

## Considerations for Weather & What to Look For

Depending on where you're at in the world, weather is impacted by different factors:

- ☐ Sun's heating which occurs differently across seasons
- ☐ High and low air pressure produced by Earth's rotation
- ☐ Different orbits of planets and our moon
- ☐ Air temperatures at different altitudes

These different factors combine with the following key components to create the weather that is experienced in a given location:

- ☐ Precipitation
- ☐ Humidity
- ☐ Wind
- ☐ Air Pressure
- ☐ Air Temperature
- ☐ Clouds

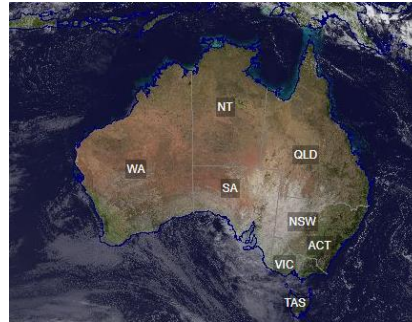
This combination produces observable features that we can use to predict weather as seen in the video below.



(Froude & Polley, 2011; Open Geography, 2017)

## Understanding Forecasts and Where to Look

There is an abundance of locations where weather forecasts can be found, whether it is online, in newspapers or even on the news. For the most up to date and accurate forecasts it is best to use an online site such as the Bureau of Meteorology, Australia's official weather forecast site, which can be accessed in the link below.



These forecasts are compiled from weather observations from:

- ☐ 60 weather stations
- ☐ 500 part-time observers
- ☐ 6000 volunteers recording daily rainfall
- ☐ 2000 storm spotters
- ☐ 400 voluntary observing ships
- ☐ 320 automatic weather stations

By looking at these weather forecasts, you can identify a whole range of crucial aspects which will dramatically shape your bushwalking experience. Key pieces of information include:

- ☐ Rainfall forecasts
- ☐ Wind forecasts
- ☐ Tide predictions
- ☐ UV ratings
- ☐ Humidity
- ☐ Temperature

(Bureau of Meteorology, 2021a; Froude & Polley, 2011)

## Reading Weather Maps

Another way we can understand and know weather is by reading weather maps, also known as synoptic maps.

Synoptic weather maps provide information relating to where the weather is coming from and is used to assist weather forecasting.

Key features and their meanings on a weather map include:

High pressure system – Normally brings fine weather, winds rotate around these systems in an anticlockwise direction.

Low pressure system – Generally brings cloudy weather with a very good chance of rain. Winds move around in a clockwise direction.

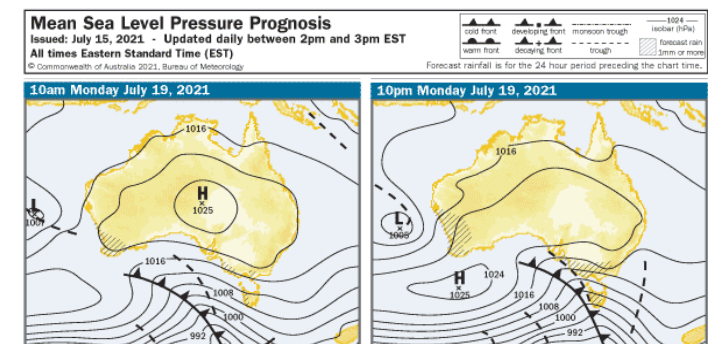
Cold front – Generally means rain or storms. The front moves in the direction of the arrows.

Warm front – Increase in temperature, can bring light showers.

Trough – Tongue or low pressure which separates two areas of high pressure

Ridge – Tongue of high pressure separating two areas of low pressure

An example of a weather map is below, with symbols to represent each feature.

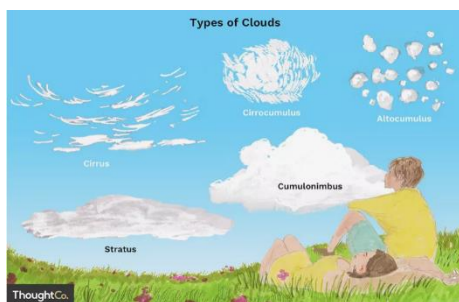


(Bureau of Meteorology, 2021b; Froude & Polley, 2011)

## Types of Clouds

Clouds are an extremely useful indication of weather conditions. They are formed by floating water drops or ice crystals. This occurs as the sun warms the Earth and water evaporates into the air from lakes, rivers and oceans. This evaporated water, or water vapor, rises into the atmosphere where it is then cooled and attaches to dust particles to form a cloud.

Examples of the different types of clouds, their level classifications and a brief description of their characteristics can be found by following the link below.



The following video demonstrates an easy experiment that can be conducted with a group to further emphasise how clouds are formed.



(Cool Science Experiments Headquarters, 2016; Froude & Polley, 2011; Means, 2019)

## Considerations for Leading in Different Conditions

Weather is dynamic and can change rapidly impacting your outdoor activities. Forecasts should always be consulted when planning activities and determining situations that may require action. However, because weather is dynamic these situations, or trigger points, can also be determined through current observable conditions.

The types of adverse weather that may affect your activities could include:

- ☐ Strong Winds
- ☐ Extreme heat or cold
- ☐ Extreme bushfire weather conditions
- ☐ Lightning
- ☐ Rain, hail or snow

Reasonable precautions, based on the competence of both leader and participant, should be taken by leaders to protect activity participants in regard to:

- ☐ Sun safety
- ☐ Shelter from severe weather
- ☐ Bushfire procedures
- ☐ Dehydration
- ☐ Hypothermia/Heatstroke

An extensive good practice guide for outdoor leaders can be accessed by clicking on the link below.



(Outdoor Council of Australia, 2018)

## Teaching Outdoors

Teaching outdoors can occur in all types of weather and presents opportunities through experiential learning for student development and growth.



This learning not only targets student outcomes such as critical and creative thinking, physical development and wellbeing, and personal and social capabilities but also provides an avenue to engage with Aboriginal perspectives and culture.

Regarding weather, a class could explore the specific seasonal indicators used to find food and prepare for changes as observed by the different Aboriginal culture groups indicated through the link below.

A circular diagram showing seasonal indicators for different Aboriginal groups across Australia, including months, seasons, and traditional activities.







(Bureau of Meteorology, 2016; Edutopia, 2020; Nature Play SA, 2017; Outdoor Education Australia, 2015)

## **References**

- Bureau of Meteorology. (2016). *Indigenous weather knowledge: Kurna calendar*. Retrieved from <http://www.bom.gov.au/iwk/culture.shtml>
- Bureau of Meteorology. (2021a). *Weather forecast*. Retrieved from <http://www.bom.gov.au/>
- Bureau of Meteorology. (2021b). *Mean sea level pressure prognosis*. Retrieved from [http://www.bom.gov.au/australia/charts/4day\\_col.shtml](http://www.bom.gov.au/australia/charts/4day_col.shtml)
- Cool Science Experiments Headquarters. (2016). *Make a cloud form in a jar science experiment*. Retrieved from <https://coolscienceexperimentshq.com/make-a-cloud-form-in-a-jar/?fbclid=IwAR2obVlcJL2yfijZYpRI4qFe65JwSlR6l31zHcO0c98HCLi1DZ5YTHhM7M>
- Edutopia (Producer). (2020). *Bringing core content to life with outdoor education*. [YouTube] Retrieved from <https://youtu.be/grjPoDHA3k8>
- Froude, C., & Polley, S. (2011). *Outdoor Education: Foundations for tertiary and senior secondary education* (2nd ed.). South Melbourne, Victoria: Cengage Learning Australia.
- Means, T. (2019). *ThoughtCo: The 10 basic types of clouds*. Retrieved from <https://www.thoughtco.com/types-of-clouds-recognize-in-the-sky-4025569>
- Nature Play SA. (2017). *Learning outdoors: Benefits and risks*. Adelaide, South Australia: Department of Education and Child Development. Retrieved from <https://natureplaysa.org.au/educators/play-space-design/>
- Open Geography. (2017). *Weather processes and systems*. Retrieved from <https://courses.lumenlearning.com/earthscience/chapter/weather-processes-and-systems/>
- Outdoor Council of Australia. (2018). *Australian adventure activity good practice guide*. Victoria: Secretariat for the Australian Adventure Activity Standard. Retrieved from <https://australianaas.org.au/>
- Outdoor Education Australia. (2015). *Rationale for outdoor ed*. Retrieved from <https://outdooreducationaustralia.org.au/education/rationale-for-oe/>



# Features of a Synoptic Chart

Weather system	Name	Description	Associated weather
	Isobar	Lines joining places of equal pressure	The closer the isobars are, the stronger the winds.
	High pressure system	Areas of sinking air	Generally fine weather. Winds rotate around these systems in an anticlockwise direction.
	Low pressure system	Areas of rising air	Generally cloudy weather and a good chance of rain. Winds rotate around these systems in a clockwise direction.
	Tropical cyclone	Areas of rapidly rising air	Torrential rain, very strong and destructive winds in a clockwise direction. Given a name (e.g. Tropical Cyclone Pamela)
	Cold front	Separates warm and cold air, with the cold air behind the front	Fall in temperature, may bring rain and storms. Front moves in the direction of the arrowheads.
	Warm front	Separates warm and cold air, with the warm air behind the front	Increase in temperature; may bring light showers. Uncommon in Australia

# Mean Sea Level Pressure Prognosis

Issued: July 15, 2021 - Updated daily between 2pm and 3pm EST

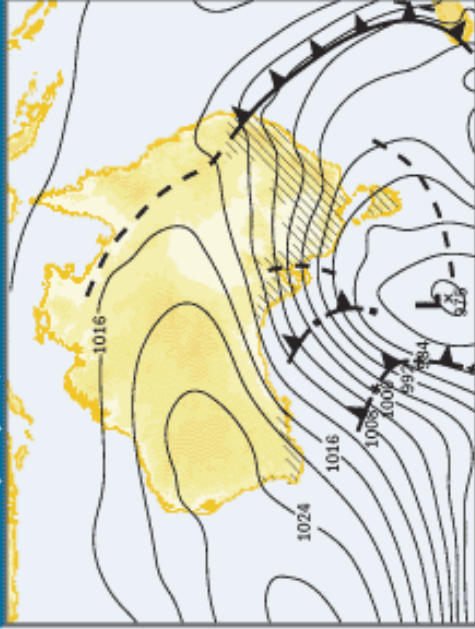
All times Eastern Standard Time (EST)

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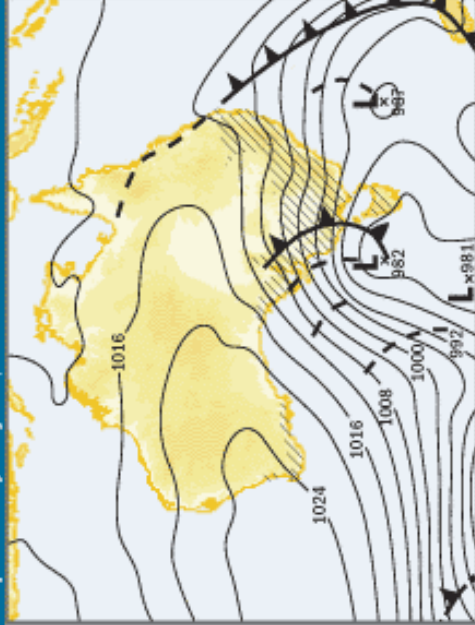


Forecast rainfall is for the 24 hour period preceding the chart time.

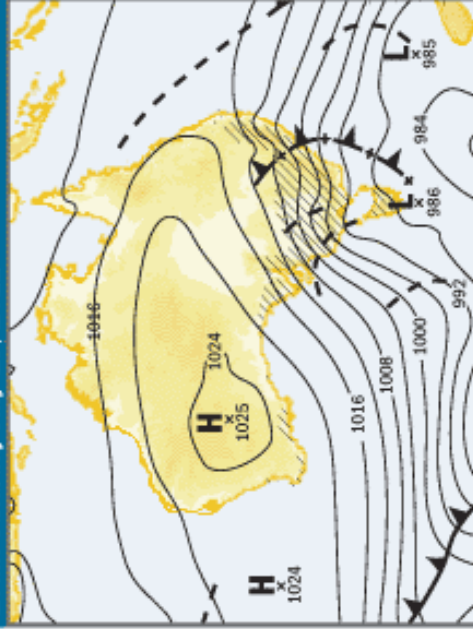
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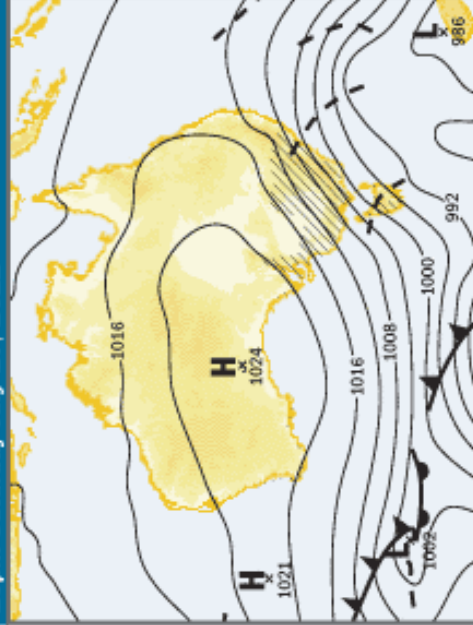
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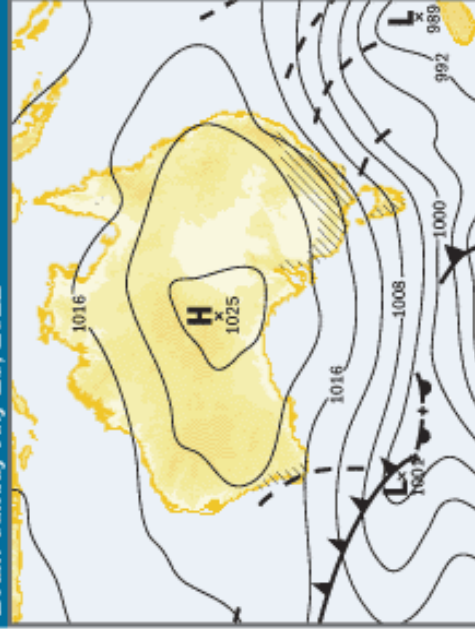
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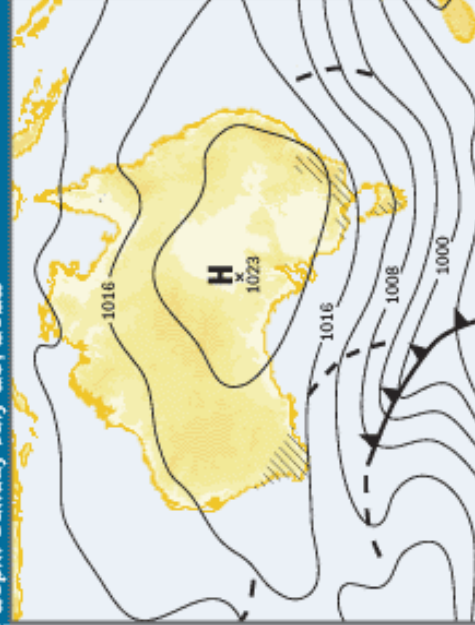
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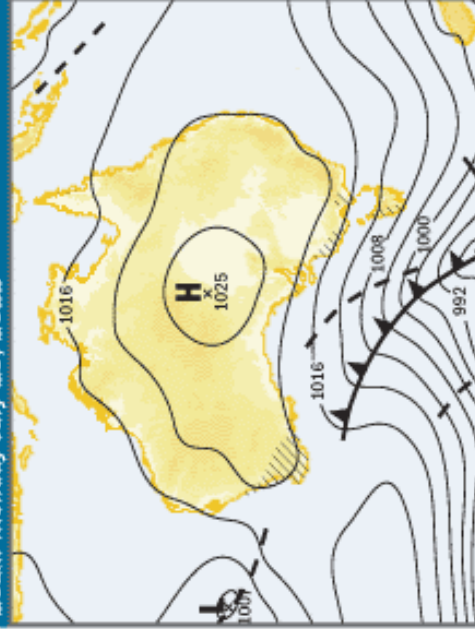
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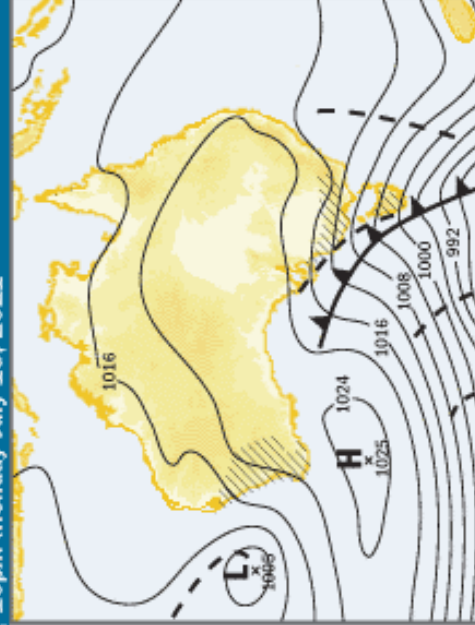
10pm Sunday July 18, 2021



10am Monday July 19, 2021

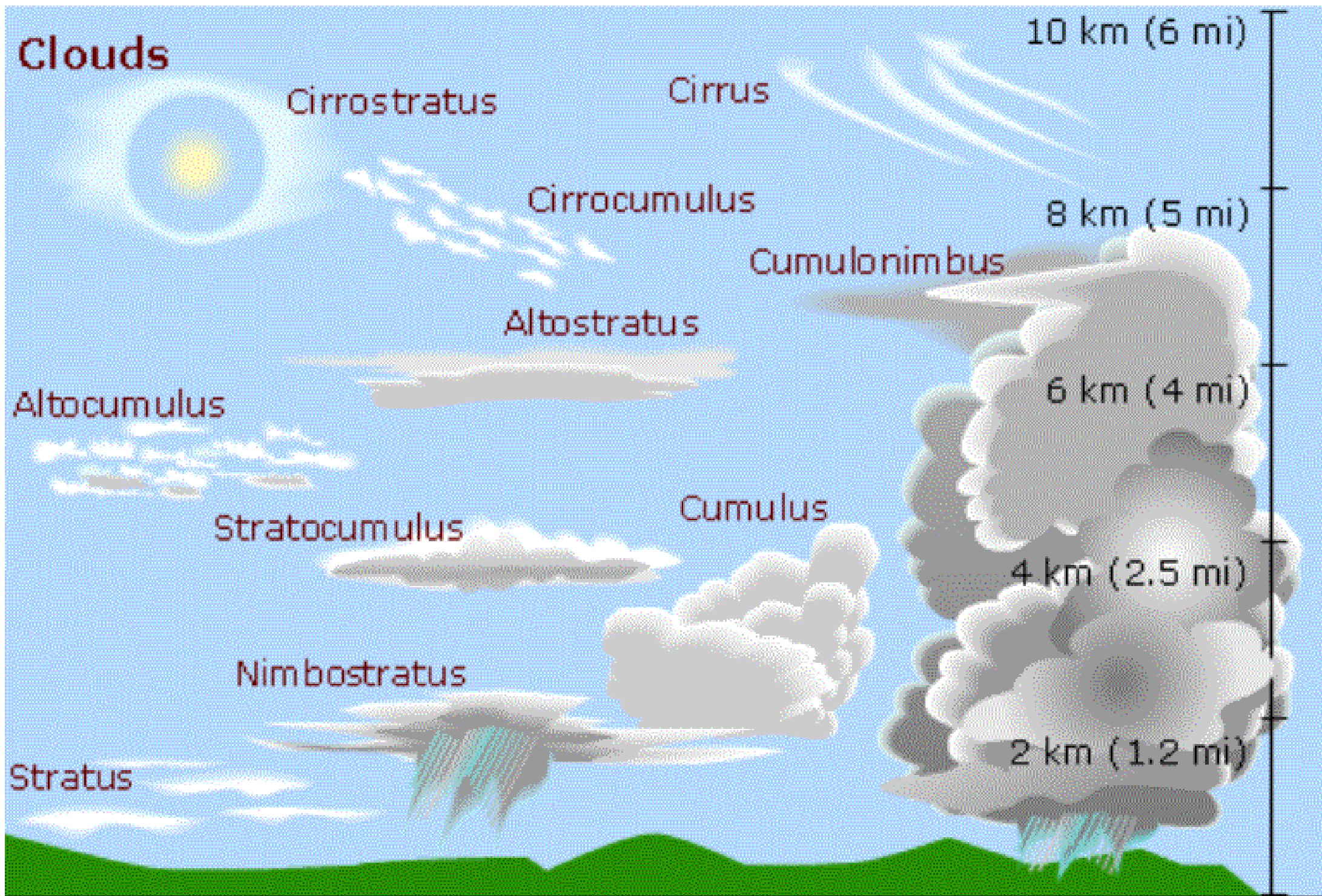


10pm Monday July 19, 2021





# Clouds



# Kaurna Seasons



## Kudlila – Winter (approximately July, August, September)

### Indicators

- ☐ Kudlinthi (to wash) - winter is when the earth is washed
- ☐ Wartapukkara (north/west wind, tempestuous weather)
- ☐ **Plant and Animal Indicators**
  - ☐ Vegetables, grubs mainly eaten
  - ☐ Bloodworms in mud
  - ☐ Ducks/water birds nesting
- ☐ **Seasonal Lifestyle**
  - ☐ Grubs collected from west sclerophyll scrub covering Mount Lofty Ranges - gum from Acacia trees collected for eating

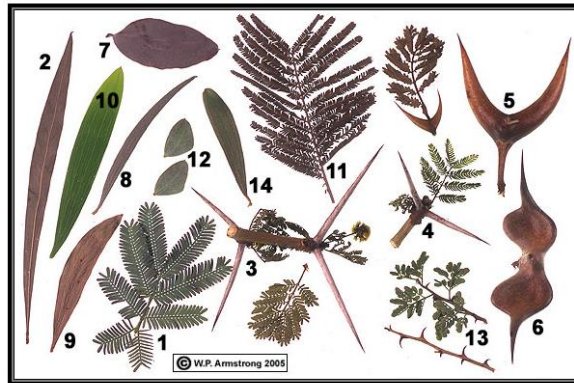




## Bloodworm



## Acacia



The enormous genus **Acacia** has evolved into two main groups. One group includes species bearing phyllodes (broadened leaf petioles functioning like leaf blades). Another group includes species with fernlike, pinnate leaves divided into small leaflets. There are nearly 800 species of phyllode and pinnate-leaf acacias worldwide. The above image shows fourteen of these species: 1. *Acacia baileyana*, 2. *A. cyanophylla*, 3. *A. xanthophloea*, 4. *A. farnesiana*, 5. *A. cornigera*, 6. *A. collinsii*, 7. *A. podalyriifolia*, 8. *A. pendula*, 9. *A. melanoxylon*, 10. *A. longifolia*, 11. *A. dealbata*, 12. *A. cultriformis*, 13. *A. greggii*, and 14. *A. redolens*.



## Witchetty Grub

