



Cook Islands Meteorological Service

Early Action Rainfall Watch

The Early Action Rainfall Watch provides sector managers with a brief summary of recent rainfall patterns, particularly drought and the rainfall outlook for the coming months.

Issued: 04/11/2020

Current El Niño-Southern Oscillation (ENSO) status: The Australian Bureau of Meteorology's ENSO Outlook remains at **La Niña**, meaning that a La Niña has formed across the Pacific Basin and is expected to persist for the rest of the year. La Niña is normally associated with above average rainfall in the southern Cook Islands and below average rainfall in the northern Cook Islands (opposite during El Niño).



Status summary:

Over the previous one to 12 months, Penrhyn's rainfall is at Drought Warning levels. In contrast, rainfall at Rarotonga has mainly been somewhat above normal for periods from one to 12 months.

Outlook summary:

For November, "High Chance Dry" alerts are in place for all northern Cook Island sites – Penrhyn, Rakahanga and Pukapuka. In contrast, "High Chance Wet" alerts are in place for the for all sites in the Southern Group: Rarotonga, Aitutaki, Mangia, Mauke and Manuae.

For November 2020 to January 2021, "High Chance Dry" alerts are in place for all northern Cook Island sites – Penrhyn, Rakahanga and Pukapuka. For the Southern Group, there are "High Chance Wet" alerts for Mauke and Manuae, and "Medium Chance Wet" alerts for Aitutaki, Mangia and Rarotonga. See table/maps below for additional information. It is very likely the northernmost Cook Islands will transition into meteorological drought in the coming months. See status table below for potential impacts.

Rainfall status the end of October 2020, Outlook to January 2021

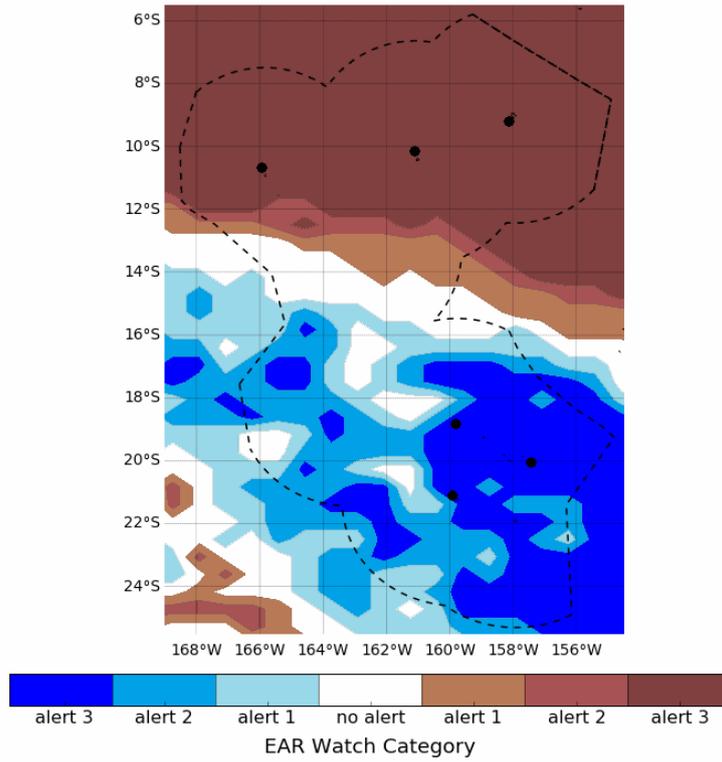
Northern Cook Islands						
	Rainfall Status				Rainfall Outlook	
	Past 12 months	Past 6 months	Past 3 months	Past month	Next month Nov. 2020	Next 3 months to Jan. 2021
Penrhyn	Orange	Orange	Orange	Orange	Dark Red	Dark Red
Rakahanga	Grey	Grey	Grey	Grey	Dark Red	Dark Red
Pukapuka	Grey	Grey	Grey	Grey	Dark Red	Dark Red
Southern Cook Islands						
	Rainfall Status				Rainfall Outlook	
	Past 12 months	Past 6 months	Past 3 months	Past month	Next month Nov. 2020	Next 3 months to Jan. 2021
Aitutaki	Grey	Grey	Grey	Grey	Blue	Blue
Mauke	Grey	Grey	Grey	Grey	Blue	Blue
Rarotonga	Green	Green	Green	Green	Blue	Blue

Rainfall status key	Meteorological Drought	Drought Warning	Drought Watch	Missing Observations	No Alert	Very Wet
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Outlook Key	High Chance Dry	Medium Chance Dry	Low Chance Dry	Outlook not available	No Alert	Low Chance Wet	Medium Chance Wet	High Chance Wet
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ACCESS-S Rainfall Outlooks for November, and November 2020 to January 2021

EAR Watch Categorical forecast for November 2020



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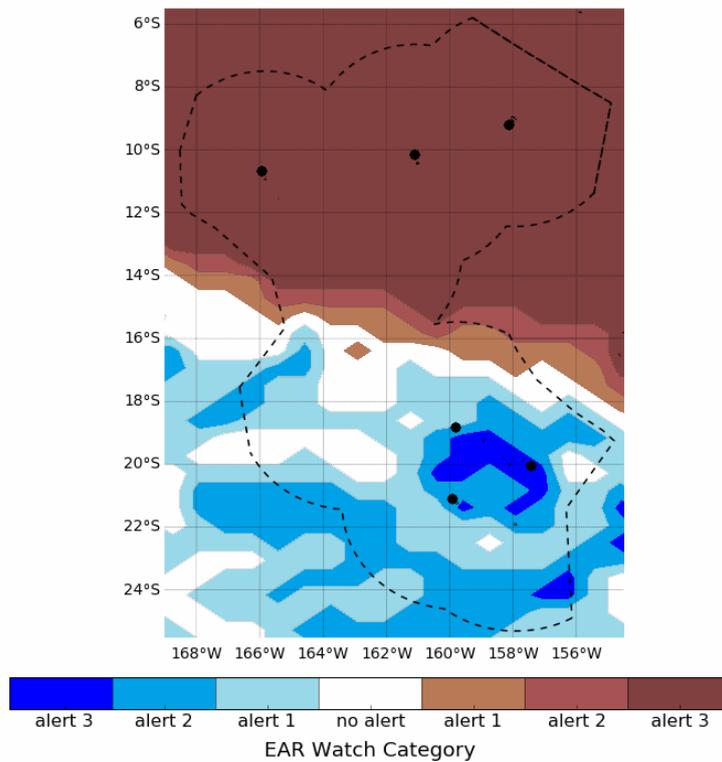
Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <http://www.marinerregions.org/>

MODEL RUN: 01/11/2020

Base period: 1990-2012

Model: ACCESS-S1

EAR Watch Categorical forecast for November 2020 to January 2021



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Shapefile data extracted from Flanders Marine Institute (2019), Maritime Boundaries Geodatabase: Maritime Boundaries and Exclusive Economic Zones (200NM), version 11. Available online at <http://www.marinerregions.org/>

MODEL RUN: 01/11/2020

Base period: 1990-2012

Model: ACCESS-S1

Rainfall status

The Percentile Index is used to assess rainfall status. Meteorological Drought is defined as drought assessed by rainfall data only. A station is assigned 'No Alert' when rainfall has been near normal for the period(s) in question.

After the specified period of below or above average rainfall, the following primary agricultural and hydrological variables and secondary socio-economic and health variables may be impacted. Note the periods are estimates only. Allow for uncertainty associated with island size, topography, geology and soil type. Contact the relevant sector offices for further information on impacts.

Southern Cook Islands				
Sector	1-month period most relevant for	3-month period most relevant for	6-month period most relevant for	12-month period most relevant for
Water	Sanitation issues, household water supply	Low water pressure, water rationing, household water tanks, household water barrels, small streams, intakes, waterfalls	Medium to large streams, intakes, waterfalls, water transportation required	Wells, community tanks
Agriculture	Shallow rooted crops (e.g. tomato, watermelon and lettuce), crop pests and diseases,	Wet and dry taro, pawpaw, mango, oranges, banana, pineapple, raparapa		
Socio-economic and health	Shallow rooted plants (e.g. flowers)	Diarrhoea, increased reliance on imported food, school closure, reduced tourist numbers	Social conflict, water stealing	Livestock death
Northern Cook Islands				
Water	Household water levels reduced			
Agriculture		Loss of some crops		
Socio-economic and health	Health conditions e.g. diarrhoea	Reduced availability of coconuts for food, social conflict increase	Mental health issues e.g. stress and anxiety	Copra yield reduced

Rainfall Outlook

Seasonal outlooks have been produced using the Australian Bureau of Meteorology ACCESS-S model <http://www.bom.gov.au/climate/ahead/about/model/access.shtml>. The outlook provides an indication of total one and three-month rainfall, not how intense the rain may be in any one event, nor how it may vary within the three months. A station is assigned 'No Alert' when near normal rainfall is favoured or there are equal chances of below normal, normal and above normal rainfall.

Cook Islands rainfall monitoring stations



Contact the Cook Islands Meteorological Service for further information.

The Director, Cook Islands Meteorological Service
P.O Box 127, Rarotonga, Cook Islands, Phone: 682 20603,
Website: <http://www.met.gov.ck> Email: mot.weather@cookislands.gov.ck