



Department of
Primary Industries and
Regional Development

Protect
Grow
Innovate

PestFacts WA Webinar

Climate and pest outlook for the WA grainbelt in 2023



Department of
Primary Industries and
Regional Development



IPMforGrains is a GRDC investment delivered by Cesar Australia,
DPIRD, QDAF, NSW DPI and SARDI
with in-kind contributions from all partner organisations

Webinar agenda

WA's climate outlook for 2023.

Ian Foster. DPIRD senior research scientist.

Pests that growers need to watch out for in 2023.

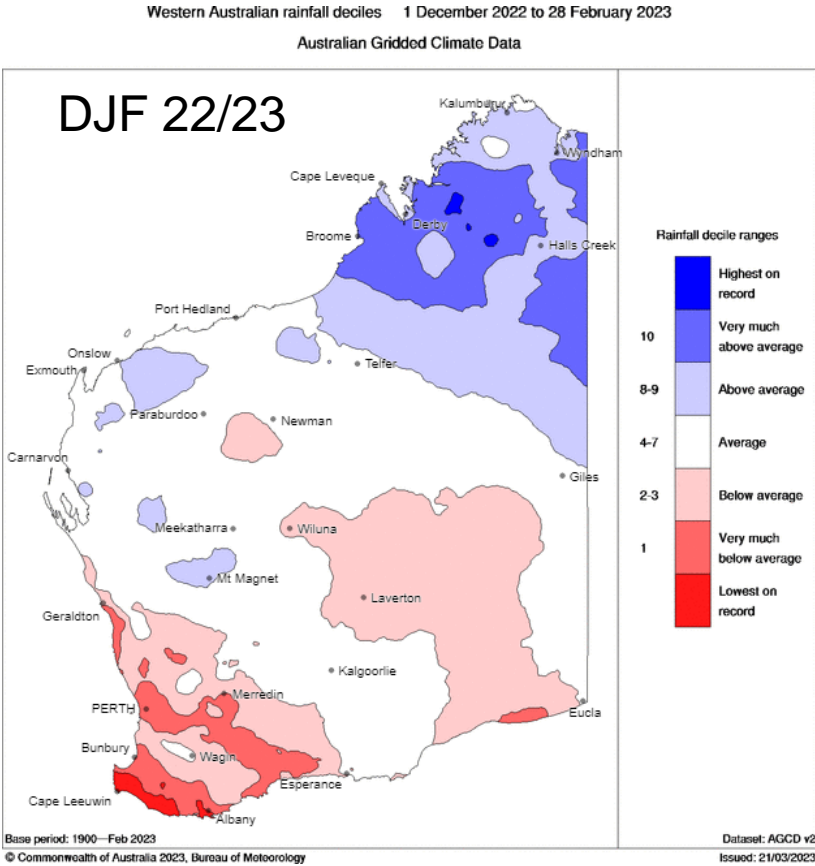
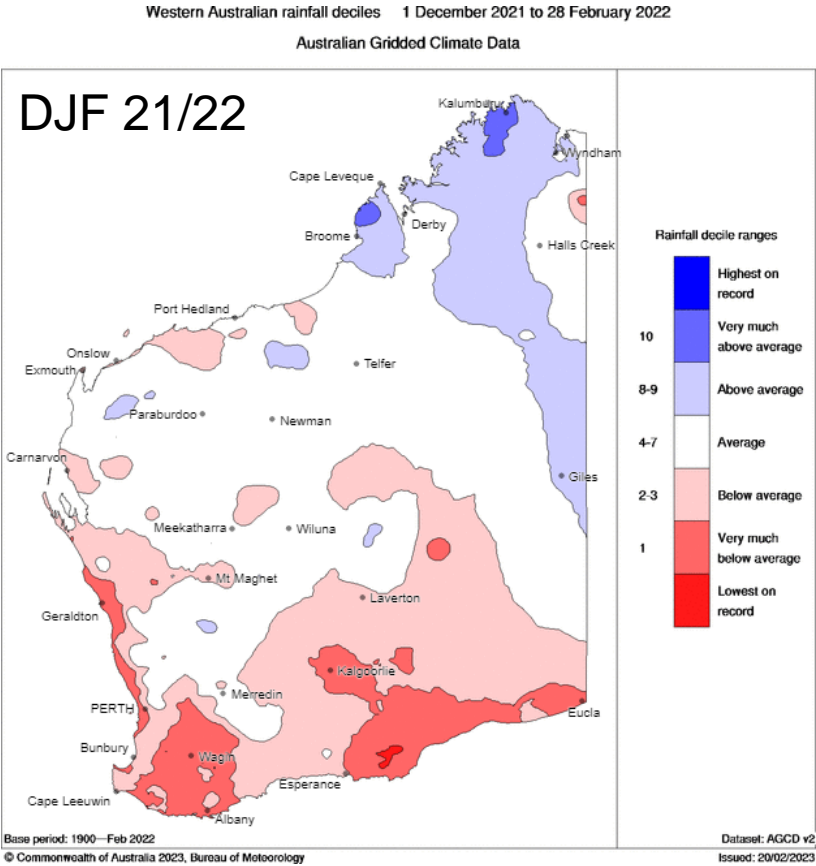
Svetlana Micic. DPIRD research scientist.

Question and Answer session.

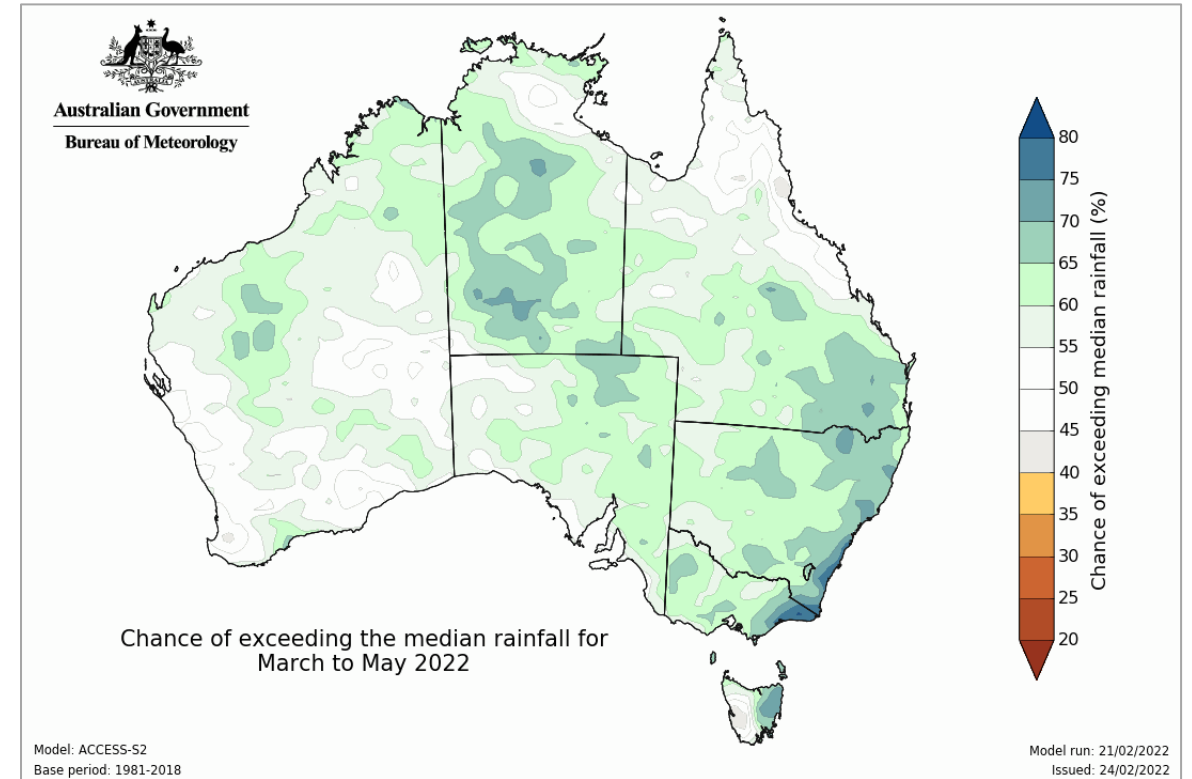
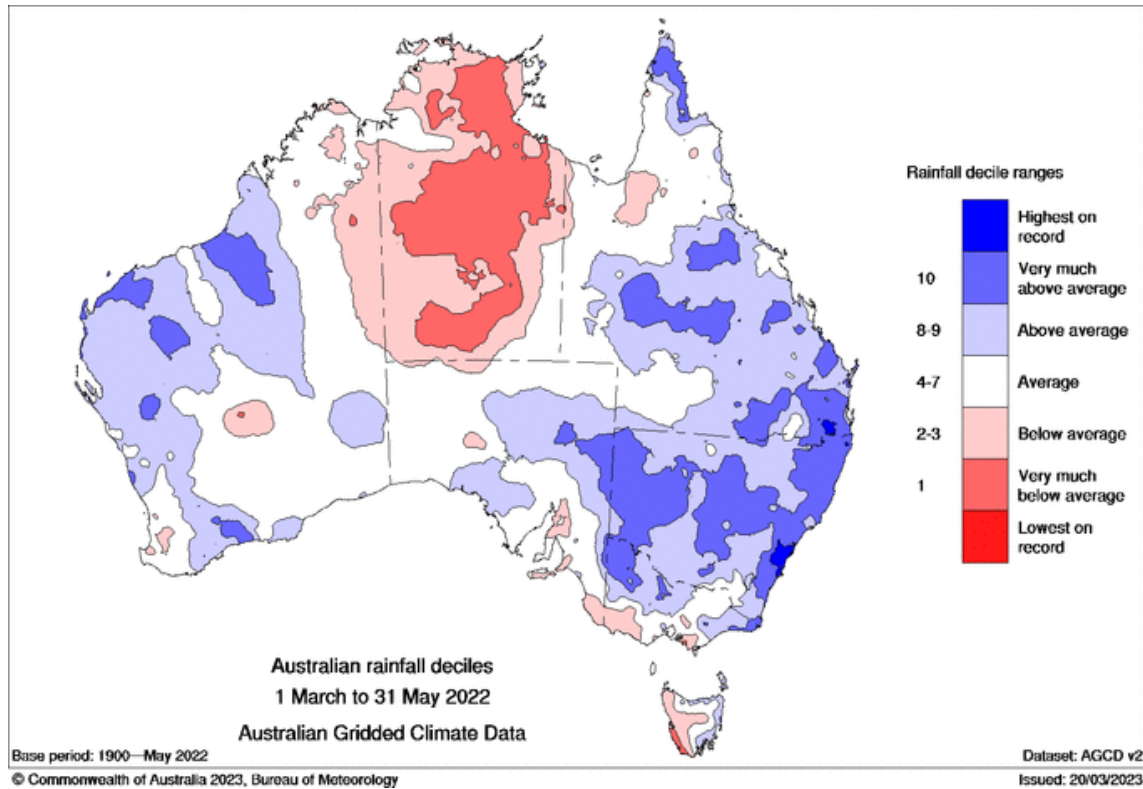
Outline

- Recap of summer rain last year vs this year
- Autumn rain in 2022
- Seasonal rain outlook for autumn and winter 2023
- Monthly rain outlooks at locations

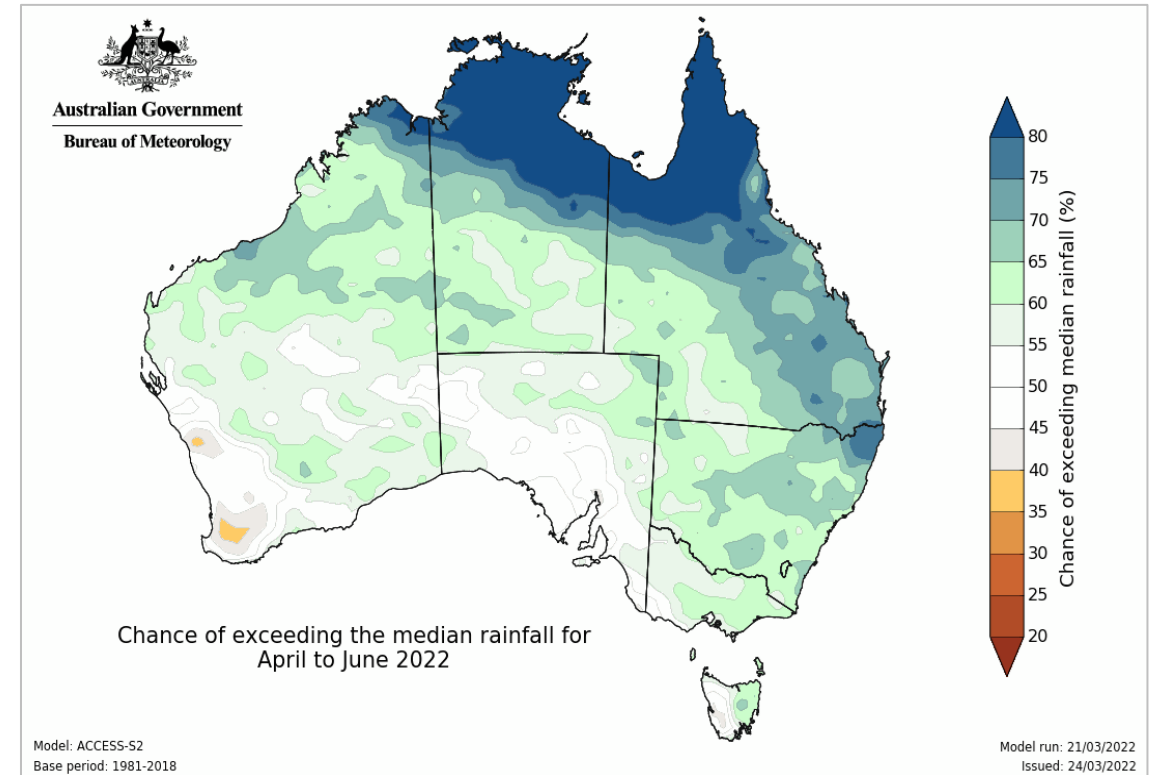
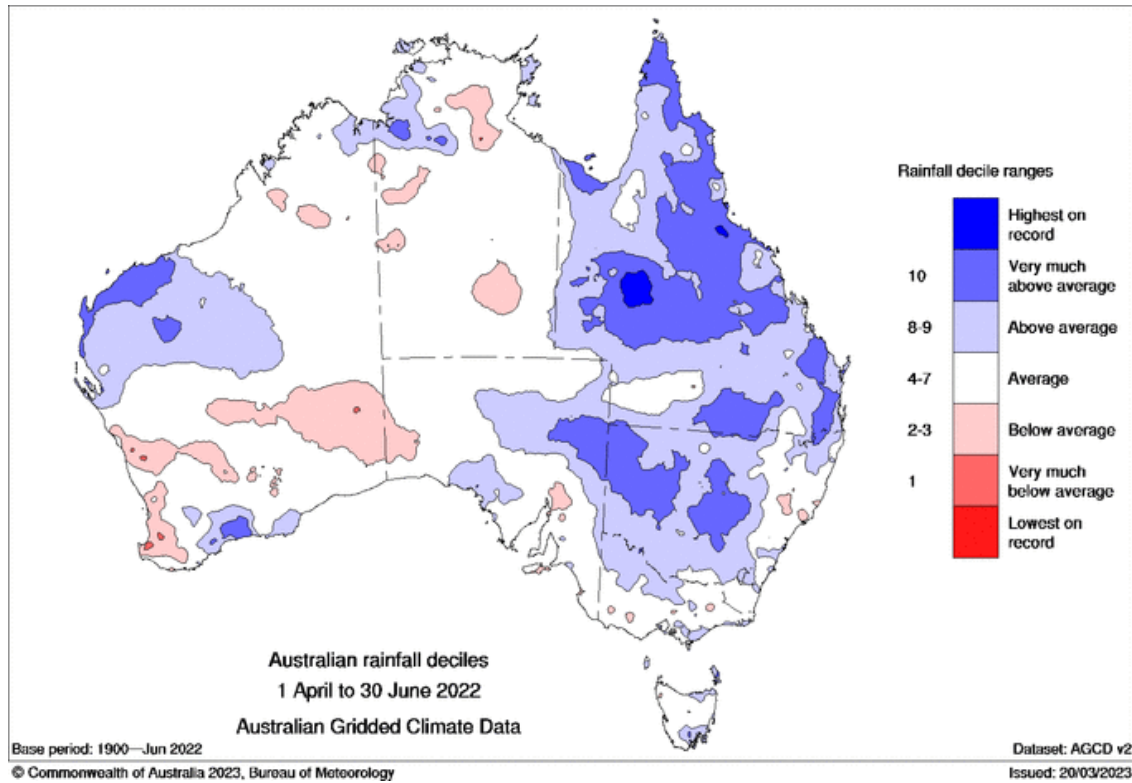
Summer 2022 vs 2023



Autumn rain 2022

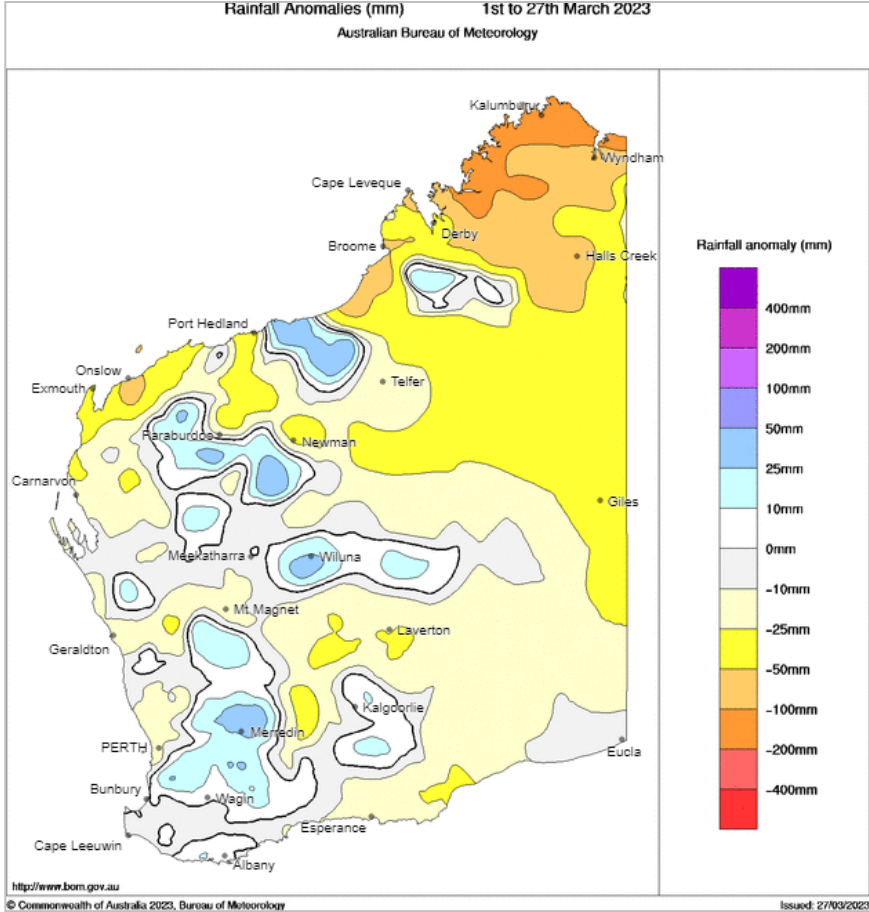
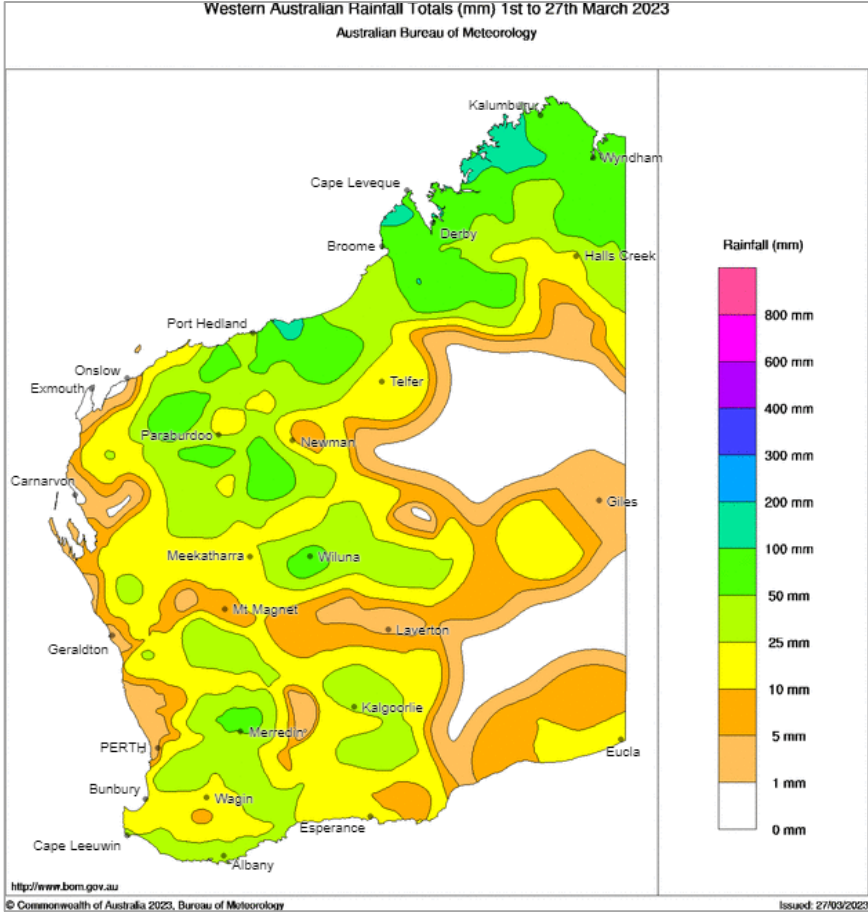


April to June rain 2022



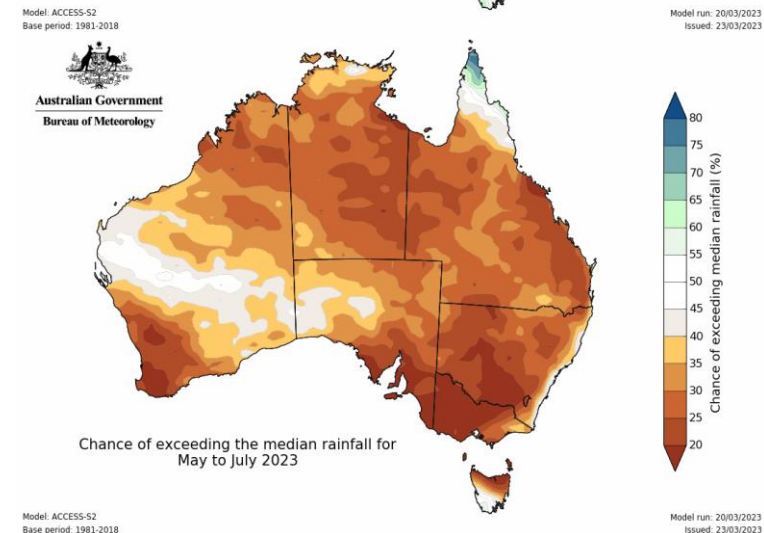
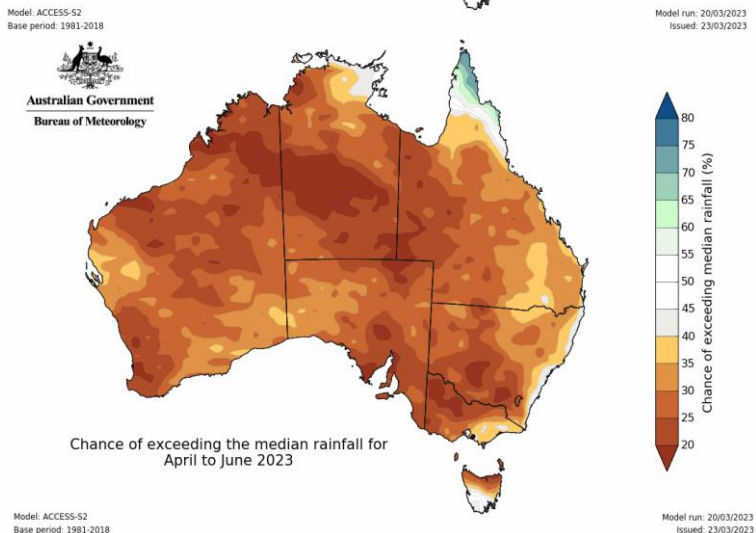
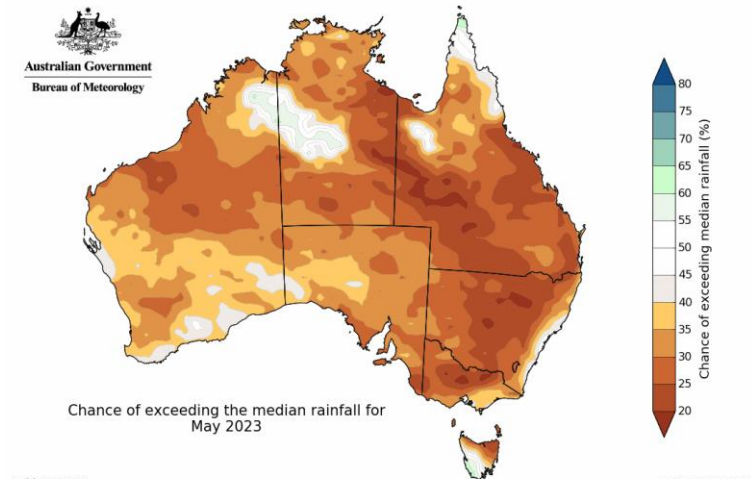
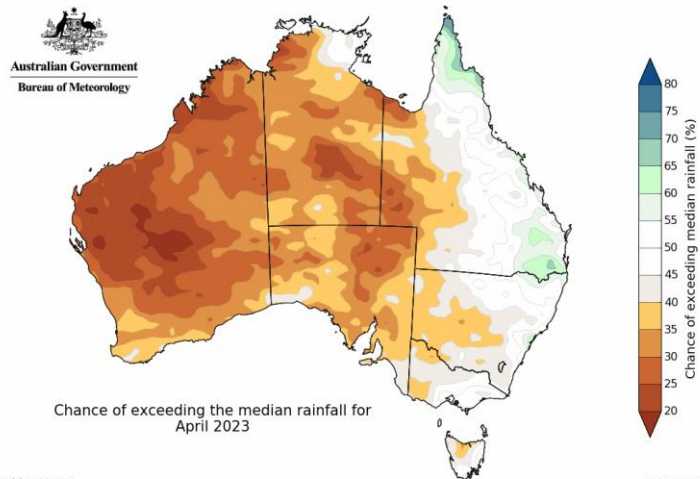
March 2023 to date

Total and anomaly



Autumn rain outlook 2023

Monthly and three-monthly



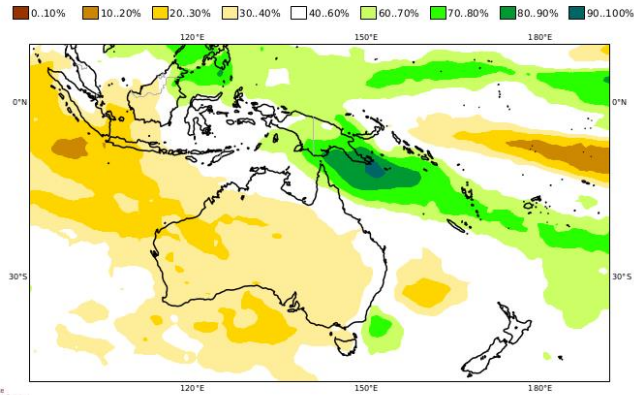
Issued
23 Mar 2023

Seasonal rain outlook 2023

Global models – Copernicus and APEC

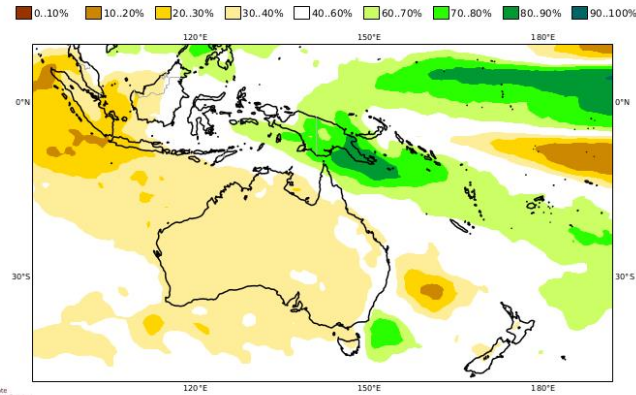
C3S multi-system seasonal forecast
Prob(precipitation > median)
Nominal forecast start: 01/03/23
Unweighted mean

ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECGC
AMJ 2023



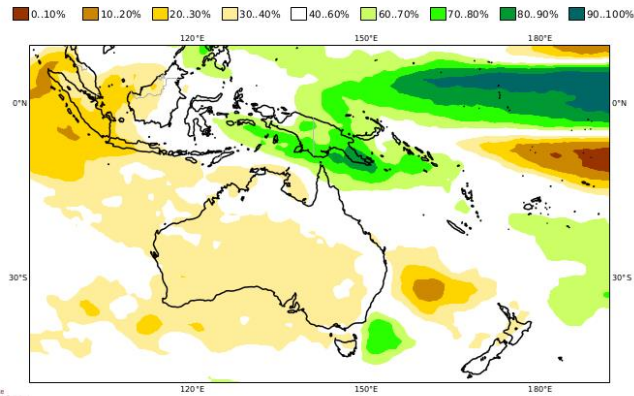
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MJJ 2023

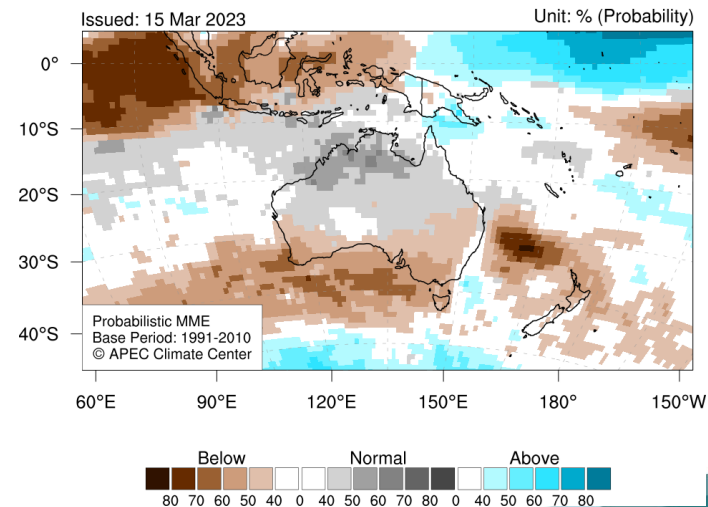


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JJA 2023

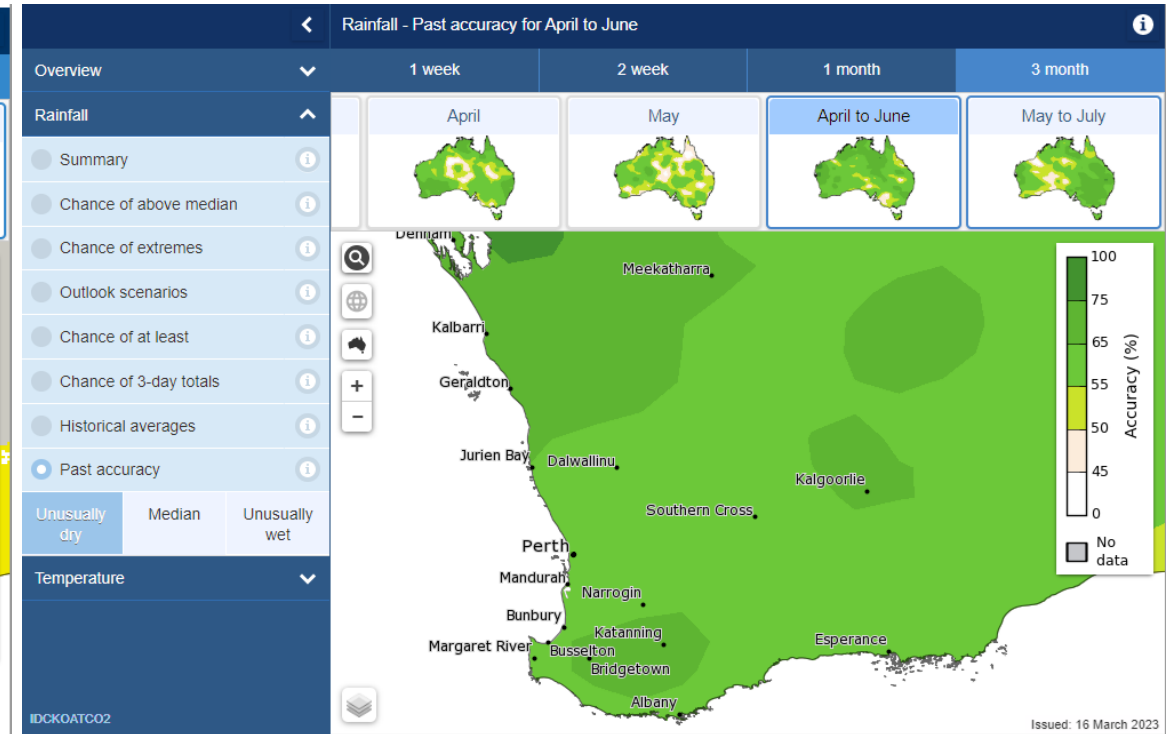
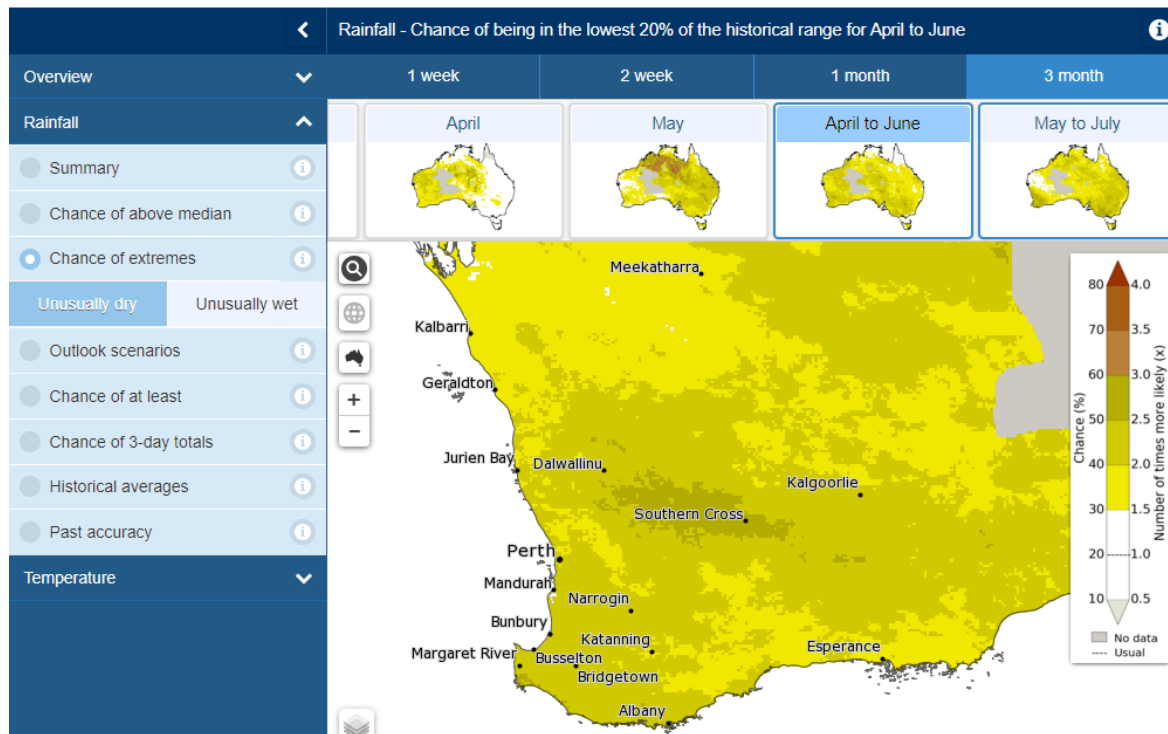


Precipitation for July-September 2023



Chances of unusually dry – April to June

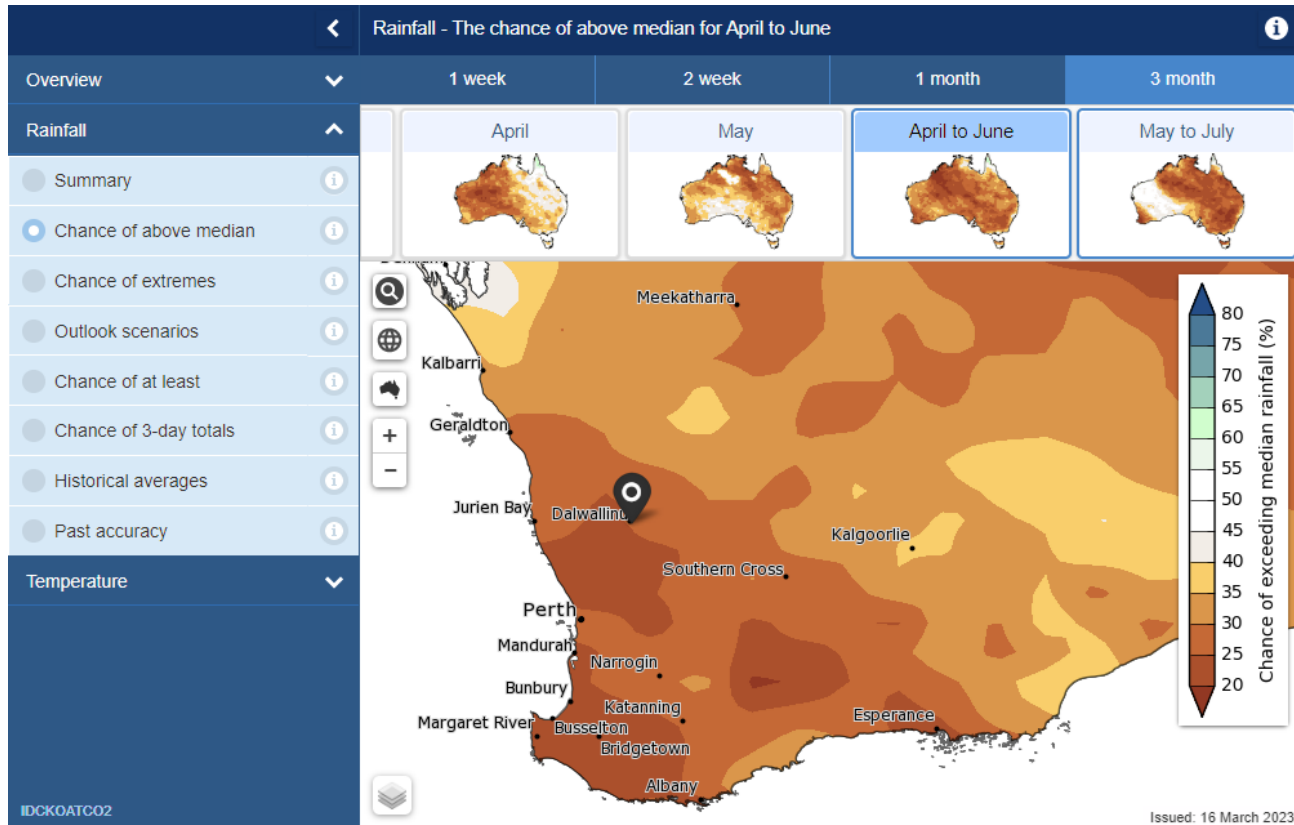
Lowest 20%



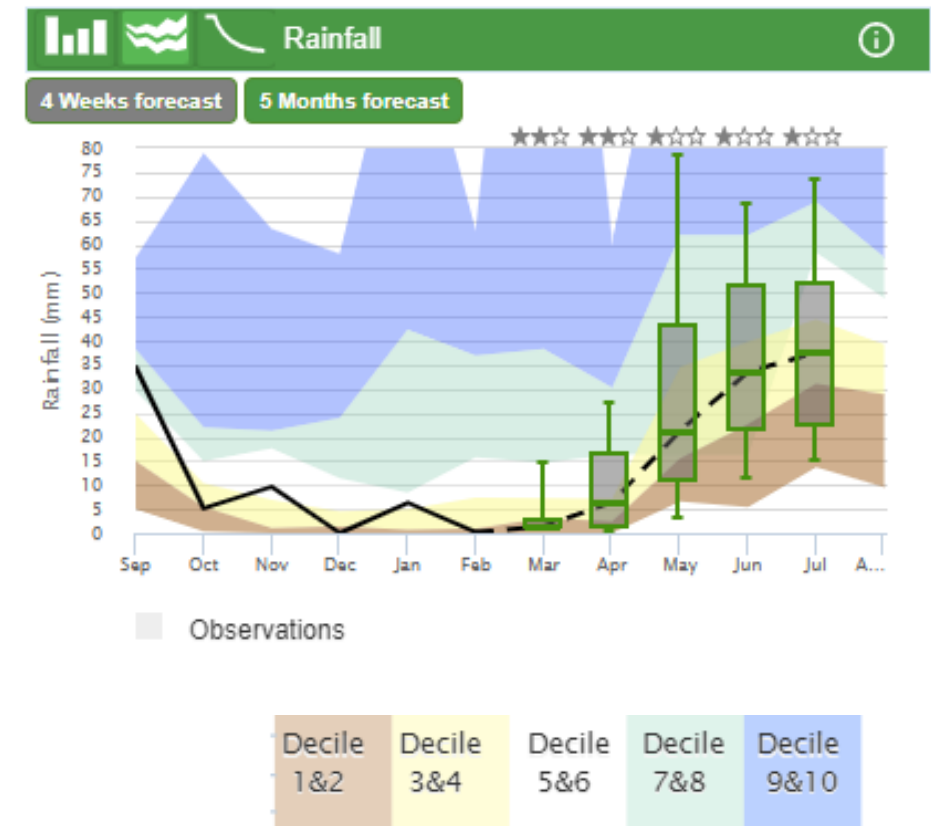
Hindcast 1981 - 2018

Downscaled outlook

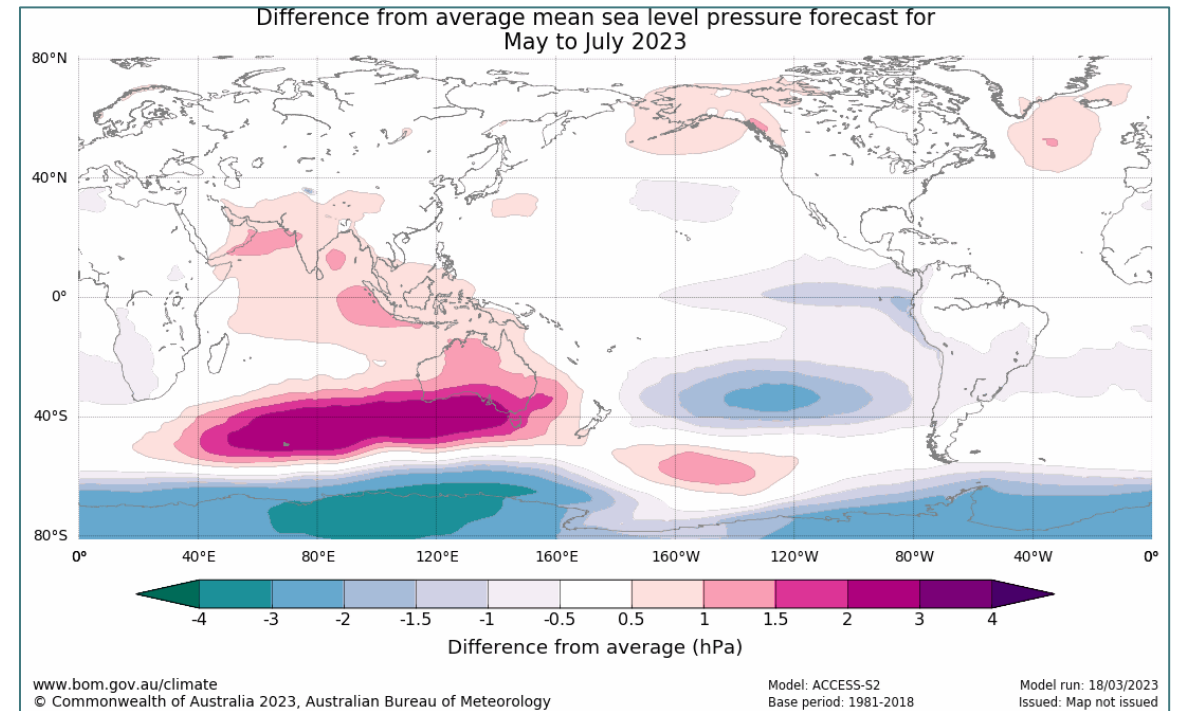
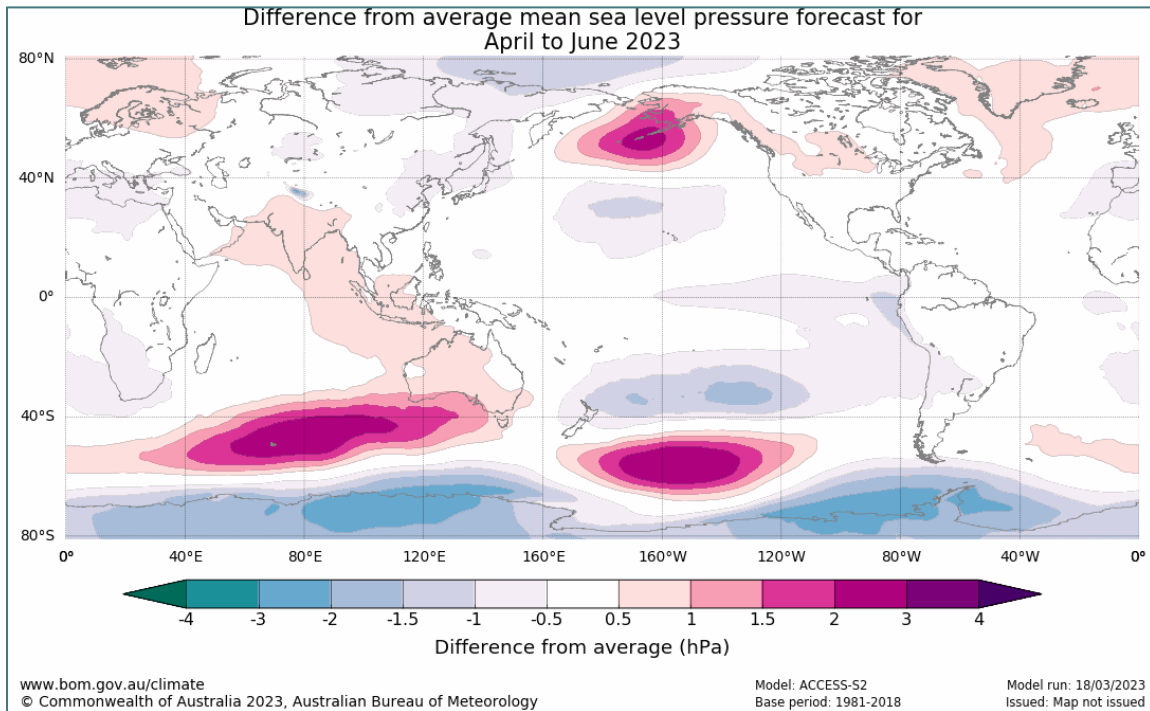
Dalwallinu example



Outlook for Dalwallinu

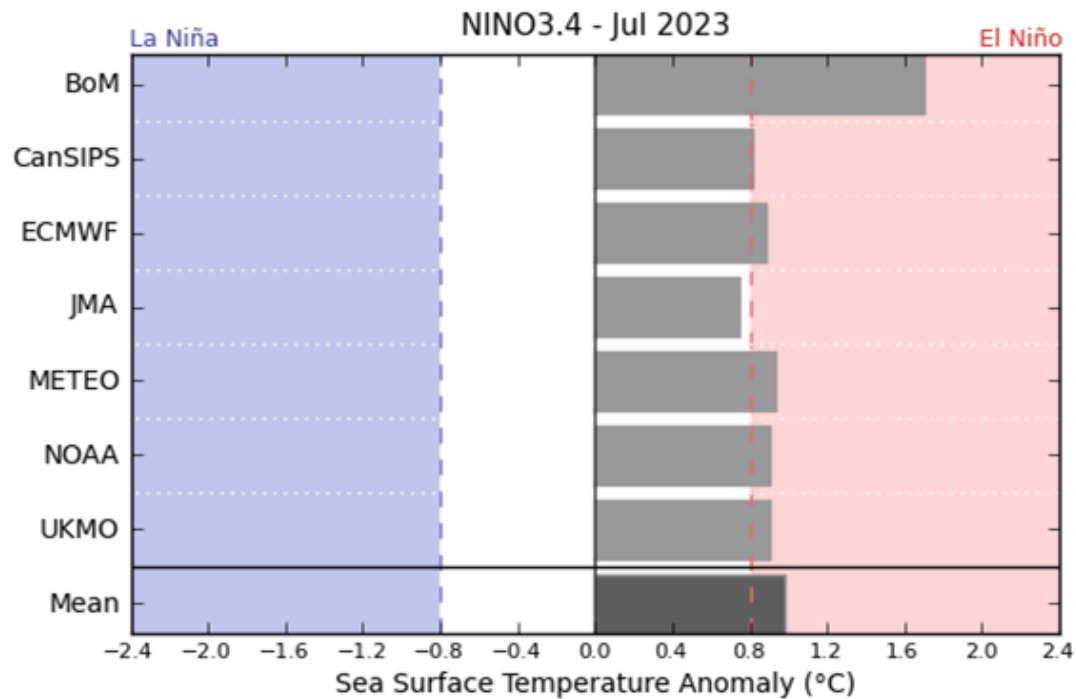


Seasonal sea level pressure outlook 2023

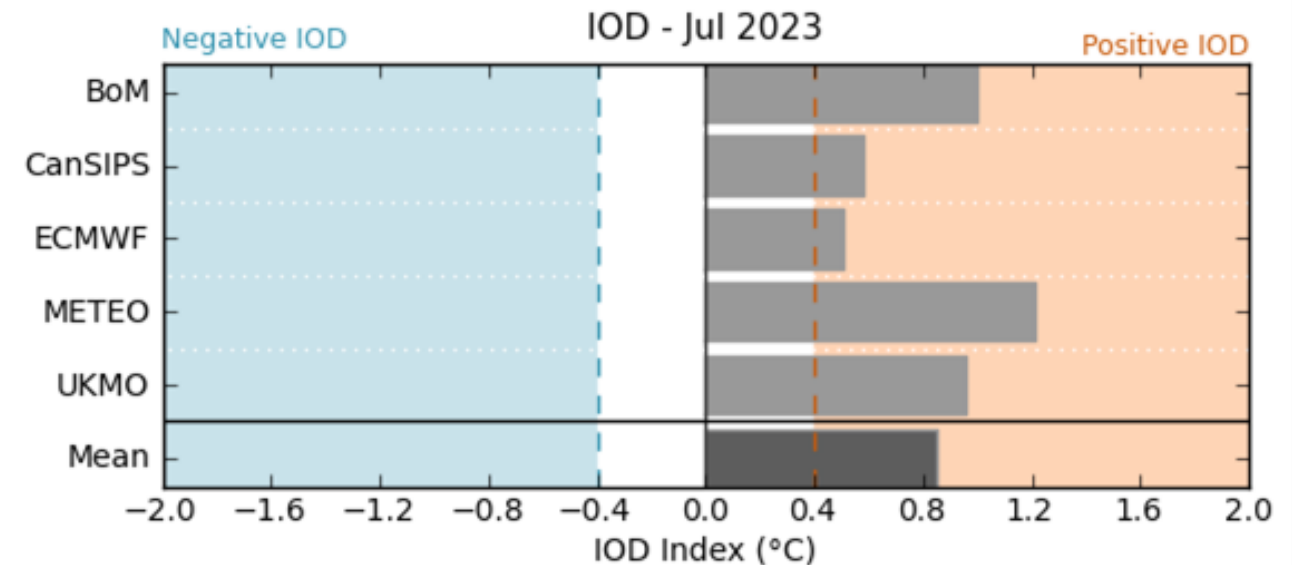


Further ahead

Bureau of Meteorology outlook for July (issued 14 Mar)

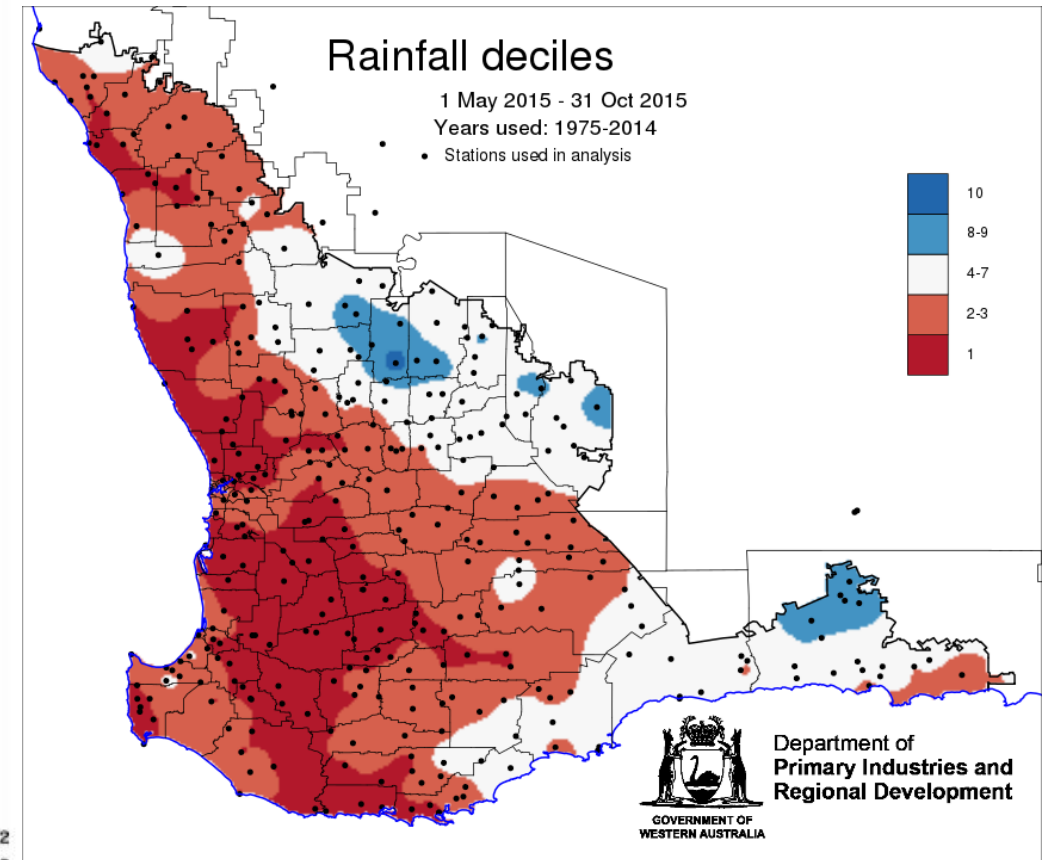
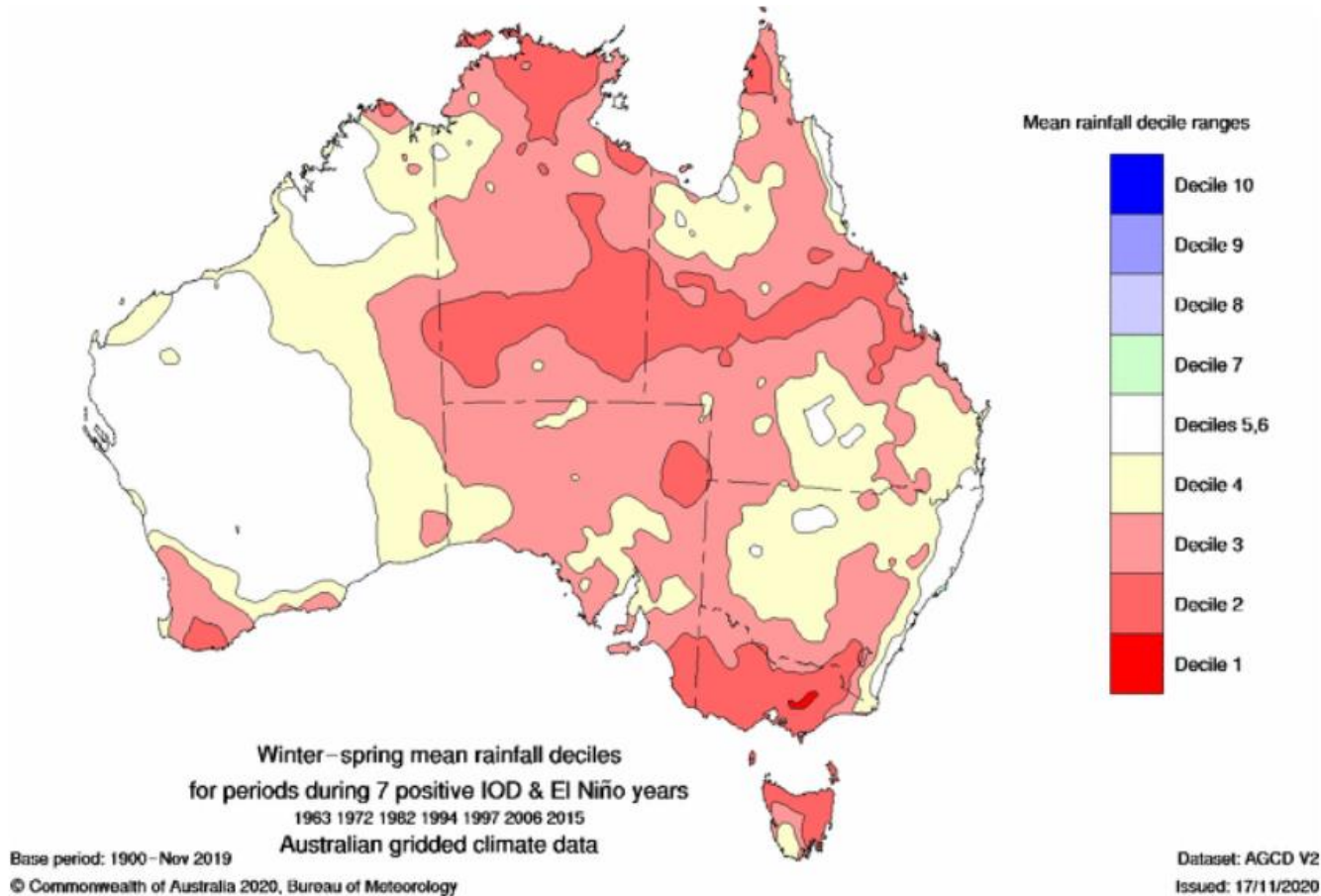


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El Nino and Positive IOD together



Take home message

Summer rain has been similar to last year

Autumn rain outlook this year is (much) drier than 2022

Seasonal outlooks into winter also indicate drier than normal

Weekly and monthly outlooks now available

El Nino seems likely, with possible IOD positive event

What to expect in 2023 regarding pests

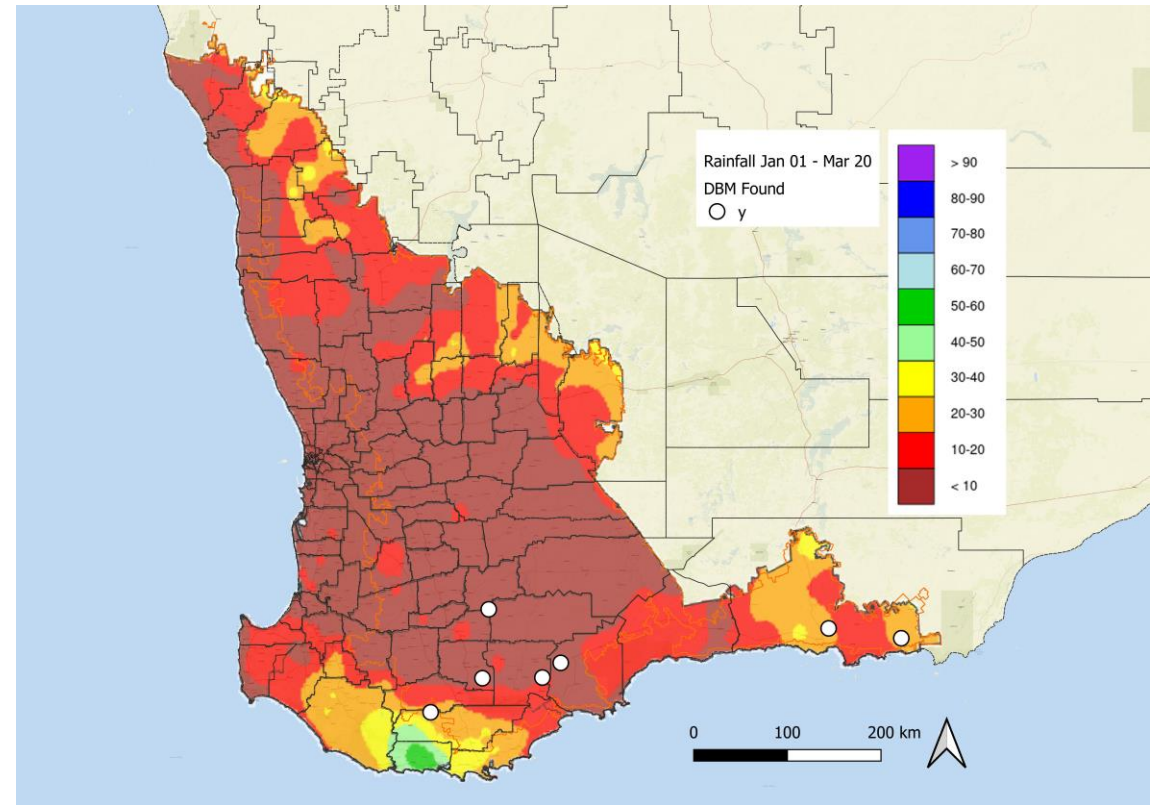
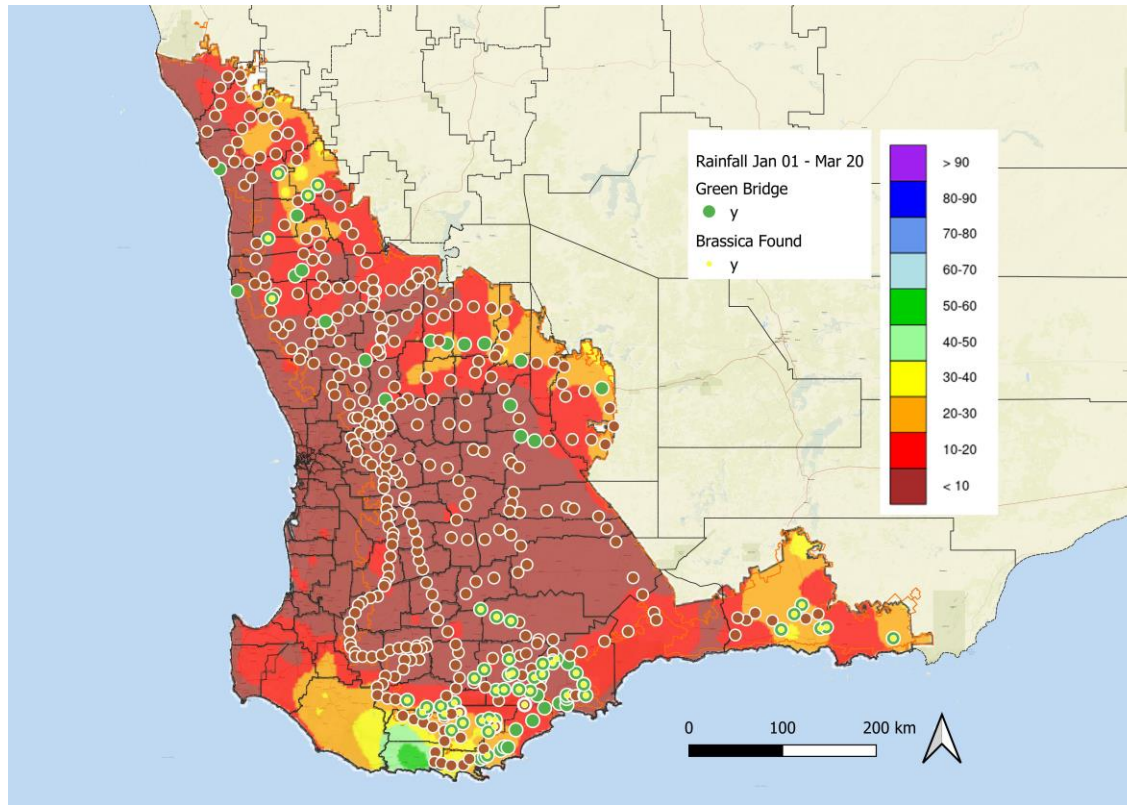
Presentation overview

- Green bridge? Impacts on FIFO pests
- A dry summer, what does it mean for resident pests?



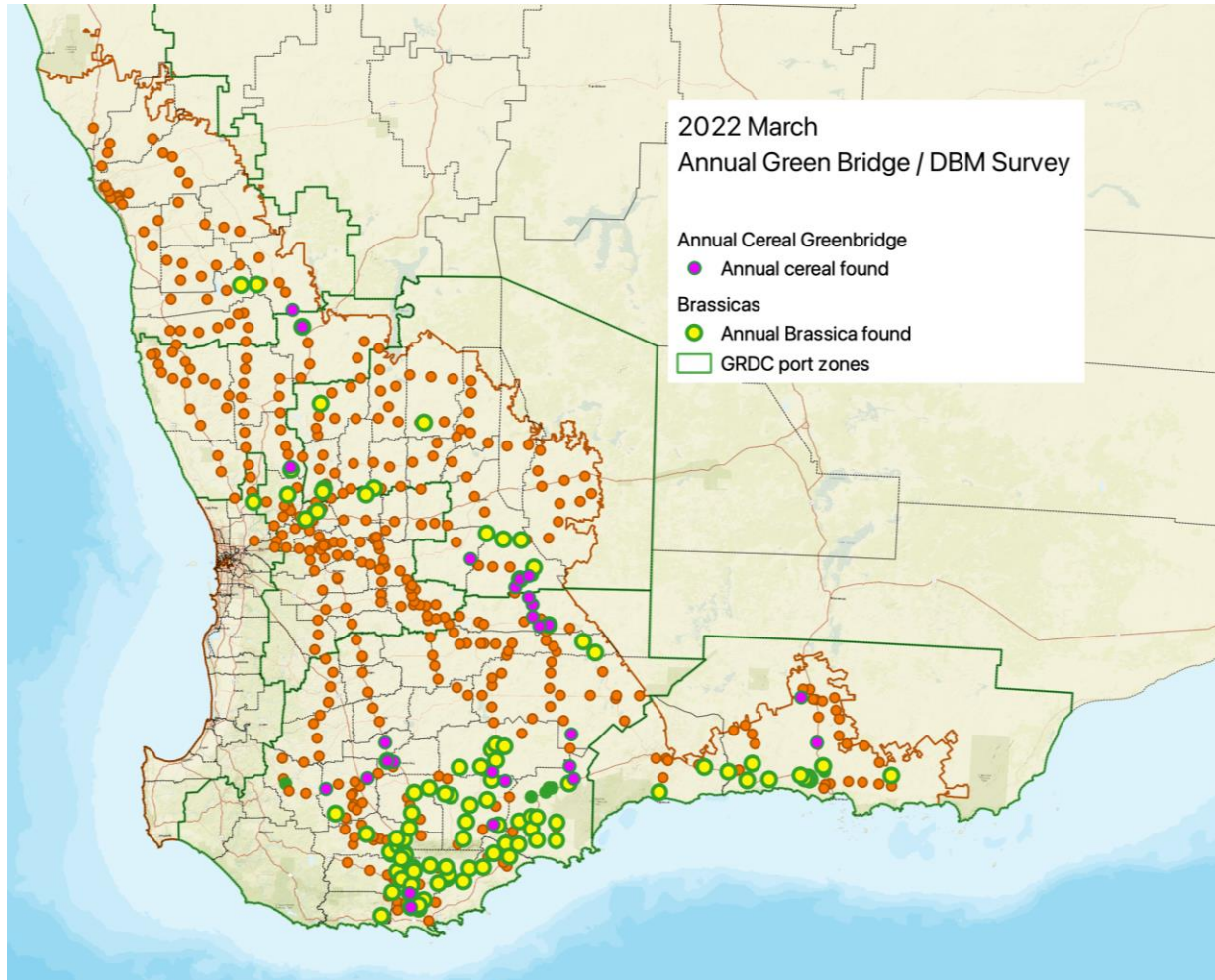
Canola with chewing damage

Green bridge and Diamondback moth (DBM) surveys

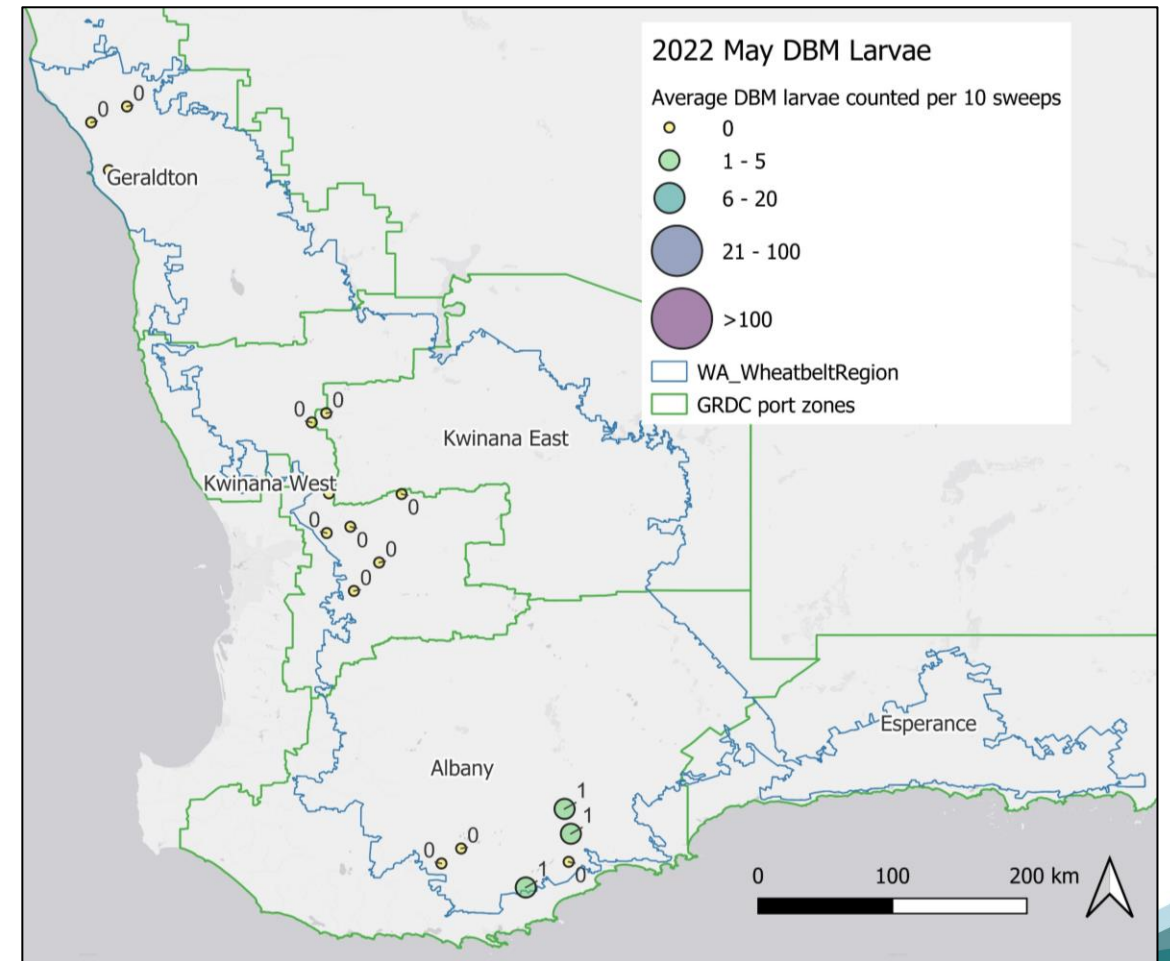


Green bridge and DBM in canola - 2022

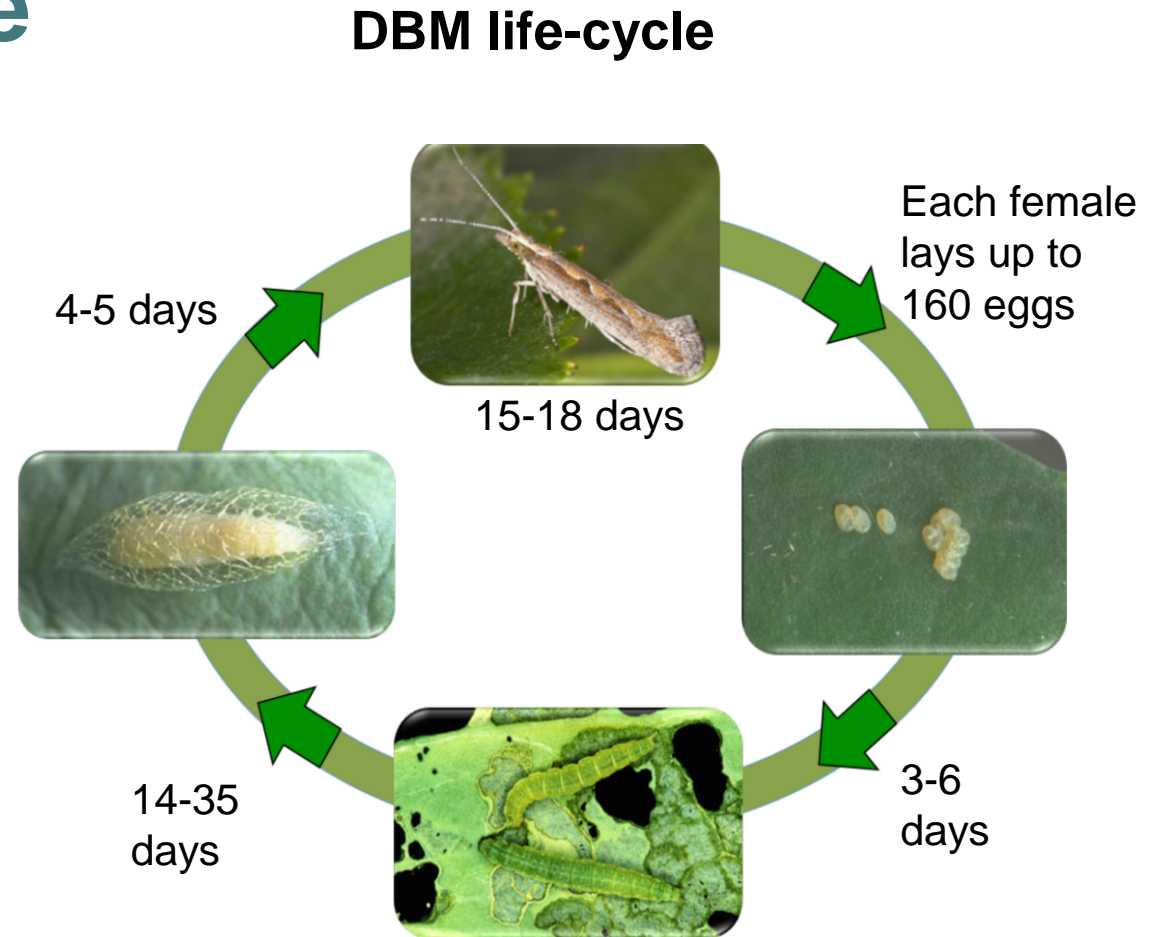
Green bridge surveillance



DBM larvae in canola crops in May



Reminder of DBM life-cycle



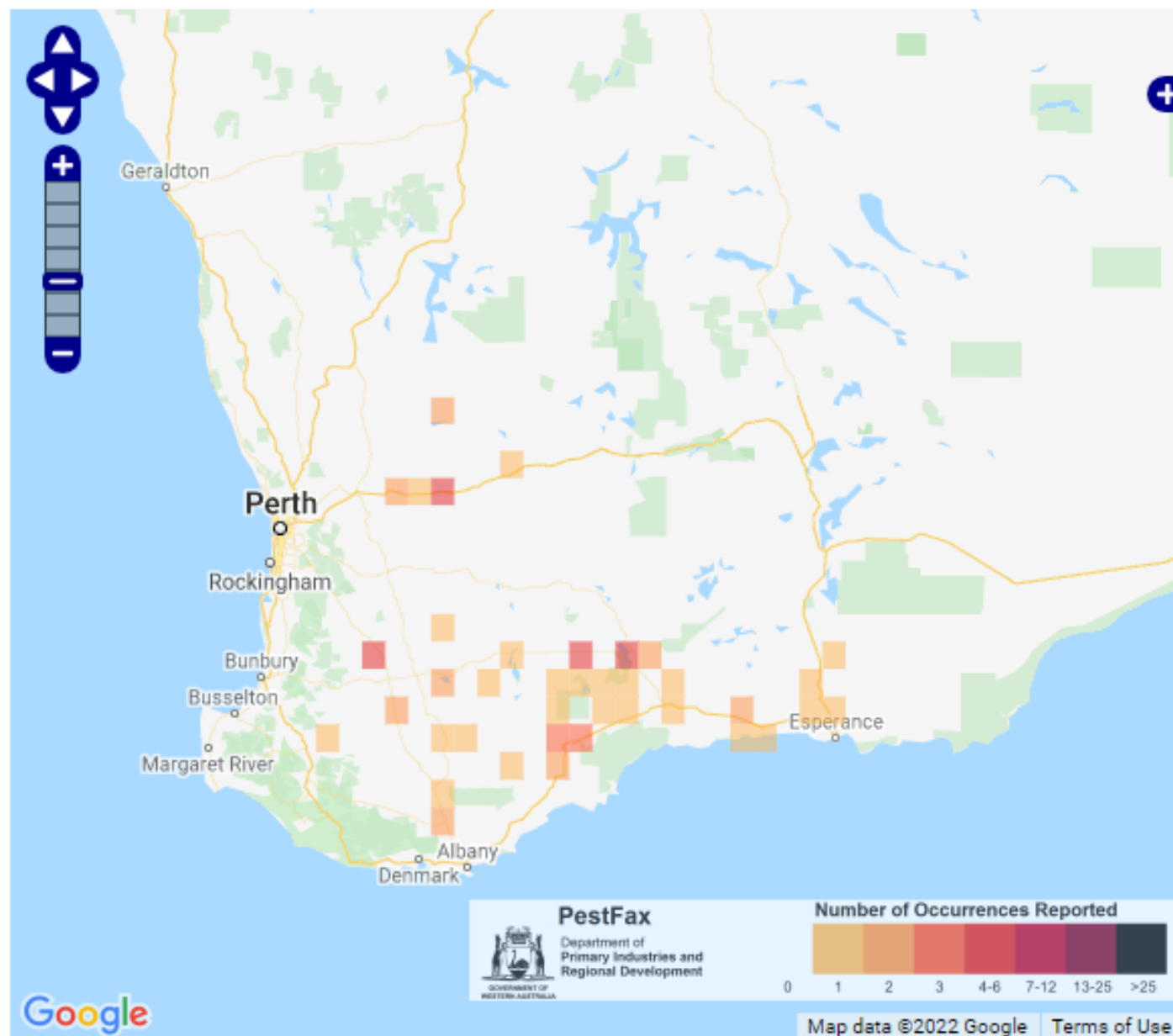
Russian wheat aphid (RWA)

- Detected in WA, 2020
- Plant symptoms include:
 - white, purple or yellow streaks on the leaves
 - stunted growth
 - loss of plant vigour
 - poorly formed grain.



Russian wheat aphid colony in curl of leaf

RWA distribution in 2021



[PestFax](#) [Newsletter](#) [Home View](#) [Feedback](#) [Share](#)

[Make an on-line report](#)

Disorder Shown

Host:

Variety:

Category:

Sub Category:

Disorder:

Time Period

End Date:

Click on a map cell to list occurrences

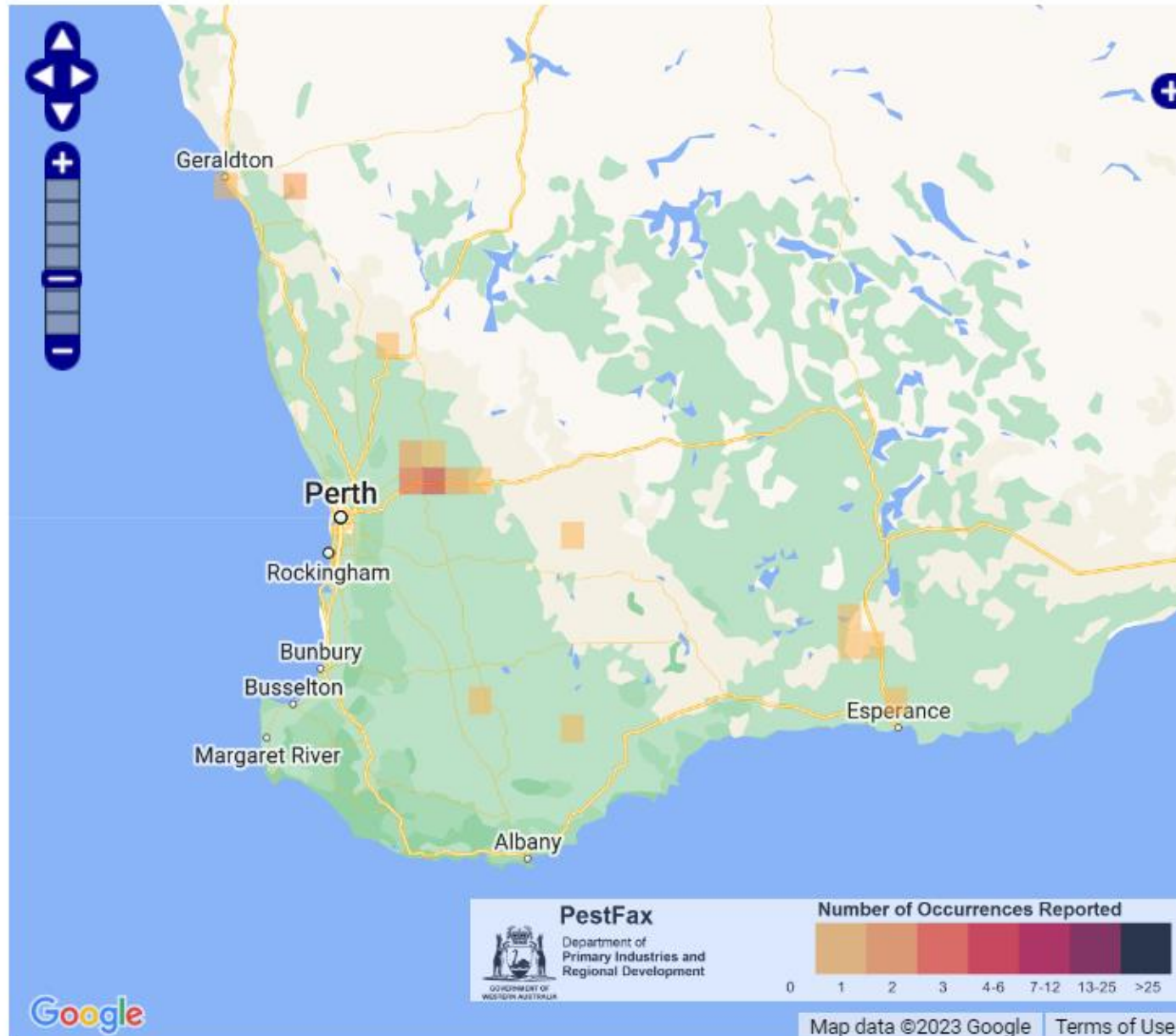
Google



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RWA distribution in 2022



[PestFax Newsletter](#) [Home View](#) [Feedback](#) [Share](#)

[Make an on-line report](#)

Disorder Shown

Host:

Variety:

Category:

Sub Category:

Disorder:

Time Period

1 Year

End Date:

Click on a map cell to list occurrences



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Map data ©2023 Google

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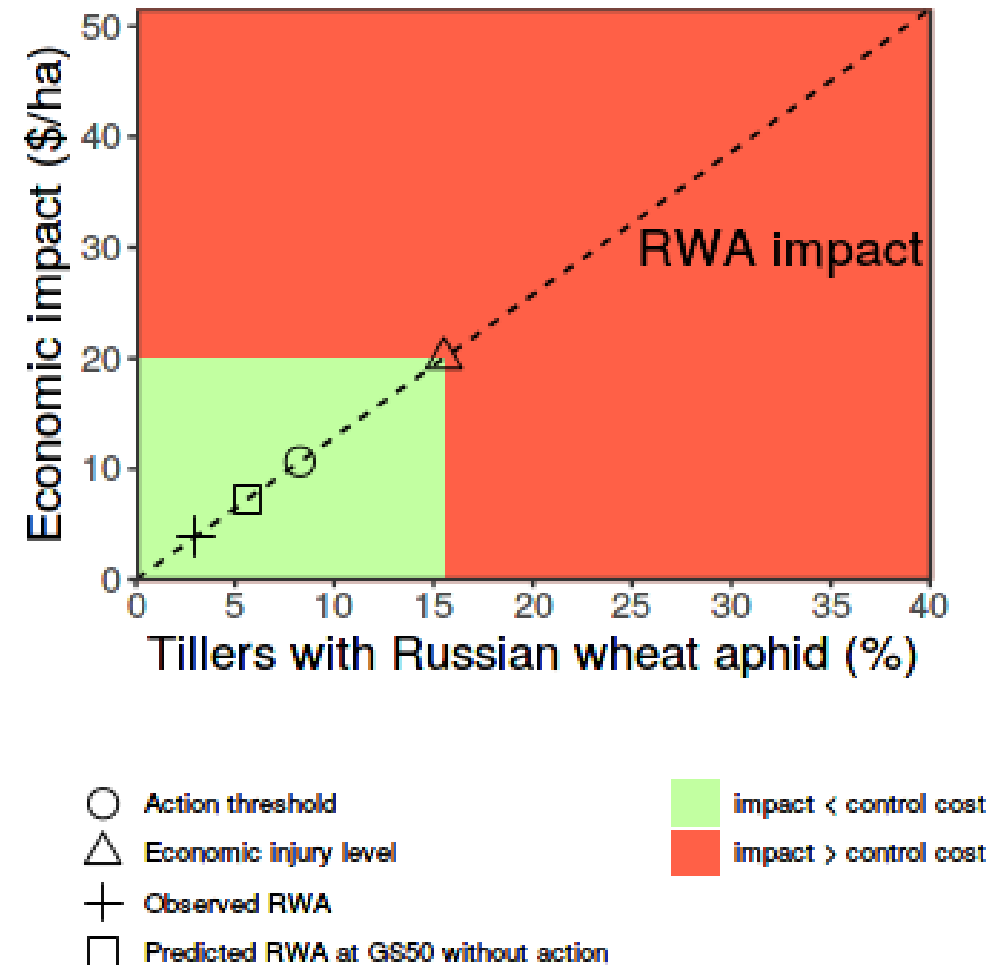


Testing of the RWA Intervention calculator

<https://grdc.com.au/resources-and-publications/resources/russian-wheat-aphid>



Testing of the RWA Intervention calculator



Results

- Yield loss predicted by RWA threshold calculator is consistent with trial results
- Feeding damage cannot be used as an indicator for RWA numbers



Russian wheat aphid feeding cause purpling and striping on leaf

Without a green bridge – risk from other aphids?

Canola aphids



Green-peach aphid

Cereal aphids



Oat aphid

Pulse/legume aphids



Cow pea aphid

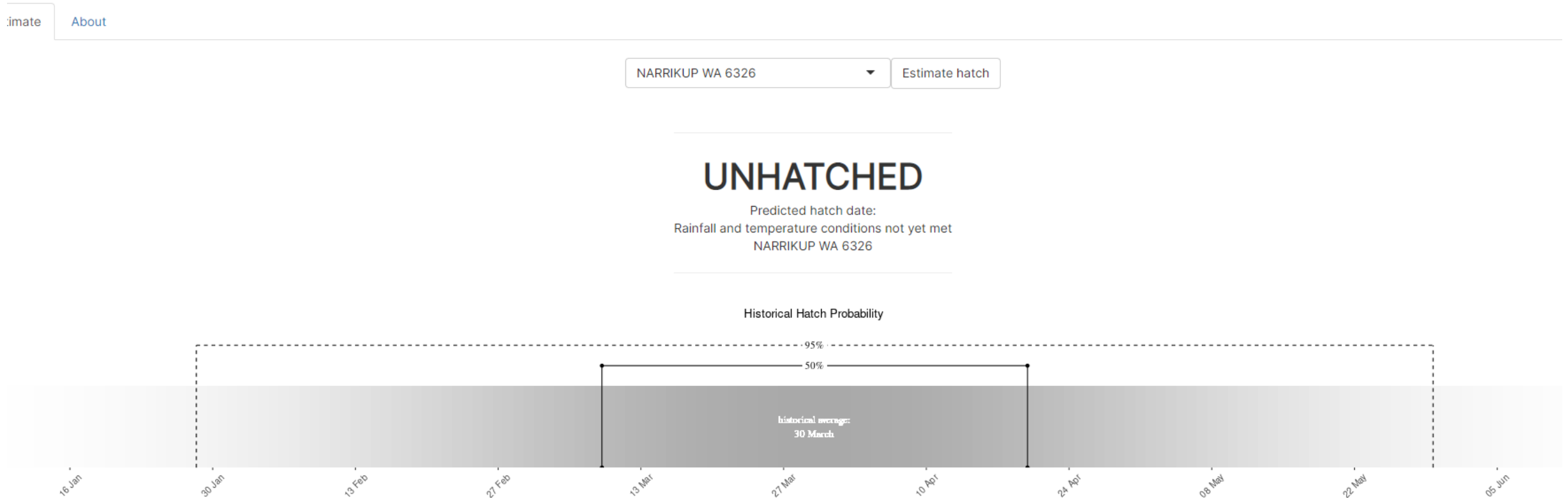
RLEM resistance testing & management update



Redlegged earth mite on pasture

RLEM hatch model

<https://cesaraustralia.shinyapps.io/RLEM-hatch/>

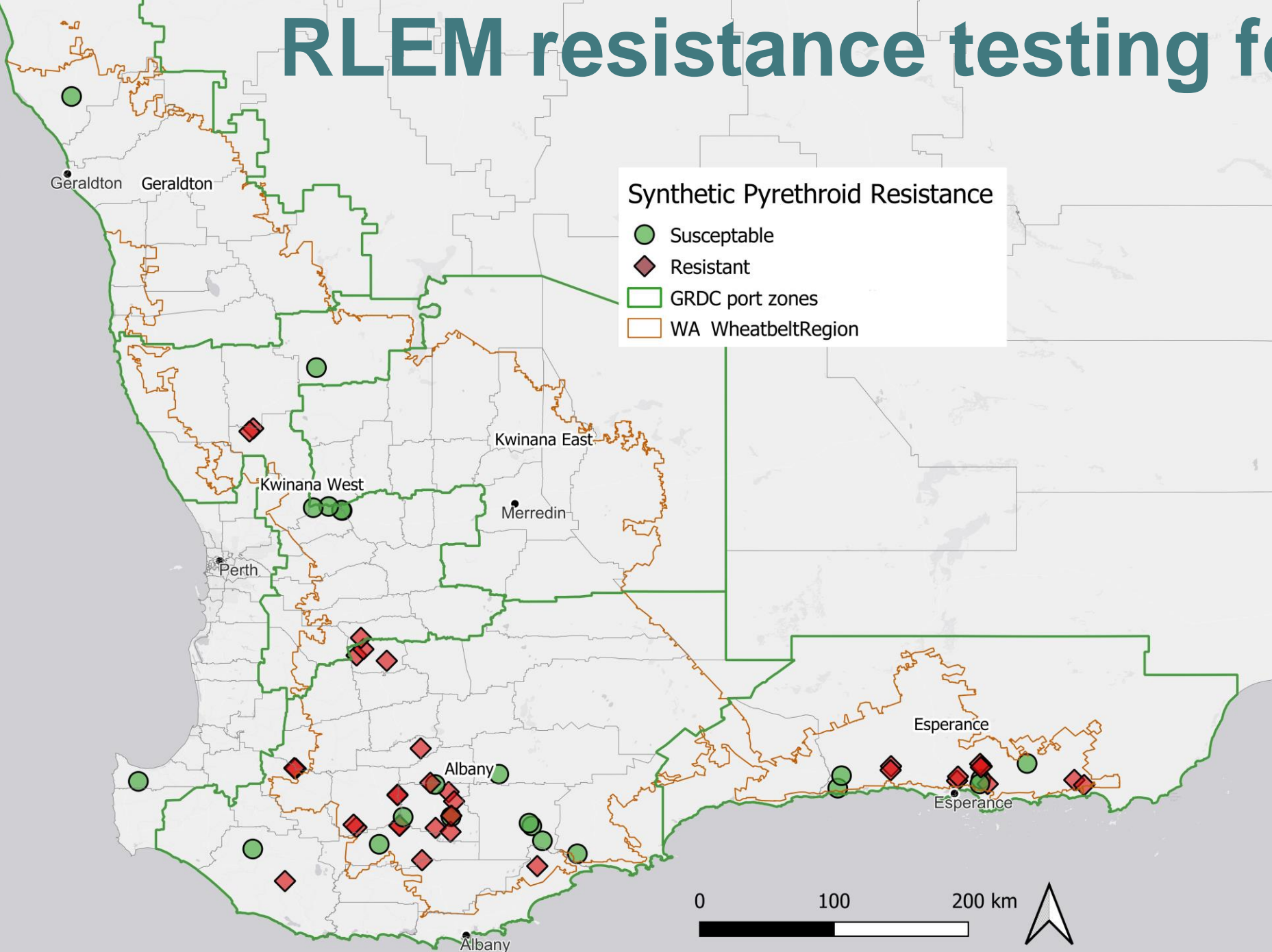


RLEM hatch model

<https://cesaraustralia.shinyapps.io/RLEM-hatch/>

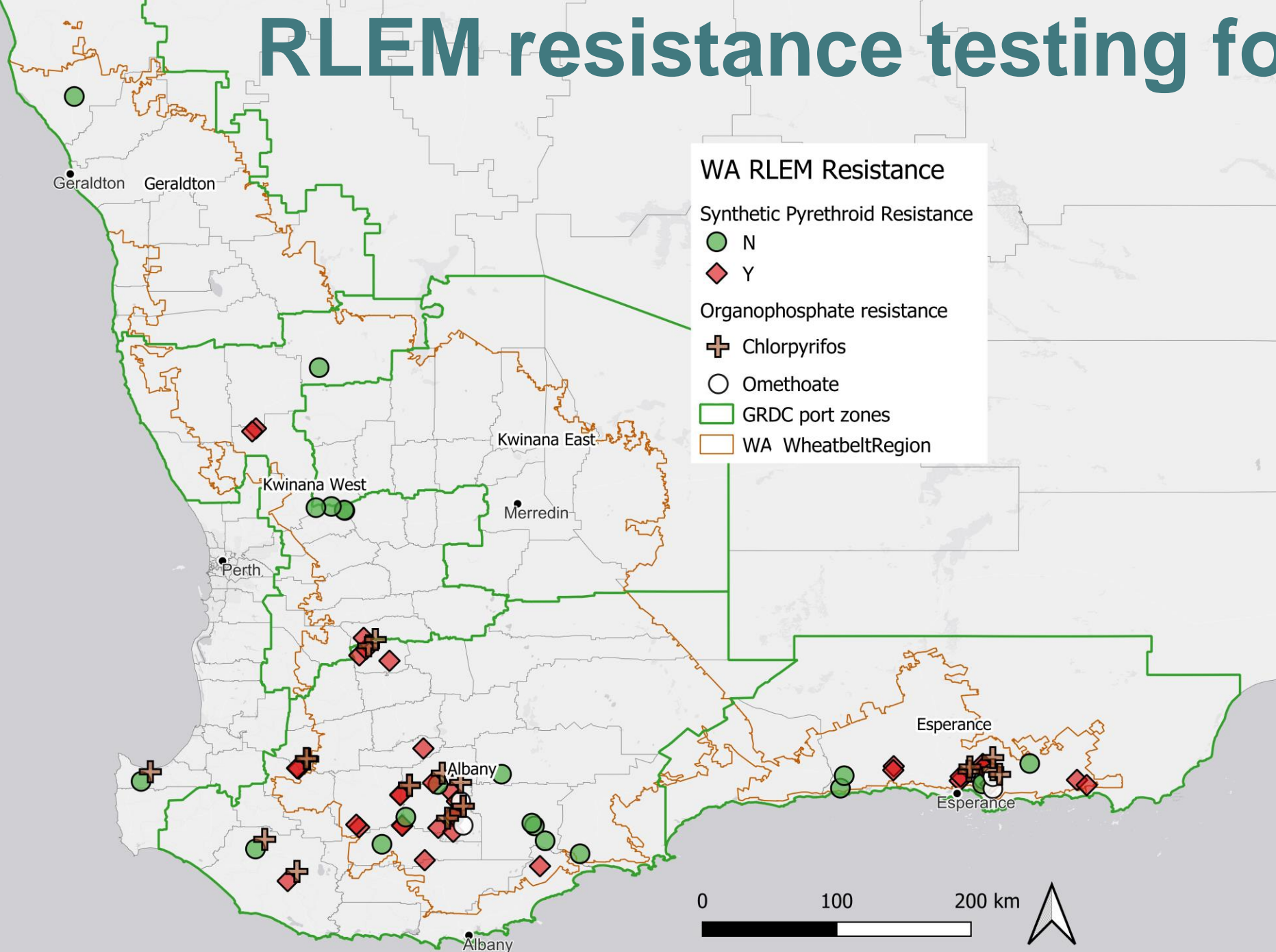
Location	Predicted hatch date 2023
Albany	30 March
Katanning	23 April
Wagin	25 April
Dandaragan	18 May

RLEM resistance testing for 2022



- 57 mite populations bioassayed
- 17 populations resistant to SP's

RLEM resistance testing for 2022



- 57 mite populations bioassayed
- 17 populations resistant to SP's only
- 3 populations resistant to OP's only
- 18 resistant to OP's + SP's

Management options

- Avoid OP and SP sprays unless necessary.
- Have SP and OP resistance? Options are limited.

Management strategy at:

<https://grdc.com.au/FS-RLEM-Resistance-strategy>



Redlegged earth mite on canola

French Anystis mite (FAM)

Biological control agent for RLEM

- Spread at 45 m per year.
- > 40 FAM per square metre control RLEM.
- In spring FAM caused 80% decrease in RLEM population.



French Anystis mite (FAM) feeding on springtail

Nursery collection sites for French Anystis (FAM)

- Manjimup Research Facility
- Private property at Boyup Brook.



Other mites to look out for



Bryobia mite



Brown wheat mite



Balaustium mite

Lucerne flea

- **Description**

- Up to 3 mm long,
- **Yellow/green to grey**
- **Globular** in shape

- **Lifecycle**

- **Soaking autumn rains** cause hatching of over-summering eggs-
- No cold requirement

- **Attacks** All crops and pastures
 - 'windowing' of leaves



Lucerne flea on clover

Slugs and Snails

Survive hot, dry summers.

Slugs

- Bait after seeding.



Black keeled slug

Slugs and Snails

Snails

- Round snails – well timed bait gives good control.
- Small pointed (conical) snails - budget to bait more than once.



Small pointed snail

Snails

Bait before egg lay



Albumen gland from dissected small pointed snails

Weevils

Desiantha weevil



Small lucerne weevil



Vegetable weevil

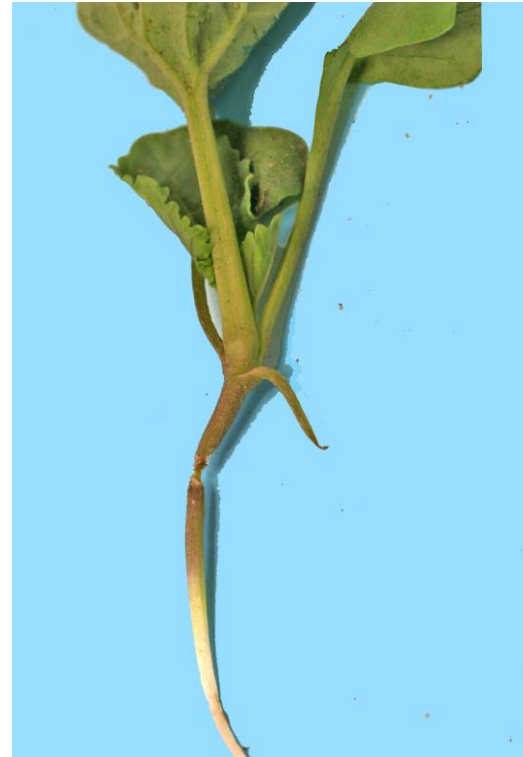


Vegetable beetle

Will feed if temperatures are above 18°C.



Vegetable beetle feeding on canola



Vegetable beetle damage to canola

European earwigs

- Thrive under drier conditions.
- Baits registered.



European earwig damage to lupin seedling

What are you finding?

We want to hear about what insects and plant diseases you find! In return you can get a free diagnosis.

- Use our free PestFacts WA Reporter app.
- Email: pestfactswa@dpiird.wa.gov.au



Follow @DPIIRDbroadacre for #PestFactsWA tweets.

Question and Answers session




- Type them in the “Q&A” tool.
- Webinar recording will be put on DPIRD’s YouTube channel.
- PowerPoint slides will be published on www.agric.wa.gov.au/crop-diseases/about-pestfacts-wa

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- 



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Thank you

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