NATIONAL CLIMATE CENTRE **30 April 2009**

SEASONAL CLIMATE OUTLOOK: May – July 2009

La Niña over, with a near-normal winter on the way

The La Niña in the tropical Pacific has faded out, and conditions in New Zealand over the coming 3 months are looking close to normal in many places.

The NIWA National Climate Centre's latest outlook states that over the three months of May, June, and July, average or above average temperatures are likely across the whole country[1]. While this is the overall expectation, it does not rule out occasional cold spells typical of winter. Most of the country is likely to experience near normal rainfalls for the three months as a whole, but normal or above normal rainfall is likely over the north of the North Island.

The Centre says that normal or below normal soil moisture levels and streamflows are expected in the east of both Islands, while near normal soil moisture levels and normal or above normal streamflows are expected in the northern North Island. Normal soil moisture levels and streamflows are expected elsewhere.

Mean sea level pressures are likely to be lower than normal to the north of the country, with slightly weaker than normal westerly winds over New Zealand.

For the final weeks of the tropical cyclone season (May 2009), there remains a small chance of an ex-tropical cyclone passing within 500 km of the country.

Overall Picture

Temperature:

Temperatures are expected to be average or above average in all regions. Sea surface temperatures around New Zealand are expected to be average or above average through May-July.

Rainfall, soil moisture, and stream flows:

Rainfall is likely to be normal or above normal over the north of the North Island, and near normal elsewhere. Normal soil moisture levels and normal or above normal streamflows are expected in the northern North Island; normal or below normal soil moisture levels and streamflows are expected in the east of both islands. Normal soil moisture levels and streamflows are expected elsewhere.

[1] **Reporters please note: Probabilities are assigned in three categories; above average, average, and below average. See end for more explanation.**

Regional predictions for the next three months:

Northland, Auckland, Waikato, Bay of Plenty:
Average or above average temperatures are likely. Rainfall and stream flows are likely to be normal or above normal for the season as a whole, while soil moisture levels, are likely to be near normal.

Probabilities are assigned in three categories; above average, average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	Stream flows
Above normal	40 %	40 %	30 %	40 %
Normal	40 %	40 %	40 %	40 %
Below normal	20 %	20 %	30 %	20 %

Central North Island, Taranaki, Wanganui, Manawatu and Wellington:
Average or above average temperatures are likely. Normal rainfall, stream flows, and soil moisture levels are likely for the three-month period.

Probabilities are assigned in three categories; above average, average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	Stream flows
Above normal	40 %	30 %	30 %	30 %
Normal	40 %	50 %	50 %	40 %
Below normal	20%	20 %	20 %	30 %

Gisborne, Hawke's Bay, Wairarapa:
Near average temperatures are likely for the three months. Normal rainfall is likely overall, with normal or below normal soil moisture levels and stream flows.

Probabilities are assigned in three categories; above average, average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	Stream flows
Above normal	30 %	30 %	20 %	20 %
Normal	50 %	40 %	40 %	40 %
Below normal	20 %	30 %	40 %	40 %

Nelson, Marlborough, Buller:
Average or above average temperatures are likely. Rainfall, soil moisture levels and stream flows are all likely to be near normal, averaged over the full three month period.

Probabilities are assigned in three categories; above average, average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	Stream flows
Above normal	40 %	20 %	30 %	30 %

Normal	40 %	50 %	40 %	40 %
Below normal	20 %	30 %	30 %	30 %

West Coast, Alps and Foothills, Inland Otago, Southland:
Average or above average temperatures are likely. Rainfall is likely to be near normal, with near normal soil moisture levels and stream flows.

Probabilities are assigned in three categories; above average, average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	Stream flows
Above normal	40 %	20 %	30 %	20 %
Normal	40 %	50 %	40 %	50 %
Below normal	20 %	30 %	30 %	30 %

Coastal Canterbury, East Otago:
Near average temperatures are likely for the three month period. Rainfall is likely to be near normal, while soil moisture levels and stream flows are likely to be normal or below normal.

Probabilities are assigned in three categories; above average, average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	Stream flows
Above normal	20 %	25 %	20 %	20 %
Normal	50 %	50 %	40 %	40 %
Below normal	30 %	25 %	40 %	40 %

Background

In the New Zealand region, mean sea level pressures are likely to be lower than normal to the north of the country, with a weak easterly flow anomaly over the country. Sea surface temperatures around New Zealand are expected to be average or above average through May-July.

The La Niña in the tropical Pacific has weakened to a neutral state and is likely to stay neutral through the outlook period.

The tropical cyclone season for the southwest Pacific ends in May. With current conditions in the Pacific, there is still a small chance of an ex-tropical cyclone passing within 500 km of the country during May. The districts at highest risk are Northland and Gisborne.

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Notes to reporters & editors

1. NIWA's outlooks indicate the likelihood of climate conditions being at, above, or below average for the season as a whole. They are not 'weather forecasts'. It is not possible to forecast precise weather conditions three months ahead of time.

2. The outlooks are the result of the expert judgment of NIWA's climate scientists. They take into account observations of atmospheric and ocean conditions and output from global and local climate models. The presence of El Niño or La Niña conditions and the sea surface temperatures around New Zealand can be a useful indicator of likely overall climate conditions for a season.

3. The outlooks state the probability for above average conditions, average conditions, and below average conditions for rainfall, temperature, soil moisture, and stream flows. For example, for winter (June-July-August) 2007, for all the North Island, we assigned the following probabilities for temperature:
   - Above average: 60%
   - Average: 30%
   - Below average: 10%

   We therefore conclude that above average temperatures were very likely.

4. This three-way probability means that a random choice would only be correct 33% (or one-third) of the time. It would be like randomly throwing a dart at a board divided into 3 equal parts, or throwing a dice with three numbers on it. An analogy with coin tossing (a two-way probability) is not correct.

5. A 50% 'hit rate' is substantially better than guess-work, and comparable with the skill level of the best overseas climate outlooks. See, for example, analysis of global outlooks issued by the International Research Institute for Climate and Society based in the U.S. (http://iri.ldeo.columbia.edu/) published in the Bulletin of the American Meteorological Society (Goddard, L., A. G. Barnston, and S. J. Mason, 2003: Evaluation of the IRI's "net assessment" seasonal climate forecasts 1997-2001. *Bull. Amer. Meteor. Soc.*, **84**, 1761-1781).

6. Each month NIWA publishes an analysis of how well its outlooks perform. This is available on-line and is sent to about 3,500 recipients of NIWA's newsletters, including many farmers. See The Climate Update: www.niwa.co.nz/our-science/climate

7. All outlooks are for the three months as a whole. There will inevitably be wet and dry days, hot and cold days, within a season.

8. The seasonal climate outlooks are an output of a scientific research programme, supplemented by NIWA's Capability Funding. NIWA does not have a government contract to produce these outlooks.