



# 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: 07/01/2021

**Current El Niño-Southern Oscillation (ENSO) status:** The Australian Bureau of Meteorology's ENSO Outlook remains at **La Niña**. The event is near its peak, with a return to **neutral** expected in the late southern summer or early autumn 2021. 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:

Penrhyn is now in "Meteorological Drought" for periods from one to six months, while remaining at Drought Warning for the past 12 months. Rainfall has also decreased at Rarotonga where "Drought Warning" is current for the past one and three months, while the six month total is only slightly above the Warning threshold.

### Outlook summary:

For **January**, "High Chance Dry" alerts are in place for all northern Cook Island sites (Penrhyn, Rakahanga and Pukapuka), and most Southern Cook Island sites, the only exceptions being Rarotonga (Low Chance Dry), and Mangaia (No Alert).

For **January to March 2021**, "High Chance Dry" alerts are in place for all northern Cook Island sites (Penrhyn, Rakahanga and Pukapuka), and most Southern Cook Island sites, the only exceptions being Rarotonga (Low Chance Dry), and Mangaia (Low Chance Wet). See table/maps below for additional information. See status table below for potential impacts.

## Rainfall status at the end of December 2020, Outlook to March 2021

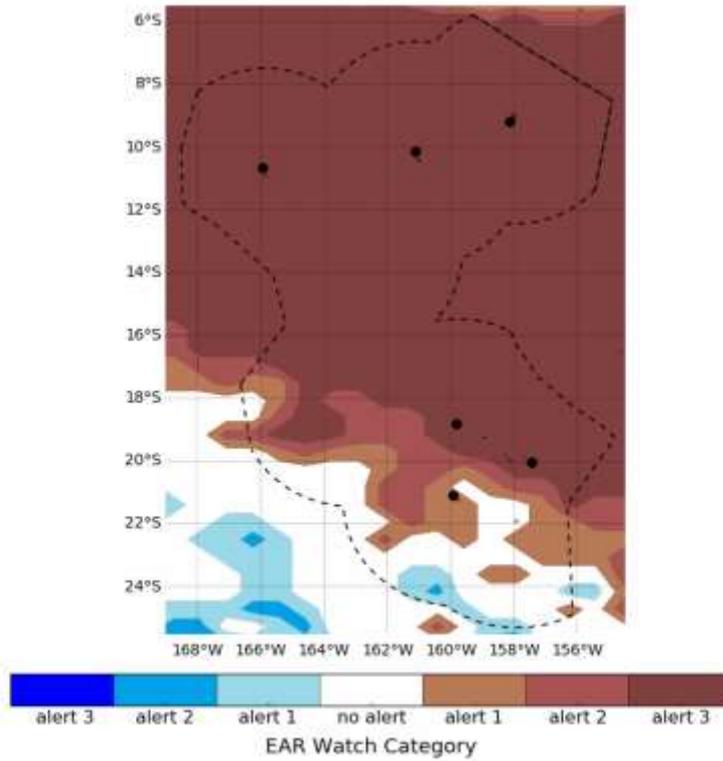
Northern Cook Islands						
	Rainfall Status				Rainfall Outlook	
	Past 12 months	Past 6 months	Past 3 months	Past month	Next month Jan. 2021	Next 3 months to Mar. 2021
Penrhyn						
Rakahanga						
Pukapuka						
Southern Cook Islands						
	Rainfall Status				Rainfall Outlook	
	Past 12 months	Past 6 months	Past 3 months	Past month	Next month Jan. 2021	Next 3 months to Mar. 2021
Aitutaki						
Mauke						
Rarotonga						

<b>Rainfall status key</b>	Meteorological Drought	Drought Warning	Drought Watch	Missing Observations	No Alert	Very Wet
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<b>Outlook Key</b>	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 January, and January to March 2021

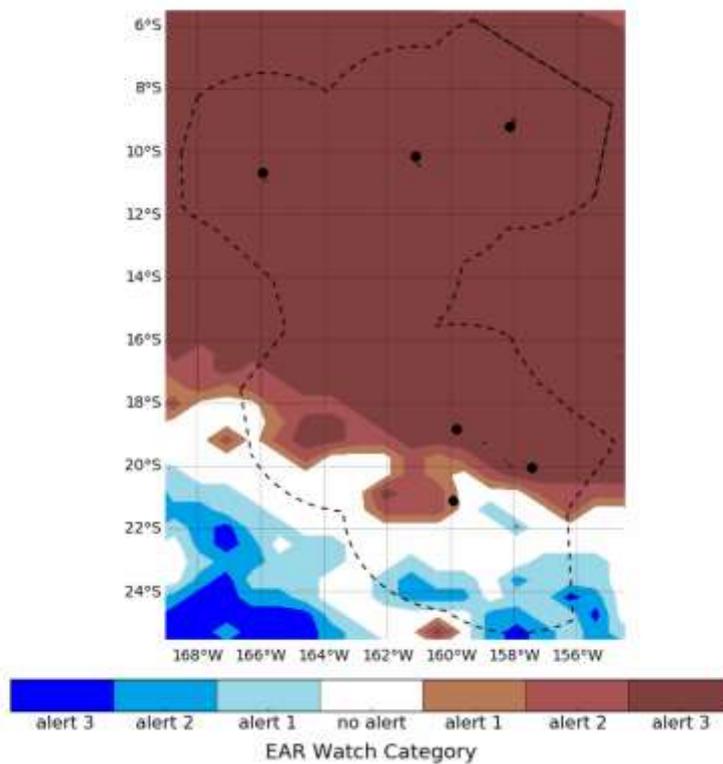
EAR Watch Categorical forecast for January 2021



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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.marinegovern.org/>

MODEL RUN: 01/01/2021  
Base period: 1990-2012  
Model: ACCESS-S1

EAR Watch Categorical forecast for January to March 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.marinegovern.org/>

MODEL RUN: 01/01/2021  
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.

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