South East Agronomy Services
3 Warrington Street
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Mobile: 0429 367 947
Email – lmarquis@westnet.com.au

1st February 2021

South Coast Natural Resource Management
88 Stead Road
Albany Western Australia 6330

RE – Weed Survey – Fels "Clancarty" Neridup – Esperance Western Australia

Att – Sophie Willshire

Following a request to undertake a weed survey on Mic and Marnie Fels' Property "Clancarty" at Neridup approximately 50km east of Esperance. Please see the following details in relation to the 3 sites that were assessed for weed species and density. These being the main site (Green) to be drained, as well as two control sites to the west, the first (Yellow) being a consistently waterlogged site and the second being a consistently dry (Pink) site. (see Photo 1) – *Please note this is the updated version with the second Wet and Dry Controls to be surveyed*

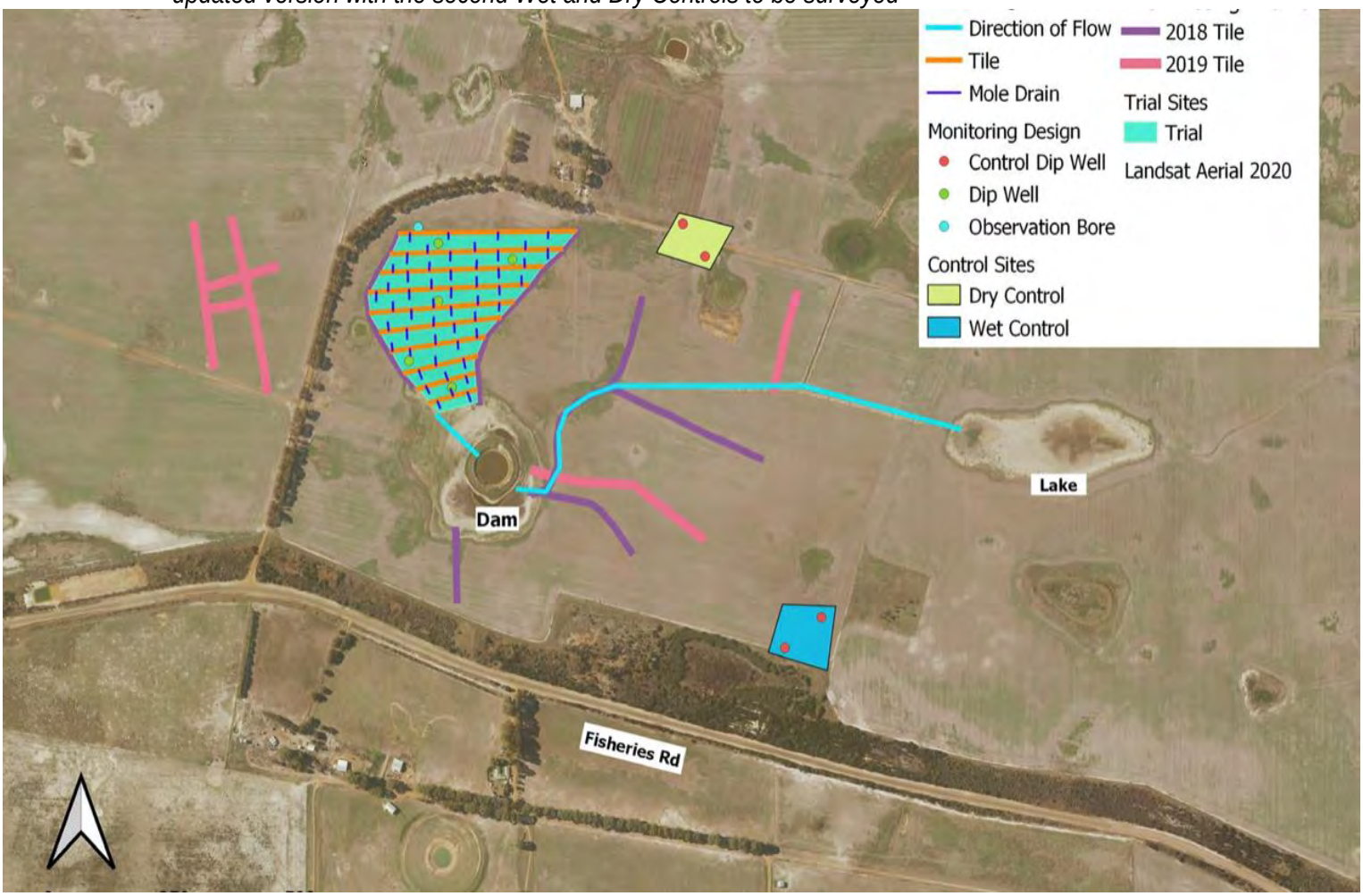

Photo 1 – 3 Main areas that were assessed for weed species and density.

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To give an understanding of the variability of weed species and density within the 3 zones a range of observations, counts and photos were taken within each specific zone to determine a starting point for the weeds that were present within these zones as of the 1st February 2021, this being prior to undertaking the drainage project (See Photo 2). These GPS Reference Points will allow for future observations at the same sites to measure changes in Species and density over time.

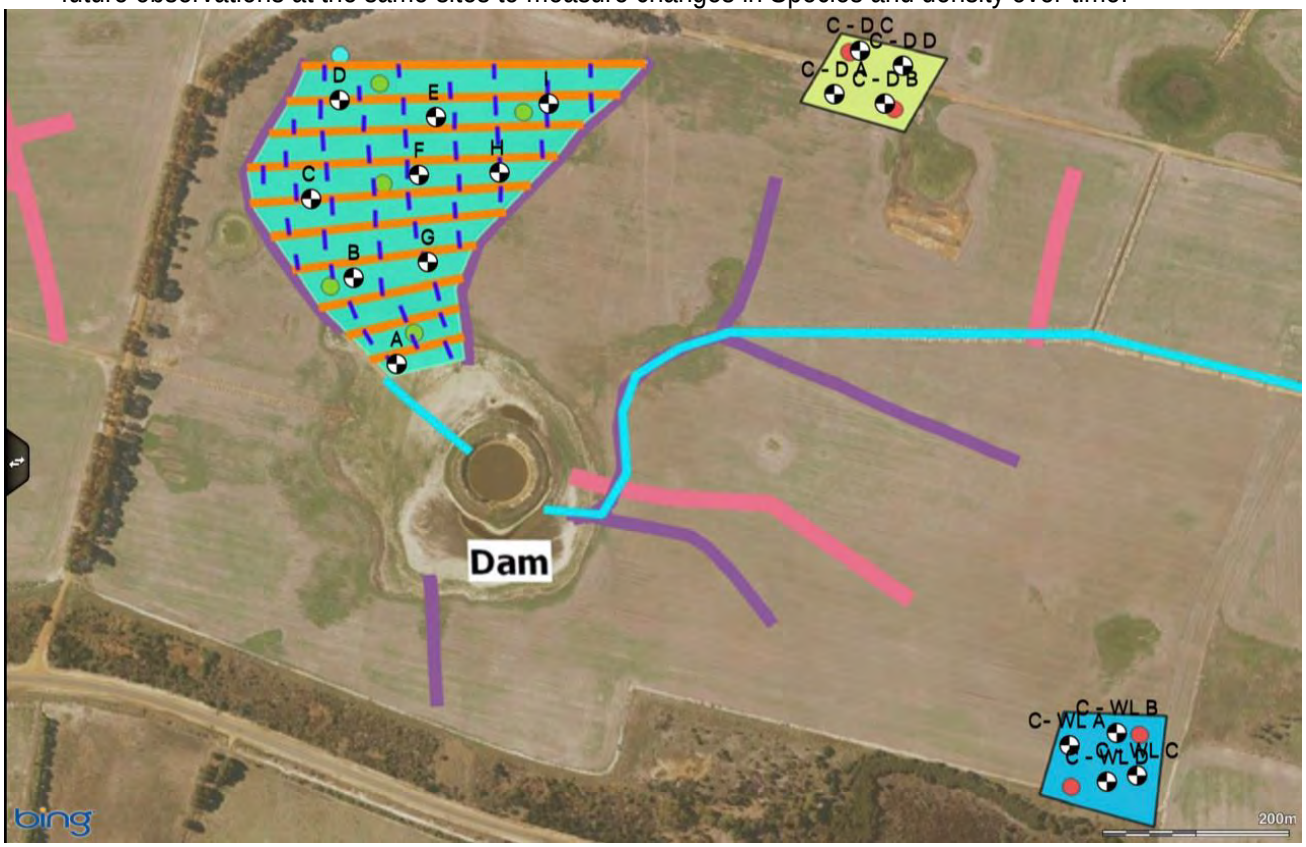

Photo 2 – Weed Assessment sites within each zone.

Weeds Present as at 18th January 2021

A. Blackberry Nightshade (Solanum nigrum)

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B. Milkthistle/ Common Sowthistle (Sonchus oleraceus)

C. Cotton Fireweed (Senecio quadridentatus)

D. Wireweed (Polygonum erectum)

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E. Mintweed/ Goosefoot (Chenopodium glaucum)

F. Flaxleaf Fleabane (Conyza bonariensis)

G. Portulaca (Portulaca oleracea)

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H. Flatweed (Hypochaeris radicata)

Main Site Observations -

As you may expect the main site had a higher burden of weeds on the southern end (lower slope) of the main drainage area, and this can be seen by comparing photos 3 & 4 where photo 3 was taken in the south west corner of the project site, looking across the lower slope in a north easterly direction. Photo 4 was taken in the north eastern corner looking in a south western direction and it is clear that the majority of the weeds occurred in the mid/ southern areas within the proposed drainage zone.

Photo 3 – Main Site looking North East. (SW Corner)

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Photo 4 – Main site looking south West (NE Corner)

At each GPS referenced site we counted the number, as well as the species of weed in 1m2 to give an indication of the variability across the sites and as example you can see that at site A in the south had 6 weeds per m2 compared to site I in the north that only had 1 weed in a m2.

	Weeds Per Square meter at each site - Main Site							
Main Site	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	1	4	0	0	1	0	0	0
B	0	1	1	0	5	0	0	0
C	0	1	0	1	0	2	0	0
D	1	0	0	0	5	0	0	0
E	0	1	0	1	0	0	0	0
F	2	0	0	0	1	0	0	0
G	0	0	0	0	8	0	0	1
H	0	1	0	0	2	0	0	0
I	0	1	0	0	0	0	0	0
Average m2	0.4	1.0	0.1	0.2	2.4	0.2	0.0	0.1

Graph 1 – Weed Species and number at each site in Main Area.

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Main Sites A – H Photos

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Control – Waterlogged Site Observations (As at 1st February 2021)

This site reflected the weed spectrum and burden that we measured on the lower (wetter) slopes in the main drainage area and will provide a very good control area once the project is underway/ completed (See photo 5)

Photo 5 – Control – Waterlogged looking North West (SE Corner)

	Weeds Per Square meter at each site - Control - Waterlogged							
Control Waterlogged	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	1	0	0	0	1	4	0	0
B	3	1	0	0	0	0	0	0
C	2	0	0	0	0	0	0	0
D	0	0	0	0	9	1	0	0
Average m2	1.5	0.3	0.0	0.0	2.5	1.3	0.0	0.0

Graph 3 – Weed Species and number at each site in Control – Waterlogged Area

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Control – Waterlogged Sites A – D Photos

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Control – Dry Site Observations (As at 1st February 2021)

The control – dry site appears to be well chosen with a very low weed burden across the whole site. At this site we only counted 1 weed within the 4 sites chosen so this is indicative of how relatively low the weed burden was at this site.

Photo 6 – Control – Dry looking North West (SE Corner)

	Weeds Per Square meter at each site - Control - Dry							
Control Dry	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0
C	1	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0
Average m2	0.25	0	0	0	0	0	0	0

Graph 5 – Weed Species and number at each site in Control – Dry Area

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Control – Dry Sites A – D Photos

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Summary

The site chosen to conduct the drainage project at Mic and Marnie Fels "Clancarty" farm at Neridup should in no doubt provide some excellent data on the benefits of drainage in this high rainfall sandplain site.

The weed survey gives a very good indication as to the effect of waterlogging on broadacre crops where excess water causes abiotic stress on crops, inhibiting healthy growth patterns and therefore give opportunity for weeds to thrive in the absence of competition from crops. This effect can be clearly seen in the comparison between the waterlogged and dry control sites where there is a substantial increase in weed population in the waterlogged site compared to the dry site. This pattern can also be seen in the main site where the northern upslope areas that would tend not to get waterlogged, has a much lower weed burden than areas that occur downslope closer to the main drain and are obviously much more prone to waterlogging.

Whilst we have taken the second round of samples (1st February 2021) for the reviewed wet and dry sites we have not put this data in as we have not received the updated Root Disease information as yet . As soon as the results arrive, I will update the report and send them through.

If there are any questions in regard to this report please do not hesitate to contact South East Agronomy Services

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23rd February 2022

South Coast Natural Resource Management
88 Stead Road
Albany Western Australia 6330

RE – Weed Survey – Fels "Clancarty" Neridup – Esperance Western Australia – YEAR 2

Att – Sophie Willshire

Following a request to undertake a second weed survey on Mic and Marnie Fels' Property "Clancarty" at Neridup approximately 50km east of Esperance. Please see the following details in relation to the 3 sites that were assessed for weed species and density.
This survey was very underwhelming with only few sites showing up any weed activity at all, this may be due to the fact that the previous Canola crop was "croptopped" with Glyphosate at the end of last cropping season, which would have effectively controlled weeds that may have been present as a result of potential waterlogged soils.

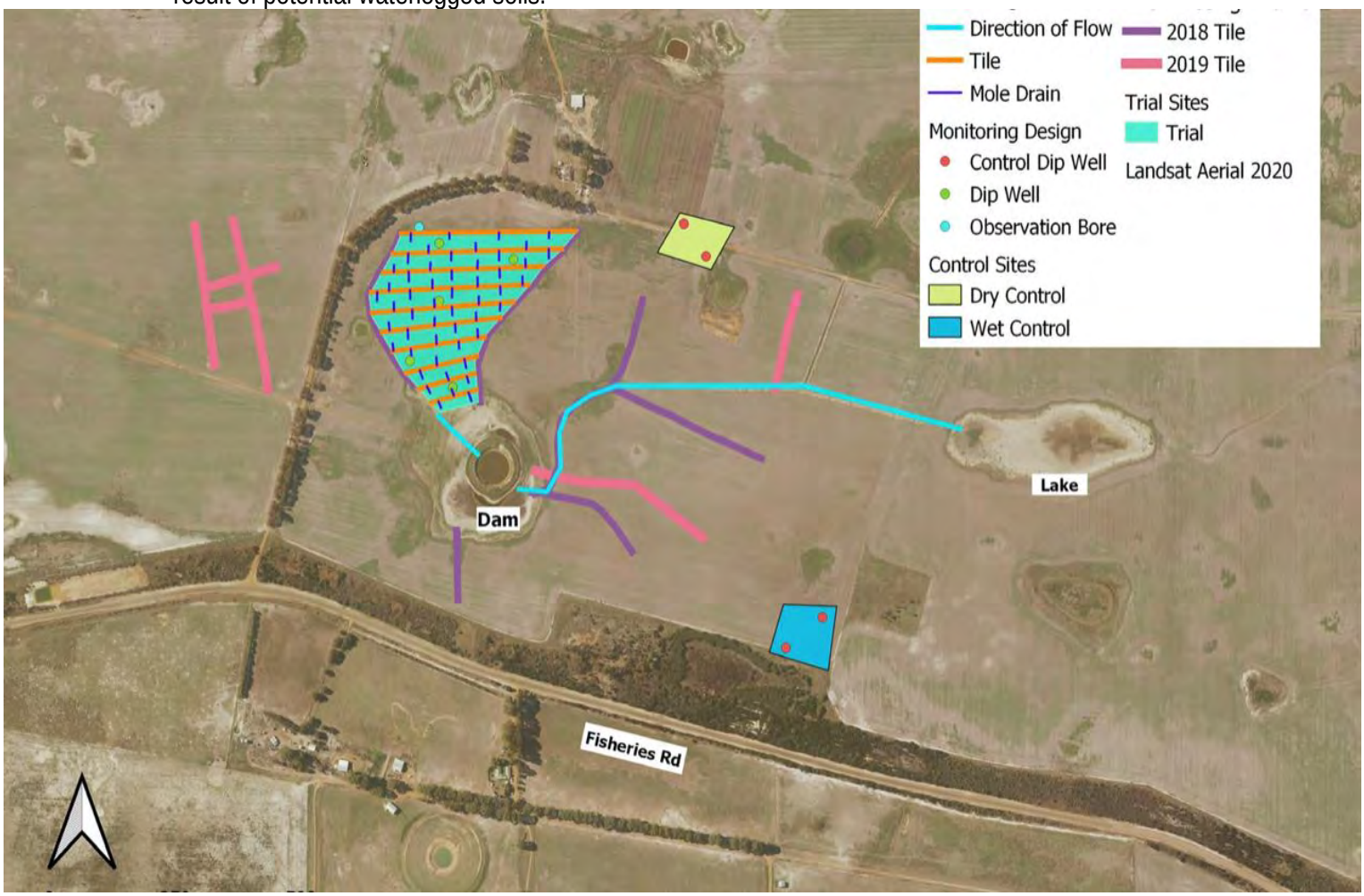

Photo 1 – 3 Main areas that were assessed for weed species and density.

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As per last year we visited and photographed and recorded any sign of weed activity on each of the 17 sites across the project

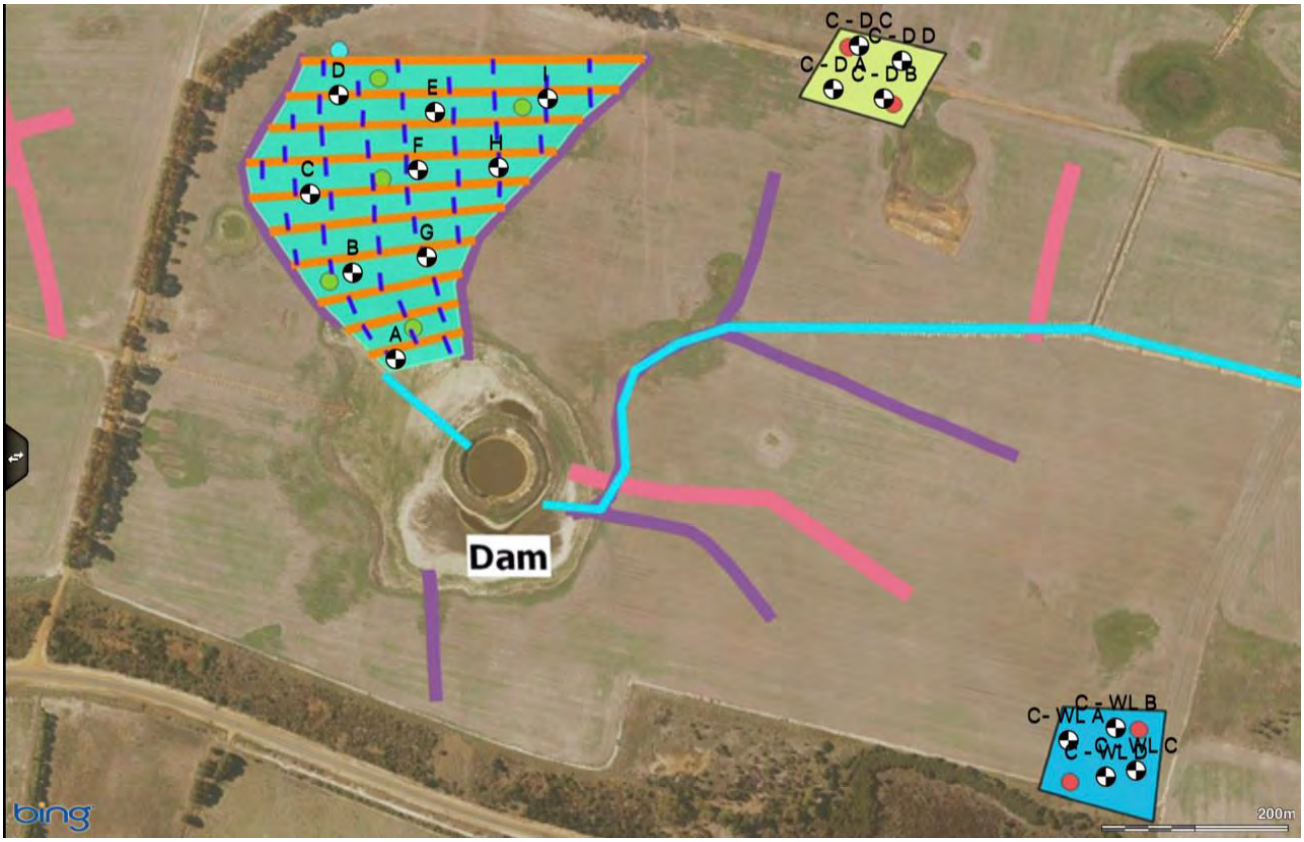

Photo 2 – Weed Assessment sites within each zone.

Weeds Present across the trial area (Not necessarily at specific sites inspected)
as at 23rd February 2022

A. Blackberry Nightshade (Solanum nigrum)

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3 Warrington Street
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Mobile: 0429 367 947
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B. Milkthistle/ Common Sowthistle (Sonchus oleraceus)

C. Cotton Fireweed (Senecio quadridentatus)

D. Wireweed (Polygonum erectum)

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E. Mintweed/ Goosefoot (Chenopodium glaucum)

Main Site Observations -

As stated in the introduction there was very little weed activity recorded across all sites (although we found wireweed on the lower slope in the main area and some low level mintweed on 2 sites in the wet zone. This being said you can still see where any depressions in the landscape held water where there was excess wireweed activity (See Photo 3 – dark patches)

Photo 3 – Main Site looking North East. (SW Corner)

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Main Site – Photos A – I above

Sites A (with Wireweed Present) D & I has stubbles that indicate that they had been waterlogged as the stubble was either flat on the surface which is indicative of wet stems that rot or very few plants that most likely suffered from waterlogging and premature senscence

At each GPS referenced site we counted the number, as well as the species of weed in 1m2 to give an indication of the variability across the sites

	Weeds Per Square meter at each site - Main Site							
Main Site	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	0	0	0	4	0	0	0	0
B	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0
Average m2	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0

Graph 1 – Weed Species and number at each site in Main Area.

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Sample: AAG9210
Paddock: **MAIN**
Grower: **SCNRM**

Nearest town: **ESPERANCE**

Report date: **11/03/2022**
Sampling strategy: **Random**
Stubble added: **No**
Region: **Western**

Paddock history	2 years ago	Last year	This year
Crop / variety	Wheat	Canola	Wheat

TEST	RESULT		DISEASE RISK*
			Not Detected / Low / Med / High
CCN	<0.05	eggs /g soil	Not Detected
Stem nematode	<0.5	nematodes/100 g soil	Not Detected
Take-all	0.82	log(pg DNA/g soil)	Low
Take-all - Oat Strain	<0.8	log(pg DNA/g soil)	Not Detected
Rhizoctonia	<0.5	log(pg DNA/g soil)	Not Detected
Crown rot	2.19	log(pg DNA/g soil)	High
Pratylenchus neglectus	<0.1	nematodes /g soil	Not Detected
Pratylenchus quasitereoides	<0.1	nematodes/g soil	Not Detected
Blackspot	<1.2	log(pg DNA/g soil)	Not Detected
Blackspot (Phoma koolunga)	<1.2	log(pg DNA/g soil)	Not Detected

*Risk categories should be used as a guide only, may be subject to regional and seasonal differences, and may be revised over time.

UNDER EVALUATION

TEST	RESULT		POPULATION DENSITY**
			Not Detected / Low / Med / High
Common root rot	<0.6	log(pg DNA/g soil)	Not Detected
Pythium clade f	1.22	log(pg DNA/g soil)	Low
Yellow leaf spot	<0.3	log(kDNA copies/g soil)	Not Detected
Eyespot	<0.3	log(kDNA copies/g soil)	Not Detected
White grain disorder	<0.3	log(kDNA copies/g soil)	Not Detected
Pratylenchus penetrans	<0.1	nematodes /g soil	Not Detected
Pratylenchus thornei	<0.1	nematodes/g soil	Not Detected
Charcoal rot	1.36	log(kDNA copies/g soil)	Med
Ascochyta blight of chickpea	<0.05	log(kDNA copies/g soil)	Not Detected

Graph 2 – Main Site Root Disease Results

Control – Waterlogged Site Observations (As at 23rd February 2022)

The waterlogeed site had some low level mintweed, but also had some residual Ryegrass and much poorer stubbles which is indicative of being affected by waterlogging. You can see in all photos in the waterlogged area that the stubble is flat on the surface as well as tractor tracks that have been left when the paddock was trafficked in wet conditions

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Photos A – D Waterlogged area

	Weeds Per Square meter at each site - Control - Waterlogged							
Control Waterlogged	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0
C	0	0	0	0	3	0	0	0
D	0	0	0	0	3	0	0	0
Average m2	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0

Graph 3 – Weed Species and number at each site in Control – Waterlogged Area

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Mobile: 0429 367 947
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Sample: AAG4285
Paddock: **WET**
Grower: **SCNRM**
Nearest town: **ESPERANCE**

Report date: **11/03/2022**
Sampling strategy: **Random**
Stubble added: **No**
Region: **Western**

Paddock history	2 years ago	Last year	This year
Crop / variety	Wheat	Canola	Wheat

TEST	RESULT		DISEASE RISK* Not Detected	Low	Med	High
CCN	<0.05	eggs /g soil	■			
Stem nematode	<0.5	nematodes/100 g soil	■			
Take-all	<0.8	log(pg DNA/g soil)	■			
Take-all - Oat Strain	<0.8	log(pg DNA/g soil)	■			
Rhizoctonia	<0.5	log(pg DNA/g soil)	■			
Crown rot	2.36	log(pg DNA/g soil)			■	
Pratylenchus neglectus	<0.1	nematodes /g soil	■			
Pratylenchus quasitereoides	<0.1	nematodes/g soil	■			
Blackspot	<1.2	log(pg DNA/g soil)	■			
Blackspot (Phoma koolunga)	<1.2	log(pg DNA/g soil)	■			

*Risk categories should be used as a guide only, may be subject to regional and seasonal differences, and may be revised over time.

UNDER EVALUATION

TEST	RESULT		POPULATION DENSITY** Not Detected	Low	Med	High
Common root rot	<0.6	log(pg DNA/g soil)	■			
Pythium clade f	1.37	log(pg DNA/g soil)			■	
Yellow leaf spot	<0.3	log(kDNA copies/g soil)	■			
Eyespot	<0.3	log(kDNA copies/g soil)	■			
White grain disorder	<0.3	log(kDNA copies/g soil)	■			
Pratylenchus penetrans	<0.1	nematodes /g soil	■			
Pratylenchus thornei	<0.1	nematodes/g soil	■			
Charcoal rot	1.44	log(kDNA copies/g soil)			■	
Ascochyta blight of chickpea	<0.05	log(kDNA copies/g soil)	■			
Sclerotinia sclerotiorum/S. minor	<0.1	log(kDNA copies/g soil)	■			

Graph 4 – Waterlogged Site Root Disease Results

Control – Dry Site Observations (As at 23rd February 2022)

The control – dry site appears to have handled the water well with nil weeds present. This being said the 2 sites (B & D) to the eastern side of the Dry zone did have some low level stubble that had laid onto the ground indicating there may have been some low level / transient waterlogging at some stage through the season.

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Photos A – D Dry Area

	Weeds Per Square meter at each site - Control - Dry							
Control Dry	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0
Average m2	0	0	0	0	0	0	0	0

Graph 5 – Weed Species and number at each site in Control - Dry Area

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Mobile: 0429 367 947
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Sample: AAG4286
Paddock: **DRY**
Grower: **SCNRM**

Nearest town: **ESPERANCE**

Report date: **11/03/2022**
Sampling strategy: **Random**
Stubble added: **No**
Region: **Western**

Paddock history	**2 years ago**	**Last year**	**This year**
Crop / variety	Wheat	Canola	Wheat

TEST	**RESULT**		**DISEASE RISK***			
			Not Detected	**Low**	**Med**	**High**
CCN	<0.05	eggs /g soil	■			
Stem nematode	<0.5	nematodes/100 g soil	■			
Take-all	0.80	log(pg DNA/g soil)	■			
Take-all - Oat Strain	<0.8	log(pg DNA/g soil)	■			
Rhizoctonia	<0.5	log(pg DNA/g soil)	■			
Crown rot	1.83	log(pg DNA/g soil)			■	
Pratylenchus neglectus	<0.1	nematodes /g soil	■			
Pratylenchus quasitereoides	<0.1	nematodes/g soil	■			
Blackspot	<1.2	log(pg DNA/g soil)	■			
Blackspot (Phoma koolunga)	<1.2	log(pg DNA/g soil)	■			

*Risk categories should be used as a guide only, may be subject to regional and seasonal differences, and may be revised over time.

UNDER EVALUATION

TEST	**RESULT**		**POPULATION DENSITY****			
			Not Detected	**Low**	**Med**	**High**
Common root rot	<0.6	log(pg DNA/g soil)	■			
Pythium clade f	2.01	log(pg DNA/g soil)			■	
Yellow leaf spot	<0.3	log(kDNA copies/g soil)	■			
Eyespot	<0.3	log(kDNA copies/g soil)	■			
White grain disorder	<0.3	log(kDNA copies/g soil)	■			
Pratylenchus penetrans	<0.1	nematodes /g soil	■			
Pratylenchus thornei	<0.1	nematodes/g soil	■			
Charcoal rot	1.99	log(kDNA copies/g soil)			■	
Ascochyta blight of chickpea	<0.05	log(kDNA copies/g soil)	■			
Sclerotinia sclerotiorum/S. minor	<0.1	log(kDNA copies/g soil)	■			

Graph 6 – Waterlogged Site Root Disease Results

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Summary

This years survey may not be the best indication as to the effects on weeds by zone description, but hopefully I have been able to demonstrate by looking at, and commenting on the stubbles and soil conditions, the positive effect of the drainage project that has occurred to date. As stated previously there was small depressions across the landscape where there was a higher presence of Wireweed, but as a general rule both the main trial area and the dry trial area appeared to be far less affected by water than the wet control area. There were less weeds recorded this year than what was recorded last year, and this may be an early indication that the drainage project is paying dividends.

Unfortunately the root disease results provided have given no conclusive evidence as to any differences in root disease activity between the 3 main sites

If there are any questions in regard to this report please do not hesitate to contact South East Agronomy Services

Thank you for your ongoing support and we hope you are happy with the report and details presented

Regards

Luke Marquis
Agronomy Consultant
South East Agronomy Services
Esperance 6450

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14th February 2023

South Coast Natural Resource Management
88 Stead Road
Albany Western Australia 6330

RE – Weed Survey – Fels "Clancarty" Neridup – Esperance Western Australia – YEAR 3

Att – Sophie Willshire

Following a request to undertake a third weed survey on Mic and Marnie Fels' Property "Clancarty" at Neridup approximately 50km east of Esperance. Please see the following details in relation to the 3 sites that were assessed for weed species and density.
This survey was once again very underwhelming with only few sites showing up any weed activity at all, this is in part due to the fact that a summer spray had been applied post-harvest which would have effectively controlled weeds that may have been present as a result of potentially waterlogged soils.

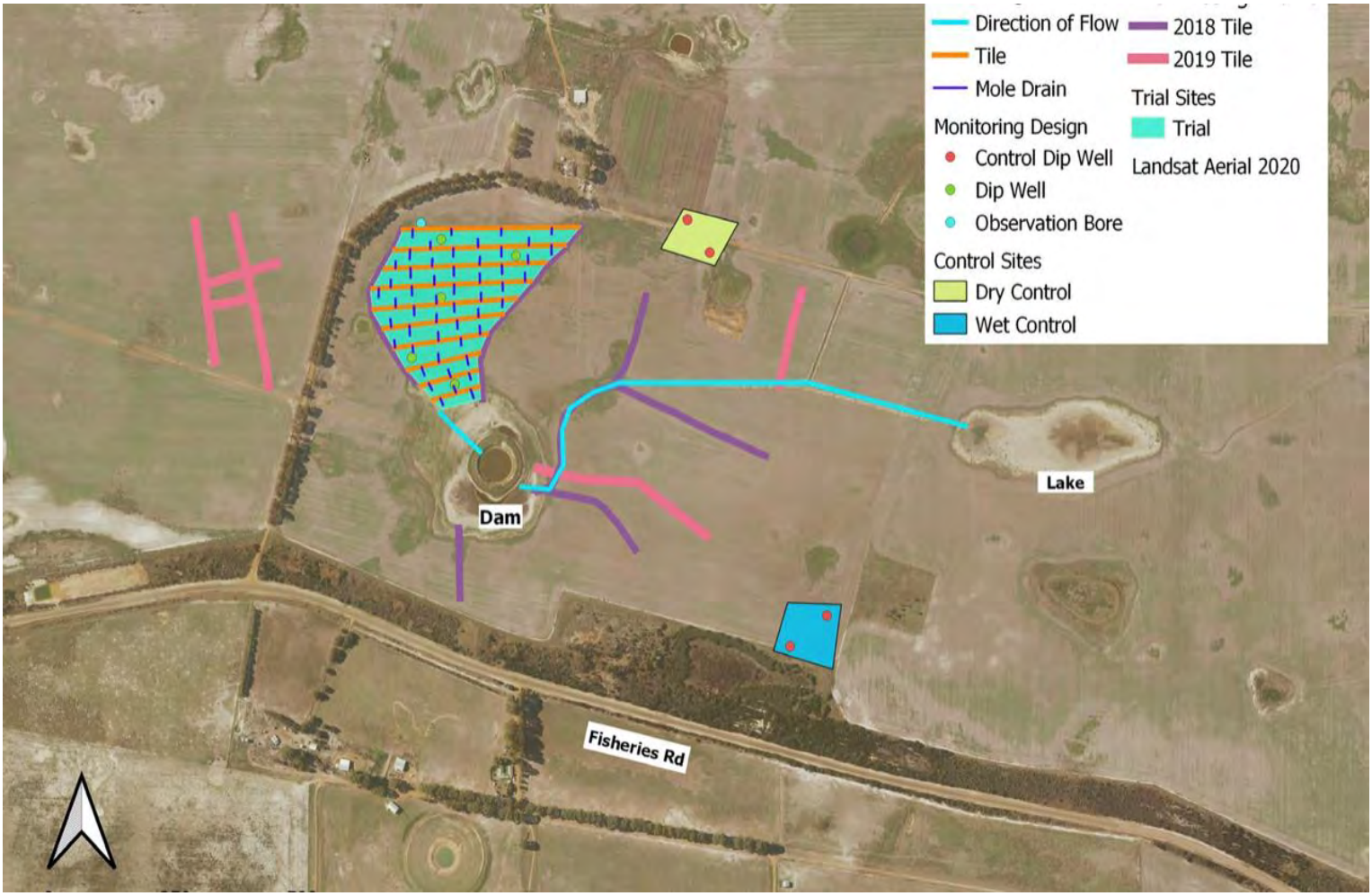

Photo 1 – 3 Main areas that were assessed for weed species and density.

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As per last year, we visited, photographed and recorded any sign of weed activity on each of the 17 sites across the project.

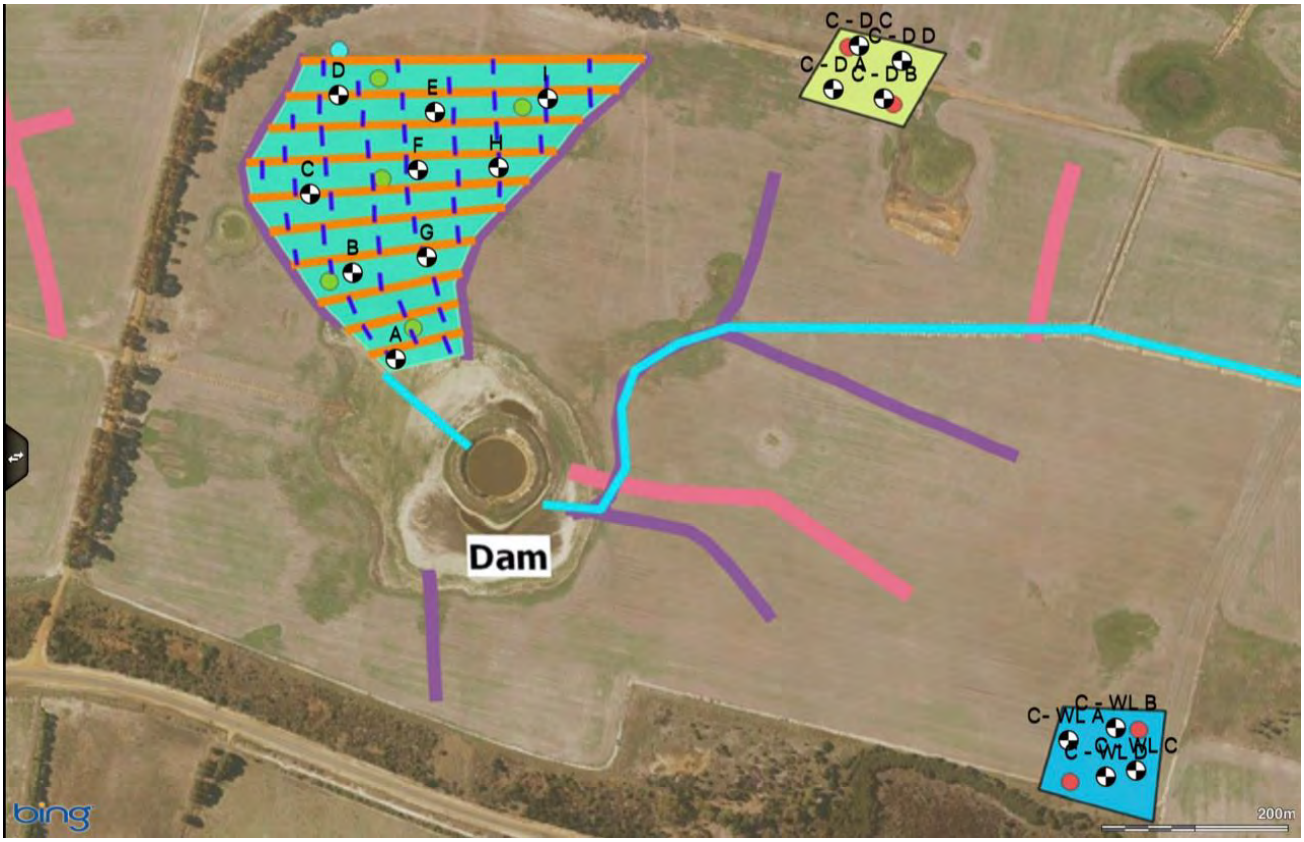

Photo 2 – Weed Assessment sites within each zone.

Previous weed spectrum across the trial area (Not necessarily at specific sites inspected)

A. Blackberry Nightshade (Solanum nigrum)

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3 Warrington Street
Esperance, WA 6450
Mobile: 0429 367 947
Email – lmarquis@westnet.com.au

B. Milkthistle/ Common Sowthistle (Sonchus oleraceus)

C. Cotton Fireweed (Senecio quadridentatus)

D. Wireweed (Polygonum erectum)

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3 Warrington Street
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Mobile: 0429 367 947
Email – lmarquis@westnet.com.au

E. Mintweed/ Goosefoot (Chenopodium glaucum)

Main Site Observations -

As stated in the introduction, there was very little weed activity recorded across the main site. In addition to this, the stubble that had been left post harvest looked to be very thick and healthy which clearly indicated a lack of in season waterlogging at the main site. This observation contrasts with 2022 where it was noted that there was a significant impact of waterlogging on the residual Canola stubble.

Photo 3 – Main Site looking Northeast. (SW Corner)

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Main Site – Photos A – I above

At each GPS referenced site we counted the number, as well as the species of weed in 1m2 to give an indication of the variability across the sites.

	Weeds Per Square meter at each site - Main Site							
Main Site	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	0	0	0	2	0	0	0	0
B	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0
E	0	0	0	0	0	0	0	0
F	0	0	0	0	0	0	0	0
G	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0
Average m2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0

Graph 1 – Weed Species and number at each site in Main Area.

South East Agronomy Services
3 Warrington Street
Esperance, WA 6450
Mobile: 0429 367 947
Email – lmarquis@westnet.com.au

Sample: **AAG09317**

Grower:	**SCNRM**
Paddock:	**TRIAL MAIN**
Nearest town:	**ESPERANCE**
Region:	**WESTERN**

Report date:	**10/02/2023**
Date sampled:	**31/01/2023**
Dry weight (g):	**547**
Sample condition:	**Damp**
Core depth:	**10cm**
Sampling strategy:	**Random**
Stubble added:	**No**

Paddock history	**2 years ago**	**Last year**	**This year**
Crop / variety	Canola	Wheat	Canola

TEST	**RESULT**		**DISEASE RISK*** Not Detected / Low / Med / High
CCN	<0.1	eggs /g soil	
Stem nematode	<0.5	nematodes/100 g soil	
Take-all	<0.8	log(pg DNA/g soil)	
Take-all - Oat Strain	<0.8	log(pg DNA/g soil)	
Rhizoctonia	<0.5	log(pg DNA/g soil)	
Crown rot	1.3	log(pg DNA/g soil)	
Pratylenchus neglectus	<0.1	nematodes/g soil	
Pratylenchus quasitereoides	<0.1	nematodes/g soil	
Blackspot	<1.2	log(pg DNA/g soil)	
Blackspot (Phoma koolunga)	<1.2	log(pg DNA/g soil)	

*Risk categories should be used as a guide only, may be subject to regional and seasonal differences, and may be revised over time.

UNDER EVALUATION

TEST	**RESULT**		**POPULATION DENSITY**** Not Detected / Low / Med / High
Common root rot	<0.6	log(pg DNA/g soil)	
Pythium clade f	0.8	log(pg DNA/g soil)	
Yellow leaf spot	<0.3	log(kDNA copies/g soil)	
Eyespot	<0.3	log(kDNA copies/g soil)	
White grain disorder	<0.3	log(kDNA copies/g soil)	
Pratylenchus penetrans	<0.1	nematodes/g soil	
Pratylenchus thornei	<0.1	nematodes/g soil	
Charcoal rot	1.1	log(kDNA copies/g soil)	
Ascochyta blight of chickpea	<0.1	log(kDNA copies/g soil)	
Sclerotinia sclerotiorum/S. minor	<0.1	log(kDNA copies/g soil)	

**Population densities are based on the pathogen levels detected in PREDICTA samples across the industry. These are not disease risk categories.

Graph 2 – Main Site Root Disease Results

South East Agronomy Services
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Email – lmarquis@westnet.com.au

Control – Waterlogged Site Observations (As at 31st January 2023)

The waterlogged site had residual Wireweed, Mintweed and Nightshade that indicates that this area is still suffering from waterlogging at times throughout the season.

Photos A – D Waterlogged area

	Weeds Per Square meter at each site - Control - Waterlogged							
Control Waterlogged	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	0	1	0	1	2	0	0	0
B	2	2	0	2	2	0	0	0
C	2	0	0	1	3	0	0	0
D	0	0	0	1	4	0	0	0
Average m2	1.0	0.8	0.0	1.3	2.8	0.0	0.0	0.0

Graph 3 – Weed Species and number at each site in Control – Waterlogged Area

South East Agronomy Services
3 Warrington Street
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Mobile: 0429 367 947
Email – lmarquis@westnet.com.au

Sample: **AAG09319**

Grower:	**SCNRM**
Paddock:	**TRIAL WET**
Nearest town:	**ESPERANCE**
Region:	**WESTERN**

Report date:	**10/02/2023**
Date sampled:	**31/01/2023**
Dry weight (g):	**502**
Sample condition:	**Damp**
Core depth:	**10cm**
Sampling strategy:	**Random**
Stubble added:	**No**

Paddock history	**2 years ago**	**Last year**	**This year**
Crop / variety	Canola	Wheat	Canola

TEST	**RESULT**		**DISEASE RISK*** Not Detected / Low / Med / High
CCN	<0.1	eggs /g soil	
Stem nematode	<0.5	nematodes/100 g soil	
Take-all	<0.8	log(pg DNA/g soil)	
Take-all - Oat Strain	<0.8	log(pg DNA/g soil)	
Rhizoctonia	<0.5	log(pg DNA/g soil)	
Crown rot	2.5	log(pg DNA/g soil)	
Pratylenchus neglectus	<0.1	nematodes/g soil	
Pratylenchus quasitereoides	<0.1	nematodes/g soil	
Blackspot	<1.2	log(pg DNA/g soil)	
Blackspot (Phoma koolunga)	<1.2	log(pg DNA/g soil)	

*Risk categories should be used as a guide only, may be subject to regional and seasonal differences, and may be revised over time.

UNDER EVALUATION

TEST	**RESULT**		**POPULATION DENSITY**** Not Detected / Low / Med / High
Common root rot	<0.6	log(pg DNA/g soil)	
Pythium clade f	0.7	log(pg DNA/g soil)	
Yellow leaf spot	<0.3	log(kDNA copies/g soil)	
Eyespot	<0.3	log(kDNA copies/g soil)	
White grain disorder	<0.3	log(kDNA copies/g soil)	
Pratylenchus penetrans	<0.1	nematodes/g soil	
Pratylenchus thornei	<0.1	nematodes/g soil	
Charcoal rot	0.8	log(kDNA copies/g soil)	
Ascochyta blight of chickpea	<0.1	log(kDNA copies/g soil)	
Sclerotinia sclerotiorum/S. minor	<0.1	log(kDNA copies/g soil)	

**Population densities are based on the pathogen levels detected in PREDICTA samples across the industry. These are not disease risk categories.

Graph 4 – Waterlogged Site Root Disease Results

South East Agronomy Services
3 Warrington Street
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Mobile: 0429 367 947
Email – lmarquis@westnet.com.au

Control – Dry Site Observations (As at 31st Januray 2023)

The control – dry site was the most interesting area as it appeared to have a higher level of weed (Milkthistle) residue than that of the main area. This had not been noted in previous reports.

Photos A – D - Dry Area – Please note extra residual weed burden when compared to the main site

South East Agronomy Services
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Esperance, WA 6450
Mobile: 0429 367 947
Email – lmarquis@westnet.com.au

	Weeds Per Square meter at each site - Control - Dry							
Control Dry	Blackberry Nightshade	Milkthistle	Cotton Fireweed	Wireweed	Mintweed	Fleabane	Portulaca	Flatweed
A	3	1	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0
C	0	2	0	0	0	0	0	0
D	0	2	0	0	0	0	0	0
Average m2	0.75	1.25	0	0	0	0	0	0

Graph 5 – Weed Species and number at each site in Control - Dry Area

South East Agronomy Services
3 Warrington Street
Esperance, WA 6450
Mobile: 0429 367 947
Email – lmarquis@westnet.com.au

Sample: **AAG09318**

Grower:	**SCNRM**
Paddock:	**TRIAL DRY**
Nearest town:	**ESPERANCE**
Region:	**WESTERN**

Report date:	**10/02/2023**
Date sampled:	**31/01/2023**
Dry weight (g):	**538**
Sample condition:	**Damp**
Core depth:	**10cm**
Sampling strategy:	**Random**
Stubble added:	**No**

Paddock history	**2 years ago**	**Last year**	**This year**
Crop / variety	Canola	Wheat	Canola

TEST	**RESULT**		**DISEASE RISK*** Not Detected / Low / Med / High
CCN	<0.1	eggs /g soil	
Stem nematode	<0.5	nematodes/100 g soil	
Take-all	1.0	log(pg DNA/g soil)	
Take-all - Oat Strain	<0.8	log(pg DNA/g soil)	
Rhizoctonia	<0.5	log(pg DNA/g soil)	
Crown rot	1.6	log(pg DNA/g soil)	
Pratylenchus neglectus	1.7	nematodes/g soil	
Pratylenchus quasitereoides	<0.1	nematodes/g soil	
Blackspot	<1.2	log(pg DNA/g soil)	
Blackspot (Phoma koolunga)	<1.2	log(pg DNA/g soil)	

*Risk categories should be used as a guide only, may be subject to regional and seasonal differences, and may be revised over time.

UNDER EVALUATION

TEST	**RESULT**		**POPULATION DENSITY**** Not Detected / Low / Med / High
Common root rot	<0.6	log(pg DNA/g soil)	
Pythium clade f	1.3	log(pg DNA/g soil)	
Yellow leaf spot	<0.3	log(kDNA copies/g soil)	
Eyespot	<0.3	log(kDNA copies/g soil)	
White grain disorder	<0.3	log(kDNA copies/g soil)	
Pratylenchus penetrans	<0.1	nematodes/g soil	
Pratylenchus thornei	<0.1	nematodes/g soil	
Charcoal rot	0.9	log(kDNA copies/g soil)	
Ascochyta blight of chickpea	<0.1	log(kDNA copies/g soil)	
Sclerotinia sclerotiorum/S. minor	<0.1	log(kDNA copies/g soil)	

**Population densities are based on the pathogen levels detected in PREDICTA samples across the industry. These are not disease risk categories.

Graph 6 – Waterlogged Site Root Disease Results

South East Agronomy Services
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Summary

This year's survey may be starting to uncover the benefits of the drainage program. As the solid stubble in conjunction with a lack of weed burden in the main (drained) zone was significantly different to the dry zone. This is opposed to what we have seen in the previous 2 years where there had been a greater weed burden in the main area when compared to the dry zone.
The wet zone appears to continue to suffer from additional weed burden as a result of wet periods, but in saying this, the crop stubble that did remain look to be more robust and not as lodged as we have seen in the 2 previous years. Once again we may be seeing some benefit of the drained area to the lower slopes of the paddock
I have discussed the timing of the assessment with Sophie, in the last 2 years the site has been sprayed for weed control quite in advance of the survey which has made the monitoring of weed population challenging.
I would suggest if the survey is to continue that any assessment be conducted very close to post harvest which may give a more accurate and greater visual example of the variability in weed spectrum and density between zones. Understandably to date Sophie requested the assessment to be taken at the same time each season to keep a level of continuity of timing.

Unfortunately, the root disease results provided have given no conclusive evidence as to any differences in root disease activity between the 3 main sites.

If there are any questions in regard to this report, please do not hesitate to contact South East Agronomy Services

Thank you for your ongoing support and we hope you are happy with the report and details presented.

Regards

Luke Marquis
Agronomy Consultant
South East Agronomy Services
Esperance 6450