A sailboat is visible in the background, sailing on a body of water. A large, bright, oval-shaped light, possibly a sun or moon, is positioned behind the boat, creating a strong reflection on the water's surface. The overall scene is serene and nautical.

Electronic Weather Using PredictWind

A Quick Reference Guide to Using PredictWind

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Introduction to PredictWind

This manual is an introduction to using the PredictWind application and is based on the Basic Subscription option. PredictWind is the most heavily used wind modeling application used by coastal, offshore and ocean racers and cruisers. The application and its forecasting models have numerous features to ensure you have a safe passage.

PredictWind is available globally and provides applications that run in your browser. You can also download the PredictWind application for your Android or iPhone smartphones and tablets.

You can zoom in/out on all maps in PredictWind by using +/-, your fingers or mouse trackball.

To purchase PredictWind please visit www.PredictWind.com or download the application from Playstore or App Store.

PredictWind Models

There are four types of models that PredictWind uses in generating its forecasts. The PWG and PWE models are specific to PredictWind and generally perform better than competitor prediction models. The GFS and ECMWF are considered to be top prediction models and are what PredictWind consider the best alternative models for comparison.

PWG

The PredictWind model that starts with the NCEP (National Centers for Environmental Prediction) as the initial conditions for the modeling forecast.

PWE

The PredictWind model that starts with the ECMWF (European Centre for Medium-Range Weather Forecasts) as the initial conditions for the modeling forecast.

GFS

The Global Forecast System from NCEP which is used by most other websites and applications.

ECMWF

European Centre for Medium-Range Weather Forecasts which is highly regarded by top meteorologists and navigators around the world.

PredictWind Main Menu

On the main menu of PredictWind you will find the following:

Location – In the basic version, you can have up to nine preset locations.

Forecast Tables – This menu choice displays the raw data in a table format that PredictWind uses.

Forecast Graphs – The forecast graphs shows the same information as the forecast tables but instead is displayed in a graphical format. This makes it easy to see the trends and compare the two PredictWind models.

Wind Map – The wind map displays the wind strength in colour and wind direction by using arrows. It also displays the pressure contours.

Gust Map – Displays gusts in a colour gradient.

CAPE Map – Indicate the stability and instability of the air through colour gradients.

Observations Map – Gives you wind speed and direction observations.

Wave Map – The colour gradients display the wind wave and swell height. The black arrows show the wave direction and the black contours display the wave period/interval.

Rain Map – The rain maps display the precipitation levels in various shades, red being heavy rain. Wind barbs are also displayed indicating wind direction and speed. Pressure contours are also displayed so you can identify frontal systems in the forecast.

Cloud Map – Cloud cover is displayed using white. When fully white there will be 100% cloud cover.

Isobar Map – The isobar map is useful in seeing the synoptic situation showing the high and low pressure systems.

Air Temp Map – The colour gradients show the different air temperatures.

Sea Temp Map – This map shows the latest sea temperature data gathered from satellite data. This is not a forecast.

Forecast Alerts – Allows you to set forecast alerts when certain conditions are met.

Settings – Allows you to set units of measure for features such as Wind Speed, Wind Direction, Temperature, Rainfall, Wave Height and Wave Direction.

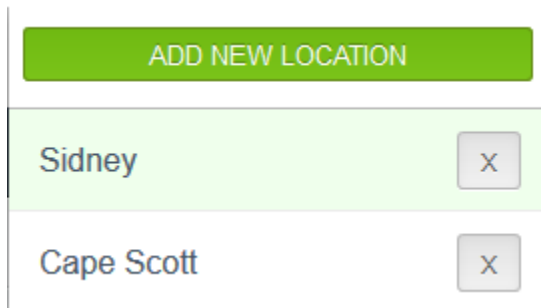
Billing – Information about the current package you have purchased.

Help Centre – Online help with tips and Frequently Asked Questions.

Support – Provides access to the PredictWind help desk for issues that you can not solve using the Help Centre.

Logout – This option will log you out of the PredictWind application

Locations



ADD NEW LOCATION	
Sidney	X
Cape Scott	X

In the basic version of PredictWind you can have up to nine saved locations. To add a location, simply search on the desired location, select either the red dot that is displayed on the map or set custom location by dragging the red dot to the desired location. Once done, press Save Location and it will be added to your available location choices.

To go to a previously saved location, select your current location and the drop down will appear allowing you to change it to one of your previously saved locations.

Forecast Tables

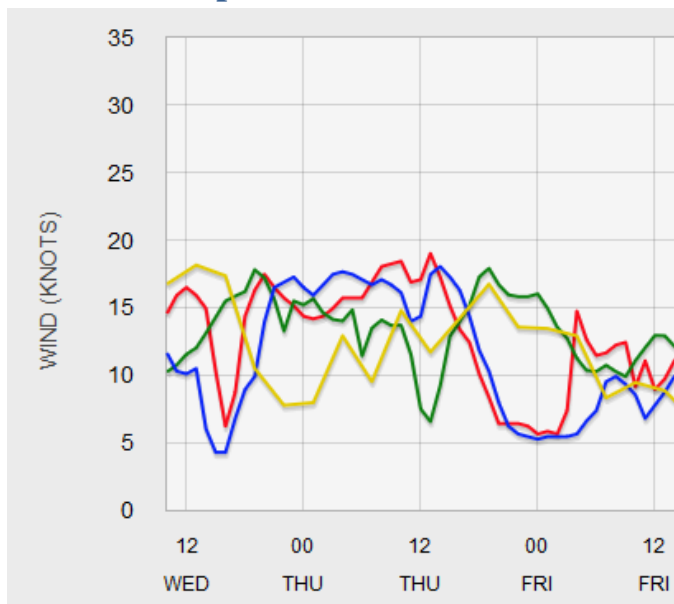
Day		Wed 22							
Local Time		10	11	12	13	14	15	16	17
Speed (Knots)	PWG	6	8	7	8	7	9	12	14
	PWE	8	9	8	8	8	6	11	13
	GFS	10	11	12	12	13	14	15	16
	ECMWF	17	17	17	18	18	18	17	17
Direction (True)	PWG	S	SE	SE	S	S	S	SW	SW
	PWE	SE	SE	S	S	S	S	S	SW

The forecast tables displays wind Speed, Direction, Gusts, CAPE, Wave Height, Wave Period, Wave Direction, Temperature, Rainfall and Cloud Cover.

Information is displayed in local time for up to a seven day period.

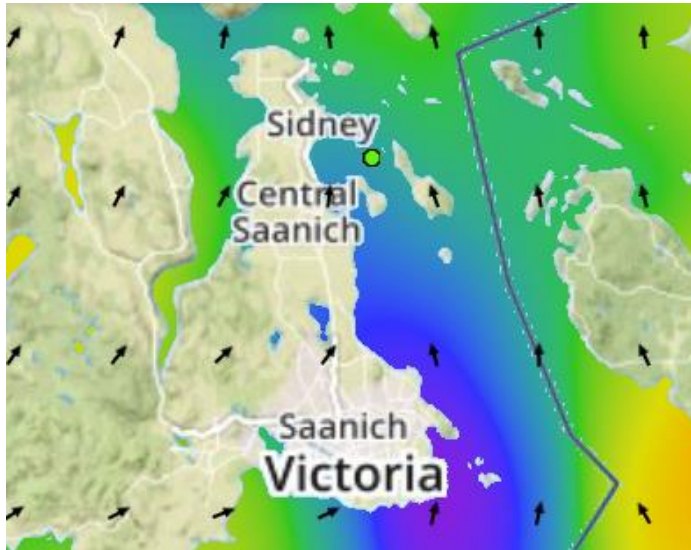
The PWG, PWE, GFS and ECMWF model information is provided.

Forecast Graphs



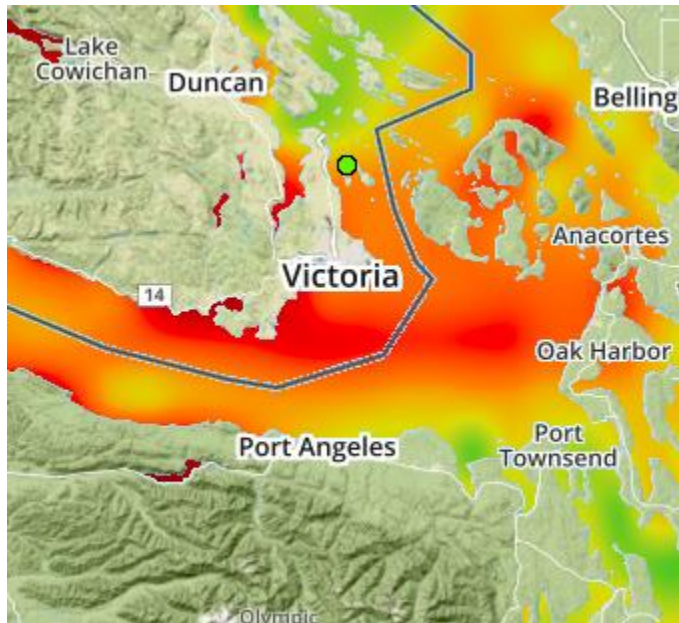
Forecast graphs displays the same information as the Forecast Tables except it is in a graphical format. This makes it much easier and quicker to spot trends.

Wind Map



The wind map displays the current location with wind arrows. The wind arrows indicate the direction of the win and the colour gradient is used with the scale at the bottom to determine wind strength. A seven day forecast is provided along with various prediction models and prediction resolution. If you click on any area you will be given data about wind speed, wind direction, pressure, longitude and latitude.

Gust Map



The Gust Map indicates areas of gusts and the colour gradient is used with the scale at the bottom to indicate gust strength. A seven day forecast is provided along with various prediction models and prediction resolution. If you click on any area you will be given data about gusts, longitude and latitude.

CAPE Map



CAPE stands for Convective Available Potential Energy. This map is used to indicate the various energy levels and can indicate potential for severe weather such as thunderstorms. When the CAPE index is 0, the air is stable and convection is not possible. For CAPE values up to 1000, the probability of heavy showers increases. In highly unstable air, CAPE values are usually in excess of 2500. The CAPE Maps can be used in conjunction with the Rain Maps. If a frontal band has a noticeably high CAPE value, it may be a more severe event. If you click on any area you will be given data about CAPE index, longitude and latitude.

- 0 – 1000 – marginally unstable
- 1000 – 2500 – moderately unstable
- 2500 – 3500 – very unstable
- 3500+ - extremely unstable

Observations Map

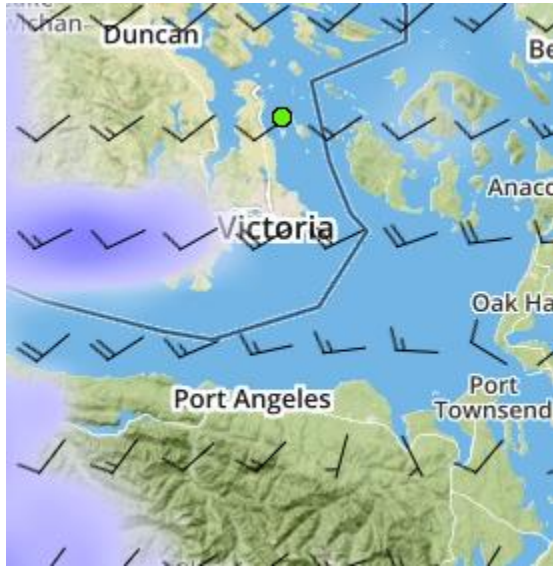
The Observations Map provides current data as received from various sources such as Environment Canada. By clicking on the wind arrow, you will be given wind speed and direction. Note that the Observations Map is currently only available on tablets and smartphones; it is not available via the PredictWind website.

Wave Map



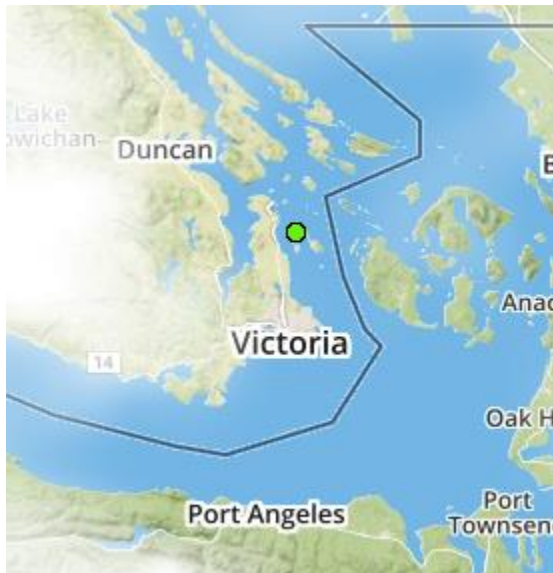
The Wave Map provides a seven day forecast using different models of wave direction, height and period. The colour gradient is used with the scale at the bottom to indicate wave height. If you click on any area you will be given data about wave height, direction, period, longitude and latitude.

Rain Map



The Rain Map provides a seven day forecast using different models of wind direction, wind strength and the colour gradient is used with the scale at the bottom to indicate mm/hr of rain. If you click on any area you will be given data about wind speed, wind direction, pressure, rain, latitude and longitude.

Cloud Map



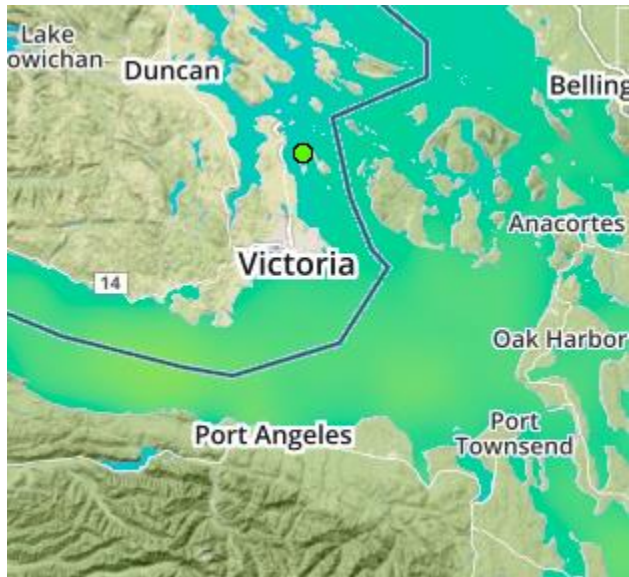
The Cloud Map provides a seven day forecast using different models of the amount of cloud cover. If you click on any area you will be given data about the percentage of cloud cover, latitude and longitude.

Isobar Map



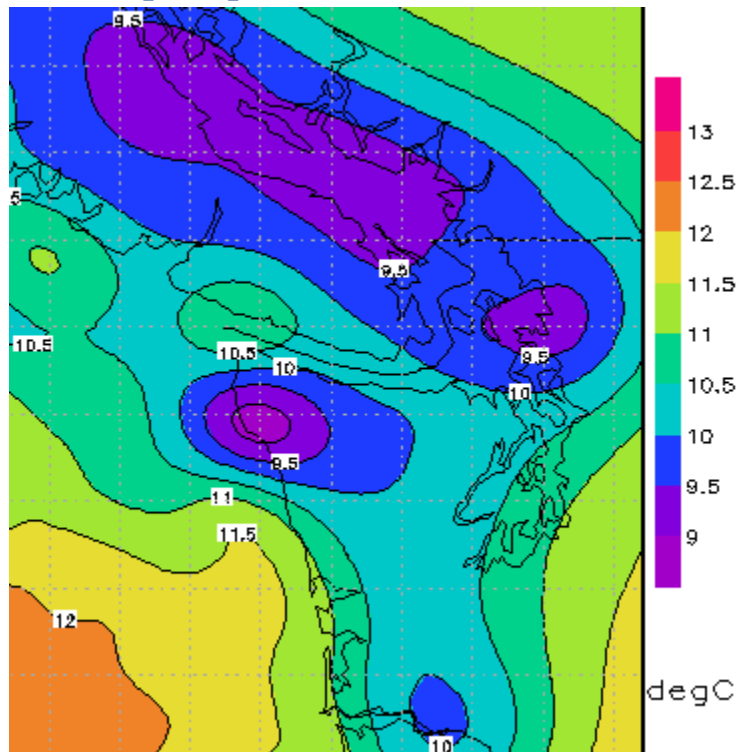
The Isobar Map provides a seven day forecast using different models of pressure isobars, wind direction, wind speed and the colour gradient is used with the scale at the bottom to indicate mm/hr of rain. If you click on any area you will be given data about wind speed, wind direction, pressure, rain, latitude and longitude.

Air Temp Map



The Air Temp Map provides a seven day forecast using different models of air temperature and the colour gradient is used with the scale at the bottom to temperature. If you click on any area you will be given data about air temperature, latitude and longitude.

Sea Temp Map



The Sea Temp Map provides data about the actual sea temperature. It is not a forecast. It is combined with the colour gradient scale on the side to indicate areas of the same temperature.

Forecast Alerts

PredictWind provides you with the ability to program alerts that when specific conditions are met in the forecast an email will be sent to the address you supplied. You can set the alert to repeat daily at specific times of the day or to only notify you at certain days of the week and times of the day.

You can set the alerts for the following based on a min and max setting:

- Wind Speed
- Wind Direction
- Temperature

- Rainfall
- Cloud Cover
- Wave Height
- Wave Direction

The forecast alerts can be sent to your phone or to your login email address. The alerts can be set for up to 5 days in advance.

Settings

Settings allow you to control how information is displayed. The following settings can be changed (defaults are in bold):

- Wind Speed – **Knots**, Beaufort or Meters/Sec
- Wind Direction – **True** or Magnetic
- Temperature – **Celsius** or Fahrenheit
- Rainfall – **Millimetres per Hour** or Inches per Hour
- Wave Height – **Metres** or Feet
- Wave Direction – **True** or Magnetic

Billing

Billing indicates information about what package you have purchased. It will also allow you to upgrade or downgrade your package..

Help Centre

The Help Centre provides you with Frequently Asked Questions and Tips about using the PredictWind application.

Support

Selecting Support allows you to submit a problem or support request to PredictWind if you were unable to find the information you needed in the Help Centre.

Log Out

If you want to Log Out of PredictWind, select this option. Please note, there is no reason to require logging out. You are allowed to use your license on multiple devices such as the website, your tablet and smartphone at the same time.

Predicting Severe Weather

By using the combination of CAPE Maps, Rain Maps and Gust Maps you can find areas of severe potential weather conditions.

CAPE Maps are used by meteorologists to understand the potential for thunderstorms and how severe those thunderstorms might be if they occur. CAPE stands for Convective Available Potential Energy and basically is the amount of fuel available for a developing thunderstorm. More specifically, it describes the instability of the atmosphere and provides an approximation of the updraft strength within a thunderstorm.

The standard unit of measurement for CAPE Maps is Joules per Kilogram. A value of 2500+ J/kg's is considered ample energy for strong updrafts and thunderstorms, should they develop.

Severe thunderstorms require high CAPE values and the higher the CAPE values the higher the chance of thunderstorms developing.

Gusts are sudden, brief increases in wind speed. According to weather observers, gusts are when wind speeds reach at least 16 knots and the variation between the peaks and lulls is at least 9 knots. The duration of a gust is at least 20 seconds.

Gusts are when damage can occur and can make boat handling much more difficult. Solid high winds are actually much easier to handle and safer than gusts. In planning your sail, it is advisable to check the gust map to determine the severity of gusts you will experience.

Rain squalls can also affect the wind strength dramatically. Rain squall clouds will push air down to the surface and so if the cloud was directly upwind of you, you will experience increased wind speed before it passes overhead and then a decrease in wind speed after it passes.

By viewing the Rain Maps you will be able to see areas of potential squalls which allows you to either be prepared or to avoid in your route planning.

As you can see, proper route planning should include a review of the CAPE Map, Rain Map and Gust Map forecast along your route to determine potential encounters to adverse weather conditions.