Weather recording/forecasting page

Beaufort wind scale (for estimating how windy it is)

1.	Calm air	0km/h
2.	Light air (smoke drifts)	2-6km/h
3.	Light breeze (leaves rustle)	7-11km/h
4.	Gentle breeze (Raises light flag)	13-19km/h
5.	Moderate breeze (raises paper, leaves)	20-30kn/h
6.	Fresh breeze (small trees sway)	31-38km/h
7.	Strong breeze (large branches, whistling)	40-49km/h
8.	Near gale (trees move, hard to walk against)	51-61km/h
9.	Gale (breaks twigs, impedes progress)	62-74km/h
10.	Strong gale (breaks branches)	76-86km/h
11.	Storm (trees uprooted, severe damage)	88-100km/h

Wind chill (how cold the air feels on your skin when it's windy)

Air temp

Km/h	8	4	0	-4	-8	-12	-16
70	-7	-14	-20	-27	-33	-40	-46
60	-7	-13	-19	-26	-32	-39	-45
50	-6	-12	-18	-25	-31	-37	-43
40	-5	-11	-17	-23	-29	-35	-41
30	-3	-8	-14	-20	-25	-31	-37
20	0	-5	-10	-15	-21	-26	-31
10	+5	0	-4	-8	-13	-17	-22

Wind chill

Freezing level (the height where the air reaches zero degrees)

If it is not raining or foggy, take present air temperature and multiply by one hundred (ie 16 degrees x 100 = 1600), add the answer to your own altitude (the height of the lodge is 750m so 750 + 1600 = 2350 metres) and the answer (2350m) is the present freezing level.
If it is foggy or raining multiply the present air temperature by sixty, add the answer to you own altitude and the new answer will be the freezing level.

Dry adiabatic lapse rate = 1 degree per 100m
Wet lapse rate (if foggy or raining) = 0.6 degrees per 100m of altitude
Note. Snow can fall just below freezing level

Clouds

There are ten main cloud types. They are…

High altitude	Cirrus	(very high wispy thin clouds)
	Cirrocumulus	(very high thin fluffy clouds)
	Cirrostratus	(a thin sheet of high cloud)
Medium altitude	Altocumulus	(high fluffy clouds)
	Altostratus	(a wide sheet of high cloud)
	Nimbostratus	(sheet of high cloud with light rain)
Low altitude	Stratocumulus	(a low sheet of fluffy clouds)
	Stratus	(sheet of flat low cloud or fog)
	Cumulus	(fluffy clouds)
	Cumulonimbus	(raining fluffy clouds)

Don't forget…

Special clouds	Imaginacumulus	(fluffy clouds that look like people, animals or anything other than just an ordinary cloud)
	Invisiblenimbus	(Those sneaky clouds that hit you with a rain drop on a sunny day)
	747 candy-floss	(Vapor trails, yes they are clouds too)

DIY mountain weather forecasting

These 'rules of thumb' can help you predict the weather in the mountains.

- If you stand with the upper level wind to you back the low pressure centre is to your right.
- The combination of wind speed and falling air pressure (you need a barometer to measure this) gives an indication of the intensity and duration of approaching weather. The higher the wind speed and the faster the air pressure drops the worse the approaching weather will be.
- Use clouds to confirm the upper level wind speed/direction and as secondary clues only. Clouds can fool you by looking big and nasty when the weather is okay or by looking small and harmless before a big storm!

Wind direction:

- **North West**: A front is approaching from the Tasman sea, a low is probably passing to the South, Heavy rain and windy in the west and hot and windy in the east,

- **West-South West**: Maybe clearing but probably just a disturbed westerly flow

- **South South West**: Usually good but cool, a ridge or high is approaching from the West, watch out though that the wind does not change suddenly to the South.

- **South**: If the wind changes to the South look out for cold weather with the possibility of snow. Often Southerlies bring sudden cold snaps/snowstorms to the mountains followed quite quickly by clear fine weather with cold frosts.

- **South East**: There is a high to south but South East clouds or light rain may cover the eastern mountains.

- **Easterly**: There is a low to the North and a high to the South. The weather depends on the pressure gradient between them, usually nothing nasty but light rain possible.

- **North East**: A low is passing to the North, there is usually a slow deterioration of weather, cloudy with light rain and light winds.
  Watch out if the air pressure falls very quickly though, this means a rare and nasty type of low (called a 'bomb' by weather forecasters) is forming with heavy snowfall and high winds (it was a 'lee cyclogenisis' storm like this that sank the Wahine ferry).