

Climate services for Agriculture – Lessons from New Zealand and Samoa

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Some typical climate products & services


- Access to climate data
- Up-to-date line plots
- Last-15-days and month-to-date maps
- Long-term climate maps
- Forecasts for the next 15 days
- Seasonal climate outlooks
- Scenarios for future climate
- General information

Access to climate data

Database Query [Save Settings](#) [Preview](#) [Send Query](#) [?](#) [login](#) | [logout](#)
Your subscription details: username=**andrew_tait**

1. Datatype

[?](#) [Manage](#) [?](#) [Remove All Datatypes](#)

Selected datatype(s): [?](#) Specify options: Daily Hourly Synoptic Remove datatype: 

2. Location

[?](#) (based on "updated" datatypes above) [Manage](#) [?](#)

Station agent number(s):

3. Date/time

[Manage](#) [?](#)

Start date (yyyy mm dd hh):

End date (yyyy mm dd hh):

4. Format

[Manage](#) [?](#)

Date/Time standard for output:
NZST is NZ Standard Time
UTC is Universal Coordinated Time [?](#)

Date/time format for output: [?](#)

Split date into date and time columns: No (single date column) Yes (separate date and time columns) [?](#)

File download option: [?](#)

Station Identifier: [?](#)

Data Sort Order: [?](#)

Include reliabilities and origins: Incl rel Incl orig [?](#)

[Save Settings](#) [Preview](#) [Send Query](#) [?](#)

<http://cliflo.niwa.co.nz>

Access to climate data

CIIDE Login - Climate Database Login - Windows Internet Explorer provided by Bureau of Meteorology



Samoa Meteorology Division

CIIDE - Climate Database Login



User Name:
Password:

Login Cancel

You are logged on as rh

User Settings

Products

Keyboard Data Entry

Data File Ingestion

Data Quality Assurance

Station Maintenance

Codes Maintenance

User Administration

Refresh About Help



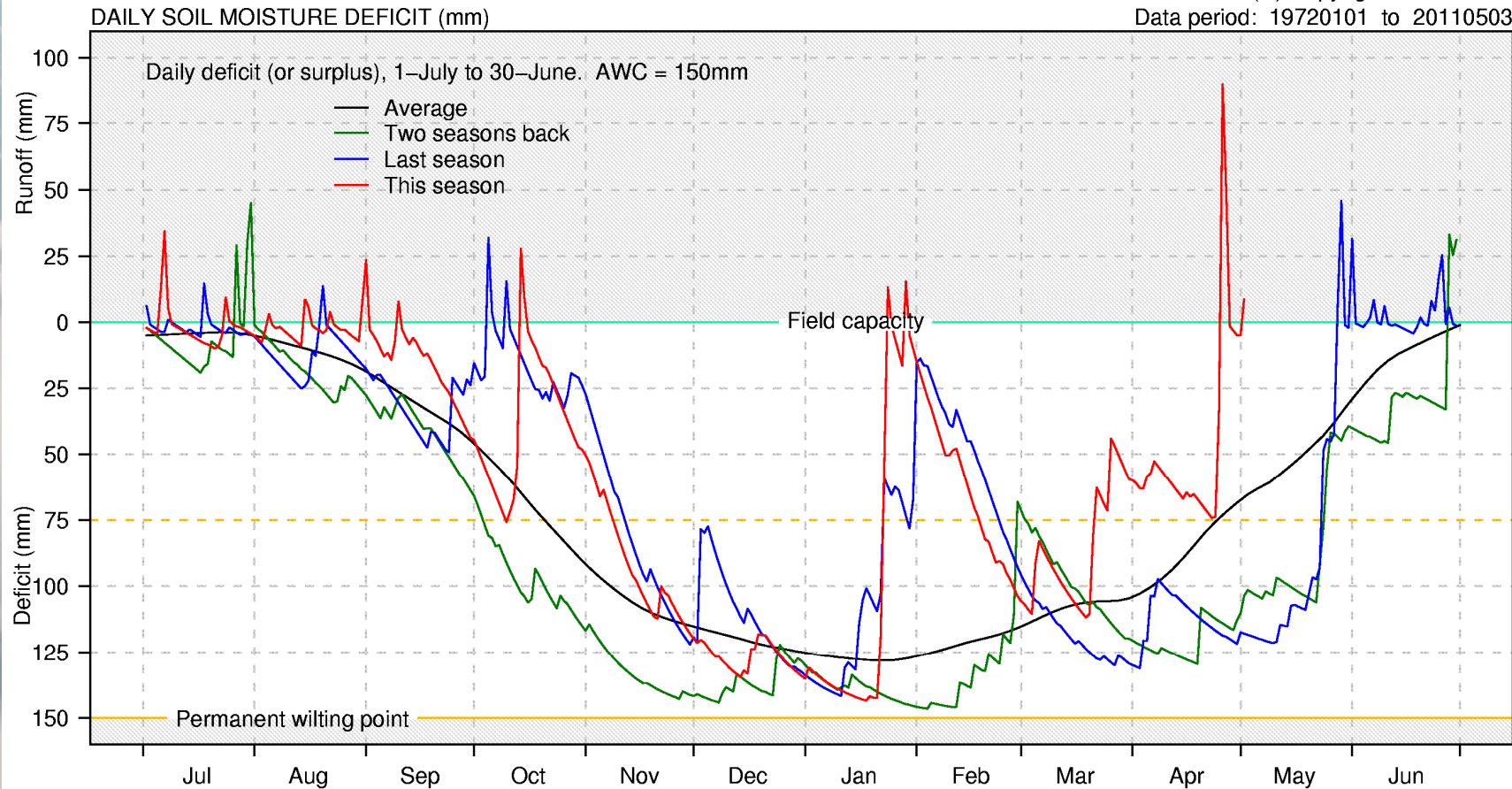
Australian Government

Up-to-date line plots

D96484 NAPIER AERO AWS

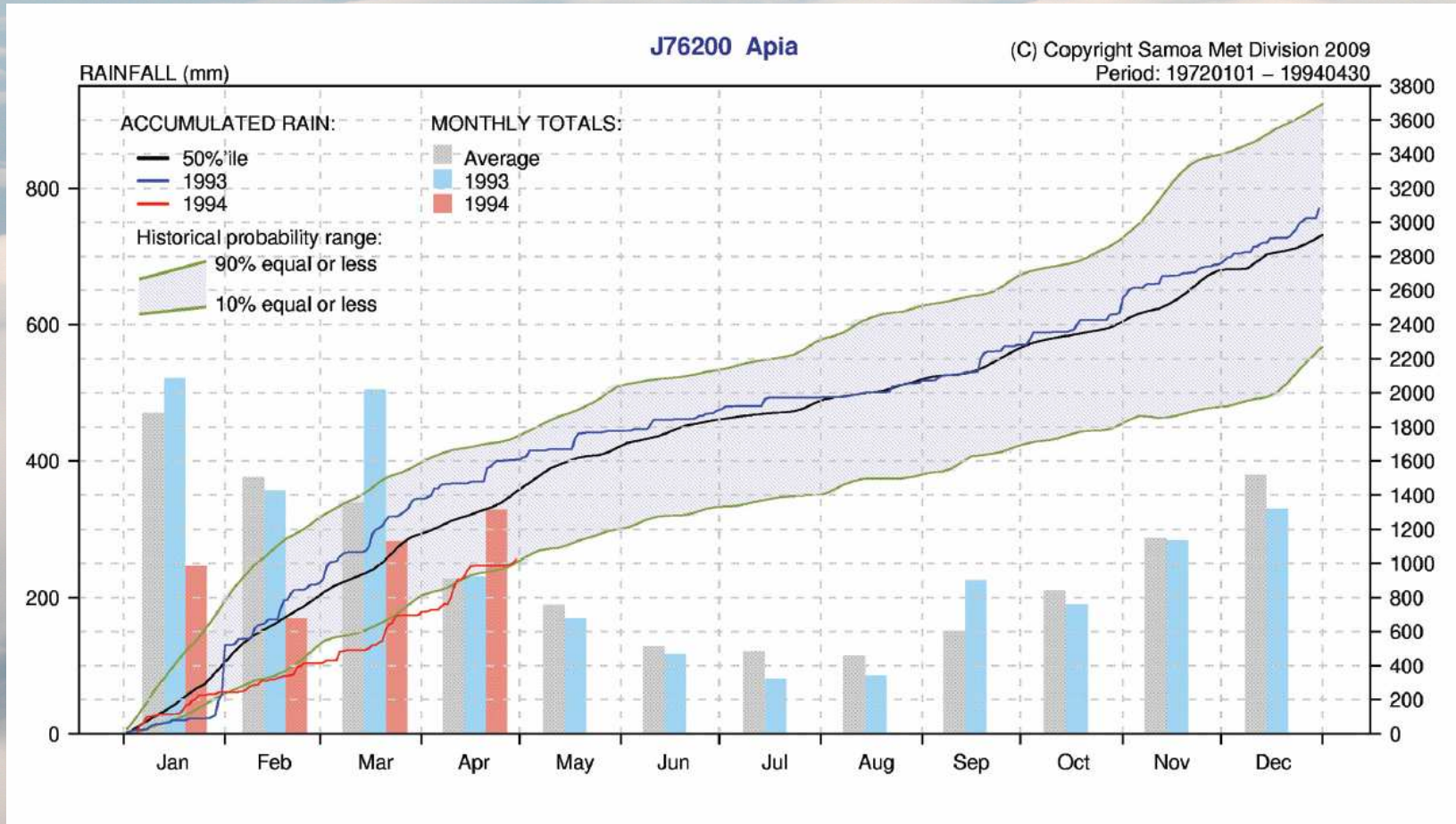
(C) Copyright NIWA 2011

Data period: 19720101 to 20110503



<http://climate-explorer.niwa.co.nz>

Up-to-date line plots

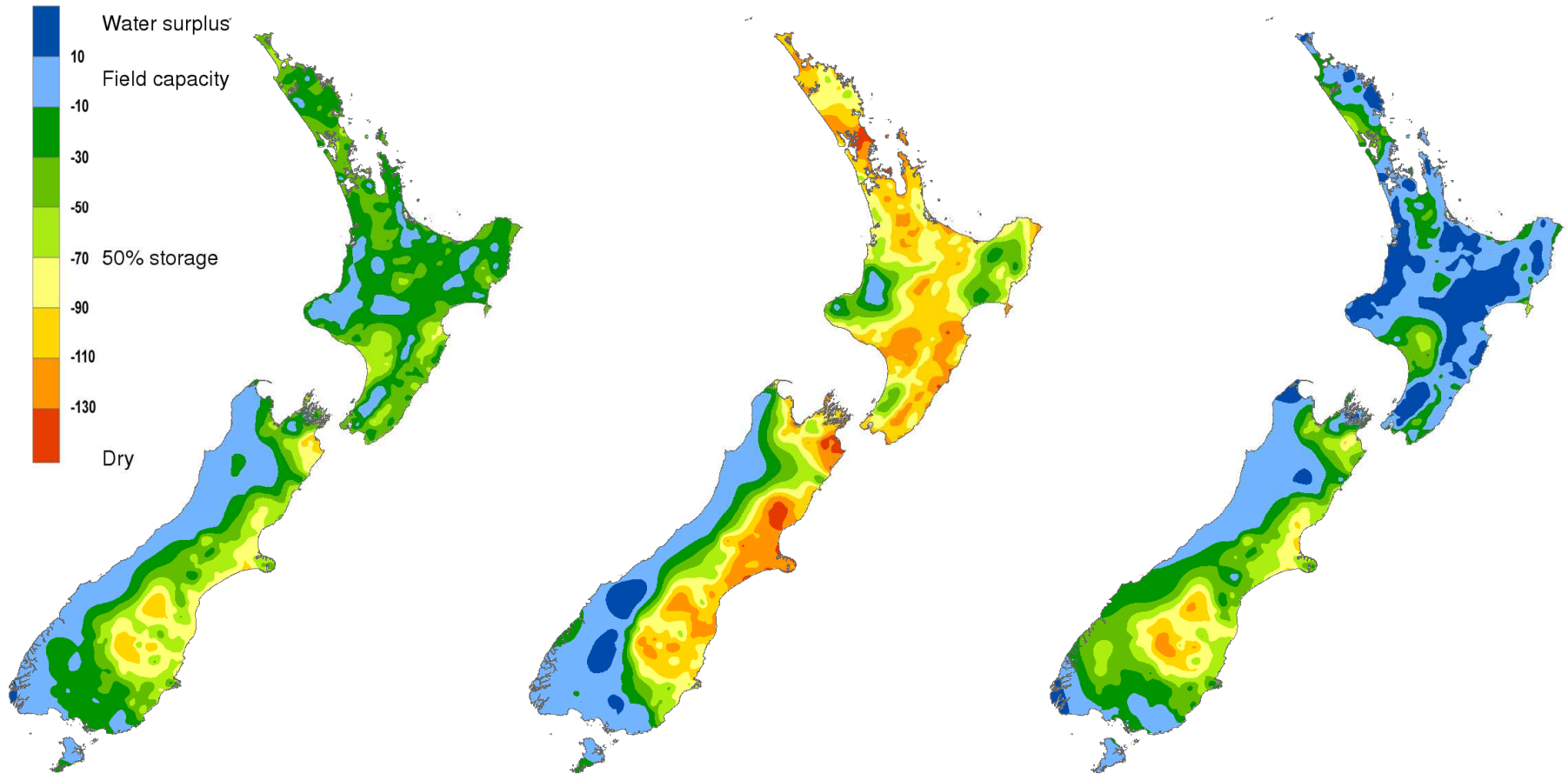
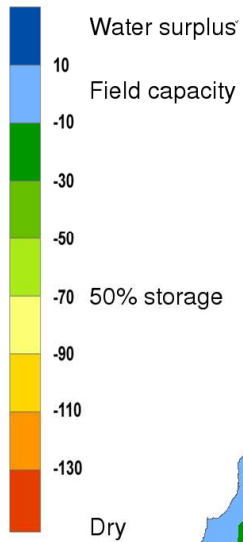


Up-to-date maps

Soil moisture deficit (mm) at 9am on 04/05/2011



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Taihoro Nukurangi



Historical average deficit at 9am on 04/05

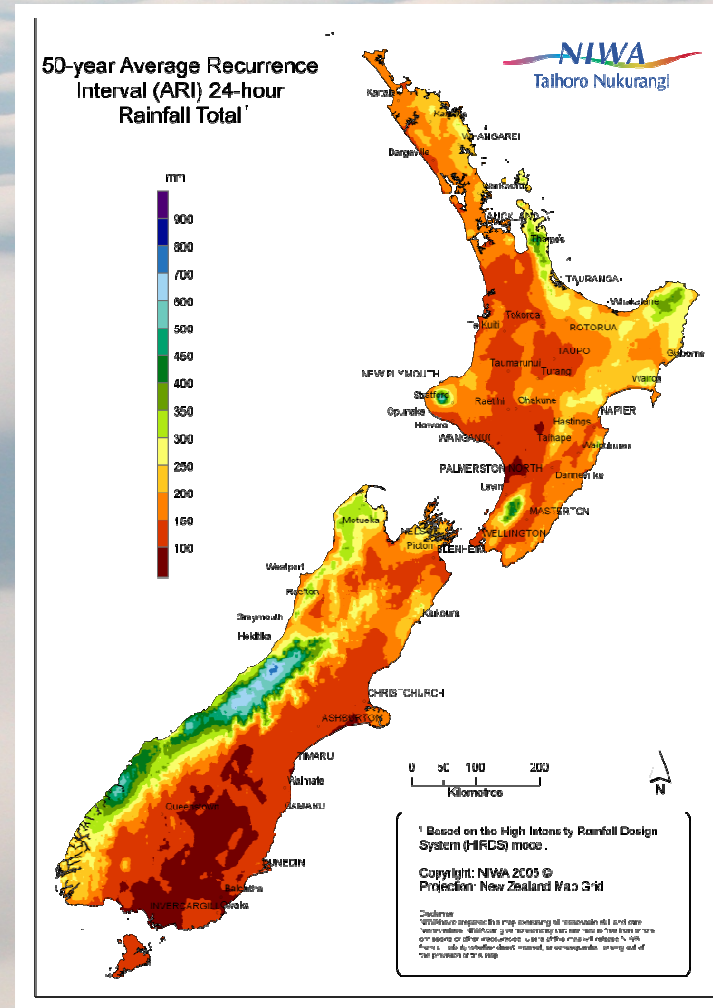
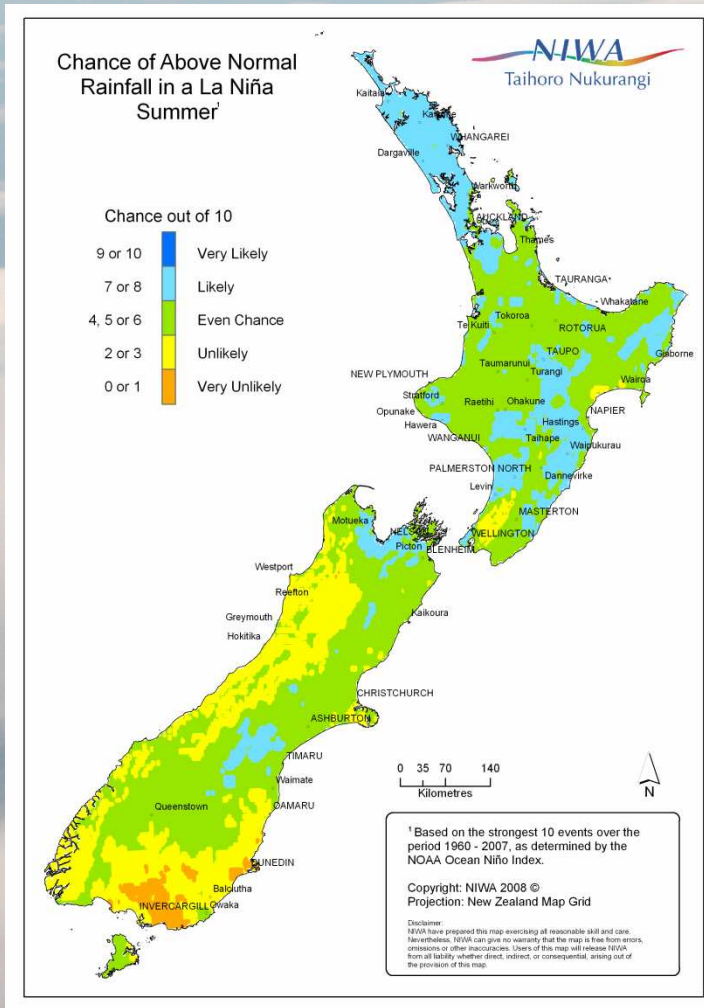
Deficit at 9am on 04/05/2010

Deficit at 9am on 04/05/2011

<http://climate-explorer.niwa.co.nz>

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Long-term climate maps

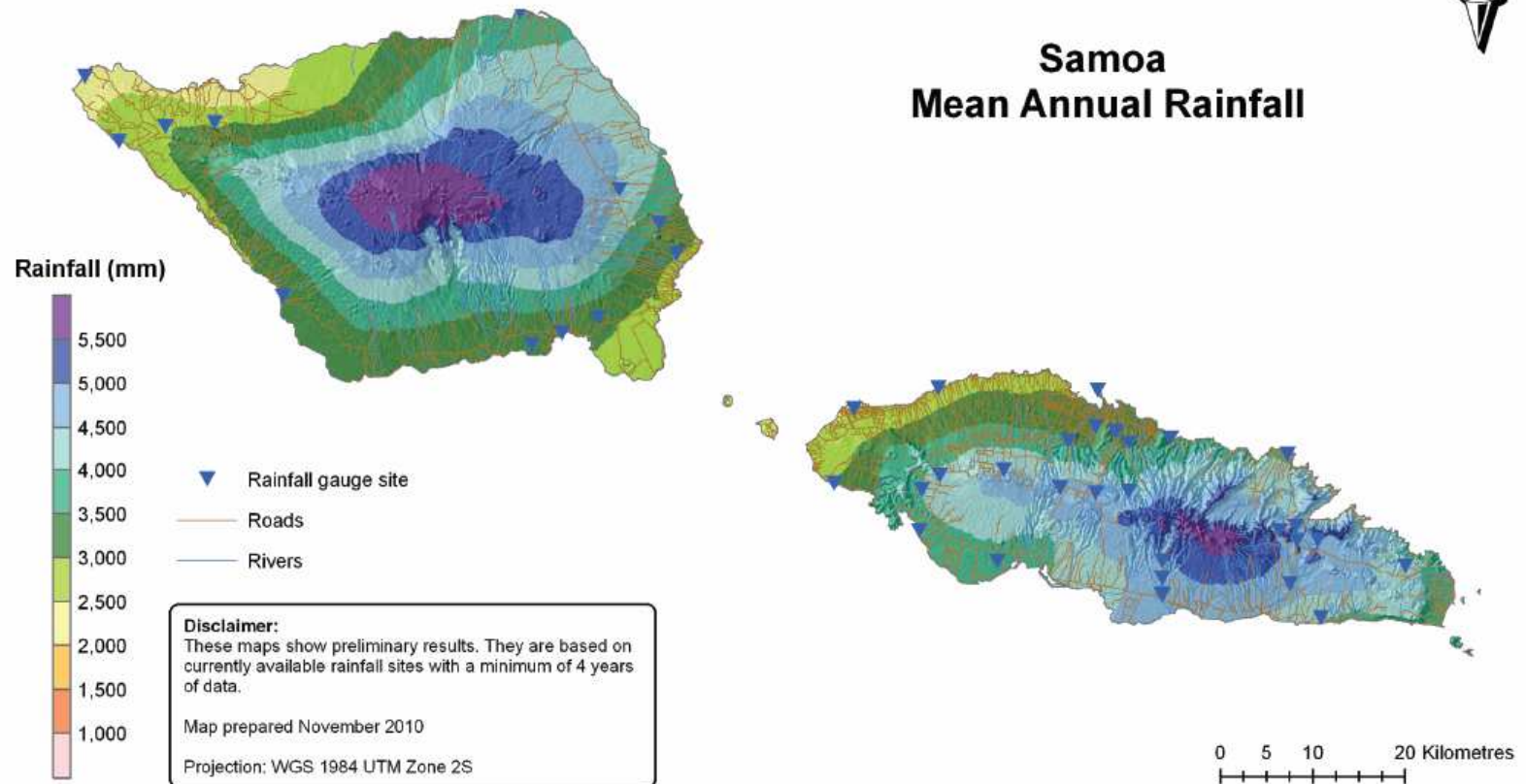


<http://climate-explorer.niwa.co.nz>

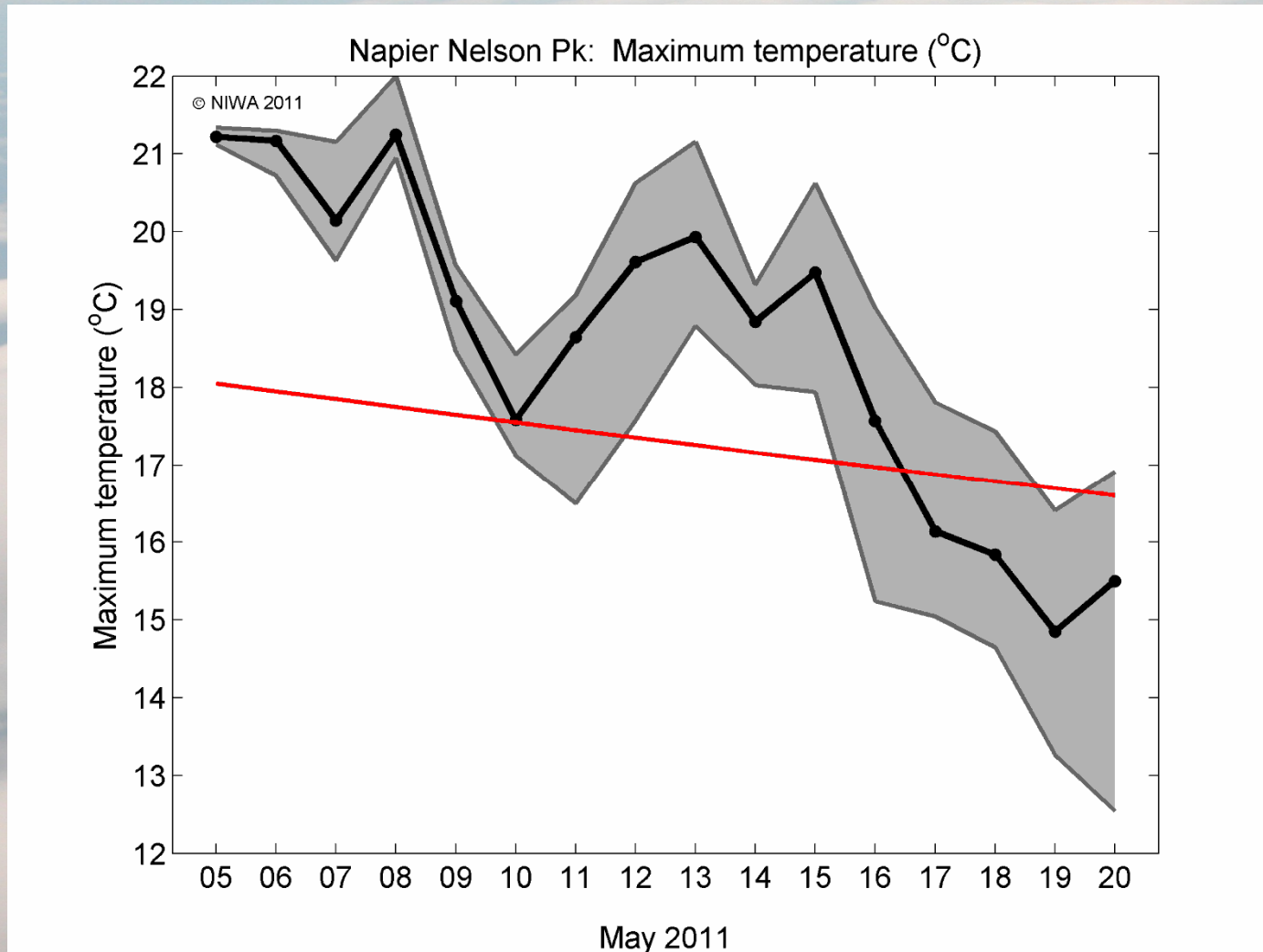
Long-term climate maps



Samoa Mean Annual Rainfall



15-day forecast plots



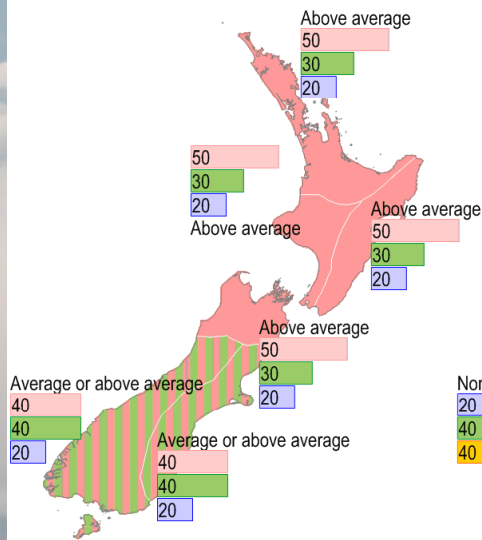
<http://climate-explorer.niwa.co.nz>

Seasonal climate outlooks

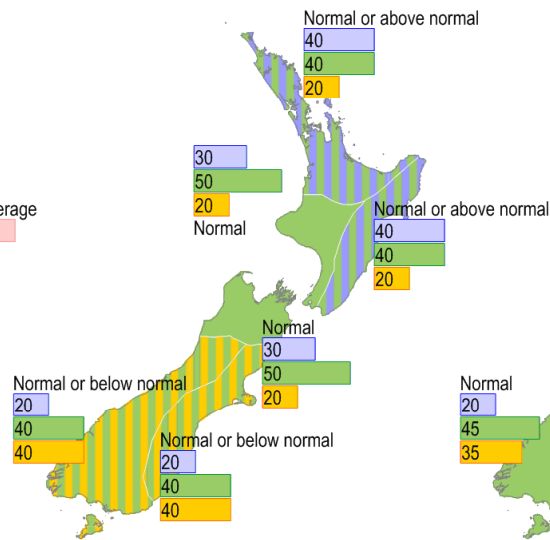
Outlook for May-July 2011



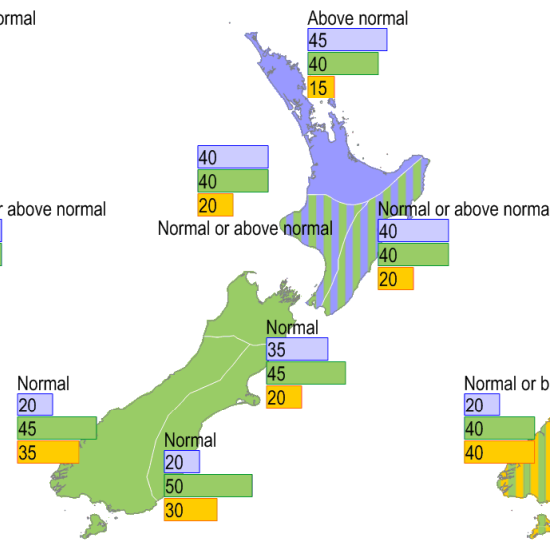
Mean air temperature



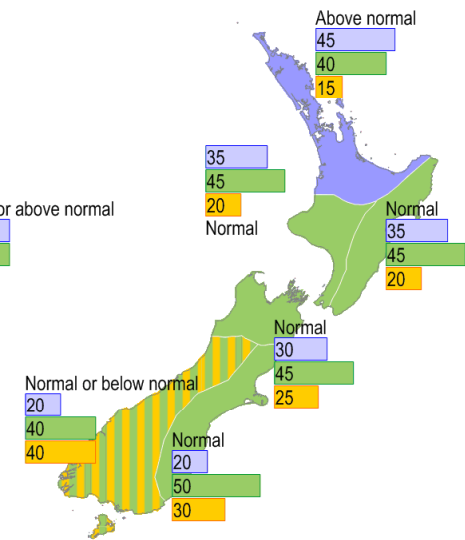
Rainfall



Available soil moisture



River flows



Key to maps (example interpretation)

Below normal

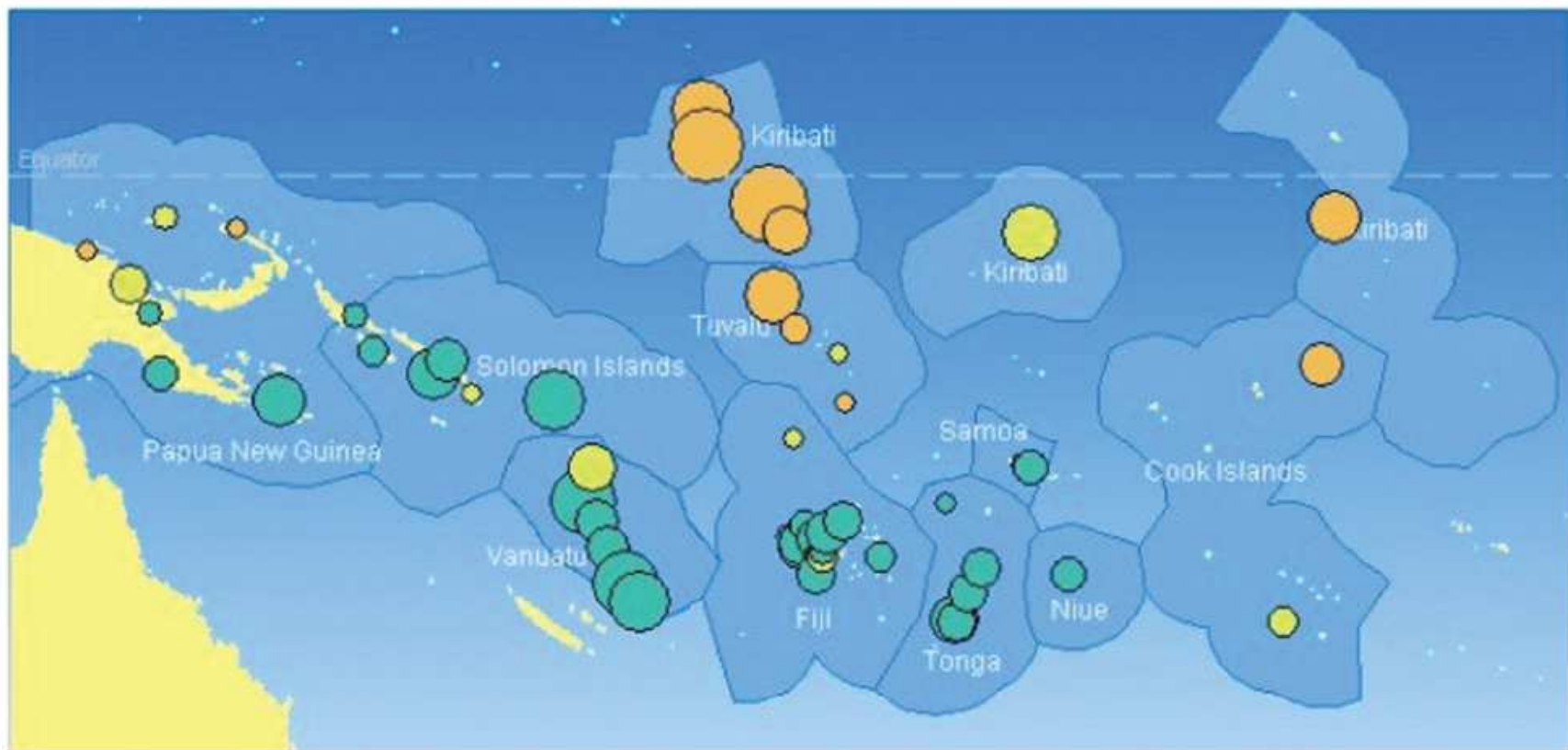
- Upper tercile: 20% chance of above normal 20
- Middle tercile: 30% chance of normal 30
- Lower tercile: 50% chance of below normal 50

In this example the climate models suggest that below average conditions are likely (50% chance of occurrence), but, given the variable nature of the climate, the chance of normal or above normal conditions is also shown (30% and 20% respectively).


<http://www.niwa.co.nz/ncc>





Seasonal climate outlooks




Click on a country for the country report

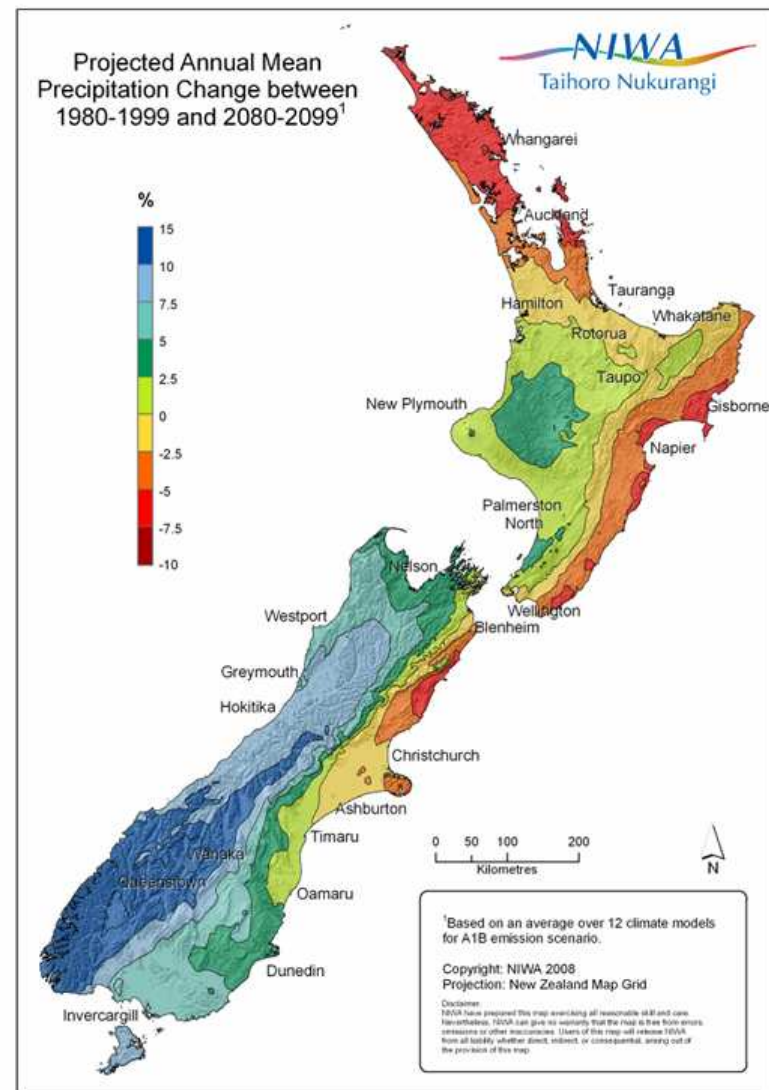
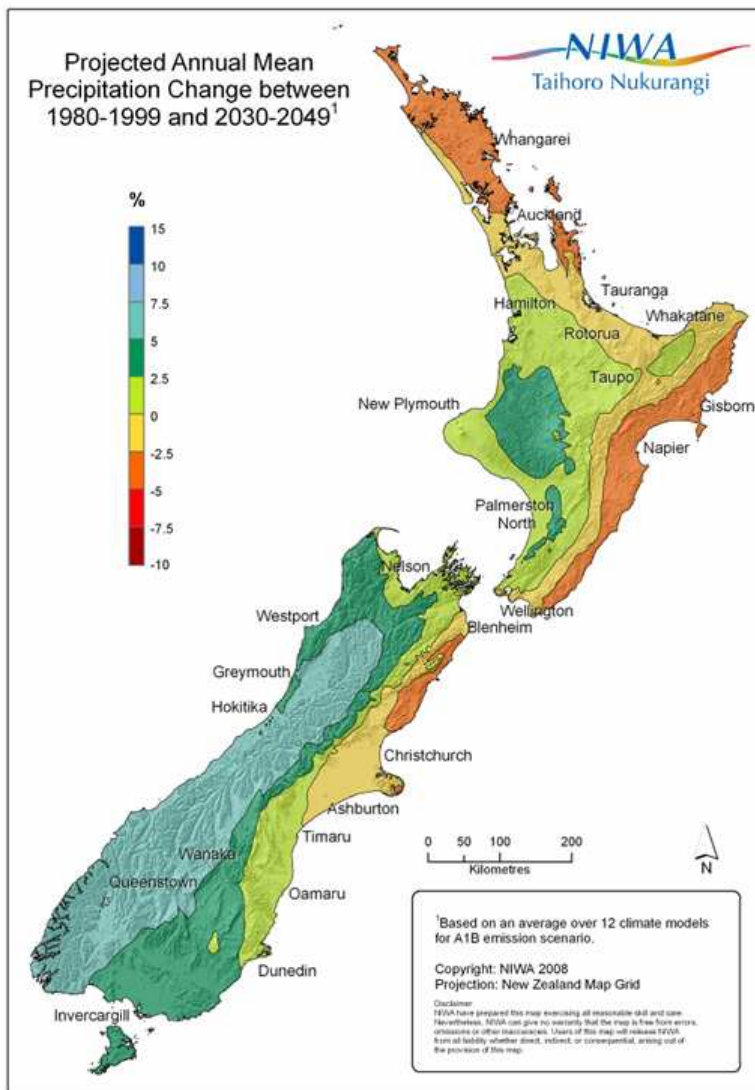
 Bias towards below normal rainfall

 Bias towards normal rainfall

 Bias towards above normal rainfall

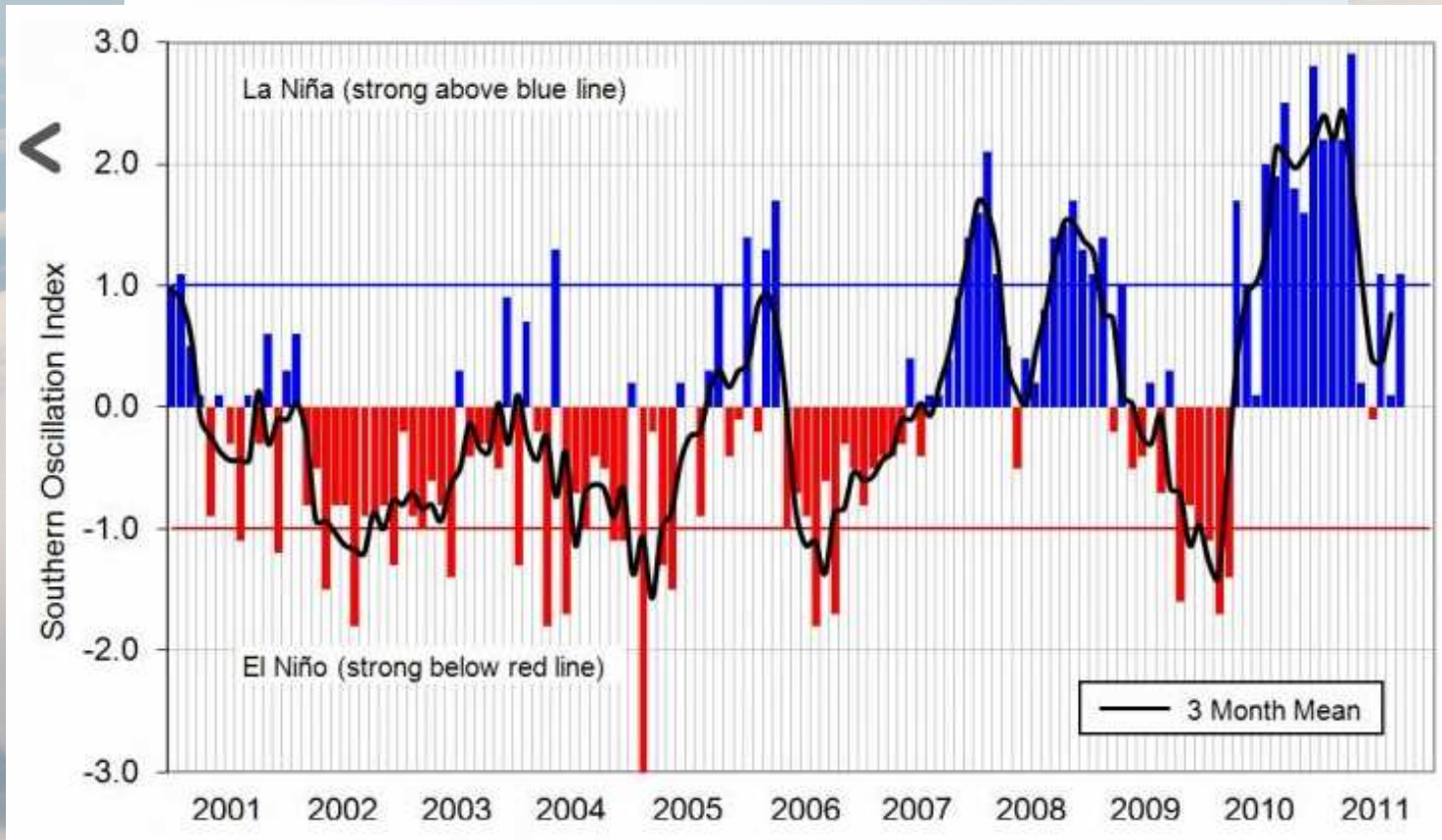
 No bias in forecast

Projections of future climate



<http://www.mfe.govt.nz/publications/climate/>

General climate information

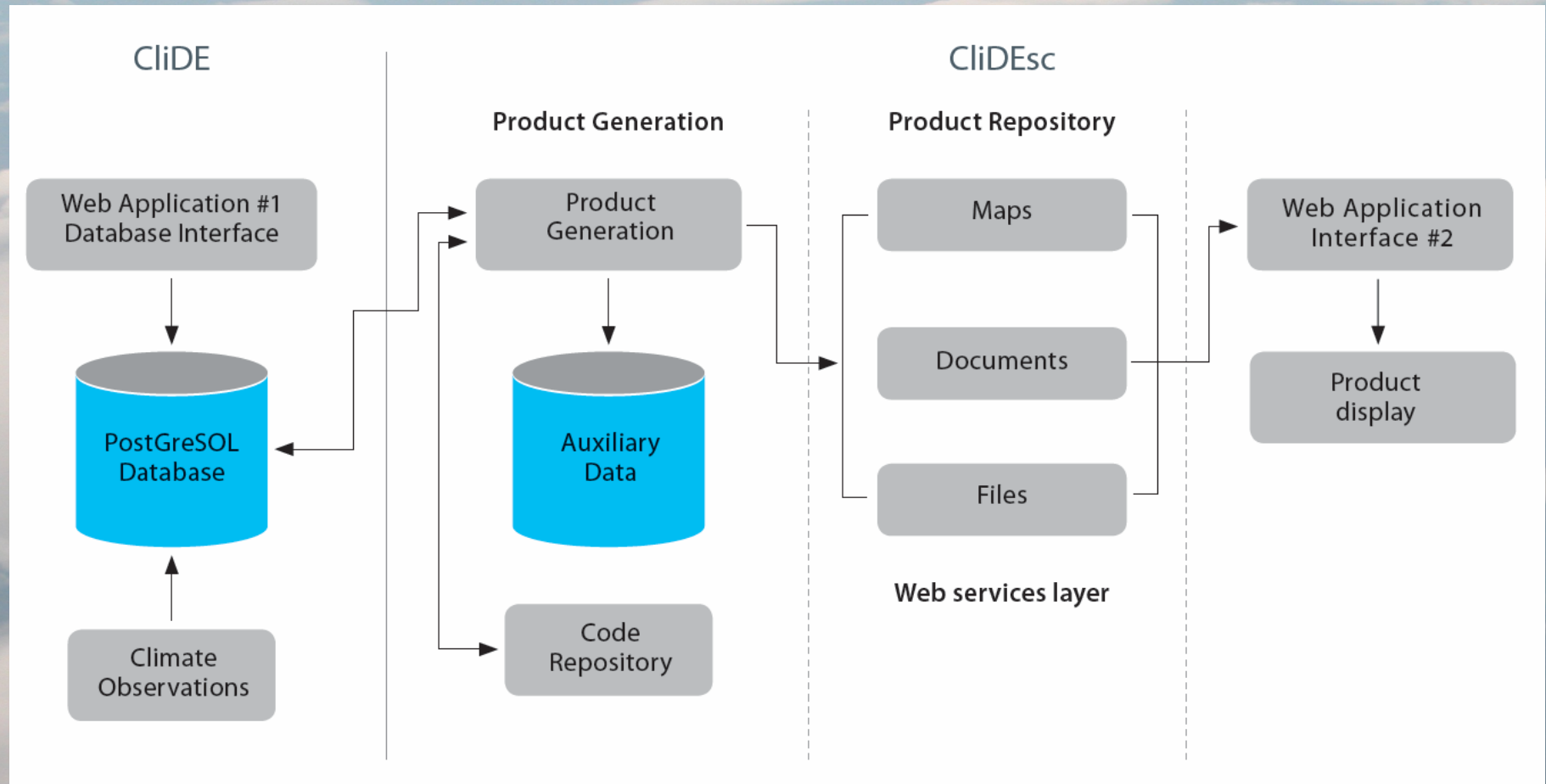


April, and in the wet, southeast event on 27-28 April. The New Zealand national average temperature in April was 13.0°C (0.4°C below the 1971–2000 April average).

Sunshine totals in April were below normal (between 75 and 90 percent of normal) for much of the North Island (except Northland), as well as in Nelson and Marlborough. In contrast, it was a very sunny month for the West Coast of the South Island (with totals around 125 percent of normal), as well as for the far south.

<http://www.niwa.co.nz/ncc>

A well-structured system for product generation



If this is such a good system, why are few NZ farmers using it?

- Limited internet access
- Information not quite what they want
- Didn't know it existed
- Takes time to get it
- Requires self motivation
- Hard to see the value
- Don't know how to apply the information

“Climate Smart Framers” project

Andrew_Tait · My Wikis · My Account · Help · Sign Out · wikispaces

Climate-Smart Farmers

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Virtual Climate Station
Network
Weather
Weekly Climate Update - Masterton
Weekly Climate Update - Tararua
► Navigation Options
edit navigation

Welcome to Your Climate-Smart Workspace!

From here, you can click on the Pages index in the left margin to go directly to a range of Climate-Smart tools and information.

You can also provide feedback about each of the tools, comment and provide suggestions for improvement, and see just what others in the group are thinking. Just click on the Discussion tab at the top of this section to get started.

Happy exploring!

Once you have had a look around, you may want to view a presentation on Wikispaces.

Check out the Weekly Climate Update for both Masterton and Tararua sites.

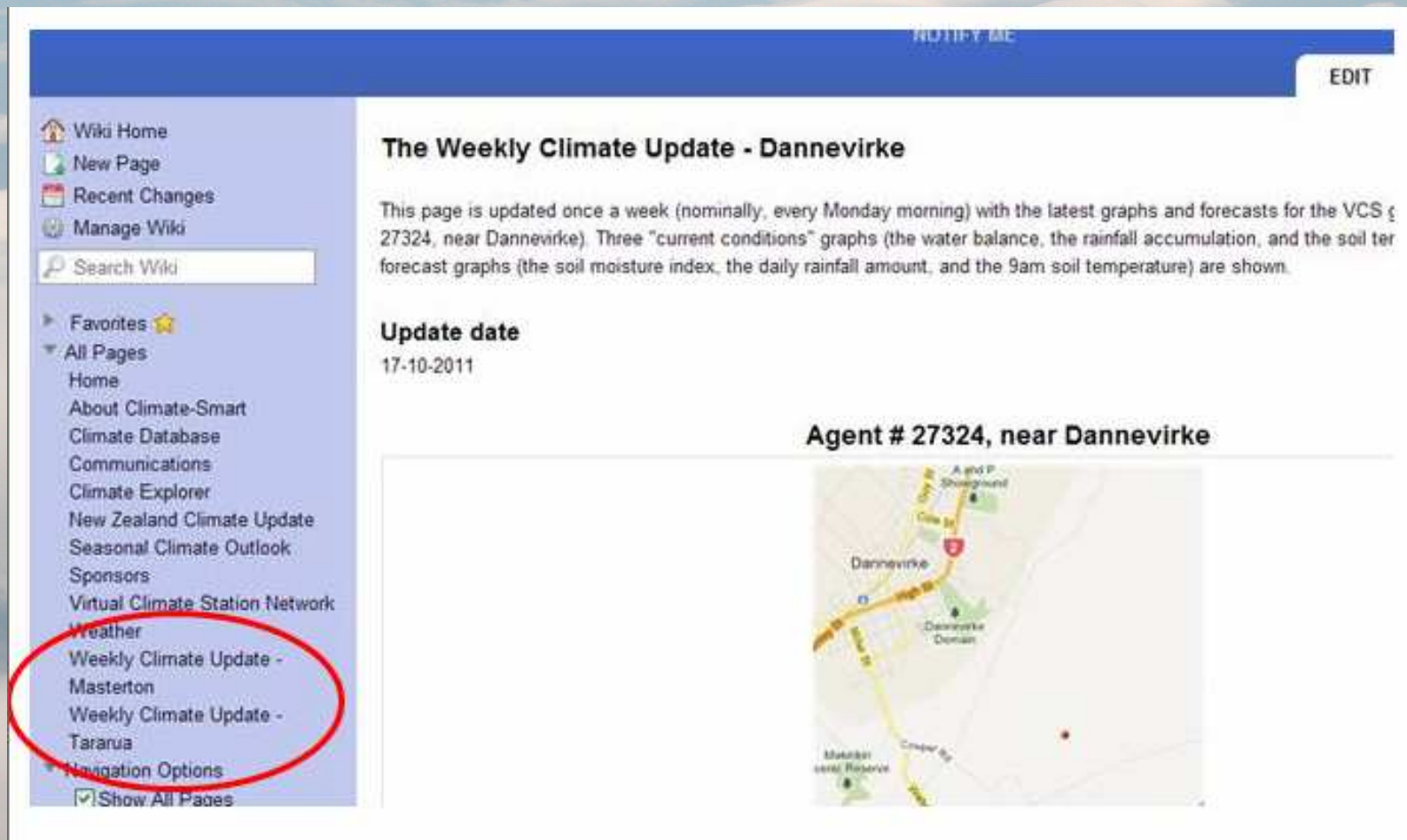
NEW FEATURE - look at the rolling 3-month outlook under the [Seasonal Outlook For Specific Location](#) and give your feedback.

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Weekly Climate Update - Taranaki
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The Weekly Climate Update - Dannevirke

This page is updated once a week (nominally, every Monday morning) with the latest graphs and forecasts for the VCS # 27324, near Dannevirke). Three "current conditions" graphs (the water balance, the rainfall accumulation, and the soil temperature) are shown. Three forecast graphs (the soil moisture index, the daily rainfall amount, and the 9am soil temperature) are shown.

Update date
17-10-2011

Agent # 27324, near Dannevirke



The map shows the location of Agent # 27324 near Dannevirke, New Zealand. The map includes labels for Dannevirke, Dannevirke Domain, A and P Showground, and Masterton (containing a Reserve). Roads shown include State Highway 1, State Highway 2, and the A and P Showground. A red dot on the map indicates the location of the agent.

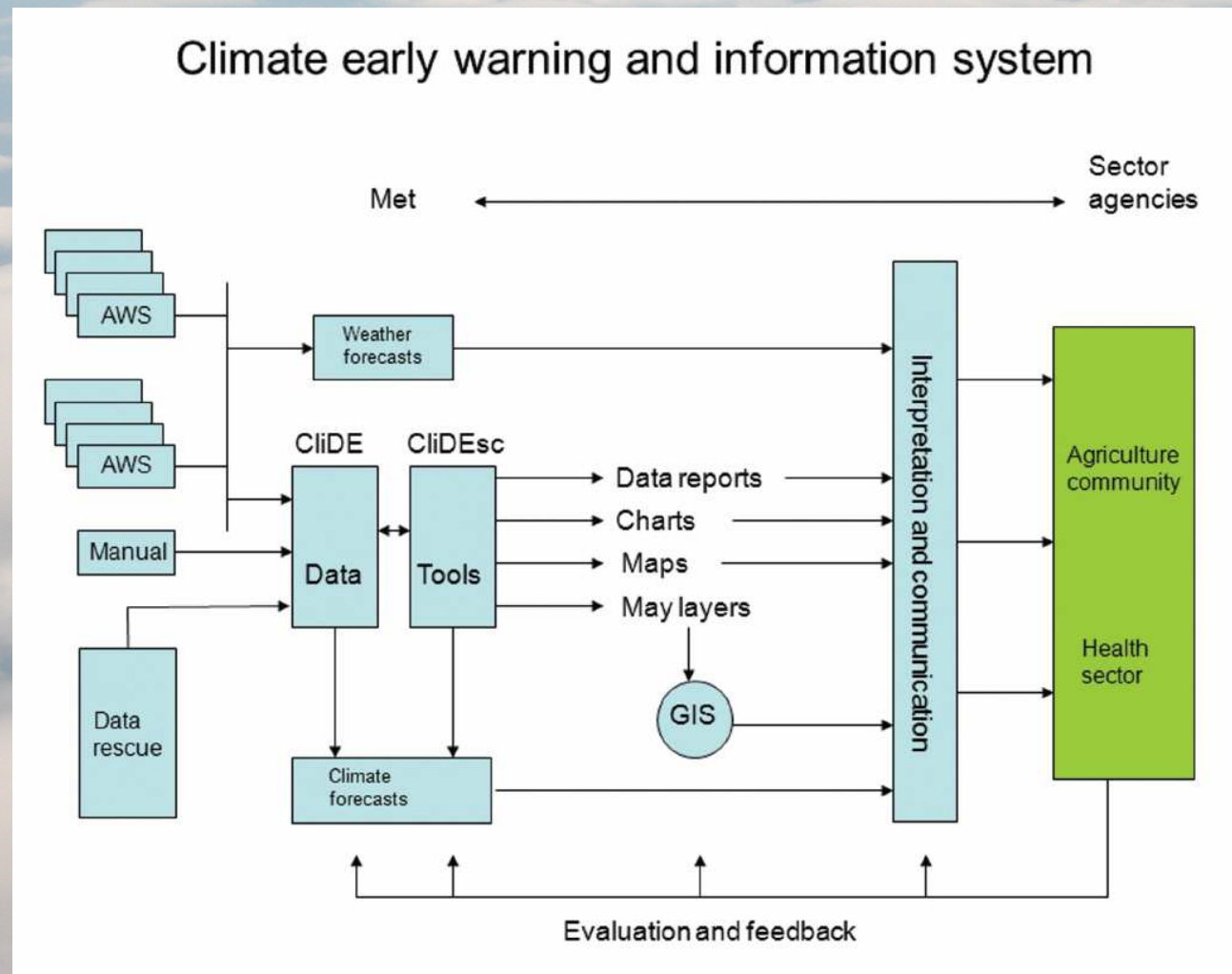
Systems need to be science-based but people-centred

The Climate Early Warning System for agriculture in Samoa is a collaborative initiative involving climate scientists, meteorologists, farmers, agricultural advisors, administrators, and community leaders. Its success is dependent on engagement at each step, and the applied knowledge and experience of all.

Systems need to be science-based but people-centred

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Need a strong focus on interpretation & communication



Deliver what is really needed

Scheduled reports and advisories, and severe weather warnings

The key to the successful uptake of new knowledge and data services will be the interaction with users in planning, analysis of problems, building of services, and accessibility on time and through the best channels.

Example:

Agricultural Services Report

- A summary of recent climate
- Charts of rainfall, soil moisture, air and soil temperature, and sunshine hours from all the climate station locations around the country showing the patterns and trends from the start of the year to now
- Maps of the last 7-days, month-to-date and year-to-date rainfall, soil moisture, air and soil temperature, and sunshine hours.
- A phenology update (e.g. the emergence of leaves and flowers, the appearance of migratory birds, leaf colouring, crop cycle stage, etc.)
- A disease / pest update (e.g. outbreaks, management plans or actions)
- Extended range (7-day) weather forecasts for the country
- The most recent seasonal (3-month) climate forecast for the country
- A tropical cyclone update and outlook (during the cyclone season)
- A seasonal drought outlook
- A seasonal phenology and disease / pest outlook.



Establish response processes

A planning table for climate decision support for seasonal agricultural production

INDICATORS	REPORTING TIME FRAME	POSSIBLE RESPONSES
NORMAL Climate indicators show that the situation is normal.	Climate-to-date updated daily. Seasonal outlook issued monthly.	Management plan with normal contingencies. Normal watch level.
LOW LEVEL ALERT Climate indicators show a climate anomaly is occurring or is likely to develop.	Climate-to-date updated daily. Seasonal outlook issued monthly. Special advisories/updates as needed. Immediate 'new-information' updates.	Heightened focus on communication and awareness. Ensure emergency contingencies are in place, eg. irrigation and drinking water.
HIGH ALERT Climate indicators show a high risk event is occurring or is very likely.	Daily climate-to-date updates. Severe weather impact warnings issued sub-daily.	High level of monitoring and evaluation of possible worse-case scenarios. Implement front-line response capability.
IMPACT REPORT Assessment of extent, strength and potential relative frequency of event.	As soon as possible after the event.	Develop learning and evaluation strategies to mitigate future events. Implement structural change.

Lessons learned (ongoing!)

- Good quality data and systems are vital
- Products are great, but...
...you're only 1/4 of the way there!
- Engage and consult at every step
- Establish partnerships
- Produce things that are really needed
- Delivery mechanism is crucial
- Need response options

Thanks!

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