



OzFlux: Inside Looking Out

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We had a
very good
workshop!



TERN

OzFlux
Land-Atmosphere Observatory

Summary

Current state of the OxFlux network
FluxNet 2015 Synthesis and BADM
Data Availability
Challenges

CURRENT OZFLUX NETWORK

Current Network

Australia

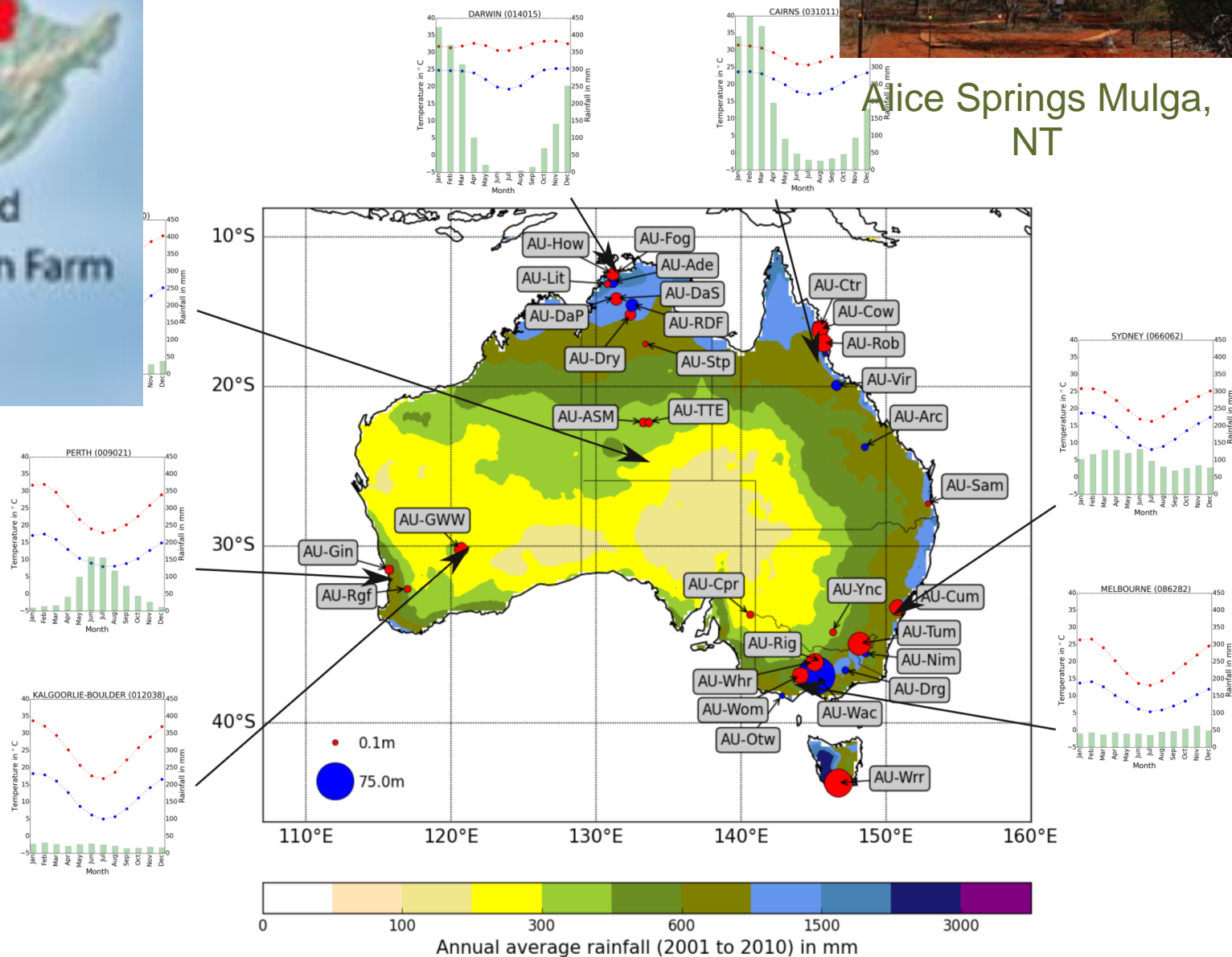
- 24 active sites, 2 added this week
 - Alpine Peatland (Vic)
 - Rocky Mouth wetland (NSW)

New Zealand

- At least 5 active sites
 - ❖ Ashley Dene (paired sites, Landcare)
 - ❖ Scott Farm, Troughton Farm, Kopuatai (University of Waikato)
 - ❖ Methven, Winchmore, ...? (NIWA)

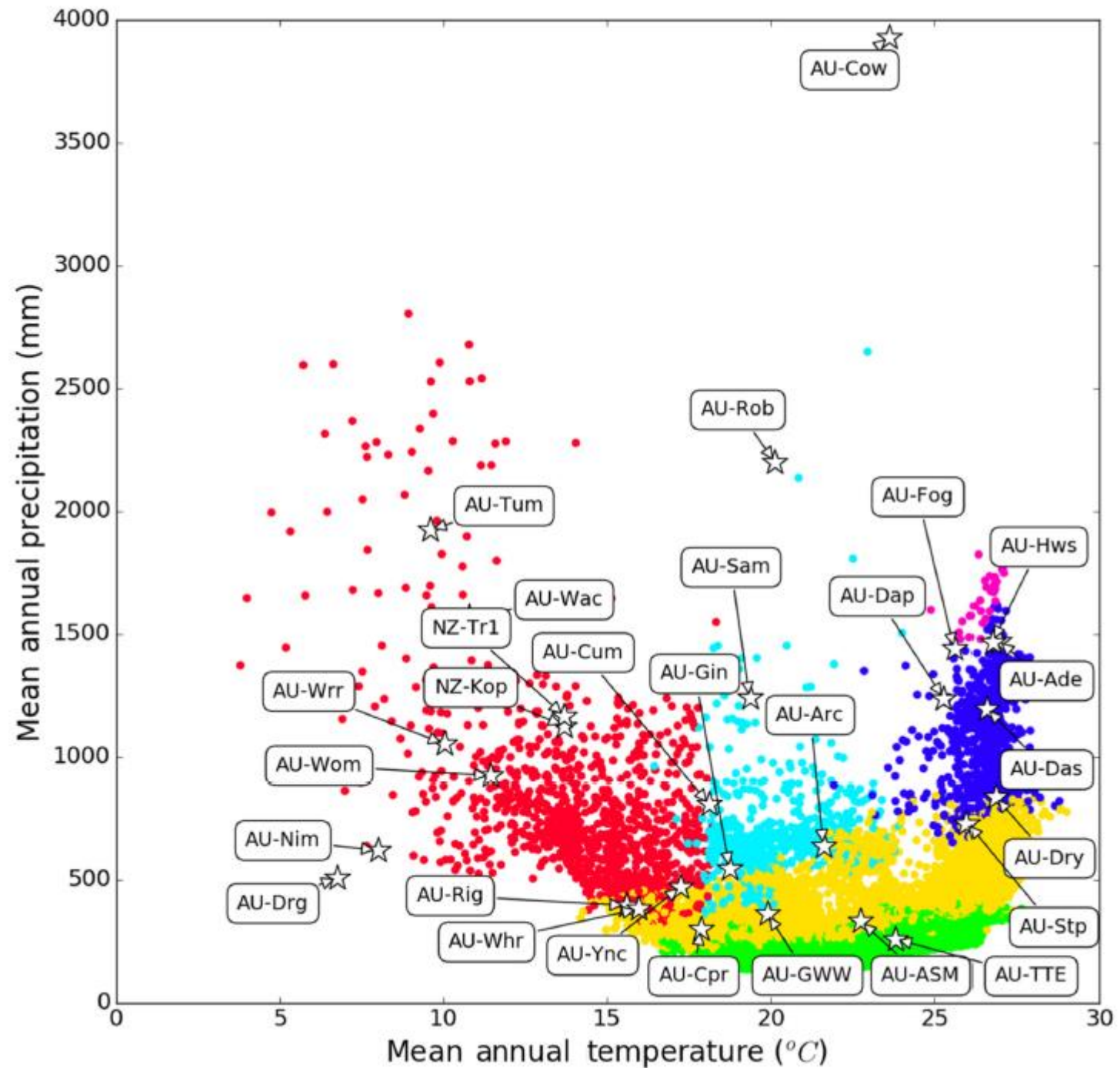


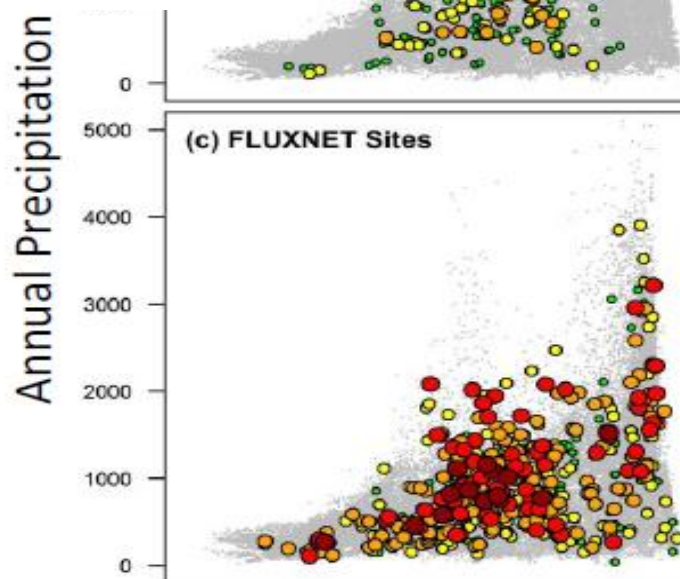
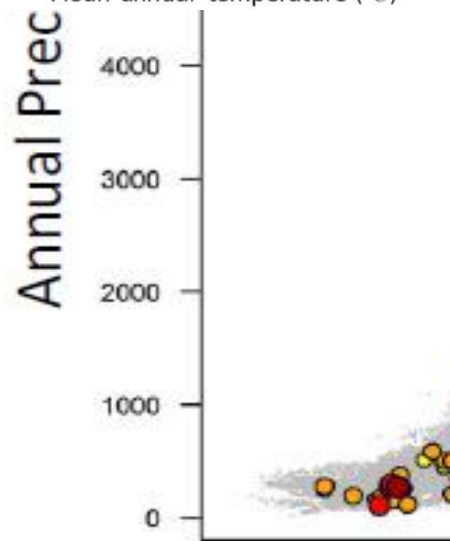
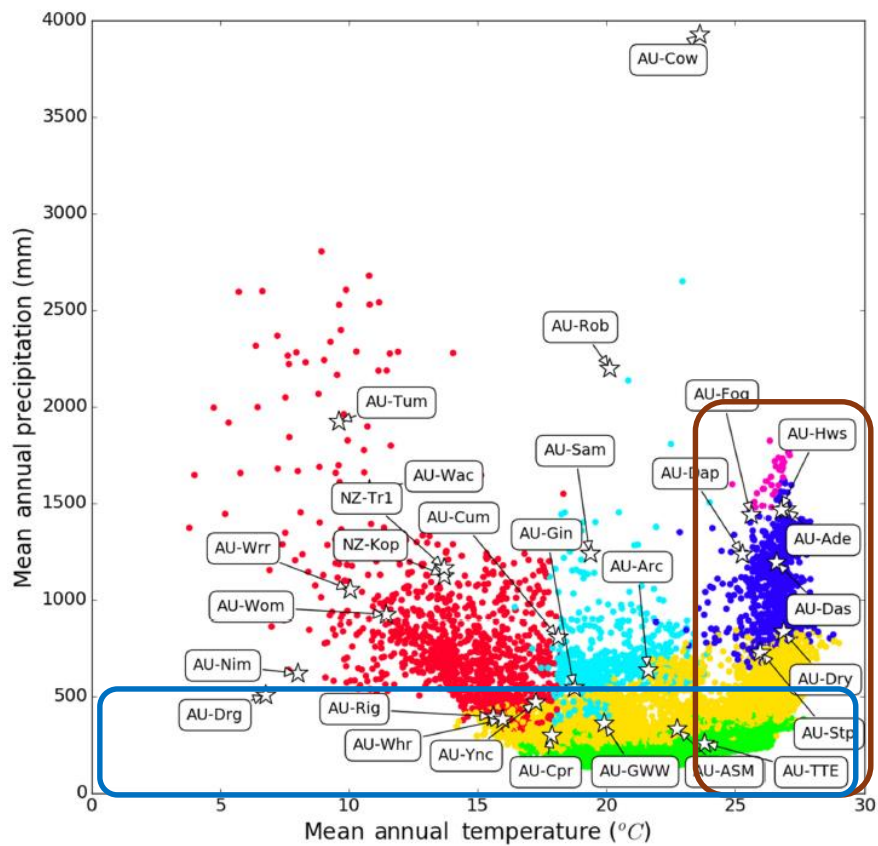
Alice Springs Mulga, NT



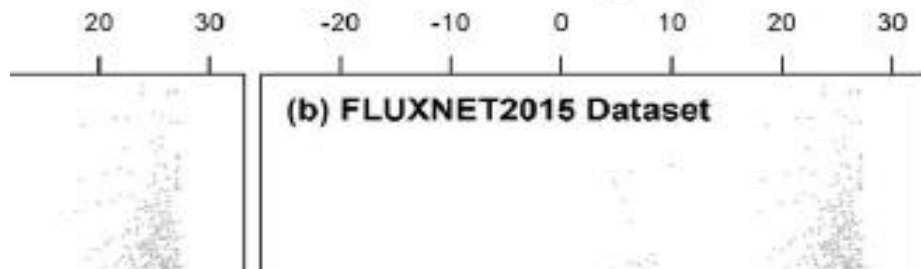
Distribution in Climate Space

Calperum, SA

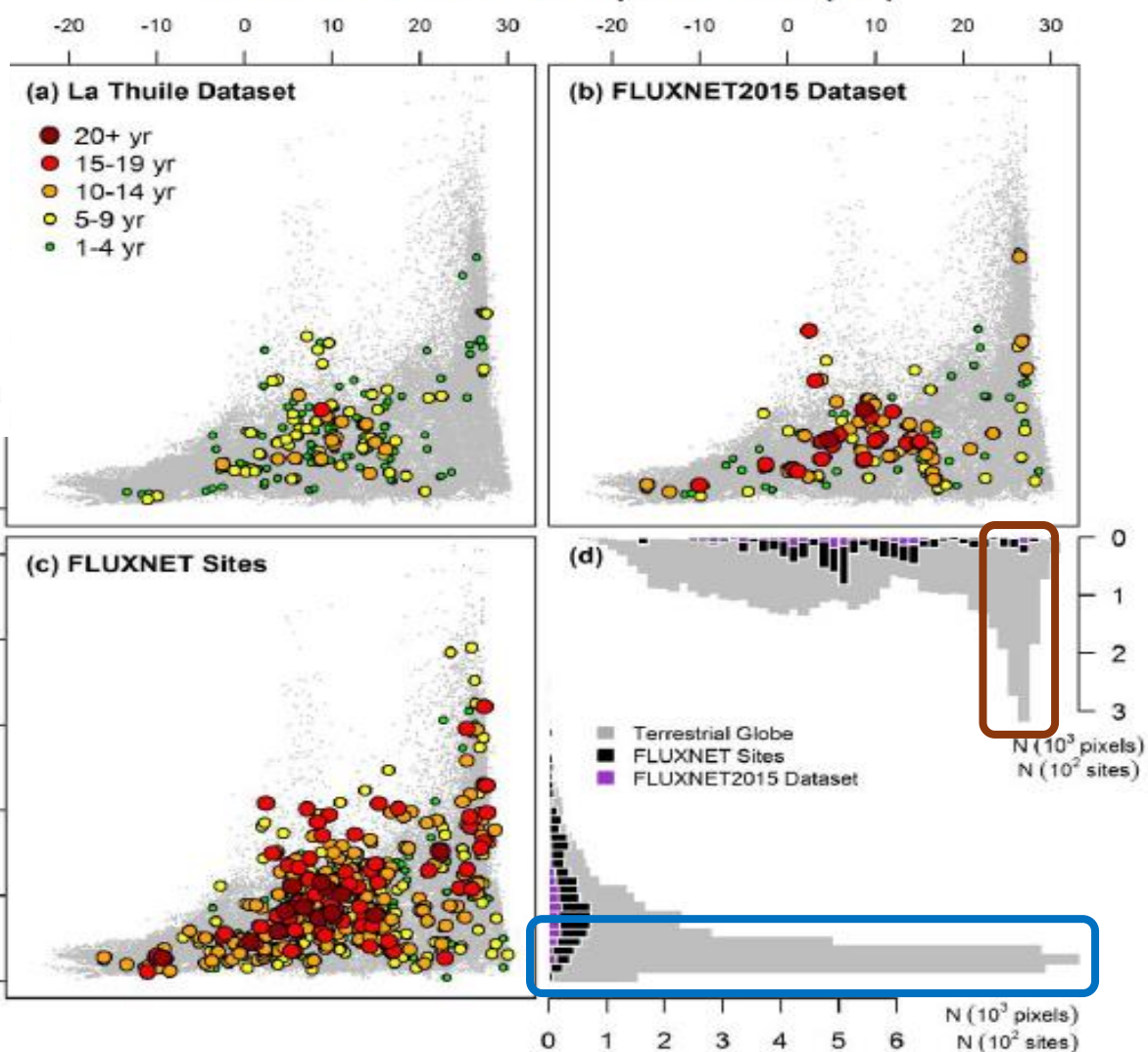




Annual Temperature (°C)



Mean Annual Temperature (°C)





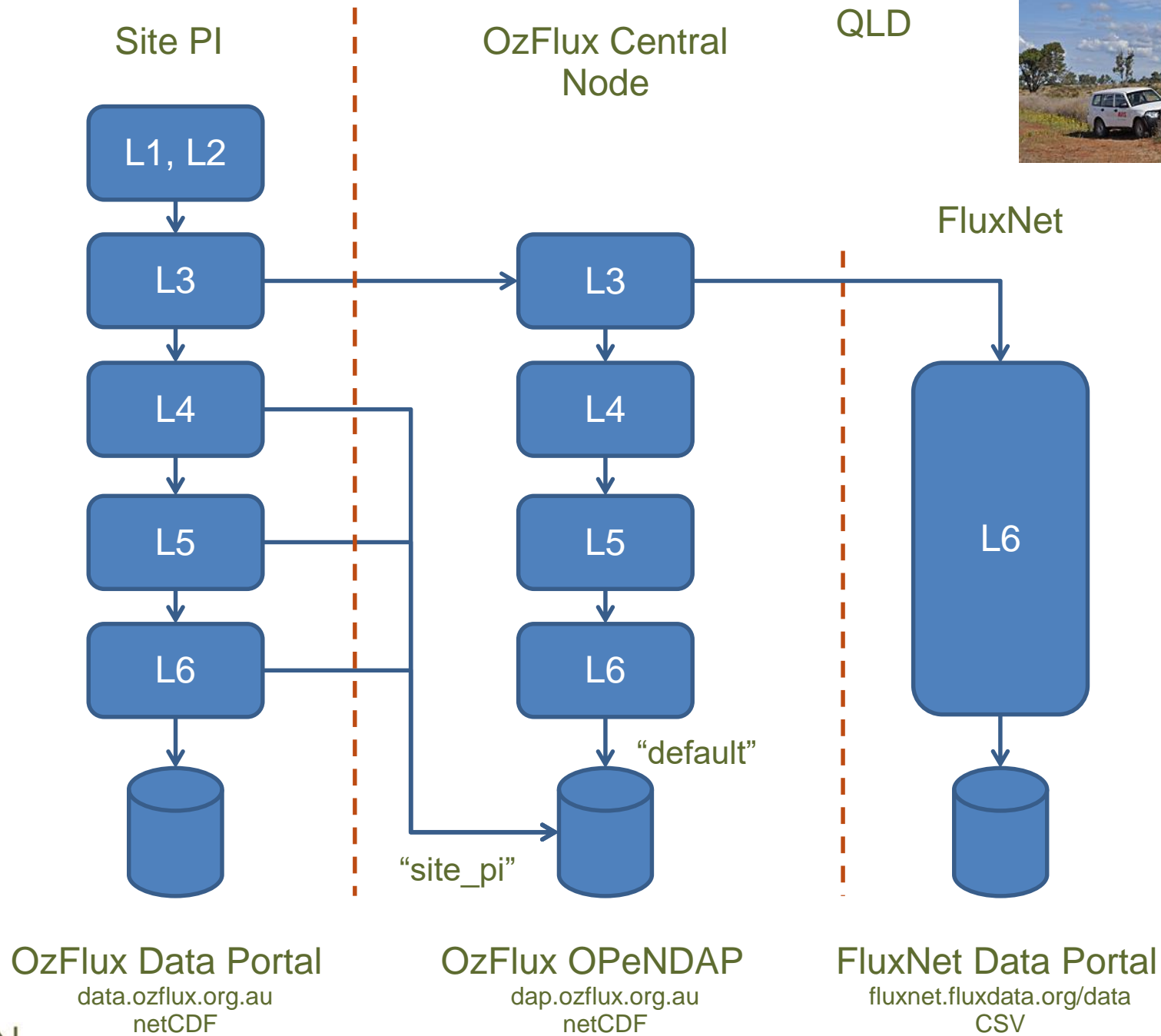
FLUXNET2015 Continent Distribution

FLUXNET2015: 212 sites 1532 site-years

North America:	84 sites (40%)	604 site-years (40%)
Europe:	71 sites (33%)	633 site-years (41%)
Oceania:	23 sites (11%)	113 site-years (7%)
Asia:	21 sites (10%)	102 site-years (7%)
C&S America:	7 sites (3%)	39 site-years (3%)
Africa:	6 sites (3%)	41 site-years (3%)

OZFLUX DATA AVAILABILITY

Arcturus
Emerald
QLD



Data Holdings



Nimmo, NSW

OzFlux Data Portal (netCDF)

- ~202 site-years as of November 2017
- 2 sites > 10 years, 16 sites > 5 years

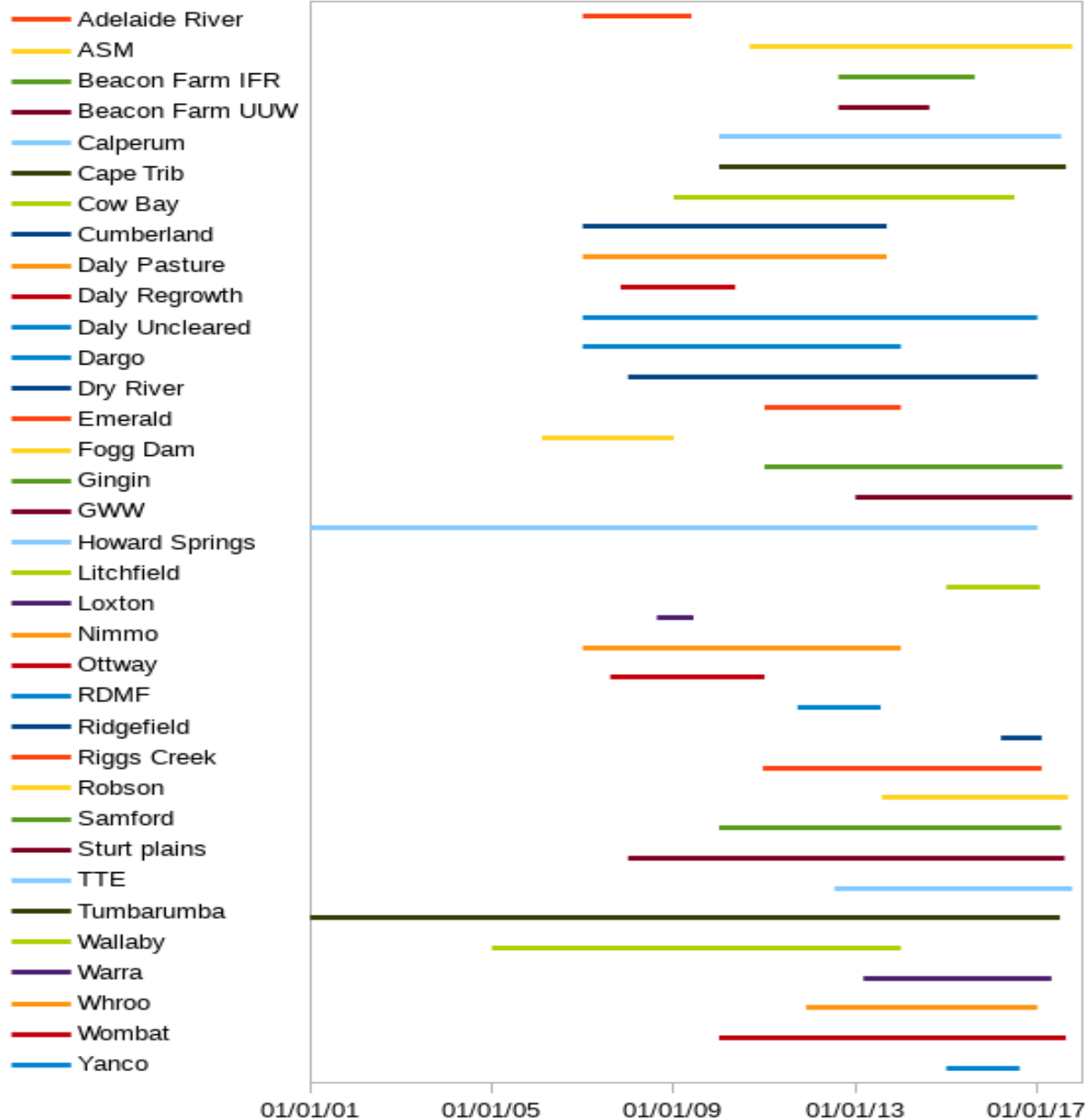
OzFlux OPeNDAP Server (netCDF)

- ~95 site-years available (“default” processing)
- “site-pi” versions to be added

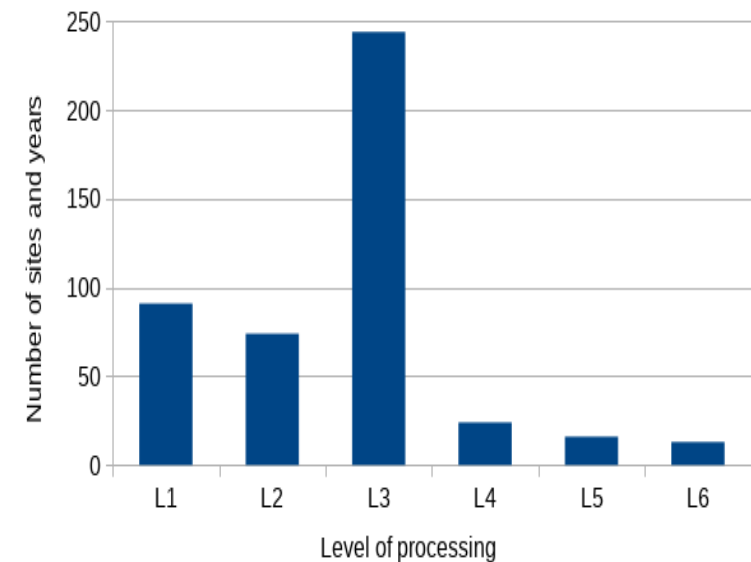
FluxNet Data Portal (CSV)

- ~85 site-years submitted (85% of available)
- Up from ~15 site-years for La Thuile data set

Site Timelines

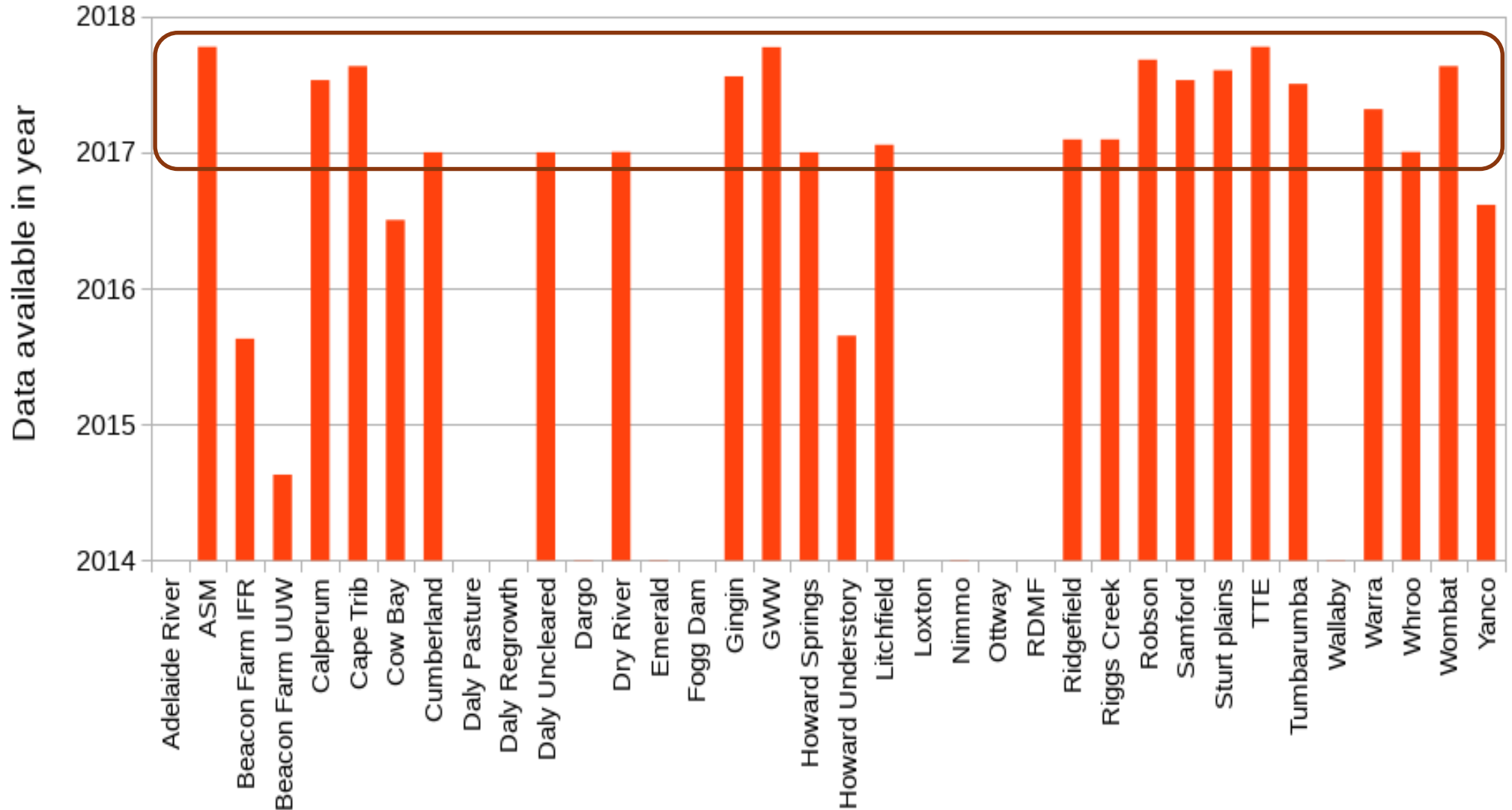


Level Distribution



Last L3 Data on Portal

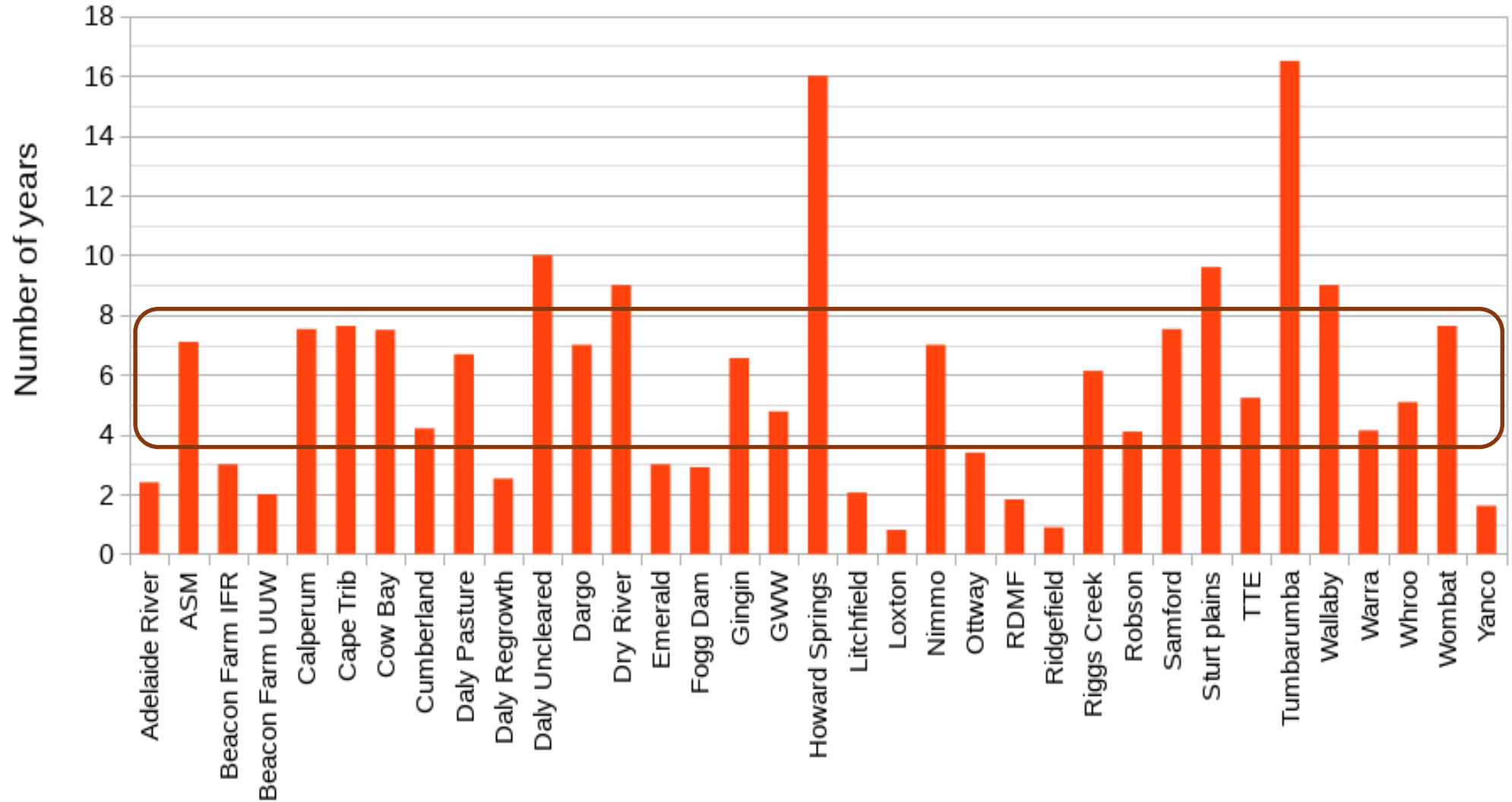
24 active sites, 20 sites up to beginning of 2017, 11 sites up to last 6 months



Eddy Covariance Tower Site

Length of Site Data Record (L3)

2 sites close to 20 years, 15 sites close to 10 years



Eddy Covariance Tower Site

Publications Using OzFlux

Courtesy of James Cleverly

~152 papers counted so far

- 61 for NATT
- 33 for Tumbarumba
- 32 for Alice Springs Mulga
- 16 Cpr, 13 NZ, 13 TTE , 12 Wombat, 6 GWW, 6 Riggs, 6 Yanco, 4 Warra, 5 Whroo

~53 for period 2016 – 2017

CHALLENGES



TERN

OzFlux
Land-Atmosphere Observatory

Wish List for 2017 - 2018

Preserve core strengths of OzFlux and
Supersites during the TERN restructure.

Strategic Plan for the new capability.

- We need this to prioritise OCN tasks.

Better use of the OzFlux Central Node.

Better engagement with research user
community.

Look at engaging with non-research
communities.

Progress on issues surrounding partitioning.

Future Directions

Maintain existing data collection and services:

- Can we get 20+ year continuous records?

Modest development of existing data path:

- Greater automation to free up time.
- Site PIs to contribute their own products.
- New products for the user community?

Position TERN and TERN-OzFlux for long-term funding:

- Draft NCRIS Roadmap available.
- TERN gets 3 mentions, IMOS gets 8, ALA gets 11.
- SKA gets 15!

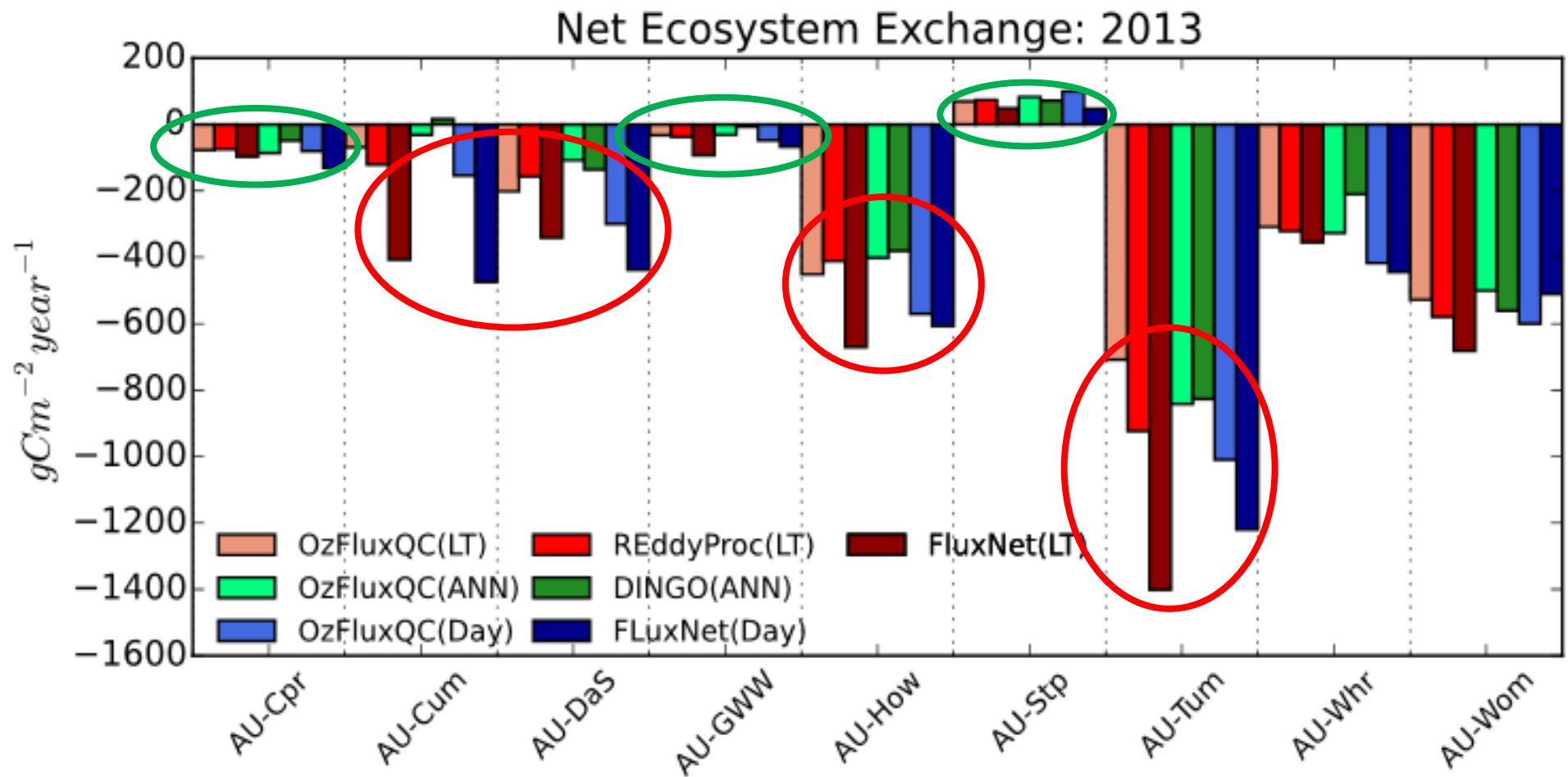
PARTITIONING, UNCERTAINTY



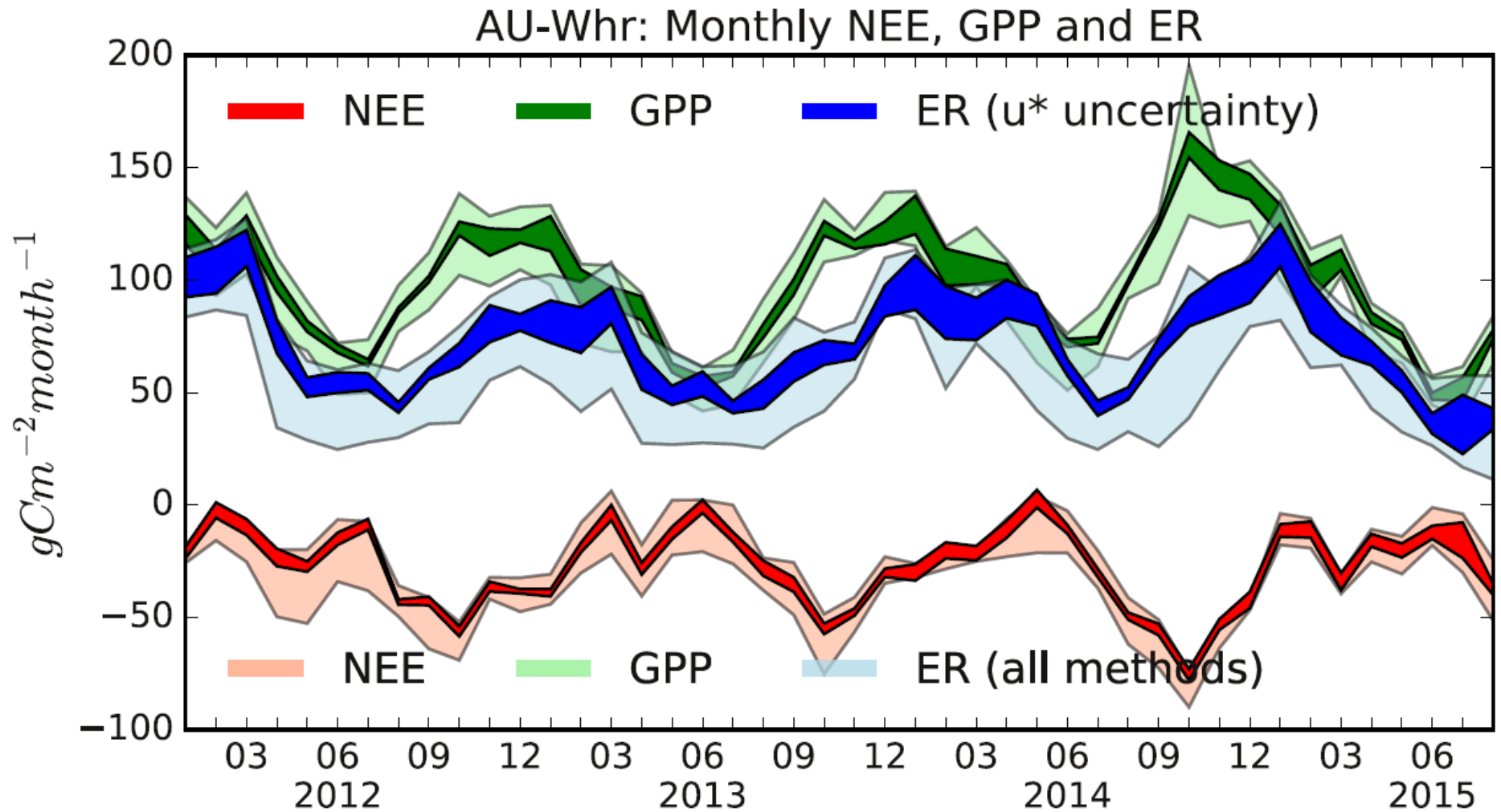
Partitioning: Different Methods

Gingin, WA

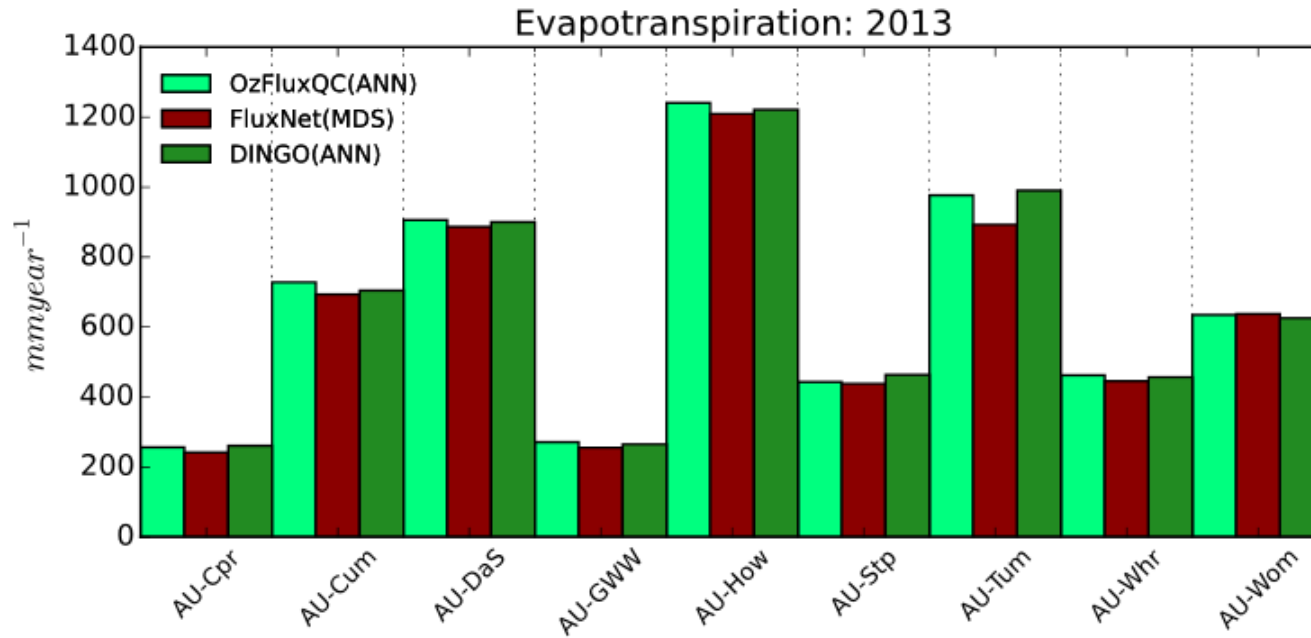
Isaac et al 2016, Figure 8



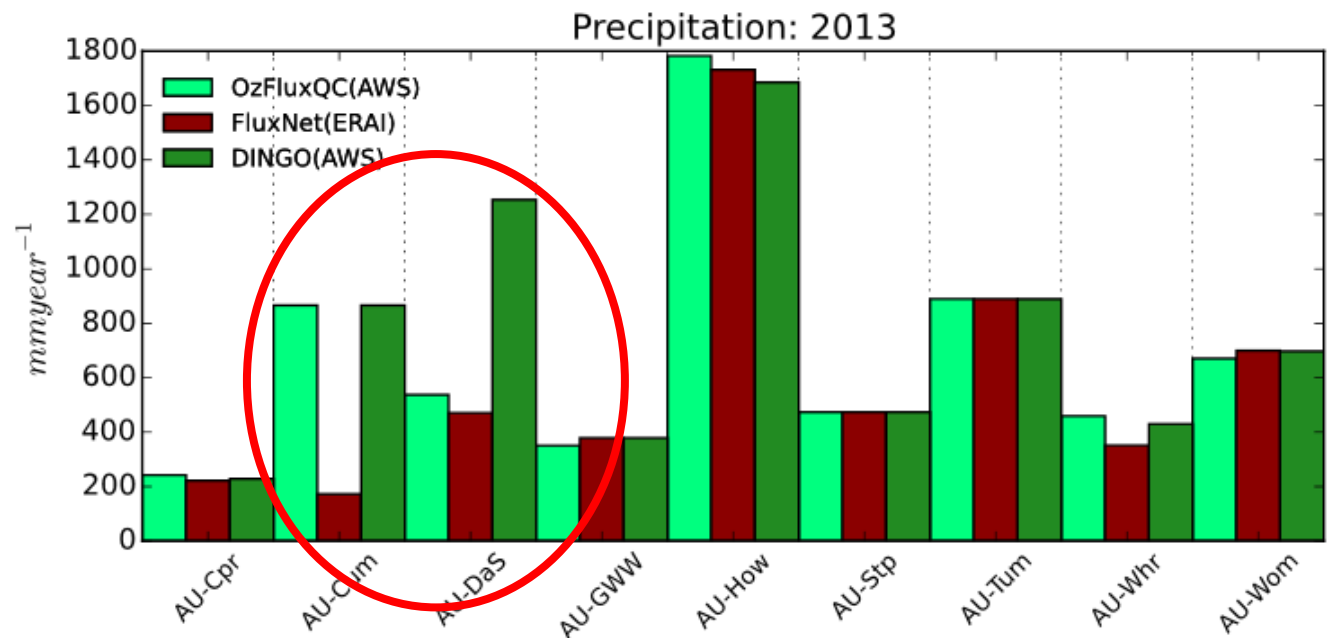
Uncertainty Due to Method



ET and Precipitation



Wombat State Forest, VIC



Acknowledgements

Ray Leuning, Helen Cleugh and Eva van Gorsel

Suzanne Prober, James Cleverly and the OzFlux Steering Committee

The OzFlux community

TERN, Siddeswara Guru

References

Beringer, J. et al: An introduction to the Australian and New Zealand flux tower network – OzFlux, Biogeosciences, 13, 5895–5916, 2016

Isaac, P. et al, 2016: OzFlux Data: Network integration from collection to curation, Biogeosciences Discuss, doi:10.5194/bg-2016-189