



# ACCESS-NRI Scientific Advisory Committee Meeting

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Thursday 21<sup>st</sup> March 2024 / 2.00 PM – 3.30 PM

## Attendance

**Chair:** Andy Hogg

**Rapporteur:** Lauren Vieira

**Members:** Rachel Law, Claire Vincent, Ben Evans, Laurie Menviel, Paul Spence, Tilo Ziehn, Charmaine Franklin, Oscar Alves, Ed Doddridge, Ben Galton-Fenzi

**Observers:** Martin Dix, Victoria Allen, Claire Carouge

**Apologies:** Kelsey Druken, Ariaan Purich, Natalia Bateman, Simon Alexander, Adele Morrison, (Claire Vincent arriving late)

## Item 1: Acknowledgement of Country

## Item 2: Previous Minutes of SAC Meeting 15th February 2024

The previous minutes have been approved and uploaded on the [ACCESS-NRI website](#).

## Item 3: Matters Arising from February SAC Meeting

**A.1.1 – Members would prefer email calendar invites to keep track of meetings as HIVE links are difficult to track. ACCESS-NRI to respond by next meeting.**

*ACCESS-NRI team are working on a prototype, currently in testing phase. When receiving email – there will be a link, inviting you to add event to your calendar.*

## Item 4: ACCESS-NRI Updates

### Recruitment

- ACCESS-NRI are offering two team lead positions – User Training & Software Transformation.
- Interviews for Oceans, CoastRI and Ice Sheet Modelling Team leads, will start tomorrow.
- New Research Software Engineers have commenced and we will be ready to advertise for more in the coming weeks.
- We are currently 50/50 on gender balance for team leads and senior levels. Females are approximately 30% of the organisation, hoping to increase that over the next rounds and a possible female only round.

- We are currently seeking advice on a First Nations recruitment round.

### CoastRI

CoastRI is an NCRIS program, put together by 10 other NCRIS facilities, our focus being on coastal ocean modelling. Long term plans may include coastal downscaling of coastal models. A recent meeting looked at all the elements to include, such as, drones for beaches, tidal gauges in estuaries, GNSS stations for wave buoys and offshore moorings, all of which will be proposed in the NCRIS funding round this year. The date is yet to be confirmed, however this will most likely be our last opportunity to bid for funding for a while.

### 2024 OMO Meeting 2 – 4 July in Canberra

- Running in conjunction with IMOS (COSIMO/biannual COMO workshops)
- Have just released a call for abstracts to our users
- This will feed into the CoastRI proposal, however will change the structure of our annual ACCESS-NRI structure, as this will be COSIMA main meeting for the year.

### 2024 ACCESS-NRI Workshop Program Committee 2 - 5 Sept in Canberra

ACCESS-NRI Director will Chair the program committee. Requesting volunteers/nominations for a committee, specifically looking for fixed commitment with a broad range and level of representation across working groups. Happy to consider suggestions on planning, daily themes, training days etc. Speakers from the Met Office attending the Bureau's Connective Workshop the week prior, are interested in also attending the ACCESS-NRI Workshop.

**Action: A2.1 - Have survey reports ready for the ACCESS-NRI workshop program committee – ACCESS-NRI**

## 4.2 CMIP7 update

- Fasttrack Version 2 survey was sent out and completed. (in time for IPPC)
- IPPC timelines suggest experiments may need to be done by 2026, which will be a challenge for CSIRO and worldwide modelling groups.
- ESMValTool Hackathon held last week in Aspendale
- Great start with forty in attendance, many discussions regarding tools
- No prototype coupled system yet, however different parts of model development are progressing well
- The Momentum partnership – initially thought the Bureau would become a “core partner” with ACCESS-NRI and CSIRO both as “research partners”. This has not eventuated, therefore the Bureau and CSIRO will remain as joint core partners, with varying levels of responsibilities.
- ACCESS-NRI aims to become a research partner with distribution rights (like an associate without a fee) which can continue even when agreements expire.
- Updated partner associate agreements are yet to be drafted, still waiting on the consortium, as well as updates to the EULA (end user licence agreement).
- NCI is not easily categorised, as there is no “research infrastructure” category.
- The current EULA was flagged as insufficient/out of date, in regards to the requirements of an IT user – when agreement expires, the users will no longer have a valid licence.

- NCI representative has no concerns of individuals losing their access come 31<sup>st</sup> March.
- AAD would possibly come through ACCESS-NRI

### 4.3 Merit Allocation Scheme

- A formal process on merit allocation was decided last year, however have since realised it is not necessary, as the scheme is underused at this time.
- 40% use of storage used so far, mainly due to COSIMAs latest experiments – Co-Chairs will be reminded there is room in guidelines to be generous with allocations.
- Storage – no plans to increase WG TB allocations until next year.
- Storage management will move to have experiments kept in folders, which will keep track of the amount of storage for each experiment.
- This change will come in April, after some more tests and planning
- Also discussed how to involve new people using access – join WGs, still need to formalise something, good ways to increase involvement.
- Until we have enough experiments – allocations are up to discretion of Working Group Chairs.
- Try and encourage communities to think about how to get the most out of NCI resource.

### 4.4 Ice Sheet Model selection process

ACCESS-NRI have the funds to support ice sheet capability in Australia, and are currently gathering information from the model developers and the community. An expert panel will meet in April to discuss the selected short list of models, and make a decision on which model to use for ACCESS-NRI.

The process has been collegial, constructive, and very focused on the essential criteria. Having seen divergences in other communities, including ocean modelling, we took a very detailed approach on the selection process, including input from the Antarctic Division. Many models did not meet the criteria, therefore making the expert panel's job simpler.

#### *Comments*

The Australian Ocean Modelling community is small and 20 years behind the international community in development. Unlike COSIMA, who have a large structure group using MOM, we have a couple of groups focused on ISM, Elmer/Ice, and other models used interchangeably for paleo.

Although Australia is focused on Antarctica, the ice sheet models for Greenland would be potentially different due to the approximations and particular expertise you need - It may be worthwhile choosing more than one model.

#### Call for Expressions of Interest in ACCESS-NRI Sub-projects

Partners can apply for ACCESS-NRI funds to help with work on the ice sheet models, please contact your institutions board members if this is of interest.

## 4.5 Presentation from ACCESS-NRI *Model Evaluation & Diagnostics (MED) Team*

### Current Releases:

- ESMValTool-Workflow on NCI Gadi
- ILAMB-Workflow on NCI Gadi
  - “Workflow” meaning the infrastructure that's needed to deploy tools on Gadi, to link with NCI data collections
- CMORised Observation datasets on NCI Gadi
  - The goal is to create observation datasets interoperable with ACCESS outputs and CMIP models
- Integration of NCI Data collections
  - Released last year with the help of NCI data collection, and aim at aggregating some key observational datasets for evaluation
- Model outputs catalogues
- Live diagnostics tools – currently in development
- Training material

### CMIP7 ACCESS Evaluation Hackathon

- Developed scripts/workflow for evaluation as ACCESS is developed for CMIP7
- Scientific input
- Identified strengths and weaknesses of different approaches
- Report ready next week and will discuss with CMIP7 leadership group – to be released on ACCESS-HIVE

### The ACCESS-NRI Replicated Datasets for Climate Model Evaluation and NCI Data collection.

- Contains key observation datasets to run with ILAMB and ESMValTool
- Simulates versions of the rule/directly comparable to CMIP outputs
- Added Australian specific data
- Available on ACCESS-HIVE

The slide is titled "Replica datasets for Model Evaluation" and features the ACCESS logo in the top right corner. It lists "CMORised Observations datasets:" which include the "ILAMB sub-collection", the "ESMValTool sub-collection", and "New 'Australian Datasets'" (specifically AGCD and ANU Climate). A QR code is provided for access, with a note stating "Requires access to project CT11 (ACCESS-NRI replica datasets)". On the right side, there is a screenshot of a social media post titled "Official release of the ACCESS-NRI Replicated Datasets for Climate Model Evaluation NCI Data collection". The post includes a link to a GitHub repository and a brief description of the data collection's purpose. The slide also includes a "See post" link at the bottom right.

- Replica datasets for Model Evaluation are classified into Tier 1 & Tier 2
- Both have light restrictions and can be shared
- We have contacted data providers for information on licensing and availability for Tier 3 datasets

**Replica datasets for Model Evaluation**

CMORised Observations datasets:

ESMValTool sub-collection

"Tier 1" and "Tier 2" public

Currently working on moving Licensed (restricted) datasets to the public collection.

- Model Live Diagnostics Version 1, currently running on ACCESS models
- Looking to integrate ILAMB and ESMValTool
- MED Team to present at EGU

**Model Live Diagnostics (v1)**

- Check
- Monitor
- Visualise
- Evaluate

of currently running or 'live' ACCESS models

Currently exploring integrating ESMValTool and ILAMB

- Tutorials were developed ahead of the CMIP7 Hackathon
- Intention is to keep providing training videos for future releases

**ESMValTool-Workflow: Youtube Training**

Target ACCESS users on NCI Gadi

- We encourage everyone to view the visualizations on ACCESS-NRI's vimeo channel, created by Owen Kaluza.
- The recent collaboration between the Australian Antarctic Project Partnership (AAPP), the Australian Earth System Simulator (ACCESS-NRI) and the Terrestrial Ecosystem Research Network (TERN). ACCESS-NRI and TERN are enabled by the Australian Government through the National Collaborative Research Infrastructure Strategy (NCRIS).
- [Antarctica Sea Ice Coverage 1978-2023](#)
- [Antarctica - Belgica Voyage](#)

**vimeo**

<https://vimeo.com/accessnri>

7 videos

## Community Engagement & Short Term Plans

- CMIP7 Hackathon in Aspendale March 2024
- ESMValTool consortium
- ACCESS-NRI MED has joined
  - ESMValTool Core development team
  - ESMValTool Observational data group
- European Geoscience Union (EGU) 2024
  - MED Team co-sharing ESMValTool splinter session
  - ACCESS-NRI presentation
  - Live diagnostics Workflow presentation
- ESMValTool Annual Workshop 2024 Munich, Germany
  - MED Team to present and discuss ACCESS-NRI plans
- Organisation of Pacific time friendly community meeting
- ACCESS Q&A virtual drop-in sessions, monthly
- ACCESS-NRI Workshop 2024
  - CMIP7 MED Hackathon day

## Software & Data Development activities

- Release of ESMValTool v2.0 – support Jupyter notebook
- Release of ILAMB-Workflow v2.0 – support native ACCESS-ESM/CM outputs without CMORisation
- Series of curated recipes for ACCESS CMIP7 evals
- Live CMORiser for ESMValTool: support native ACCESS-ESM/CM outputs
- Model Live Diagnostics v2.0 – ESMValTool / ILAMB integration
- Observation datasets – new observation CMORisers, ERA5 daily data

## *Comments*

Work on the regional nesting suite is still in progress, we can then move to evaluation diagnostic tools for high resolution models.

[CSET](#) is currently available on GitHub, a toolkit for evaluation and investigation of numerical models for weather and climate applications, however it is not fully functional, could be a good way to leverage the Bureau's in-kind contributions.

ACCESS-NRI could take part in the Bureau's September Workshop and the high resolution/seaset training days.

Grafana is being used to monitor Working Groups and ACCESS-NRI resources, however it's too expensive to open. This can be discussed at the ACCESS-NRI / NCI meeting tomorrow.

## Item 5: Update from Working Groups

### Forecasting & Prediction

- Working on document to support Machine Learning

### Atmospheric Modelling

- Looking at kilometre scale simulations
- Aus2200 doesn't extend far enough north – may potentially use Met Office runs
- Looking at 2 options, extending Aus220 domain or setting up tropical domain
- Been discussing joint meetings with Aus2200 project, to expand engagement to ACCESS-NRI meetings

### Land Surface

- Adding high-res data sets to Australia – discussing ideas

### ESM

- Joint meeting with F&P went well, attendance is high, however running out of speakers.

## Item 6: Any Other Business

### AI/ML Workshop

Save the date - 8<sup>th</sup> & 9<sup>th</sup> April, 2024. Start of the day UK time, late evening Australia/NZ time (exact times TBC)

- UM/Momentum partners machine learning science workshop (Online/virtual)
- Intended to help inform how machine learning can best be woven into the new Momentum Partnership
- Outcomes of the workshop will be shared and more widely discussed during the Momentum User workshop in June
- Blue Link meeting was held this week. Interesting discussions on forecasting models, seasonal predictions, and the ensemble carbon filtered DA system.

## Item 7: Next Meeting

9<sup>th</sup> May 2024 2.00pm - 3.30pm

End of meeting.

### Action Items

**Action: A2.1 – Have survey reports ready for the ACCESS-NRI workshop program committee – ACCESS-NRI**

**Action: A1.1 – Members would prefer email calendar invites to keep track of meetings as HIVE links are difficult to track. ACCESS-NRI to respond by next meeting.**