



Risk Forecasting: Weather & Psa

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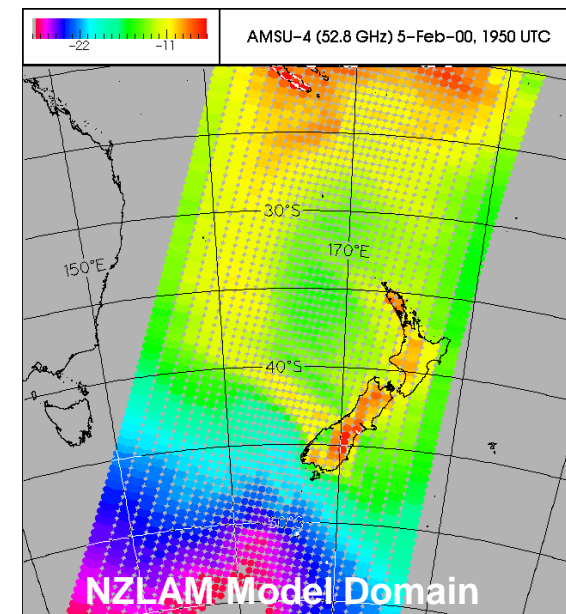


- New Zealand Limited Area Model (NZLAM):
 - State of the art, data assimilating (NIWA):
 - 12 km resolution, 2 day range, hourly, 4× daily
 - “Down scaled” to specific sites;
 - Temperature, relative humidity, rain, wind, cloud, etc.
- Global Unified Model:
 - Leading global weather prediction model (UK Met Office):
 - 25 km resolution, 6 day range, 3 hourly, 1× daily
 - Temperature, relative humidity, rain, wind.
- Ensemble long range forecasts:
 - Based on global ensemble (US Weather Service)
 - Down scaled to specific sites, 15 day range, daily, 1× daily;
 - Min/Max temperature, wind speed, probability of rain > n mm..
 - Probabilistic
- Seasonal Forecast (3 months)



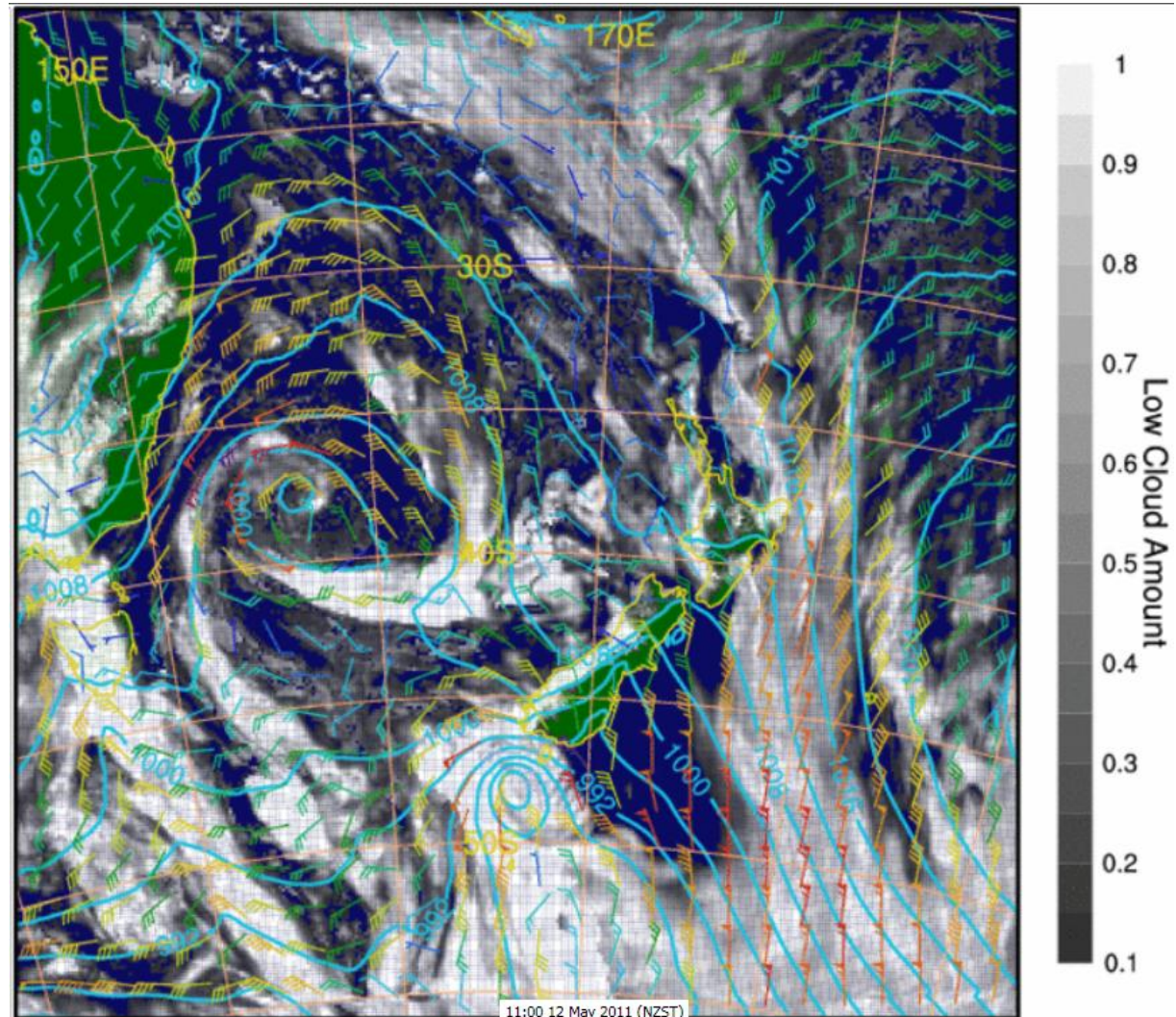
NZLAM: Weather Prediction

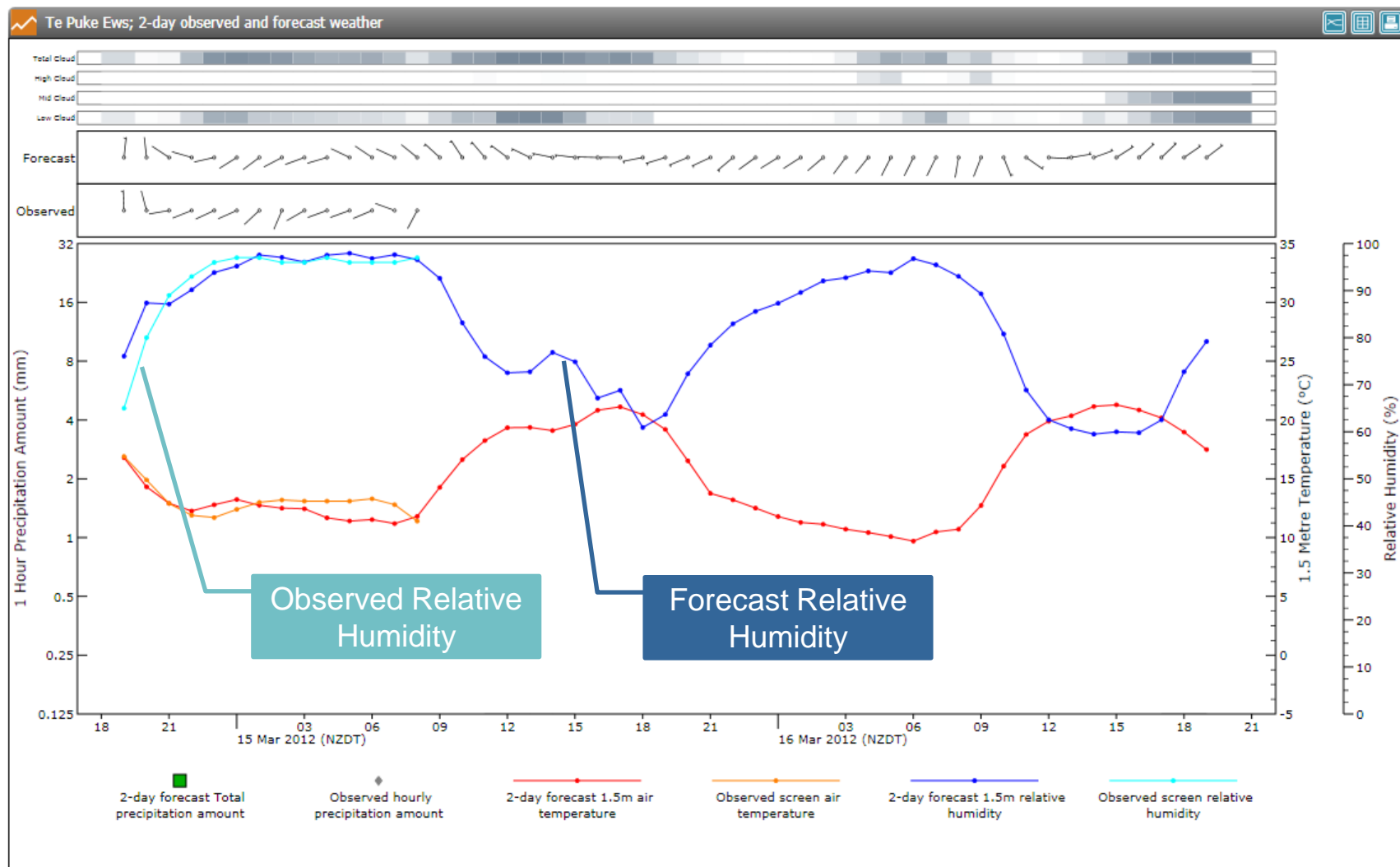
- **New Zealand Limited Area Model:**
 - 12 km grid, 70 levels (to 80km);
 - Based on **UK Met Office Unified Model**;
 - Forecasts every hour to 48 h;
 - 4 x daily.
- **Data Assimilation:**
 - Weather prediction is an initial value problem;
 - Uses data from Ships, Buoys, Land, Balloons, Aircraft, Satellites.
- Large model domain:
 - Accurate forecasts to 48 h.
- **Forecasts verified against obs;**
- Unified Model now adopted by BoM KMA,SAWS, US Air Force, Norway.



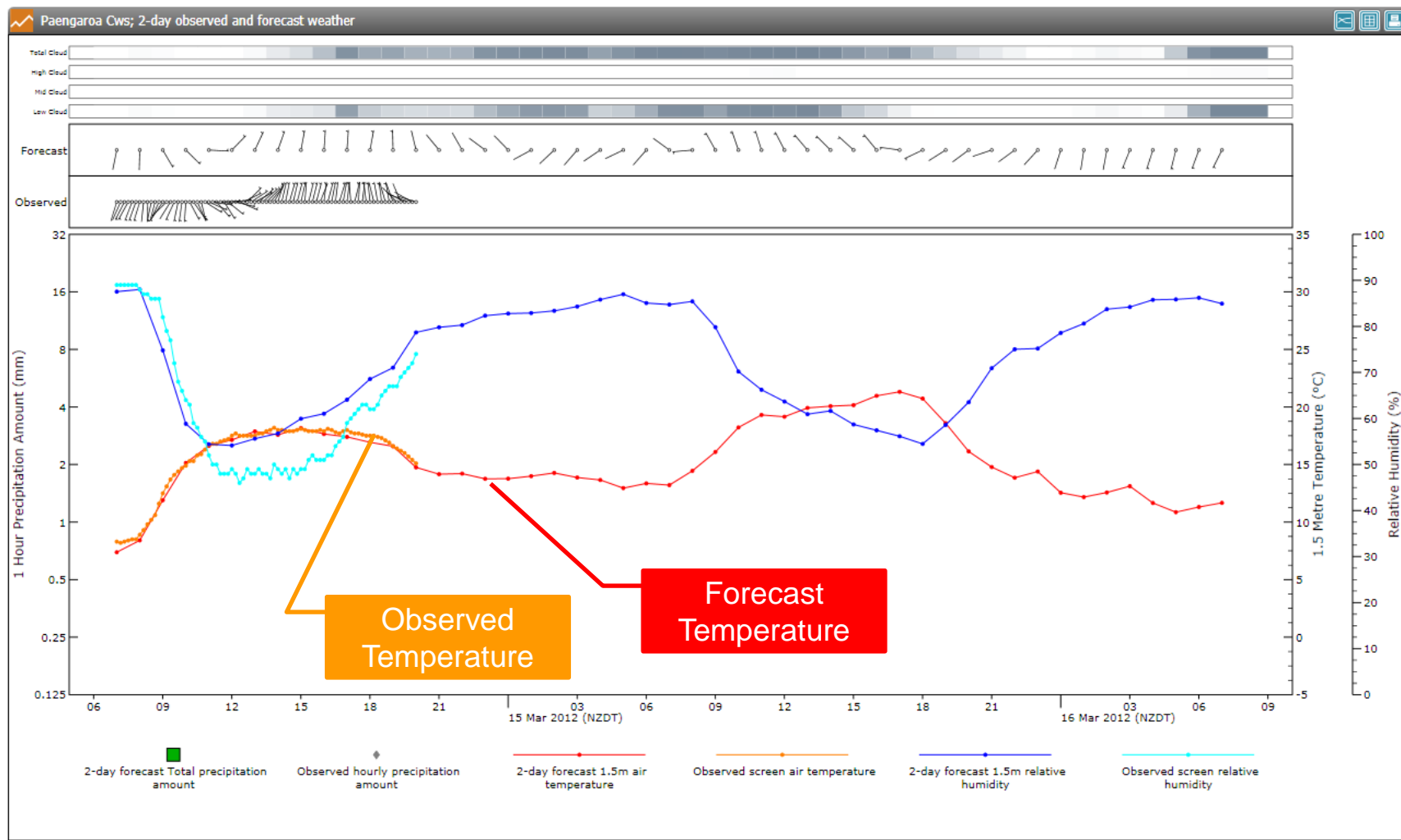
Wind Event: 12 May 2011 1000 NZST

- NZLAM 17 h forecast:
 - VT 1100
 - Low cloud
 - 10 m winds
- Terra MODIS passes:
 - 1000 NZST
 - 1138 NZST



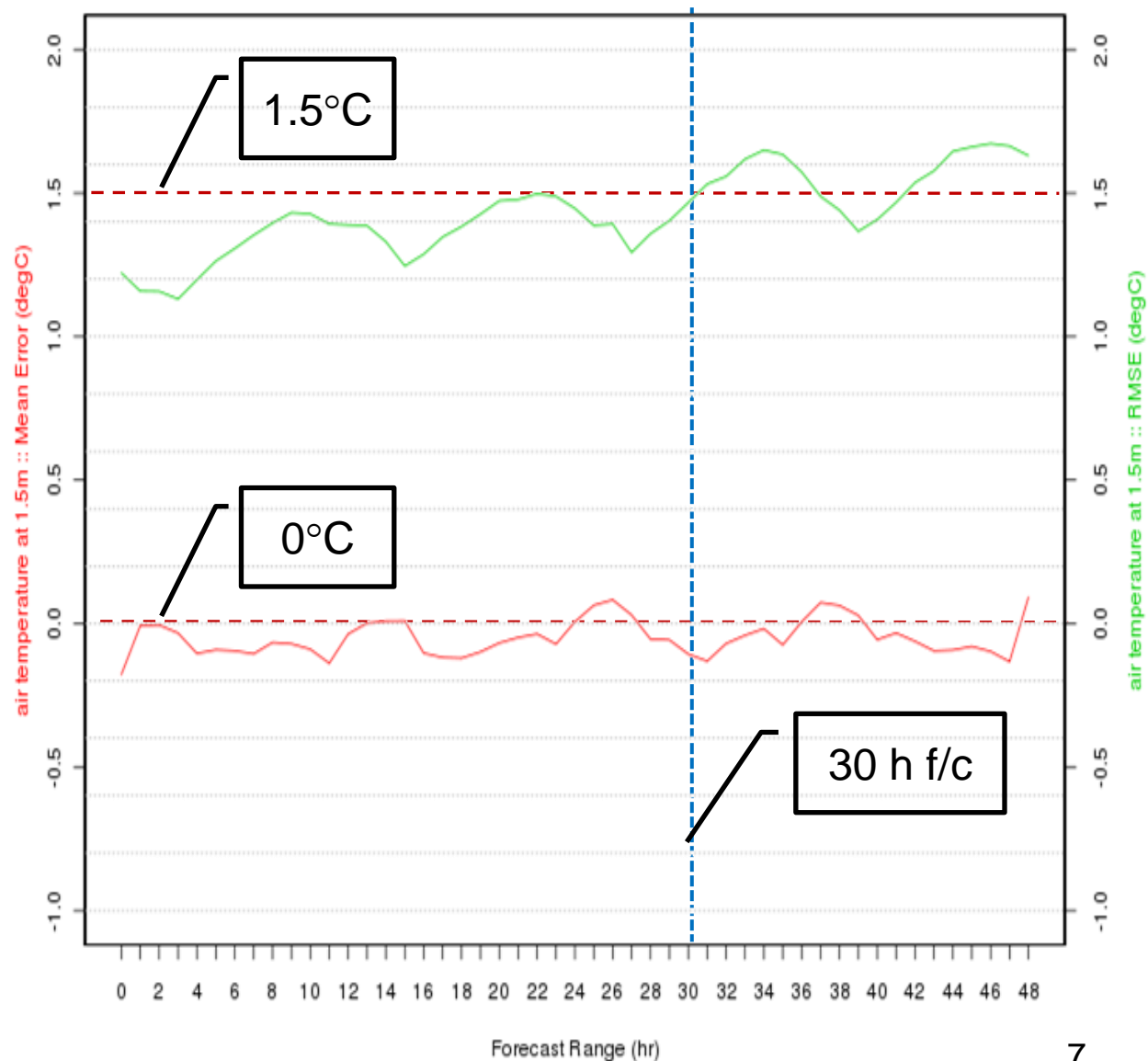


Example NZLAM Forecast: Paengaroa

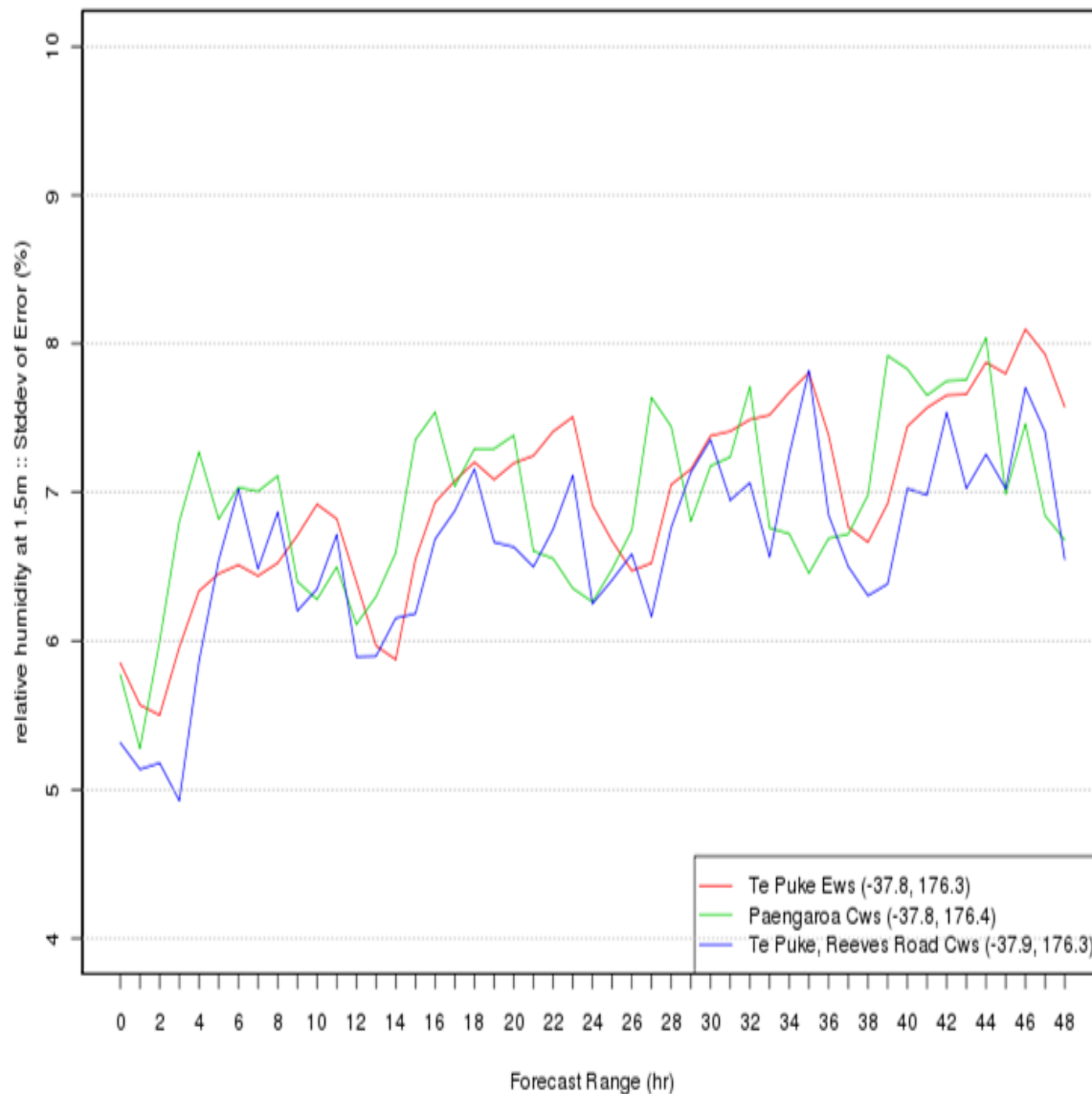


NZLAM-12 Accuracy: Temperature

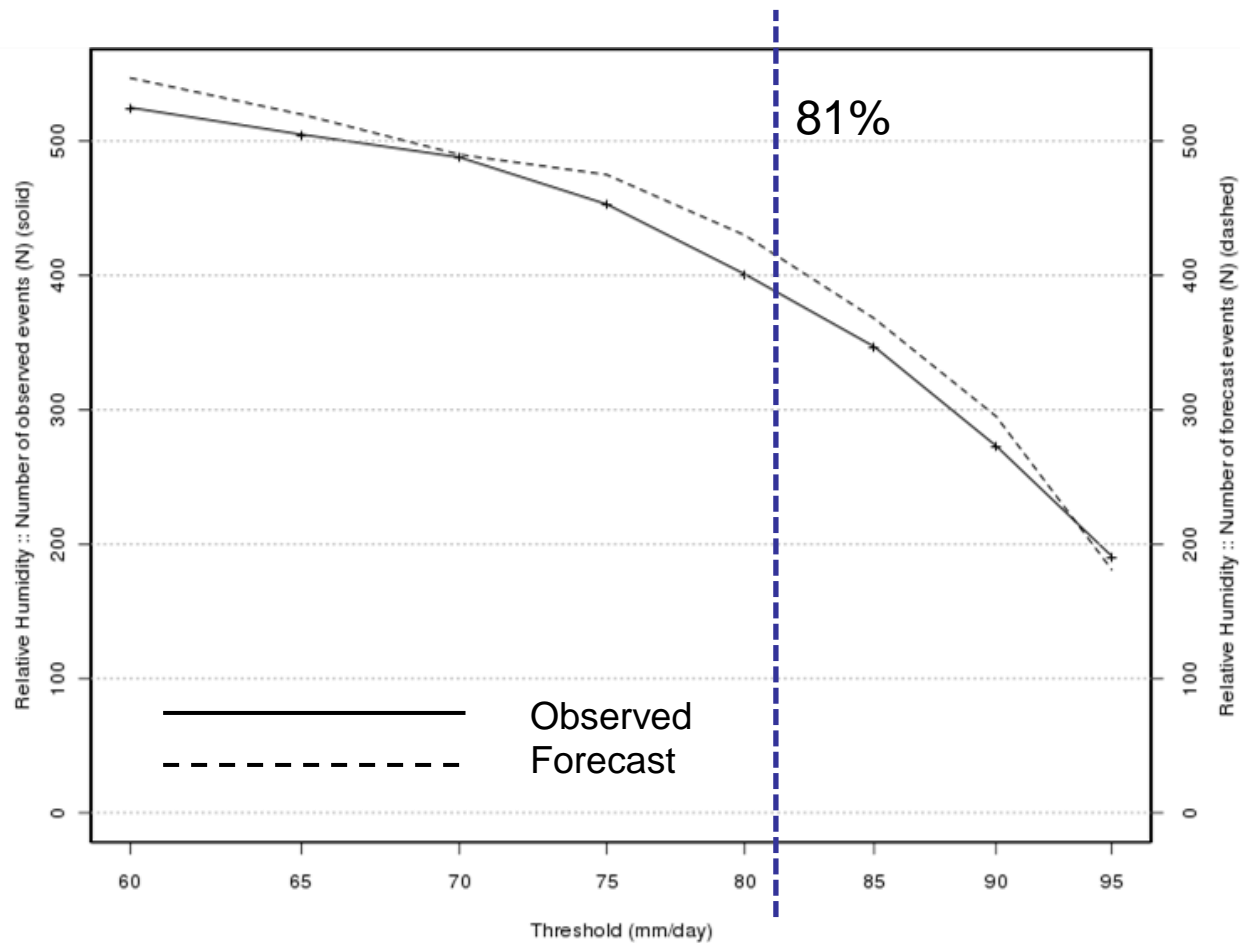
- 11 Months
- Temp:
 - 1.1 to 1.6°C



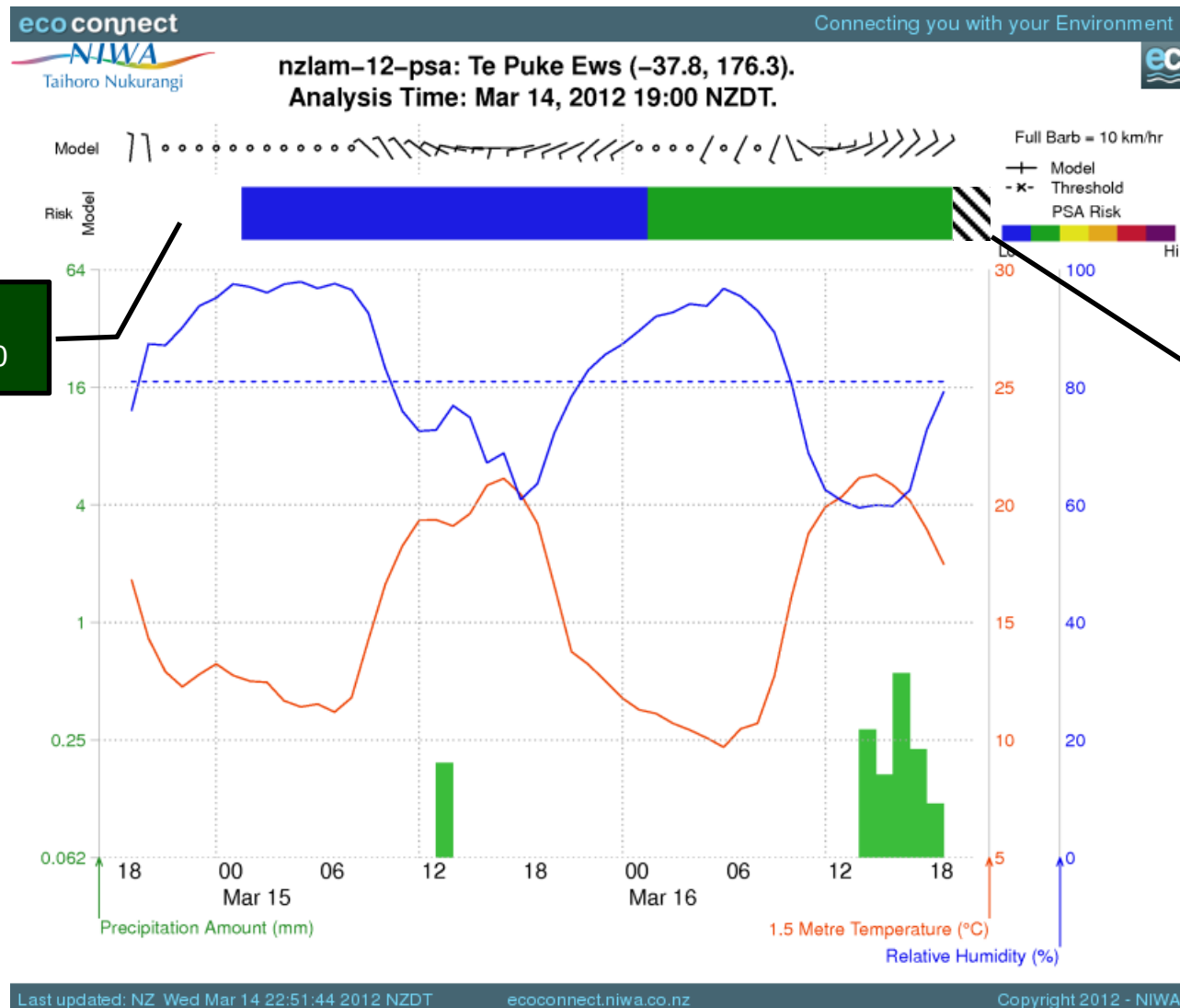
- 11 Months
- Temp:
 - 1.1 to 1.6 °C
- RH:
 - 5 to 7 %



- 11 Months
- Temp:
 - 1.1 to 1.6 °C
- RH:
 - 5 to 7 %



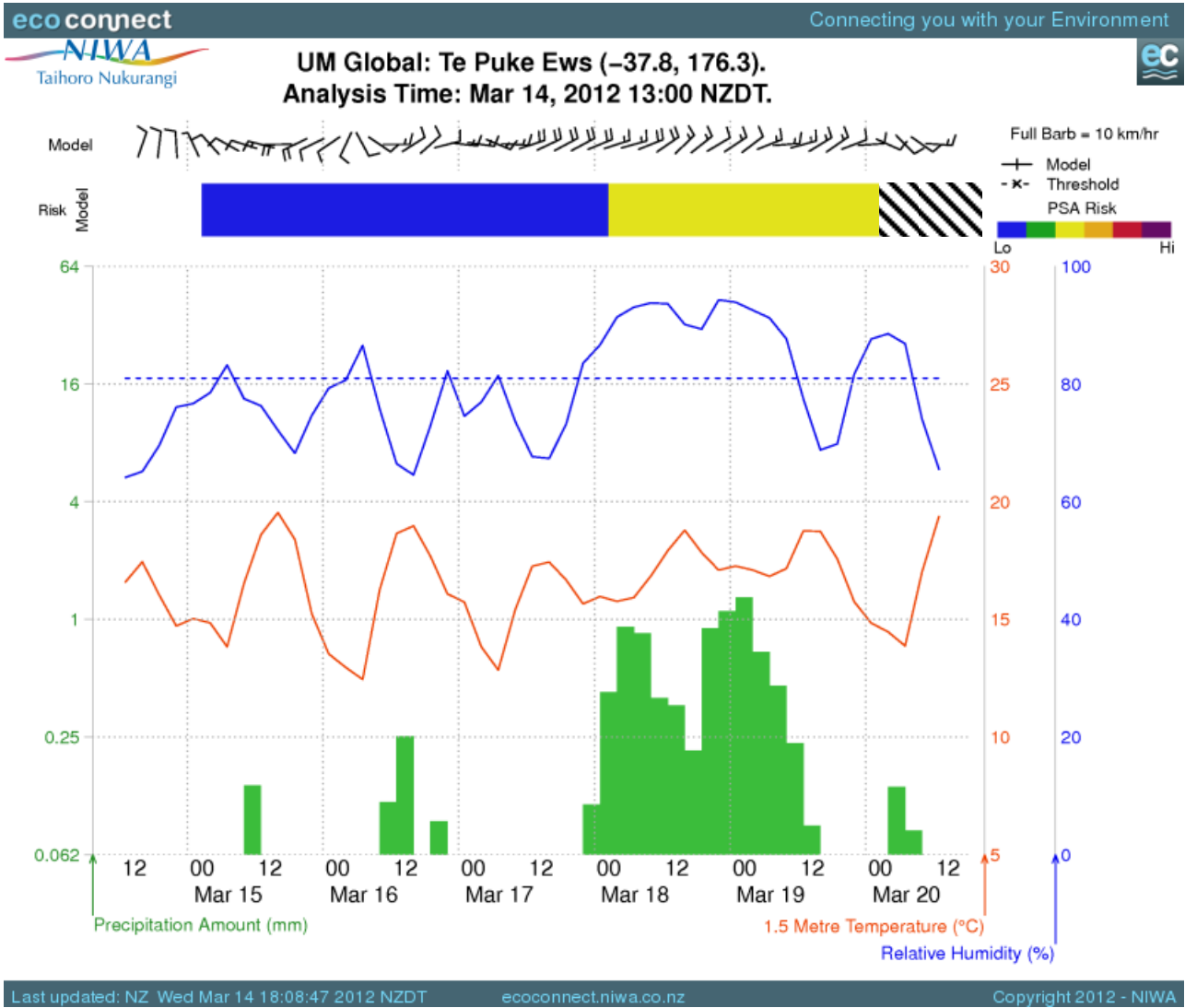
Psa Risk Forecast: Site Specific (48 h)



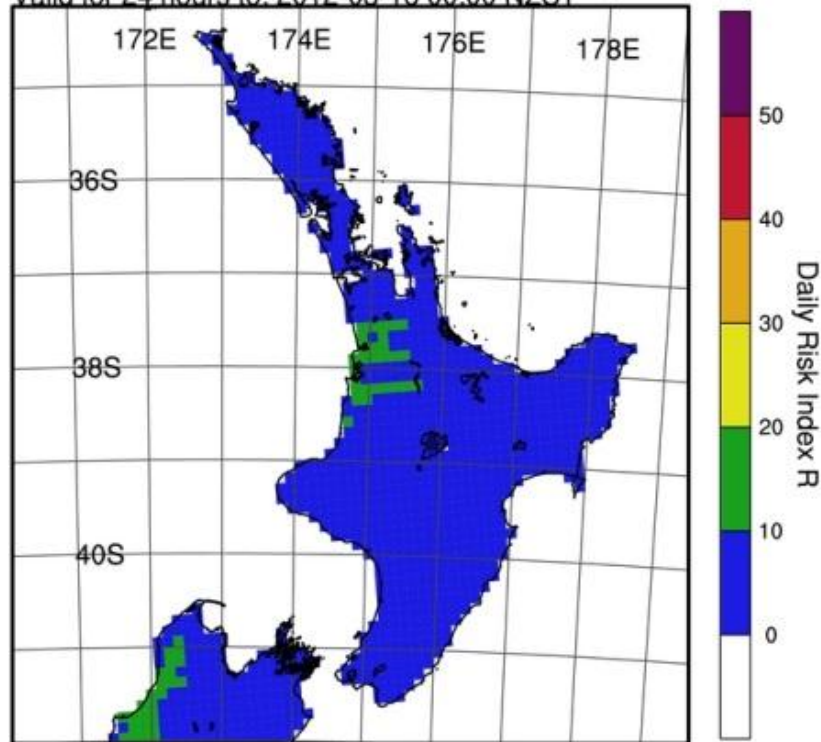
Risk Model
indicates $R=0$

No Risk Forecast available

Psa Risk Forecast: Site Specific (144 h)

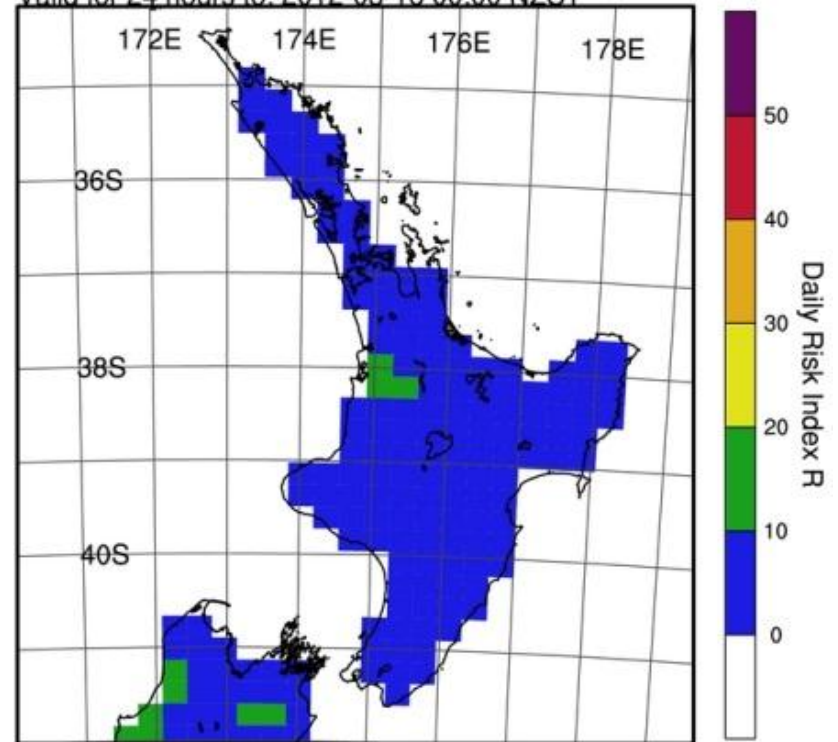


NZLAM-12: PSA Daily Risk Index R
Valid for 24 hours to: 2012-03-16 00:00 NZST



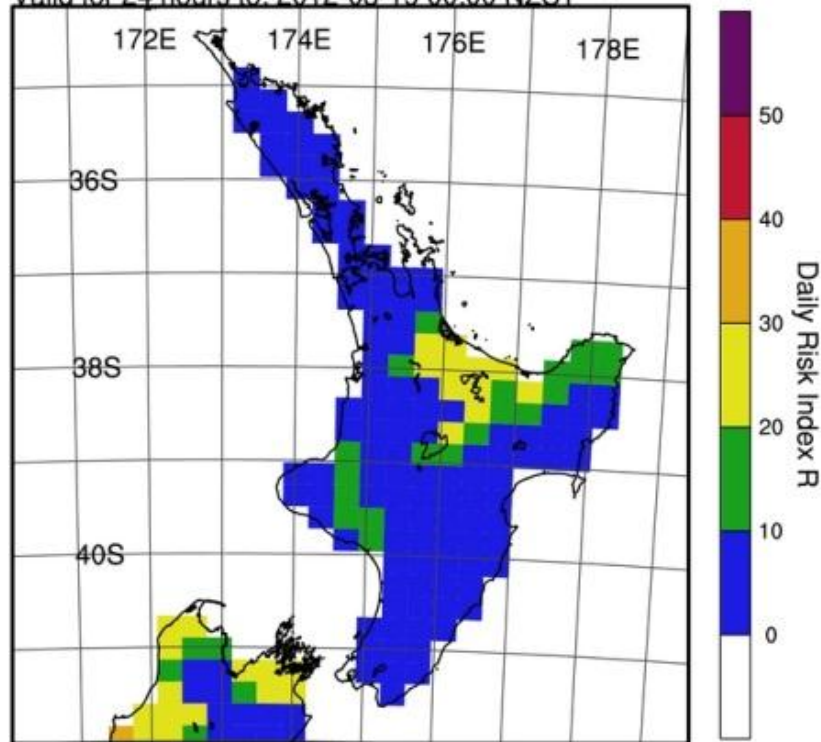
NZLAM-12

Global: PSA Daily Risk Index R
Valid for 24 hours to: 2012-03-16 00:00 NZST



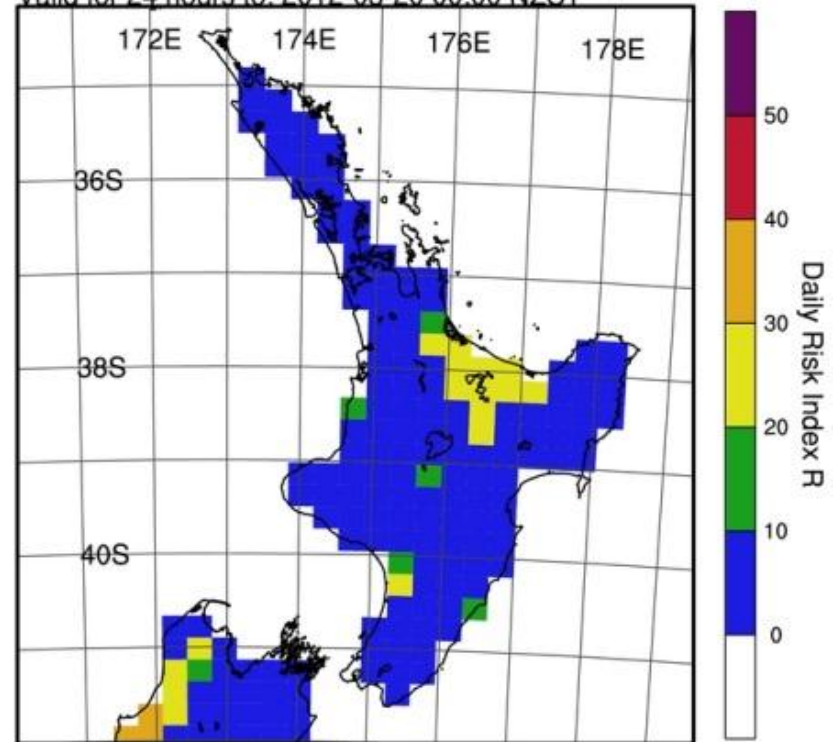
UM Global

Global: PSA Daily Risk Index R
Valid for 24 hours to: 2012-03-19 00:00 NZST



UM-Global Day 4

Global: PSA Daily Risk Index R
Valid for 24 hours to: 2012-03-20 00:00 NZST



UM Global Day 5

NIWA EcoConnect system | Kiwifruit Vine Health (KVH) - Mozilla Firefox

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www.kvh.org.nz/niwa_ecoconnect_system
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NIWA weather information

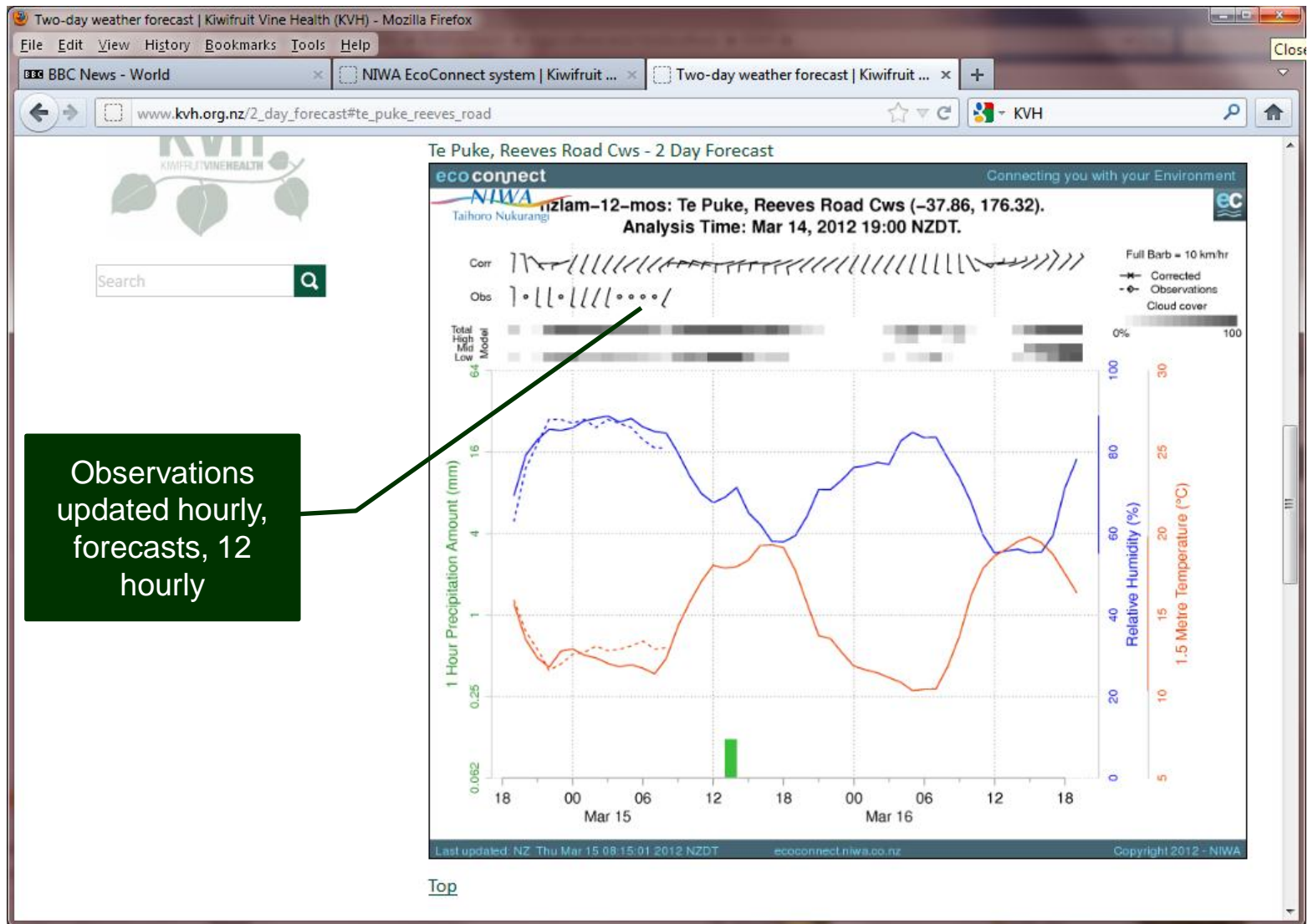
Orchard hygiene
 Spray information
 NIWA weather information
 NIWA EcoConnect system
 Te Puke forecasts
 Tauranga forecasts
 Opotiki forecasts
 Katikati forecasts
 Seasonal Management Guide
 Monitoring and reporting symptoms
 Sampling and testing

NIWA EcoConnect system

The forecast products are provided by NIWA using the [EcoConnect Forecasting System](#).

The fifteen and six-day forecasts are updated daily and the two-day forecasts are updated twice a day. Update times for the two-day forecasts are **10:20** and **22:20** NZ Standard Time (NZST) or **11:20** and **23:20** NZ Daylight-savings Time (NZDT). Growers can use these tools to plan orchard practices such as pruning and protective spray applications before significant weather events.

Te Puke forecasts <ul style="list-style-type: none"> 2 day forecasts 6 day forecasts 15 day forecasts 	Tauranga forecasts <ul style="list-style-type: none"> 2 day forecasts 6 day forecasts 15 day forecasts
Opotiki forecasts <ul style="list-style-type: none"> 2 day forecasts 6 day forecasts 	Katikati forecasts <ul style="list-style-type: none"> 2 day forecasts 6 day forecasts



Thank you

Trajectory Forecast: E. BoP Source

- Given a “source” region
 - Advects source parcels in 3 dimensional space (with t)
 - x, y, z
- Not a dispersion model
- Better than streamline plots.

