

Trends in Irrigation Development on the Murray and Lower Darling (Baaka) River Systems

Acknowledgement of Country



We acknowledge the First Peoples of the Millewa-Mallee as the Traditional Owners and Custodians of the Country we are on today. We pay our respects to Elders past and present of the First Peoples of Millewa-Mallee, and the ancient connection they hold with their Country.

Who and what?

- Community organisation (not-for-profit)
- Mapping irrigated land use data since 1997 (continuous)
- Utilised by land and water managers including:
 - Irrigators, industry groups, local, state and federal government agencies/bodies, educational institutions, other interested parties
- Informs decision-making and complements other studies
- **This study commissioned by MDBA to compile irrigated land use data:**
 - **from 2003 to 2021**
 - **for the Lower Murray-Darling region of Vic, NSW and SA**



Study Areas

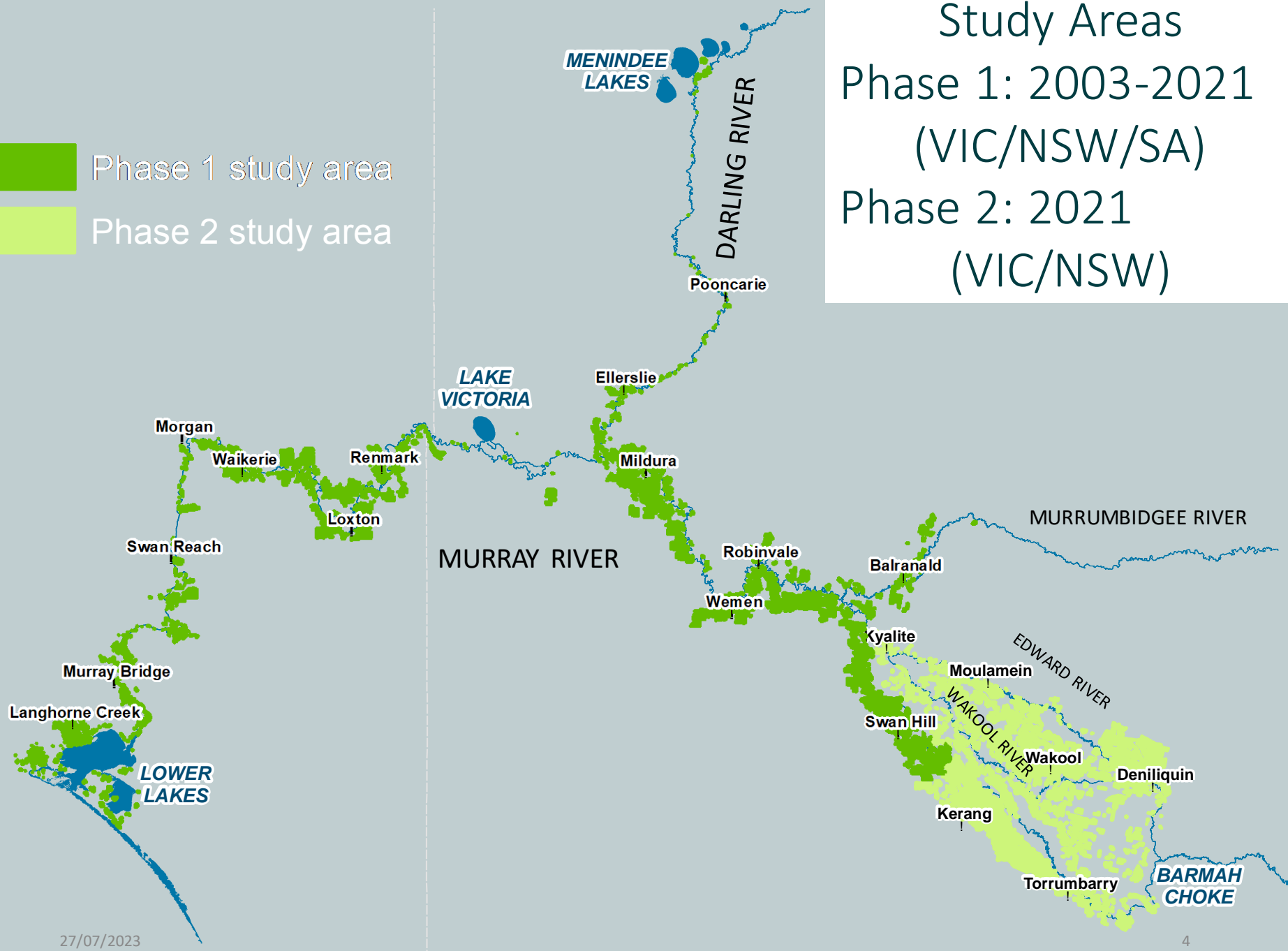
Phase 1: 2003-2021

(VIC/NSW/SA)

Phase 2: 2021

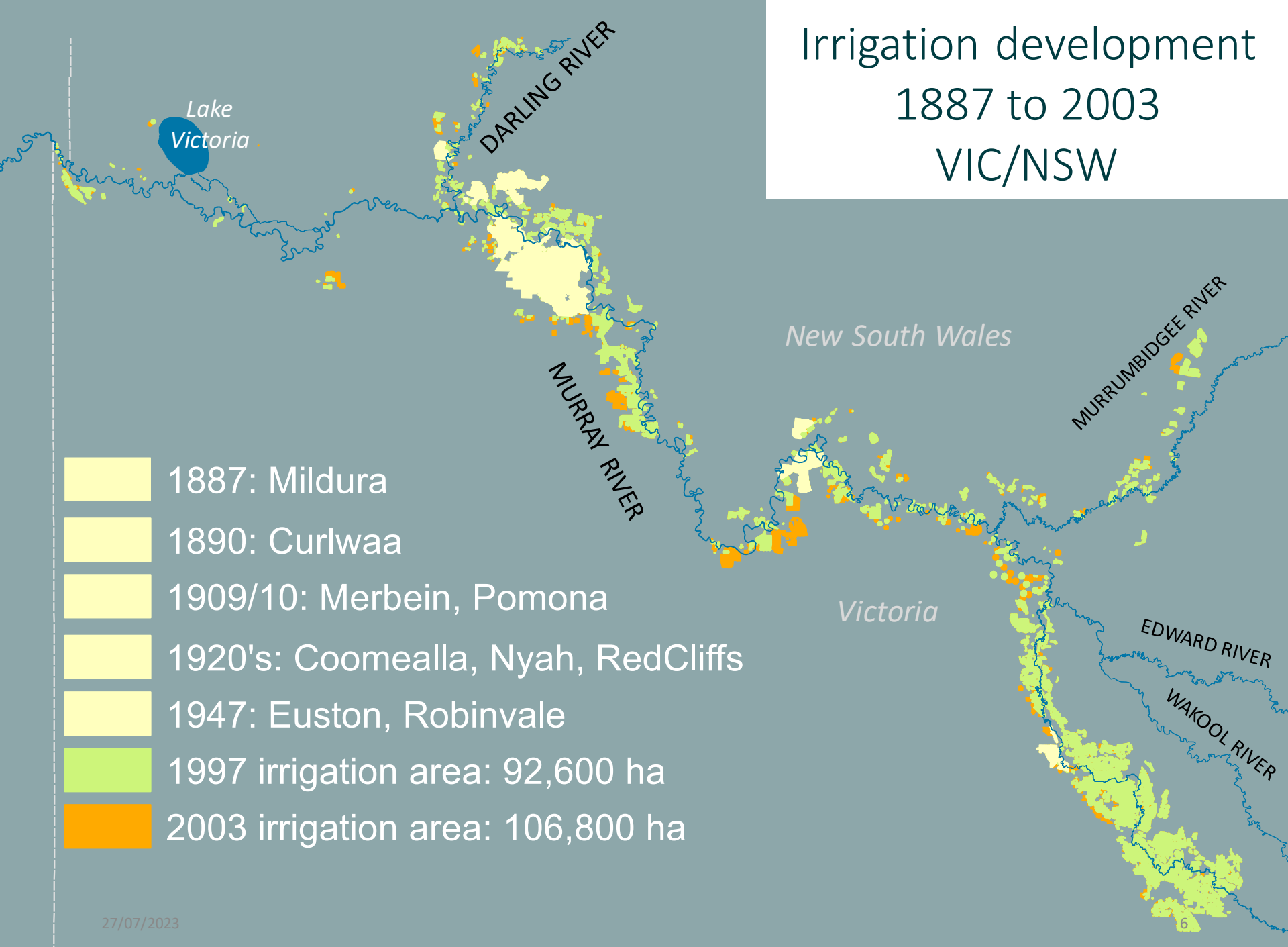
(VIC/NSW)

-  Phase 1 study area
-  Phase 2 study area



A short history ...

Irrigation development 1887 to 2003 VIC/NSW

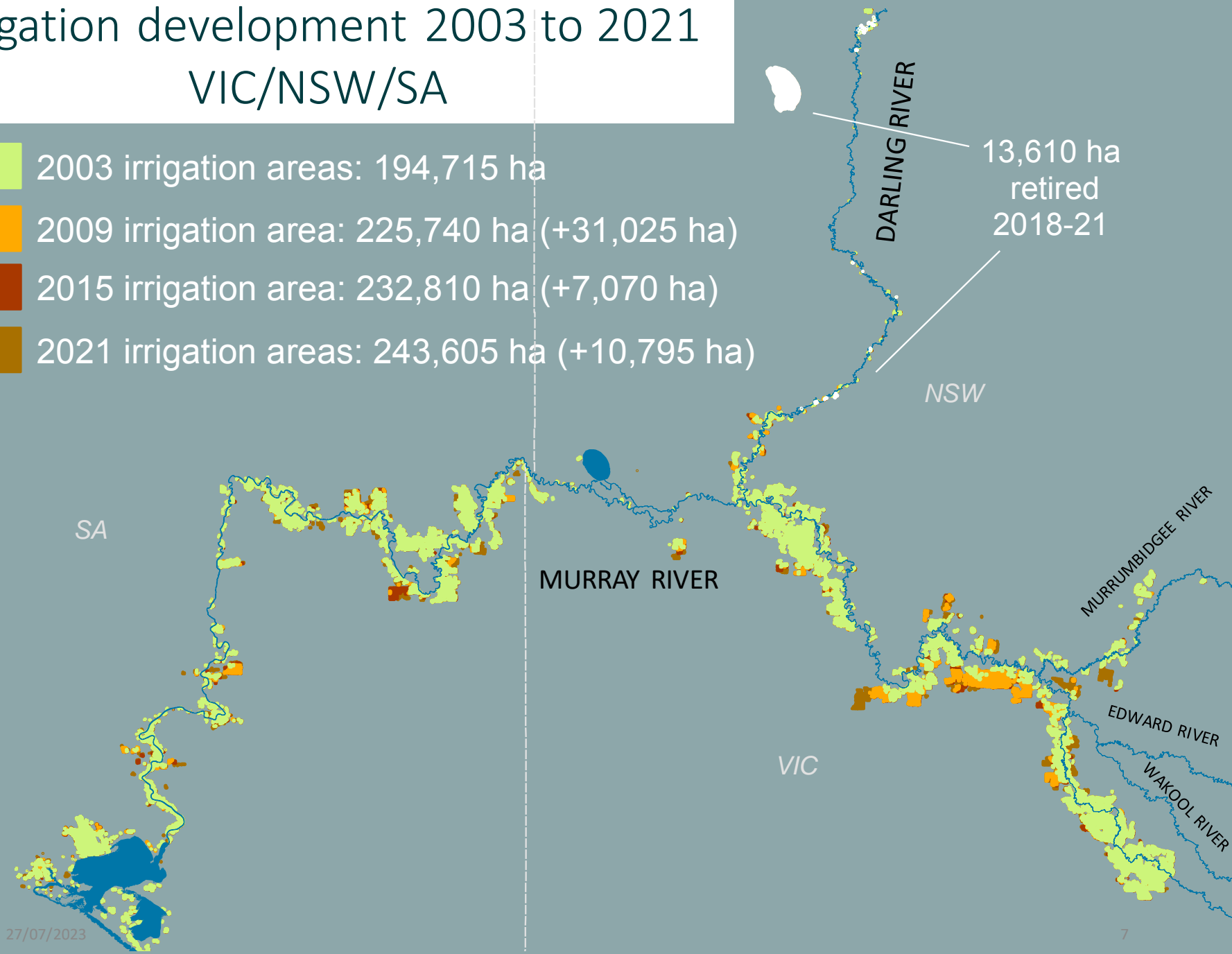


- 1887: Mildura
- 1890: Curlwaa
- 1909/10: Merbein, Pomona
- 1920's: Coomealla, Nyah, RedCliffs
- 1947: Euston, Robinvale
- 1997 irrigation area: 92,600 ha
- 2003 irrigation area: 106,800 ha

Irrigation development 2003 to 2021

VIC/NSW/SA

- 2003 irrigation areas: 194,715 ha
- 2009 irrigation area: 225,740 ha (+31,025 ha)
- 2015 irrigation area: 232,810 ha (+7,070 ha)
- 2021 irrigation areas: 243,605 ha (+10,795 ha)



13,610 ha
retired
2018-21

NSW

SA

MURRAY RIVER

DARLING RIVER

MURRUMBIDGEE RIVER

EDWARD RIVER

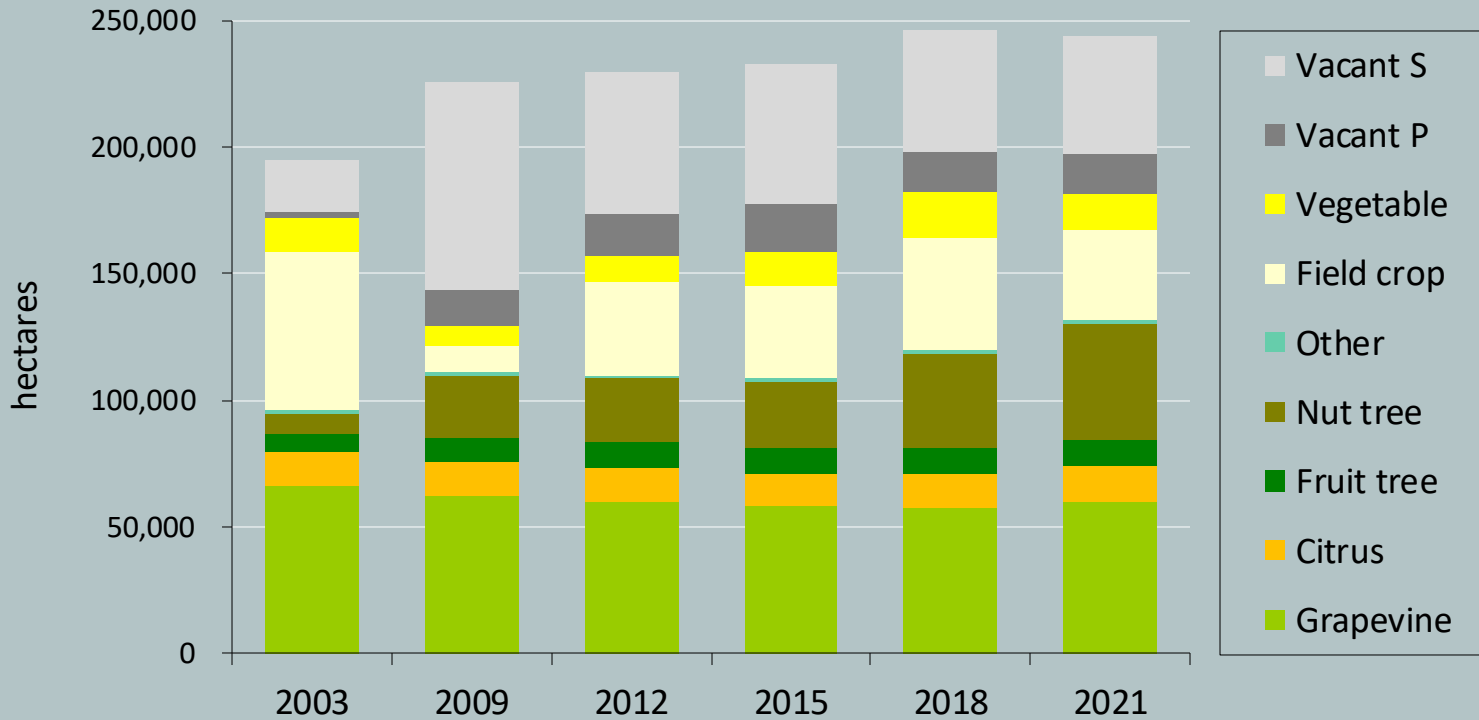
WAKOOL RIVER

VIC

Net change in permanent plantings

2003-2009: +15,285 ha	↑ almonds olives	↓ dried grapes citrus
2009-2012: -1,330 ha	↑ table grapes almonds	↓ wine grapes olives
2012-2015: -1,420 ha	↑ table grapes almonds	↓ wine grapes citrus
2015-2018: +11,095 ha	↑ almonds table grapes	↓ wine grapes stone fruit
2018-2021: +11,945 ha	↑ almonds table grapes	↓ stone fruit dried grapes

Crop types (LMD)



- **516%** increase (37,815 ha) in almond plantings, from 7,330 to 45,145 ha
- **179%** increase (2,890 ha) in olive tree plantings, from 1,615 to 4,505 ha
- **66%** increase (5,100 ha) in table grape plantings, from 7,720 to 12,820 ha
- **43%** decrease (26,755 ha) in field crops, from 62,815 to 36,060 ha
- **16%** decrease (8,235 ha) in wine grape plantings, from 51,850 to 43,615 ha
- **49%** decrease (3,095 ha) in dried grape plantings, from 6,360 to 3,265 ha

Land use change

2009

Mallee dryland paddock



Same site in 2021

Irrigated horticulture



More information

For the full report (Phases 1 and 2):

<https://www.mdba.gov.au/sites/default/files/pubs/irrigated-crop-area-data-for-the-lower-murray-darling-2003-to-2021.pdf>

For mapping requirements:

Sue Argus, Program Manager
SunRISE Mapping & Research
139 Lime Avenue, Mildura
Ph. (03) 5021 3156, sue@sunrisemapping.org.au

To support ongoing data collection by community organisations, informing policy and decision-making:

Pat Timmons, Executive Officer
Rural Business & Community
139 Lime Avenue, Mildura
Ph. (03) 5021 3156, pat@sunrisemapping.org.au

And now ... Some reflections on the Millennium Drought (1996-2010)* – using Merbein as a case study



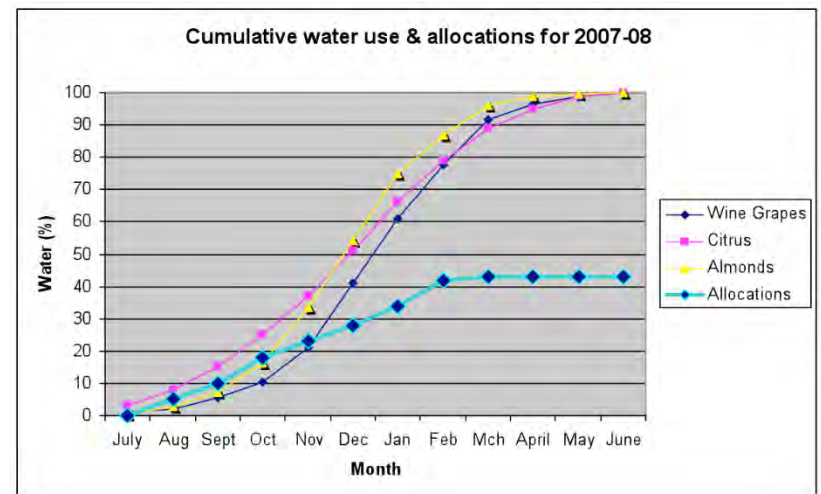
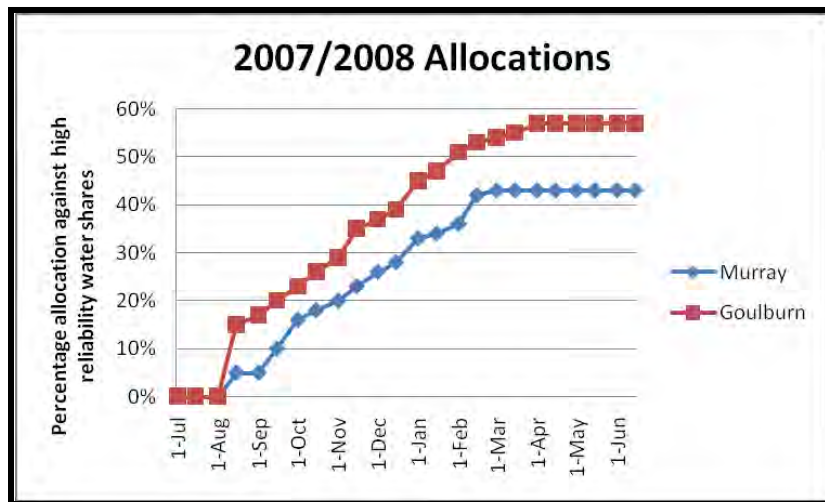
2021 Mallee Horticulture Crop Report



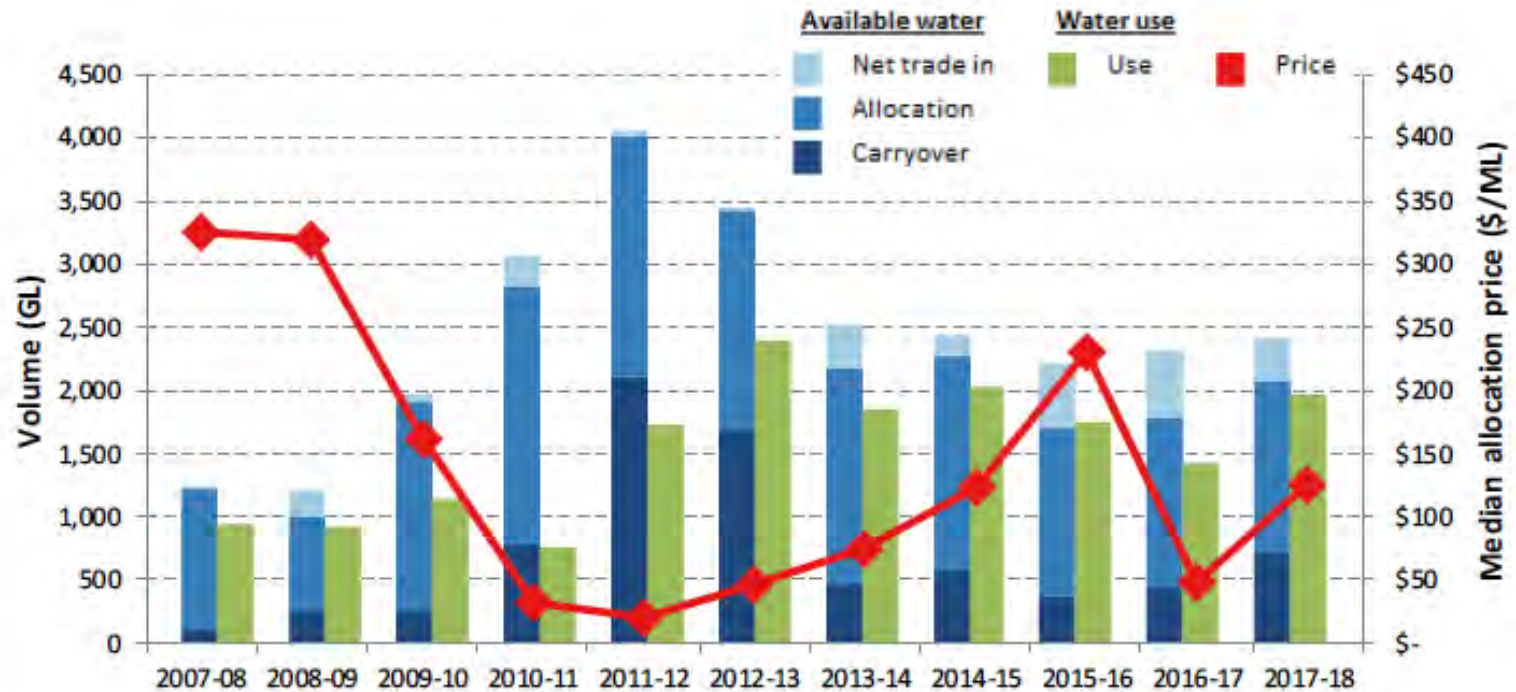
- Sponsor: Mallee Catchment Management Authority
- Author: Sue Argus, SunRISE Mapping and Research
- Finer detail – drills down to irrigation districts and river reaches
- <https://www.malleecma.com.au/wp-content/uploads/2022/07/2021-Mallee-Horticulture-Crop-Report-V4.pdf> (accessed 26 Nov 2022)

In Victoria, irrigated agriculture was first affected by the drought in season 2007/08

NSW affected in 2006/07



Putting 2007/08 water allocation prices in perspective



Note: Only privately held accounts with water use recorded against them during the relevant year are included in this data.

Figure 12. Private water availability & use, & allocation price, northern Victoria

Contrasting responses to drought

Merbein



Figure 49: Merbein irrigation district - planting trends from 1997 to 2021

Robinvale

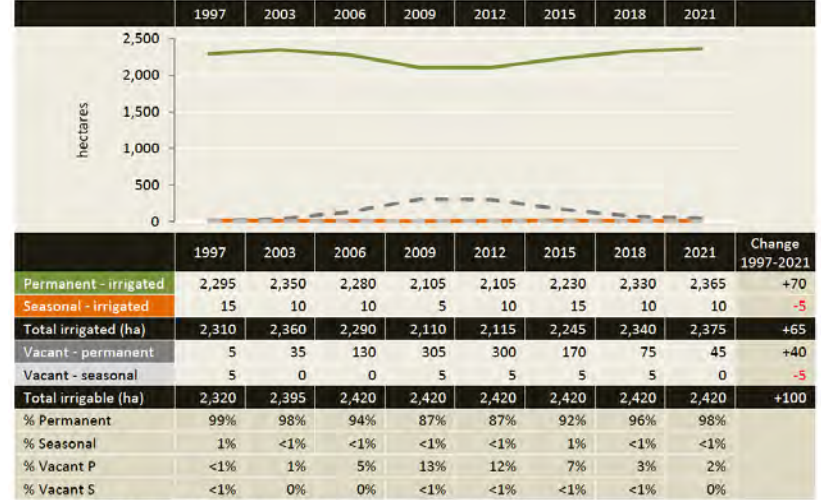


Figure 31: Robinvale irrigation district - planting trends from 1997 to 2021

Robinvale's trends in crop types

Crop type		1997	2003	2006	2009	2012	2015	2018	2021	% in 2021	Change 1997-2021	
Permanent	Grape Dried	385	155	125	90	85	75	30	5	<1%	-380	
	Grape Table	1,405	1,730	1,680	1,650	1,765	1,915	2,085	2,155	89%	+750	
	Grape Wine	460	445	435	315	190	130	70	65	3%	-395	
	Citrus	25	5	5	5	5	5	5	10	<1%	-15	
	Fruit Olive	5	0	0	0	0	0	0	0	0%	-5	
	Fruit Other	15	15	30	40	55	100	115	115	5%	+100	
	Nut Almond	-	-	-	-	-	-	-	-	-	-	-
	Nut Other	-	-	-	-	-	-	-	-	-	-	-
	Other	0	0	5	5	5	5	25	15	1%	+15	
Seasonal	Field Crop	5	5	5	0	5	5	5	5	<1%	0	
	Veg. Carrot	-	-	-	-	-	-	-	-	-	-	
	Veg. Potato	-	-	-	-	-	-	-	-	-	-	
	Veg. Other	10	5	5	5	5	10	5	5	<1%	-5	
Vacant P		5	35	130	305	300	170	75	45	2%	+40	
Vacant S		5	0	0	5	5	5	5	0	0%	-5	
Total irrigable (ha)		2,320	2,395	2,420	2,420	2,420	2,420	2,420	2,420	100%	+100	
Dominant		table grape										

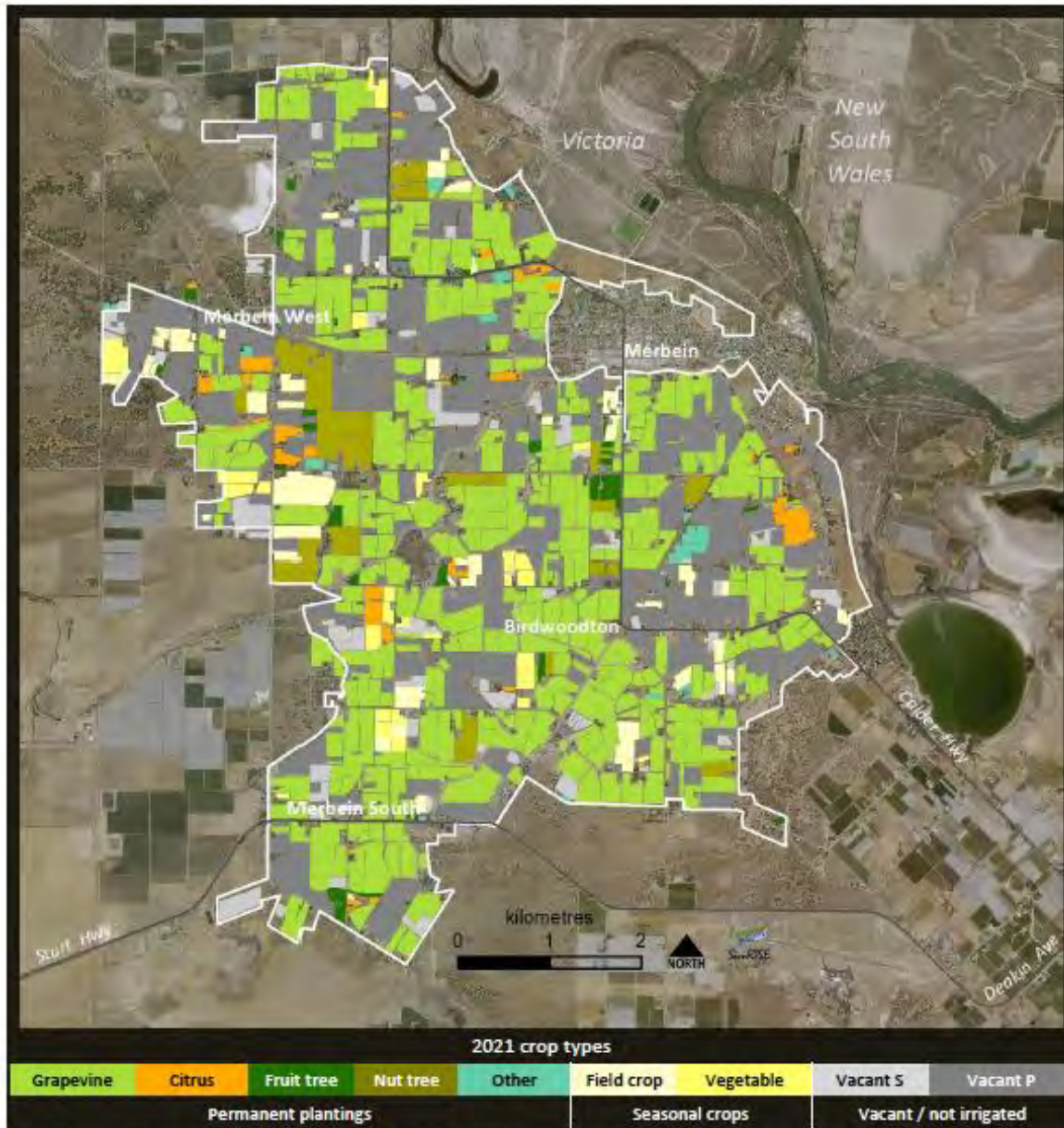
Figure 29: Robinvale irrigation district - crop types from 1997 to 2021

Merbein's trends in crop types

Crop type		1997	2003	2006	2009	2012	2015	2018	2021	% in 2021	Change 1997-2021
Permanent	Grape Dried	1,640	1,295	1,115	725	710	695	620	385	13%	-1,255
	Grape Table	150	240	275	270	310	390	550	770	26%	+620
	Grape Wine	915	1,115	1,065	790	540	475	305	250	9%	-665
	Citrus	220	145	135	90	80	65	55	60	2%	-160
	Fruit Olive	5	10	10	10	15	15	15	10	<1%	+5
	Fruit Other	35	35	35	30	35	25	25	25	1%	-10
	Nut Almond	40	35	30	15	15	20	25	25	1%	-15
	Nut Other	15	15	15	10	15	20	105	120	4%	+105
	Other	15	10	10	10	10	15	25	25	1%	+10
Seasonal	Field Crop	20	20	30	45	90	80	85	115	4%	+95
	Veg. Carrot	-	-	-	-	-	-	-	-	-	-
	Veg. Potato	-	-	-	-	-	-	-	-	-	-
	Veg. Other	40	70	80	55	100	55	105	80	3%	+40
Vacant P		40	140	290	975	1,100	1,085	990	910	31%	+870
Vacant S		10	10	20	60	45	95	95	140	5%	+130
Total irrigable (ha)		3,145	3,140	3,110	3,085	3,065	3,035	3,000	2,915	100%	-230
Dominant		dried			wine	dried			table		

Figure 47: Merbein irrigation district - crop types from 1997 to 2021

Merbein Irrigation District: February 2021



27/07/2023

Map 10: Merbein irrigation district showing 2021 crop types

Conclusion

- Merbein Irrigation District is setting up to be more resilient in the face of the next drought (assuming current commodity prices).