Monitoring Large Area Land Cover Change in the SCERIN region

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SCERIN Area

- Long land use history
- Diverse climatic conditions
- Variety of changes in landscape
- Uncertain estimates of land cover changes
- Uncertain estimates of biogeochemical cycles

The job ahead

To improve our understanding of land change trends in SCERIN we need to:

- better quantify landscape changes
- better characterize/qualify these changes
- better characterize the uncertainty of our estimates
- integrate observed changes with biophysical variables
- help guide future conservation/resource management

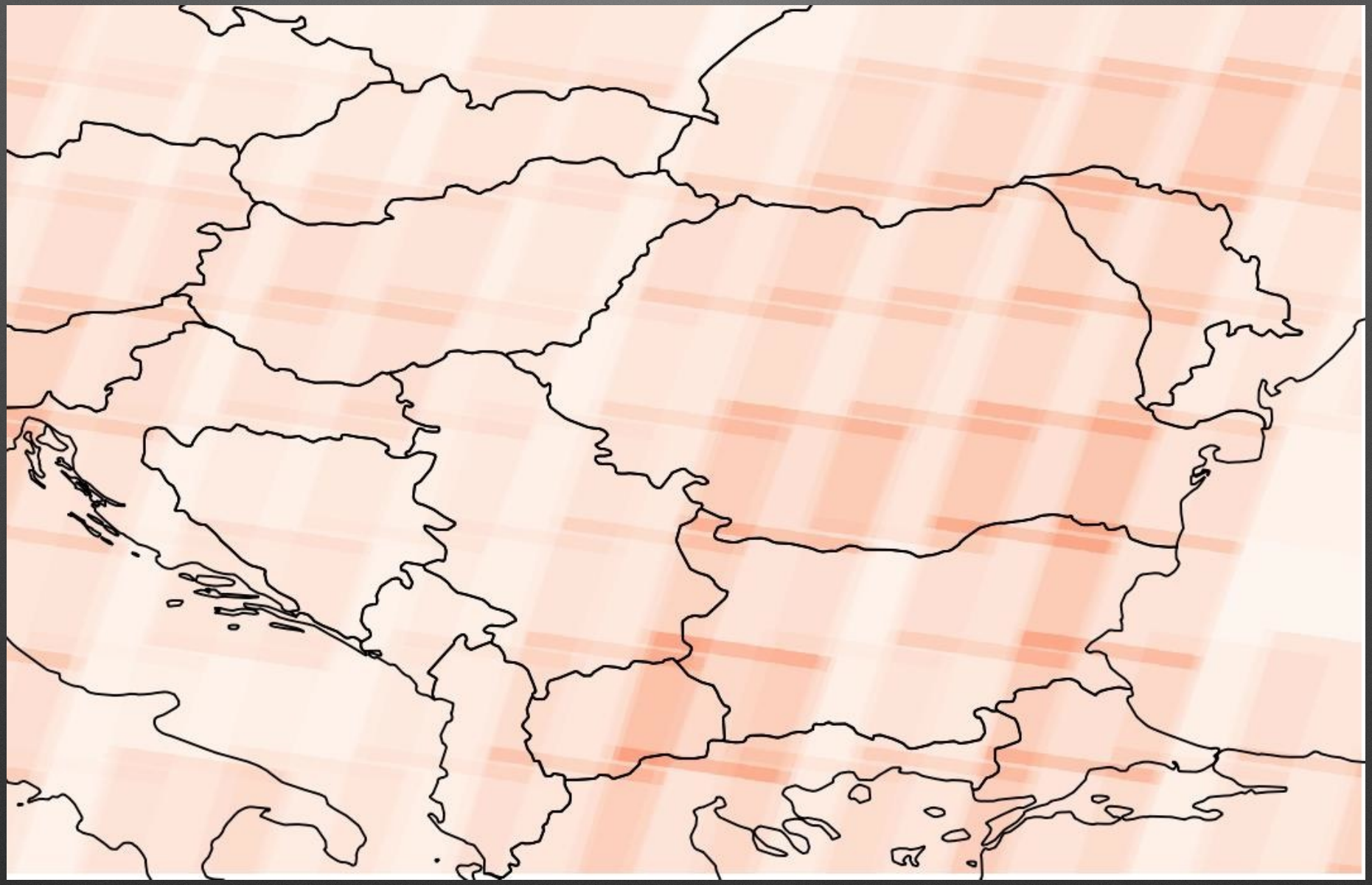
The role of remote sensing

- the archival nature of data
- spectral information
- landscapes that lend themselves to RS studies
- landscape diversity
- ability to integrate with other non-RS data
- experience rooted in other disciplines
- new and emerging technologies (such as cloud computing)

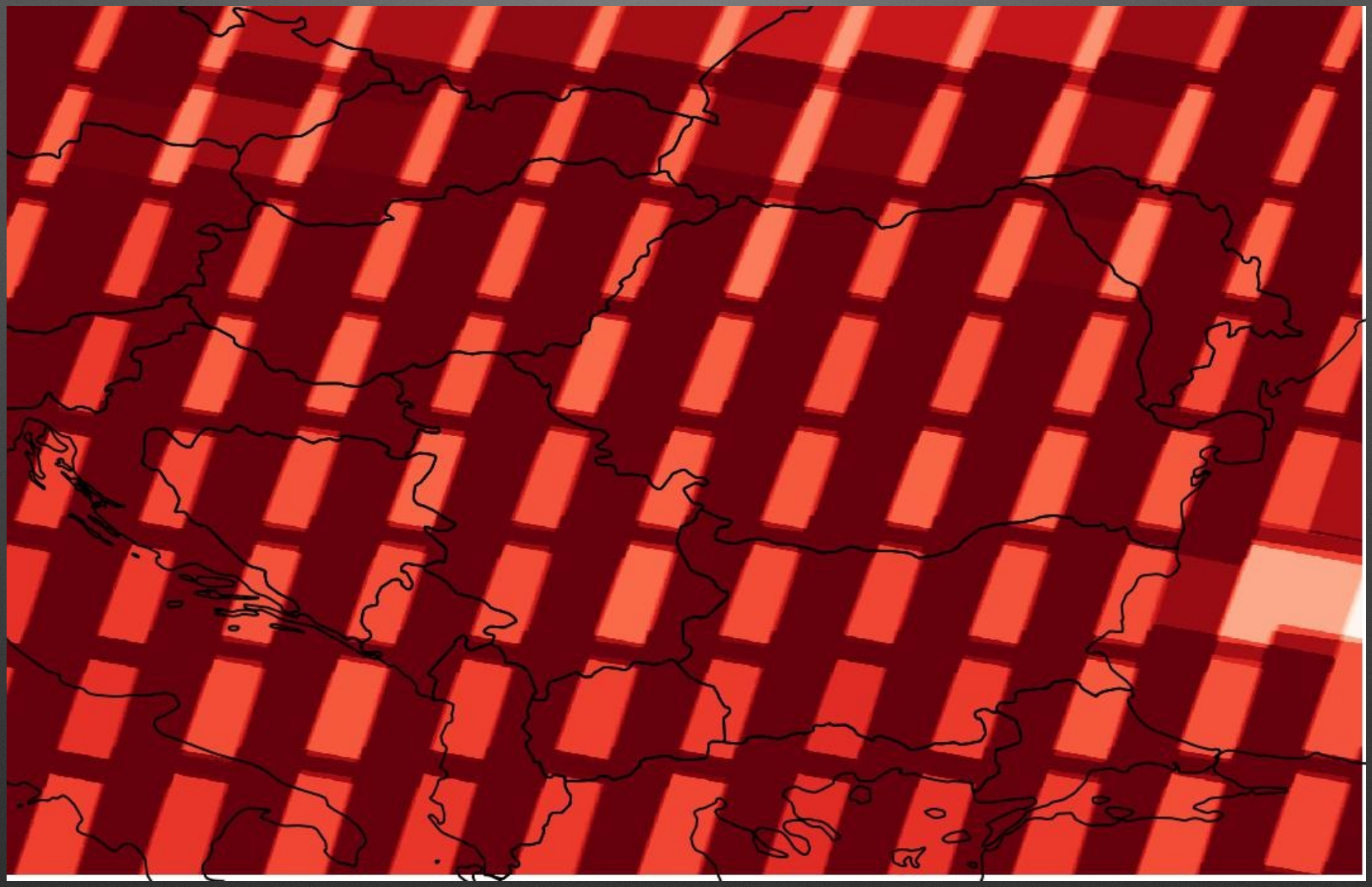
Challenges

- the archive is thin in earlier periods
- small changes in the landscape
- subtle (but important) changes
- fairly large area to be monitored
- capacity

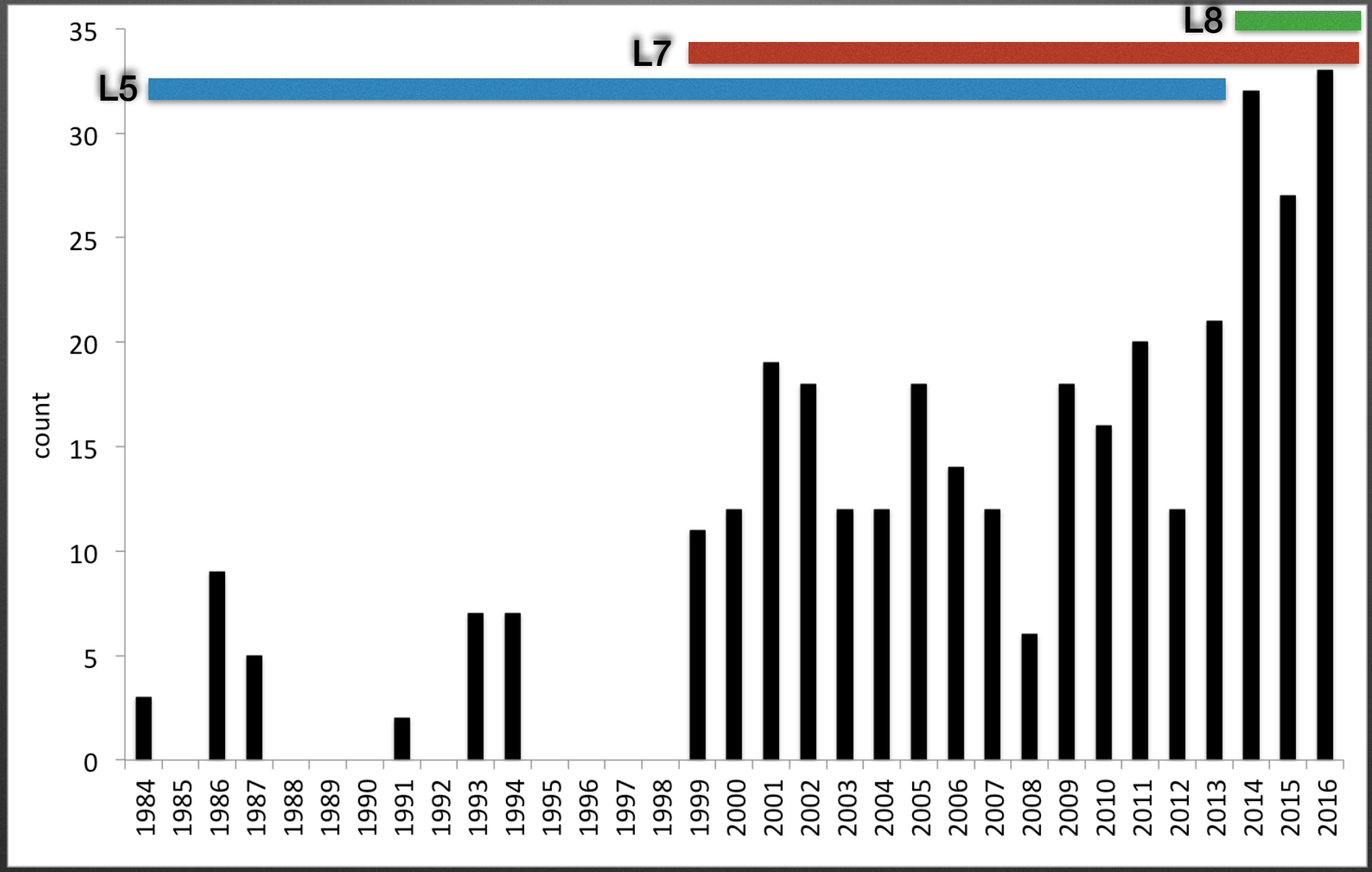
Landsat acquisitions 1984



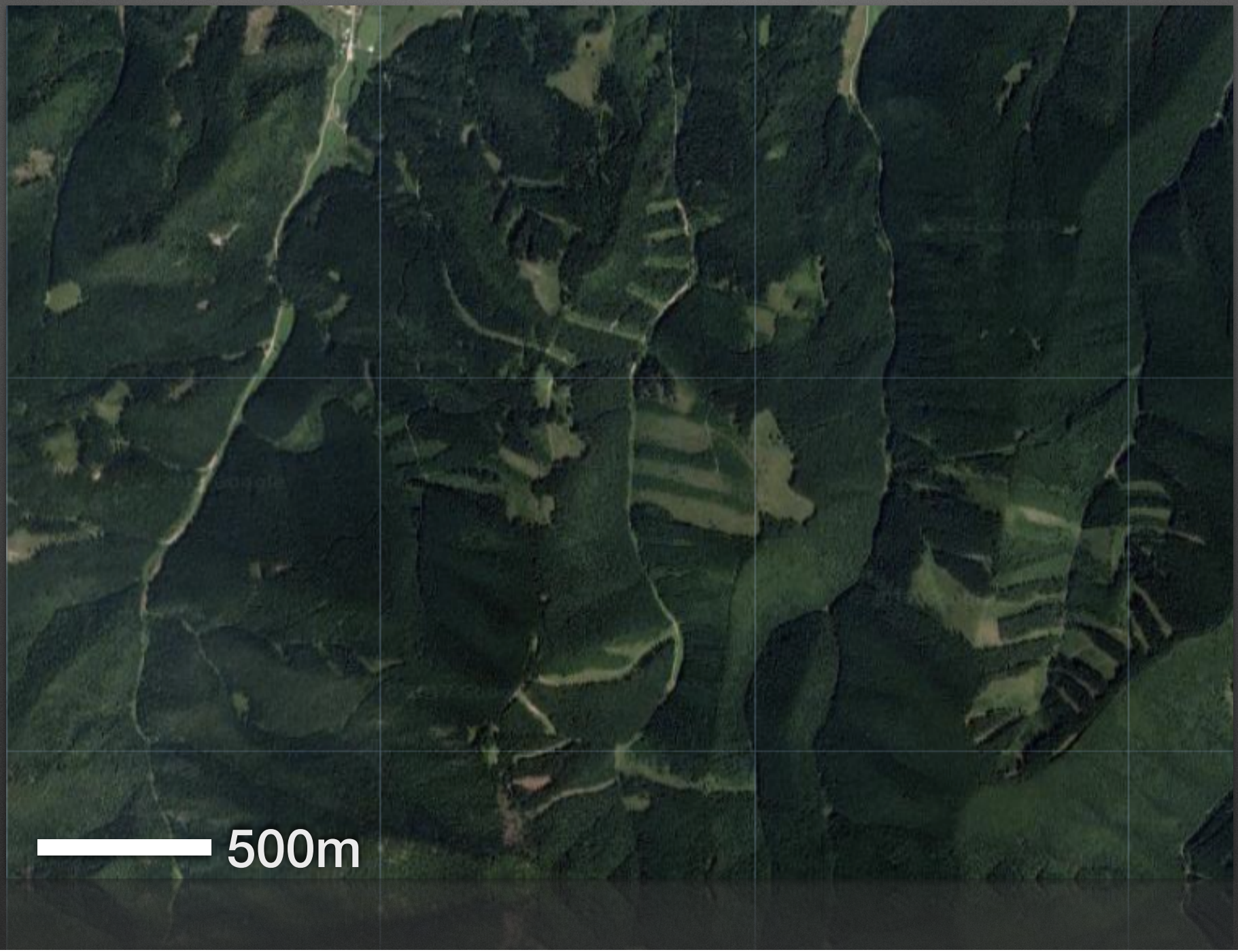
Landsat acquisitions 2016



Landsat acquisitions Czechia



Forest change in Czechia



Forest recovery in Hungary

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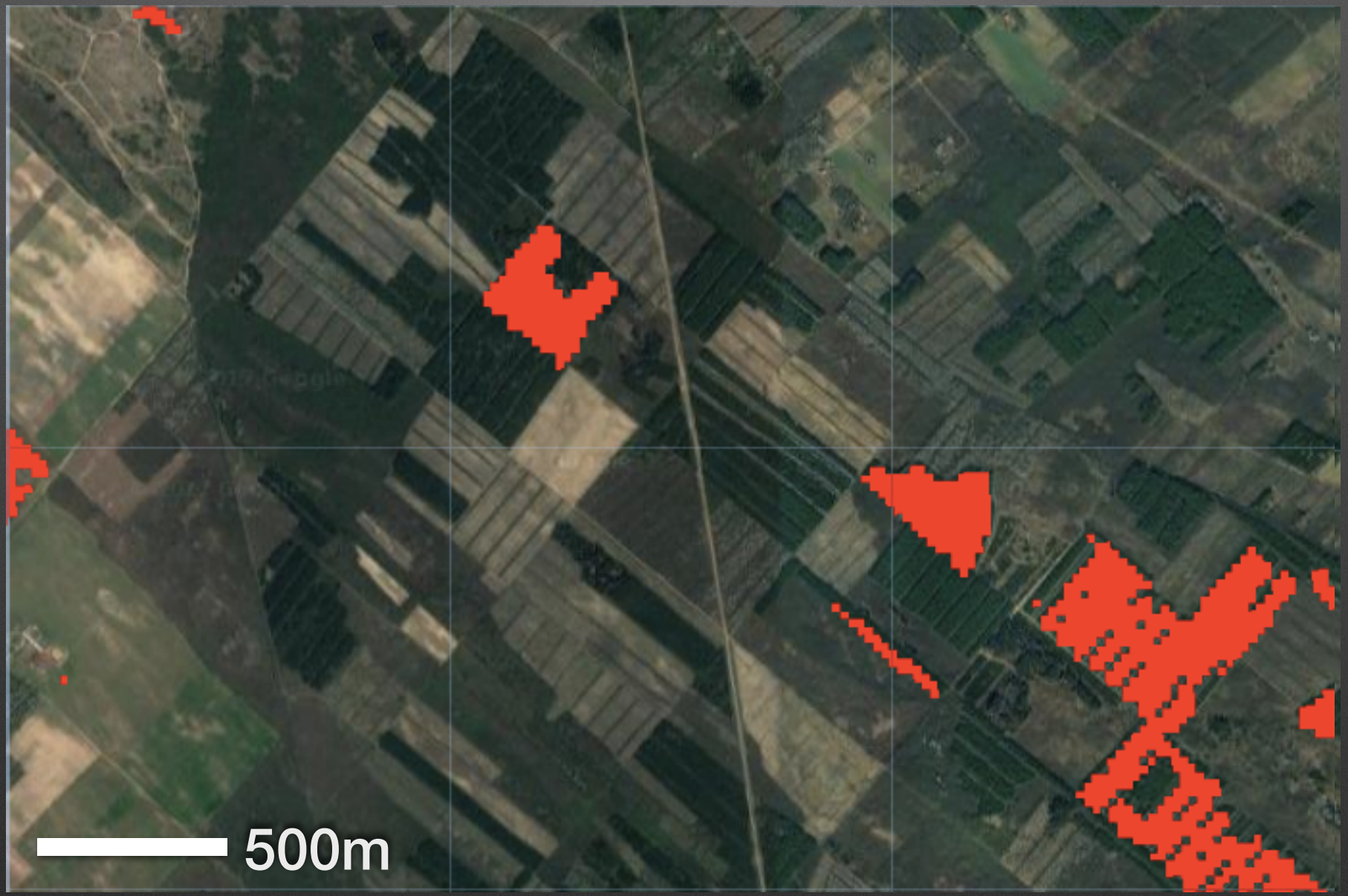

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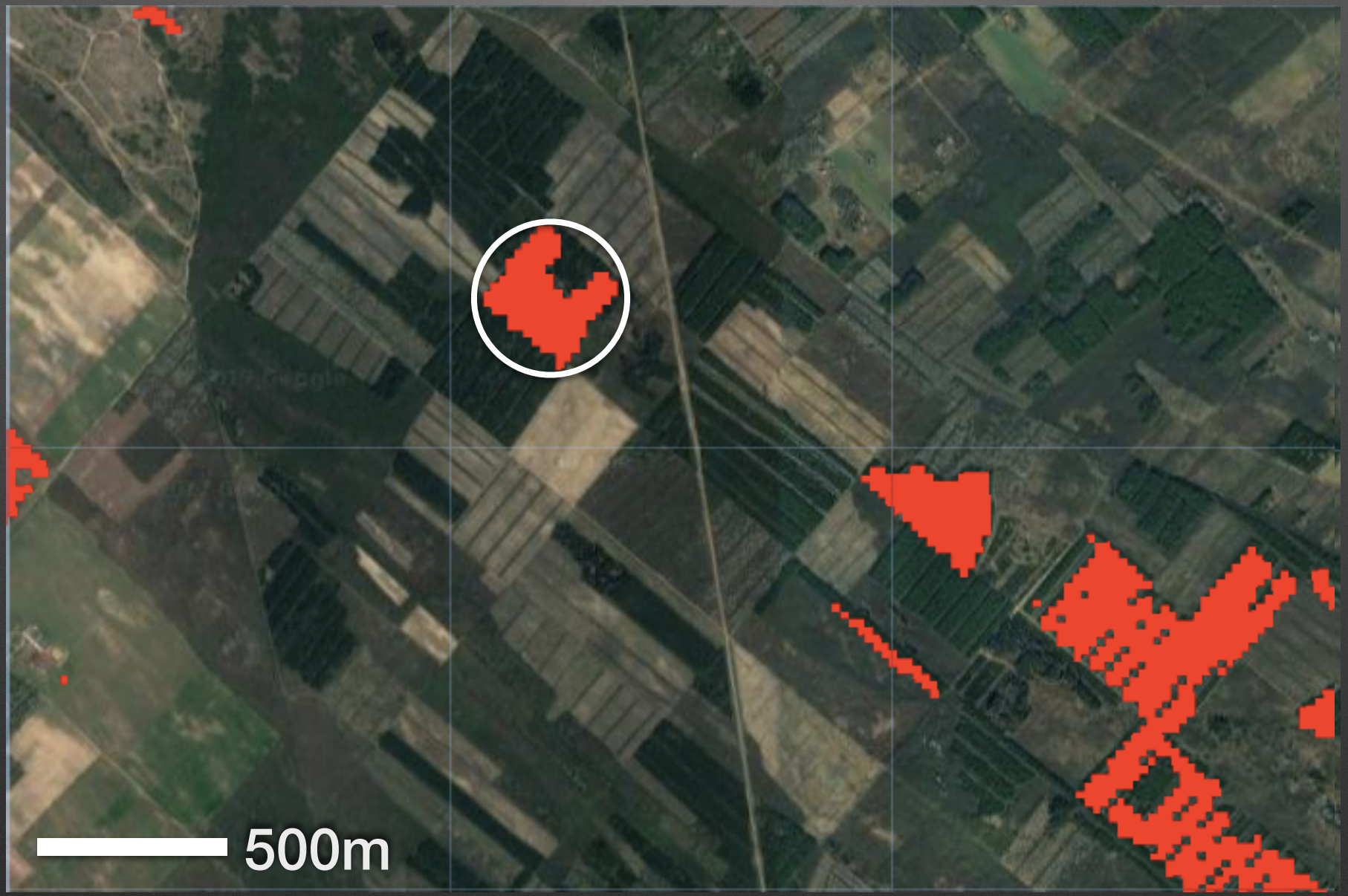

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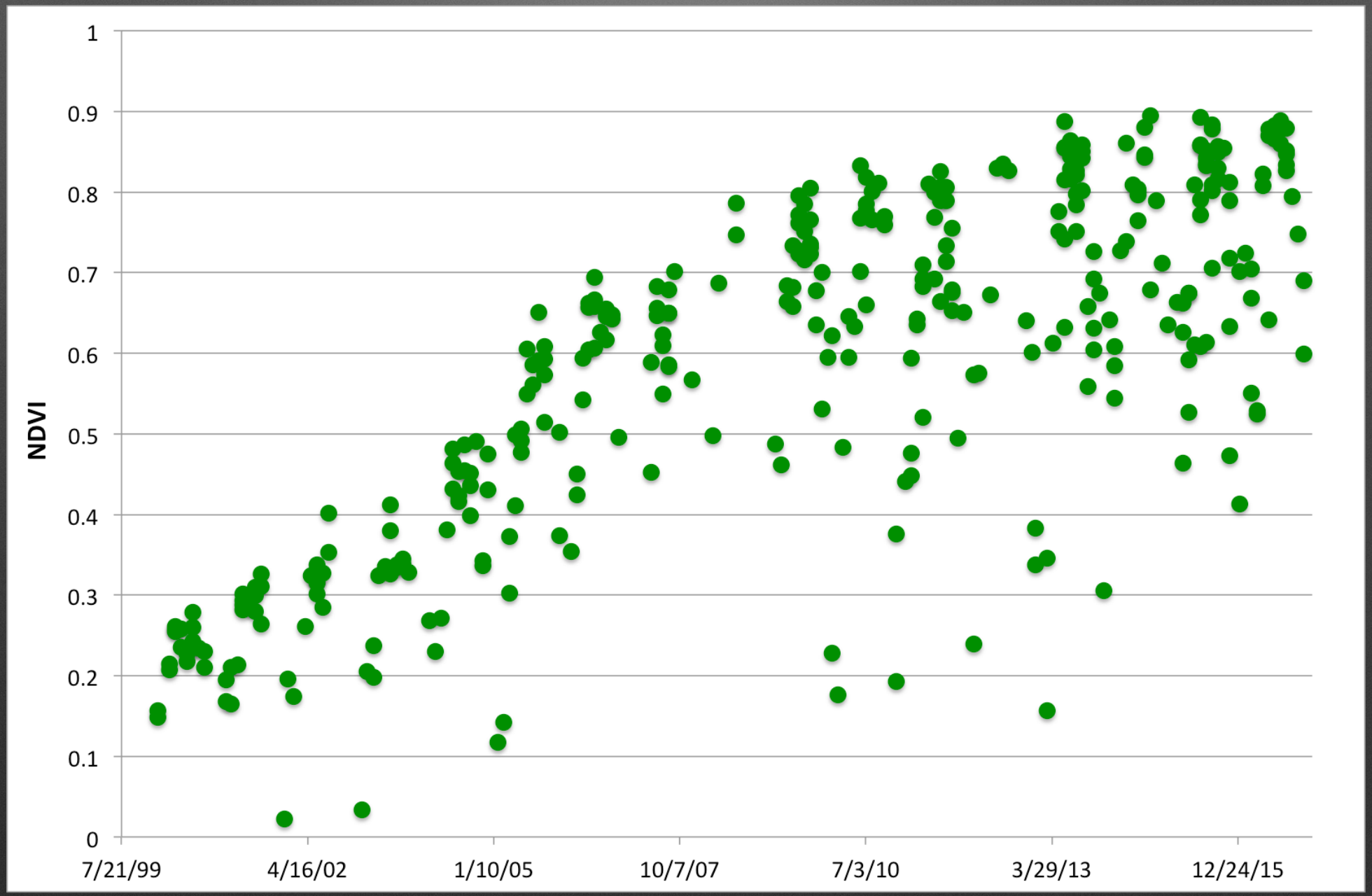

Opportunities

- improved observations (but we still need the archive!)
- better access to data
- better tools for qualifying change
- cloud computing
- more attention to capacity building
- inclusion from different regions and disciplines

Forest disturbance in Slovakia

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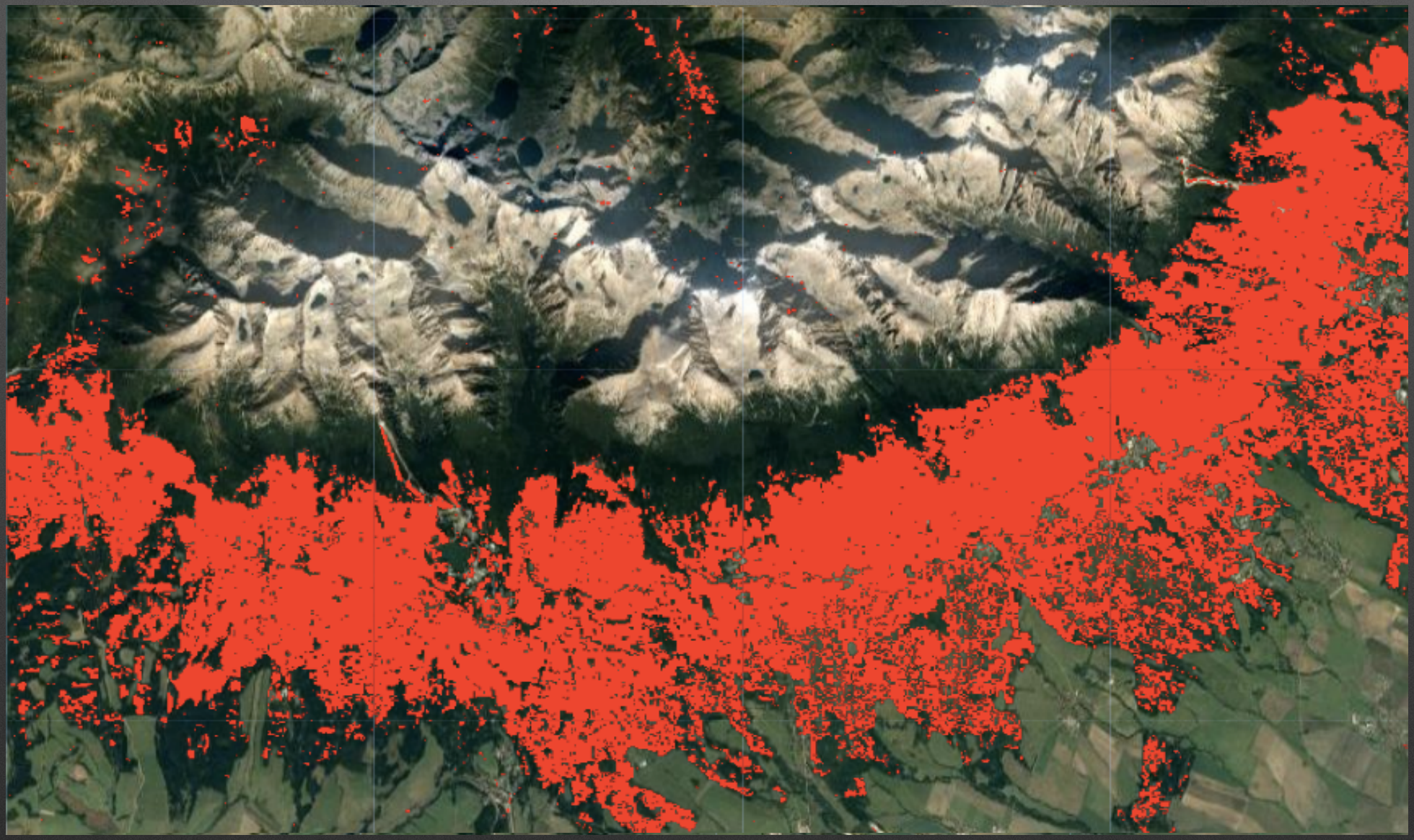
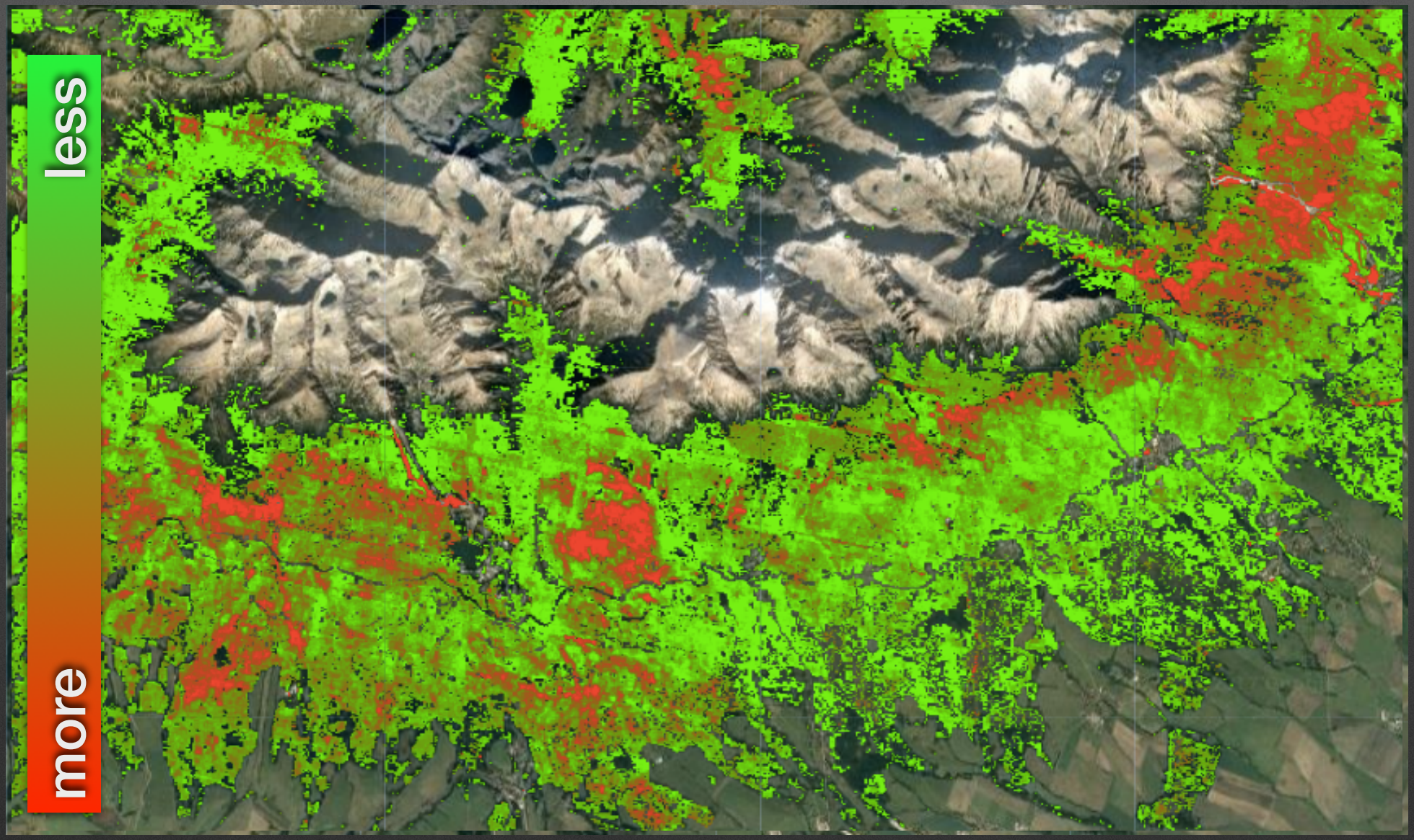


forest loss layer from Hansen et al

Forest disturbance in Slovakia



temporal segmentation of Landsat archive

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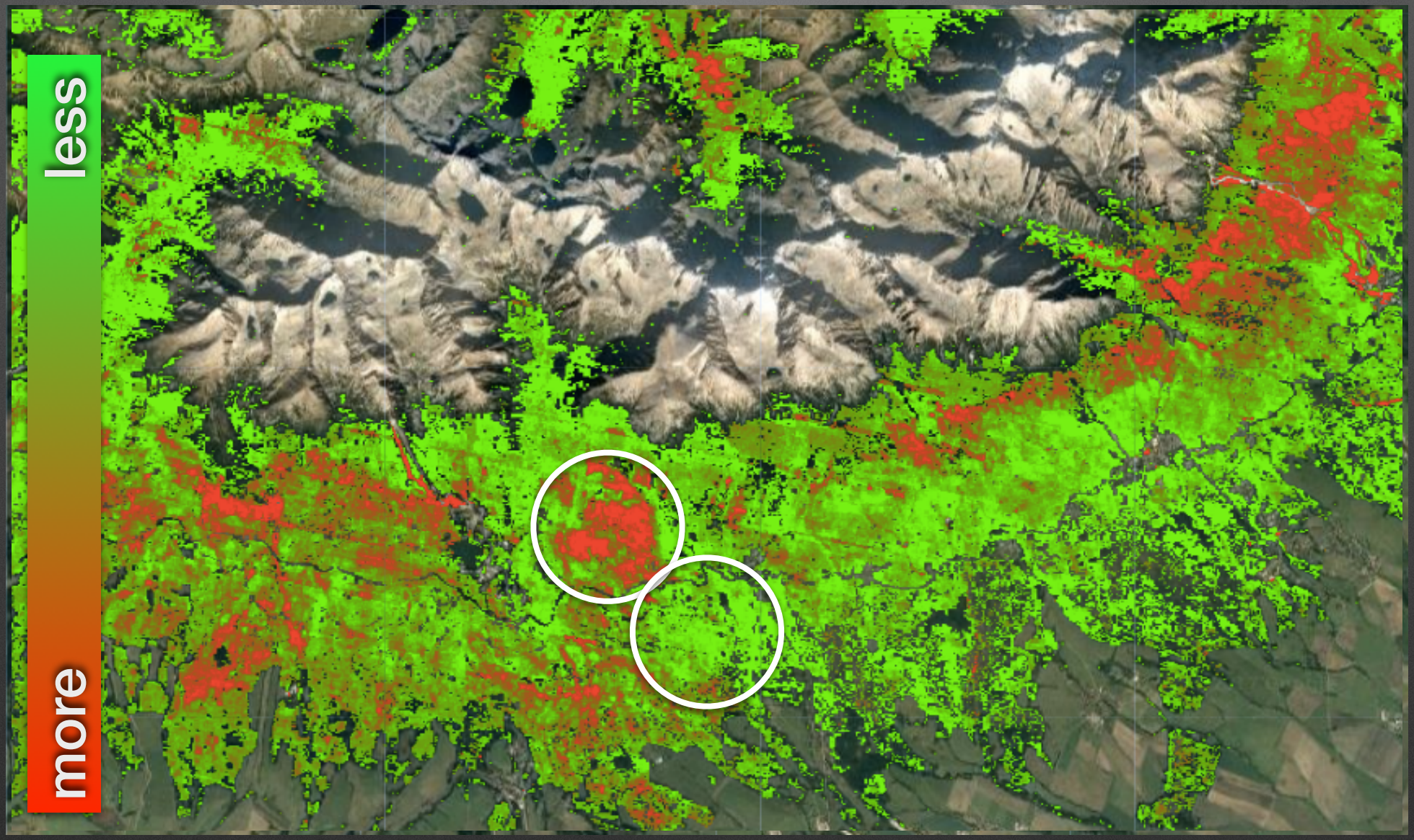

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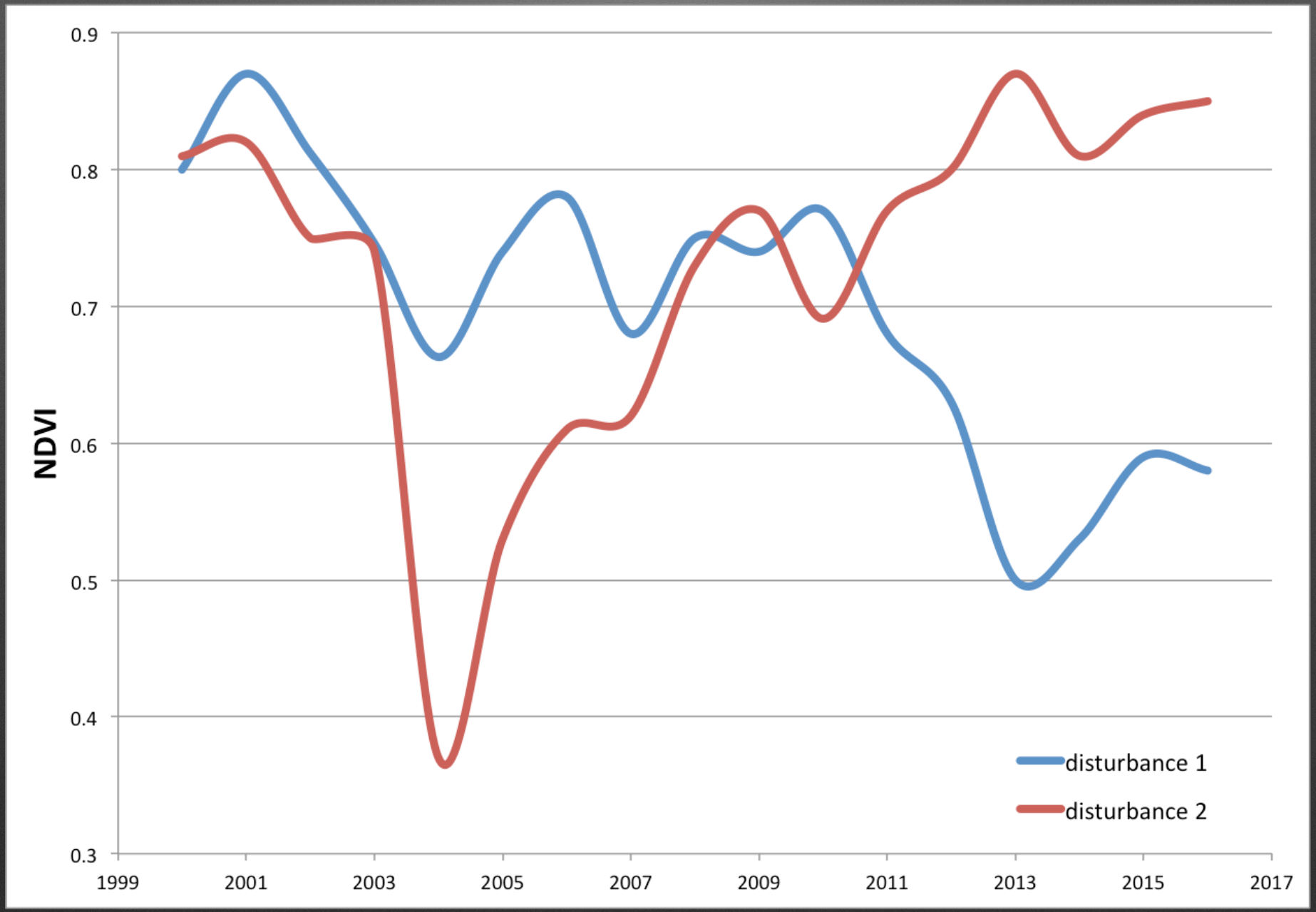

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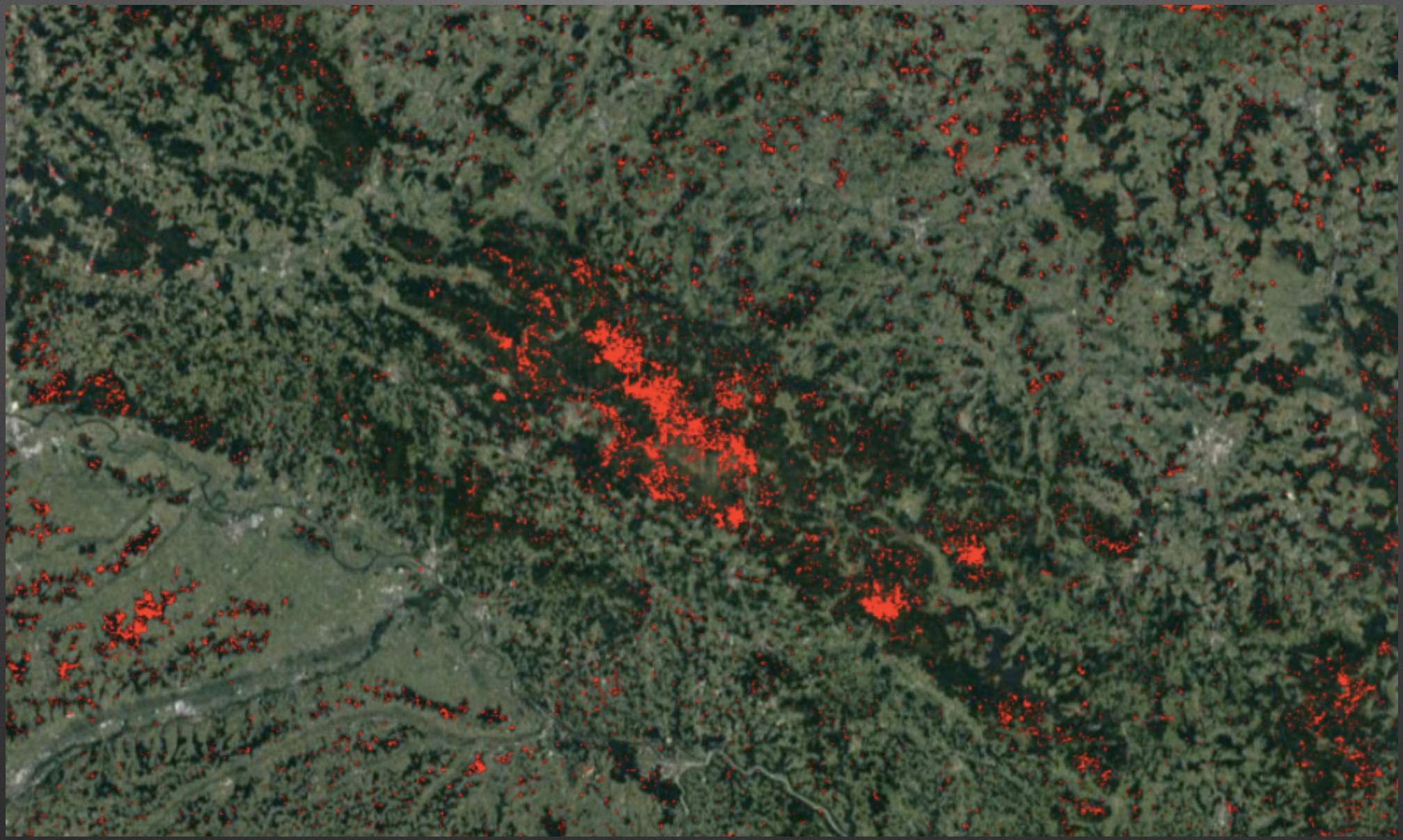

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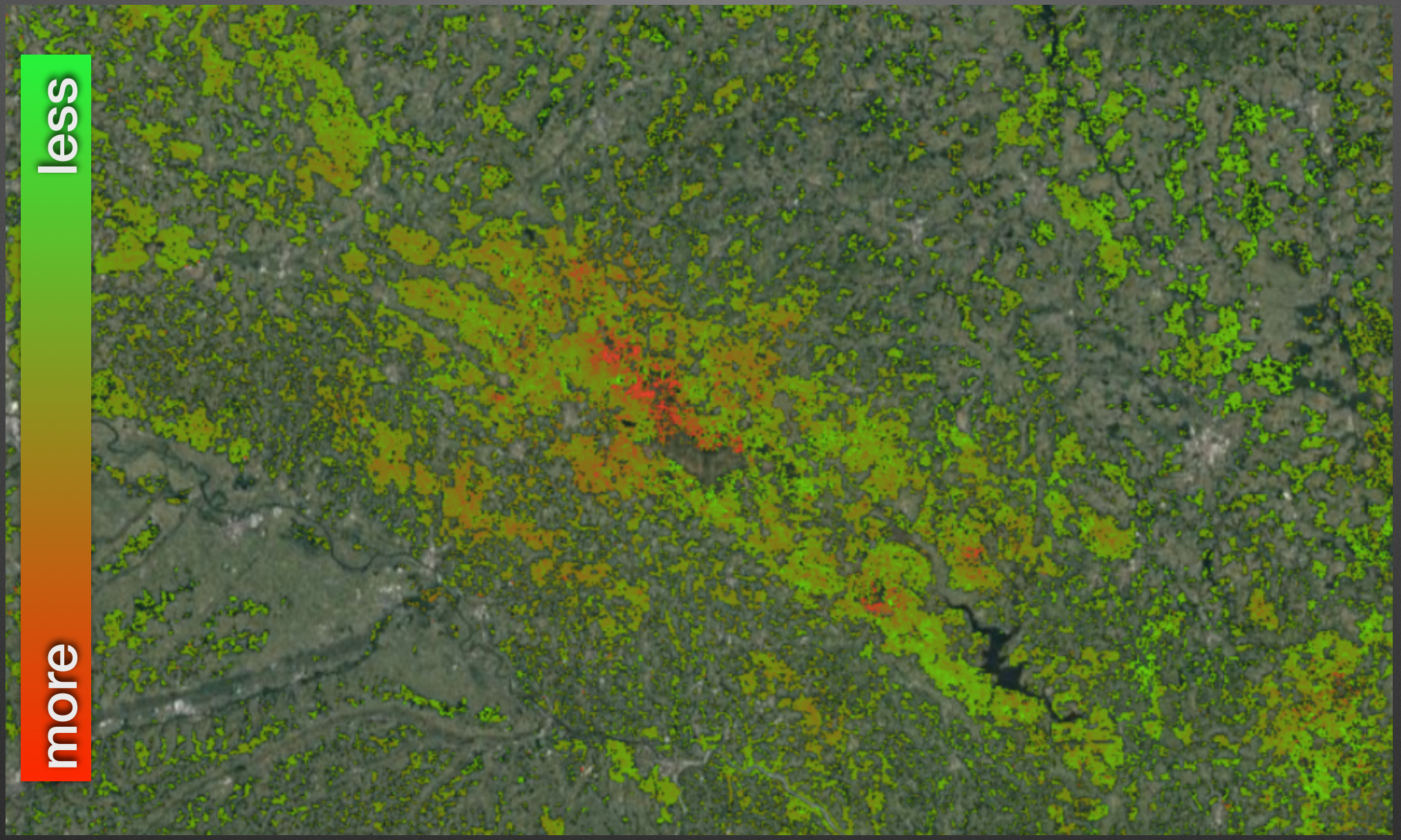

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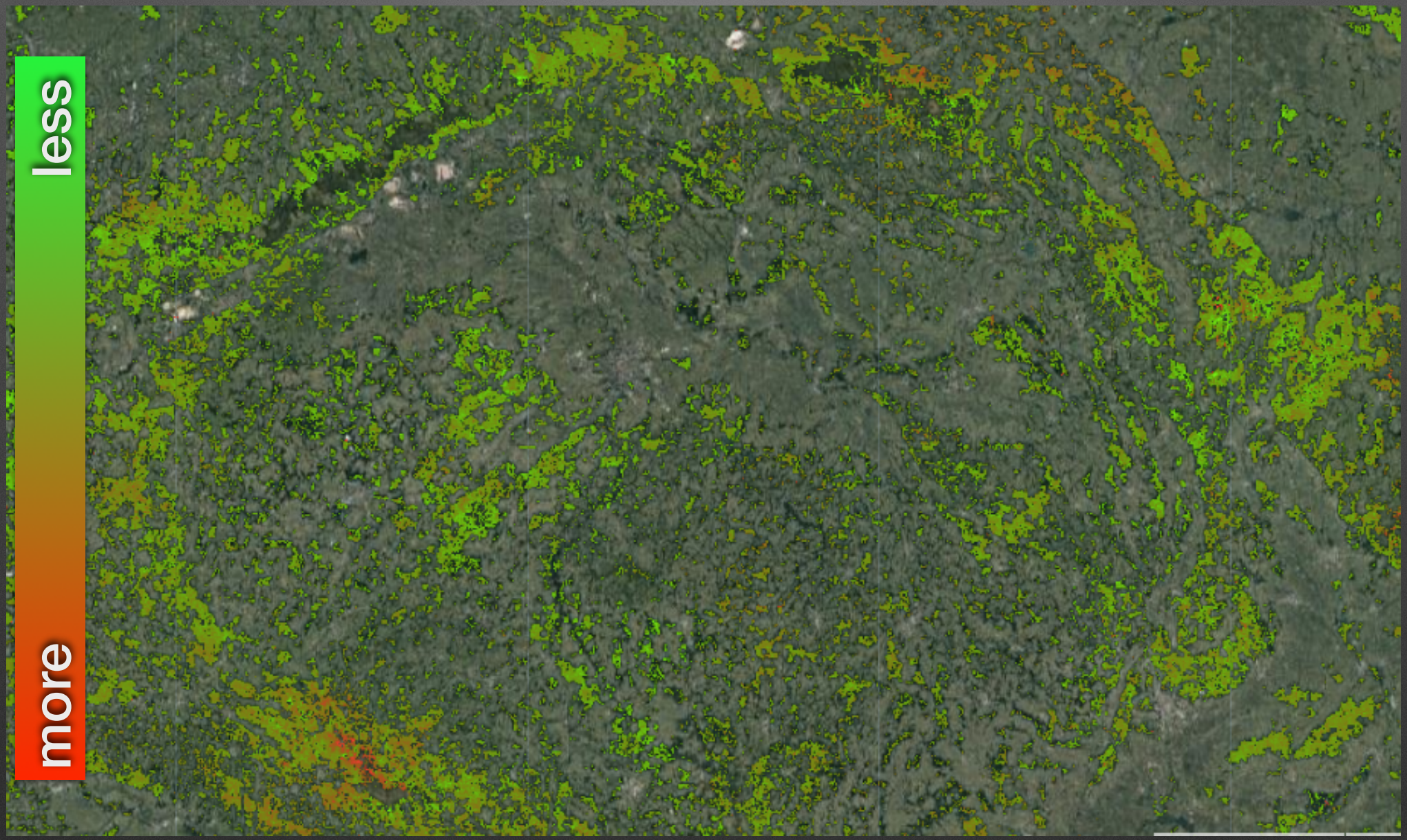

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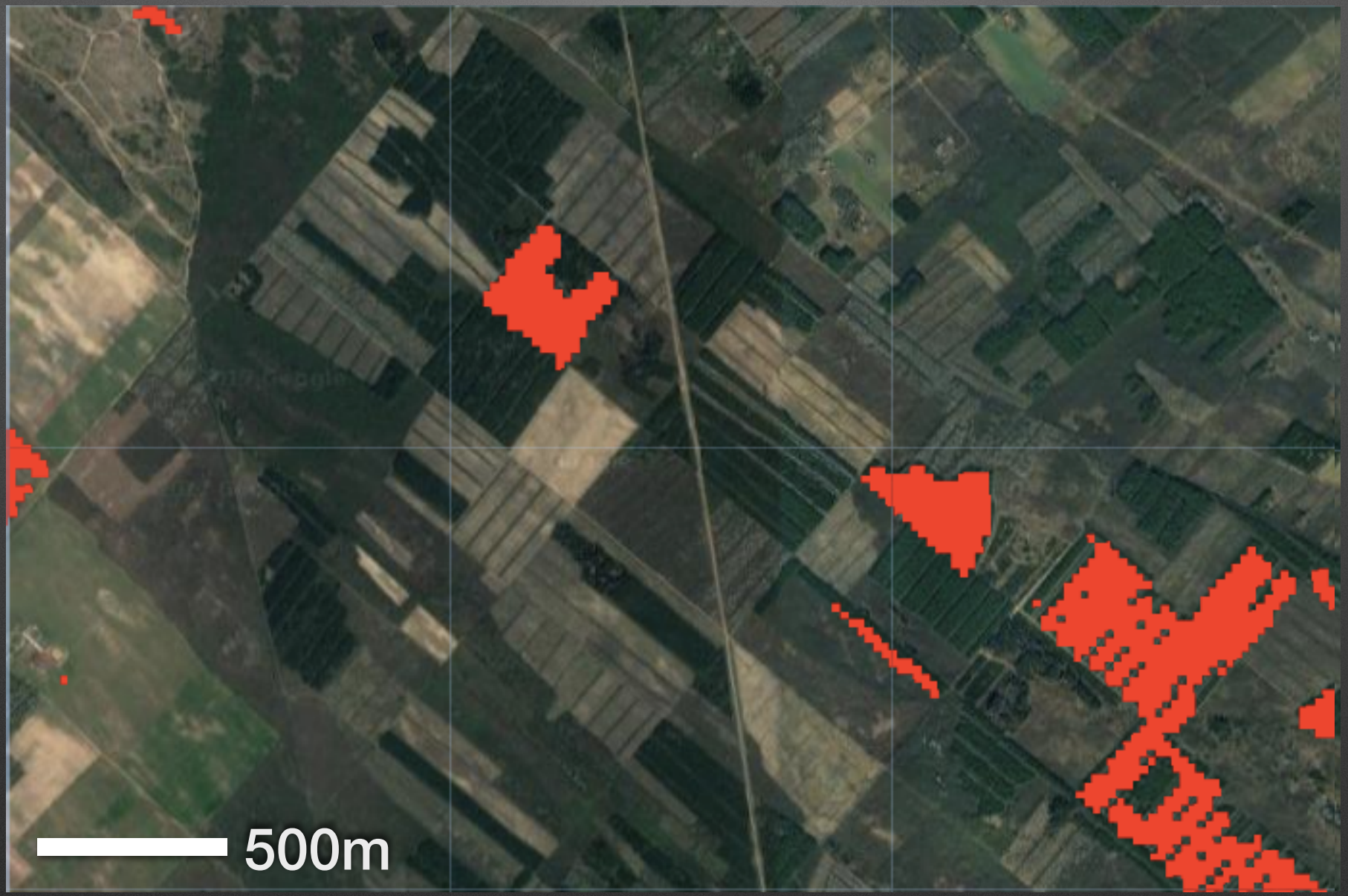

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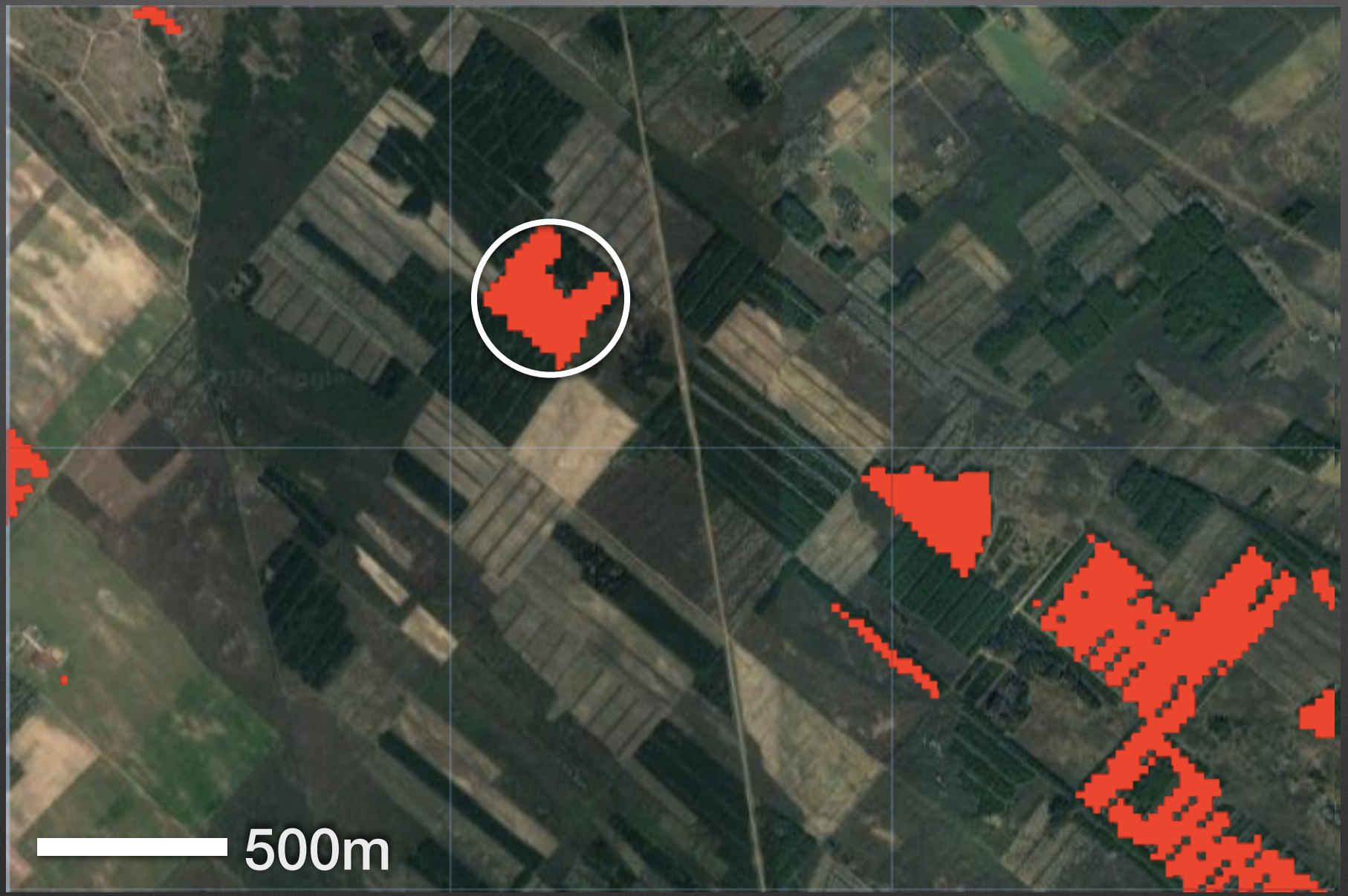

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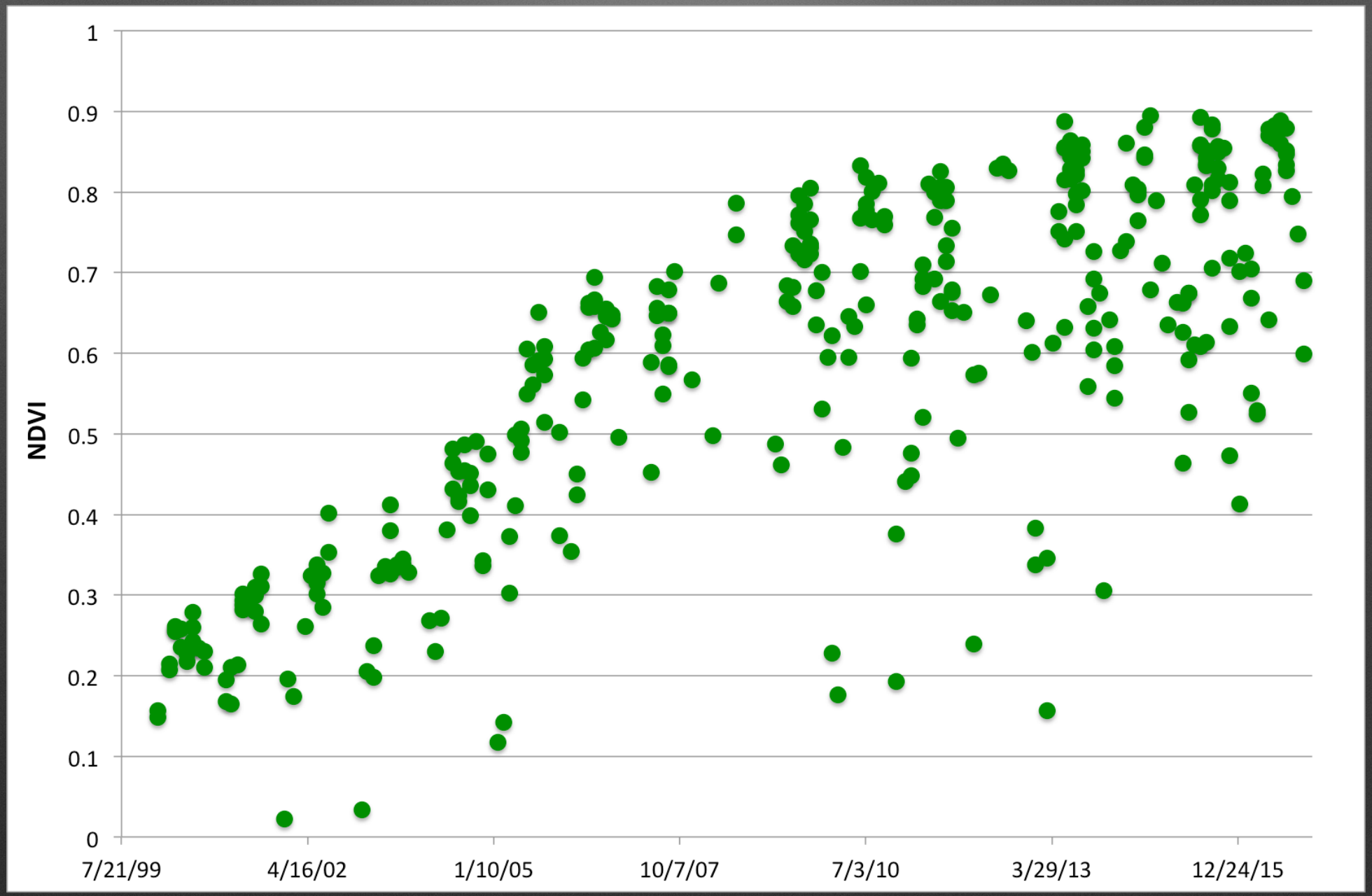
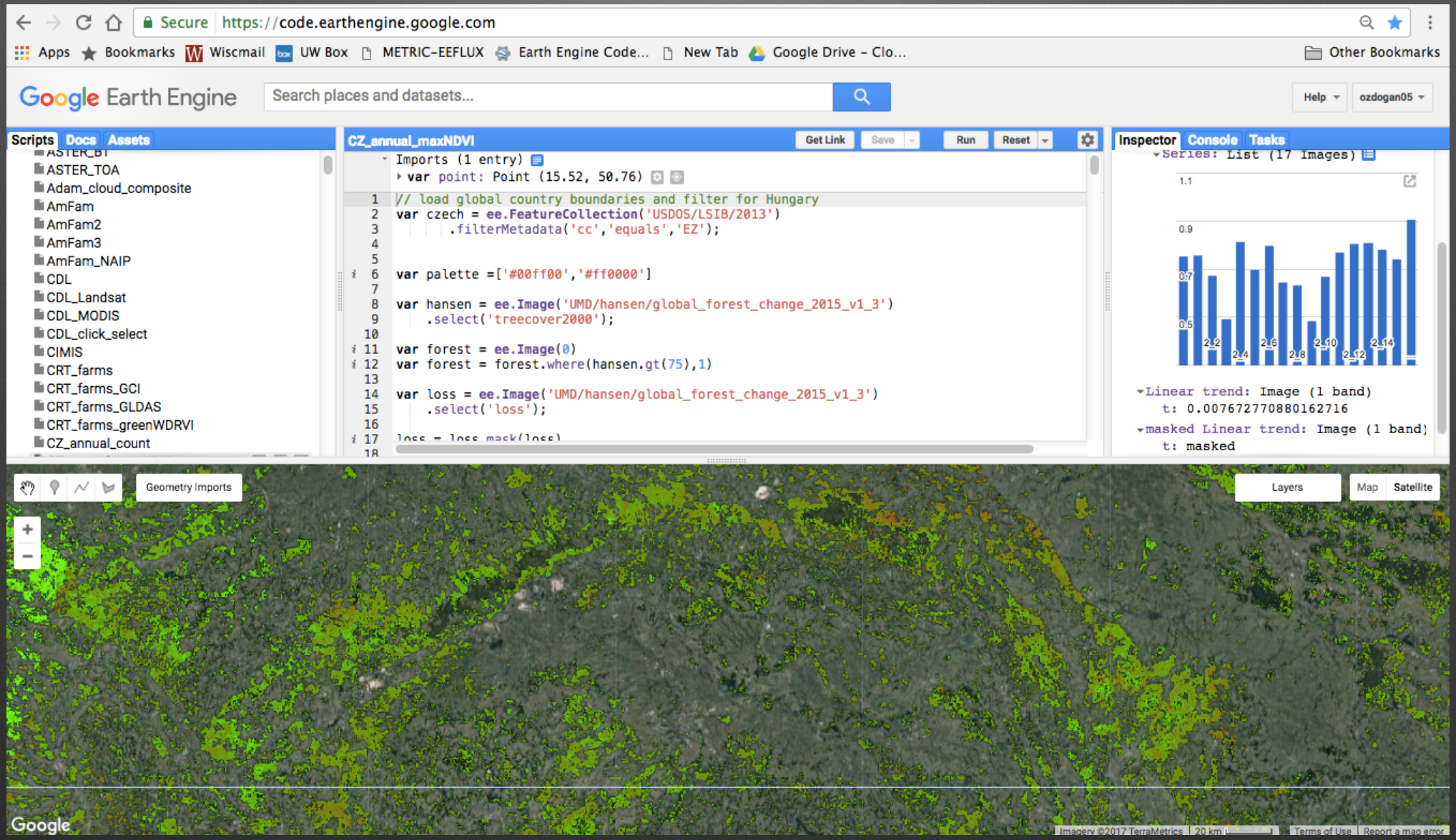


Cloud computing



Capacity building

Capacity building

Summary

- We have better tools/data quantify landscape changes
- We can better characterize/qualify these changes
- We are working on quantifying/reducing the uncertainty of our estimates
- We are integrating observed changes with biophysical variables
- Cloud-based tools are a big help to map variables over large areas
- We will do a better job in future conservation/resource management

Thank you

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