

**The House of Representatives Industry, Science and Innovation Committee Bureau
Inquiry
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Overview

The Bureau of Meteorology's Seasonal Outlooks products use statistical connections that link present sea surface temperatures across both the Indian Pacific Oceans with likely temperature and rainfall patterns for the three months to follow. These connections are based on historical relationships.

Being a statistical product, they do not present outcomes in a yes/no format but as a percentage probability style which is scientifically correct but difficult to understand for the layman.

At The Weather Channel we experimented for some time in presenting these products but felt that the general understanding was not high so we now use it sparingly. The times we do tend to use it is when there are strong shifts towards anomalous conditions, either with temperature or rainfall.

Problems

The following is an article that appeared online in the ABC News on Wednesday 25th March. It illustrates the type of problem we are dealing with here. The Weather Channel audience has indicated through our feedback that although the product can be useful, there is a misconception about what the outlooks should be used for.

ABC 25th March 2009

More dry times forecast for southern NSW

Dry conditions are expected to continue throughout much of Victoria and southern New South Wales.

The Bureau of Meteorology has released its three month weather outlook for April to June.

It says there is less than a 40 per cent chance of above average rainfall in most parts of Victoria and southern NSW.

There is a 50-50 chance that temperatures will be warmer than average at day time, especially in western Victoria, but colder than normal at night.

Climatologist Agata Imielska says it comes after very little rainfall last month, but weather fronts could still deliver some rain.

"Hopefully we'll get some weather systems coming through which obviously aren't included in our forecasts," she said.

"The seasonal outlook for the three months is very much based on the ocean temperatures and the conditions regarding those which both the Pacific and the Indian are currently neutral."

Whilst the body of the story is accurate, the headline is somewhat misleading, as the outlook also implies that there is more than a one in four chance of exceeding average rainfall over large parts of South Australia and Victoria. This type of interpretation has led to distress in rural areas that is sometimes blamed on the product itself.

What to do?

I believe the product is a very valuable one for a variety of reasons but could benefit from a "re-badge" in an attempt to steer around the raft of misunderstanding that surrounds it.

Many people view it as a prediction which is either "right" or "wrong". In reality it is a summary of the most likely outcomes based on past events. If the product is presented something like this, rather than as a "forecast" or "outlook", it may improve the public perception issue.

Perhaps if it was called something like "Statistical rainfall connections" and "Statistical temperature connections" – it may help change this perception.

Another alternative may be to issue the product only when there is a strong probability shift in one direction or the other – which is when the outlooks indicated are more likely to be accurate.

Because this product is issued as a probability forecast it cannot be wrong, but is it useful? I think that the answer is yes.

This product comes into its own for agricultural purposes when used regularly over a period of time when the statistical connections will eventually predominate over random events.

A Success Story - The 2003 wheat crop

The 2003 winter wheat crop was a good example where the information was acted on in a sensible fashion with significant benefit resulting for rural Australia.

Bureau Statement issued 15th April 2003

The chances of ABOVE median rainfall for the May to July period are between 60 and 75% in the southeast quarter of Queensland and much of the eastern half of NSW.

So with climate patterns like the current, about 6 to 7 seasons out of 10 are expected to be wetter than average in these areas, whilst about 3 to 4 are drier.

The objective statistical outlook scheme has moderate to strong reliability over the areas where the chances for above median rainfall are more than 60%, but lower reliability elsewhere.

The overall pattern of probabilities is almost entirely a result of warmer than average temperature in the Indian Ocean, with little contribution from the Pacific Ocean.

As far as the El Niño is concerned, most of the main indicators show the event is nearly over.

Sydney Morning Herald, April 28, 2003

Farmers bet Australia's biggest grain crop on rain

By Daniel Lewis, Regional Reporter

April 28 2003

Farmers in northern NSW have started planting what may turn out to be Australia's biggest grain crop as weather forecasters predicted the recent rainfalls there would continue.

Officially, 99.5 per cent of NSW is still affected by drought, with thousands of farmers receiving government income support and subsidies.

Weather forecasters say there will be a 60 to 70 per cent chance of above-average rainfall in the state's north between May and July.

"As far as the El Nino is concerned, most of the main indicators show the event is nearly over," the Bureau of Meteorology said in its latest outlook bulletin.

ABARE Report on 2003-2004 wheat crop

(Australian Bureau of Agricultural and Resource Economics)

"Wheat production from the 2003-04 wheat harvest was a record 25.2 million tonnes, 160 per cent higher than the 2002-03 harvest of 9.7 million tonnes".

In Summary

I believe that the Bureau's Seasonal Outlook service is a valuable one if used correctly but could possibly benefit from a change in title to more closely reflect the nature of the product.

The Weather Channel would welcome any further discussion that would assist in this process as there is definite benefit for rural Australia from the prudent use of the service.

Yours Sincerely,



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