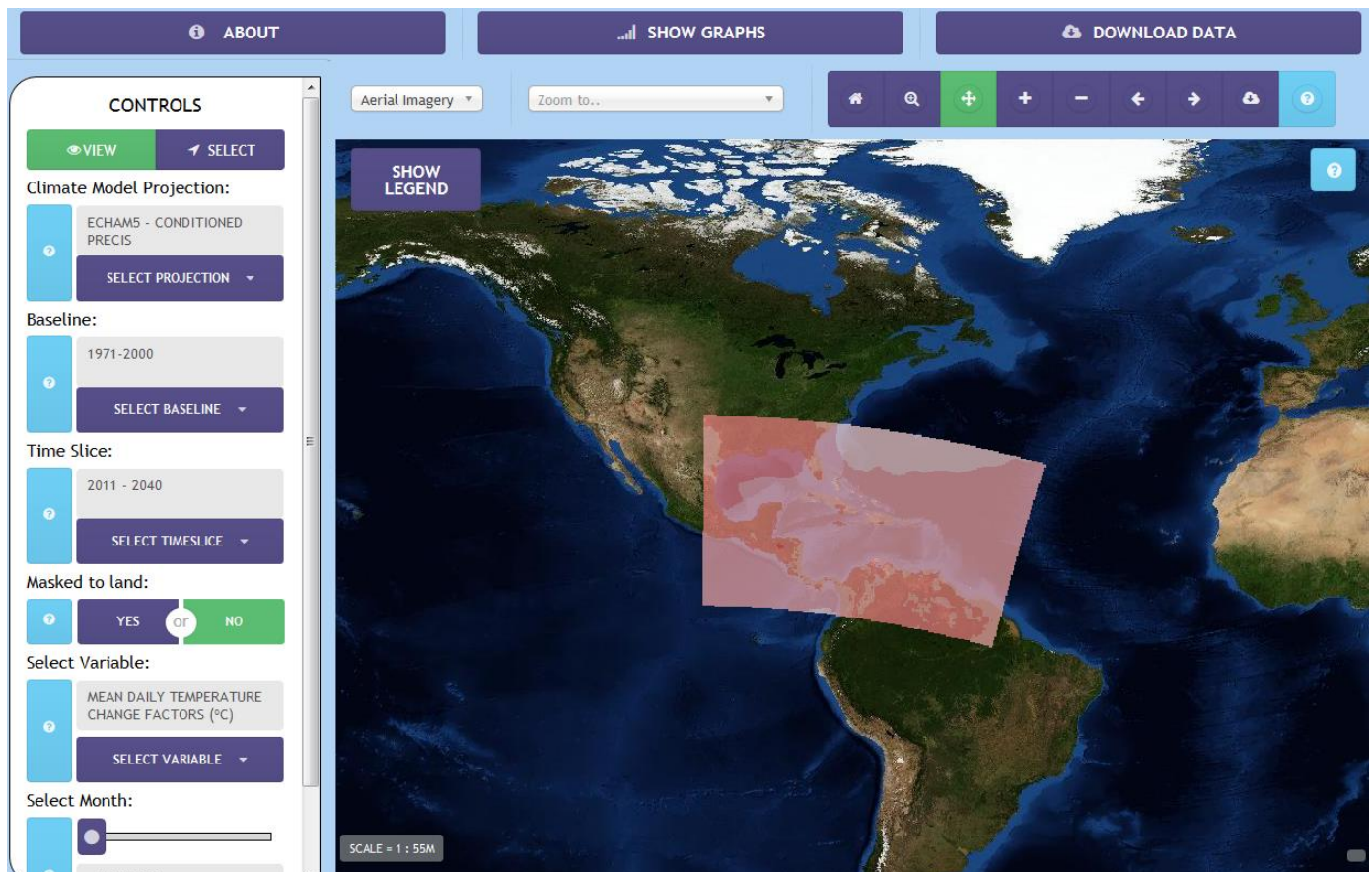


Introduction

The Change Factor tool provides access to projections of the change between a baseline climate and the future climate by calendar month based on Regional Climate Model projections. The Change Factor tool has three components:

- The *Controls Panel* on the left hand side provides access to controls to select variables, time slices, the climate model run and calendar months;
- The *Map Panel* shows a grid coloured in accordance with the average value of a weather variable. The *Map Toolbar* provides tools for interactive zooming, panning and selection of grid cells (see *Map Navigation Help* for details).
- The top button bar provides tools for graphing (see *Graph Tool Help* for details) and downloading data



The Change Factor Viewer

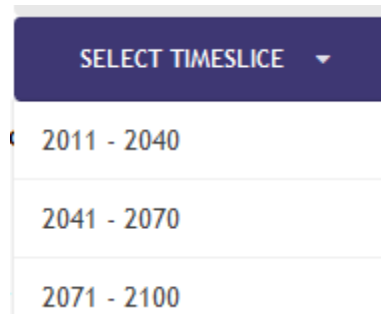
The Controls Panel

The *Controls Panel* has two modes: *View* and *Select*. The *View* mode allows changes to the current map view. The *Select* mode displays current map selections. Green buttons show a currently selected item. Purple buttons show alternative selections or provide access to dropdown selectors.

The main controls provided in *View* mode are:

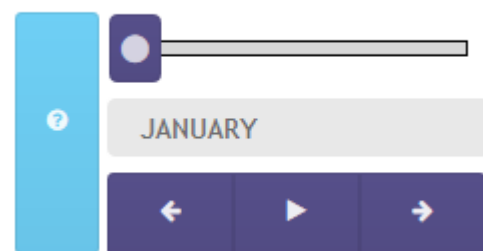
For further information please contact:
www.cariwig.org

1. *Climate Model Projection* – switches the *Map Panel* to display outputs from different climate model runs. Currently available models runs are conditioned by the GCMs
 - a. ECHAM5
 - b. HADCM3Q0
2. The *Baseline Selector* provides a dropdown to select the baseline time-period. This defines the baselin agains which future climate change is measured. There are two options available: 1971 – 2000 or 1981 - 2010.
3. The *Time Slice Selector* is a dropdown menu of available *future* time slices. Click the *SELECT TIME SLICE* button and select the period you wish to display. The label on the control panel will display your current choice.



4. The Masked to Land selector restricts the display of the Change Factor to land areas. Please note that this is at coarse resolution and that smaller islands may be omitted.
5. The *Variable* selector is a dropdown menu of the available weather variables. To activate the menu press the *Select Variable* button and choose the variable you wish displayed. The currently selected variable will be displayed.
6. The *Month* selector provides the means to display change factors for different calendar months. can be chosen using the slider or by stepping through the months using the arrow controls. An animation of all months can be started by pressing the *play* button ‘▶’ on the *Select Month* control. To pause the animation, press the pause button, ‘⏸’.

Select Month:

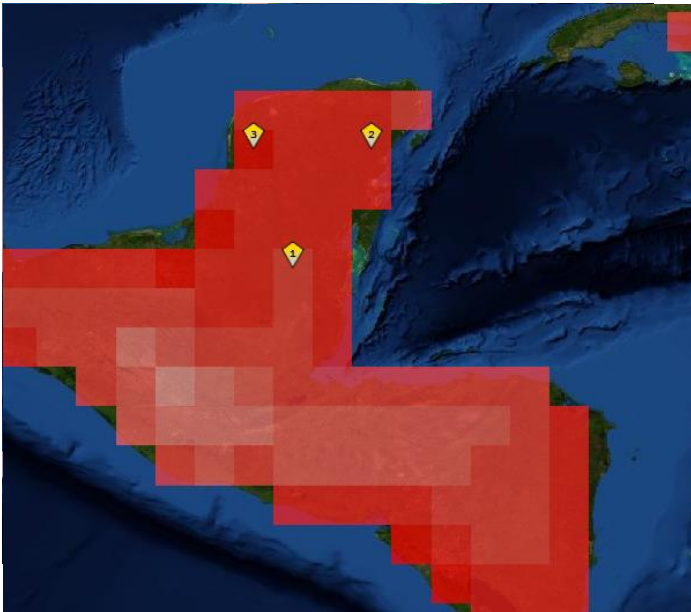


Viewing Data

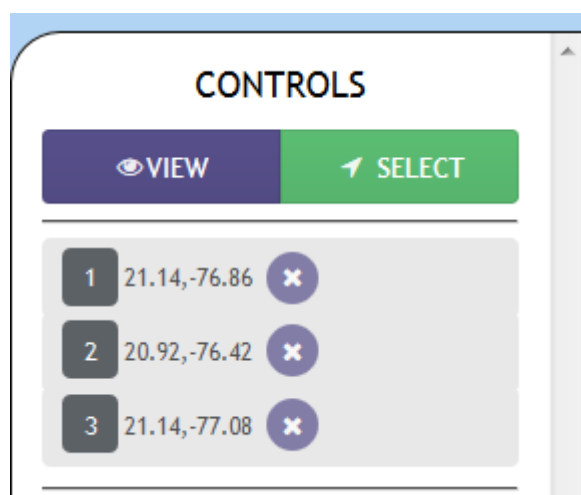
The current data layer is displayed in the *Map Panel*. The map can be zoomed and panned to investigate the cange factor values (see *Map Panel Help* pages for details). Data is coloured according to its value. The value range can be seen in the legend in the map window. To see values associated with individual grid squares, hover the mouse over a grid and the value underneath the mouse pointer will be displayed in a small popup.

Selecting Grid Cells

To create graphs or download data, one or more grid cells should first be selected. It may be helpful to zoom or pan the map to pinpoint your chosen location(s). To select a grid cell click on any of the coloured squares on the map. A pin will be displayed on the map to show your selection. The number of the each selection is shown in the pin.



When a grid is selected the *Controls Panel* will switch to the *Select* mode (clicking the *View* button in the *Controls Panel* will revert to the *View* mode). The *Select* mode lists currently selected grid cells. A selection may be removed by clicking the 'x' next to the Note that switching between land-masked and non land-masked view will delete the current selection(s).



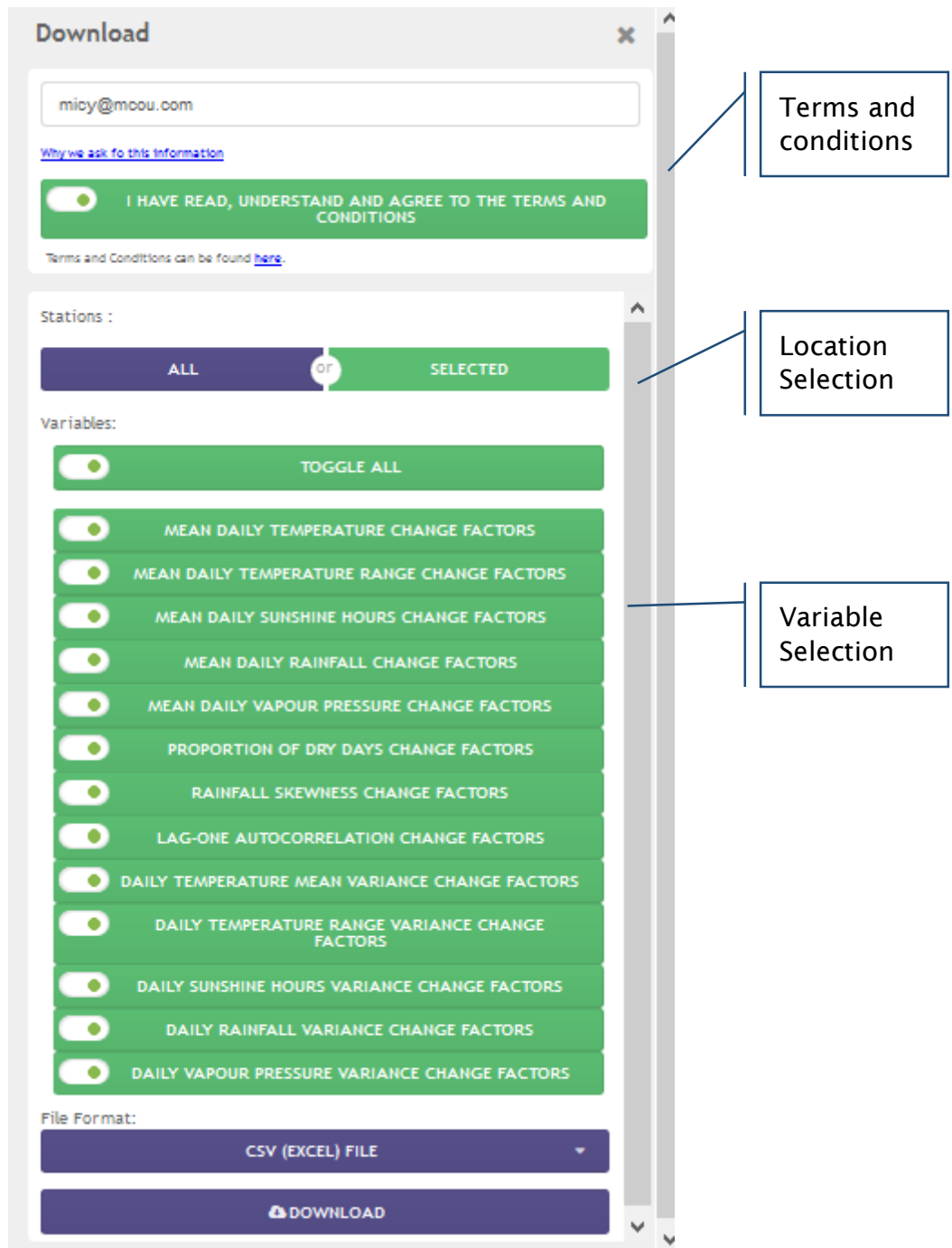
The *Controls Panel* in *Select* mode showing a list of current map selections

Once one or more locations are selected, the graphing and download-data tools are activated.

Downloading Data

To download change factor data press the *Download Data* button on the top button bar.

- A *Download* popup-window will then appear. Provide an email address (if one is not already entered) and agree to the terms and conditions;
- Select the locations you wish to download. If you have selected a cell or cells on the map the *SELECTED* option will be the default (this option is not available if no selection has been made). To change the selection to all stations click the *ALL* button.
- Select the variables you wish to download. By default all variables are selected but the selection can be modified by selecting or deselecting from the variable list. To deselect-all or to select-all click the *ALL* button at the top of the list of variables.



The screenshot shows a 'Download' popup window with the following elements:

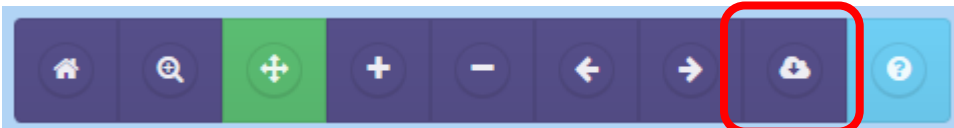
- Terms and conditions:** An email input field containing 'micy@moou.com', a link 'Why we ask for this information', a green toggle switch that is turned on, and the text 'I HAVE READ, UNDERSTAND AND AGREE TO THE TERMS AND CONDITIONS'. Below this is a link 'Terms and Conditions can be found here.'
- Location Selection:** A section titled 'Stations:' with two buttons: 'ALL' (purple) and 'SELECTED' (green), separated by an 'OR' indicator.
- Variable Selection:** A section titled 'Variables:' with a 'TOGGLE ALL' button and a list of 14 variables, each with a green toggle switch that is turned on:
 - MEAN DAILY TEMPERATURE CHANGE FACTORS
 - MEAN DAILY TEMPERATURE RANGE CHANGE FACTORS
 - MEAN DAILY SUNSHINE HOURS CHANGE FACTORS
 - MEAN DAILY RAINFALL CHANGE FACTORS
 - MEAN DAILY VAPOUR PRESSURE CHANGE FACTORS
 - PROPORTION OF DRY DAYS CHANGE FACTORS
 - RAINFALL SKEWNESS CHANGE FACTORS
 - LAG-ONE AUTOCORRELATION CHANGE FACTORS
 - DAILY TEMPERATURE MEAN VARIANCE CHANGE FACTORS
 - DAILY TEMPERATURE RANGE VARIANCE CHANGE FACTORS
 - DAILY SUNSHINE HOURS VARIANCE CHANGE FACTORS
 - DAILY RAINFALL VARIANCE CHANGE FACTORS
 - DAILY VAPOUR PRESSURE VARIANCE CHANGE FACTORS
- File Format:** A dropdown menu currently set to 'CSV (EXCEL) FILE'.
- Download:** A large purple button with a download icon and the text 'DOWNLOAD'.

Callouts on the right side of the image point to the 'Terms and conditions' section, the 'Location Selection' buttons, and the 'Variable Selection' list.

- Select the output format by clicking the dropdown. The output formats available for Change Factor are:
 - *Comma Separated Values* (a text based format compatible with Microsoft Excel);
 - *ShapeFile* (a GIS format that includes the location and areas of the cell(s) along with associated climate data in an attribute table).
 - *GeoTiff* (*Image based raster data sets suitable for analysis in GIS packages*)
- Click the *Download* button to begin the download process (depending on the resolution of your monitor you may need to scroll down the download popup to see the *Download* button).
- Preparation of the download will take a few moments depending on the amount of data and format selected. Once the files are ready a second *Download* button will be provided. To download the data click this button.
- The data download consists of a zipped archive that contains:
 - The data in the format selected;
 - A copy of the license information;
 - A copy of the metadata information.
- Unzip the downloaded archive to a location on your computer to access the contents.
- The download popup window may be dismissed by clicking the 'x' in the top right hand corner.

Downloading map images

To download an image of the current map for use in a report or document, use the *Download Map* button on the *Map Toolbar*. A jpeg format image file of the current map view will be prepared for download. When the files have been created, press the *Download* button



Exiting the Change Factor Tool

To exit the *Change Factor Tool* use the back button on your browser or click the navigation links at the top of the *Data Viewer* page.

