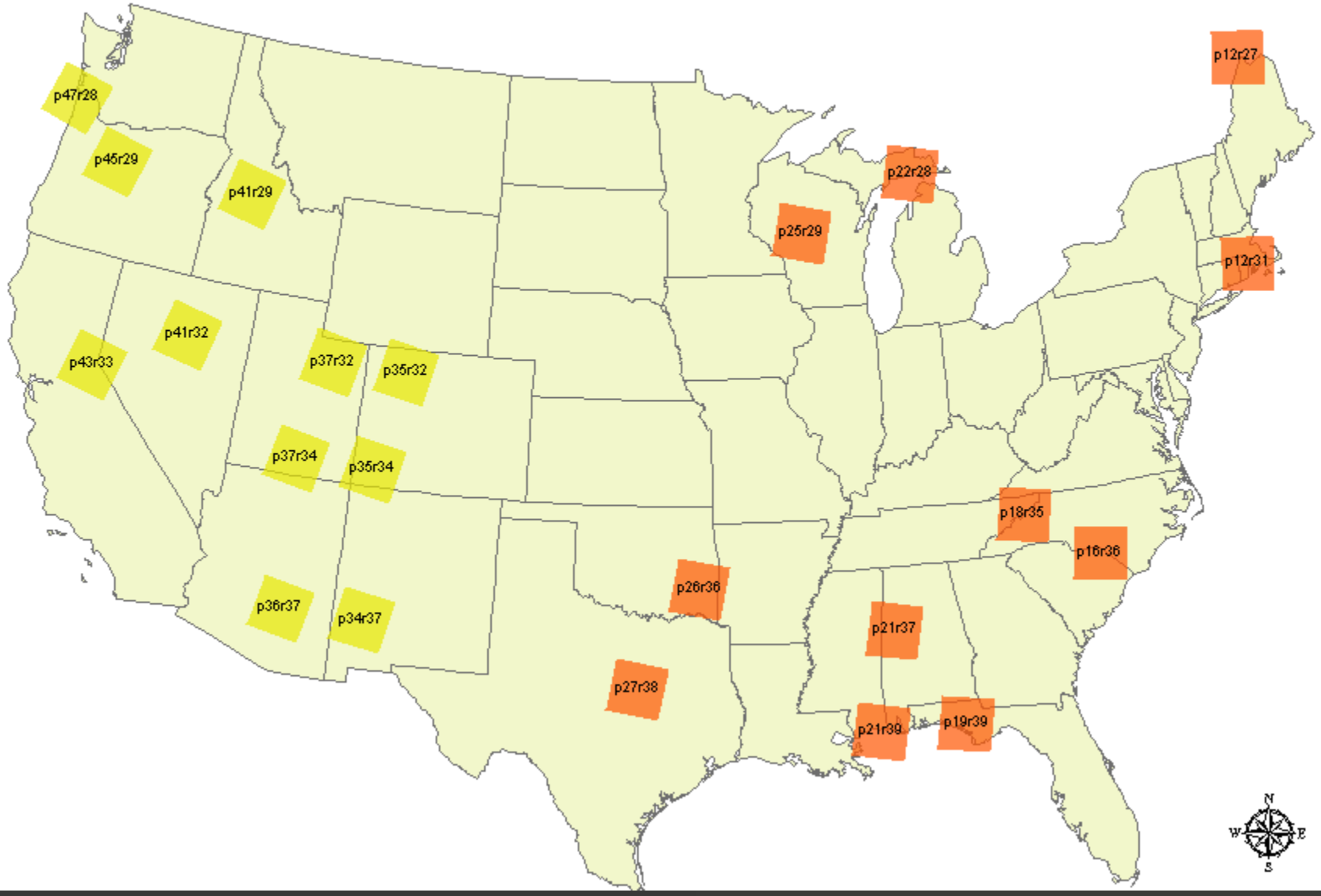
- Provide independent validation of LEDAPS stand-replacing disturbance & regrowth products

- Create a standard group of validation areas across the western United States for use in current and future studies

Accomplishments

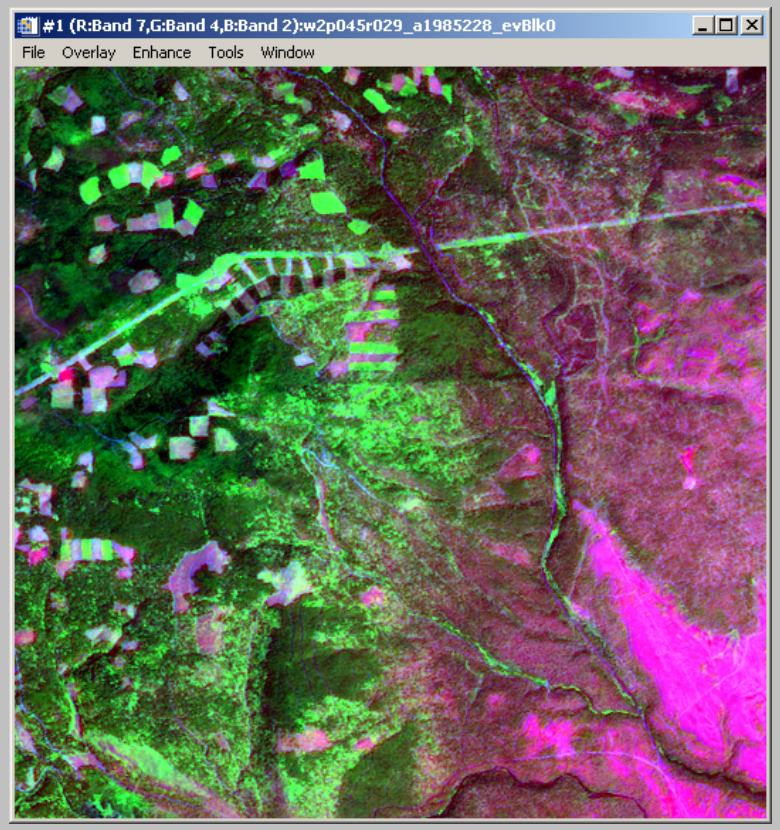
- Classified 21 225-km^2 sample blocks equally distributed across 7 LEDAPS-processed Landsat scenes for forest disturbance and regrowth between ~1984-2006.
- Identified all disturbance and regrowth based on temporal trajectories of spectral index.
- Visually checked by independent observer by comparing LARSE result to temporal sequential viewing of Tasseled Cap time series.

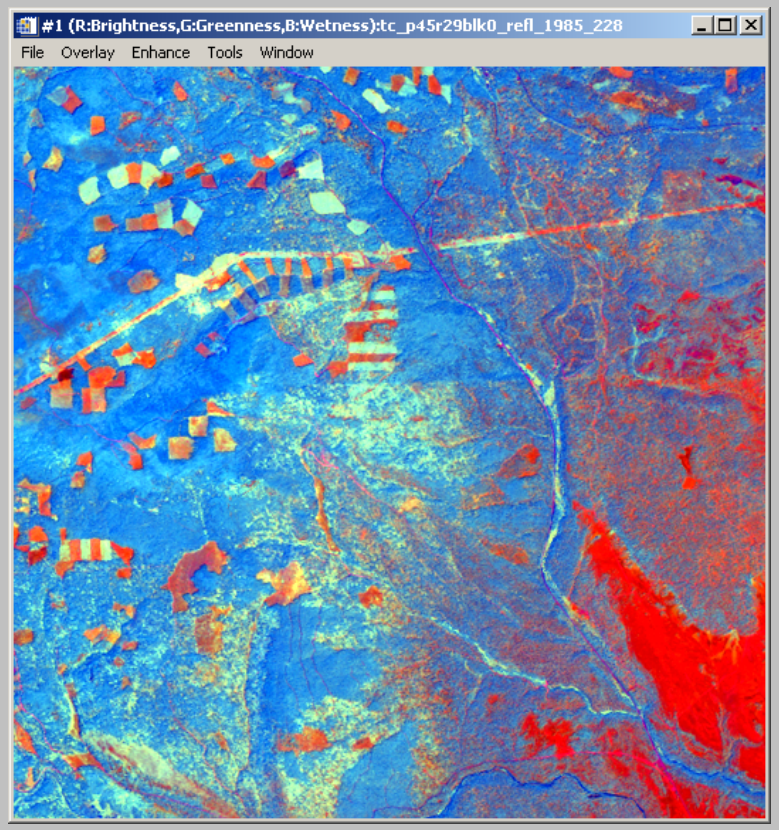
LEDAPS Validation Scenes



METHODS

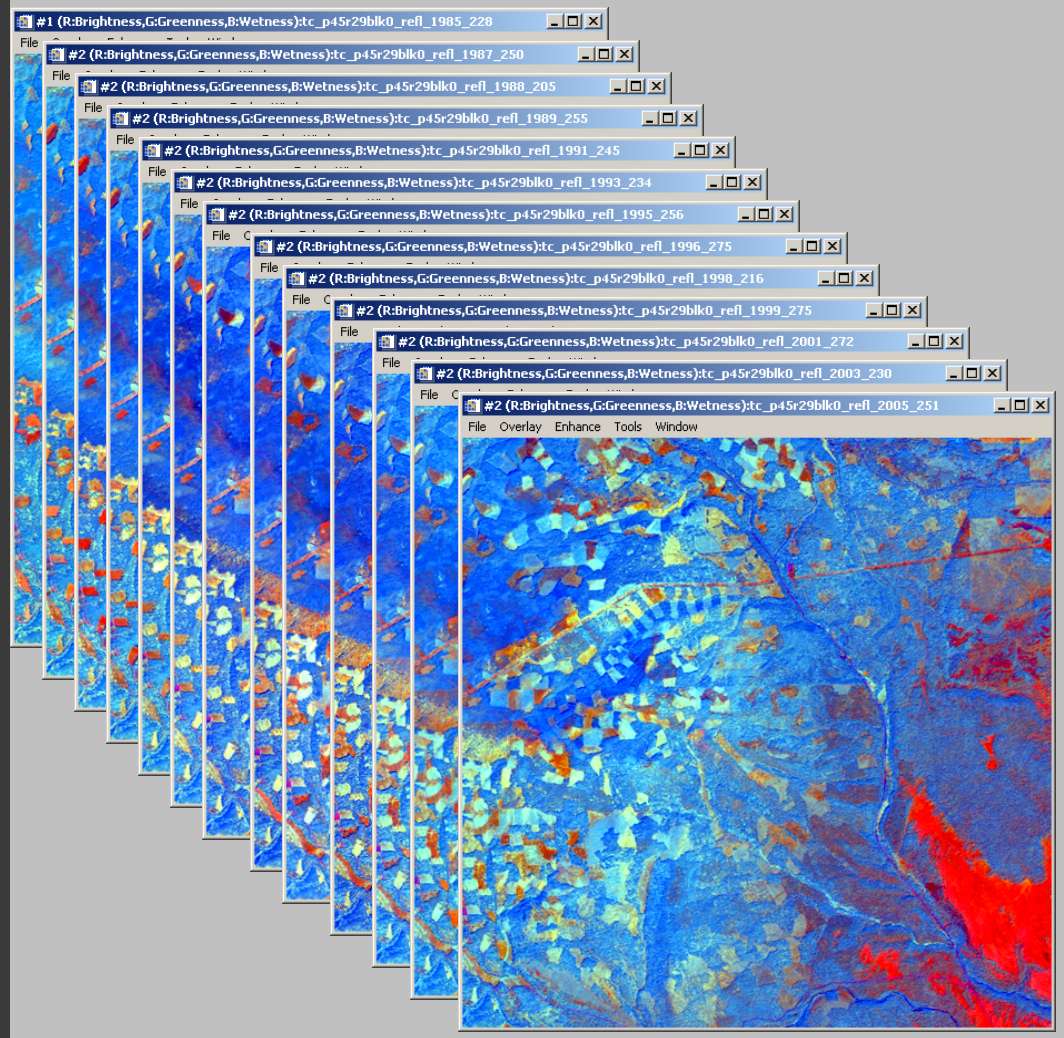
1. Convert LEDAPS Reflectance to Tasseled Cap

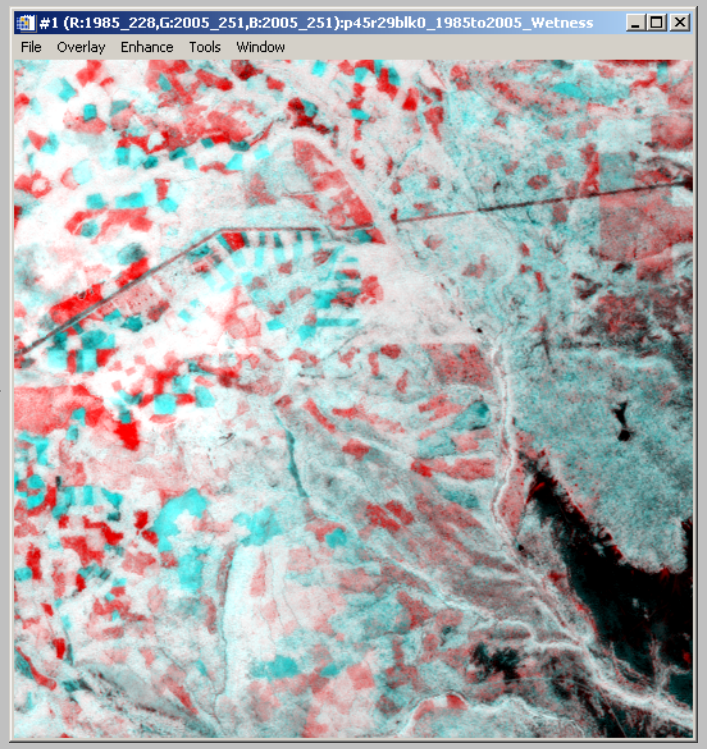




METHODS

2. Stack Tasseled Cap Wetness

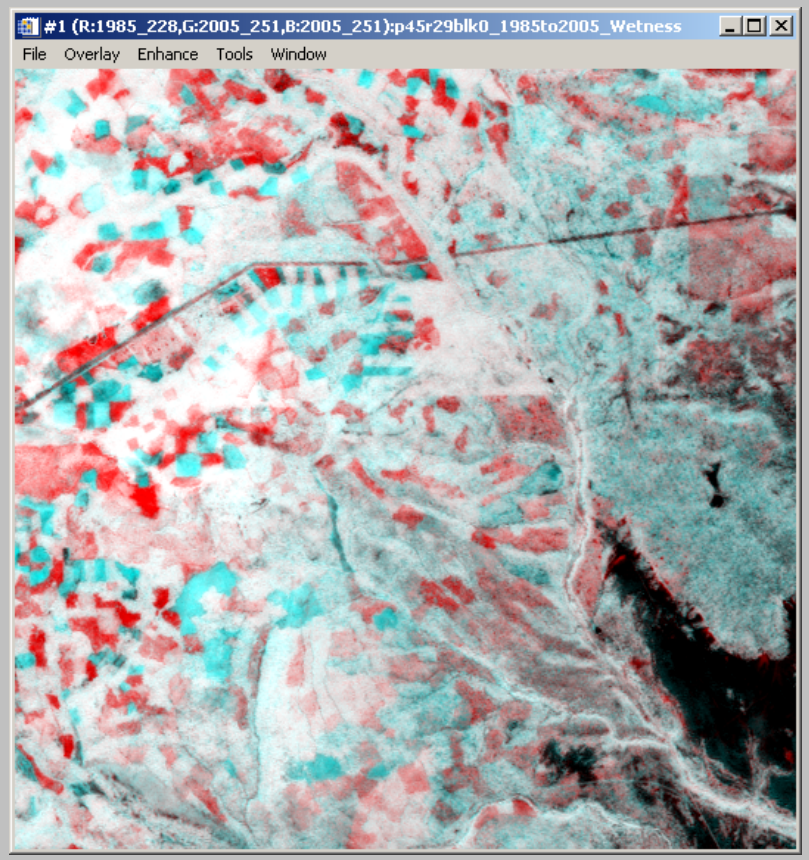


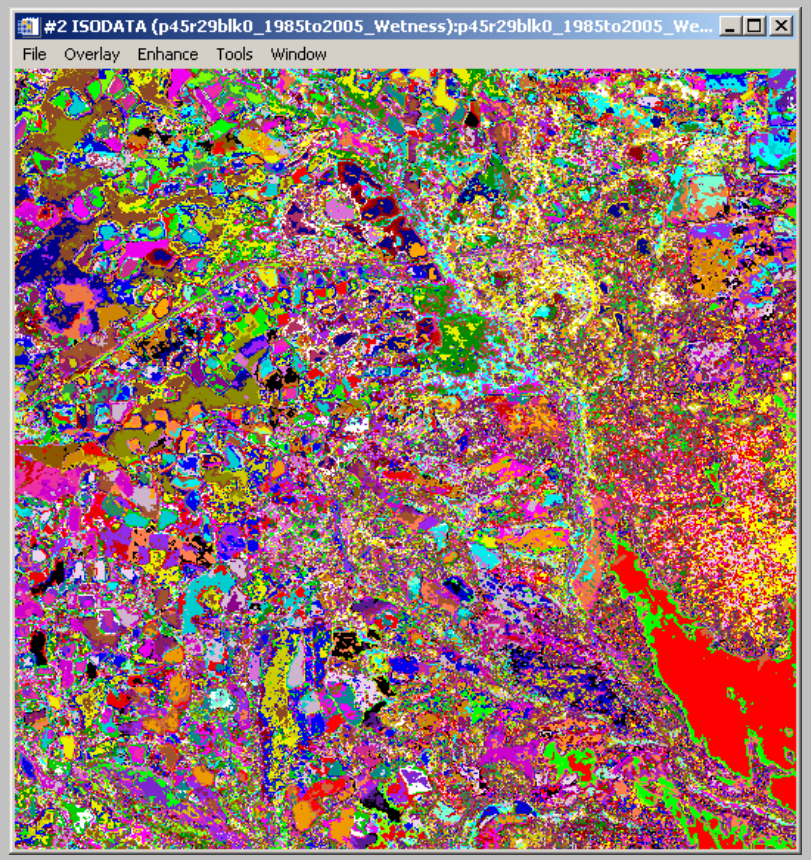


Red= disturbance Cyan=growth

METHODS

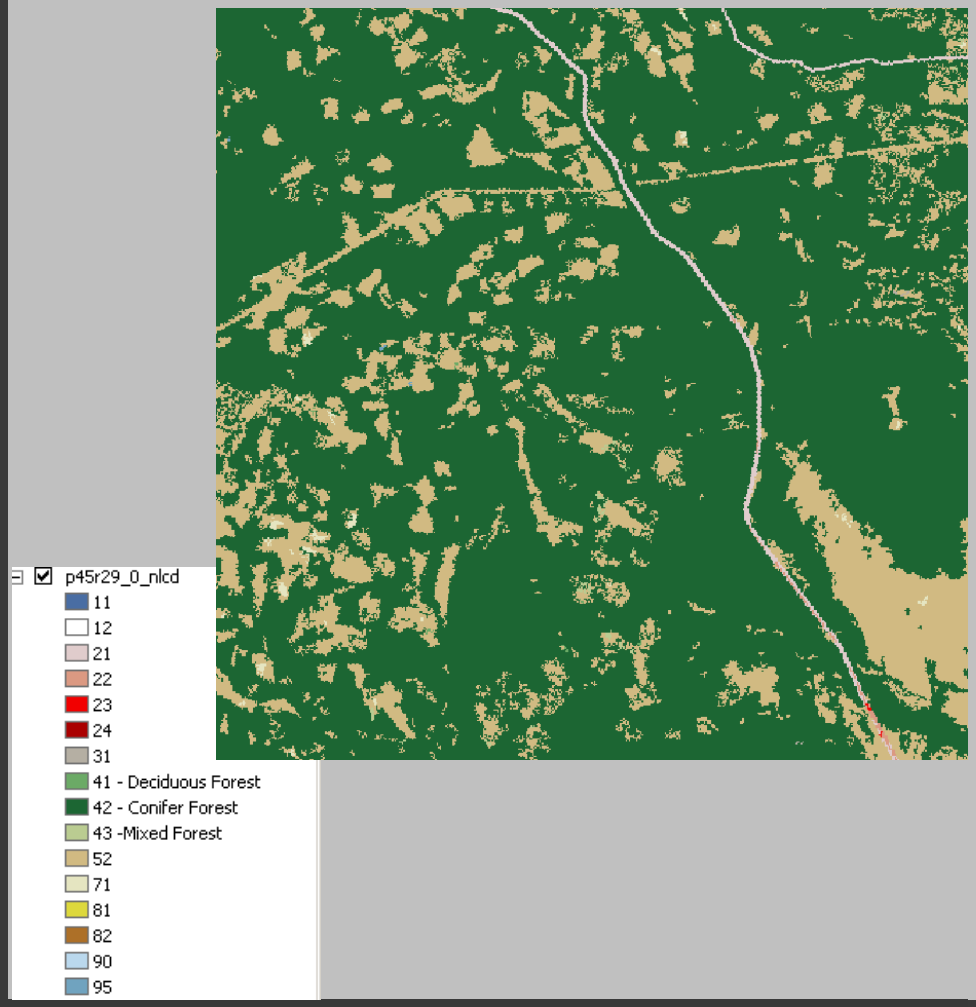
3. Unsupervised Classification (250 classes)

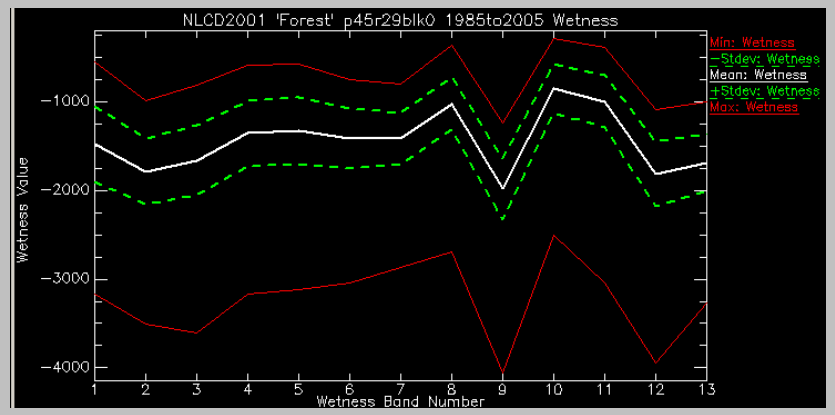




METHODS

4. Derive mean TC Wetness of "forest" trend using NLCD 2001

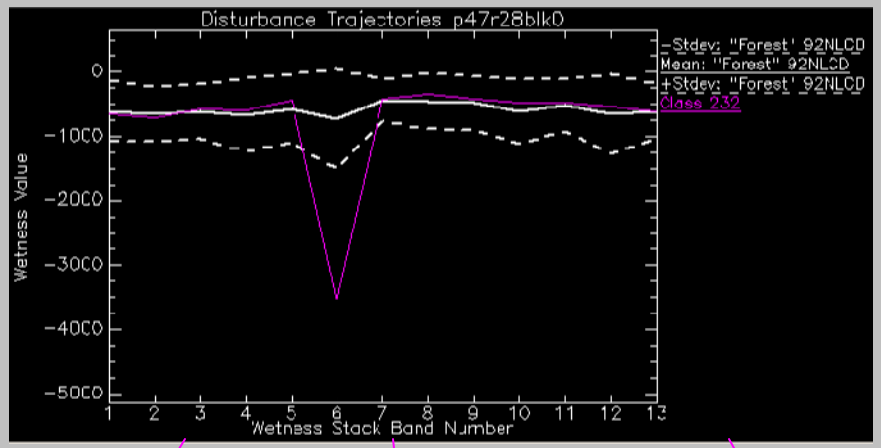


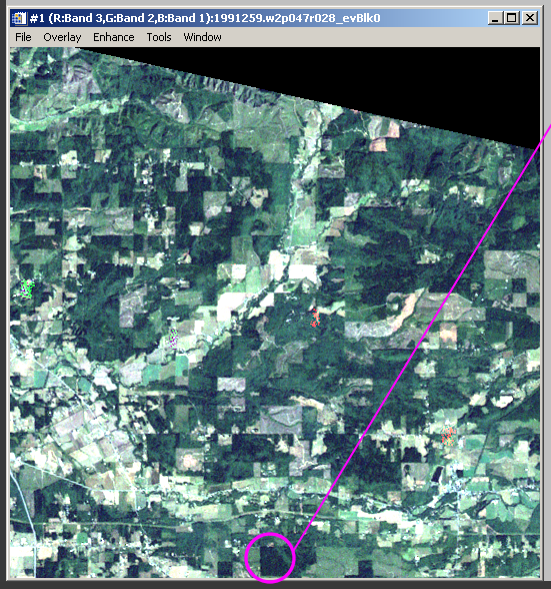


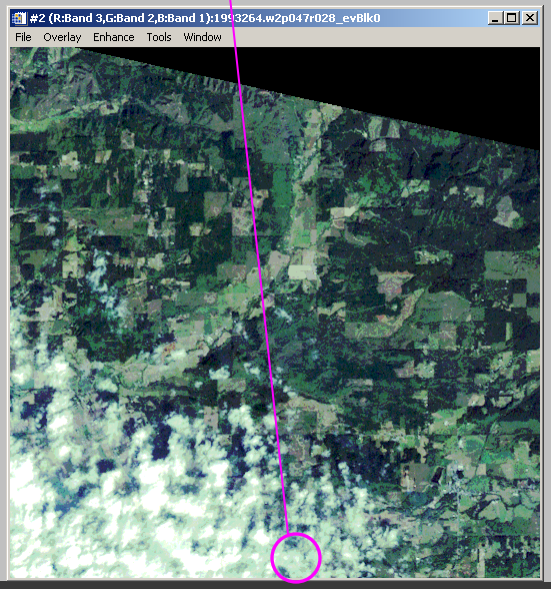
METHODS

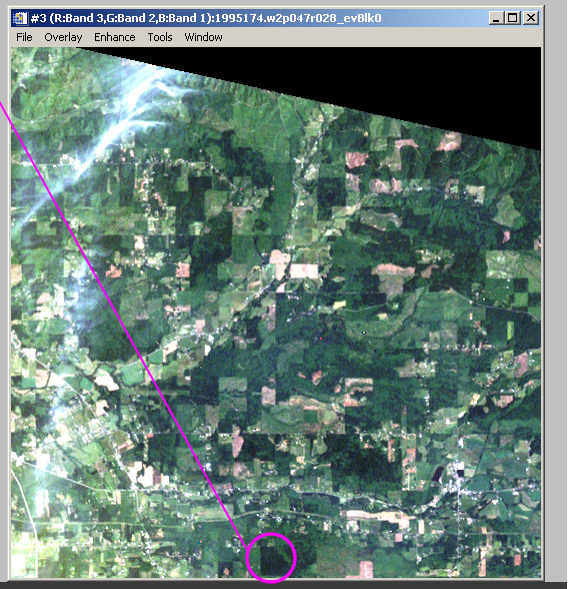
5. *Evaluate clusters*

Clouds





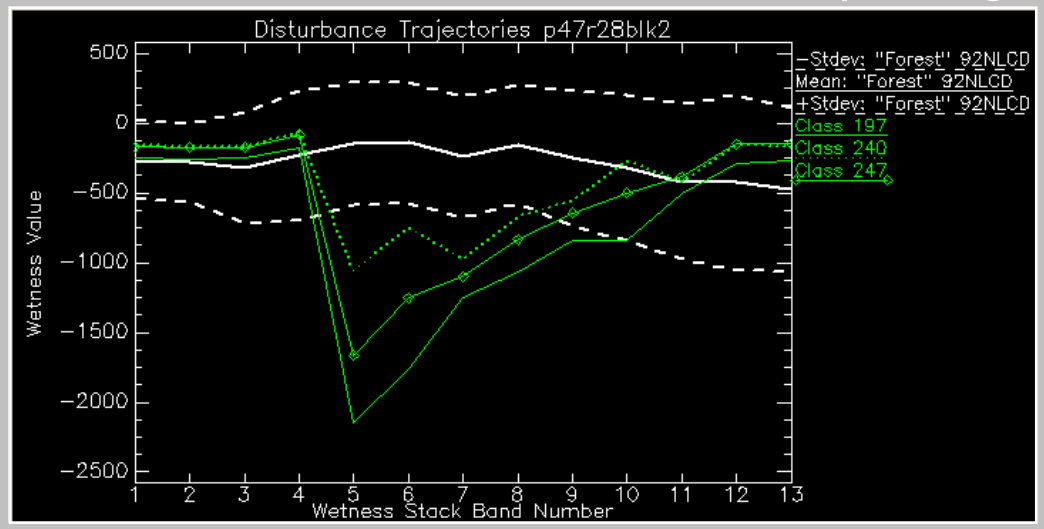




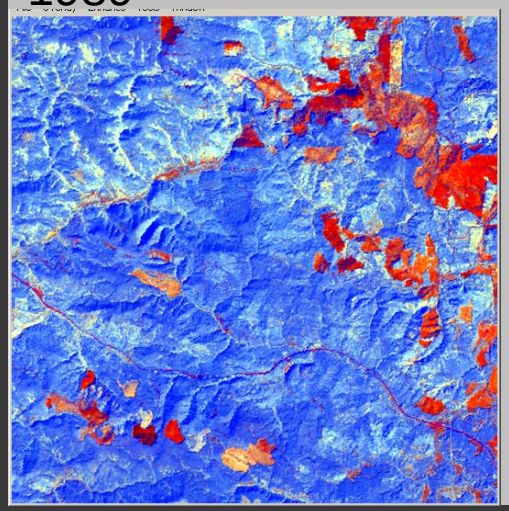
METHODS

5. *Evaluate clusters*

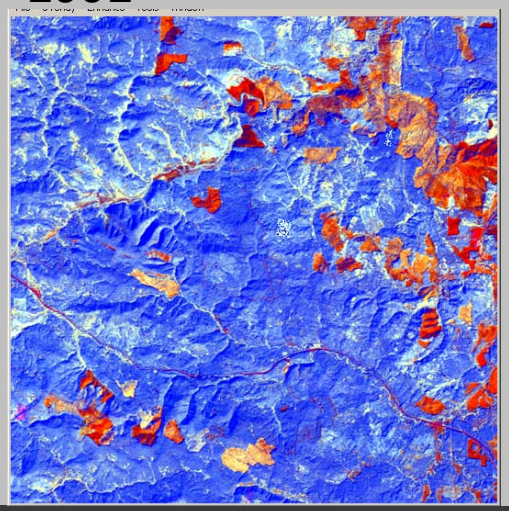
Stand-replacing Disturbance



1989



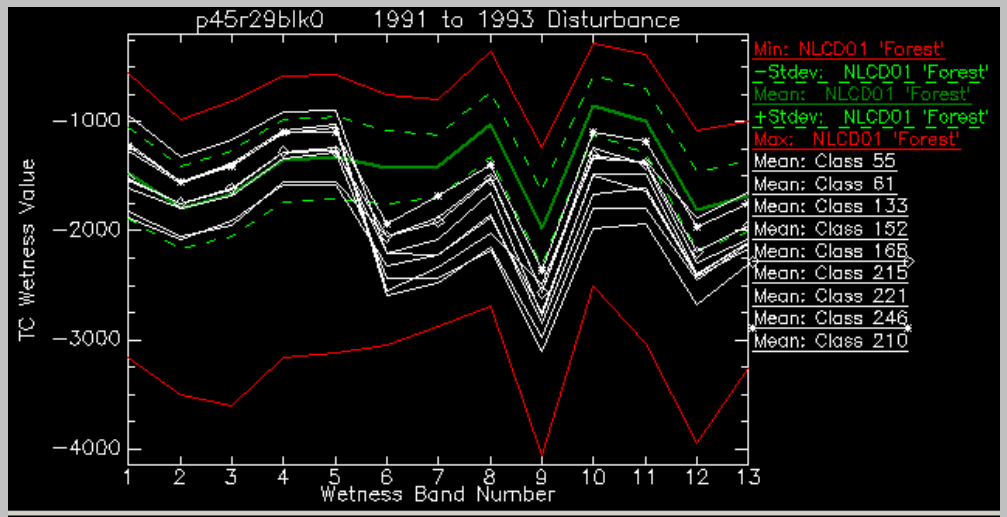
1991



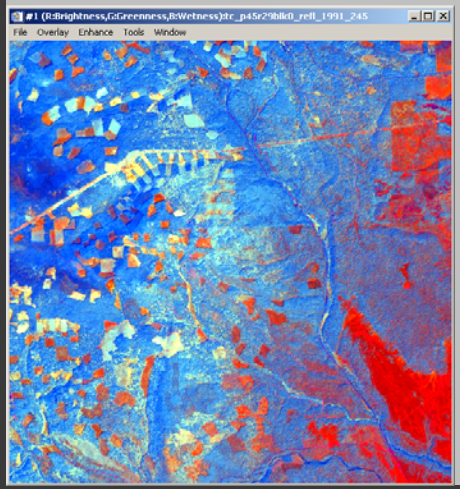
METHODS

5. *Evaluate clusters*

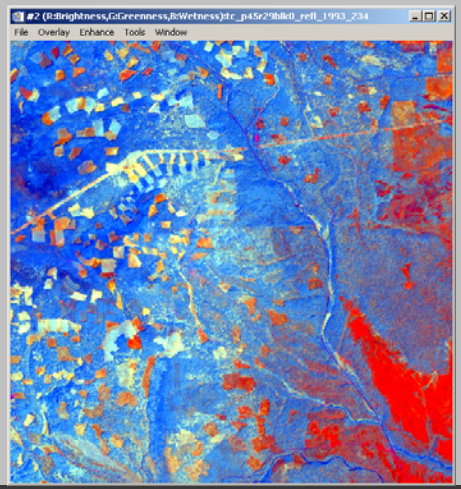
Stand-replacing Disturbance



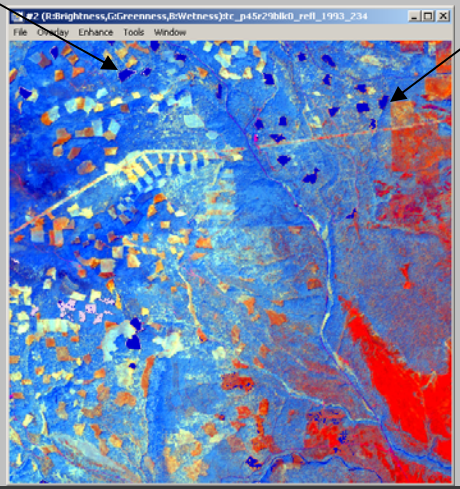
1991



1993



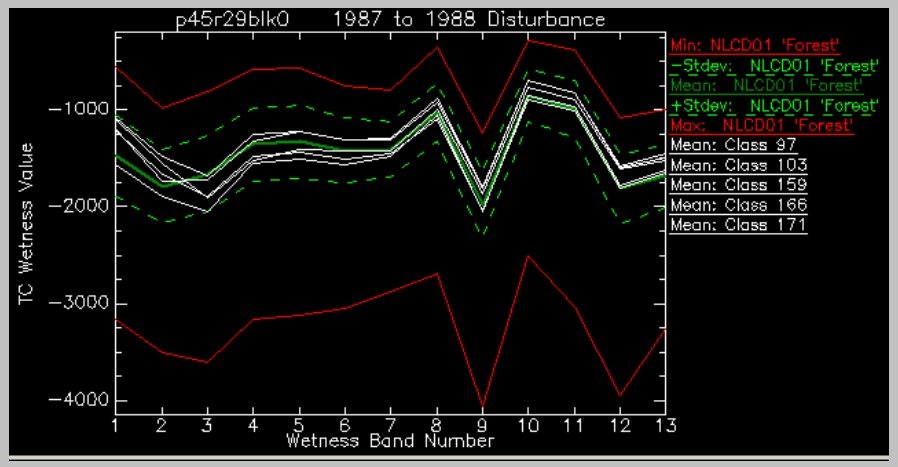
Stand-replacing Disturbance



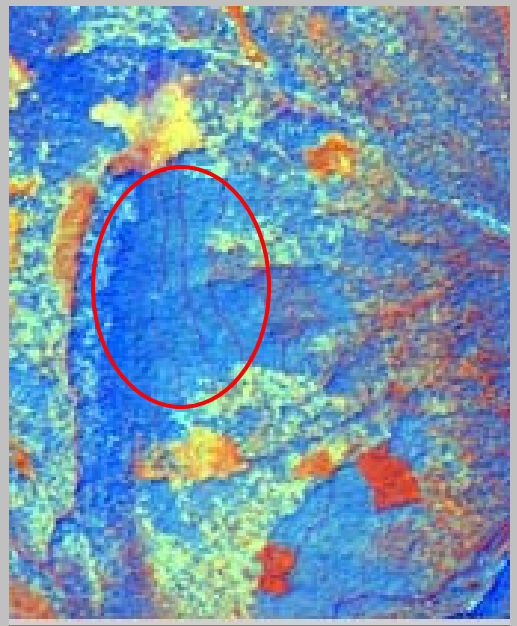
METHODS

5. *Evaluate clusters*

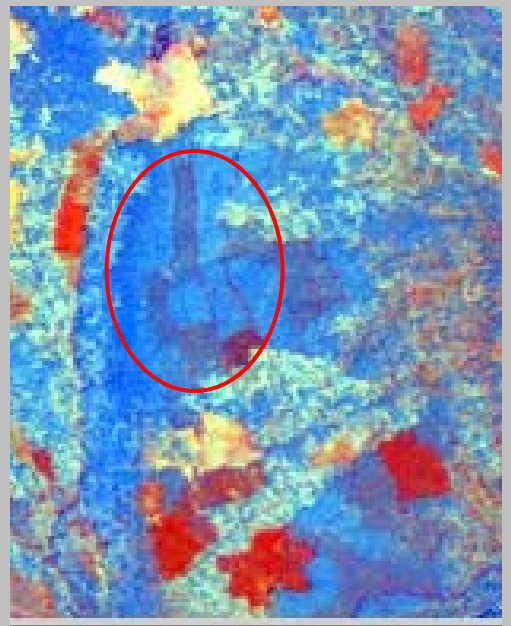
Forest Thinning



1987



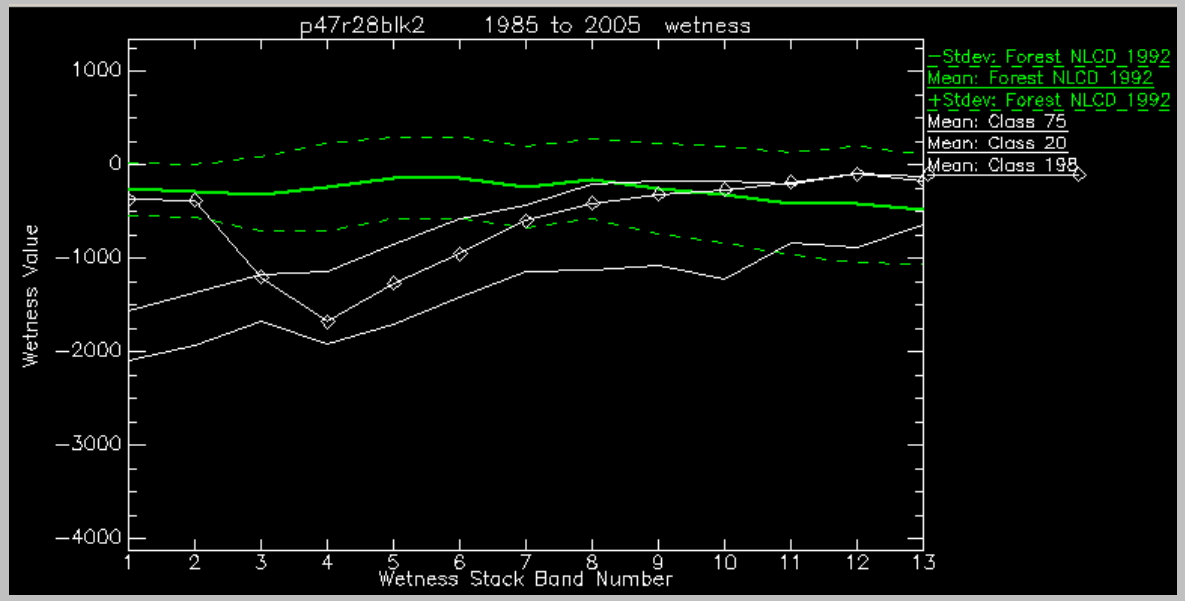
1988

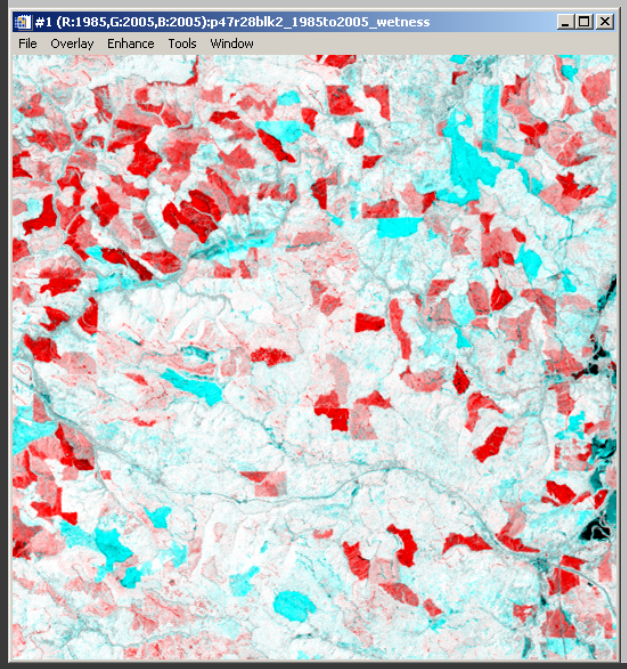


METHODS

5. *Evaluate clusters*

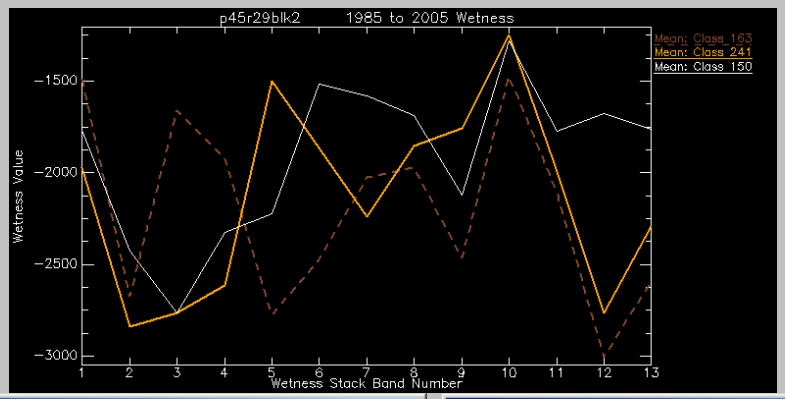
Regrowth

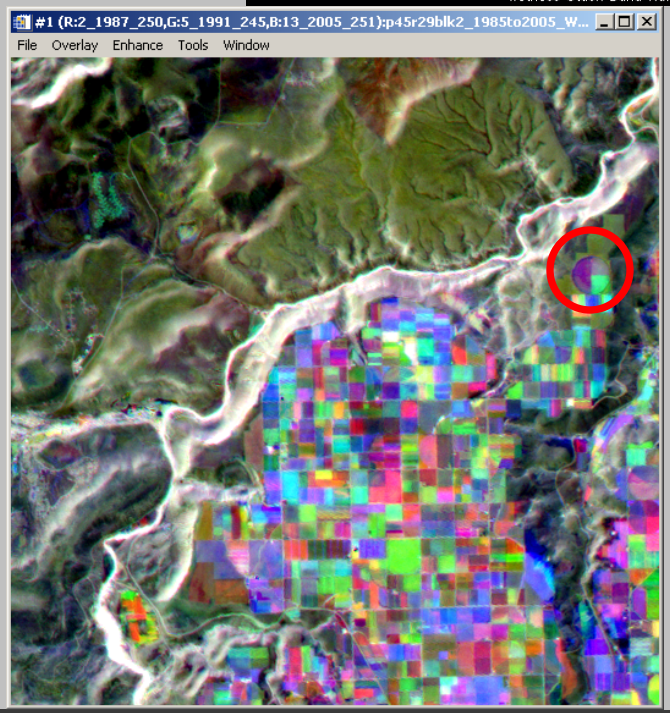


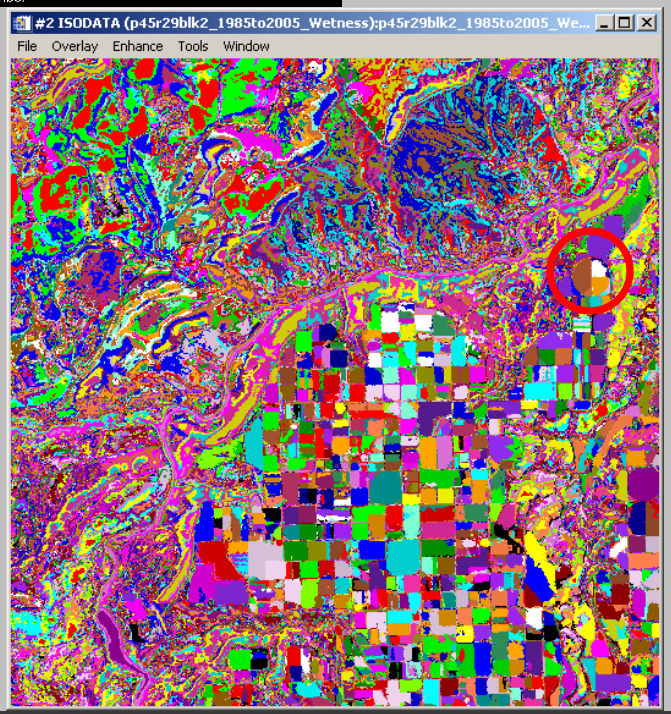


METHODS

5. Evaluate clusters

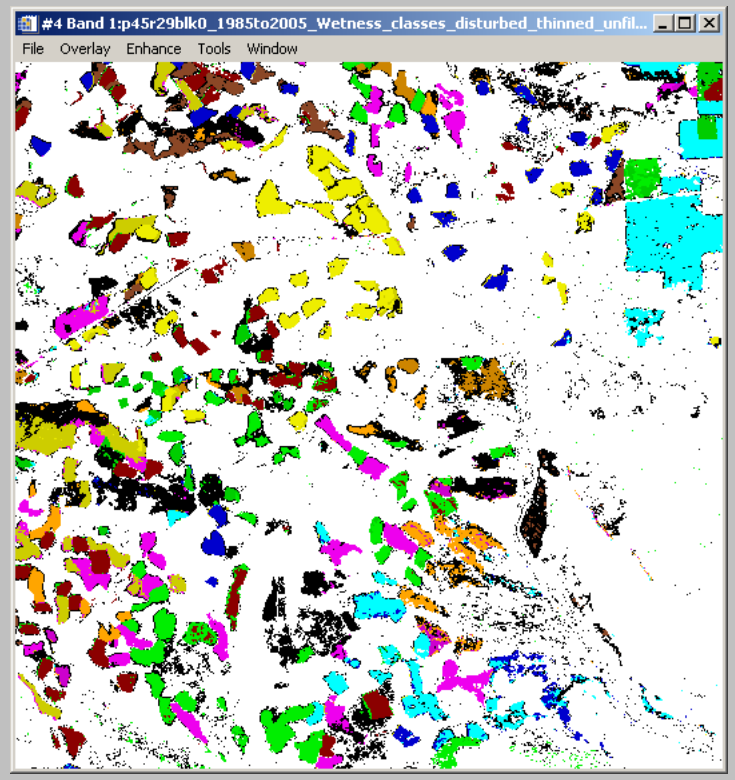


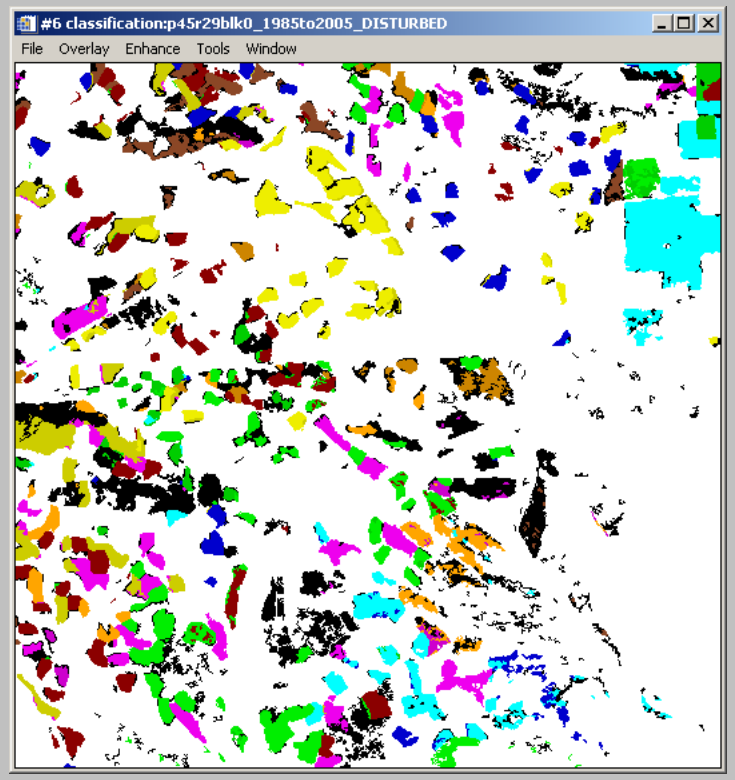




METHODS

6. Filter to Minimum Mapping Unit (5 pixels)

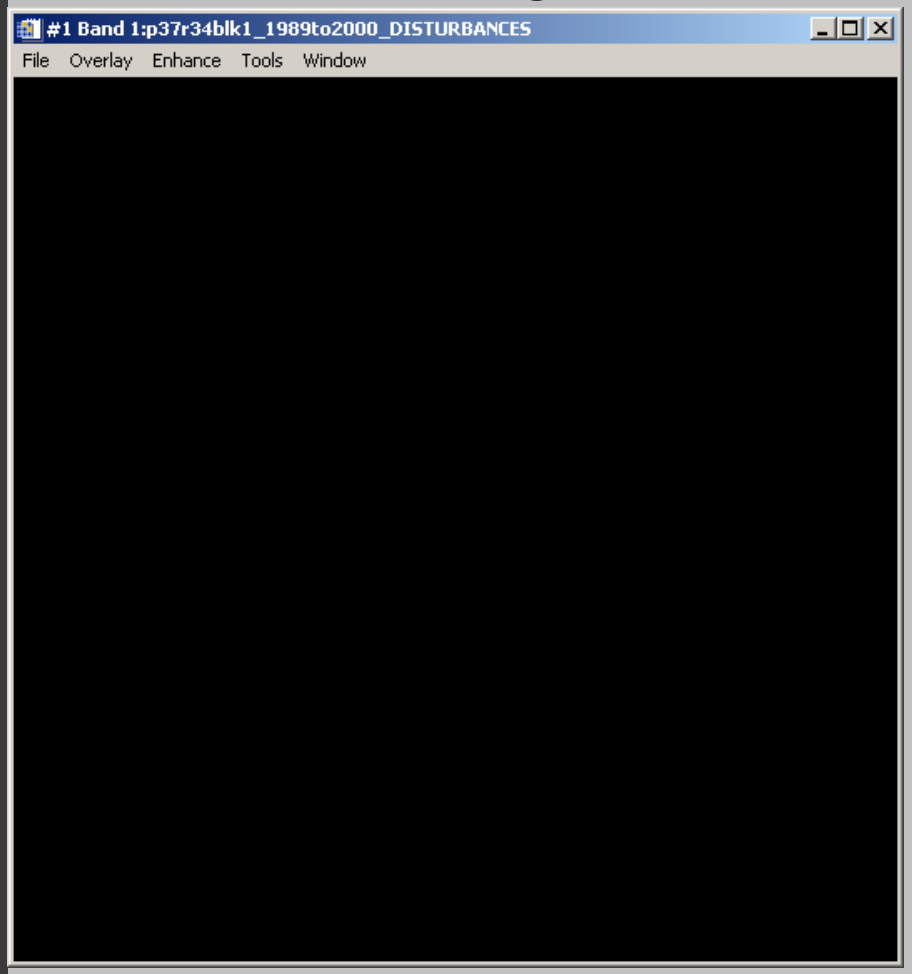




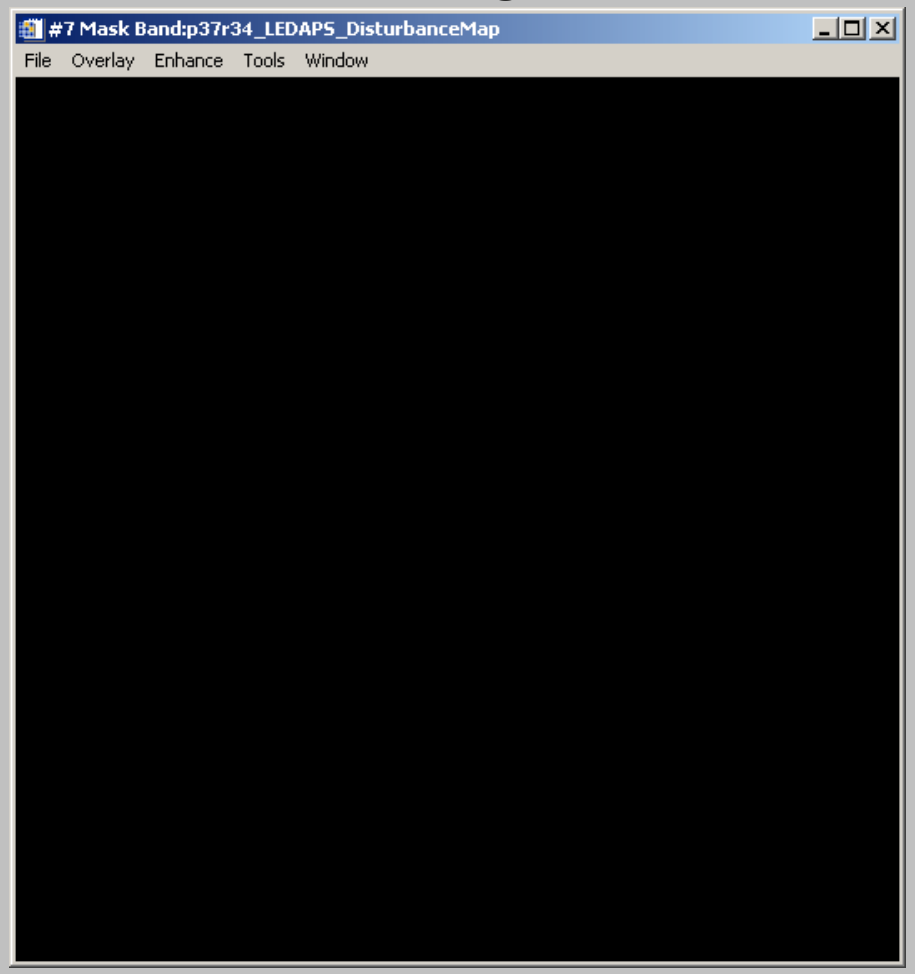
100% Agreement
No disturbances

P37 R34
Block 1

LARSE

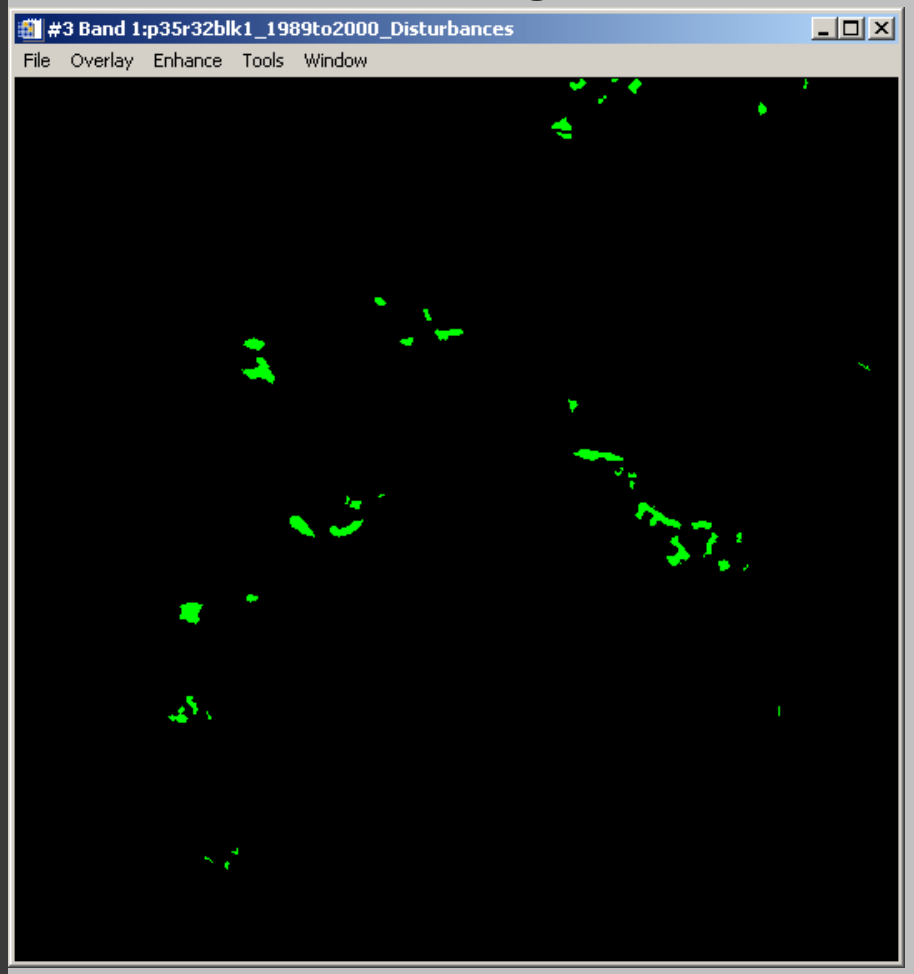


LEDAPS

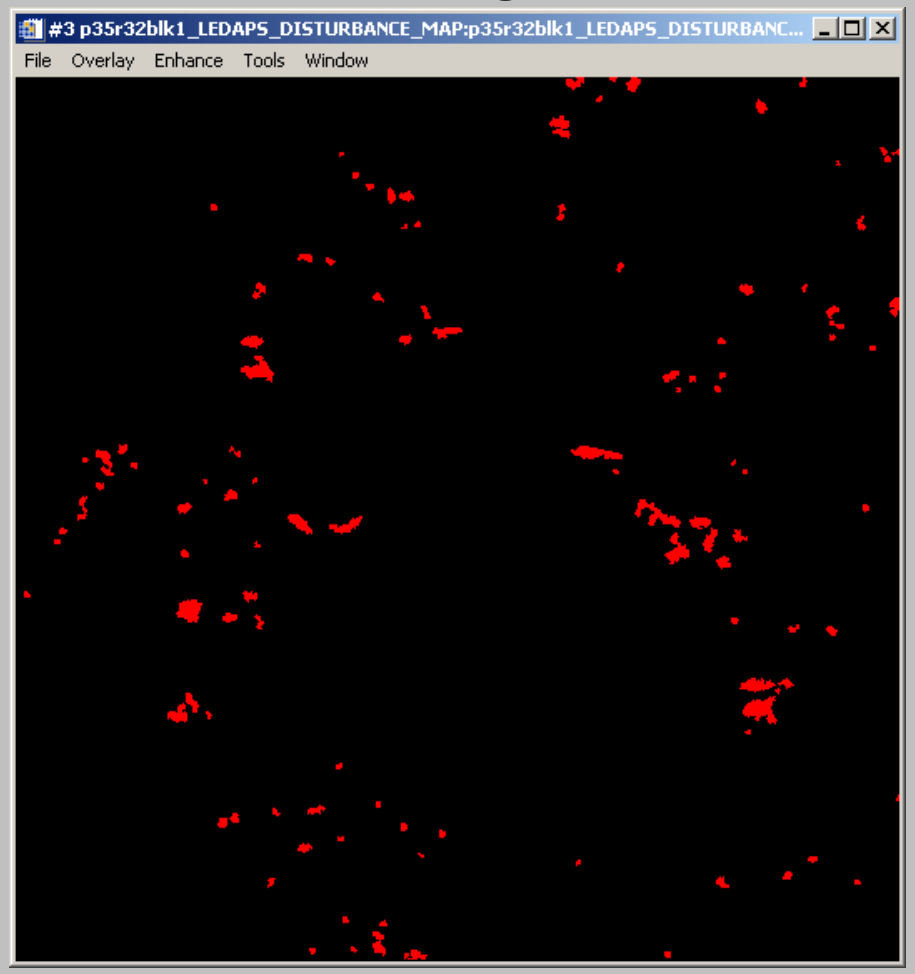


P35 R32
Block 1

LARSE



LEDAPS



Continuing work…

- Further validation of LARSE products through aerial photos
- Increase temporal scale with MSS
- LARSE has developed independent datasets for use in validation