

Property Report for

‘Lockyers Farm’

GOODLANDS, WESTERN AUSTRALIA

Report Commissioned by - Verdant
Wealth Ltd UK & G.A.S

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Farm Description & Location

The inspected property comprises one distinct farm block, with two other neighbouring blocks having been sold to other purchasers in recent periods. The farm is located approximately 25km North East of the Goodlands grain receival point. The Goodlands district is located in the Northern Central Wheatbelt of Western Australia, on the far North Eastern fringe.

The farm is located on Leeson Road and is located south East of the Leeson Rd and Martin Rd intersection.

The closest service centre is Kalannie approximately 57km to the South, while services are also available at Wubin (60km West) and Dalwallinu (65km South West). Dalwallinu is the largest of these centres and provides business and community facilities such as medical and Hospital, schooling, agricultural services and light manufacturing. Items not obtainable from these centres will normally be sourced from Perth, the state capital 275km to the South West. Goodlands is approximately equal distance from Perth and Geraldton.

The farm comprises an arable area of approximately 1500ha or 3,700 acres (to be confirmed), with soil types again well suited to a range of crop enterprises including wheat, barley, oilseeds and leguminous pulse crops.

Livestock enterprises have been successfully carried on this property, with the necessary infrastructure in place and in reasonable condition. The vendor has conducted a successful prime lamb breeding operation from this property and has also produced beef cattle. There will be certain years where crops cannot be sown or indeed fail, and in these seasons livestock would allow the generation of some income for the business. In general however, the property would be better utilised as a cropping property, with the profitability of the cropping enterprises significantly greater in most years than are livestock enterprises.

Like virtually all areas of Australian broadacre farmland, there is no opportunity for irrigation; however alternative non-traditional enterprises are always possible though they tend to have a more long term profitability potential with lower short term income streams.

The farm is located in what can be described as a marginal rainfall zone, with the official Goodlands recording site 10km SW showing an average annual rainfall between 1950 and 2008 of 315mm and annual growing season rainfall of 225mm.

Lockyer's

Title details

Title details for this property are; Lot 3282 on deposited plan 204469 and being the whole of the land comprised in certificate of title volume 1769 Folio 109.

Land Areas

This farm has a total area of approximately 1620ha (4000 acres) of which 1500ha (3700 acres) is described by the vendor as arable. While this figure appears to be accurate on face value, it would be my suggestion that we accurately map these areas once ownership has occurred. FARMANCO can accurately map arable areas of properties using digitised aerial photos from our government lands department. The necessary surveying of the property, if it is to be divided between individual buyers, should however allow arable area to be provided as part of the survey

It is important to note that land regarded as arable by vendors is often different to the land we would regard as arable. To us the ability to crop the land does not necessarily make it arable, its needs to have the ability to be productive in most seasons. This would necessitate mapping out areas which are erosion prone poor light soils, soils with a saline tendency and other 'weak' spots.

The vendor has provided a paddock map with his estimations of arable area per paddock (see appendices) which outlines the layout of the farm and the size of the individual paddocks. Paddock sizes are mostly good for a broadacre cropping enterprise and have been divided on soil types and access points. There are some smaller paddocks established for the livestock enterprises but these could be amalgamated.

There are several areas of natural vegetation on this property but these are mostly confined to non-productive soil types along ridge-lines and in areas of poorer sandy soils. While reducing the arable area of the property they assist its overall value both through conservation value but also importantly due to removing poorer production areas from the cropping zones.

Soil Types

The property has a mix of soil types, being approximately 40% medium soils and 60% lighter soil types. The medium soil types appear productive and lend themselves to a broad range of possible crop rotations as they hold their moisture well once wet, but their clay content is

such that it would be unusual for these soils to suffer from water-logging issues. The medium soil types are naturally more fertile than lighter soil types and also tend to have a higher pH, allowing the production of pulse crops such as Chick Peas, Field Peas, Faba Beans and Lentils which would not be able to be grown on the lower pH sandy soils.

Most of the medium soil types appear to be located on the South Eastern side of the property, but there are pockets of these soil types across the property. These soils were originally timbered with Gimlet and Mallee.

The remaining soils are average to good quality lighter sandy soils, being predominately yellow/brown in colour indicating a clay percentage of 5-16%. These sands are very capable of good production in most seasons and have the capacity to produce some yield in years where heavier soil types struggle to do so. The lighter soil types tend to outperform medium soils in years of below average rainfall as they require a lower volume of rain to still enable soil penetration, while in higher rainfall seasons the medium soils have the ability to hold their moisture in the profile longer than sandy soils allowing better moisture usage.

Although I have not had access to soil test results to indicate soil pH, there would not appear to be significant areas of the lighter soils types that would be defined as 'Wodjil' sands. These sands are typically low in pH and high in free Aluminium and consequently are often less productive. These soils can be brought into higher production with extensive liming to raise pH, as fundamentally the structure and clay content of these soils is sound, it really is a problem relating to soil pH. The apparent small area of this type of soil is pleasing though the indicative vegetation for this acidity problem is present on this property as it is on all properties in the district.

I would estimate the soil types on this property as;

- 900ha of ave – good lighter soils
- 650ha of medium soil types

Soil Related Issues

Aside from the soil pH issue on the lighter soils already mentioned, the other important factor facing many properties in the area is in regard to waterlogging and possible salinity. It is very pleasing that this property shows no signs of dryland salinity and also shows little potential for waterlogging.

Most of the property has good drainage with topography allowing any surface water to shed into established dams. The ability to shed excess surface water is a very large positive for this farm as there are few farms that show no signs of one or both of these issues. In general the medium soil types are lower in the profile as expected, and this is the site of the water

catchment dams for the property's livestock. The dams are supplied by an extensive network of contour banks that collect surface runoff and deposit it into the dams.

The medium soil types that are in the valley floor have been planted out to mallee vegetation for both aesthetic and conservation reasons. The presence of these trees should ensure that salinity and waterlogging remain distant possibilities.

Unlike many medium soil types, the soils on this property appear to have reasonable depth and the established contour banks indicate good soils to at least 1m. The lack of significant areas of sub-surface rock is also pleasing from a production viewpoint. There are areas on the property that carry both surface and sub-surface rock but they are confined to a 'breakaway' area and would not impact on production.

The lighter soils also show good depth and with their clay percentage should be productive soils in most seasons assuming pH is reasonable.

Soil Nutrition Levels

The vendor was unable to provide me with any recent soil tests to indicate soil nutrition levels. He has some test results from previous seasons but we normally only regard tests less than four years old as relevant, and I would suggest that a comprehensive program of soil testing is conducted after settlement to establish the nutritional status of the property.

Given the production history of the property I can surmise that the key nutrients of Phosphorus and Potassium are at acceptable but not high levels but this really needs verification. Perhaps the most important benefit of soil testing will be to allow an accurate measure of soil pH and Phosphorus sorption to be gauged so as to plan for the coming cropping season.

I would suggest that full soil testing of the property would cost \$4000A and would be money very well spent.

Weed Burdens

Given the time of my inspection it is difficult to gauge exactly what weeds may be present on the property as they have been senesced since October last year and heavily grazed by livestock.

It is fair to say however that it would appear likely the property has few real weed issues and this results from its geographic location and its past management. It is unlikely the property has any of the problem weeds such as Patterson's Curse, Cape Tulip or couch

grass, as there is no sign of their presence and conditions are not conducive to them being present. The weeds present on the property are essentially 'standard' cropping weeds with Capeweed being perhaps the dominant weed species, along with several grass species and also wild Radish. These weeds are readily controllable and do not pose a threat to cropping or livestock enterprises.

Another benefit to farms in this zone is that there is little developed resistance to common herbicides by weed species. Resistance has become a serious issue in many regions of the world, and the problem is increasing, relying on good management and new chemistry to overcome the problem.

Ryegrass is the main weed species that has developed resistance throughout Australia but the rye population on this property looks to be of low density and by all accounts is still controllable through common herbicides.

There are areas of **Brome, Silver and Barley grass** present on this property but these are manageable and reasonably insignificant. These grasses tend to occupy certain soil types and are generally controllable with sound management

Wild Radish is a problem weed in most of the Northern Wheatbelt and again has developed resistance to many herbicides in many regions. The wild radish population on this property looks to be of low density and is still susceptible to all herbicides.

Doublegees are an invasive weed with sharp pointed seed pods and are common in the wheatbelt. I saw no Doublegees on my inspection which is excellent. Capeweed is a very dominant weed species in this area and is a major component of pastures. This species however presents few problems in the cropping system if sound management is employed.

Climatic Data

Rainfall data for Goodlands has only been officially recorded during the periods 1922-1950 and 1951-2009 from two separate recording stations in close proximity. During these periods **the mean rainfall was 301mm of which 214mm fell during the April – October growing season**. These rainfall totals would be considered reasonable considering the asking price of the property in question and are representative of many of the fringe areas of the Western Australian Wheatbelt. Land is available for similar value in regions with poorer growing season rainfall.

The official rainfall records for the Bureau of Meteorology (BOM) site at Goodlands (1951–2009) and Goodlands 2 (1921-1950) (see appendices) show the seasonal variation that occurs in these geographic districts.

While growing season rainfall is certainly the key to enabling good seasonal grain production, with the more medium to heavy soil types, non-growing season rainfall is also important especially if it falls in the Feb – March period. This ‘summer rainfall’, if received at a reasonable intensity, can be stored in these soil types and contribute up to 90mm of moisture to the crop during its growing season. Normally the best crops are grown in seasons with good summer rainfall even if growing season rainfall is only average.

Lighter soil types as present on a large area of this property, do not have the same ability to store moisture for later use but do have the ability to produce better yields from lower growing season rainfall than do the heavier soil types. The sound mix of soil types on this property will allow some production in almost any season.

Summer rainfall also allows the mineralisation of organic soil nitrogen and often yield potentials are raised because of this, regardless of soil type.

Rainfall variability is certainly a major issue in the drier regions and Goodlands is no exception. While it has historically been more reliable than other areas around it, the region is still prone to periods of drought where production is either poor, or in a worst case, non-existent.

The closest official recording centre to the property is Goodlands but this site is located some 18km to the South West and may not necessarily represent rainfall for the property at any point in time. Rainfall in the wheatbelt tends to be patchy, with natural topographic features also helping to determine rainfall patterns. I would suggest that in certain seasons the recording station at Mouroubra may be more representative of the rainfall for the property in question. This site is located some 15km to the south East of the property and suggests an average rainfall of 290mm for the period 1946-2007, with growing season rainfall of 167mm. This recording site is located outside of the recognised wheatbelt in adjacent ‘grazing’ country, but these fringe areas tend to record more out of season rainfall and lower growing season rainfall.

The recording station of Mount Gibson is located to the North East of the property and may also represent potential rainfall patterns, although it too is located in a grazing zone rather than cropping area. This station has records available for a limited period of 1983-2008 and suggests an annual average of 350mm with a growing season average of 186mm. I would treat these averages with caution as the short period of recordings makes them statistically unreliable. The BOM records for Mouroubra and Mount Gibson are shown in appendices.

Frost damage can be an issue in many central and southern parts of the West Australian wheatbelt but is seen only infrequently in the Northern and North Central districts, including

those around Goodlands. The Northern wheatbelt generally has higher daytime temperatures and less extreme night time temperatures than those regions further south.

I would suggest that an extreme frost event in the Goodlands area would reduce grain yields by 10-15%, however good management and choice of grain varieties will negate most of this risk and in a ten year period it is unlikely frost damage yield losses would exceed 5%. This compares very favourably with land of comparable value and production potential in the central and eastern wheatbelt regions where frost damage can exceed 50% and probably averages 20% over any period. The 2008 season was a strong example of the losses recorded from frost with some properties in susceptible areas having grain yield reduced by 60-70%.

Poor weather during harvest is seldom an issue in this region. The harvest tends to be conducted over a 6-8 week period, with high daytime temperatures and low humidity. While many of the southern regions of the state are suffering from damaging weather this harvest, the northern areas are progressing well.

Infrastructure

- **Fertiliser storage** – There is one shed on this property that is used to store fertiliser as well as hay and machinery. One sector of this shed has a concrete floor and wall panels, with the ability to store more than one type of fertiliser at the one time. I would estimate that this shed is able to store 300t of fertiliser and this would be more than sufficient for the farms usage.
- **Silos** – There are several silos on the property in varying sizes and condition. Three large 2800 bushel (80t of wheat) silos exist on good concrete pads. These silos appear to be only about 8 years old, however they have been damaged so cannot be classified as sealed silos as originally intended. They will however store grain sufficiently as long as stored grain insect pests are managed.

There are also three small old style elevated silos that have an approximate capacity of 10t each. These silos are old but usable though I would not suggest they are suitable for longer term grain storage. In all, the silo capacity is sufficient for the property.

- **Sheep facilities** – Are poor in regard to handling facilities, with no real usable sheep yards and no shearing shed on the property.

- **Fencing** is in varying condition but mostly classified as good, with many sections of new prefabricated ringlock style fencing. In general the fencing is in better condition than that on many other properties and the bulk of it would be considered adequate to conduct a sheep enterprise. There are some lengths of lower quality fencing that would need replacement for a livestock enterprise, and some boundary fencing would be classified as only average.
- **Water Supplies** – There are numerous dams on the property which supply most paddocks with a good quality livestock water supply. In addition there are bores on the farm supplying groundwater for both stock and spraying use. This water appears of good quality and is reticulated to all paddocks where tank/trough combinations are used for livestock needs and larger tanks for spraying needs.

There is a large scheme water tank located on the property and this tank and its associated pumping equipment is owned and maintained by the Water Authority. This tank is not able to be accessed by the property.

- **Housing** – There is no dwelling located upon this property. This is not an issue as the property is of insufficient scale to support a full time employee. It does however mean that any future purchase of land would need to consider the value of housing during the purchase negotiation.

Current Management

The vendor and current manager Keith Hathway is a capable individual who has operated a good scale of farming enterprise at a sound level. The farm is productive, clean and reasonably free of problems issues. **This reflects positively on his management both currently and historically.**

The vendor has no interest in continuing on the property after sale so any planned cropping program on the property would need to utilise contractors or other local farmers.

Rotations

- **Crops** – The predominant crop on this property (and indeed most farms in the state) is **wheat**. Wheat consistently returns the highest operating margin of any of the cropping enterprises and is the businesses primary profit driver.

While there are many instances of continuous wheat rotations, this is only achievable on certain soil types in certain areas.

The issues against continuous wheat are nutrition, disease and weed burdens with lighter soil types less suitable to pushing this rotation than medium to heavier soil types. Management of the property and its rotations will have as much influence on profitability as does the weather

Lupins are suitable only for lighter soil types and need to be sown reasonably early if they are to achieve economic yield. Hence there are often years where the rotation is adjusted to remove Lupins from the cropping program due to a poor or late break to the season. Lupins are leguminous and contribute approx 30kg/ha of Nitrogen to the soil (enough to grow 1.0/ha of wheat the following year). Yields in this region are typically 0.5 -0.8 t/ha and they currently sell domestically for \$280/t (same as wheat).

Canola is certainly able to be grown in this region but it should be considered an opportunistic crop and sown only in those years with a good opening rainfall event and prior to mid May. Canola traditionally sells at double the value of wheat and is hence a valuable part of the rotation in those years where it is able to be established.

Barley adds some diversity to the cropping program and helps spread production risk. It normally yields less than wheat in the northern areas and is usually worth less per tonne hence it has a limited role, with management factors and soil type helping to determine its inclusion or otherwise.

- **Varieties** – New varieties of all grains are continuously being released. Although new varieties tend to be expensive to purchase, we encourage growers to adopt selected new varieties as the increases in production and or quality provide an economic benefit from doing so.
- **Alternative enterprises** – These areas are really only grain and livestock producing areas. There may be other enterprises that can be conducted on a cottage industry scale but their overall impact on business profitability is negligible.

There are some exciting possibilities in coming seasons in regard to growing trees (mallee eucalypts) for carbon capture. Already many trees have been planted in areas such as this to help offset carbon emissions from resource companies such as Rio and BHP. The pace of these plantings will undoubtedly accelerate as our federal carbon emissions trading scheme gets closer to implementation.

A real advantage of these plantings is that they can allow the selling off of poor producing parts of the farm at a price equivalent to better soil types.

There are also opportunities for the production of sandalwood, though the property is outside of the preferred zone.

Alternative cropping enterprises such as Fababeans, Chickpeas and Lentils all show promise in this area particularly on the heavier soil types. As with Canola, these crops are all opportunistic.

- **Livestock** – Livestock, particularly sheep, have traditionally been run on this farm as a risk reduction enterprise should cropping potential not be fulfilled. There are several issues in regard to running a livestock enterprise on this property and my suggestion would be that it is not worthwhile due to the required upgrading of infrastructure, but more importantly due to the high labour requirement of livestock.

If a merino sheep enterprise were to be considered, you would need to be able to access a shearing shed on a neighbouring property (it would cost \$100,000+ to build one). In addition there are many challenges facing the Merino sheep industry, not least being the poor value of wool, the high cost of shearing, the high labour requirement of the enterprise, the mulesing debate and the general poor performance of merinos when compared to other breeds.

Breeds that do not require shearing such as Dorpers may well play a valuable role in this environment as they are far less labour intensive and convert feed at a far better ratio than most other breeds. They do however have an uncanny ability to migrate and there would be a requirement to upgrade many of the fences if these sorts of breeds were to be considered

In the initial stages at least, the opportunistic trading of sheep on crop residues would be the best option. It is also important to note that in years with poor or little crop production, there is still an ability to generate some income from livestock industries.

Potential Yields

Soil type is a major factor in potential crop yield, but differing soil types perform varying in different years. **Lighter soils** have the ability to capture and use lighter rainfall events as plant root growth is relatively unimpeded in these soil types. Hence in lower rainfall years, the lighter soils often perform far better than heavy soils which may not produce at all. Lighter soils however do not have the same capacity to store moisture and hence cannot hold early summer rainfall high enough in the profile to allow the plant access to it during the growing season. Lighter soil types comprise approximately 60% of the arable land on this property.

Potential yields of wheat on these lighter soil types vary but are generally 0.4 – 1.6 t/ha with few crops outside this range. An average of 1.25t/ha is likely. Lupins are likely to achieve 0.2 – 1.2t/ha, while this is not an ideal soil type for the production of canola or barley.

Medium soil types tend to be the most consistent as they can store some moisture but also wet sufficiently from lighter rainfall events. **Wheat yields should average 1.4t/ha, with a range of 0.3 – 3.0t/ha. Lupins can be grown on these soils but are less reliable (ave 0.5 t/ha), while Barley should be similar to wheat in yield in most seasons and Canola should be able to average 0.7t/ha with a range of 0.0t/ha – 1.4t/ha.**

Heavier clay based soils are not common on this property with only a small area present around the breakaway area.

Machinery purchase

The vendor has basic machinery available for sale to the farm purchaser. This machinery is sufficient to seed a larger seeding program of up to 5000ha, though does not include a boomspray or harvester which would need sourcing from other parties.

Labour issues

There are many issues in operating a farm in a reasonably isolated production area and the ability to source permanent and casual labour are becoming more important. As I have stated earlier, the ability to attract a suitable manager depends upon his or her individual circumstances but in general the attraction will be achieved by salary package, the challenge of the operation and the quality of the social infrastructure including the housing.

Goodlands is reasonably isolated and has no facilities so staff would need to travel to Kalannie (South 50km) to get basic services, Dalwallinu (50kms West) for more comprehensive services or Perth (250km South West) to access a major centre. This issue is not insurmountable but it does mean that the other factors such as house and salary need to be sufficient to offset the isolation.

As this property has neither the scale nor the infrastructure to support a full time employee, the importance of housing quality on any future purchase becomes more important. I would suggest that the purchase of an adjoining or adjacent farm in coming months should focus on the ability of the vendor to remain as a manager for a period of time. It will be far easier to retain the services of a vetted manager already residing in the area than it will to attract a new manager to the area. This decision of course will depend on the potential manager having the proven skill set and management history to warrant his or her retention.

FARMANCO can source both managerial and casual labour for interested parties but this can involve some time to ensure the correct person is chosen. Our view is that labour retention is critical as it is hard to replace good staff, hence if an employee needs to be paid above market rates to retain them, then that is acceptable, as the consequences to an absentee owner from not having adequate labour are significant.

The difference between a good manager and a more average one will be very significant, with the full difference quickly showing in the business performance and profitability. Given the importance of good staff and the costs incurred with recruiting them, labour retention through a good working environment is a priority.

Summary

This property is consistent with its pricing level and should perform well as an investment purchase over a reasonable timeframe. The Goodlands area has been shown to be one of the more productive and reliable districts within the North Eastern wheatbelt and enjoys solid yields in average to above average seasonal conditions. This district also receives above average summer rainfall which contributes to yield potential.

This property has run large numbers of livestock and although reasonably well set up for livestock production, is more suited to an intensive cropping system. I would envisage an analysis of the enterprise profitability would lead to the full 1700ha being cropped annually to a mixture of enterprise types. Wheat will be the major enterprise and probably account for 80% of the cropped area annually as it has shown to be the most reliable and most profitable of all enterprises in this district.

FARMANCO tend to suggest that a ideal scale of management unit in the broadacre wheatbelt is 4,500 to 5,500 hectares and this property is obviously well below that range.

Hence further purchases of farmland will be required to generate the required scale and ideally this scale will be in place by the time of the 2010 cropping season. By having this scale you have the ability to maximise value from both your employees and your machinery investment, with a single good harvester, airseeder and boomspray capable of completing the desired cropping program. Smaller cropped areas tend to underutilise the machinery and make the machinery investment per hectare too high, while larger cropped areas often negate scale by requiring a second set of machinery, again impacting on machinery value per cropped hectare.

Soil types are good and range from light to medium with the majority of soils being of good quality and potentially very productive. There should be few production issues related to soil types as the property has no heavy soil and no real obvious poor light soil types

Soil nutrition should be average, given the recent yields and management of the property. It may be a fair assumption to say that soil pH is possibly getting lower than desired but this can be rectified through a liming program. I would suggest all paddocks were soil tested to ascertain soil nutrition levels and pH, upon purchase. This testing should be done at least once every four years.

The infrastructure on the property is basic though adequate for the scale of the property. Rather than upgrading or adding new infrastructure, the deficiencies of this property will be easily covered with the next property purchase

Overall I feel it fits your investment profile of seeking a high return farming operation. It is however important that you recognise that these geographic areas are potentially high return but like all similar high return investments carry more risk (in this case seasonal variability)

If you have any queries regarding this report please feel free to contact me.

Regards

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30°01'03.78" S 117°18'14.93" E elev 398 m

Eye alt 6.02 km

Monthly Rainfall (millimetres)

GOODLANDS

Station Number: 010026 · State: WA · Opened: 1951 · Status: Open · Latitude: 30.06°S · Longitude: 117.14°E · Elevation: 310 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1951									9.9	7.2	0.6	10.3	
1952	35.7	13.8	2.6	4.9	42.0	15.6	50.0	7.5	11.7	9.5	3.3	19.1	215.7
1953	4.1	4.6	111.0	13.6	66.7	52.5	37.3	11.5	4.4	17.5	3.4	0.3	326.9
1954	6.1	0.0	0.0	6.9	69.6	21.9	42.0	28.4	20.7	0.3	1.5	28.8	226.2
1955	17.1	27.7	35.1	30.6	57.3	19.9	19.8	72.7	34.5	17.1	0.0	5.9	337.7
1956	0.0	2.1	5.3	5.4	66.6	72.8	58.2	13.3	1.6	5.8	51.8	0.0	282.9
1957	31.1	0.0	49.6	9.2	37.9	98.1	10.5	30.0	6.1	7.4	0.0	0.5	280.4
1958	12.2	4.3	56.8	3.8	87.8	19.6	134.8	85.7	61.7	7.7	8.1	31.1	513.6
1959	0.0	7.9	12.5	40.7	6.8	91.3	25.3	66.3	21.6	24.4	7.9	5.1	309.8
1960	6.6	63.7	54.9	6.7	69.4	16.3	65.2	14.0	29.2	2.5	8.1	0.0	336.6
1961	40.2	6.4	1.3	147.7	20.8	90.8	36.5	24.2	6.9	4.6	0.0	9.7	389.1
1962	7.1	4.1	6.6	3.3	116.9	63.6	35.4	17.9	16.3	12.6	1.8	16.3	301.9
1963	52.4	23.0	24.6	33.0	82.3	74.4	84.2	115.6	22.2	1.8	7.4	20.6	541.5
1964	5.9	23.1	9.6	15.8	0.5	90.5	94.5	36.4	11.3	4.3	9.5	6.9	308.3
1965	5.0	0.5	6.9	9.6	37.7	97.8	51.9	45.6	18.8	29.6	16.9	3.0	323.3
1966	1.9	35.8	0.3	41.2	7.4	50.5	56.7	29.3	22.7	25.2	22.8	2.3	296.1
1967	69.4	1.0	0.0	10.0	71.2	47.6	66.7	17.3	6.1	6.1	3.9	17.6	316.9
1968	22.6	16.5	8.8	36.3	26.4	124.2	35.1	26.1	36.8	7.3	4.9	0.0	345.0
1969	0.8	3.3	6.9	4.3	39.7	44.1	18.4	9.7	14.8	0.0	8.1	0.0	150.1
1970	0.0	82.9	0.3	30.0	20.6	96.2	25.6	22.9	30.0	6.9	12.0	18.0	345.4
1971	6.9	8.2	113.5	1.3	13.0	25.8	26.3	26.5	22.1	24.9	17.3	0.0	285.8
1972	0.5	8.0	8.4	1.8	17.3	96.4	73.7	39.0	20.6	3.9	2.5	0.5	272.6
1973	3.5	3.6	1.0	3.8	26.5	62.5	79.3	44.0	43.2	4.9	24.9	2.0	299.2
1974	2.0	0.0	23.4	77.2	94.0	52.2	51.6	51.4	55.0	13.4	11.4	0.0	431.6
1975	0.0	7.8	44.2	45.2	31.9	32.8	44.1	34.5	16.2	65.2	2.8	32.8	357.5
1976	7.0	10.5	0.0	11.8	22.8	13.2	14.8	35.7	8.4	9.6	5.6	0.0	139.4
1977	0.0	0.0	1.4	18.4	21.6	36.4	8.8	43.0	8.0	18.4	1.2	35.0	192.2
1978	40.3	74.0	2.4	13.0	17.0	29.6	75.8	20.2	29.0	8.6	20.6	51.8	382.3
1979	1.8	18.0	9.8	4.0	14.6	23.8	17.0	28.2	0.6	0.6	24.0	7.0	149.4
1980	4.0	1.8	0.6	16.1	45.5	72.2	35.4	17.0	2.2	12.1	0.0	0.0	206.9
1981	13.0	23.4	4.0	1.0	66.0	67.4	46.6	54.6	8.4	19.1	24.4	10.0	337.9
1982	49.9	6.4	3.6	2.2	34.2	54.4	16.2	22.2	32.8	20.3	4.7	7.2	254.1
1983	7.6	0.0	23.5	16.8	8.5	80.5	40.3	62.7	33.4	0.7	25.8	23.2	323.0
1984	11.4	24.4	82.8	65.4	90.2	11.6	46.8	14.2	24.0	23.0	18.2	10.8	422.8
1985	0.0	45.2	14.4	0.0	23.8	26.6	62.4	29.6	17.8	7.2	0.0	4.4	231.4
1986	23.6	21.0	24.2	2.6	53.6	74.2	27.6	37.0	20.0	30.2	1.2	0.0	315.2
1987	0.0	5.4	3.8	22.0	32.2	33.0	31.6	30.0	5.0	13.4	25.6	15.0	217.0
1988	0.0	0.0	31.8	59.2	107.6	47.8	57.8	45.8	9.0	10.0	8.6	28.2	405.8
1989	0.0	19.2	5.4	32.4	90.6	93.0	22.0	14.2	5.2	17.2	0.0	0.8	300.0
1990	87.5	7.8	22.8	13.2	19.4	44.6	48.8	38.6	31.2	30.6	0.4	7.4	352.3
1991	3.2	0.2	7.8	19.6	31.6	48.8	53.5	19.6	14.2	15.0	35.4	41.8	290.7
1992	2.0	28.4	54.2	89.8	2.6	65.8	20.2	88.4	54.0	13.2	6.6	15.0	440.2
1993	0.0	0.0	24.2	19.8	106.8	80.4	29.8	49.4	21.2	18.0	42.4	17.8	409.8
1994	11.4	57.4	0.0	0.0	43.8	30.4	26.2	52.2	12.4	1.8	0.0	2.6	238.2
1995	14.0	46.8	42.0	31.6	30.8	45.0	107.8	10.6	17.2	12.0	3.8	4.8	366.4
1996	0.0	16.4	0.8	44.0	17.6	83.0	104.0	50.0	18.8	8.0	21.2	0.0	363.8
1997	0.0	46.0	15.6	62.0	42.2	14.8	29.2	40.4	30.8	6.8	35.8	1.2	324.8
1998	0.0	0.0	14.2	16.4	64.2	57.4	68.2	48.0	19.0	2.0	1.6	19.0	310.0

Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown



Monthly Rainfall (millimetres)

GOODLANDS

Station Number: 010026 · State: WA · Opened: 1951 · Status: Open · Latitude: 30.06°S · Longitude: 117.14°E · Elevation: 310 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1999	36.0	3.8	138.6	10.2	173.4	51.4	52.0	26.4	37.0	23.4	16.2	27.0	595.4
2000	48.8	0.0	152.4	11.2	4.8		55.0	34.0	19.6	0.0	1.2	9.2	
2001	109.8	24.8	7.6	2.0	30.0	11.0	66.0	18.0	27.4	11.4	21.0	0.0	329.0
2002	3.6	1.8	1.6	15.2	6.2	25.4	29.2	19.2	11.6	10.4	3.0	35.8	163.0
2003	0.0	15.2	22.4	15.6	46.0	21.4	29.4	58.8	28.6	2.8	14.0	9.6	263.8
2004	10.6	49.0	24.2	6.4	51.8	59.8	46.6	27.0	16.4	12.0	17.0	23.2	344.0
2005	1.0	0.0	49.0	12.4	114.2	67.8	7.4	58.4	25.2	5.8	0.8	0.0	342.0
2006	135.2	3.8	9.0	54.0	15.8	4.6	19.0	18.8	47.2	5.8	13.0	5.2	331.4
2007	47.8	18.6	0.6	8.8	10.8	14.2	56.6	19.2	15.6	9.0	0.0	22.6	223.8
2008	15.2	91.6	16.2	67.4	2.8	28.0	99.4	16.4	38.0	19.4	8.6		
2009	10.6	0.6	20.0	19.8	27.2								

Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown



Monthly Rainfall (millimetres)

GOODLANDS

Station Number: 010026 · State: WA · Opened: 1951 · Status: Open · Latitude: 30.06°S · Longitude: 117.14°E · Elevation: 310 m

Statistics for this station calculated over all years of data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	17.7	17.4	24.4	23.6	44.5	51.3	46.9	35.4	21.3	12.2	10.9	11.7	315.6
Lowest	0.0	0.0	0.0	0.0	0.5	4.6	7.4	7.5	0.6	0.0	0.0	0.0	139.4
5th percentile	0.0	0.0	0.0	1.3	4.5	12.8	13.9	11.3	4.1	0.6	0.0	0.0	159.1
10th percentile	0.0	0.0	0.5	2.1	7.2	15.2	17.8	14.1	5.8	1.8	0.0	0.0	210.4
Median	6.3	7.8	9.7	14.4	33.2	49.7	44.1	29.6	19.3	9.6	7.7	7.2	316.9
90th percentile	49.1	47.5	55.5	60.0	91.6	92.2	81.3	60.4	37.3	24.5	25.1	29.7	417.6
95th percentile	72.1	65.2	111.4	68.9	108.6	96.8	100.3	75.3	48.2	29.7	35.5	35.2	462.2
Highest	135.2	91.6	152.4	147.7	173.4	124.2	134.8	115.6	61.7	65.2	51.8	51.8	595.4

Statistics calculated over the period 1961-1990

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	15.5	16.0	16.2	24.6	41.8	58.6	44.4	34.4	19.3	14.4	10.2	11.0	306.5
Lowest	0.0	0.0	0.0	0.0	0.5	11.6	8.8	9.7	0.6	0.0	0.0	0.0	139.4
5th Percentile	0.0	0.0	0.1	1.1	7.9	18.0	15.4	14.2	3.5	0.6	0.0	0.0	149.7
10th percentile	0.0	0.0	0.3	1.8	12.6	25.6	16.9	16.7	5.2	1.7	0.0	0.0	188.0
Median	5.4	7.9	6.9	14.5	29.2	53.3	42.2	29.8	18.3	11.1	7.8	7.1	311.8
90th percentile	50.2	36.7	33.0	59.8	90.9	96.2	76.2	51.7	33.7	29.7	24.5	28.7	407.5
95th percentile	61.8	61.0	65.4	71.9	101.5	97.2	82.0	59.1	40.3	30.4	25.3	34.0	427.6
Highest	87.5	82.9	113.5	147.7	116.9	124.2	94.5	115.6	55.0	65.2	25.8	51.8	541.5

1) Calculation of statistics

Summary statistics, other than the Highest and Lowest values, are only calculated if there are at least 20 years of data available.

2) Gaps and missing data

Gaps may be caused by a damaged instrument, a temporary change to the site operation, or due to the absence or illness of an observer.

3) Further information

<http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml>.

Product code: IDCJAC0001 reference: 00212812



Monthly Rainfall (millimetres)

GOODLANDS 2

Station Number: 010057 · State: WA · Opened: 1921 · Status: Closed 31 Dec 1951 · Latitude: 30.10°S · Longitude: 117.10°E · Elevation: Unknown m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1921							45.2	42.0	36.0	26.7	0.0	13.9	
1922	0.0	2.5	21.1	34.0	22.9	33.2	37.6	11.2	2.8	0.5	0.0	4.3	170.1
1923	20.3	0.8	2.6	22.1	24.4	145.3	36.0	18.8	10.7	2.5	6.1	0.0	289.6
1924	0.0	7.6	16.0	1.8	32.5	48.5	40.3	36.3	7.0	27.7	4.1	0.0	221.8
1925	64.5	17.0	13.4	0.0	44.0	64.3	34.4	12.7	27.5	3.6	3.6	68.3	353.3
1926	12.7	11.5	56.5	21.8	26.5	31.2	63.0	17.0	21.3	20.3	46.7	12.2	340.7
1927	0.0	0.0	180.8	20.2	19.3	40.1	51.3	19.0	17.0	1.5	3.8	0.0	353.0
1928	16.7	0.0	8.6	24.1	38.4	16.7	49.6	37.4	10.4	3.8	0.0	37.9	243.6
1929	4.9	31.7	12.7	0.0	108.0	62.8	26.3	19.5	3.6	23.2	20.1	1.3	314.1
1930	0.0	0.0	21.3	85.9	14.5	108.5	43.0	31.9	16.8	17.0	0.8	21.3	361.0
1931	0.0	3.0	1.3	15.6	52.1	25.2	27.3	37.6	28.5	16.5	38.0	17.8	262.9
1932	16.0	0.0	50.3	25.4	36.1	24.1	45.1	102.1	11.2	31.2	0.0	13.0	354.5
1933	0.0	16.5	21.1	3.9	62.2	96.3	33.3	40.7	11.1	20.4	0.3	11.5	317.3
1934	20.8	4.6	35.3	57.8	8.2	33.9	31.0	45.8	7.9	0.0	11.4	0.5	257.2
1935	11.2	26.4	13.7	31.3	16.2	11.0	38.8	48.7	12.5	5.4	0.0	1.6	216.8
1936	23.4	0.5	22.5	3.9	18.1	34.3	22.5	24.3	15.0	5.8	0.3	14.2	184.8
1937	10.4	1.5	6.1	13.2	52.6	43.9	5.5	37.8	12.5	0.0	9.4	0.0	192.9
1938	0.8	0.0	25.6	35.8	3.6	11.4	54.7	13.4	15.5	9.6	10.5	3.8	184.7
1939	16.8	51.3	4.6	1.8	54.6	119.6	59.5	36.4	2.6	31.3	24.9	0.0	403.4
1940	1.0	1.0	1.1	0.5	24.9	39.0	43.6	6.0	5.1	27.7	2.3	17.0	169.2
1941	0.0	7.4	0.3	51.7	50.4	69.5	38.5	21.1	27.2	7.9	19.1	36.1	329.2
1942	18.3	1.3	49.1	42.9	44.1	57.0	28.3	29.8	14.7	10.5	1.3	12.2	309.5
1943	20.1	75.9	64.1	35.4	30.5	66.2	36.3	23.2	14.5	5.7	0.0	27.1	399.0
1944	4.4	0.0	34.5	3.3	39.6	19.3	81.3	49.2	3.4	0.0	3.3	3.2	241.5
1945	0.0	31.5	10.7	6.1	39.2	112.2	24.1	53.8	22.3	9.9	4.9	7.6	322.3
1946	2.8	23.1	1.5	7.1	42.1	95.4	93.6	54.7	2.1	1.3	36.0	0.0	359.7
1947	5.5	8.6	27.7	16.5	46.6	33.0	40.9	11.0	12.4	34.8	2.5	0.0	239.5
1948	34.3	18.0	21.1	41.6	1.0	39.7	36.9	28.4	20.1	1.6	32.8	0.0	275.5
1949	0.8	19.4	1.5	6.5	0.3	30.5	78.3	71.2	19.2	9.0	15.2	0.0	251.9
1950	3.1	0.0	0.0	0.0	81.3	40.5	58.1	63.4	23.3	14.5	0.0	2.5	286.7
1951		41.6	0.0	80.2	16.5								

Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown



Monthly Rainfall (millimetres)

GOODLANDS 2

Station Number: 010057 · State: WA · Opened: 1921 · Status: Closed 31 Dec 1951 · Latitude: 30.10°S · Longitude: 117.10°E · Elevation: Unknown m

Statistics for this station calculated over all years of data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	10.6	13.4	24.2	23.0	35.0	53.5	43.5	34.8	14.5	12.3	9.9	10.9	283.0
Lowest	0.0	0.0	0.0	0.0	0.3	11.0	5.5	6.0	2.1	0.0	0.0	0.0	169.2
5th percentile	0.0	0.0	0.1	0.0	2.2	13.5	23.2	11.1	2.7	0.0	0.0	0.0	175.9
10th percentile	0.0	0.0	1.0	0.4	7.7	18.8	26.1	12.6	3.3	0.4	0.0	0.0	184.8
Median	4.9	6.0	14.9	18.4	34.3	40.1	39.5	34.1	13.5	9.3	3.7	4.1	286.7
90th percentile	21.3	32.7	50.9	52.3	55.4	109.2	64.5	55.6	27.2	28.0	33.1	28.0	360.0
95th percentile	29.9	46.9	60.7	70.1	72.7	116.6	79.9	67.7	28.0	31.3	37.1	37.1	383.8
Highest	64.5	75.9	180.8	85.9	108.0	145.3	93.6	102.1	36.0	34.8	46.7	68.3	403.4

1) Calculation of statistics

Summary statistics, other than the Highest and Lowest values, are only calculated if there are at least 20 years of data available.

2) Gaps and missing data

Gaps may be caused by a damaged instrument, a temporary change to the site operation, or due to the absence or illness of an observer.

3) Further information

<http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml>.

Product code: IDCJAC0001 reference: 00212813



Monthly Rainfall (millimetres)

GLAMOFF

Station Number: 010084 · State: WA · Opened: 1959 · Status: Open · Latitude: 30.11°S · Longitude: 117.36°E · Elevation: 357 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1959								59.5	13.0	11.7	5.6	11.6	
1960	8.4	31.3	42.1	6.6	54.2	15.7	73.6	6.4	25.7	3.6	9.7	0.0	277.3
1961	71.1	0.0	0.0	134.9	17.8	77.4	40.4	19.3	3.8	0.0	0.0	2.5	367.2
1962	0.0	0.0	0.0	0.0	161.7	62.4	38.9	20.0	15.5	19.8	7.4	15.0	340.7
1963	8.9	12.7	15.7	34.7	90.3	76.9	97.4	97.4	16.5	0.0	10.7	29.9	491.1
1964	17.0	13.0	8.4	25.2	0.9	87.5	93.4	38.9	17.0	8.4	8.1	4.1	321.9
1965	3.3	3.3	6.3	8.0	42.9	77.6	53.2	51.8	17.2	30.1	47.2	17.6	358.5
1966	2.8	21.4	0.0	43.1	4.8	51.7	61.1	30.6	29.4	29.3	8.7	1.0	283.9
1967	86.9	3.3	0.5	16.6	76.1	37.4	57.7	17.9	7.1	4.6	1.1	20.1	329.3
1968	31.5	20.9	8.6	36.2	24.0	169.9	38.7	33.9	38.6	4.1	6.3	0.0	412.7
1969	8.4	1.1	6.1	5.6	36.6	53.8	18.8	8.2	16.9	3.8	11.0	2.0	172.3
1970	1.0	120.3	0.0	36.1	22.9	93.8	23.9	23.8	37.9	11.0	10.2	16.8	397.7
1971	7.4	15.2	117.6	11.7	15.3	30.2	24.4	35.2	27.9	19.4	16.7	1.0	322.0
1972	0.0	5.6	9.4	2.5	14.3	96.4	97.7	35.9	21.2	6.3	4.1	2.4	295.8
1973	34.5	3.0	0.0	5.1	22.5	53.8	87.9	40.0	47.9	6.5	21.8	2.1	325.1
1974	18.4	2.2	31.4	64.2	94.4	47.8	60.2	49.9	58.0	17.6	7.8	12.0	463.9
1975	0.0	0.6	56.0	62.4	36.8	30.4	43.4	30.6	20.4	104.8	3.4	15.6	404.4
1976	12.8	13.0	0.0	21.8	25.6	14.4	12.8	29.8	11.4	24.0	10.6	0.0	176.2
1977	2.6	0.8	3.2	24.6	21.4	25.8	6.6	47.4	9.4	19.0	0.4	21.6	182.8
1978	71.6	100.0	2.4	22.6	18.4	29.2	81.2	19.2	27.8	14.1	15.4	60.4	462.3
1979	4.0	17.2	18.4	5.1	23.4	31.2	18.2	36.8	5.2	1.0	54.6	1.0	216.1
1980	24.6	2.2	3.8	15.6	53.2	62.2	50.2	22.2	4.6	11.4	1.2	3.6	254.8
1981	10.8	41.8	5.2	5.0	67.4	60.8	41.2	56.8	9.8	13.2	40.4	10.2	362.6
1982	63.8	0.0	8.4	6.0	29.0	51.2	16.6	18.0	29.2	50.4	22.8	3.8	299.2
1983	0.6	0.8	22.0	10.0	8.8	76.4	39.6	50.6	37.6	16.6	36.0	31.8	330.8
1984	31.0	34.2	64.0	48.0	110.4	14.0	65.8	20.2	32.4	23.8	14.4	1.0	459.2
1985	0.0	25.0	10.2	1.6	17.0	24.8	70.6	27.6	22.0	6.2	2.8	3.4	211.2
1986	23.2	15.0	11.0	3.2	48.6	112.4	36.4	41.2	22.8	27.8	0.8	13.8	356.2
1987	1.0	12.0	6.2	33.2	40.6	47.4	37.4	29.0	6.6	18.2	31.4	16.4	279.4
1988	0.0	0.6	28.0	45.6	125.2	55.6	63.4	46.4	16.2	12.8	10.6	61.2	465.6
1989	34.4	26.2	4.8	35.4	105.2	116.8	18.4	15.4	8.8	9.6	0.4	0.6	376.0
1990	70.2	30.4	31.2	19.6	33.6	39.4	33.4	54.2	26.6	35.2	0.2	8.4	382.4
1991	7.6	0.0	7.4	17.0	28.6	45.4	47.6	20.0	19.0	15.8	30.2	44.0	282.6
1992	12.6	34.8	41.2	64.8	3.8	64.8	19.4	95.6	70.6	8.2	9.0	13.0	437.8
1993	0.4	0.6	10.2	17.6	120.2	68.6	30.8	48.6	21.2	16.0	53.6	6.4	394.2
1994	0.0	58.2	0.4	0.0	48.0	30.4	21.0	53.2	12.6	3.0	0.0	3.0	229.8
1995	28.6	124.6	29.4	39.2	40.2	40.0	117.0	11.2	19.0	26.2	2.4	19.8	497.6
1996	0.0	19.4	5.8	29.6	7.4	86.6	91.8	45.8	23.0	6.2	22.0	0.0	337.6
1997	0.0	26.2	11.8	48.0	52.8	15.8	35.4	41.8	28.6	10.2	21.2	0.8	292.6
1998	0.0	0.0	5.2	17.2	66.2	55.4	75.6	47.6	20.8	2.6	2.8	14.8	308.2
1999	16.8	3.2	159.2	7.0	171.8	49.3	46.0	25.0	39.8	18.0	21.6	16.6	574.3
2000	70.6	0.2	151.2	14.4	4.2	17.0	45.8	29.4	18.8	1.4	0.0	12.4	365.4
2001	72.0	40.6	3.4	0.4	28.2	10.4	56.2	21.4	28.2	16.4	27.6	0.0	304.8
2002	1.2	9.6	16.2	18.8	8.7	28.0	32.8	22.8	14.6	11.7	4.0	21.8	190.2
2003	2.4		24.0	8.8	56.6	22.4	28.0	64.8	22.6	3.4	33.8	2.6	
2004	2.8	24.6	39.0	11.4	43.6	52.4	45.6	22.0	11.4		17.6	2.4	
2005	0.0	0.4	74.6	10.4	72.6	70.0	6.2	71.8	20.2	5.4	1.2	0.0	332.8
2006	106.0	10.4	15.2	76.0	12.2	5.4	22.6	21.6	43.6	1.0	22.2	27.2	363.4

Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown



Monthly Rainfall (millimetres)

GLAMOFF

Station Number: 010084 · State: WA · Opened: 1959 · Status: Open · Latitude: 30.11°S · Longitude: 117.36°E · Elevation: 357 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2007	58.0	13.8	0.8	30.0	13.4	11.8	54.6	11.2	17.2	7.4	0.0	38.6	256.8
2008	4.4	75.4	10.6	51.0	2.2	32.6	86.4	14.8	31.0	14.6	9.4	0.0	332.4
2009	12.2	24.8	20.2	4.8									

Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown



Monthly Rainfall (millimetres)

GLAMOFF

Station Number: 010084 · State: WA · Opened: 1959 · Status: Open · Latitude: 30.11°S · Longitude: 117.36°E · Elevation: 357 m

Statistics for this station calculated over all years of data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	20.9	21.2	22.9	25.1	45.4	51.6	48.3	35.7	22.9	14.9	14.0	12.3	337.9
Lowest	0.0	0.0	0.0	0.0	0.9	5.4	6.2	6.4	3.8	0.0	0.0	0.0	172.3
5th percentile	0.0	0.0	0.0	0.9	4.0	12.7	14.3	11.2	5.8	1.0	0.0	0.0	185.0
10th percentile	0.0	0.2	0.0	3.1	6.9	15.4	18.4	15.3	8.6	2.4	0.4	0.0	214.1
Median	8.4	13.0	9.8	17.4	33.6	49.3	43.4	30.6	20.6	11.7	9.6	7.4	332.4
90th percentile	70.7	45.1	56.8	52.1	106.2	88.8	88.7	57.1	38.7	28.1	34.0	30.1	462.9
95th percentile	71.8	90.2	98.2	64.5	123.2	106.0	95.8	68.7	46.0	33.2	44.1	41.6	483.5
Highest	106.0	124.6	159.2	134.9	171.8	169.9	117.0	97.4	70.6	104.8	54.6	61.2	574.3

Statistics calculated over the period 1961-1990

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	21.4	18.1	16.0	26.1	46.3	60.3	47.6	34.9	21.5	18.3	13.5	12.6	336.7
Lowest	0.0	0.0	0.0	0.0	0.9	14.0	6.6	8.2	3.8	0.0	0.0	0.0	172.3
5th Percentile	0.0	0.0	0.0	2.0	6.6	19.1	14.5	16.5	4.9	0.4	0.3	0.3	179.2
10th percentile	0.0	0.5	0.0	3.1	13.8	25.7	18.0	18.0	6.5	3.5	0.4	1.0	208.4
Median	9.9	12.4	7.3	20.7	31.3	53.8	40.8	32.2	18.8	13.6	9.4	6.2	335.8
90th percentile	70.3	35.0	33.9	49.4	105.7	98.0	88.4	52.0	38.0	30.6	36.4	30.1	462.5
95th percentile	71.4	73.8	60.4	63.4	118.5	114.8	95.6	55.6	43.7	43.6	44.1	47.5	464.8
Highest	86.9	120.3	117.6	134.9	161.7	169.9	97.7	97.4	58.0	104.8	54.6	61.2	491.1

1) Calculation of statistics

Summary statistics, other than the Highest and Lowest values, are only calculated if there are at least 20 years of data available.

2) Gaps and missing data

Gaps may be caused by a damaged instrument, a temporary change to the site operation, or due to the absence or illness of an observer.

3) Further information

<http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml>.

Product code: IDCJAC0001 reference: 00212814



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Monthly Rainfall (millimetres)

MOUROUBRA

Station Number: 010107 · State: WA · Opened: 1946 · Status: Closed 01 Nov 2007 · Latitude: 29.80°S · Longitude: 117.70°E · Elevation: 350 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1946	4.3	7.6	0.8	5.4	32.2	51.6	60.1	40.8	1.6	1.0	28.2	16.5	250.1
1947	18.6	1.3	24.9	11.2	43.9	36.9	31.9	9.5	15.8	28.2	7.8	0.0	230.0
1948	6.4	48.3	7.1	31.3	0.0	24.4	36.1	31.3	12.7	0.0	30.9	0.0	228.5
1949	5.4	8.6	0.0	3.0	0.0	28.5	73.7	93.3	25.0	11.2	21.6	3.5	273.8
1950	2.5	0.0	0.0	0.0	128.3	35.6	42.7	28.2	6.9	9.9	0.0	0.0	254.1
1951	14.7	33.5	4.1	43.1	9.1	96.2	50.3	19.0	13.2	0.0	0.0	0.0	283.2
1952	49.5	15.3	0.0	19.3	29.9	2.8	40.1	7.4	12.3	9.4	5.6	0.0	191.6
1953	0.0	13.7	137.1	40.4	50.7	46.1	26.4	19.1	12.0	3.5	2.5	0.0	351.5
1954	11.4	0.0	0.0	2.8	60.2	8.1	33.1	25.9	18.2	0.0	0.0	0.0	159.7
1955	15.8	27.5	27.9	10.9	62.4	29.8	22.3	49.8	18.5	13.9	0.0	0.0	278.8
1956	0.8	6.6	0.5	5.1	69.8	56.7	40.0	13.4	1.3	20.3	12.4	0.0	226.9
1957	1.8	0.0	17.0	0.0	9.4	59.9	12.2	29.8	2.5	1.8	0.0	19.1	153.5
1958	24.9	9.7	34.1	2.8	48.9	13.0	109.0	53.4	56.4	10.6	13.9	17.0	393.7
1959	11.9	0.0	22.9	12.9	4.8	104.7	18.5	48.1	4.6	13.4	9.4	16.5	267.7
1960	1.5	31.3	74.6	15.3	35.1	21.9	94.1	8.1	20.9	3.6	0.0	0.0	306.4
1961	66.1	2.5	4.1	147.5	10.7	96.0	31.2	27.7	0.0	5.6	0.0	6.3	397.7
1962	6.6	15.5	8.1	13.2	115.4	59.9	34.6	8.8	7.1	23.7	8.4	22.6	323.9
1963	37.9	39.6	29.1	19.6	116.0	63.0	101.9	67.5	12.7	5.3	8.7	14.9	516.2
1964	1.8	18.8	4.6	30.8	0.0	68.5	93.6	30.5	14.0	3.8	9.4	2.3	278.1
1965	2.8	2.3	7.9	2.3	48.2	121.4	50.3	56.0	18.0	31.8	24.8	3.3	369.1
1966	7.7	15.3	11.9	70.4	2.0	56.2	38.2	13.5	26.2	32.3	8.4	0.0	282.1
1967	92.7	0.0	0.0	24.6	65.8	40.2	28.8	13.7	11.5	3.1	1.3	18.0	299.7
1968	11.7	5.3	18.5	49.0	20.8	151.1	40.9	21.1	22.8	5.3	3.0	1.5	351.0
1969	7.1	0.8	2.8	4.8	25.4	34.2	17.0	7.9	20.9	7.1	10.7	0.0	138.7
1970	2.5	109.7	0.0	40.6	27.4	76.8	22.1	15.0	24.8	7.1	0.0	20.8	346.8
1971	4.6	13.7	88.4	4.3	18.0	14.9	22.9	32.1	19.1	14.7	14.4	0.0	247.1
1972	7.6	8.1	34.8	1.5	15.5	51.2	78.6	23.5	8.4	6.3	10.2	2.0	247.7
1973	9.9	27.2	0.0	22.9	39.7	42.2	86.3	33.0	33.1	6.1	15.7	1.0	317.1
1974	27.0	6.6	74.2	85.2	107.0	45.8	32.0	36.0	49.6	10.8	8.4	1.6	484.2
1975	0.6	21.0	18.8	78.4	26.4	42.0	55.1	41.4	10.0	65.0	3.2	16.4	378.3
1976	4.5	9.6	1.8	32.6	26.2	22.6	10.8	24.0	23.2	18.2	9.2	0.0	182.7
1977	1.6	2.8	4.3	23.0	19.0	35.5	6.8	25.0	8.5	18.4	7.0	11.0	162.9
1978	22.8	61.2	1.0	4.6	11.6	22.6	57.0	25.4	26.2	7.2	11.0	19.6	270.2
1979	19.6	6.8	5.2	0.0	11.6	29.7	5.4	15.9	6.4	0.0	50.2	0.0	150.8
1980	17.2	4.2	2.0	10.8	45.6	74.8	25.4	13.4	2.0	6.6	2.6	0.0	204.6
1981	2.0	12.2	0.0	3.8	31.7	49.8	47.4	38.3	7.2	7.6	28.2	0.0	228.2
1982	26.4	0.0	7.8	15.4	5.8	42.4	12.0	10.1	22.2	25.0	30.2	4.2	201.5
1983	1.6	0.0	14.4	3.2	12.4	54.0	33.0	41.8	25.8	1.6	22.0	80.8	290.6
1984	3.0	31.0	56.6	44.7	94.4	16.8	54.6	21.8	22.6	19.4	66.2	0.0	431.1
1985	0.0	67.8	7.2	6.4	7.6	17.2	63.2	21.8	11.6	7.6	5.4	0.0	215.8
1986	26.8	15.0	4.2	3.2	62.8	94.2	24.4	25.2	9.2	25.2	4.0	0.0	294.2
1987	6.0	0.0	9.8	11.3	26.0	35.4	22.0	23.0	5.6	17.8	25.0	4.6	186.5
1988	0.0	7.2	16.9	67.2	87.6	29.8	45.2	44.8	8.4	5.0	10.4	52.2	374.7
1989	1.4	44.0	9.8	36.4	82.0	32.6	14.6	4.4	4.0	8.0	0.8	1.2	239.2
1990	44.8	58.6	9.2	50.6	23.0	22.0	27.2	44.6	13.0	15.4	0.0	4.4	312.8
1991	9.6	0.0	4.4	15.2	27.6	51.8	52.8	9.4	10.8	6.0	17.8	43.2	248.6
1992	31.6	29.6	78.2	91.4	14.4	43.4	8.6	127.3	58.8	10.5	14.4	12.6	520.8
1993	0.0	8.8	6.0	25.0	72.0	70.8	20.2	42.1	12.2	5.4	36.8	0.4	299.7

Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown



Monthly Rainfall (millimetres)

MOUROUBRA

Station Number: 010107 · State: WA · Opened: 1946 · Status: Closed 01 Nov 2007 · Latitude: 29.80°S · Longitude: 117.70°E · Elevation: 350 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1994	0.0	38.2	1.2	0.0	46.2	16.2	14.6	85.0	12.2	4.0	0.0	8.8	226.4
1995	23.8	135.6	12.8	31.8	22.0	43.2	59.6	9.6	15.6	15.0	2.0	7.4	378.4
1996	2.2	10.4	2.2	51.0	24.4	52.8	100.2	45.4	28.2	9.4	31.4	0.4	358.0
1997	0.0	40.8	1.4	20.4	24.0	19.4	34.0	49.0	35.2	9.4	54.8	0.0	288.4
1998	0.0	0.0	6.0	4.7	93.6	76.4	57.6	37.6	24.6	3.8	2.2	25.0	331.5
1999	0.8	3.4	218.4	7.2	91.0	26.6	29.2	13.8	24.6	7.6	12.2	33.4	468.2
2000	81.6	4.2	114.2	21.2	5.6	11.4	41.2	41.2	10.2	1.8	0.0	14.9	347.5
2001	119.4	32.6	20.0	7.6	16.8	1.6	48.2	15.2	19.4	17.4	43.4	0.0	341.6
2002	7.0	9.0	2.9	11.6	16.8	23.2	30.0	17.2	7.6	11.2	1.8	14.4	152.7
2003	14.6	19.6	57.0	11.0	46.2	21.4	23.8	44.4	24.6	7.6	58.8	5.8	334.8
2004	7.4	70.4	50.4	24.2	29.2	37.8	37.6	22.8	6.2	12.2	10.8	0.0	309.0
2005	0.2	2.2	22.4	15.4	51.6	56.4	3.4		18.8	6.8	0.0	0.0	
2006	16.2	16.2	28.4	71.2	1.8	1.8	9.2	16.2	36.8	7.8	23.4	6.6	235.6
2007	58.8	71.2	2.6	48.6	9.8			4.0	11.8	5.2			

Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown



Monthly Rainfall (millimetres)

MOUROUBRA

Station Number: 010107 · State: WA · Opened: 1946 · Status: Closed 01 Nov 2007 · Latitude: 29.80°S · Longitude: 117.70°E · Elevation: 350 m

Statistics for this station calculated over all years of data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	16.2	21.0	23.1	25.3	38.1	44.5	40.1	30.6	17.0	11.0	13.8	8.8	290.2
Lowest	0.0	0.0	0.0	0.0	0.0	1.6	3.4	4.0	0.0	0.0	0.0	0.0	138.7
5th percentile	0.0	0.0	0.0	0.1	1.8	8.1	8.6	7.9	2.0	0.1	0.0	0.0	153.5
10th percentile	0.0	0.0	0.0	2.8	5.6	14.9	12.0	9.4	4.7	1.8	0.0	0.0	180.7
Median	7.1	10.1	7.8	15.4	26.9	40.2	34.0	25.2	13.1	7.6	9.2	2.0	282.6
90th percentile	44.1	57.6	72.5	65.6	90.7	76.8	78.6	49.8	28.0	23.4	31.4	20.8	394.1
95th percentile	65.7	70.3	87.9	78.0	106.4	96.2	94.1	67.5	36.7	28.0	50.2	33.4	469.0
Highest	119.4	135.6	218.4	147.5	128.3	151.1	109.0	127.3	58.8	65.0	66.2	80.8	520.8

Statistics calculated over the period 1961-1990

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	15.5	20.2	15.1	30.3	39.5	51.4	39.4	26.9	15.8	13.7	13.3	9.6	290.8
Lowest	0.0	0.0	0.0	0.0	0.0	14.9	5.4	4.4	0.0	0.0	0.0	0.0	138.7
5th Percentile	0.3	0.0	0.0	1.9	3.7	17.0	8.6	8.3	2.9	2.3	0.0	0.0	156.2
10th percentile	1.3	0.0	0.0	3.1	7.4	21.5	11.9	10.0	5.4	3.7	0.7	0.0	180.7
Median	6.8	10.9	7.8	21.2	26.1	42.3	32.5	24.5	12.9	7.6	8.9	2.2	286.3
90th percentile	38.6	58.9	37.0	71.2	95.7	94.4	79.4	44.6	26.2	25.9	28.4	21.0	401.0
95th percentile	56.5	64.8	66.3	82.1	111.6	110.0	90.3	51.0	30.0	32.1	41.2	38.9	460.3
Highest	92.7	109.7	88.4	147.5	116.0	151.1	101.9	67.5	49.6	65.0	66.2	80.8	516.2

1) Calculation of statistics

Summary statistics, other than the Highest and Lowest values, are only calculated if there are at least 20 years of data available.

2) Gaps and missing data

Gaps may be caused by a damaged instrument, a temporary change to the site operation, or due to the absence or illness of an observer.

3) Further information

<http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml>.

Product code: IDCJAC0001 reference: 00212815



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Monthly Rainfall (millimetres)

MOUNT GIBSON

Station Number: 010075 · State: WA · Opened: 1982 · Status: Open · Latitude: 29.61°S · Longitude: 117.41°E · Elevation: 355 m

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1982							9.2	18.6	40.6	9.5	47.6	9.8	
1983	5.0	0.0	10.0	11.0	8.5	72.2	42.5	50.5	30.9	0.0	30.0	48.4	309.0
1984	13.7	30.2	106.6	36.2	135.0	14.3	80.7	17.5	19.9	1.6	5.5	43.1	504.3
1985	0.0	13.0	16.0	5.0	20.0	21.5	82.2	31.7	16.0	6.6	2.5	0.5	215.0
1986	15.5	54.2	7.5	3.5	57.0	85.5	30.5	22.6	8.8	27.2	0.0	0.0	312.3
1987	9.5	18.5	14.0	17.0	24.0	29.5	17.5	20.0	5.5	14.0	47.0	33.0	249.5
1988	14.0	0.0	16.5	79.5	82.5	25.5	52.0	53.0	6.5	5.0	12.0	47.5	394.0
1989	8.0	45.5	3.0	36.5	98.0	51.2	9.0	4.5	3.0	8.0	2.0	0.0	268.7
1990	49.2	51.0	12.7	40.0	27.0	30.5	47.0	50.1	18.4	40.5	0.0	4.7	371.1
1991	50.0	0.0	4.2	14.0	30.2	66.5	46.6	12.2	14.4	3.7	13.2	34.7	289.7
1992	2.0	10.5	91.0	79.0	3.7	54.5	9.8	136.3	97.2	10.0	36.8	8.2	539.0
1993	1.5	8.2	0.0	17.0	110.5	71.2	24.2	42.0	19.1	3.5	57.5	4.0	358.7
1994	0.0	56.8	0.0	0.0	37.5	29.5	3.2	90.7	11.0	0.0	0.0	34.0	262.7
1995	24.0	185.0	14.5	35.0	26.5	41.0	77.5	4.1	22.5	15.5	2.0	11.5	459.1
1996	0.0	0.0	0.0	50.0	32.8	76.8	103.3	52.0	40.5	15.5	31.5	35.5	437.9
1997	0.0	39.5	20.0	79.5	44.0	16.0	45.2	86.7	82.0	22.5	26.7	0.0	462.1
1998	0.0	0.0	2.5	36.0	83.5	96.3	58.5	27.0	21.5	4.0	7.0	16.5	352.8
1999	11.0	7.0	193.7	5.0	105.5	20.5	19.7	17.2	30.7	7.0	68.0	33.5	518.8
2000	175.7	1.0	168.0	10.0	4.0	15.5	37.5	42.0	16.5	3.5	0.0	5.0	478.7
2001	69.0	36.5	20.0	2.5	22.0	5.5	38.0	15.5	26.5	40.5	69.0	0.0	345.0
2002	2.5	6.5	1.7	55.0	4.5	30.5	24.0	16.0	12.0	11.0	0.0	27.0	190.7
2003	10.0	14.5	49.0	23.5	46.0	23.5	25.0	86.0	29.0	7.0	22.0	0.0	335.5
2004	16.0	20.0	27.0	16.0	23.5	37.5	39.5	16.0	8.5	7.0	12.0	2.5	225.5
2005	6.0	3.0	40.0	2.0	95.0	47.5	0.0	55.5	16.2	6.0	3.5	0.0	274.7
2006	46.0	30.0	20.0	83.5	3.5	42.5	11.2	13.2	26.2	8.0	13.7	43.0	340.8
2007	47.0	40.2	0.2	17.3	7.9	16.4	54.5	9.2	9.4	7.4	8.2	45.8	263.5
2008	10.5	157.0	15.3		2.2	25.8	74.4	14.6	34.0	17.2	4.8	0.8	
2009	40.6	4.4	26.6	16.0									

Quality control: 12.3 Done & acceptable, 12.3 Not completed or unknown



Monthly Rainfall (millimetres)

MOUNT GIBSON

Station Number: 010075 · State: WA · Opened: 1982 · Status: Open · Latitude: 29.61°S · Longitude: 117.41°E · Elevation: 355 m

Statistics for this station calculated over all years of data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	23.2	30.8	32.6	29.6	43.6	40.3	39.4	37.2	24.7	11.2	19.4	18.1	350.4
Lowest	0.0	0.0	0.0	0.0	2.2	5.5	0.0	4.1	3.0	0.0	0.0	0.0	190.7
5th percentile	0.0	0.0	0.0	2.1	3.5	14.6	4.9	5.9	5.8	0.5	0.0	0.0	217.1
10th percentile	0.0	0.0	0.1	3.0	3.8	15.8	9.1	11.0	7.7	2.7	0.0	0.0	235.1
Median	10.5	14.5	15.3	17.1	28.6	30.5	38.0	22.6	19.1	7.4	12.0	9.8	340.8
90th percentile	49.5	55.2	97.2	79.2	101.8	74.5	78.8	86.3	40.5	24.4	51.6	44.2	494.1
95th percentile	63.3	126.9	149.6	79.5	109.2	83.3	81.8	89.5	69.6	36.5	64.8	47.0	515.9
Highest	175.7	185.0	193.7	83.5	135.0	96.3	103.3	136.3	97.2	40.5	69.0	48.4	539.0

1) Calculation of statistics

Summary statistics, other than the Highest and Lowest values, are only calculated if there are at least 20 years of data available.

2) Gaps and missing data

Gaps may be caused by a damaged instrument, a temporary change to the site operation, or due to the absence or illness of an observer.

3) Further information

<http://www.bom.gov.au/climate/cdo/about/about-rain-data.shtml>.

Product code: IDCJAC0001 reference: 00212816

