

Eyre Peninsula seasonal summary 2018

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Key messages

The 2018 season on Eyre Peninsula was a year of extremes with crop yields dependent not just on how much rain was received, but also on when the rain was received. Dry conditions across the region at sowing resulted in poor germination and early crop vigour in most districts. Although pastures germinated well in many districts, cold and dry conditions to August resulted in poor pasture growth, and producers in all districts needed to keep supplementary feeding livestock, which significantly reduced hay and feed grain reserves across the region.

Well above average rainfall in August turned the season around in much of the region, and with follow-up rainfall in October, average to slightly below average yields were achieved in Western and Central Eyre districts, with average to well above average yields on Lower Eyre Peninsula. However, continued dry conditions in Eastern Eyre districts around Franklin Harbour, Cleve, Arno Bay and Port Neill resulted in little crop and pasture growth, and low paddock surface cover and frequent strong winds resulted in significant erosion of sandy soils in these districts, negatively impacting crop establishment and growth.

Severe frosts during August and September damaged crops in all districts north of Cummins, with large areas of crops of types affected in the Kimba, Lock and Karkoo districts. Significant frost damage was also reported in districts where frost risk is traditionally lower such as the Far West, Streaky Bay, Port Kenny, Ungarra and Tumby Bay. High demand for hay because of drought conditions in eastern Australia, coupled with record prices made it profitable to cut frosted crops (and those suspected of being frosted) for hay.

Stored subsoil moisture from August rains combined with follow-up rain and an absence of heat stress events in October helped to fill grain and farmers in most districts (with the exception of the drought-affected districts in Eastern EP) were pleased with the yields achieved despite well below average growing season rainfall. Rain and humidity caused harvest delays across the region. Fortunately this did not result in significant grain quality downgrades until late December, and much of the grain had high protein and low screenings. High grain and hay prices resulted in good gross margins for crops in those districts where seasonal conditions delivered yields.

Summer/Early Autumn

Despite very dry conditions in early summer, thunderstorms in late January resulted in rainfall totals well above the average for the month. Summer weeds and volunteer crops emerged and grew rapidly during this period, and most growers sprayed at least once to control the green bridge and minimise the risk of pest and disease damage to 2018 crops. Given the high number of Russian wheat aphid in 2017, most growers applied a seed treatment insecticidal dressing to at least a portion of their seed to reduce the risk of crop damage.

Snail activity increased during this period and growers baited paddocks to be sown with vulnerable crops such as canola and pulses. A number of hot days during this period also gave growers an opportunity to control snails by rolling and chaining. However, in many cases these operations detached and exposed soils to erosion, with strong winds eroding sandy rises in many paddocks across the region.

Low paddock biomass levels in the previous spring resulted in very low surface cover levels over summer and livestock producers had to supplement paddock feed with hay and grain. Many prepared growers moved livestock into containment feeding areas at this time.

Late-Autumn/Winter

Dry conditions remained to early winter. Whilst several cold fronts passed over the region, most brought little rainfall, with strong winds drying out topsoils causing numerous stops and starts to seeding. Some canola and long season wheat varieties were dry sown in April, as well as cereal paddocks and vetch for feed. However, most growers held off sowing the majority of their crop until adequate rain was received, particularly those with non-wetting sands. Widespread rains totaling more than 15 mm in the first week of June allowed most growers to finish sowing by the end of June.

Crop and pasture germination was patchy and depended on location, sowing time and timing of rainfall. Considerable variation in crop maturity was seen, even within paddocks, depending on soil type variability. Numerous light frosts and moisture stress in late winter further checked the growth of crops and pastures, with livestock producers needing to continue supplementary feeding stock until at least the end of July.

This placed enormous pressure on farm feed reserves, and most growers had to buy in extra hay and grain at considerable expense. Most growers chose not to grass free pastures, preferring to maintain the little paddock biomass present, and instead spraytopped paddocks in spring to control grass weed seed set.

Cold fronts in August brought significant rainfall and most districts recorded well above the monthly average. This rain turned the season around in many districts, as it resulted in some stored soil moisture which helped crops and pastures continue to grow between irregular rainfall events. As a result of this rain most districts in Western and Central Eyre Peninsula and around Darke Peake, Rudall and Wharminda in the Eastern EP were finally able to grow adequate surface cover for erosion protection and crops in Lower Eyre grew rapidly with high yield potential.

However, in those districts east of Cleve, Arno Bay, Franklin Harbour and Cowell, continued dry conditions saw little to no growth of crops and pastures, with continuing erosion of exposed sandy soils. Growers tried a number of strategies to reduce erosion, including ripping paddocks to roughen the soil surface and reseeding areas of crop. Unfortunately these winds continued into spring and many of the resown crops were damaged by sandblasting just as they were emerging.

Spring

Although September rainfall was below average, stored soil moisture from August rains enabled crops and pastures to grow through this period until further rains were received in October. Crop disease levels were generally low, due to seasonal conditions and landholder's fungicide strategies. There were few reports of significant numbers of Russian wheat aphid. High numbers of cabbage and turnip aphids were reported in canola crops and most growers had to apply at least one spray to control them. There were also reports of native budworm above threshold levels in canola and pulse crops, and army worm cutting off the heads of cereal crops, but these were easily controlled. Cow pea aphids were reported in medic and vetch pastures in early spring and growers monitored livestock grazing in these paddocks to avoid animal health issues with photosensitization as seen in 2017.

There was heavy frost damage to crops in all districts north of Cummins in late September and early October. High demand for hay due to drought conditions in eastern Australia made hay a profitable option, and significant areas of frosted crop were cut in the Kimba, Buckleboo, Tooligie, Lock and Kapinnie districts. Strong winds in mid-October caused some damage to ripe canola and barley crops in Western and Eastern Eyre districts, however although the

damage was significant in individual paddocks these were generally isolated and did not represent a high proportion of the total crop area.

Rain and humid days frustrated harvest efforts, and many growers did not finish harvest until early January. The conditions did not significantly impact grain quality until late in the harvest.

Yields were highly variable depending on rainfall, sowing time, rainfall timing and soil type. Further details of how these factors affected yield can be found below in the sub-regional reports. Most growers, with the exception of those in the drought affected Eastern EP districts, stated that crops yielded better than they expected given the very dry start to the season, patchy germination, early moisture stress, frost and well below average growing season rainfall. This is attributed to the generally well above average August rainfall combined with rain and a lack of heat stress events in October. Canola and peas which were not frosted yielded exceptionally well, but yields of other pulse crops varied dramatically. Grain quality was generally very high.

DISTRICT REPORTS

Western Eyre Peninsula

Summer

Most of January was dry, however thunderstorm activity late in the month resulted in above average rainfall. This germinated summer weeds and provided some 'green pick' for livestock.

However, well below average February rainfall stalled weed growth and paddock surface cover levels reduced during this period. Hot days during this period provided growers with the opportunity to chain and roll stubbles for snail control, these operations resulted in soils exposed to wind erosion in some areas, with strong wind events during this period resulting in erosion of some sandy rises between Poochera and Warrambo.

Autumn/Winter

Continued dry conditions to the end of July resulted in little weed growth and reduced the need for knockdown herbicide applications. Soil profiles contained little to no stored subsoil moisture and growers waited on good opening rains to complete their sowing programs. Although little rain was received, heavy overnight dews increased snail activity and growers baited paddocks which they intended to sow to vulnerable crops such as canola and pulses. As dry conditions continued growers decided to reduce the area intended to be sown to higher risk crops such as canola and replaced these with barley or a hay crop, with reports of up to a 20% reduction in the area sown to wheat in drier districts west of Wirrulla.

Regular cold fronts passed over the region in May and June, but these brought little rainfall. Scattered showers were accompanied by strong winds which dried out surface soils and caused paddocks with low surface cover levels to drift and crop and pasture establishment and growth was poor. By the end of June inland districts around Minnipa and Wudinna had only received 50 mm of rainfall since the start of February.

Rainfall in the middle of June enabled growers on better soil types to finish seeding by the end of June in most districts. On the non-wetting sands around Koongawa, Kyancutta and Warramboo growers waited until good rains were received before sowing crops. On heavier soils which received good early rainfall around Elliston, Streaky Bay and Mt Cooper, crops emerged well. However, in areas with continued dry conditions around Poochera, Mudamuckla and Nunjirkompita, crop germination was delayed and patchy resulting in significant variability in crop maturity even within paddocks. Dry conditions continued into July and young crops suffered damage from light frosts and moisture stress. These crops struggled to regain crop vigour during the season. Strong winds eroded exposed sand dunes and sandblasted establishing crops.

Well above average August rainfall and warmer sunny days resulted in rapid growth of crops and pastures and most paddocks contained adequate surface cover levels for wind erosion protection by the end of the month. These favourable growing conditions reduced some of the early variability in crop growth.

Pastures had very low levels of feed until the end of August and most growers had to provide supplementary feed to livestock. Despite good conditions improving pasture growth in August, biomass levels were well below average and rather than grass-freeing pastures most growers chose to spraytop in spring to control grass-weed seed set whilst maintaining paddock biomass. Although biomass levels were low most livestock producers aimed to cut some hay to replenish supplies depleted during the preceding 9 months.

Spring

Cumulative April to October rainfall was well below the long term average. Good rains in early October resulted in average rainfall totals for the month, these rains had little impact on grain yields. Heavy frosts were reported in September, and whilst severe in some districts on average 10 to 30% yield losses were estimated. The worst affected paddocks were cut for hay.

Crop disease levels throughout the growing season were low. However, there were reports of

large numbers of cabbage aphids in canola crops, particularly those stressed by low moisture conditions or frost. There were also reports of native budworm in pulses and canola and army worm damage to cereal crops on the grey calcareous soils around Streaky Bay and Elliston.

Although good growing conditions resulted in rapid growth of pastures, spring biomass levels were below normal levels and were not expected to provide long term feed value over summer. Most livestock producers in the region made arrangements to buy in hay and grain to replenish supplies.

Strong winds and hail accompanied intense storm activity in mid to late November. Although there were reports of significant crop damage in isolated paddocks, this did not represent a large proportion of the overall crop area. Further scattered showers in early to mid-December resulted above average rainfall being recorded for this period. These damp conditions caused delays to harvest with many growers not finishing until the end of December.

Crop yields were generally better than expected given the seasonal conditions. Early sown wheat on lighter soils in areas which had good early rainfall achieved well above average yields in the range 1.8 to 2.2 t/ha. The red flats around Nunjirkompita, Wirrulla and Poochera yielded 1.0 to 1.2 t/ha on average and later sown crops on grey calcareous soils performed poorly with yields from 0.7 to 0.9 t/ha. Wheat quality was generally very good with high protein and low screenings.

Barley performed generally well with many crops yielding above 2.0 t/ha. Quality was also high with good grain weights, high protein and low screenings. Pea and canola yields were highly variable depending on soil type and frost damage.

Although November rainfall caused a decline in stubble feed quality a germination of summer weeds provided some high quality 'green pick' and many growers began summer weed spraying programs as soon as they had finished harvest.

Eastern Eyre Peninsula

Summer

Summer forage crops at harvest in 2017 grew well and provided valuable feed during a dry period in early summer. Although the first half of January was very dry, intense thunderstorms brought heavy rain to the region in the last week of the month resulting in above average January rainfall in many districts. Following these rains summer weeds and volunteer crops germinated and grew rapidly, with growers spraying these to control the 'green bridge' and manage pest and disease levels ahead of the 2018 cropping season.

Most growers also intended applying insecticidal seed treatments to reduce the risk of Russian wheat aphid impact on crop growth in 2018.

Low spring biomass production in 2017 provided few opportunities for growers to cut hay. Extended dry conditions into late January placed pressure on these limited on-farm hay reserves, with most growers intending to plant a paddock or two of hay in 2018 to replenish supplies. Low biomass levels also resulted in lower than usual surface cover levels in paddocks for protection against erosion.

Autumn/Winter

Dry conditions continued throughout autumn and early winter, with below average rainfall in March, April, May, June and July. Combined with hot, drying winds in autumn these conditions resulted in little to no pasture growth and put further pressure on on-farm feed reserves. Many growers removed livestock from paddocks into confinement feeding areas during April, and some began selling surplus livestock at this time. Dam water reserves were extremely low requiring growers in the Cleve Hills to cart water for livestock.

Whilst deep subsoil layers contained some stored moisture, surface soil remained very dry. Whilst this reduced the need for knockdown herbicide applications, it also reduced weed and pasture germination and extended the period of low paddock surface cover and erosion risk. Strong winds in the second week of April eroded exposed soils around Lock, Darke Peak, Kielpa, Wharminda, Arno Bay and Franklin Harbour and resulted in significant dust storms throughout the region.

Some vetch and cereal was sown in March for feed in the Kimba, Franklin Harbour and Mangalo districts. Clearfield barley varieties were used as an early sowing option as they provided an option for post-emergent weed control. Early indications were that the area of crop sown would not vary significantly from usual, however, growers did reduce the area sown to high risk crops such as canola and sowed barley instead.

Regular cold fronts passed across the region in May and June, however these brought little rain and the strong winds accompanying these resulted in further erosion of exposed dunes in the Darke Peak, Kielpa, Wharminda, Arno Bay and Franklin Harbour districts.

Poor soil moisture resulted in numerous stops and restarts to seeding. Widespread rainfall in mid-June enabled growers in the Kimba, Mitchellville and Cleve areas to finish seeding by the end of June. However, low rainfall to the end of June in the Wharminda, Arno Bay, Rudall, Darke Peak and Franklin Harbour

districts caused growers to reduce the area they intended to sow (particularly of high risk crops), whilst they continued to wait for good opening rains.

Crop germination and development was highly variable depending on where rain had fell and sowing time. On heavier soil types around Cleve and Franklin Harbour, crops germinated well but soon suffered moisture stress when further rain was not received. Pasture paddocks in these areas contained little to no feed and growers needed to continue to supplementary feed livestock.

August rainfall was highly variable with western districts receiving well above average but falls in eastern districts were well below average. As a result the crop yield potential to the end of August varied significantly across the region from slightly below average at Kimba, Lock and Buckleboo to well below average at Darke Peak, Rudall, Wharminda, Arno Bay and Cleve. Franklin Harbour recorded its lowest April to August rainfall on record and crops there had little to no biomass.

Some growers near Cleve, Rudall, Arno Bay and Cowell, undertook emergency tillage operations to manage erosion risk, with many resowing exposed dunes multiple times to try and establish surface cover as drifting soils cut off emerging crops.

Whilst pests and diseases were generally low, high levels of cow-pea aphid were reported in some vetch and medic pastures with growers monitoring stock grazing on these paddocks to avoid potential photosensitisation issues as experienced in 2017. Low biomass in paddocks sown for hay at the end of winter meant that many growers reassessed whether they would cut hay, turn to stock into paddocks and graze or allow the crop to go through to harvest.

Spring

September rainfall was very much below average and Franklin Harbour recorded its lowest September rainfall on record. October rainfall was around the monthly average, however it was mostly too late to contribute significantly to yield.

Widespread heavy frosts in September and October damaged significant areas of crop in the Kimba, Lock, Tuckey and Wharminda districts. Demand for hay due to drought conditions in eastern Australia, and associated record high prices, made hay a profitable option and large areas of frosted crop were cut, including consecutive whole paddocks on a number of properties near Kimba and Tooligie. In other areas frost damage was estimated to have reduced yields between 10 and 30%.

Despite dry conditions in September good soil moisture reserves from the above average August rainfall resulted in good growth of crops and pastures near Darke Peak, Rudall, Wharminda and Mangalo and rainfall in October provided good conditions for grain fill. Canola crops in the Cleve Hills that weren't affected by frost maintained good yield potential, but pulse crops on heavier soil types around Cleve suffered significant moisture stress. Very high numbers of aphids and native budworm were reported in canola and pulse crops, with insecticide applications providing generally good control.

Strong winds during this period continued to erode exposed sandy rises in the Verran, Darke Peak, Rudall, Wharminda and Franklin Harbour areas. Growers employed a range of management strategies including sowing cereals or summer forage crops and roughening the soil surface by ripping with a tined implement to reduce wind speed.

Harvest began in late November, but above average November rainfall caused significant harvest delays. Intense storm activity with strong winds and hail damaged isolated paddocks of canola and barley. However, whilst there were some paddocks with significant yield losses these represented a low proportion of the total crop area for the region.

Continued thunderstorms and cold fronts into December further frustrated harvest efforts with many only completing harvest in early January. Crop yields were highly variable depending on where rain fell, sowing time and frost damage. Kimba districts and the Cleve Hills fared generally better than other districts, and some exceptional yields above 2.5 t/ha were reported. Later sown districts near Kielpa, Rudall and Wharminda had generally low yields, with crops generally too poor to harvest at Franklin Harbour. Wheat and barley yields between 1.0 and 2.0 t/ha were generally below the long term average. Quality was generally good with good test weights, high protein and low screenings. Pulse yields were highly variable. Canola yields were generally good given the season and many paddocks yield over 1.0 t/ha with oil contents above 44%.

Warm days and good soil moisture from rain at harvest resulted in rapid germination and growth of summer weeds and volunteer crops and growers began to spray these immediately after finishing harvest. A number of growers also used the late rainfall as an opportunity to sow summer forage crops such as sorghum, canola and millet.

Lower Eyre Peninsula

Summer

January rainfall was well above the monthly average which resulted in high levels of summer weeds and

volunteer crops in paddocks. Although this provided some quality feed during this period and surface cover for protection against erosion biomass levels were generally low and most growers needed to supplementary feed livestock with hay and grain, either in stubble paddocks or in containment areas. Weed growth was slowed during February due to dry conditions. These damp conditions also increased snail activity and growers baited paddocks intended to be sown with vulnerable crops such as peas and canola.

There were early indications that the crop area would be close to the long term average, with slight increases in the area of canola grown compared to 2017, and a corresponding decrease in the barley area. There was also some indication that growers were looking to increase the area of pulse break crops.

Autumn/Winter

Autumn rainfall was generally below average. Whilst multiple cold fronts passed across the region during this period, they brought little rain and hot north winds in the week of 9-13 April dried out surface soil layers. Small areas of vetch and cereals were sown for feed following April rainfall, and some growers with large cropping programs sowed small areas of canola, pulses and long season wheat. Intense cold fronts in May and June brought significant rainfall and, apart from in the Butler district where continued dry conditions delayed seeding further, enabled most growers finish sowing by mid-June.

Whilst most growers sowed all of their intended winter crop program, some livestock producers reduced the area of high risk crops (canola and pulses) and sowed an extra paddock or two of barley or vetch for feed, or an opportunity hay cut to replenish supplies depleted over summer.

Germination was staggered and crop maturity was variable even within the same paddock. Early sown crop with good moisture conditions at germination had good early growth and produced high levels of biomass by the end of spring. Later sown crops struggled with early vigour due to cold conditions during winter. Growers applied post-emergent herbicide sprays in early winter, however there were reports of reduced herbicide efficacy due to dry soil conditions. Livestock health was generally good, however pasture paddocks contained little to no feed throughout winter and whilst producers wanted to move stock into paddocks they were concerned that if they did so too early the pasture would not have the leaf area to recover quickly from grazing. This meant that producers kept feeding stock hay and grain throughout winter, putting considerable pressure on depleted feed reserves with many growers needing to buy in feed from outside of the region.

August rainfall was well above average and some areas near Cummins recorded their highest August rainfall on record. Whilst this rain and warmer days in late August resulted in excellent crop and pasture growth, waterlogging made paddock trafficability difficult toward the end of the month, reducing the opportunities for in-crop herbicide and fertiliser applications. Good growing conditions for crops and pastures resulted in high biomass levels toward the end of winter, which gave rise to opportunities for growers to cut hay to replenish on-farm feed reserves.

Spring

Several severe frosts in late September damaged crops (even in areas with a traditionally lower risk of frost such as Ungarra and Tumby Bay). High demand for hay due to drought conditions in eastern Australia made cutting hay a profitable option. Although it is estimated that only about 5% of the total crop area in Lower EP was affected overall, yield losses of above 30% were estimated on the worst affected areas, with significant areas of frosted crop cut and baled near Cummins, Kapinnie and Ungarra.

September rainfall was low, but widespread cold fronts brought rain in October helping to fill grain. Mild weather until mid-October provided good conditions for flowering and grain fill, with most Lower EP districts having average to above average yield potential. Canola was windrowed in mid-October with some early paddocks harvested toward the end of October.

Whilst pest levels were generally low, native budworm and aphids were reported to have caused damage in canola crops with armyworm damaging cereal crops on the calcareous soils around Mt Hope. These were easily controlled with pesticide applications.

Thunderstorms during November caused significant harvest delays, with only around 75% of harvest completed by the end of December. Crop yields were generally above average across most of Lower EP and some exceptionally high yields (more than 6 t/ha) were reported. The good yields were generally attributed to good stored soil moisture at the end of August and the widespread rainfall event as soil moisture reserves began to run out in late September. Canola and pulse yields were exceptional with many reports of canola yields in excess of 2 t/ha and pulses more than 3 t/ha. Grain quality was good with high protein and low screenings.

Stubbles provided a high levels of biomass and most livestock producers were able to replenish on-farm feed reserves.

Acknowledgements

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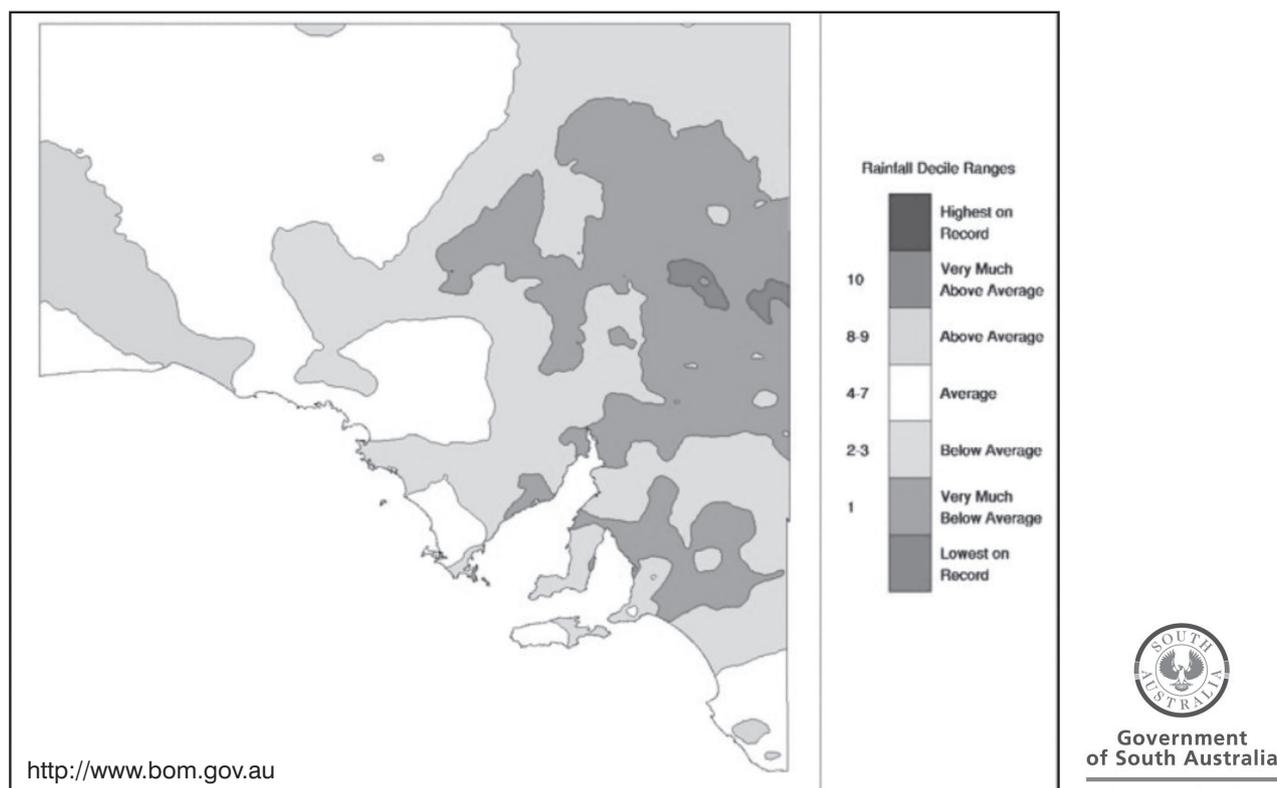


Figure 1. South Australian rainfall deciles, 1 April to 31 December 2018.