NAFI – Update and related research

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- NAFI update.. Funding etc
- Landsat burnt area image service.
- Other research and training
  - Fire edge research
  - 4D fire spread simulation.

NAFI funding update

NAFI is currently funded by the Federal Department of Environment and Energy (DoEE) because of their responsibilities for the fire and carbon projects.

Funding for NAFI has been extended until June 30 2018. In this time the DoEE aims to work with the major stakeholders in NAFI will to secure a longer-term funding agreement.

This longer term agreement will likely:

- Involve only the basic service – the regularly updated fire scar mapping and fire histories and the map viewer and hotspots feed etc. It won't for example include the reporting tools.
- Reduce the dependency of NAFI on CDU infrastructure. For example, the NAFI website could be hosted on a cloud server
- Allow the NAFI 250m fire scar data to be easily distributed across a number of platforms

NAFI funding update

The longer term agreement may involve a mapping extent covering much of the fire prone rangelands or it may be restricted to the high fire frequency rangelands (north of 20^{o}S).

The estimated costs for a basic NAFI service is around $500K per year. The extension of the fire scar mapping outside the high fire frequency areas is relatively inexpensive (<100K per year). The spend may be somewhat higher in the initial year to put appropriate systems in place.

The preferred funding model is for the basic NAFI service to be funded by the Federal Government over a number of years – rather like a mini BOM for rangelands fire. The transaction costs for collecting a fee for service from all beneficiaries is unlikely to be justified given the overall budget.

A business case will need to be developed.

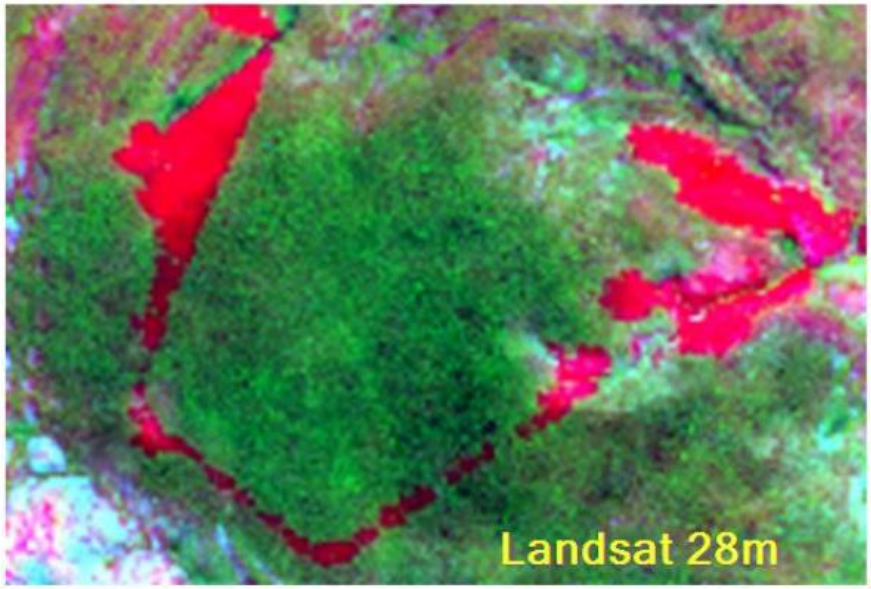
NAFI funding update

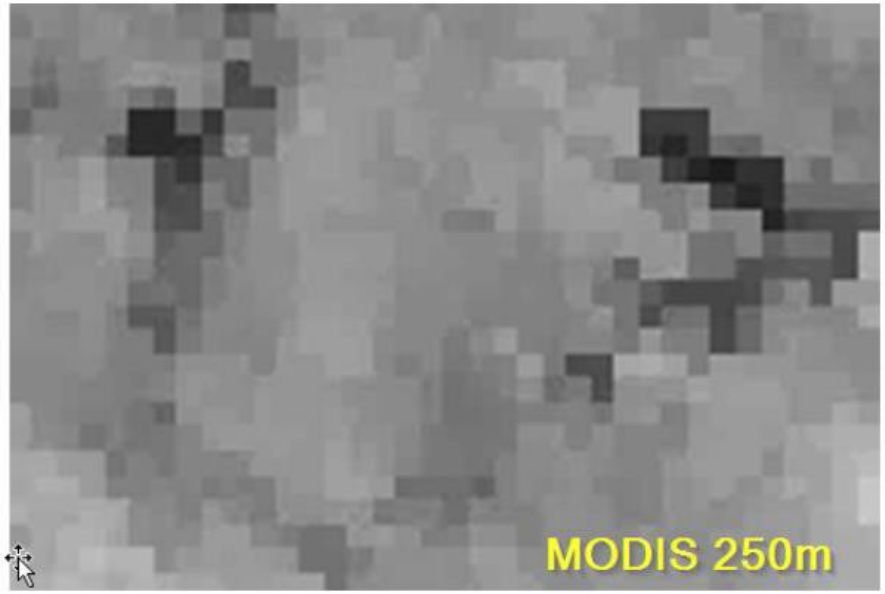
The longer term agreement will need to be shaped by the major stakeholders in the NAFI service – those who perceive they have the most to gain and lose from the nature of its future. These are likely to be:

- North Australia and rangelands fire managers. E.g. Fire agencies that operate in these areas, the Savanna Burning carbon industry, Park services in areas, Indigenous organisations conducting fire management.
- The Federal Government, given its obligations under the ERF legislation and its 55 contracts with Savanna Burning proponents, and given the public good assets at risk.

CDU, as a teaching and research institution, is not a major stakeholder. As the main developer and operator of the service it can offer technical advice and support for the process – and is keen to continue to be involved in the future of the basic service.

Similarly BNHCRC is not a major stakeholder but can offer advice and support.





Increasing demand for Landsat-scale data to inform ongoing burning as it is clear that many smaller but operationally important early dry season burns are not effectively captured by the MODIS scale mapping provided through NAFI.

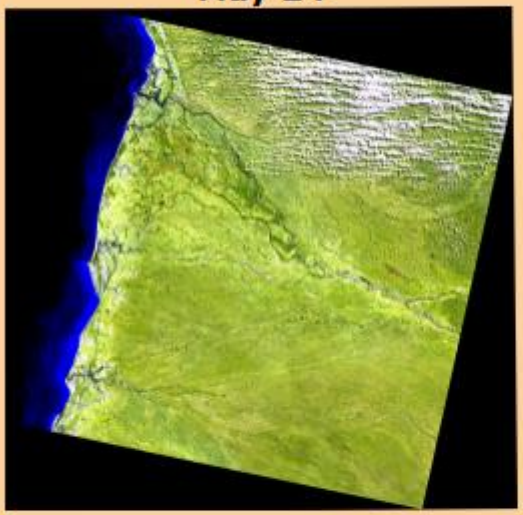
Development funding from NLC – top-up $ from QLDNP and others.

Download Landsat Fire Scar Images

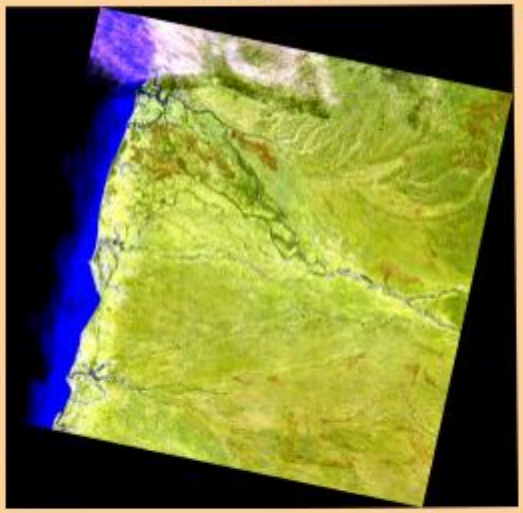
How to download the fire scar images

Please choose a day

May 24



June 09



June 25

Not available yet

August 12

Not available yet

August 28

Not available yet

September 13

Not available yet

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Imagery optimised/customised for visualising burnt areas and mobile device applications. Work in progress.

51 - /Landsat/098071/

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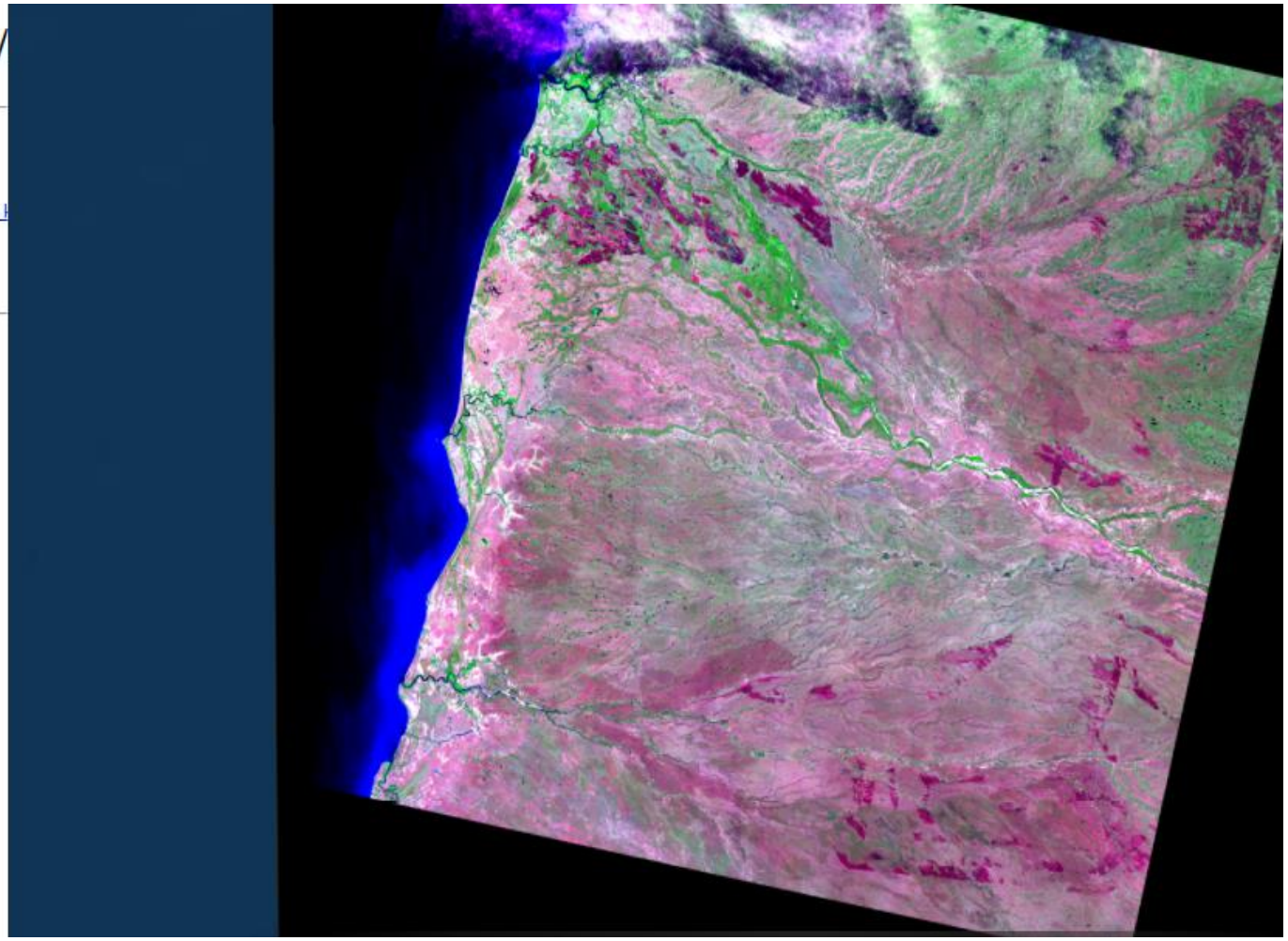

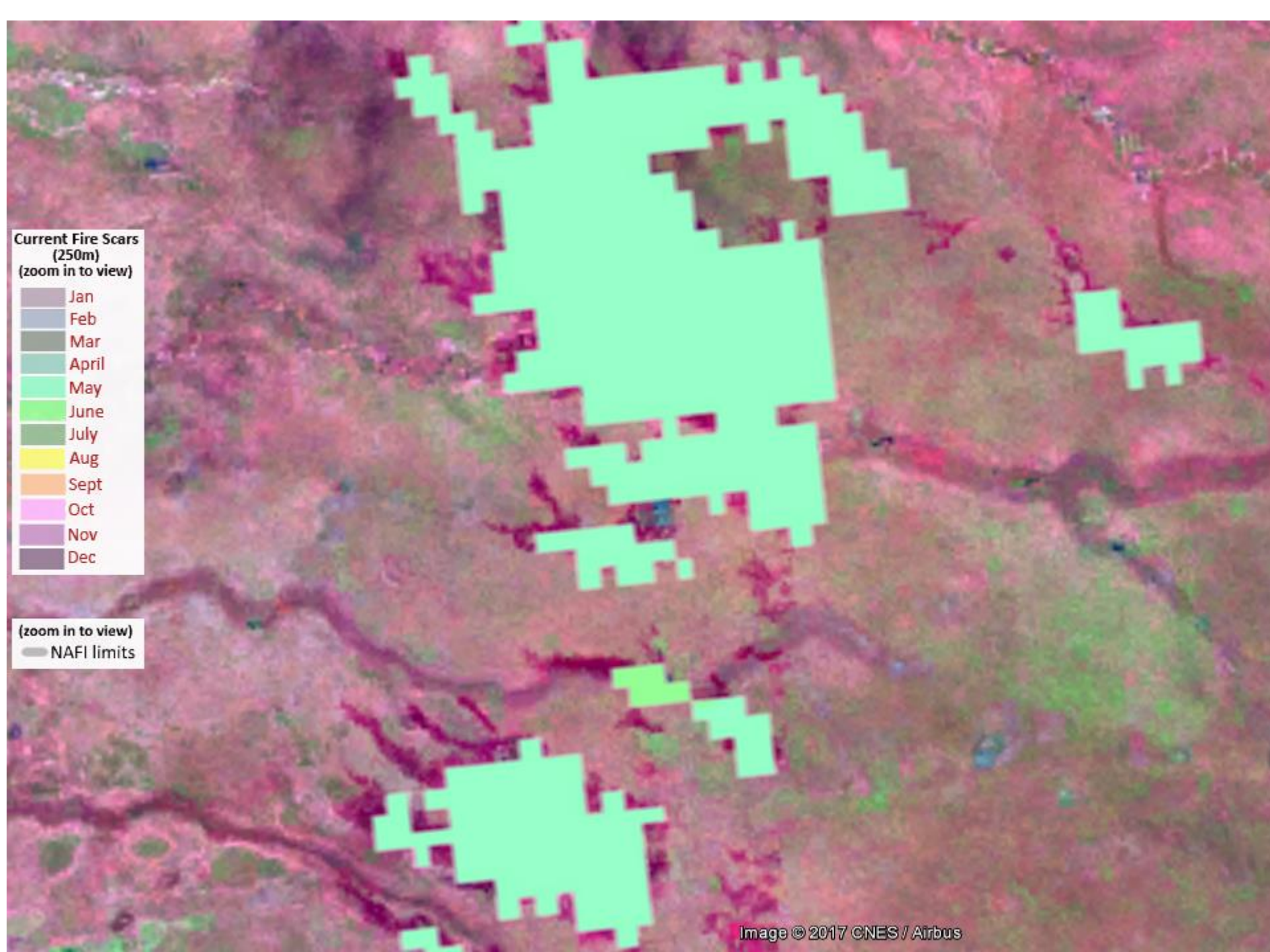
Current Fire Scars
(250m)
(zoom in to view)
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(zoom in to view)
NAFI limits
Image © 2017 CNES / Airbus

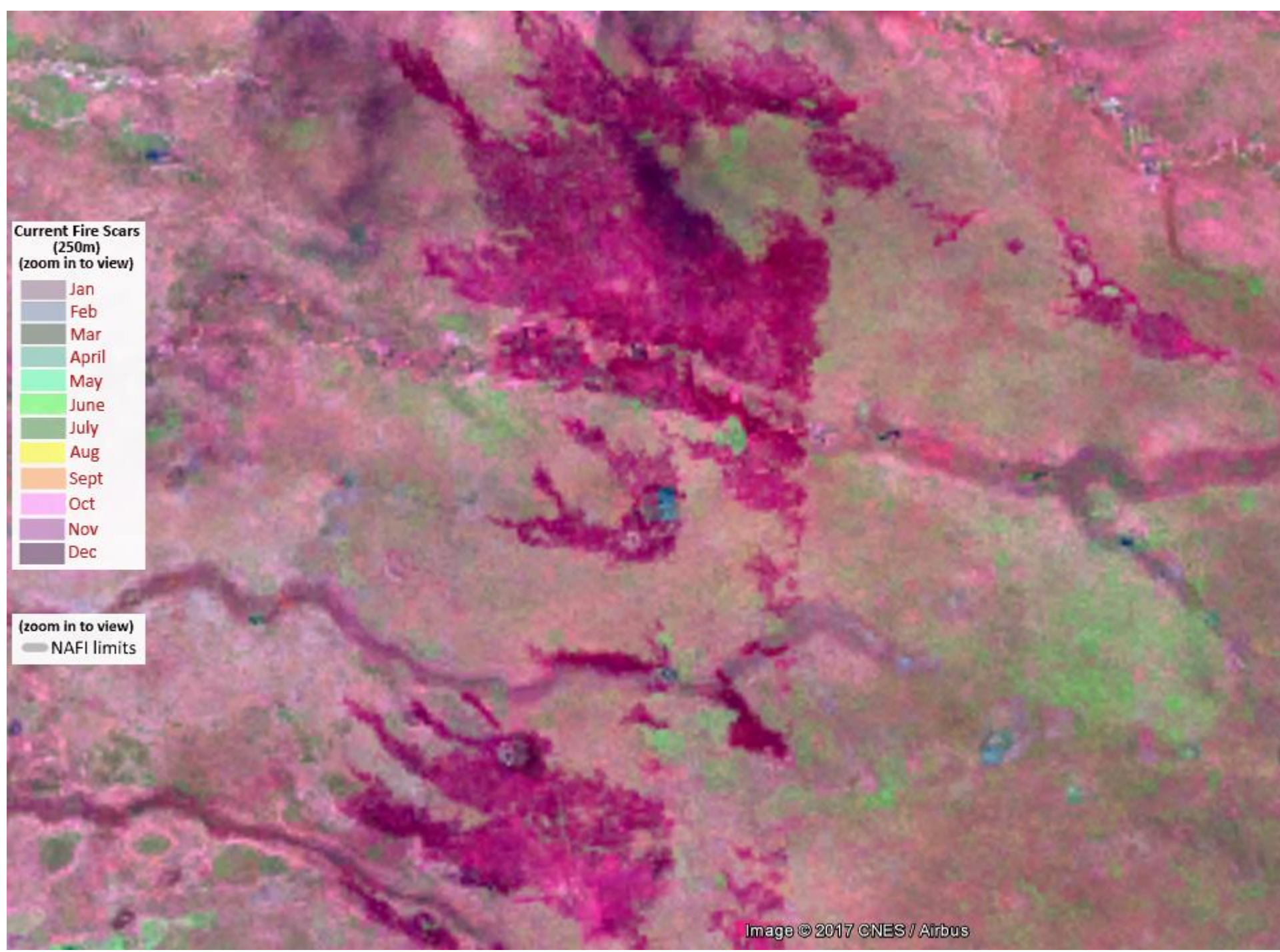
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Image © 2017 CNES / Airbus

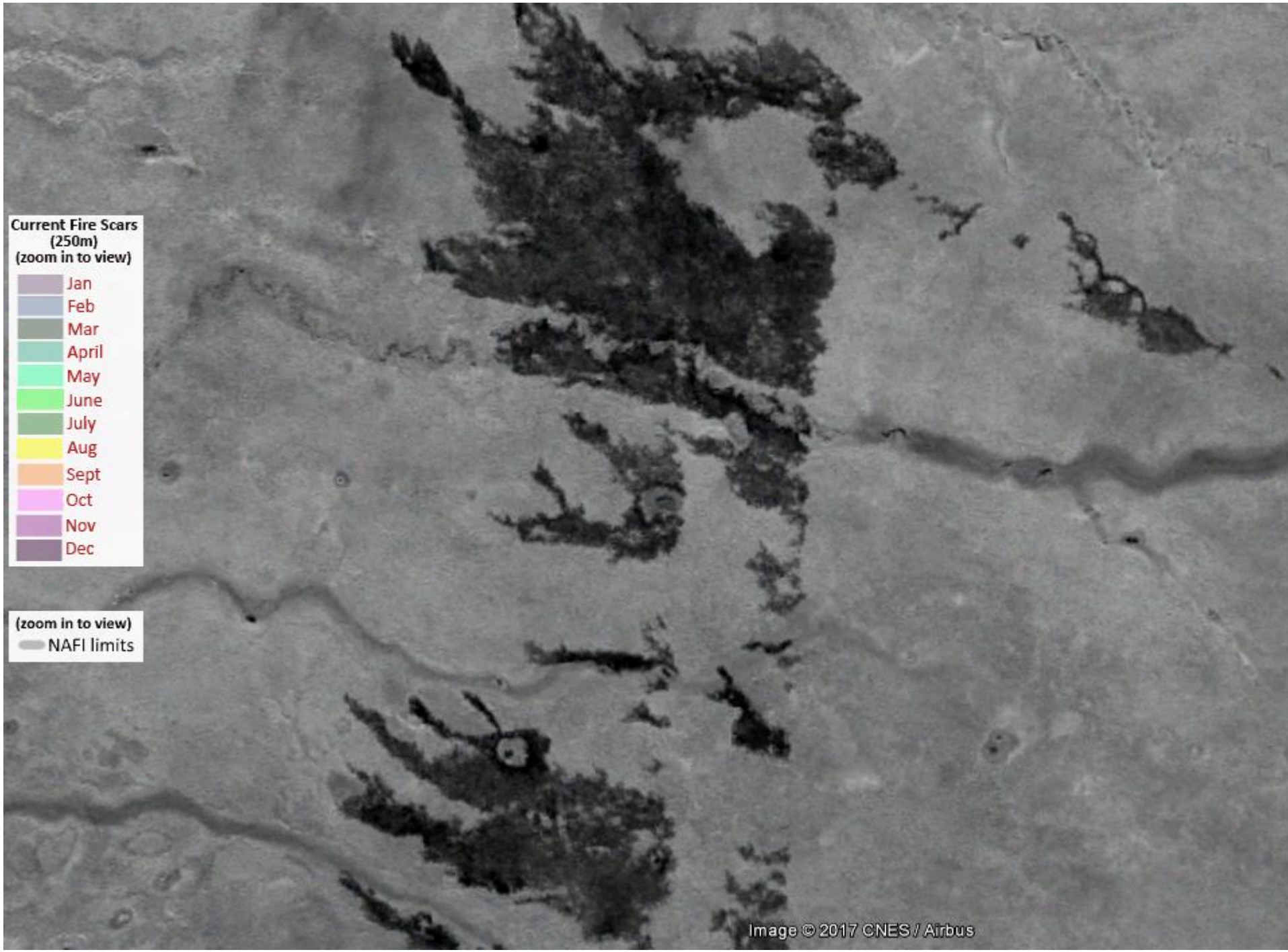
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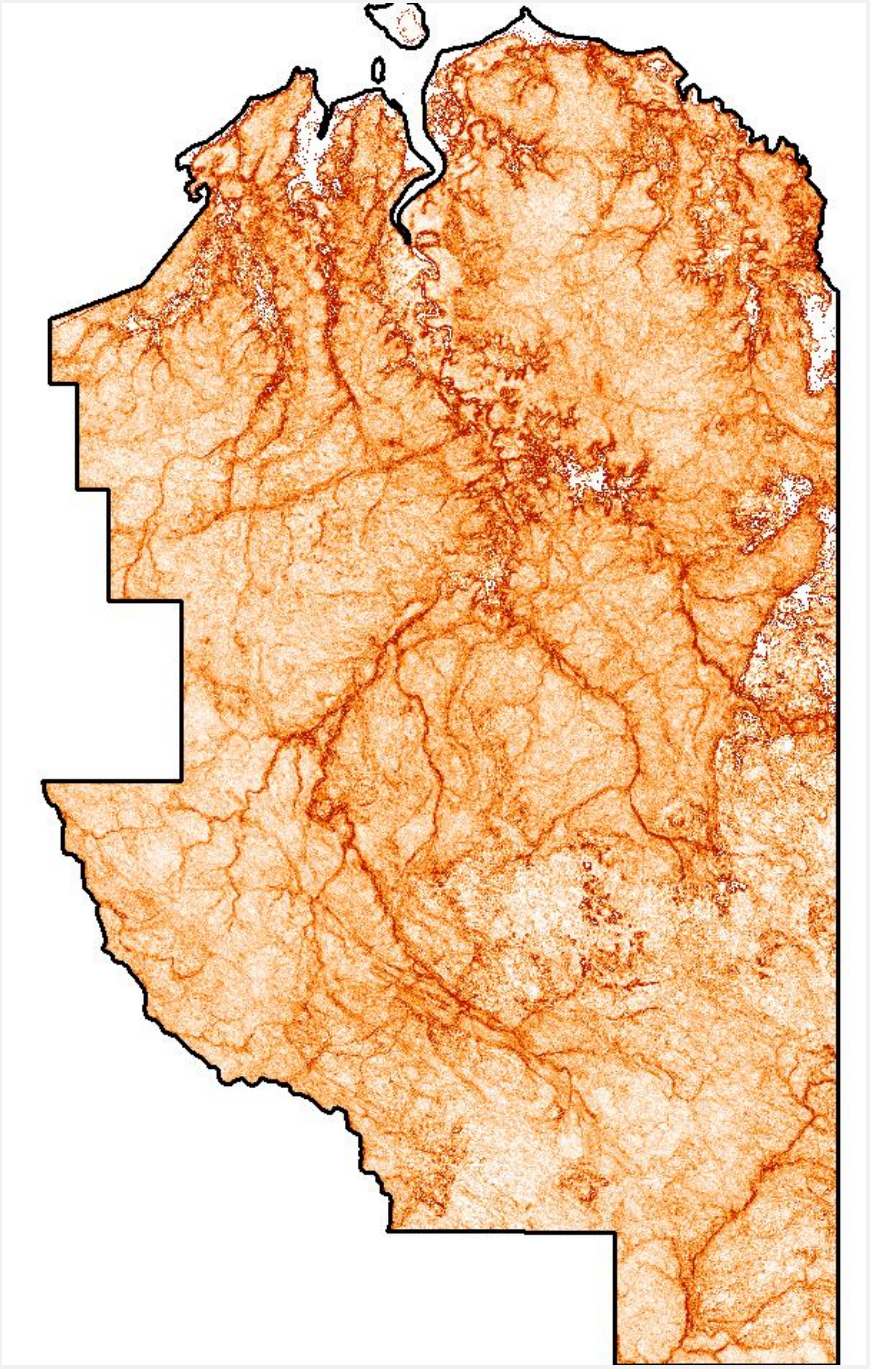
Image © 2017 CNES / Airbus

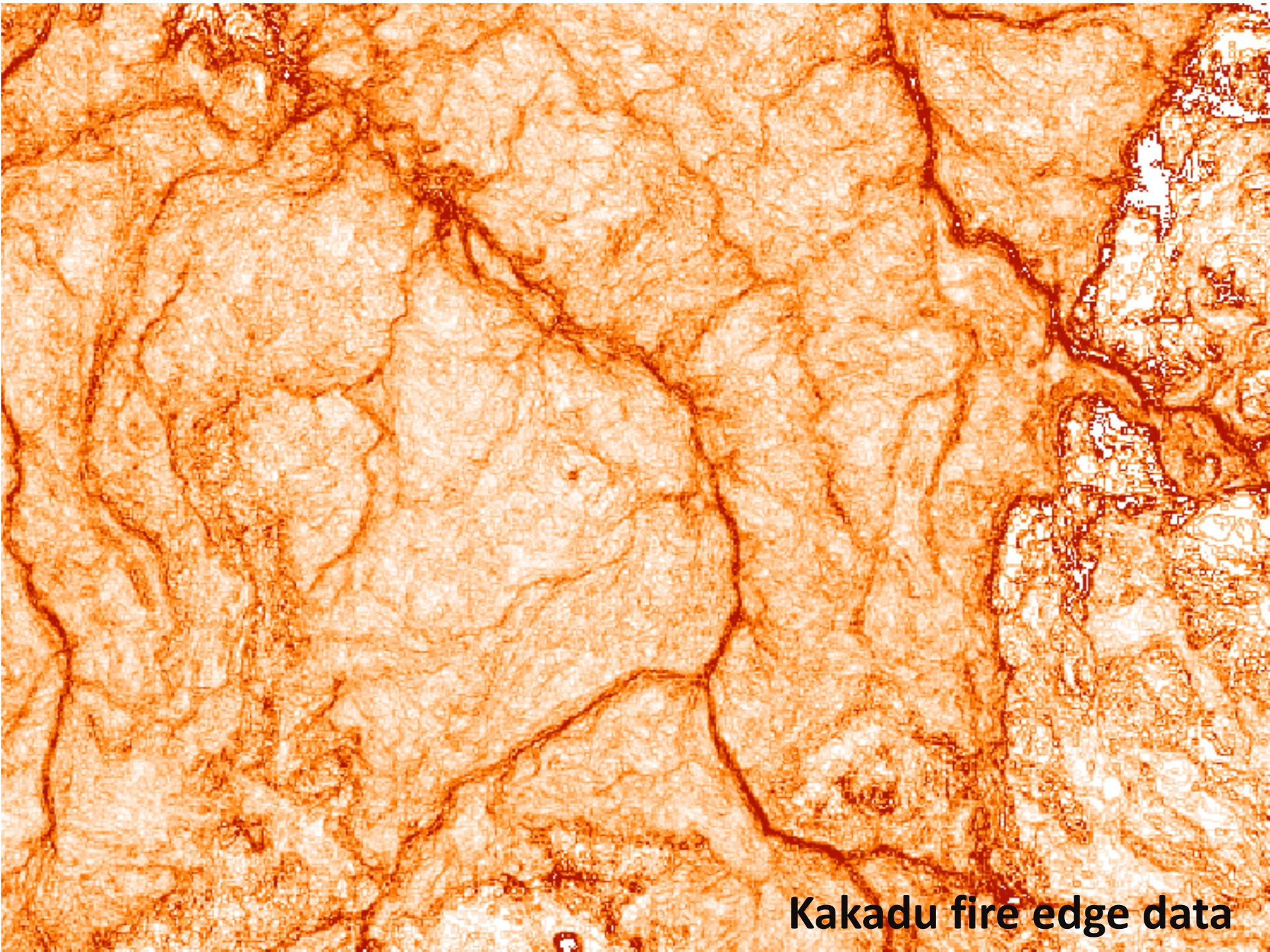
Other research

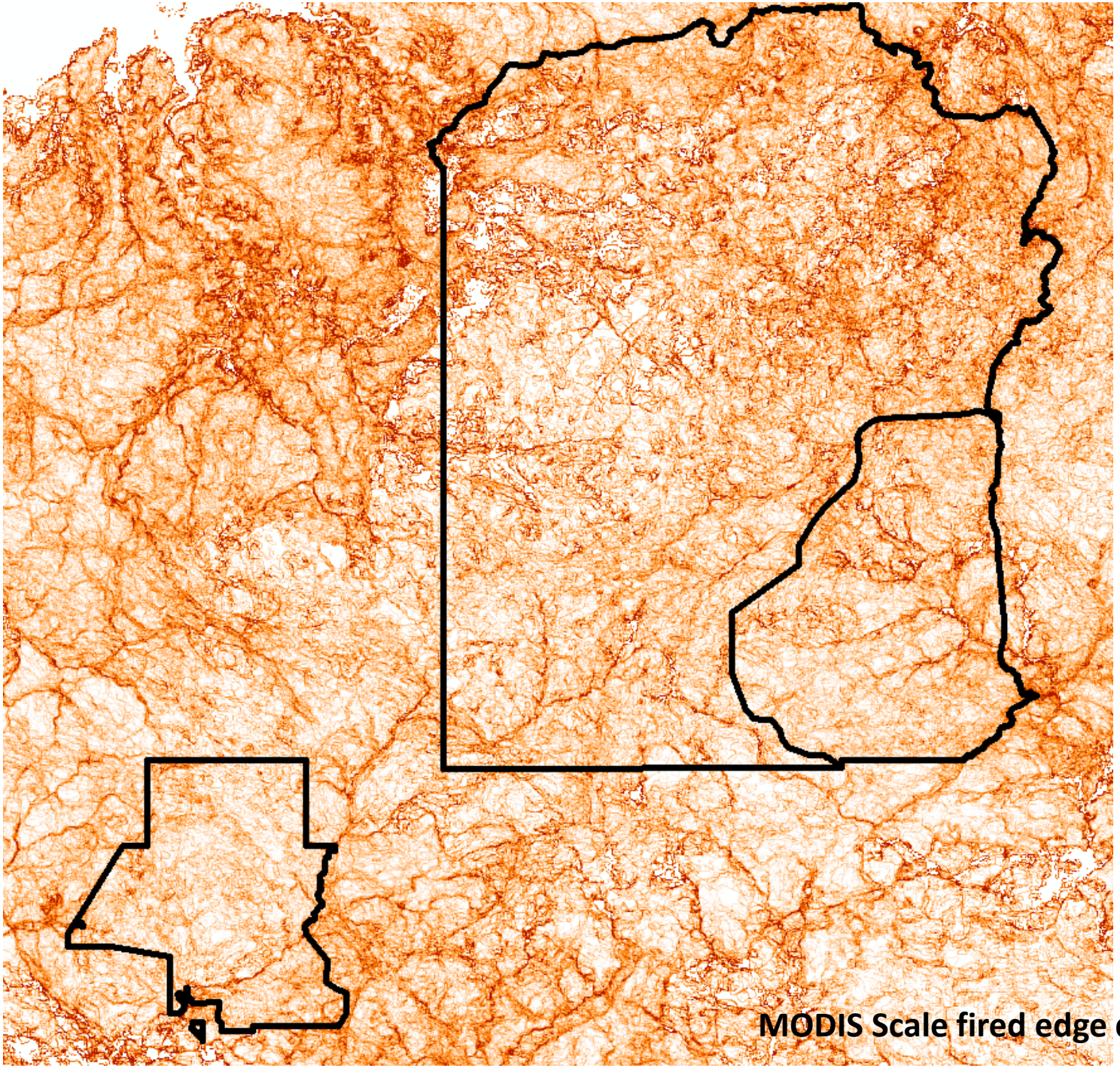
Mapping fire edges: aims to assess what landscape features act as barriers to fire spread in northern Australian using long term satellite-derived fire histories.

Supporting strategic fire management planning.

- Most work focused on propagation – little work on fire extinction.
- Fairly unique opportunity due to high FF and good base data.
- Kakadu 37 year data set.
- Potential to expand to all Savannas via MODIS
  - **Derived from work initiated by Ben Lewis**




Kakadu fire edge data


MODIS Scale fired edge data

3D interactive fire spread simulation

Developing capacity building/teaching tool for understanding fire behaviour in tropical savannas in.

Using 3D printing or sand as medium for interactive (cellular-automata) models of spread/extinction simulation

Collaboration with:

- Dhimurru
- Jawoyn/Nitmiluk
- Mimal – Bullman
- Tiwi Land council