

Wild fire case study objectives

- This case study focuses on the analysis of the climate information required in areas where forest fires represent a major hazard through organization of interaction strategies (mainly workshops) with relevant stakeholders.

Workshop objectives

- To present the CLIM-RUN project and the concept of climate services
- To provide an overview of state-of-the-art in climate modelling, observations and impacts analysis on forest fires
- To better understand who are the climate services stakeholders
- To begin to define what they need/want from climate services

The 'who' and the 'what'

- Who are the climate services stakeholders?
 - Short term fire planning
 - Long term fire policy making
 - Educational stakeholders
- What do you need/want from climate services?
 - Specific data / calculations
 - Web-based analysis tools
 - Guidance and training tools

Forecasts of fire risk on an operational basis for the Greek territory

The fire risk forecast based on FWI values can be found at

[http://
cirrus.meteo.noa.
gr/forecast/
bolam/index.htm](http://cirrus.meteo.noa.gr/forecast/bolam/index.htm)

Under
Forest Fires -
CFWI

National Observatory of Athens
INSTITUTE FOR ENVIRONMENTAL RESEARCH - WEATHER FORECASTS

Navigation menu:
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BOLAM model

AIR TEMPERATURE AT 2 M
METEOROLOGICAL SERVICE OF GREECE

WEATHER FORECASTS ON YOUR MOBILE
Ο καιρός τώρα και σε SMS στο 54045
Using your mobile phone you can get weather forecasts for 200 cities and 25 sea areas over Greece.
Just send an SMS to 54045, following the instructions provided here. (0.3 Euro per sms, VAT included).

WEATHER FORECASTS FOR EUROPE
The National Observatory of Athens issues specific weather forecasts for: 500 European cities and 120 sea points in European seas.
You can visit our new web page at: <http://www.eurometeo.gr>
Any comments and/or suggestions are welcome.

FLASH PROJECT
NOA participates in the EU-funded FLASH project, with the aim to observe, analyse and model lightning activity over the Mediterranean. More info about the project is given here.

FORECAST PRODUCTS FOR SEA
NOA distributes wind forecasts in GRIB format, that can be used by special marine software. For subscription information please click here.

ENJOY ATTICA COASTS
NOA issues detailed weather forecasts for 13 beaches over Attica. In order to view these forecasts, first click on the MMS model above, then click on the Attica Coasts button and ...enjoy the sea!

GENERAL INFO
Daily forecasts are issued for Europe, Greece and Athens area by three models: BOLAM, MMS and WRF.
Detailed forecasts are issued for 40 major Greek cities, as well as for selected locations over the Greek seas (sailing forecasts). Forecasts are presented as maps, time-plots, word text and outlook tables. Surface observations over Europe and Greece, satellite pictures, satellite winds, soundings as well as lightning data from NOA's ZEUS lightning detection system are also presented.

ABOUT THE MODELS
BOLAM, MMS and WRF models are executed daily at the National Observatory of Athens, using two PC clusters, providing the more detailed weather forecasts available today in Greece. BOLAM model was developed at ISAC-Bologna (Italy). MMS model was developed at the Pennsylvania State University. WRF model is a next generation mesoscale model, designed to serve both

Forecasts of fire risk on an operational basis for the Greek territory

National Observatory of Athens
cirrus.meteo.noa.gr/forecast/bolam/index.htm

NATIONAL OBSERVATORY OF ATHENS
INSTITUTE FOR ENVIRONMENTAL RESEARCH - WEATHER FORECASTS

CANADIAN FIRE WEATHER INDEX

- Day D
- Day D+1
- Day D+2
- Back to main

The Canadian Fire Weather Index (FWI) is a daily meteorological-based index used worldwide to estimate fire danger. FWI components depend on daily noon measurements of dry-bulb temperature, air relative humidity, 10m wind speed and 24 h accumulated precipitation. FWI consists of different components each measuring a different aspect of fire danger: fuel moisture contents of forest fuel with different drying rates, rate of spread, fuel weight consumed and fire intensity.

Although FWI has been developed for Canadian forests, its suitability has been proved for the Mediterranean. The evaluation of the FWI in relation to the forest fires in Greece signifies that as we move further south and further east, i.e. to hotter and drier conditions, higher values of FWI are needed to reach high fire risk conditions: FWI>15 for western and north-western, FWI>30 for central and FWI>45 for eastern and south-eastern areas.

These daily fire danger predictions have been produced in the framework of EU project CLIMRUN (www.climrun.eu) to support stakeholders active in fire prevention policies. More information on this project and its uses of climate information for areas where forest fires represent a major hazard are available from NOA (C. Giannakopoulos: cgiannak@noa.gr)

GrADS: COALA/IGES

Canadian Fire Weather Index valid at : 05/09/2012

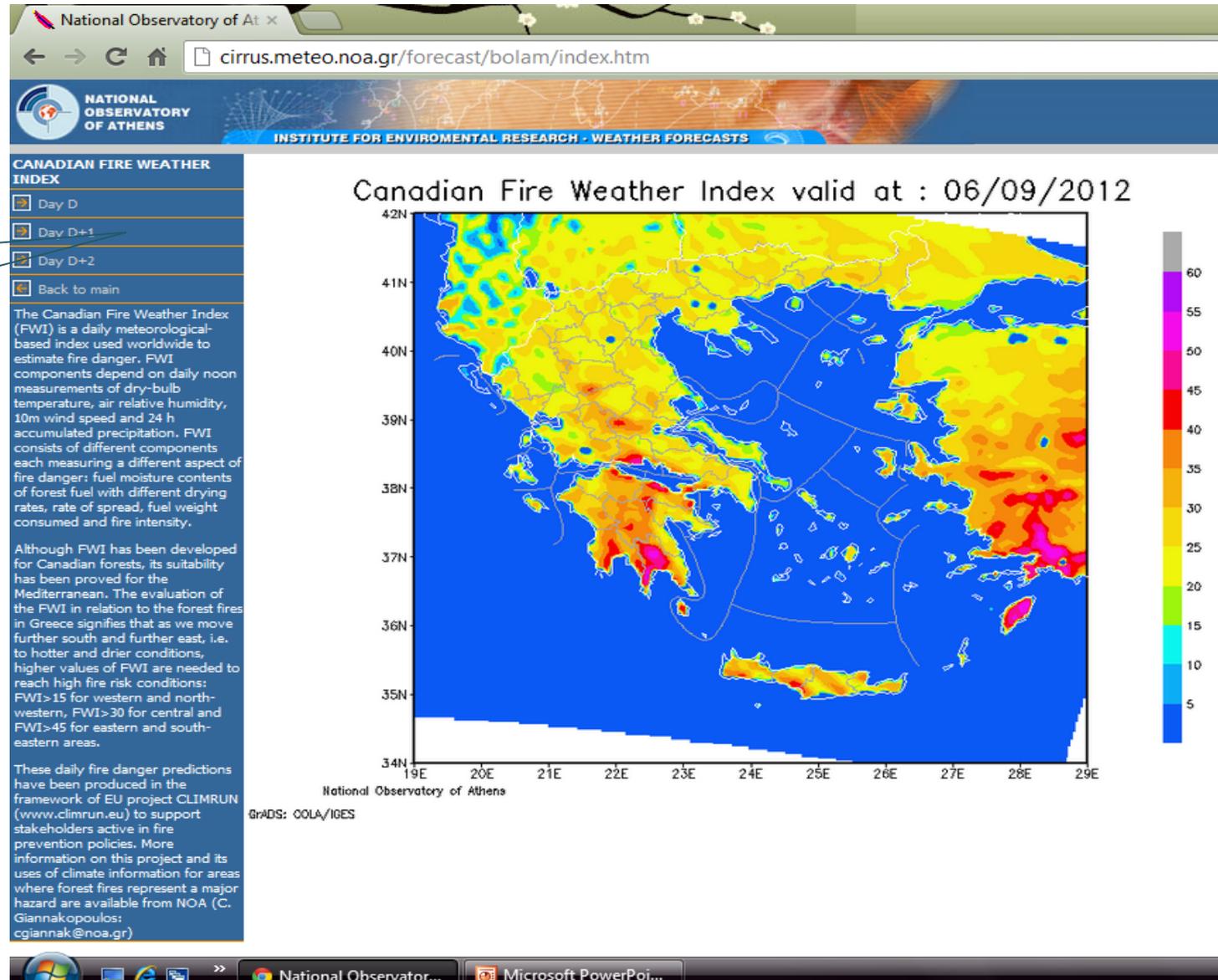
National Observatory of Athens

Description of FWI and of the thresholds set for the Greek territory

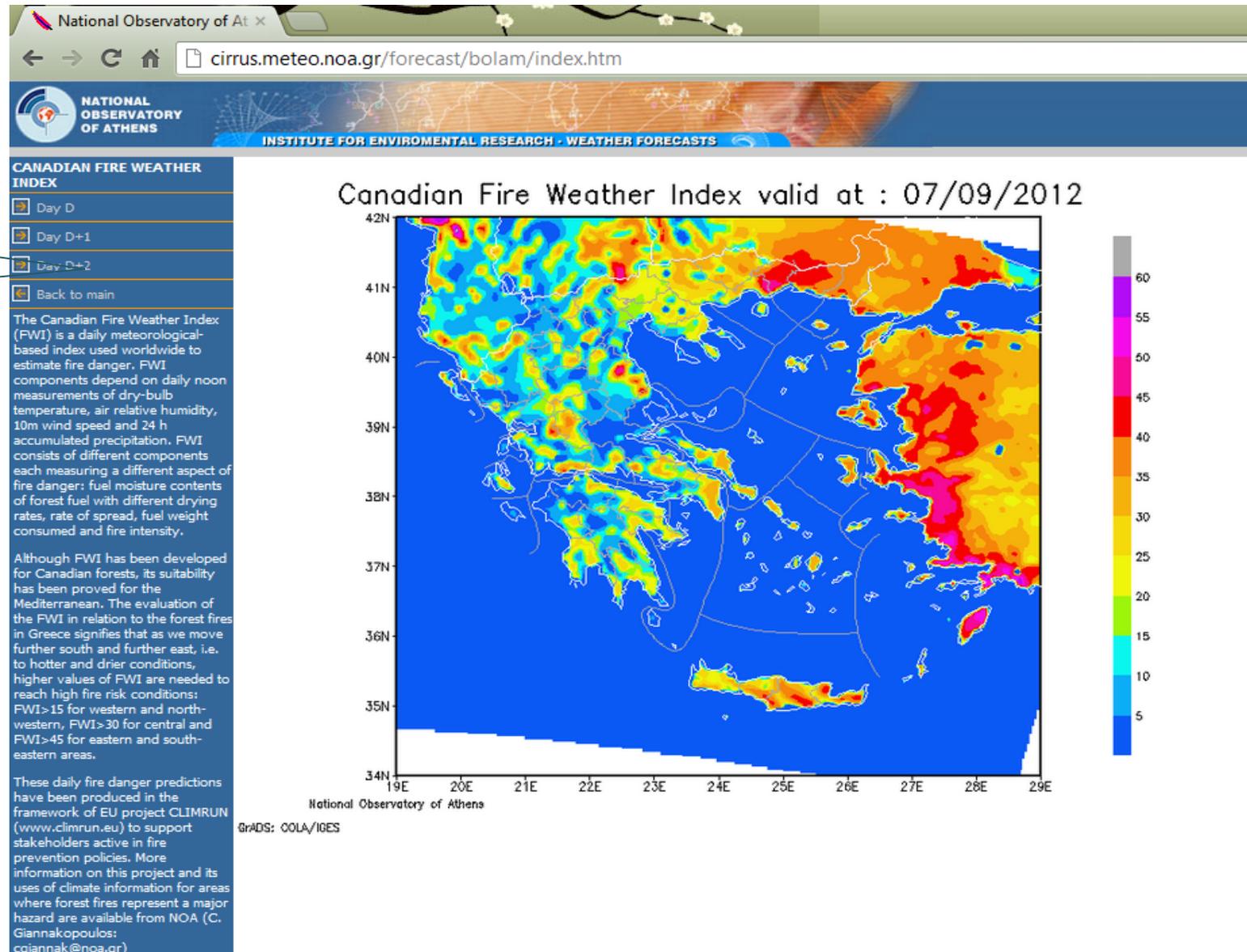
National Observator... Microsoft PowerPoi...

Forecasts of fire risk on an operational basis for the Greek territory

DAY D +1



Forecasts of fire risk on an operational basis for the Greek territory



DAY D
+2

WWF web-tool for future projections of climate extremes for the Greek territory

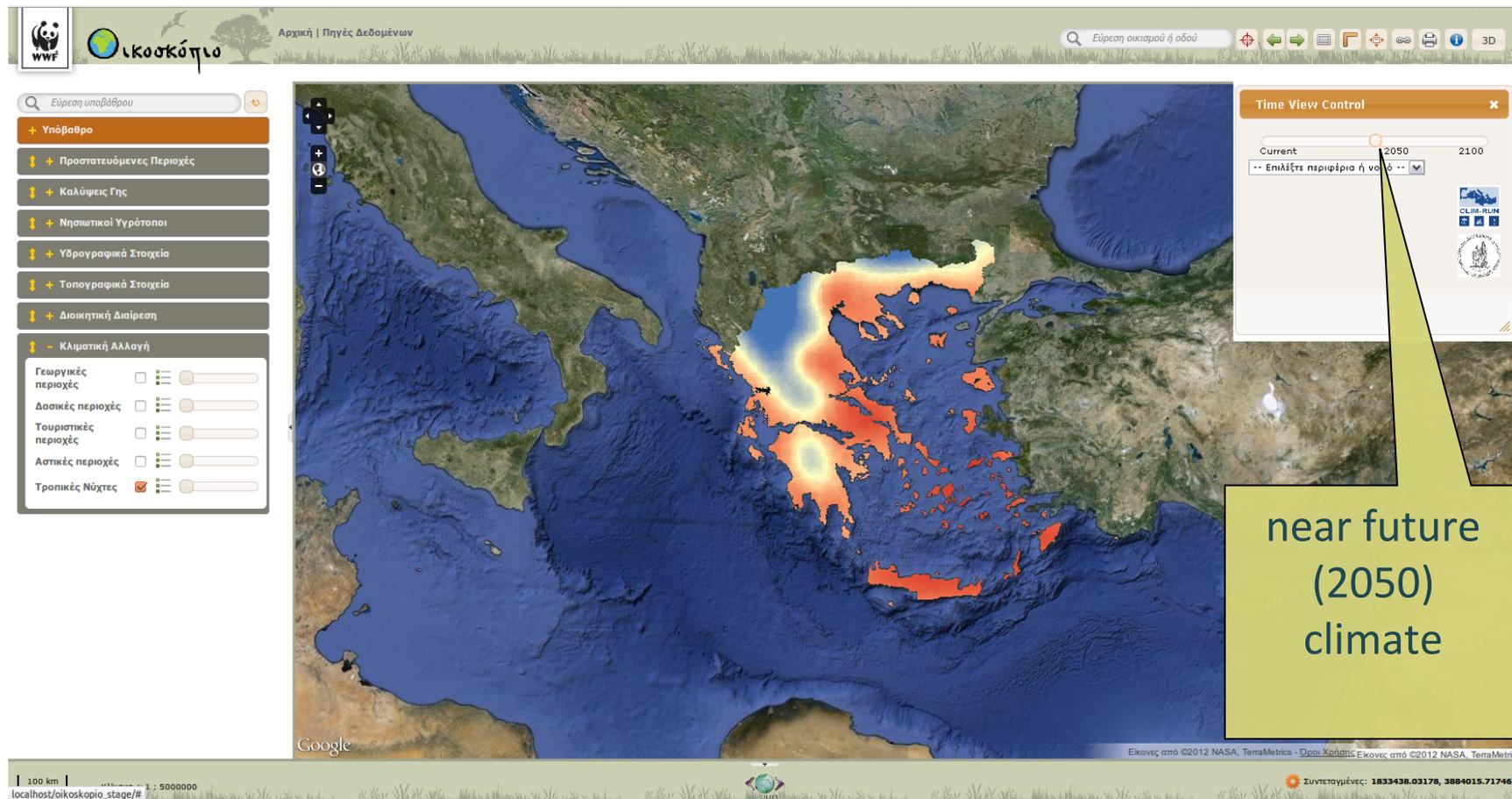
Start Page

The screenshot shows the WWF web-tool interface. At the top left, there is a search bar with the text "Εύρεση υποβάρθρου" and a search icon. Below the search bar is a vertical menu with several categories, each with a plus sign and a downward arrow: "Υπόβαθρο", "Προστατευόμενες Περιοχές", "Καλύψεις Γης", "Νησιωτικοί Υγρότοποι", "Υδρογραφικά Στοιχεία", "Τοπογραφικά Στοιχεία", "Διοικητική Διαίρεση", and "Κλιματική Αλλαγή". The "Κλιματική Αλλαγή" category is expanded, showing a list of climate zones with checkboxes and sliders: "Γεωργικές περιοχές", "Δασικές περιοχές", "Τουριστικές περιοχές", "Αστικές περιοχές", and "Τροπικές περιοχές". A yellow callout box with a pointer to the "Κλιματική Αλλαγή" category is labeled "Climate Change Tab". The main part of the interface is a satellite map of the Mediterranean region, showing the Greek territory and surrounding areas. The map is overlaid with a blue color scheme, likely representing projected climate extremes. At the bottom of the map, there is a Google logo and a copyright notice: "Εικονες από ©2012 NASA, TerraMetrics - Όροι Χρήσης Εικονες από ©2012 NASA, TerraMetrics". In the bottom right corner, there is a small orange icon and the text "Συντεταγμένες: 831827.08281, 4281361.83087".

WWF web-tool for future projections of climate extremes for the Greek territory

The image shows a screenshot of the WWF web-tool interface. The main map displays the Greek territory with a color-coded projection of climate extremes. A callout box labeled "Present Climate" points to the map. The left sidebar contains a search bar and a list of categories: Υπόβαθρο, Προστατευόμενες Περιοχές, Καλύψεις Γης, Νησιωτικοί Υγρότοποι, Υδρογραφικά Στοιχεία, Τοπογραφικά Στοιχεία, Διοικητική Διάρθρωση, and Κλιματική Αλλαγή. Under "Κλιματική Αλλαγή", there are five options: Γεωργικές περιοχές, Δασικές περιοχές, Τουριστικές περιοχές, Αστικές περιοχές, and Τροπικές Νύχτες. A callout box labeled "Tropical Nights" points to the "Τροπικές Νύχτες" option. The right sidebar shows a "Time View Control" panel with a slider for "Current" (2050) and "2100", and a dropdown menu for "Επιλέξτε περιφέρεια ή νομό". The bottom of the interface includes a Google logo and a footer with the text "Εικόνες από ©2012 NASA, TerraMetrics - Όροι Χρήσης Εικόνες από ©2012 NASA, TerraMetrics" and "Συντεταγμένες: 701052.12931, 4448621.68175".

WWF web-tool for future projections of climate extremes for the Greek territory



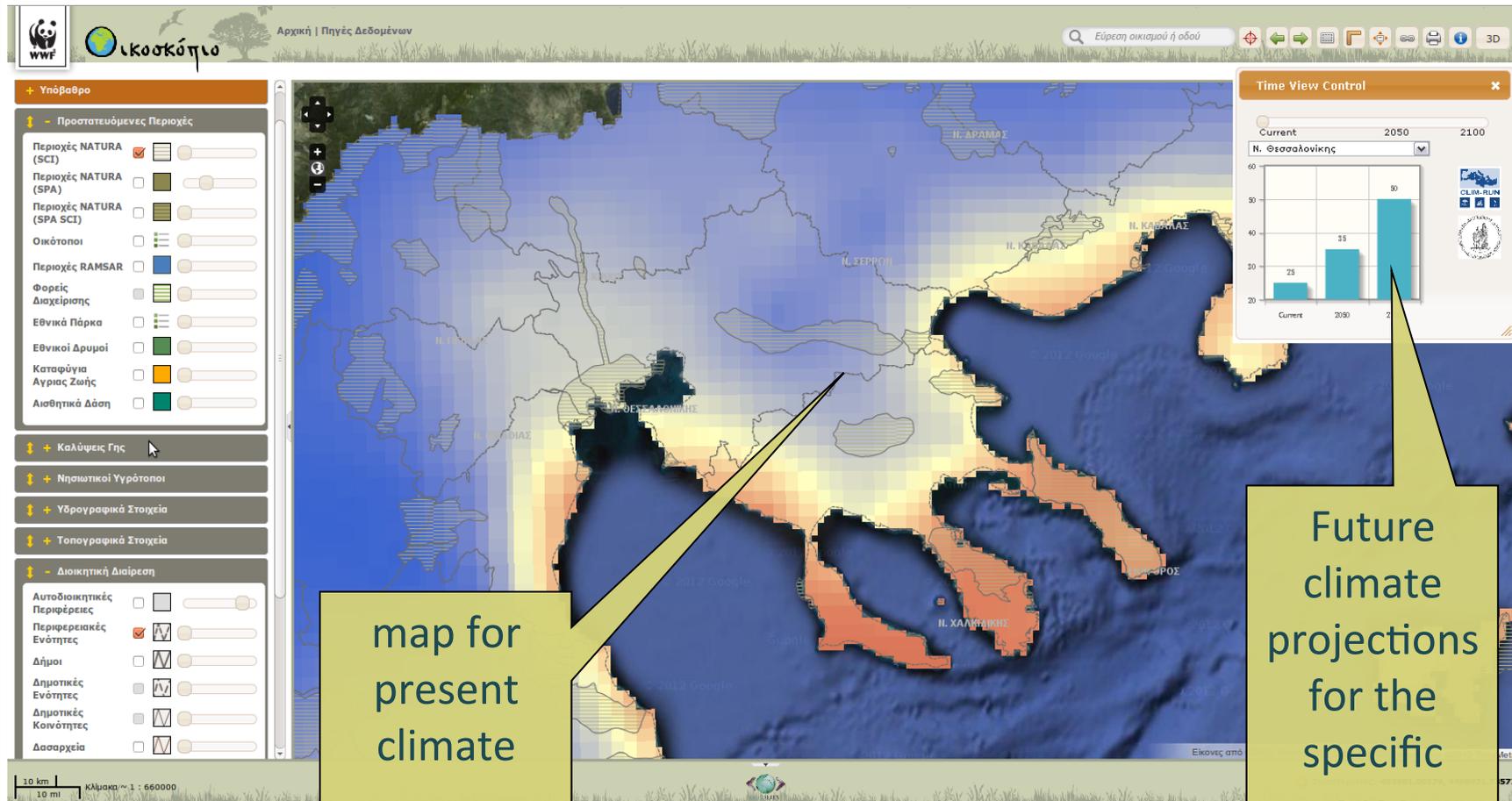
WWF web-tool for future projections of climate extremes for the Greek territory

The screenshot displays the WWF web-tool interface for climate projections. The main map shows the Greek territory with a color-coded overlay representing projected climate extremes for the year 2100. The overlay uses a red-to-yellow color scale, indicating warmer temperatures, particularly over the landmass and in the Aegean Sea region. The interface includes a search bar at the top left, a navigation menu on the left side with categories like 'Υπόβαθρο', 'Προστατευόμενες Περιοχές', and 'Κλιματική Αλλαγή', and a 'Time View Control' panel on the right. The 'Time View Control' panel shows 'Current' and '2100' options, with a dropdown menu set to 'Επιλέξτε περιφέρεια ή νομό'. A callout box with a green background and black border points to the 2100 projection, containing the text 'remote future (2100) climate'. The bottom of the interface shows a scale bar (100 km), a coordinate system (5000000), and a Google logo.

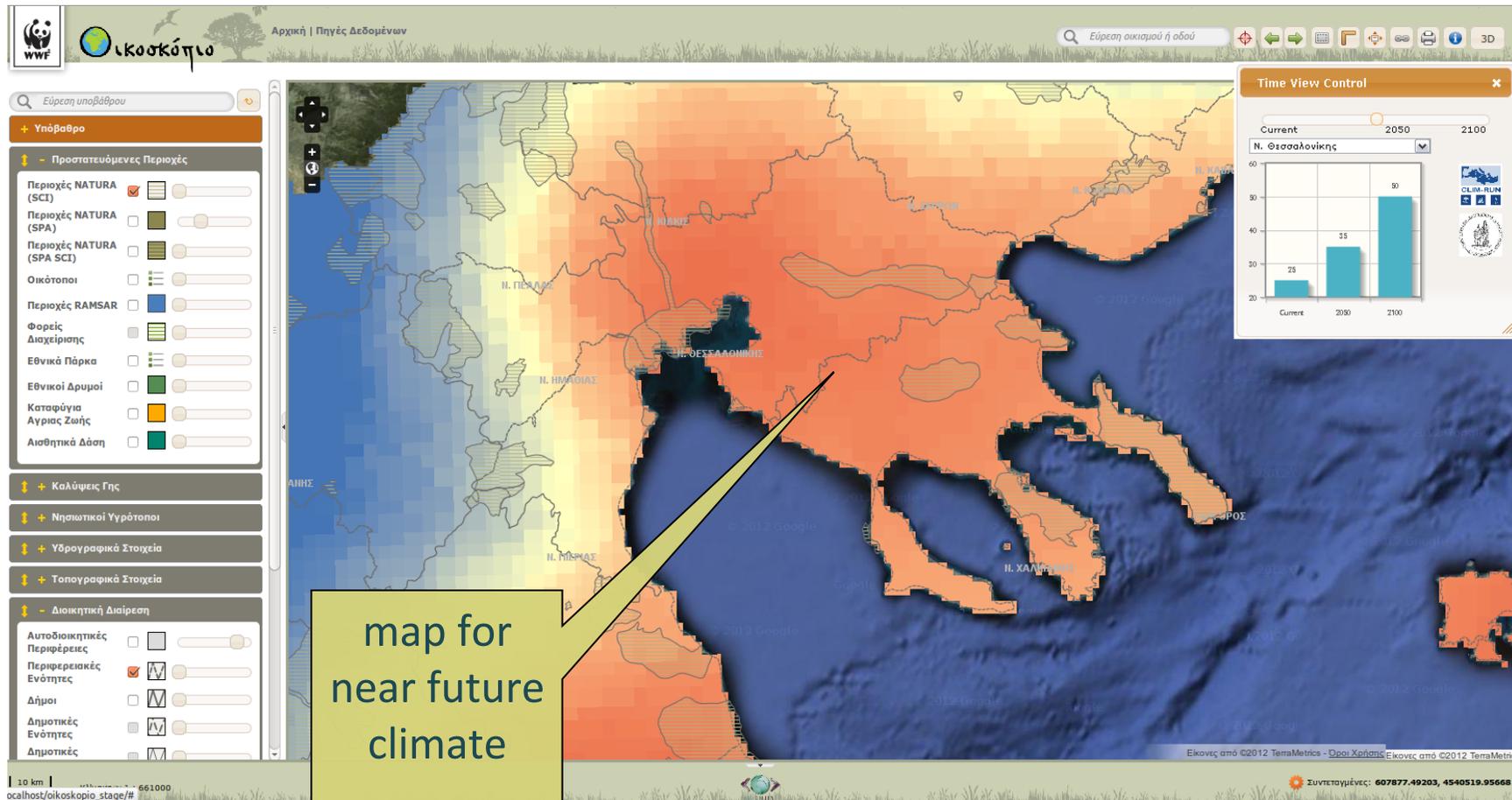
WWF web-tool for future projections of climate extremes for the Greek territory

The screenshot displays the WWF web-tool interface for climate projections. The top navigation bar includes the WWF logo, the title "οικοσκόπιο", and the text "Αρχική | Πηγές Δεδομένων". A search bar contains the text "Εύρεση οικισμού ή οδοί". The left sidebar features a search bar and several filter categories: "Υπόβαθρο", "Προστατευόμενες Περιοχές", "Καλύψεις Γης", "Νησιωτικοί Υγρότοποι", "Υδρογραφικά Στοιχεία", "Τοπογραφικά Στοιχεία", "Διοικητική Διάρθρωση", and "Κλιματική Αλλαγή". The "Κλιματική Αλλαγή" section includes checkboxes and sliders for "Γεωργικές περιοχές", "Δασικές περιοχές", "Τουριστικές περιοχές", "Αστικές περιοχές", and "Τροπικές Νύχτες". The central map shows a 3D topographic view of Greece with a color-coded overlay representing climate extremes. The right panel, titled "Time View Control", shows a timeline from "Current" to "2100" and a list of regions, with "Κεντρική & Δυτική Μακεδονία" selected. A callout box with a green background and white text points to the map, stating "Specific areas of the Greek territory". The bottom of the interface includes a scale bar (100 km), a URL "localhost/oikoskopio_stage/#", and a unique identifier "Συντεταγμένες: 701052.12931, 4448621.68175".

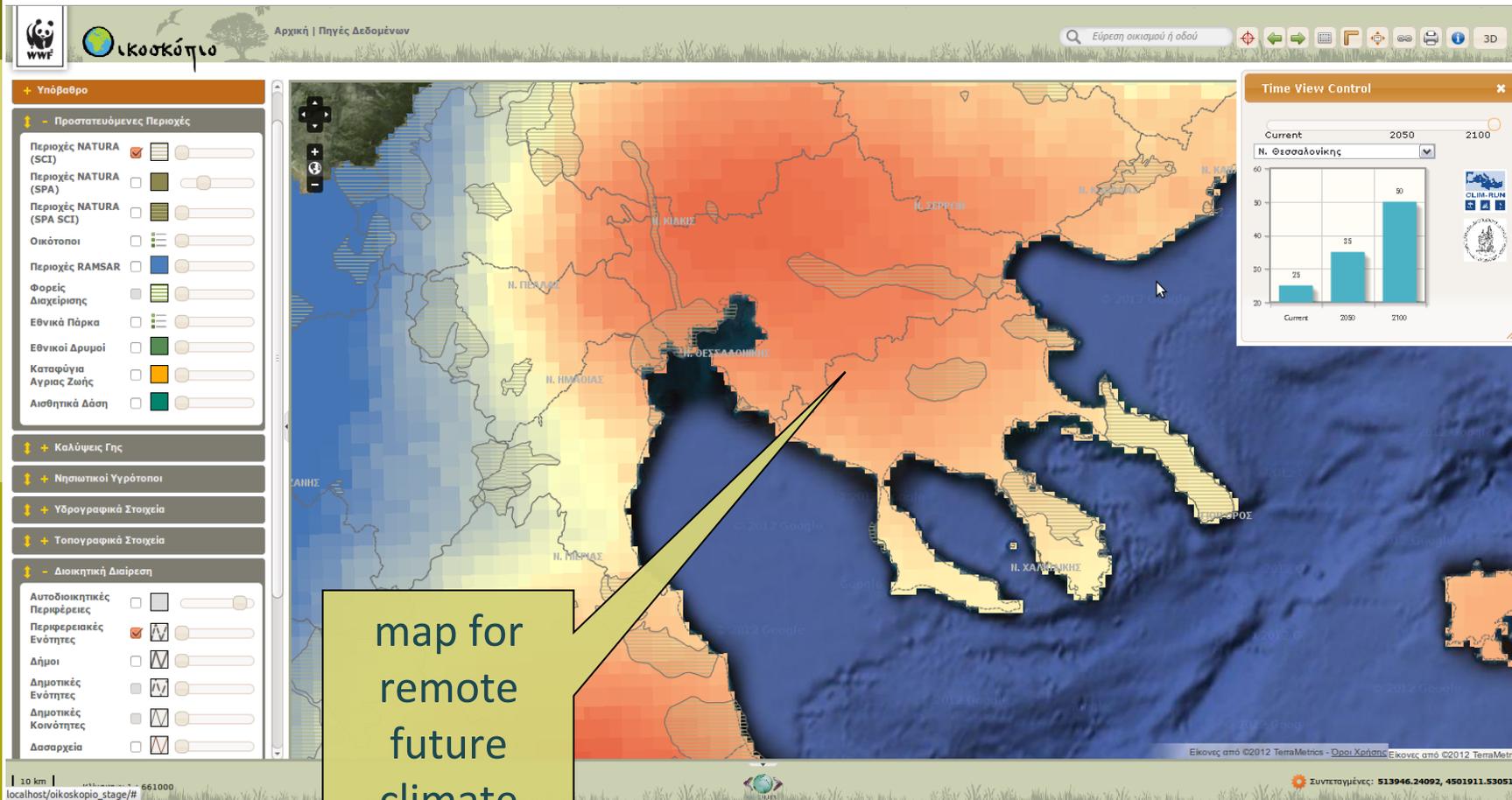
WWF web-tool for future projections of climate extremes for the Greek territory



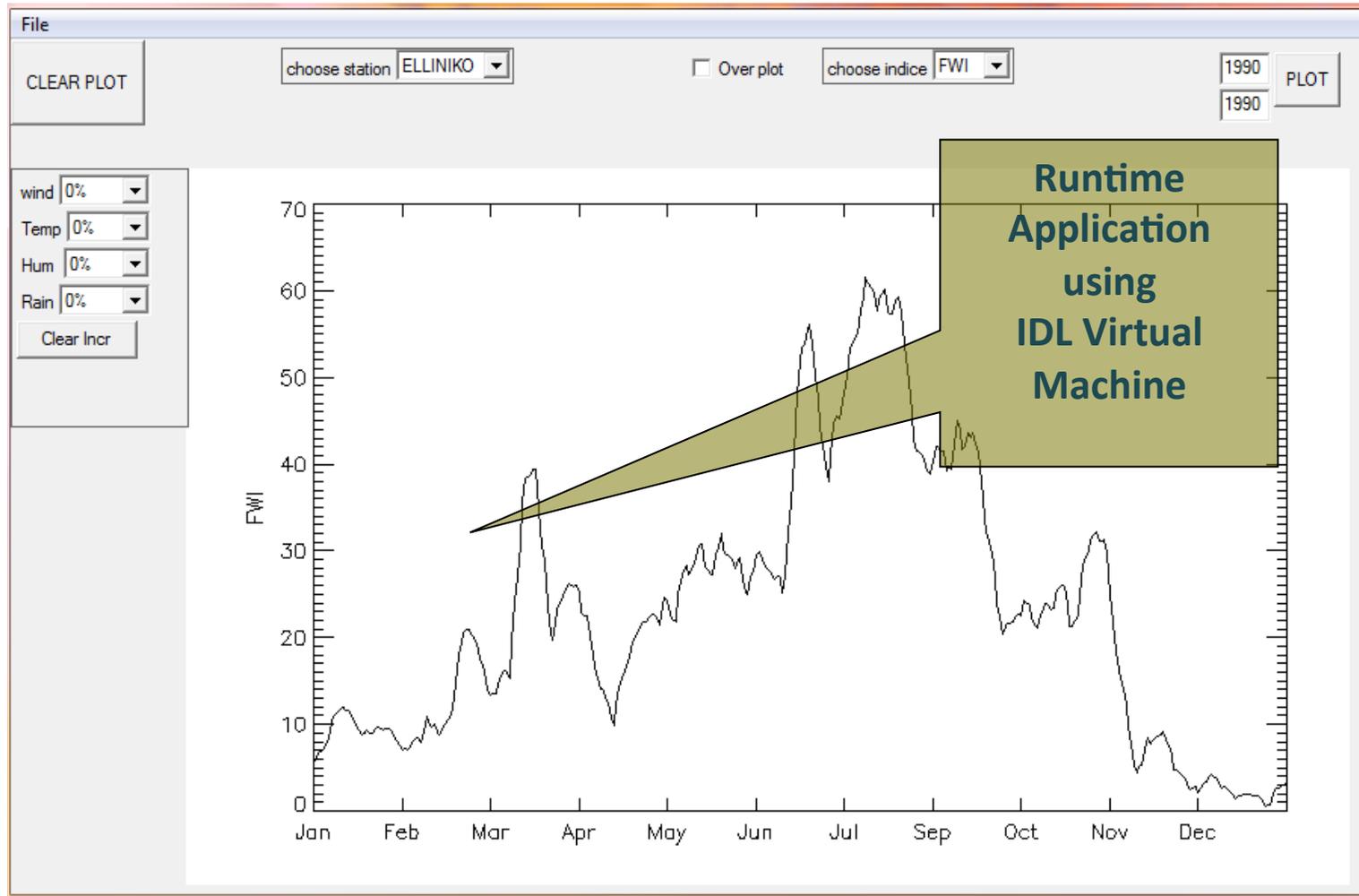
WWF web-tool for future projections of climate extremes for the Greek territory



WWF web-tool for future projections of climate extremes for the Greek territory

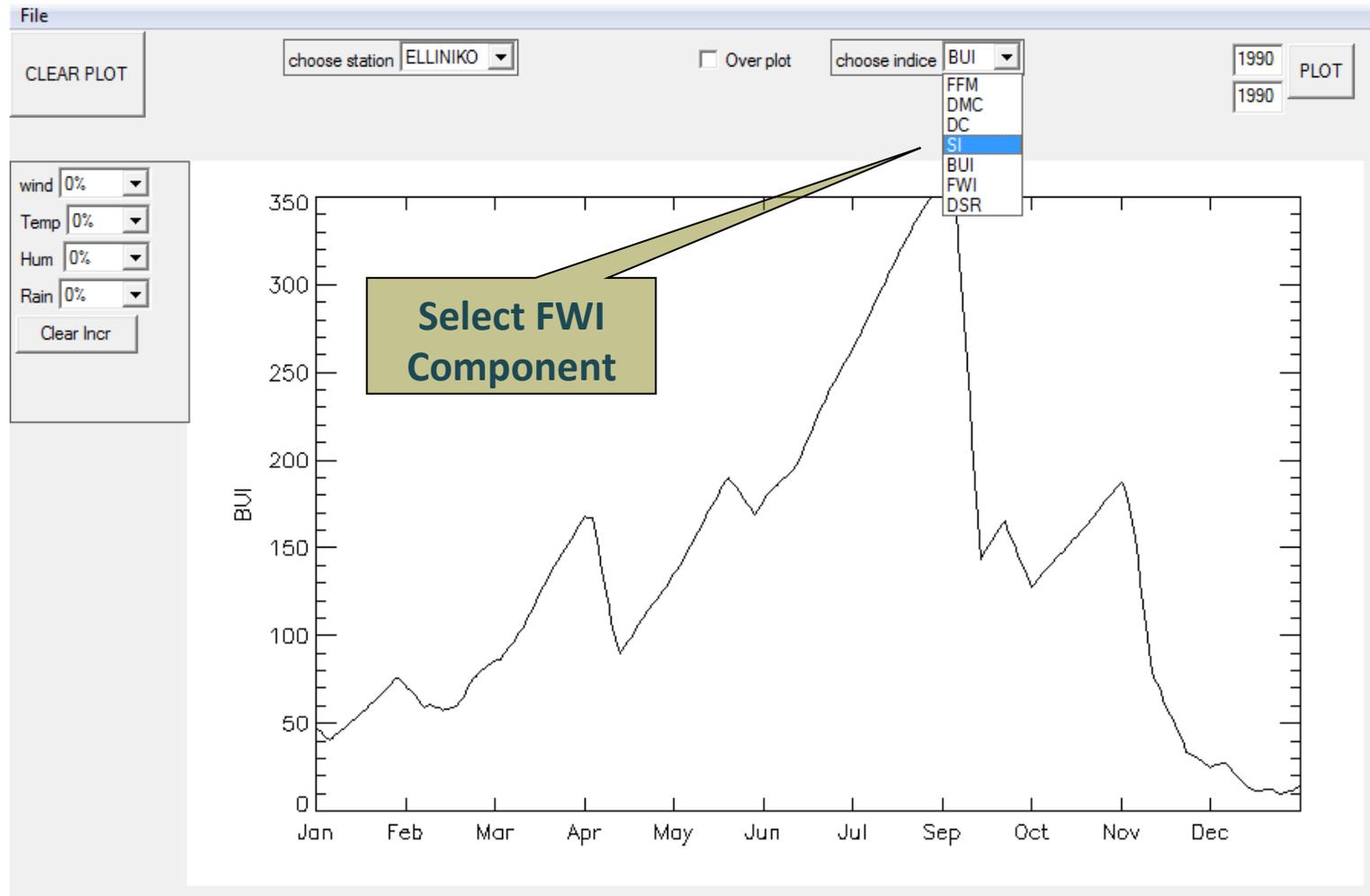


Educational Software for Fire Weather Index Using Station Data

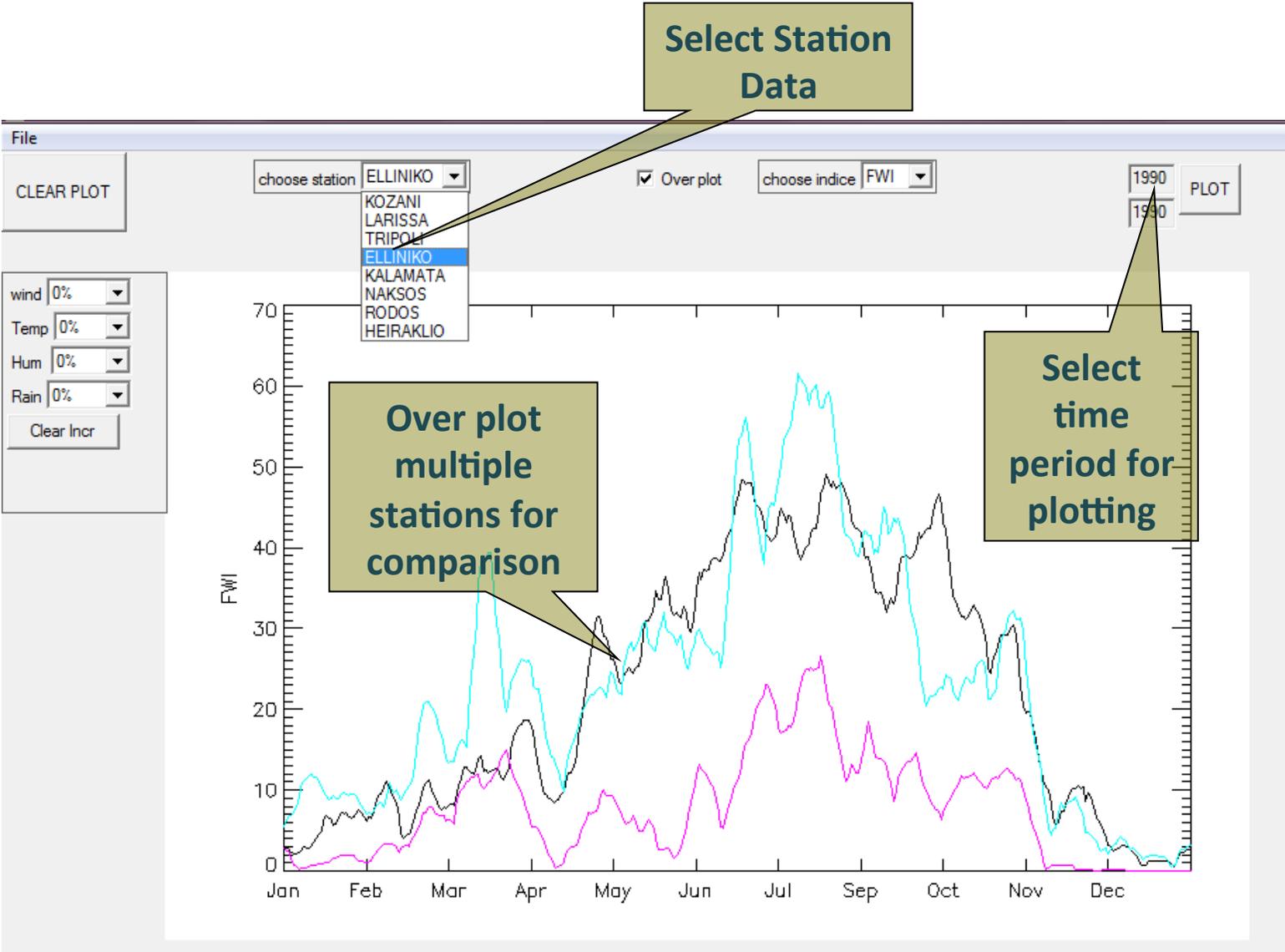


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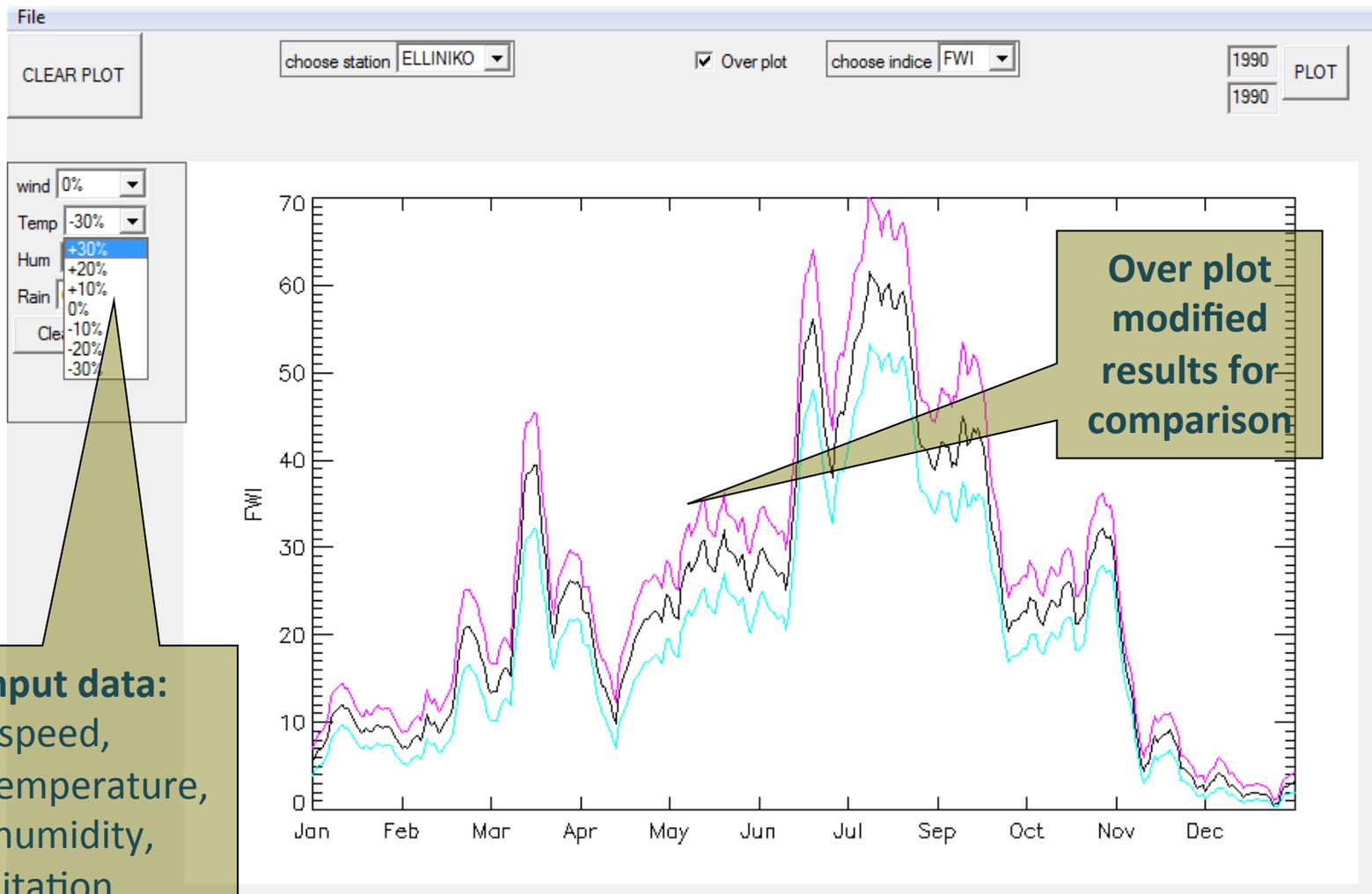
Educational Software for Fire Weather Index Using Station Data



Educational Software for Fire Weather Index Using Station Data



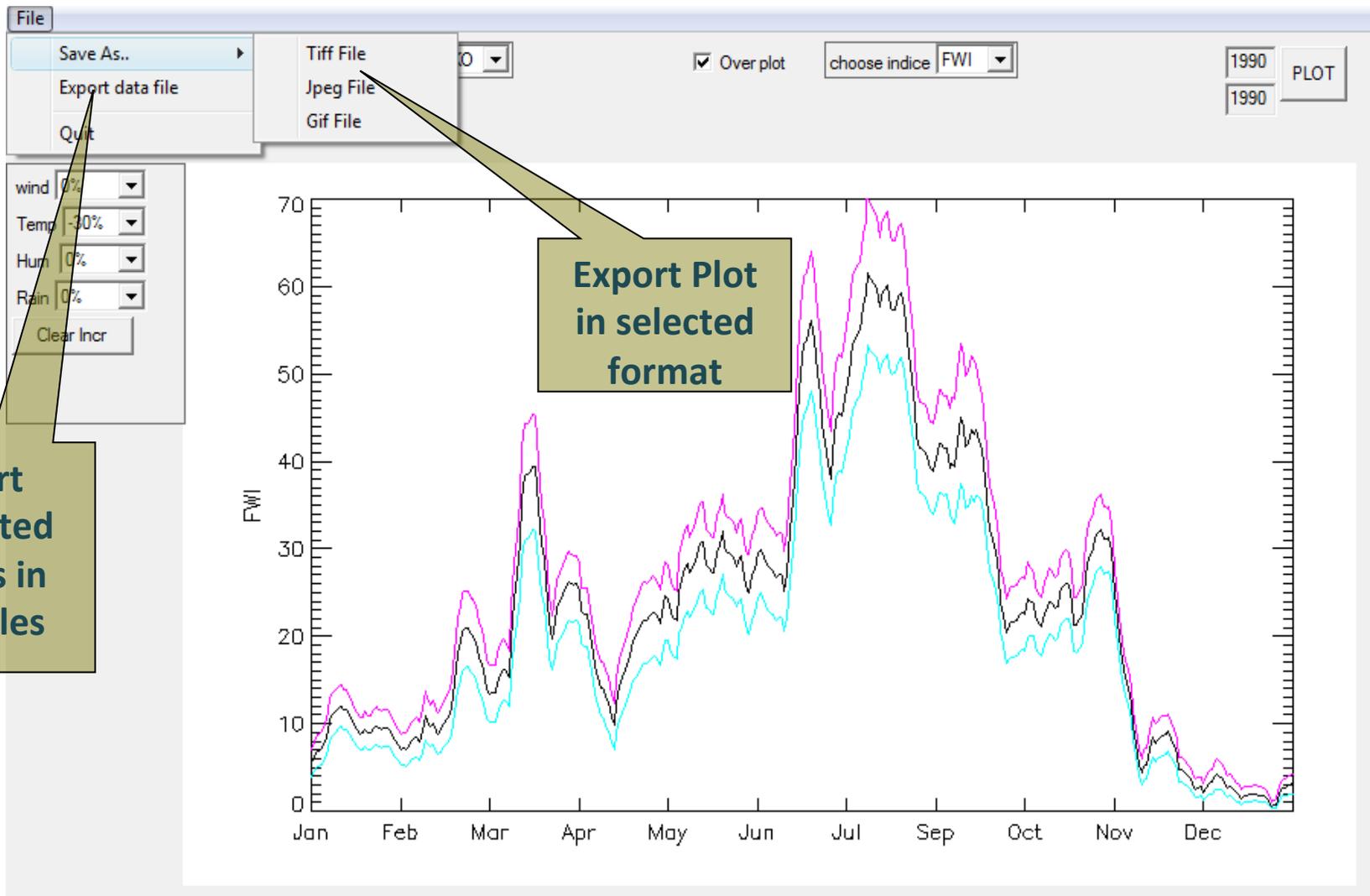
Educational Software for Fire Weather Index Using Station Data



Modify input data:
Wind speed,
maximum temperature,
relative humidity,
precipitation

Educational Software for Fire Weather Index

Using Station Data

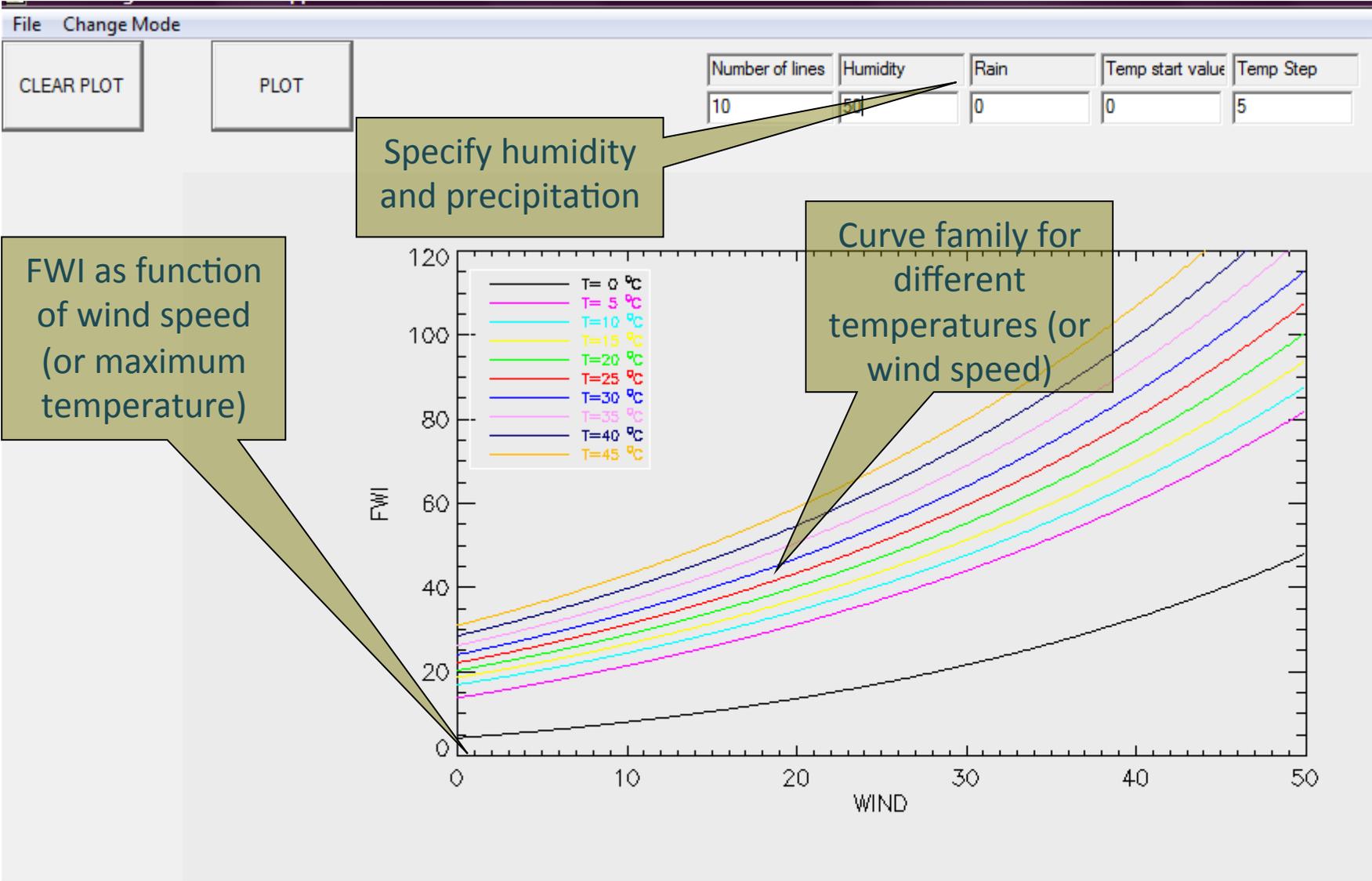


Export calculated indices in data files

Export Plot in selected format

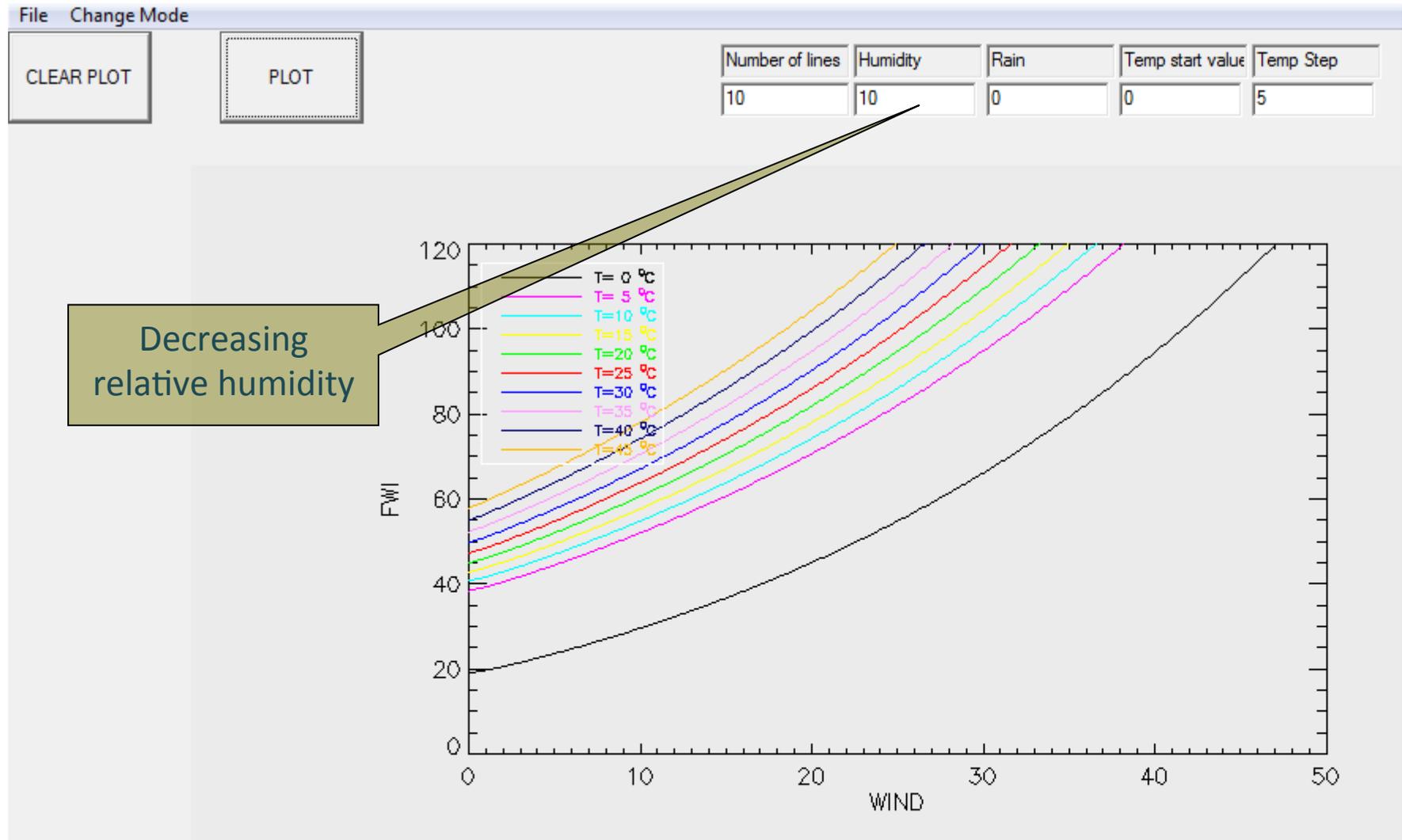
Educational Software for Fire Weather Index

Studying the FWI sensitivity



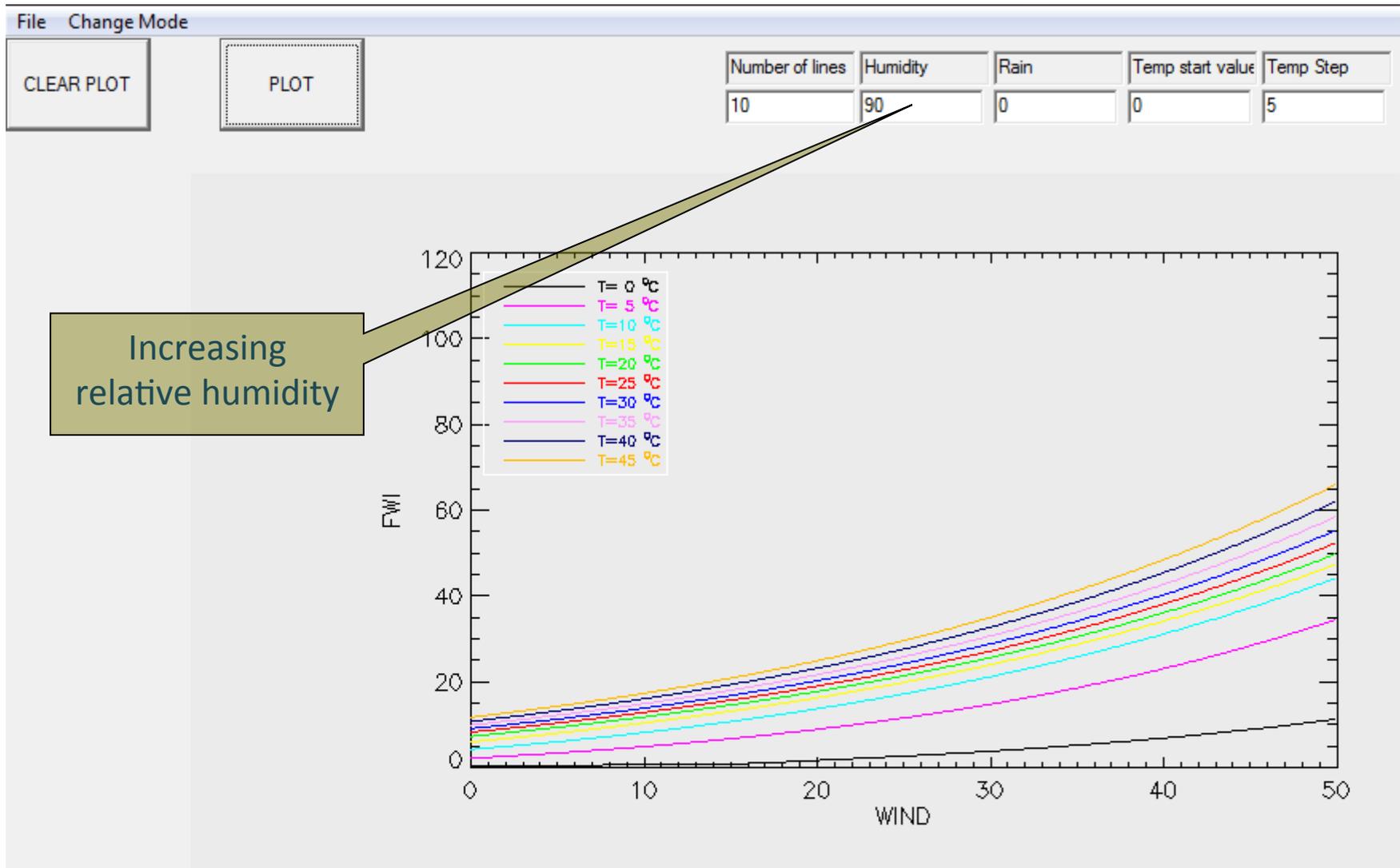
Educational Software for Fire Weather Index

Studying the FWI sensitivity



Educational Software for Fire Weather Index

Studying the FWI sensitivity



Conclusions

- ❑ Provision of short term fire risk forecasts for 3 days to address the needs of short term fire planners
- ❑ Provision of long term fire risk and other fire related indices changes due to climate change (time horizon up to 2050 and up to 2100) to address the needs of long term fire policy makers
- ❑ Provision of an educational software tool to complement the two web-based tools and to further expand knowledge in fire risk modelling to address the needs for in-depth training.