VegMachine Quick Guide

Access VegMachine for free at http://vegmachine.net/

VegMachine is an online tool to summarise decades of satellite data over Australia quickly and easily. It is available as a mobile app and for desktop use. With VegMachine you can:

- view satellite datasets of vegetation cover from 1988 onwards
- measure vegetation cover, fire and rainfall data through time for user-defined areas
- generate comprehensive ground cover monitoring reports for Queensland

Key Functions

Display

The map window displays a particular dataset, selected via clicking the 'Display' tab and choosing one of the dataset options. You can then:

- Explore back and forth through time using the time slider.
- Change the transparency of the satellite dataset using the transparency slider.
- Access the legend via clicking the legend button.
- View property boundaries via the Vector Overlays option (Queensland only)
- Use Map Tools to search for a location or import your own spatial data

Chart

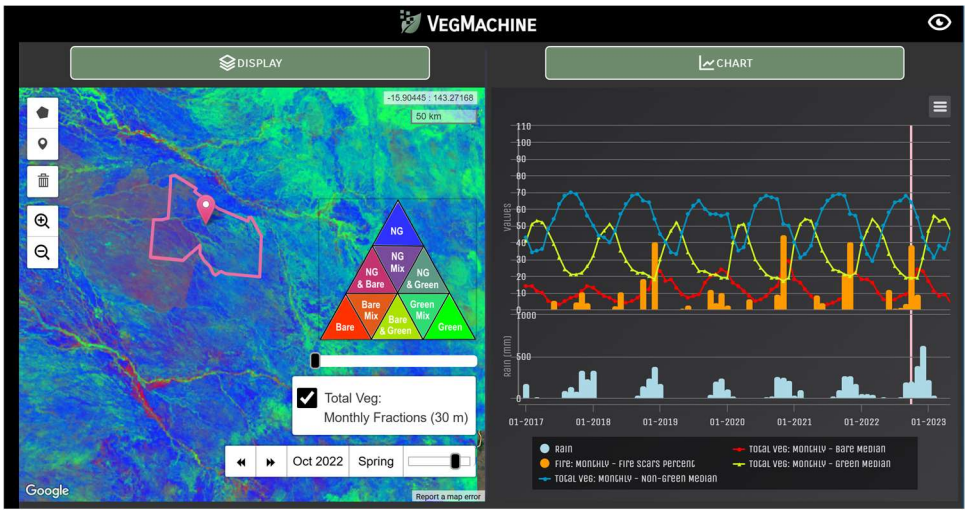
You can summarise satellite data over a particular area using the 'Chart' tab.

Create and select an area of interest

- Create a polygon either by uploading a spatial file (via Map Tools), using the polygon tool to manually draw an area, or the marker tool to make 1 ha circle around a point.
- Select your area of interest by clicking on your chosen polygon. You can select multiple polygons by using the multi-select tool.

Extract and summarise data

- 'Basic' charts show one dataset over time. The 'Combine' option shows data from all selected polygons, while the 'Compare' option allows comparison between two selected polygons.
- 'Advanced' charts allow more customisation but cannot compare between areas.
- Click on the chart legend to turn individual datasets on and off.
- Scroll up and down on the chart to zoom to a particular time period.
- The map display is synced with the chart. Click on a particular datapoint to change the display to the relevant satellite product within the time series.
- Once the chart is made, the underlying data can be downloaded via the chart context menu.



Example of VegMachine map and chart, showing changes in vegetation cover for a property in northern Queensland. In the chart, green vegetation (light green line) shows regular peaks following the summer wet period. As this vegetation dries, the proportion of green vegetation declines and the dry vegetation (blue line) increases. Finally, the proportion of bare ground (red line) increases late in the dry season, often associated with fires (orange bars).

Available datasets

Vegetation

Three main vegetation datasets are available for exploration within VegMachine: Total Veg, Ground Cover and Woody Veg. These datasets are all based on Fractional Cover, which divides each pixel into its proportion of green vegetation, dry vegetation and bare ground.

The best dataset to use will depend on whether you are interested in changes in all vegetation (i.e. Total Veg) or components of the vegetation (i.e. Ground Cover or Woody Vegetation). For both Total Veg and Ground Cover, it is possible to investigate green and dry vegetation separately (Monthly and Seasonal Fractions) or combined (Monthly and Seasonal Total).

Higher spatial resolution (10 m) and temporal resolution (monthly) datasets are only available from 2016 onwards, while 30 m resolution, 3-monthly seasonal datasets are available from 1988. The monthly datasets are best for investigating rapid change over a year, while the 3-monthly seasonal datasets are useful for inter-annual changes over longer periods. Some datasets are only available for Queensland.

Fire scars

This dataset shows burnt areas in Queensland each month from 2017 onwards. This dataset does not show currently active fires, but is useful for managing natural resources, assessing fire hazard and risk, and monitoring impacts over time. Some burnt areas may be missed or mapped later than the month they occurred due to cloud cover or misclassification. Small fires or low intensity burns under tree canopy may also be missed.