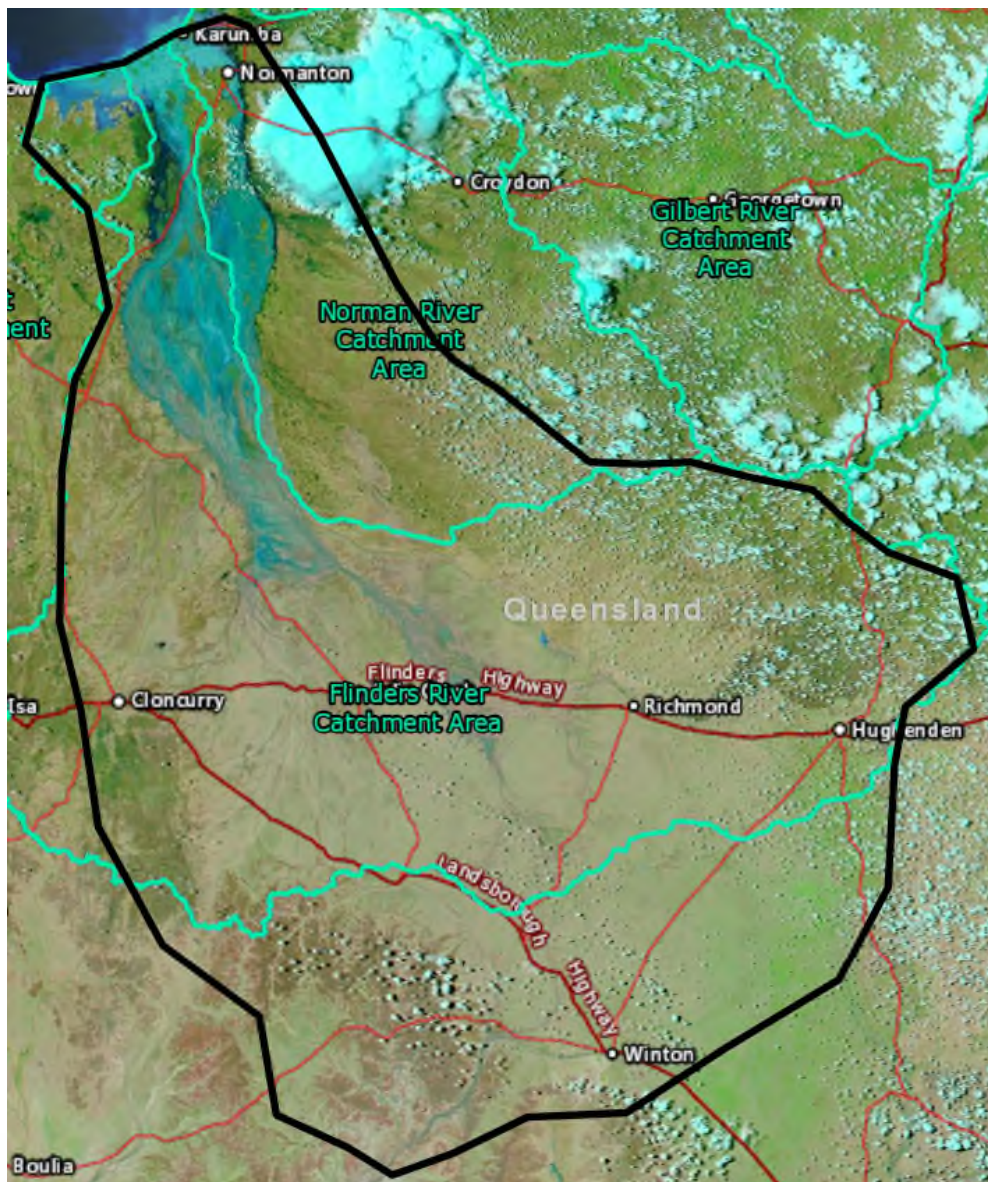


# North west Queensland pasture response after flooding



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# The area that I will address in this webinar



Focus is on:

- Flinders River catchment
- northern section of the Diamantina River catchment

# The most pressing priorities

The impacts of the monsoonal flooding have been wide-spread and devastating. The most pressing priorities are:

- Human and animal health
- Carcass disposal
- Financial support
- Bringing surviving cattle back into production
- Rebuilding fences, waters and other infrastructure
- Managing pastures for restocking and re-establishing a cash flow

# I will cover pastures in this webinar

Information on the other priorities can be found at

<https://www.daf.qld.gov.au/business-priorities/agriculture/disaster-recovery/natural-disaster/declared-areas>

More detail on managing cattle nutrition and beef businesses are available at

<https://futurebeef.com.au/>

We also know that sheep producers have been affected, and more sheep information is available at

<http://www.leadingsheep.com.au/>

Australian Veterinary Association hotline **1800 62 19 18**

Lifeline **13 11 14**

# What I won't be covering in this webinar

- The financial costs or benefits of looking after your pasture
- Options for supplementation or feeding hay
- Advice for your specific situation
  - but I will answer your questions





# The key pasture questions

Is there enough pasture on offer for the surviving cattle?

Will there be enough pasture for restocking opportunities?

What is the long term impact on pastures?



# In summary: there is enough pasture

There is enough pasture for surviving cattle in most areas. Palatable carry over feed is generally in short supply:

- Cattle are relying on new growth to satisfy their nutritional needs
- Good quality hay may still be needed in some areas

Cattle numbers are low and they are generally able to free-range the landscape to access pockets of better feed

Floodplain pasture is slow



# A rough guide to enough pasture

- New growth over ankle height (10cm) = enough green pick for cattle to access
- New growth that's over the top of your riding boot (20cm) = enough green feed for cattle to graze effectively



Fresh green leaf is 80-90% moisture

- The lack of roughage could still be a concern
- Need the perennial grasses grow stalk and start to bulk up





# **In summary: there will be enough pasture in many areas to restock**

The most likely areas to have a reasonable bulk of feed over the coming 4-8 weeks are:

- Mitchell grass country that received 300-600mm rain
- Red country that was not flooded
- Floodplains – but the response could be slow

Wait to see how much feed grows before restocking

Let the perennial grasses start to go to seed



# How long will that take?

Waiting until the majority of perennial grasses have started to go to seed will vary:

- Buffel country could be as early as next week
- For Mitchell grass pastures that received 300-600mm rain will probably be mid to late March
- Flooded bull Mitchell and bluegrass-browntop might not be until mid April





# Check what's growing

Ashy downs may be limited to Flinders grass and herbages

- Whilst highly digestible, may lack enough bulk

Mitchell grass country may be dominated by roly poly or herbages

- Especially after years of drought
- Some areas may lack useful bulk

Red or black soil areas could be dominated by pigweed, button grass or other toxic plants



# In summary: long-term impact

There are areas which have never been flooded before leading to:

- Erosion across paddocks and in creeks
- Deep deposits of silt downstream
- Drowning of perennial grasses





# In summary: long-term impact

There are others areas where the pasture has been weakened through flooding that need a chance to recover before grazing

- Extremely light stocking rates for next 4-8 weeks
- Delayed restocking and spelling



# Pasture management summary

The main tools available to help perennial grasses recover are:

- Delayed restocking
- Wet season spelling
- Light grazing pressure
- Forage budgeting

Areas with severe erosion will need greater effort, for example:

- Deep ripping, ponding banks or other mechanical works
- Re-seeding

# Key messages

Most areas are responding, but palatable carry over feed is generally very limited:

- It has rotted under floodwater, been covered in silt or there was none to start with due to drought
- Cattle are relying on new growth to satisfy their nutritional needs
- Recommend defer restocking until the end of March, or once the majority of perennial grass has started to go to seed
- Exception is those areas with severe erosion or very slow pasture response which require longer-term spelling

# Let's get into greater detail

I will:

- Cover some of our early observations and expectations for different land types
- Get into detail of current and anticipated pasture yield
- Provide some more rough guides
- Outline some advanced tools that you may find useful





# The pastures aspects in this webinar

- An overview of the rainfall and flooding event
- Current pasture response
- Potential pasture growth
- Longer-term response
- Pasture management tips:
  - For medium and good response
  - For poor response and impacted areas
- A range of tools you might find useful
- A lot of detail – it is recorded and can be watched again later



# I will assume

That you already understand key land types such as floodplains, bluegrass-browntop and Mitchell grass downs

That you are looking for tips on recovering your perennial grasses and pastures after the flooding

You are looking for information on pasture availability for surviving animals and opportunities to restock to generate cash flow

# Pasture response is depending on

## Land type

- Red country
- Buffel
- Floodplain
- Bluegrass-browntop
- Bull Mitchell
- Open Mitchell grass
- Ashy Mitchell grass

## Rainfall totals

- <200mm
- 200-400mm
- 400-600mm
- >600mm

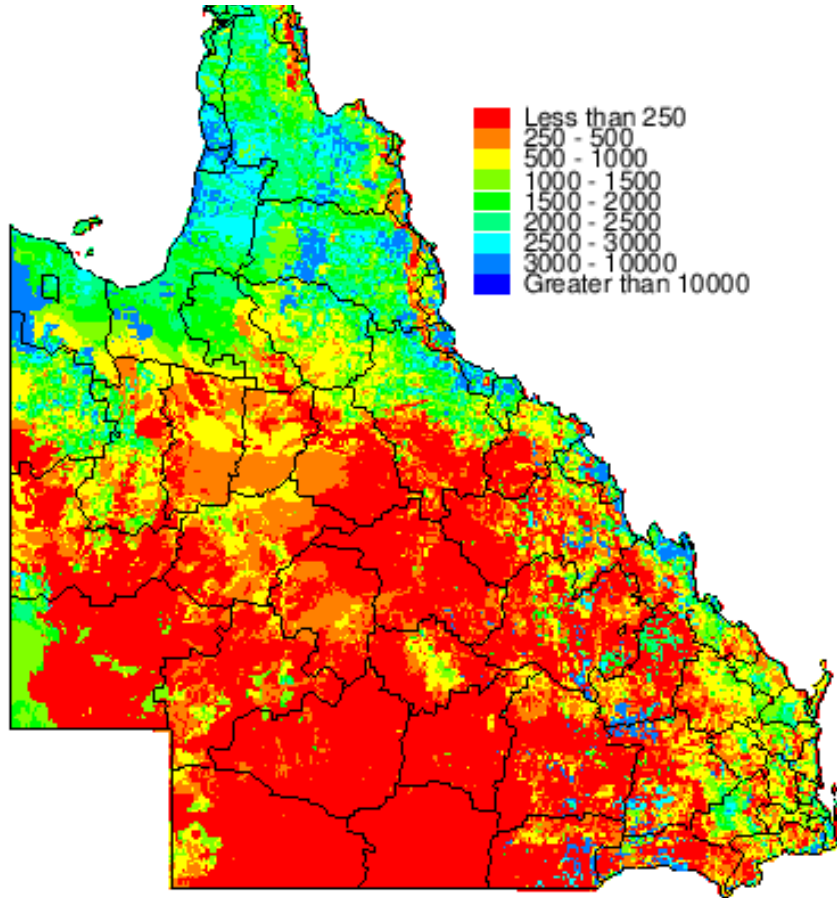
## Flood impact

- Depth
- Duration
- Water speed

Low pre-flood ground cover due to drought or land condition

# Pasture situation – end of January 2019

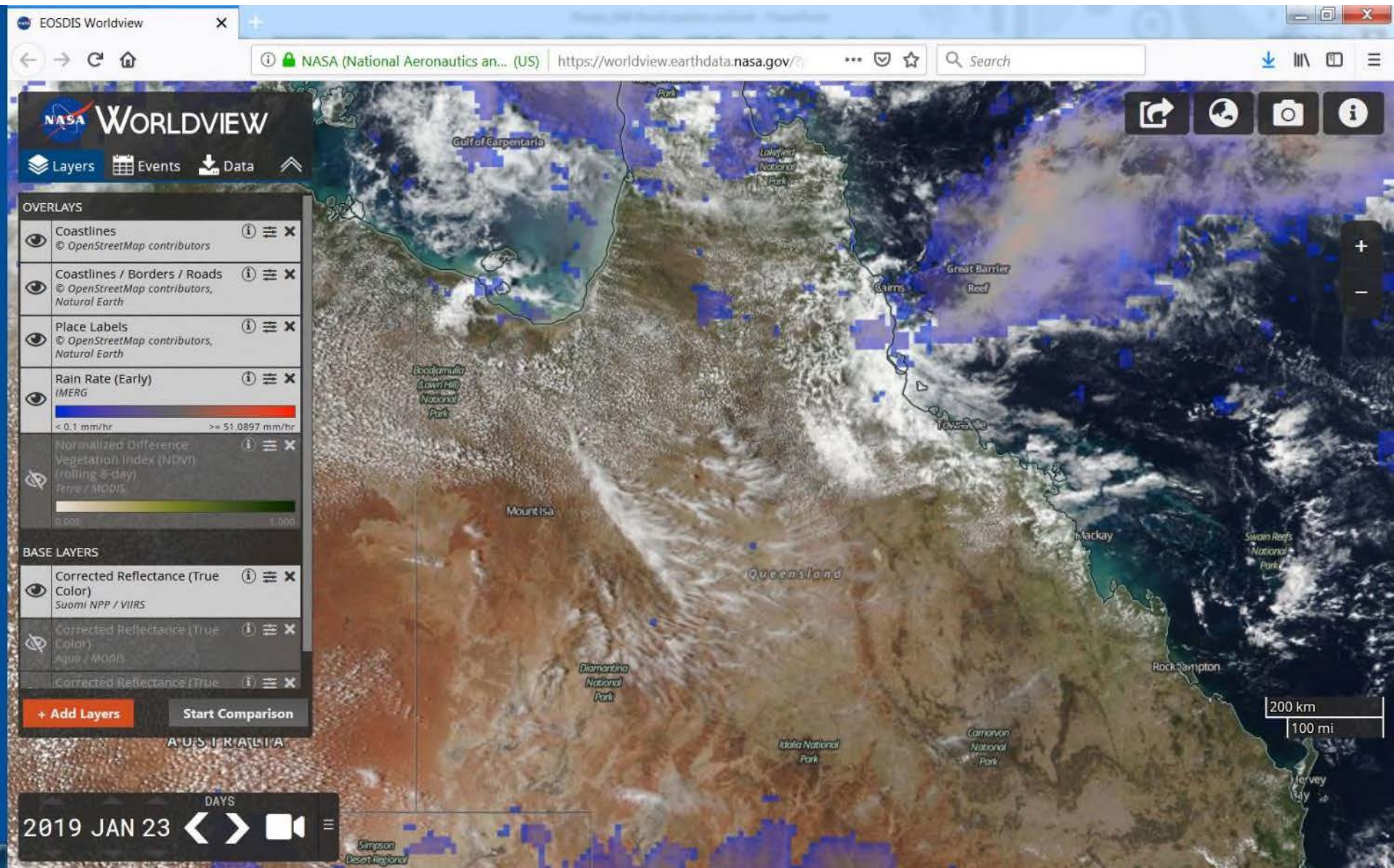
Total Standing Dry Matter (kg DM/ha)  
January 2019



Was generally low across the upper catchments of the Flinders and Diamantina Rivers due to drought

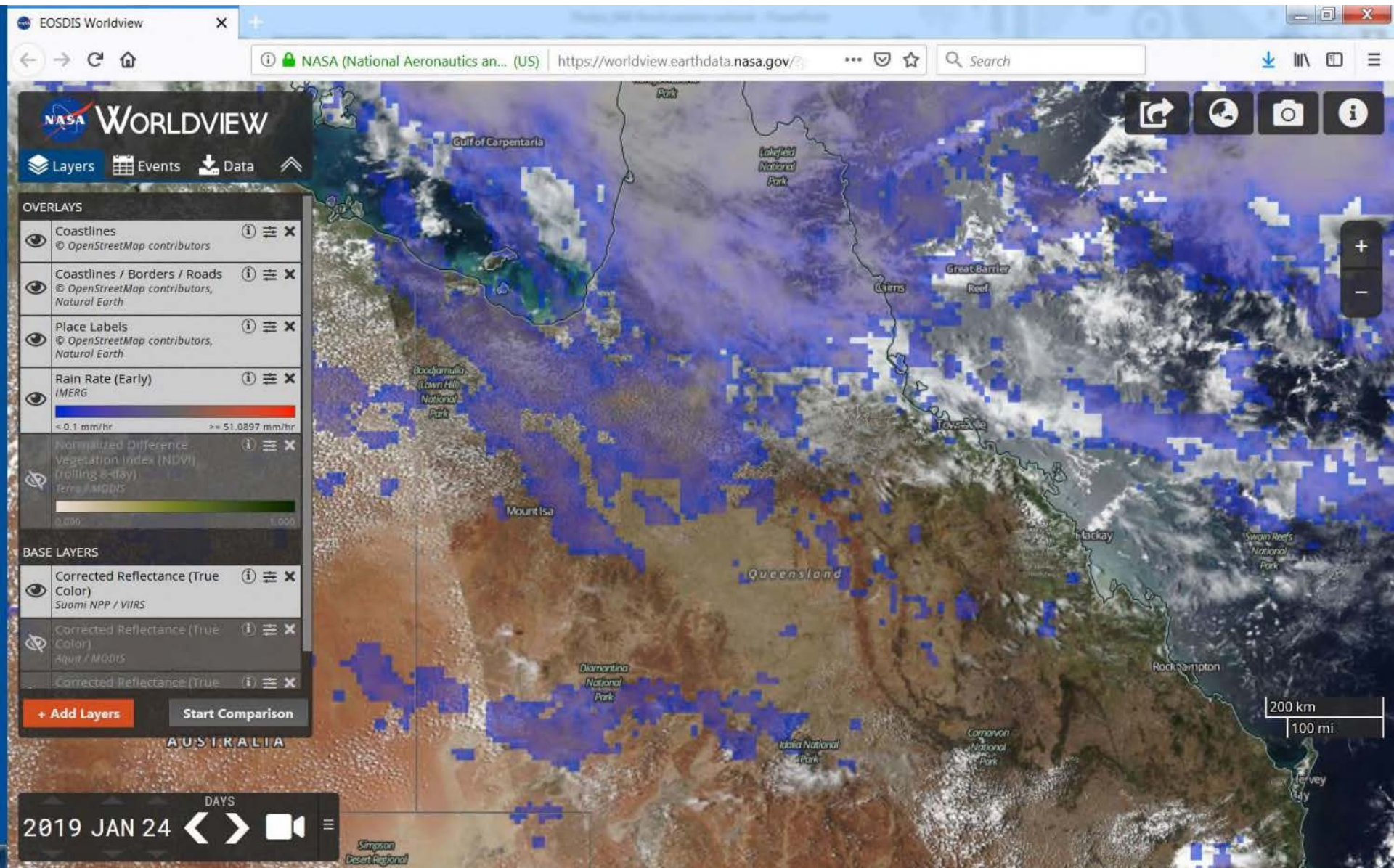


# Monsoonal trough



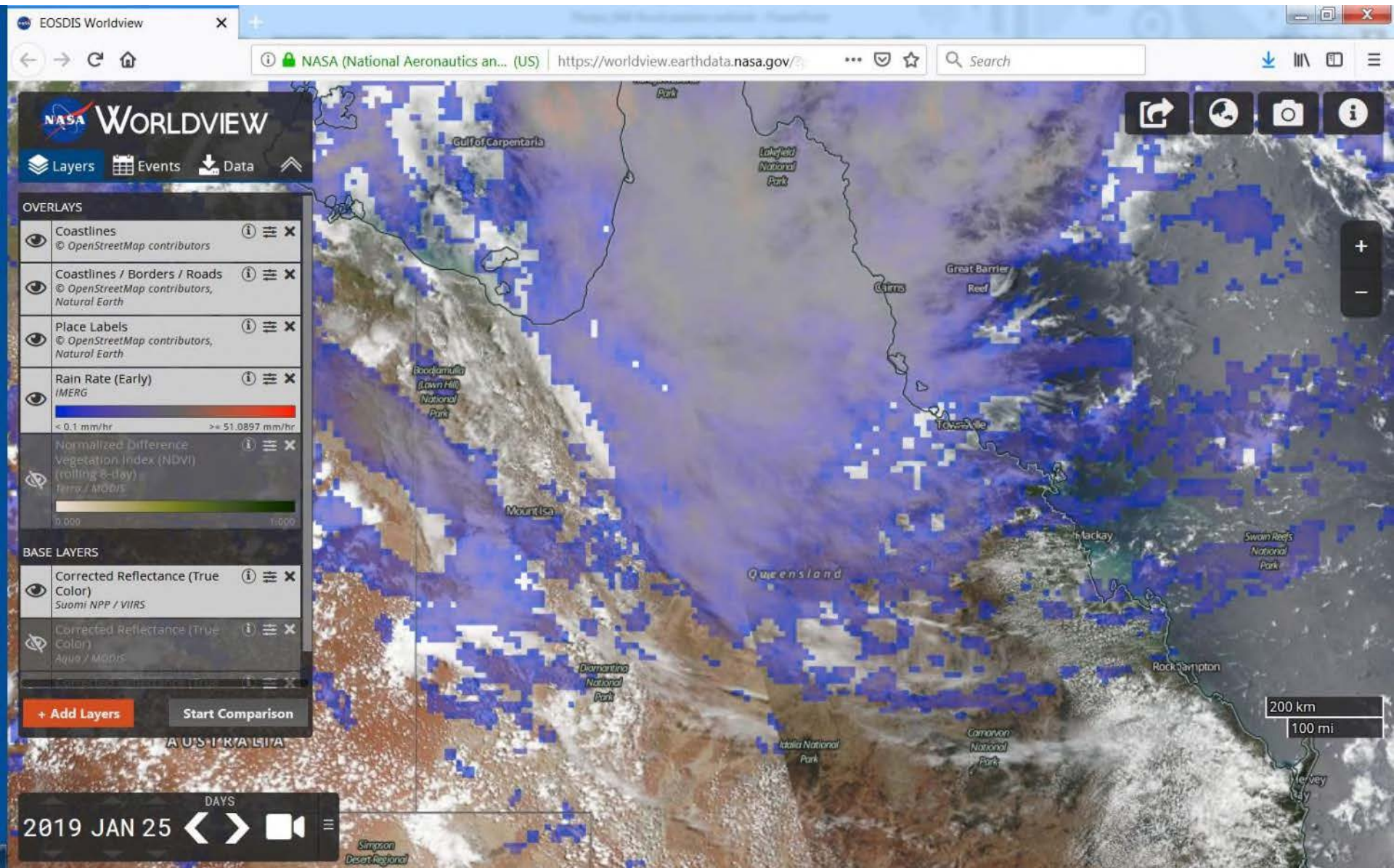


# Monsoonal trough



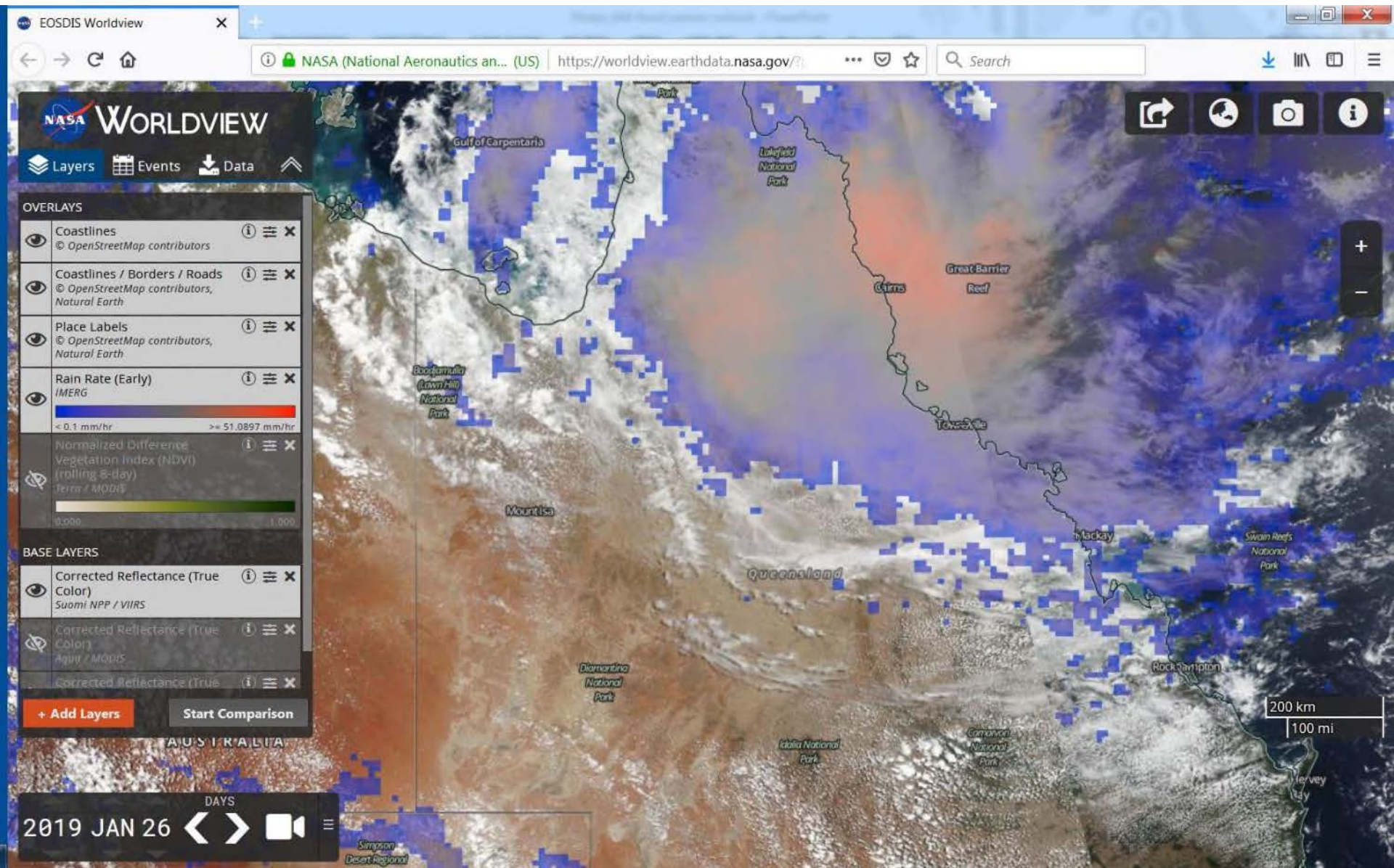


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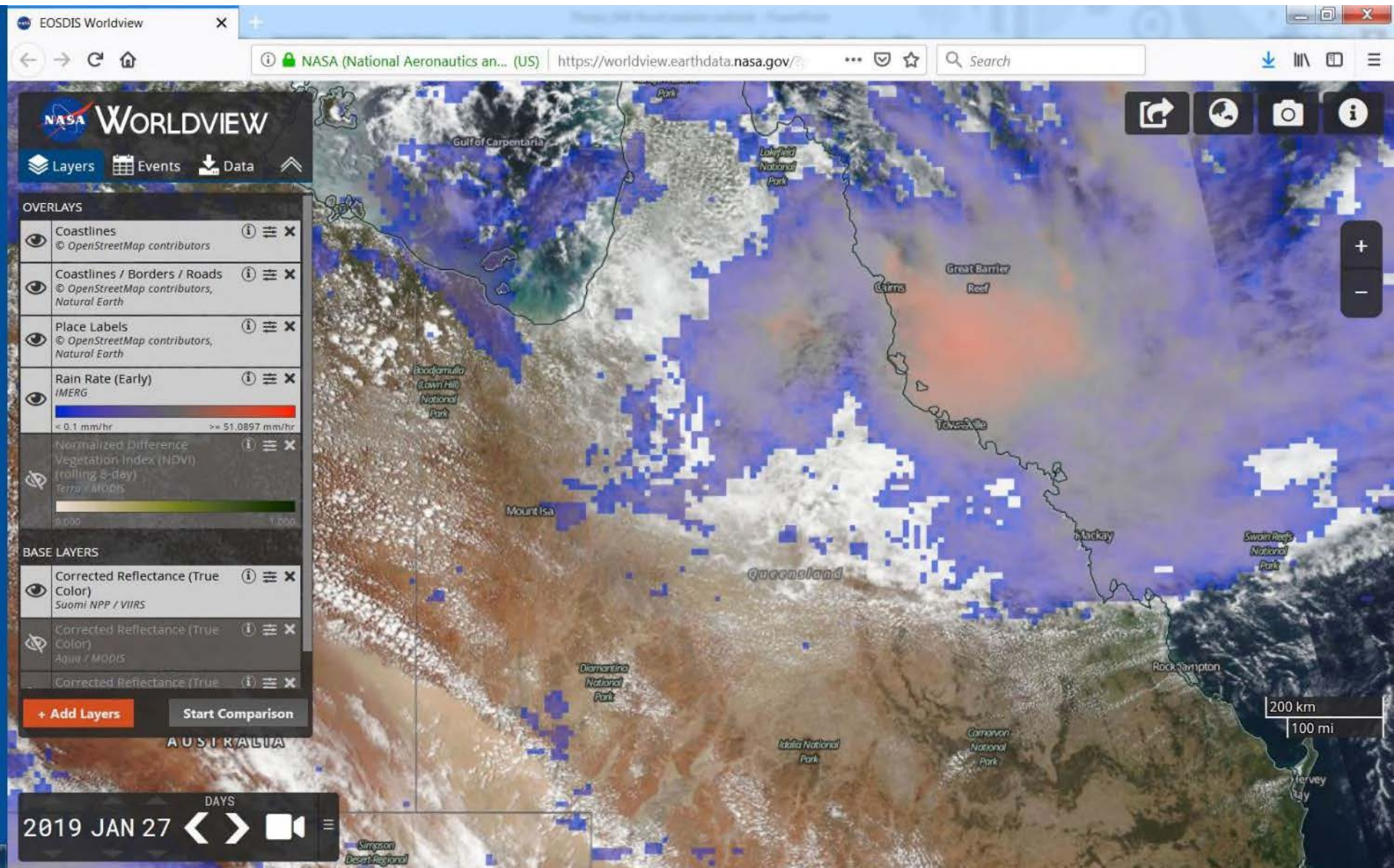


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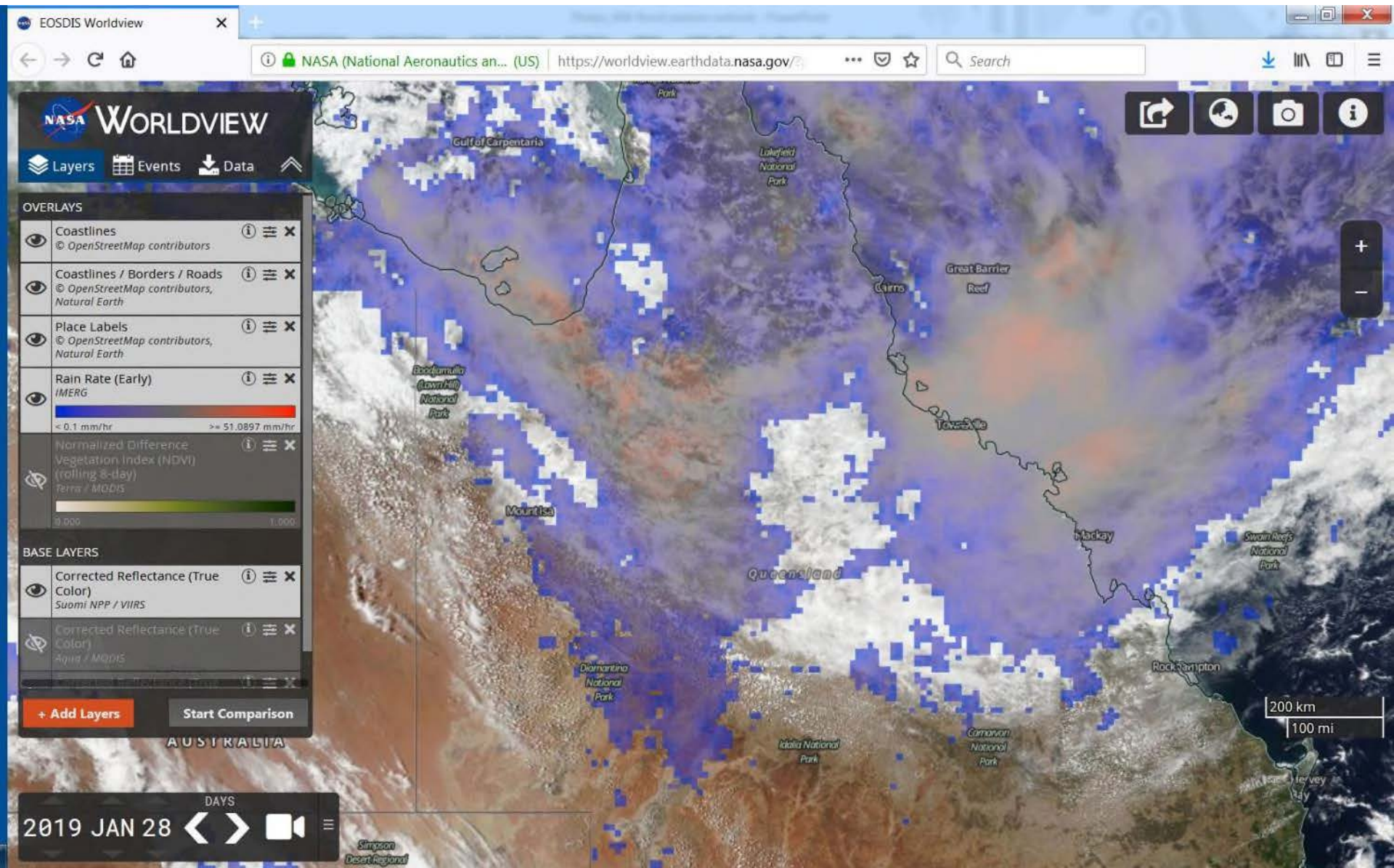


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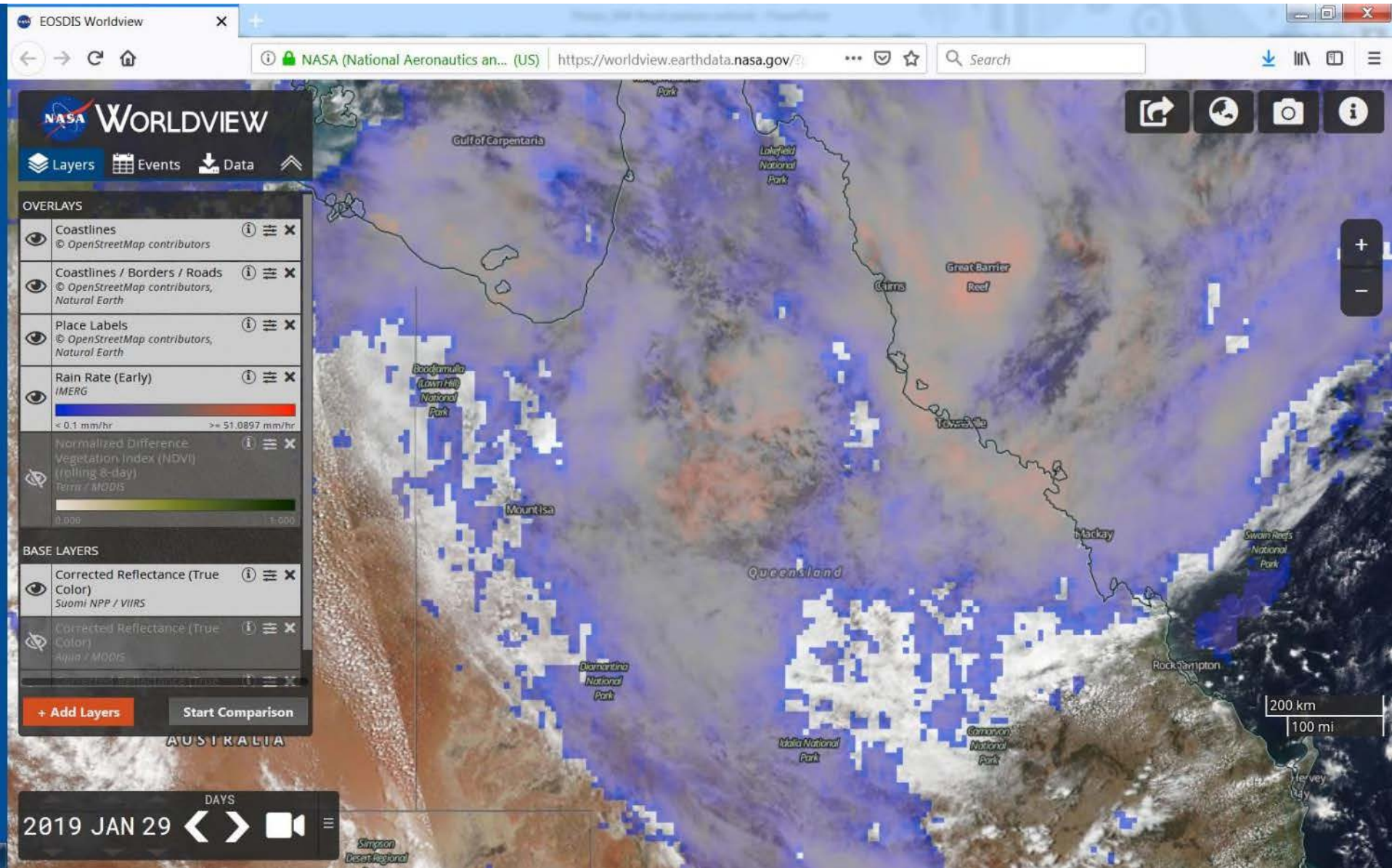


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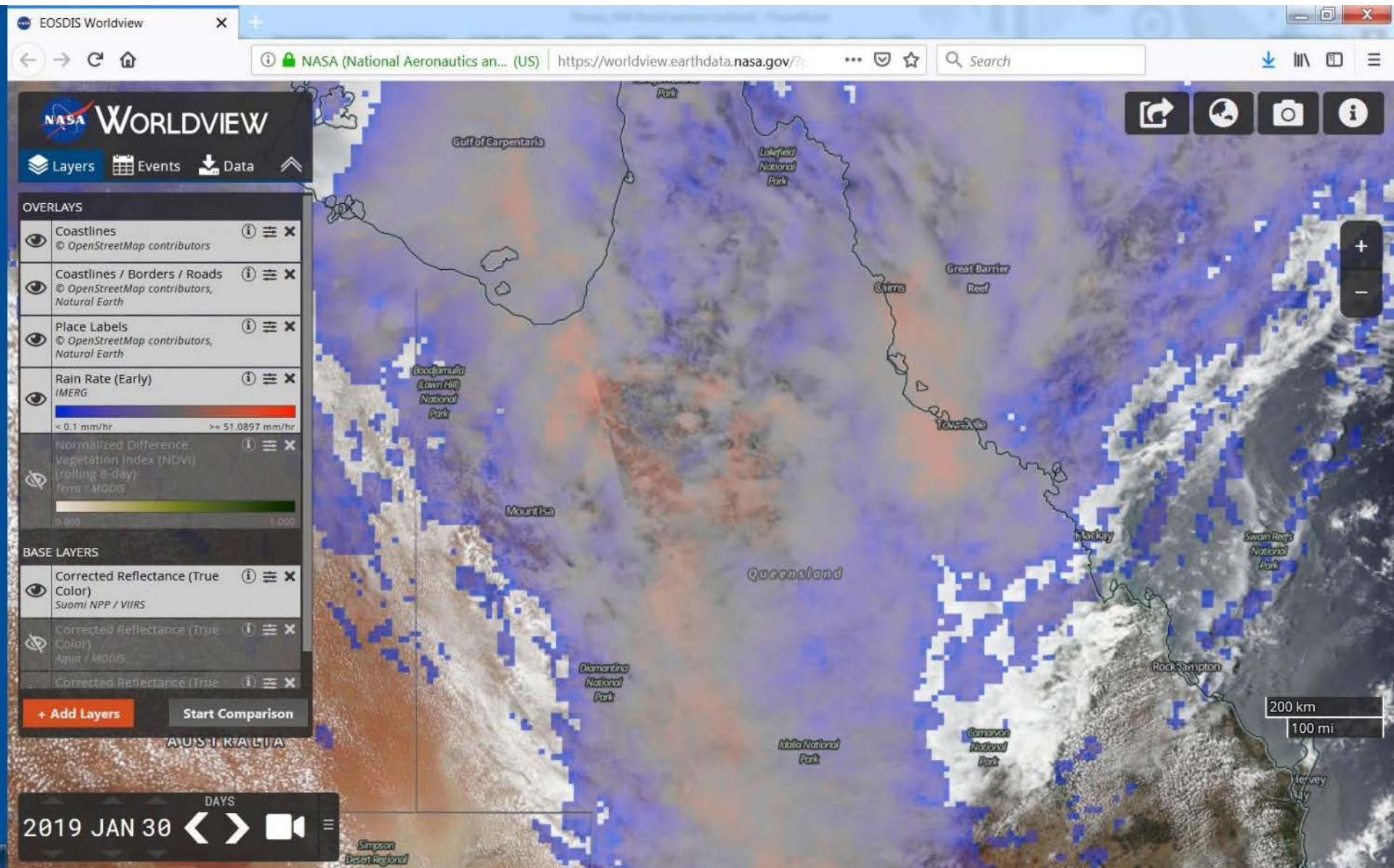


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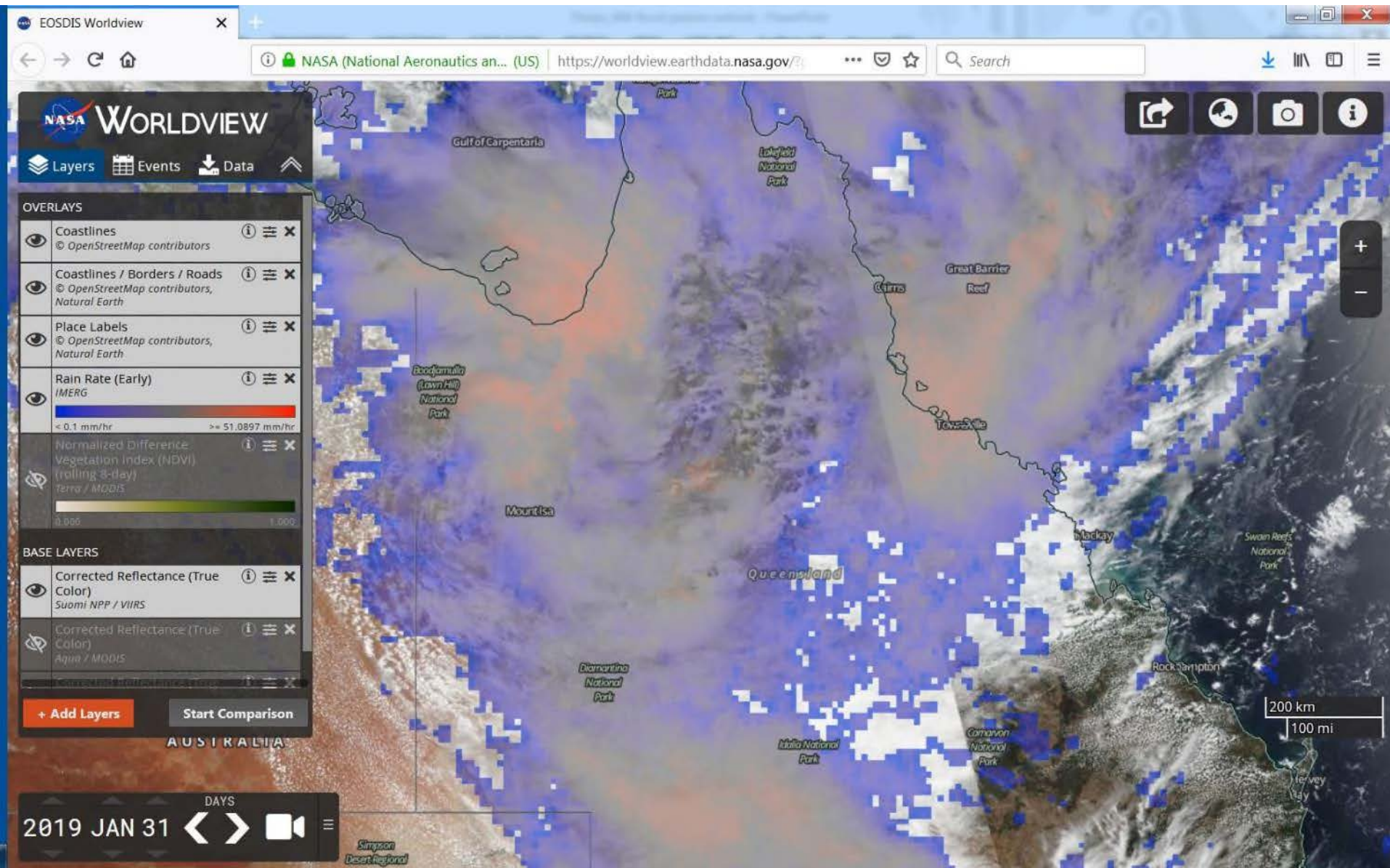


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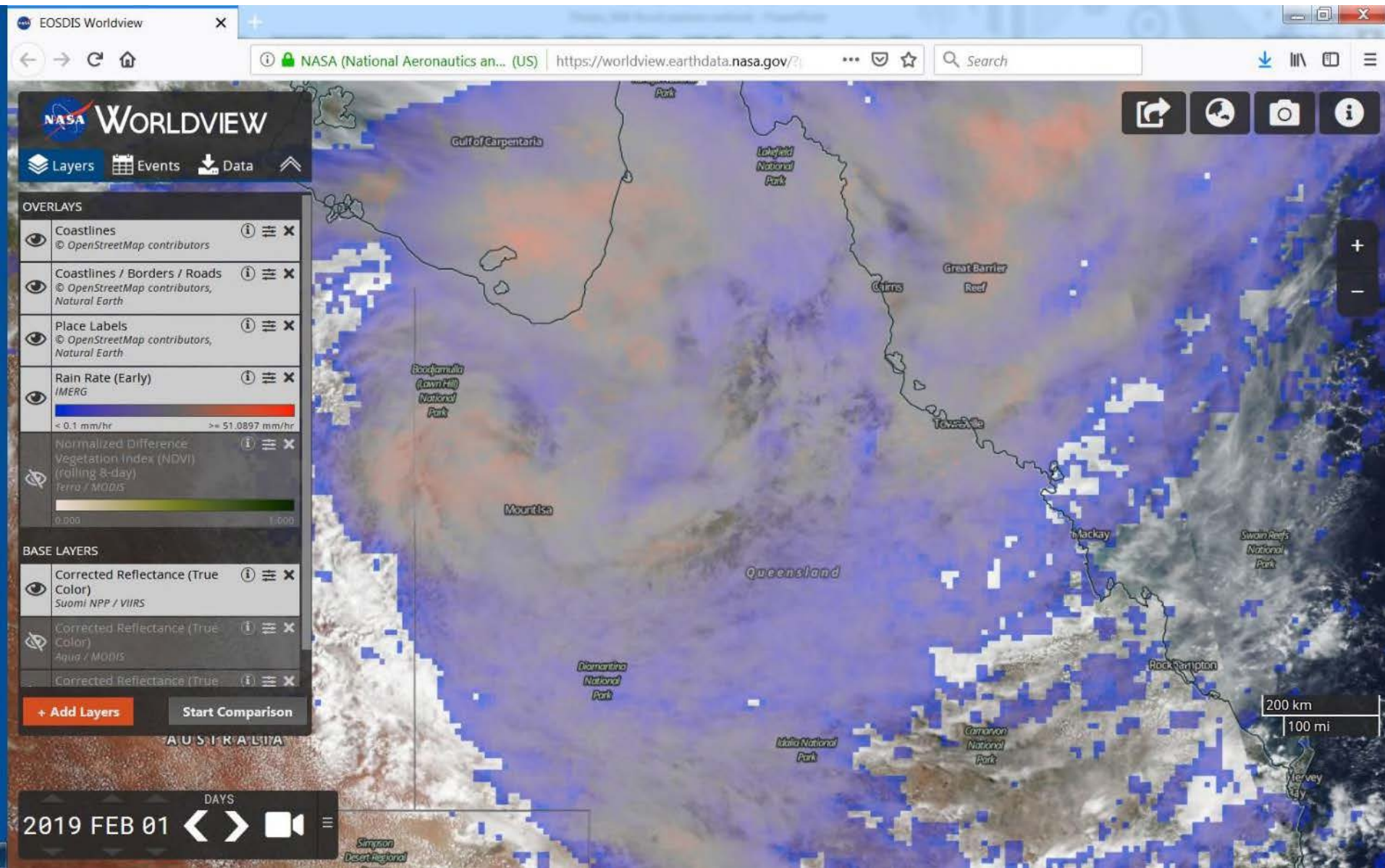


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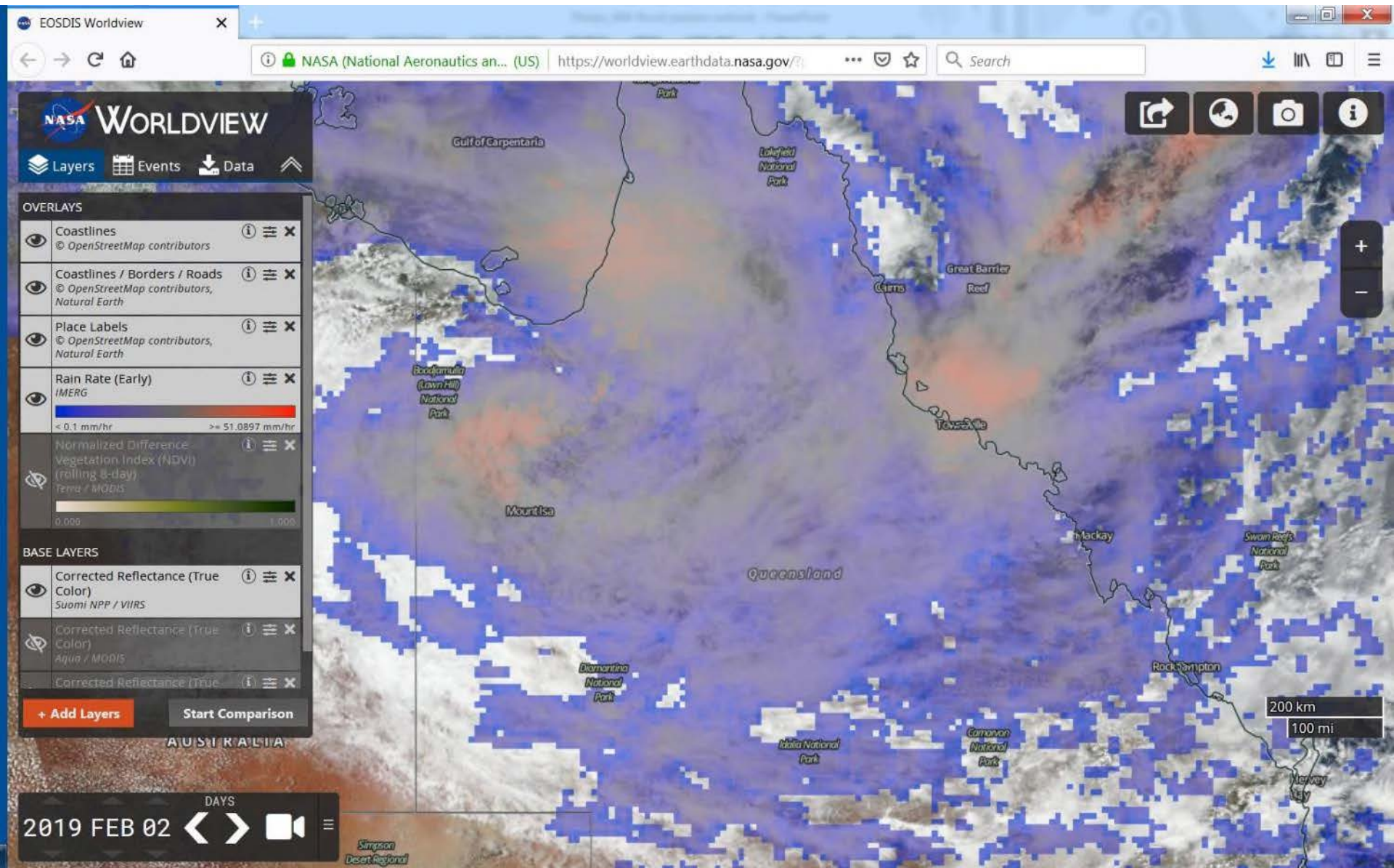


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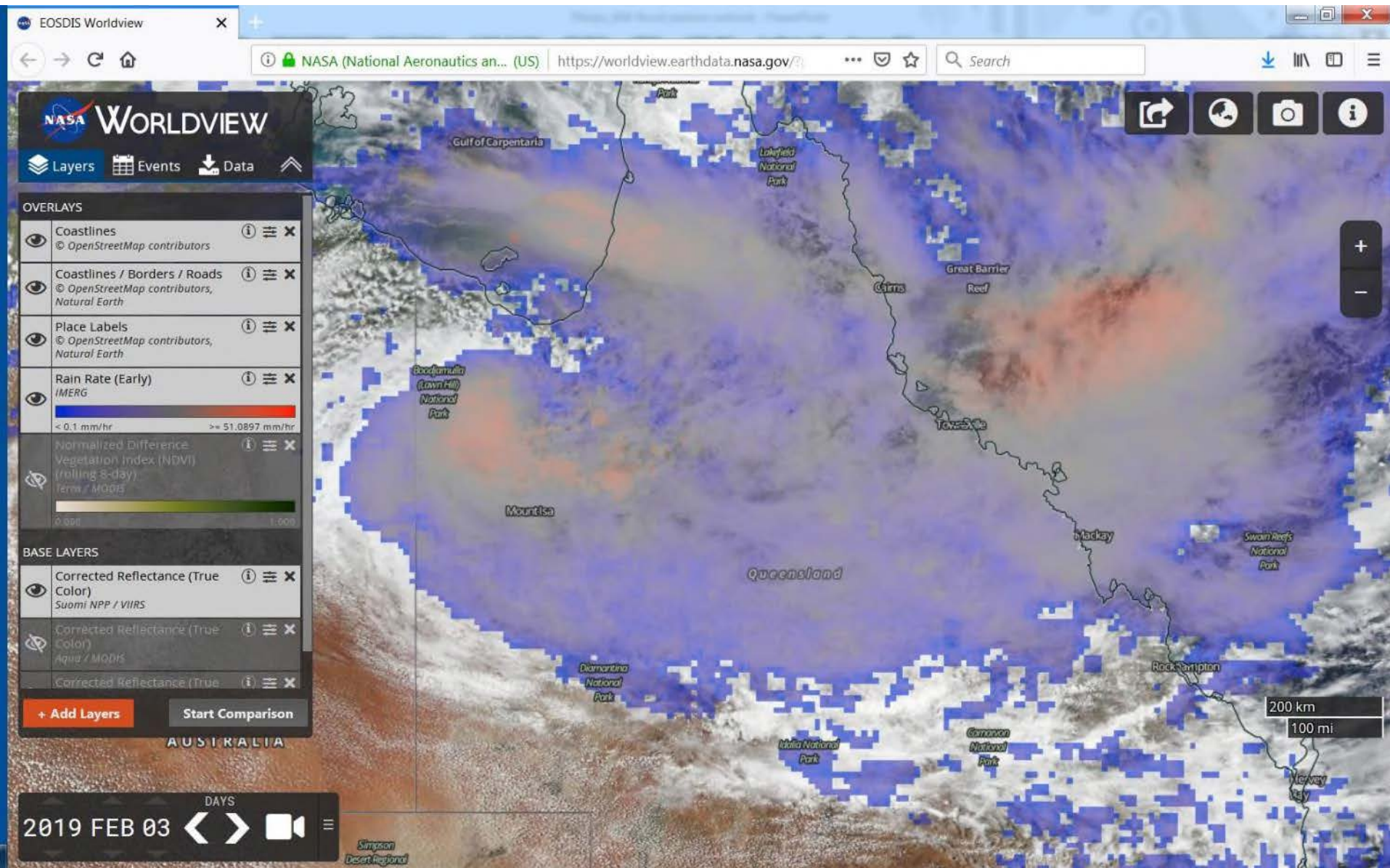


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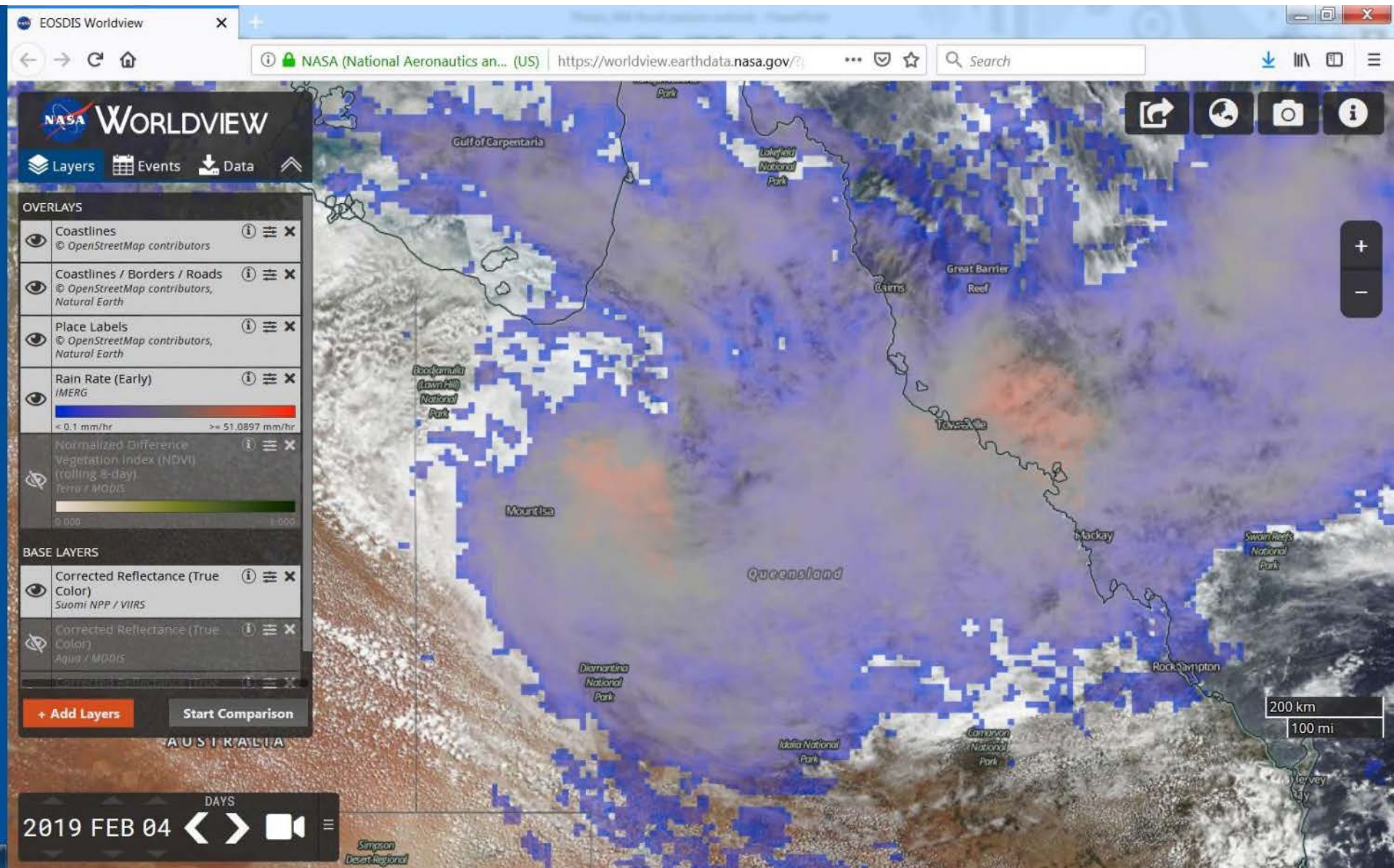


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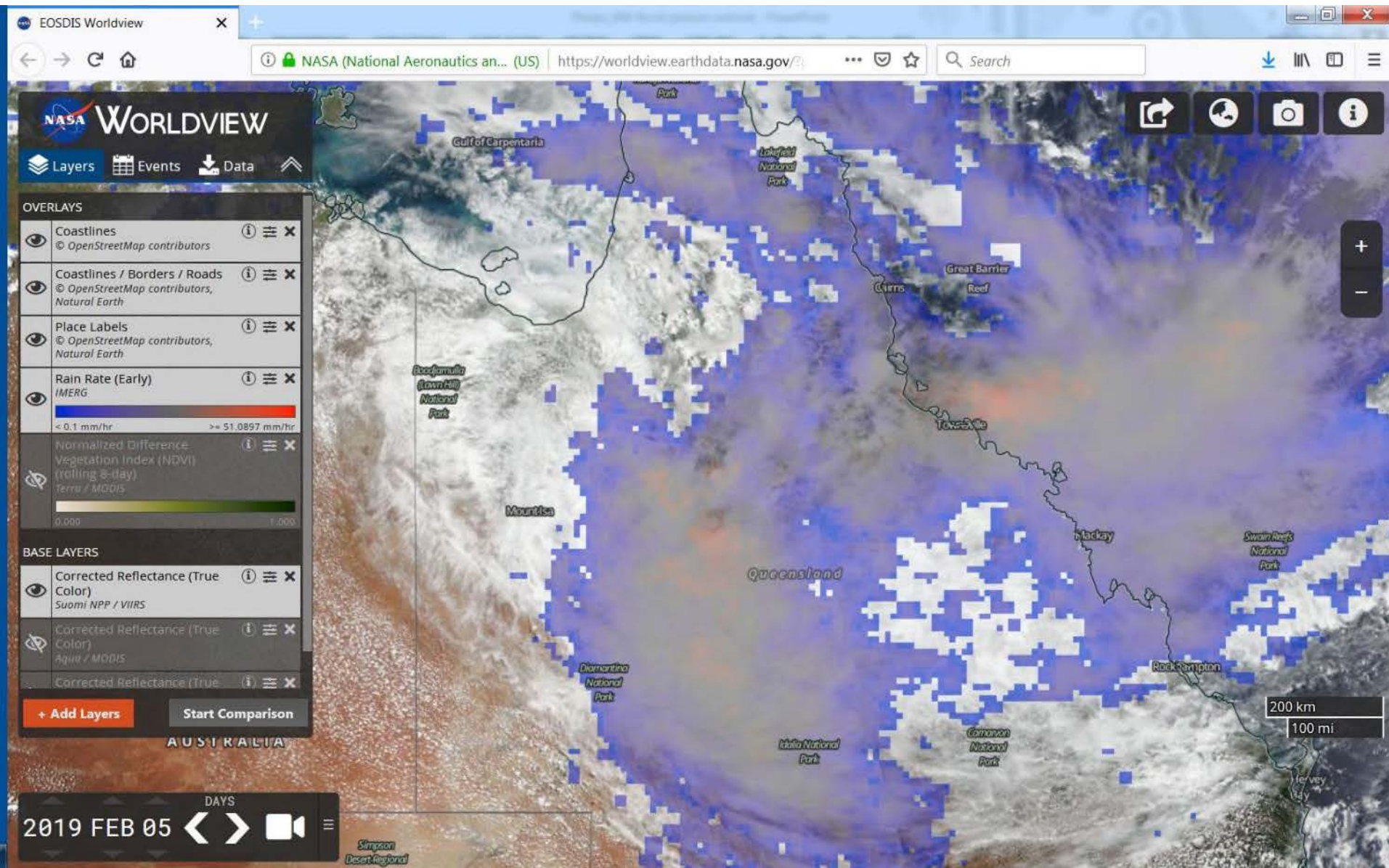


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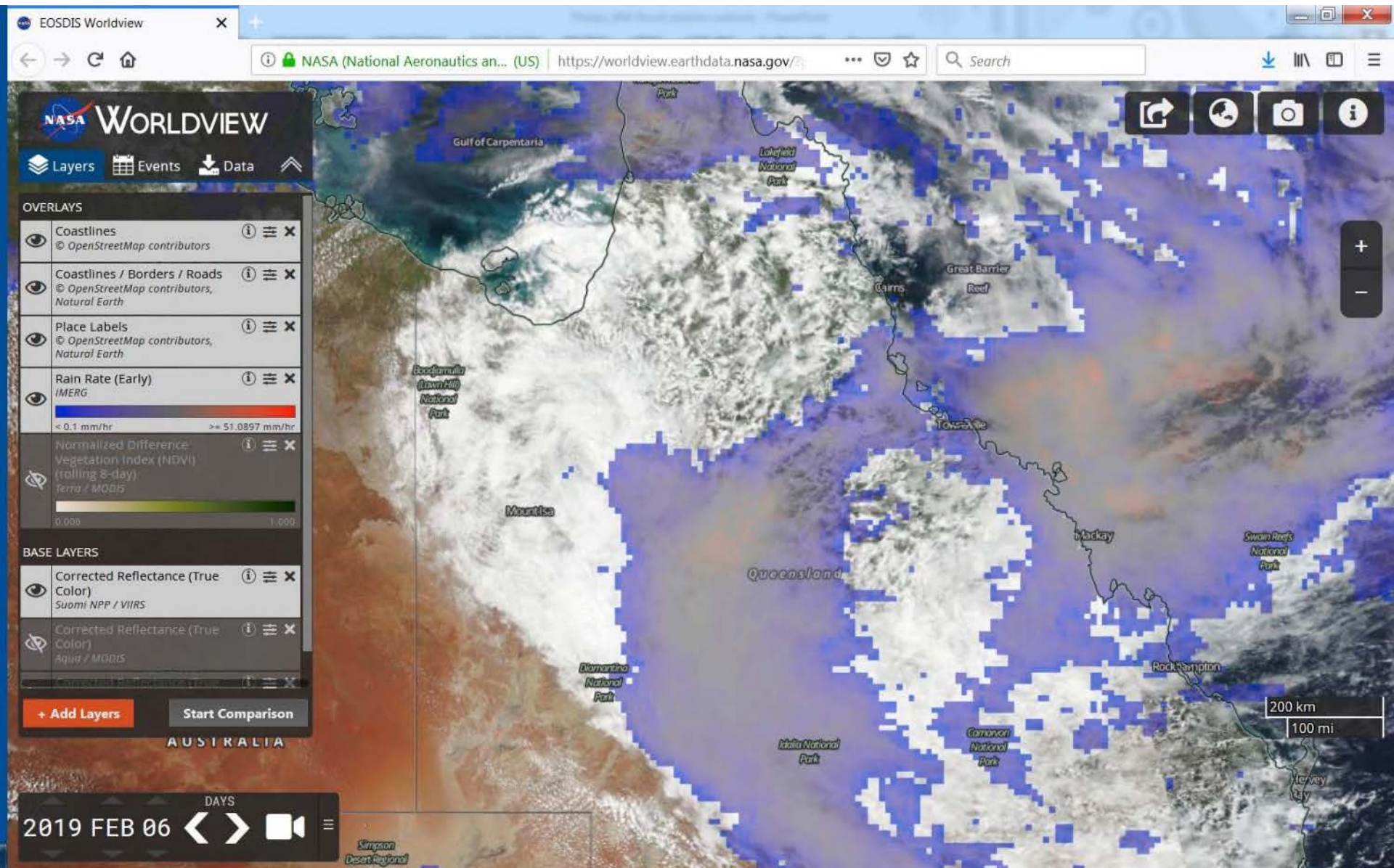


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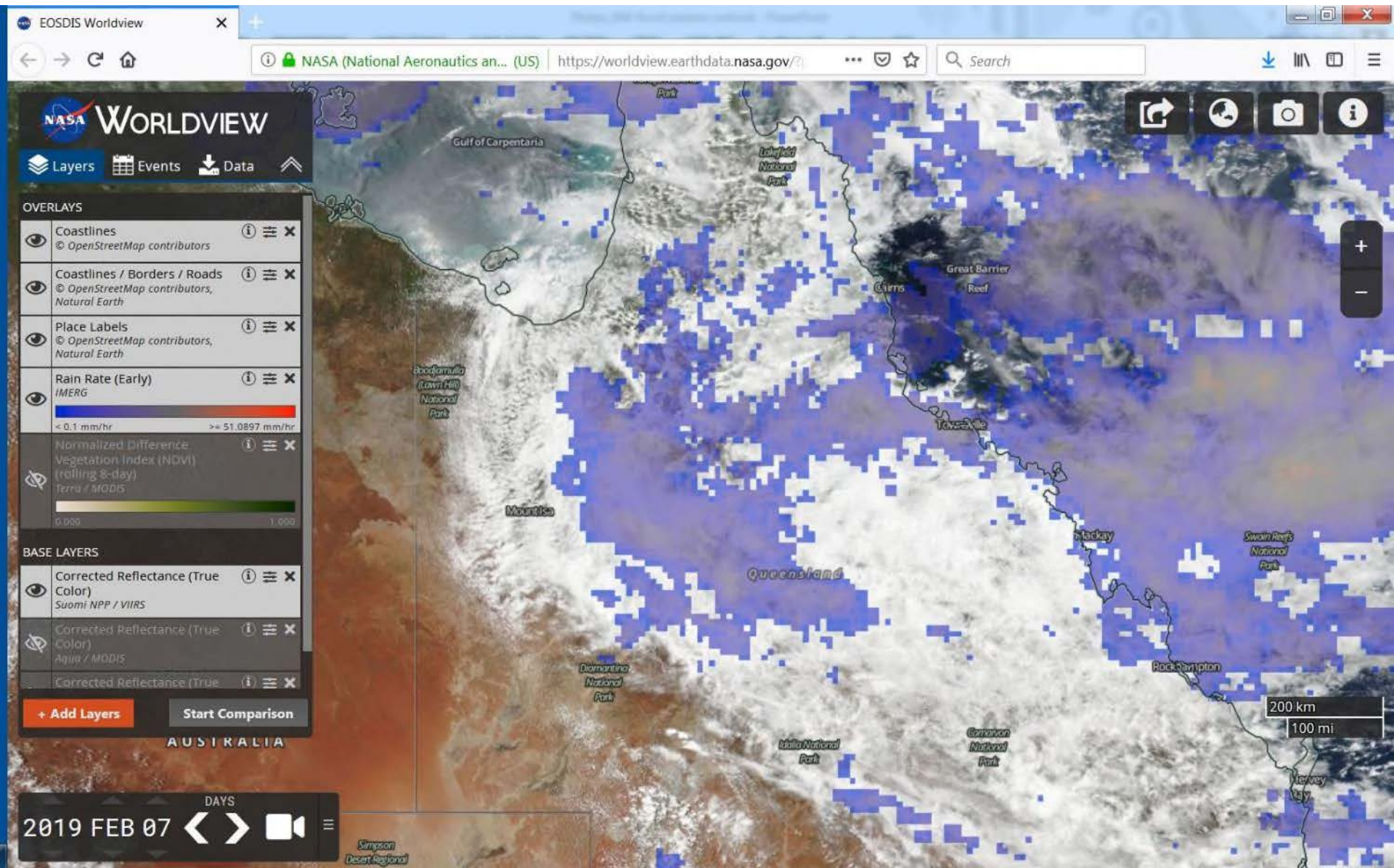


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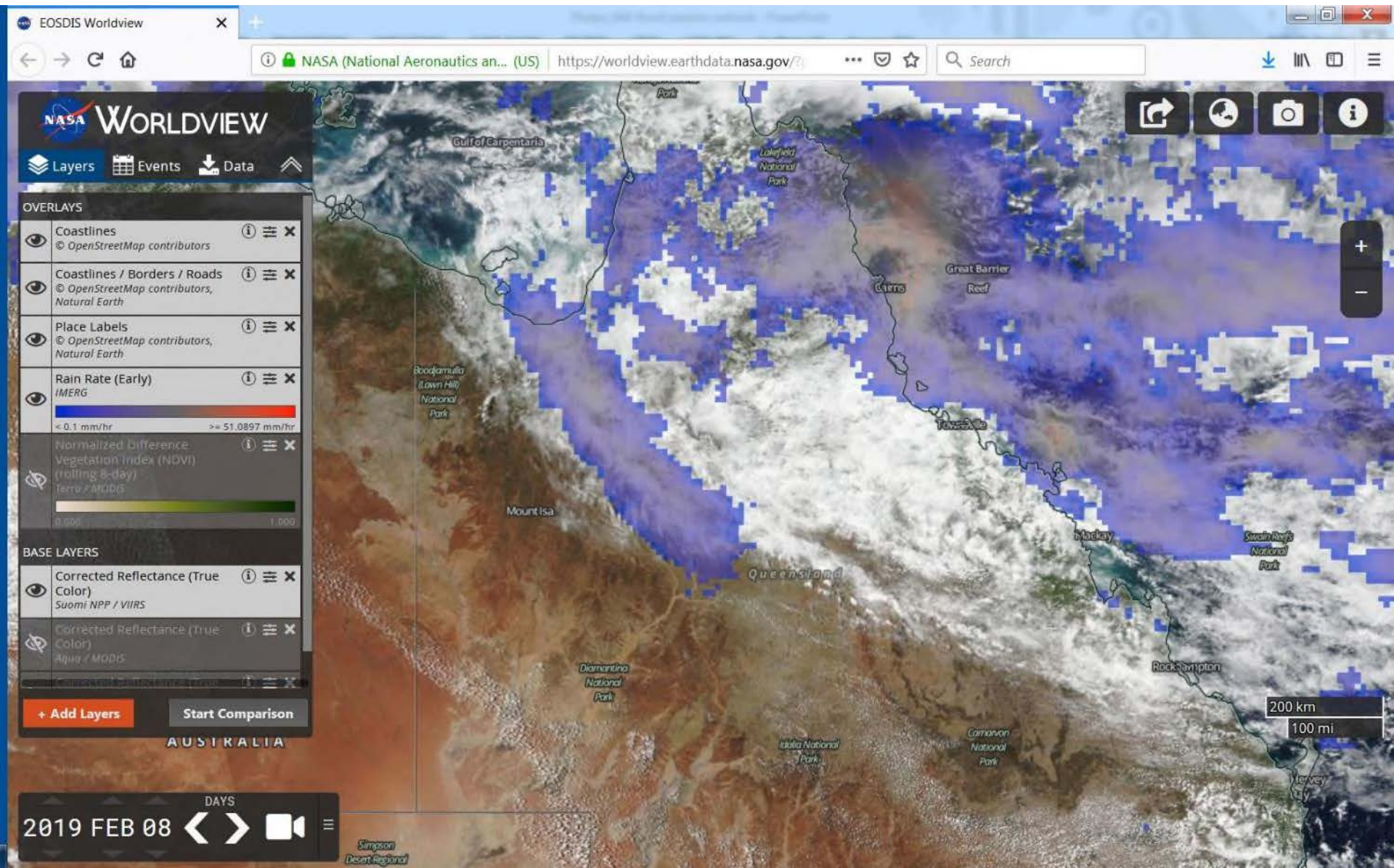


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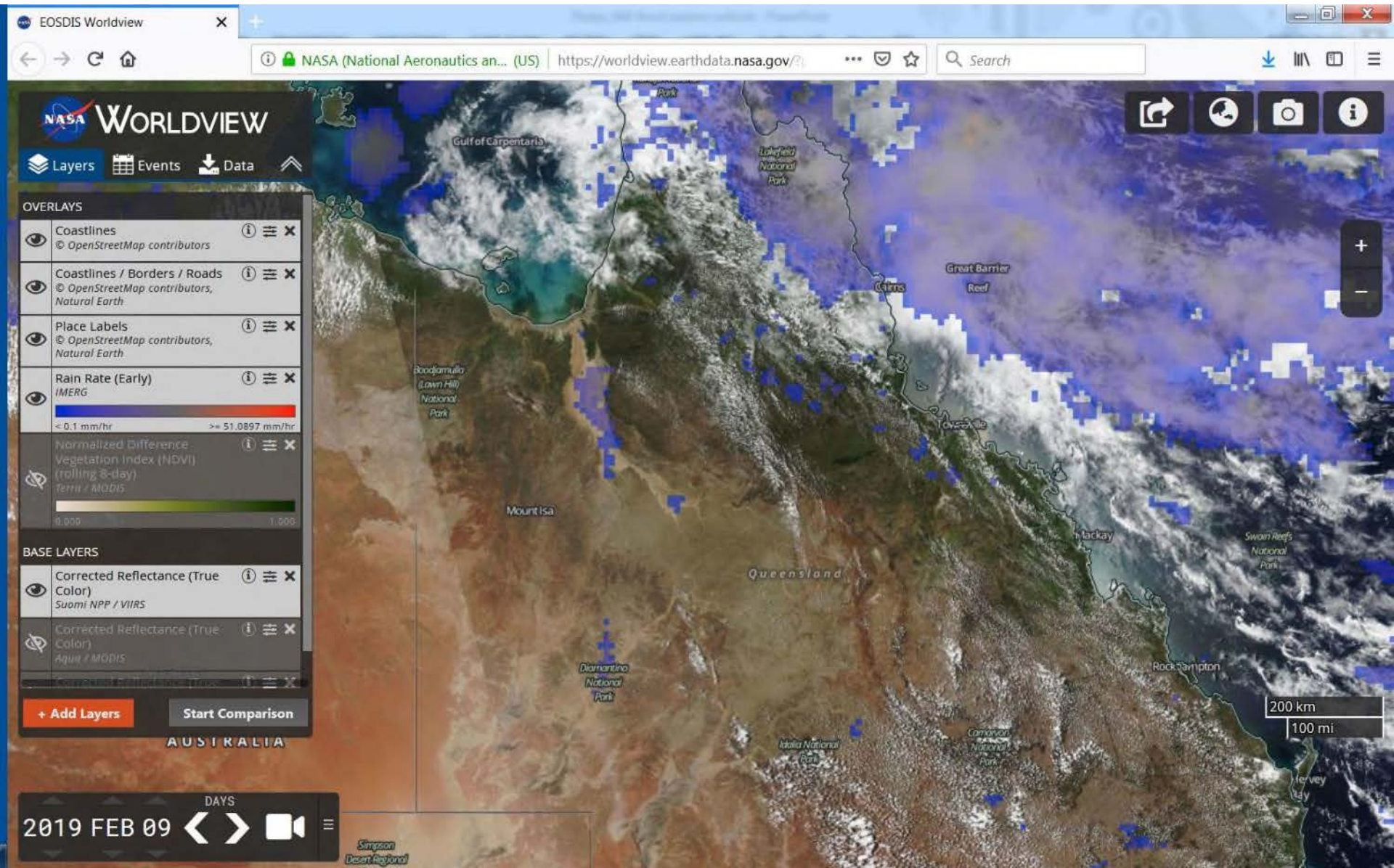


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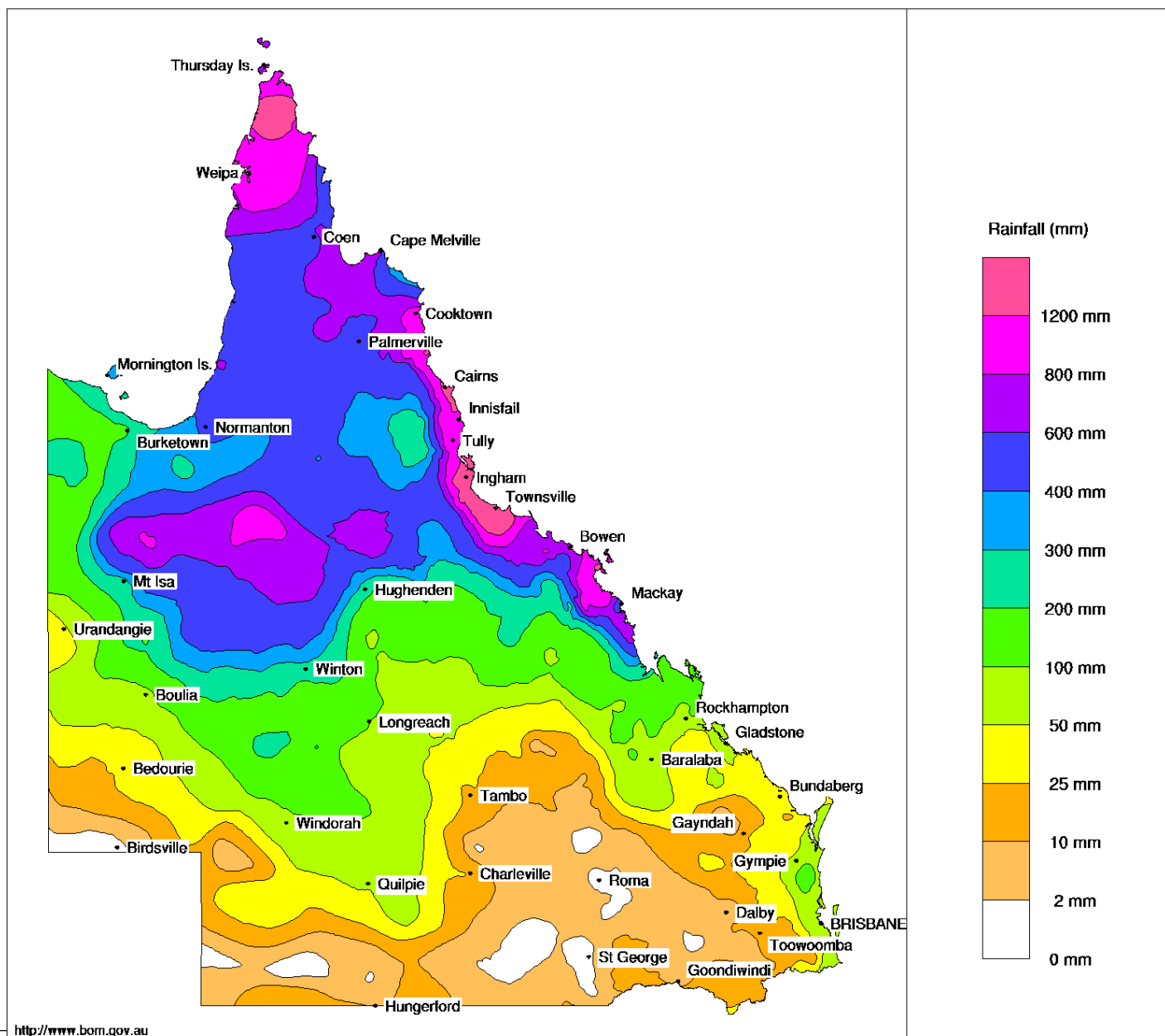


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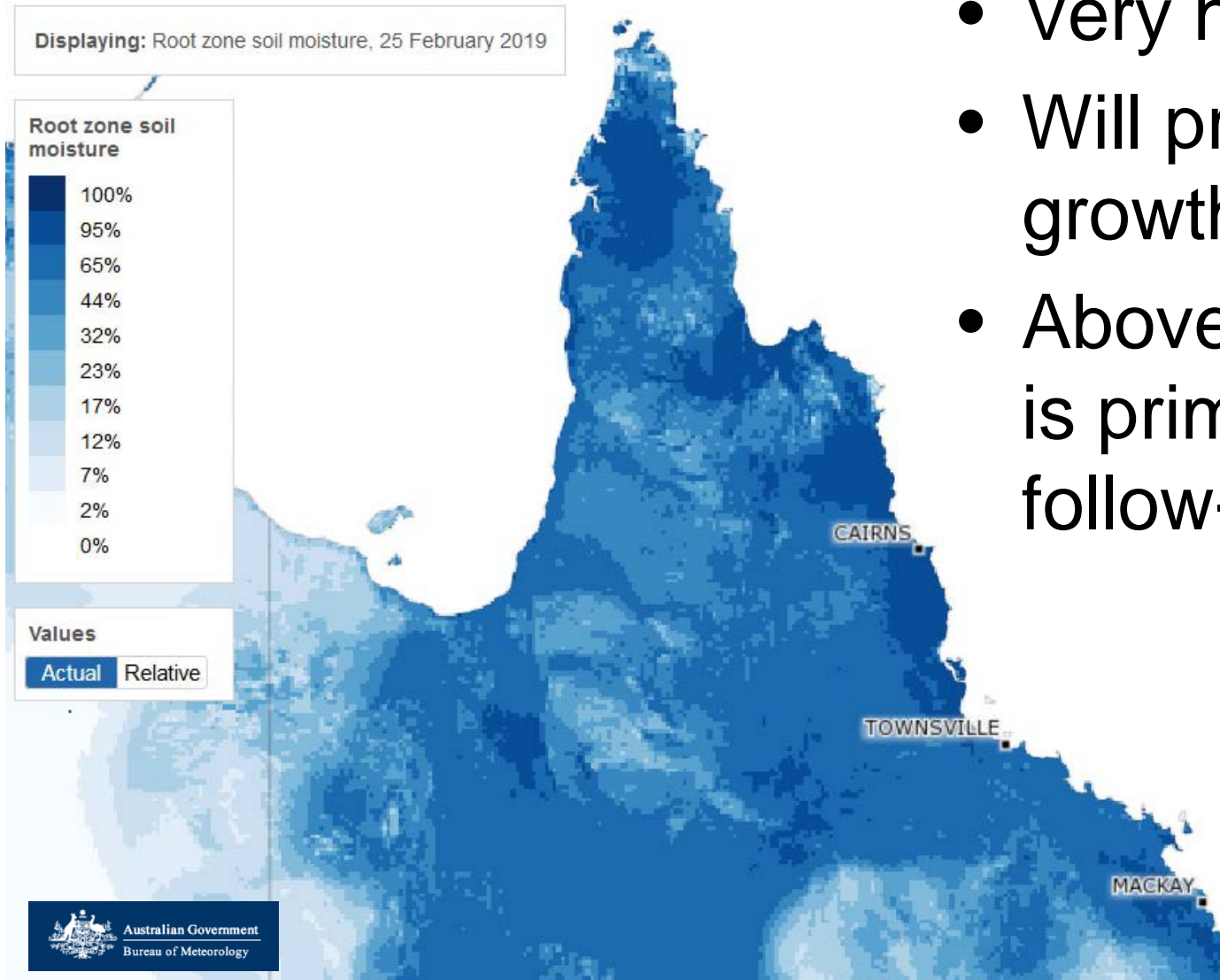


# Rainfall totals

Records broken right across the upper Flinders catchment



# Soil moisture levels



- Very high
- Will provide extra growth
- Above about 23% is primed for follow-up rain



# Mitchell grass is responding

Open Downs country had pasture yields of 300-400 kg/ha from about Hughenden to Winton early last week





# Bull Mitchell floodplains are responding

Bull Mitchell is re-shooting from the base, even under a layer of silt





# Bull Mitchell floodplains are responding

Bull Mitchell pastures should produce good yields, once the soil starts to dry out





# Floodplains and bluegrass-browntop

It's a bit early to know for certain

Anticipate usual response, but early reports of patchy response and areas of pasture death





# Ashy country has been slow

Areas of Ashy Downs had pasture yields less than 100 kg/ha about 10 days ago, but are reported to have improved considerably



# Spinifex is responding

Red spinifex country was looking good early last week, with total yields in excess of 1,500 kg/ha





# Buffel is responding

Red country with buffel grass was looking good early last week, with yields ranging from 250-1,000 kg/ha



# Flood impacted pastures

Areas with severe erosion along drainage lines,  
and scouring of Open Downs country

Areas adjacent to floodplains are likely to be worst  
hit









# Flood impacted pastures

Areas with severe erosion, scouring and gouging are going to be very challenging

Spelling is recommended in the interim

Mechanical methods will be needed





# Flooding duration

Barley Mitchell is the least flood tolerant, and 5 days under water can lead to plant deaths

Curley is more tolerant, and able to withstand 7-10 days under water

Hoop is better again, with 10-14 days

Bull can generally withstand 14-20 days under water

Bluegrass-browntop pastures can generally tolerate flooding for 10-20 days

Buffel can withstand 3-5 days flooding

This is modified by the depth of water and how fast it is moving

Fully submerged plants are less likely to survive

Still, rancid water is worse than slowly moving water

# Rebuilding a resilient business

The ultimate goal for most people will be to restore pastures and animal production, to reinstate cash flow and rebuild the business stronger than it was before.

There are a number of training courses, tools, practical methods and a few new emerging possibilities to help:

- EDGE training packages from MLA
- Private consultants – both training and advice
- DAF neighbour days, workshops and training over the coming weeks and months



# Rebuilding a resilient business

Monitoring the pasture response and starting forage budgets is highly recommended once you're back on your feet.

Monitoring land condition is also highly recommended to adapt your management over time.

The aim will be to restore country to good condition – which in most cases will be possible over 3-5 years.

# Rebuilding a resilient business

There a range of new tools and gadgets to help monitor and track progress

Any-thing from drones to helicopters will help to gain an immediate view of where the pasture is responding, and guide

- Where to re-stock based on the best feed on offer
- Which fences to reinstate, based on the best feed on offer
- Which fence-lines to change based on erosion, poor pasture recovery and new watercourses



# Rebuilding a resilient business

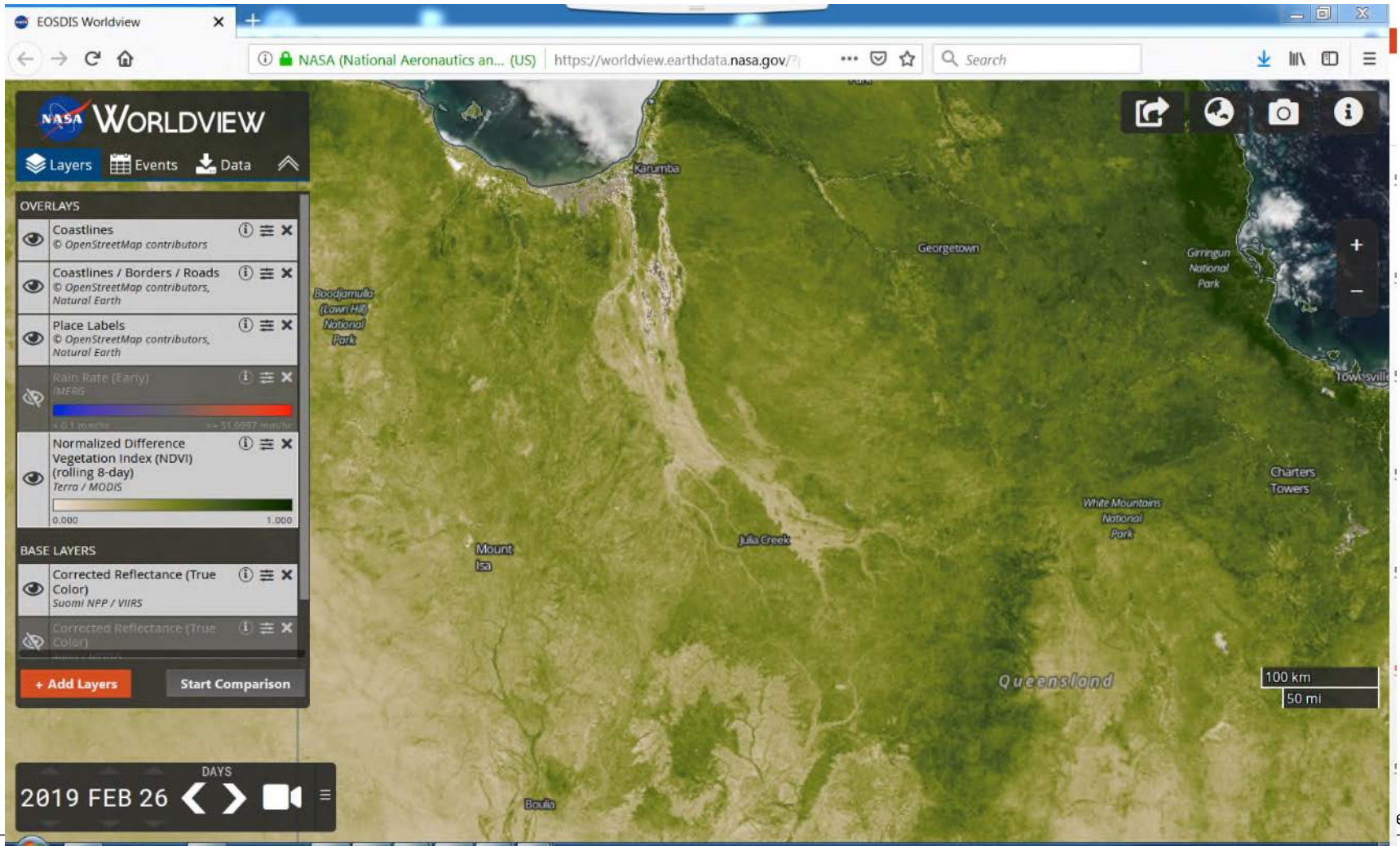
The NASA site I showed of the monsoon trough also has a greenness index, called the NDVI

You may find it useful to provide an overview of how quickly your pasture is greening up, but keep in mind:

- The satellite can't tell you what type of feed is growing – you still need to check on the ground
- The satellite can't tell you how much old carry-over feed is there – it only registers green feed
- If you get your eye in, you can get a feel for how much green feed is around

# NASA site

<https://worldview.earthdata.nasa.gov>





# To sum it all up

The response is mixed, but there are areas of:

- Good response
  - Already exceeded 400 kg/ha
  - Anticipate at least 1,500 kg/ha
  - Reasonable opportunities for restocking
  - Defer restocking and rebuild stocking rates cautiously (>10ha/AE)
- Medium response
  - Currently 150-300 kg/ha
  - Anticipate 1,000-1,200 kg/ha
  - Opportunities for restocking exist
  - Spell and rebuild stocking rates gradually (>14ha/AE)

# To sum it all up

The response is mixed, but there are areas of:

- Poor response
  - Currently less than 150kg/ha
  - Anticipate 300-500kg/ha
  - Limited opportunities for restocking
  - Spell and only carry essential stock (>25ha/AE)
- Impacted pasture response
  - Currently less than 50kg/ha
  - Anticipate no more than 100kg/ha
  - No opportunities for restocking
  - Destock and limit grazing access



# Further south - the Diamantina

Along the middle to lower reaches will experience a good flood



# Thank you for your participation

## Time for your questions

DAF's Northwest Agriculture Recovery Team

- led by the Queensland Reconstruction Authority (QRA) and involving the Departments of Premier and Cabinet, Queensland Health, Communities and DAF
- The Australian Government, not-for-profit organisations, local governments and industry groups are also part of the recovery efforts