



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: 07/09/2020

Current El Niño-Southern Oscillation (ENSO) status: The Australian Bureau of Meteorology's ENSO Outlook remains at La Niña ALERT. This means the chance of La Niña forming in 2020 is around 70%—roughly three times the average likelihood. La Niña could become established in the next three months. La Niña is normally associated with wetter than normal conditions in the southern Cook Islands and drier than normal conditions in the northern Cook Islands (opposite during El Niño).



Status summary:

Meteorological drought existed at Penrhyn 12 months ago. Rainfall has returned to normal in the last few months.

Outlook summary:

For September, a medium chance dry alert is in place for Penrhyn and low chance dry alerts for Rakahanga and Manihiki. For the Southern Group, there is low chance wet alerts for Aitutaki, Rarotonga and Mangaia and medium change dry alerts for the eastern islands.

For September to November, high chance dry alerts are in place for Penrhyn, Rakahanga and Manihiki and a low chance dry alert for Pukapuka. For the Southern Group, there are low chance wet alerts for Palmerston, Aitutaki and Manuae and low chance dry alerts for Atiu 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 August 2020, Outlook to November 2020

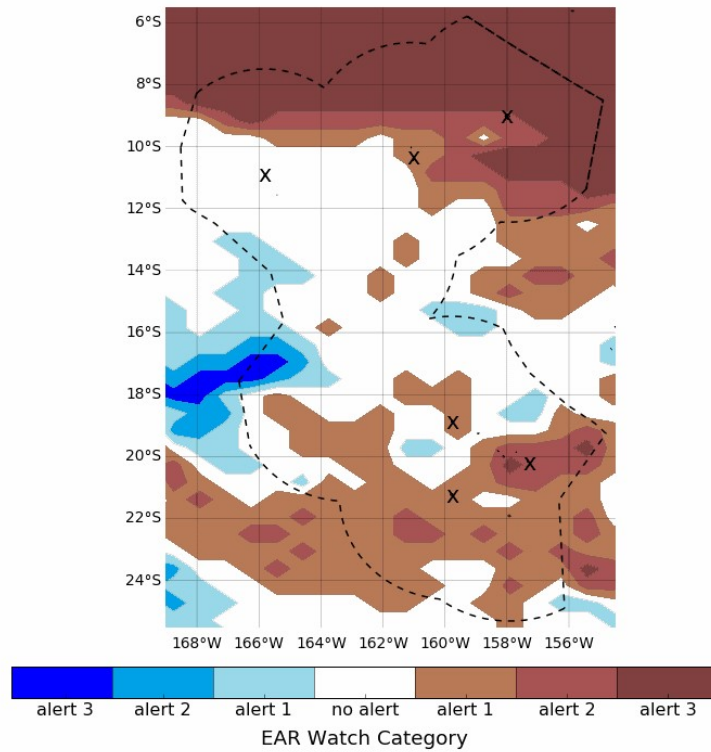
Northern Cook Islands						
	Rainfall Status				Rainfall Outlook	
	Past 12 months	Past 6 months	Past 3 months	Past month	Next month Sept. 2020	Next 3 months to Nov. 2020
Penrhyn	Red	Red	Green	Green	Red	Red
Rakahanga	Grey	Grey	Grey	Grey	Red	Red
Pukapuka	Grey	Grey	Grey	Grey	White	Red
Southern Cook Islands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

Rainfall status key	Meteorological Drought (Red)	Drought Warning (Orange)	Drought Watch (Yellow)	Missing Observations (Grey)	No Alert (Green)	Very Wet (Blue)
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Outlook Key	High Chance Dry (Light Red)	Medium Chance Dry (Red)	Low Chance Dry (Light Orange)	Outlook not available (Grey)	No Alert (White)	Low Chance Wet (Light Blue)	Medium Chance Wet (Blue)	High Chance Wet (Dark Blue)
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ACCESS-S Rainfall Outlooks for September and September to November 2020

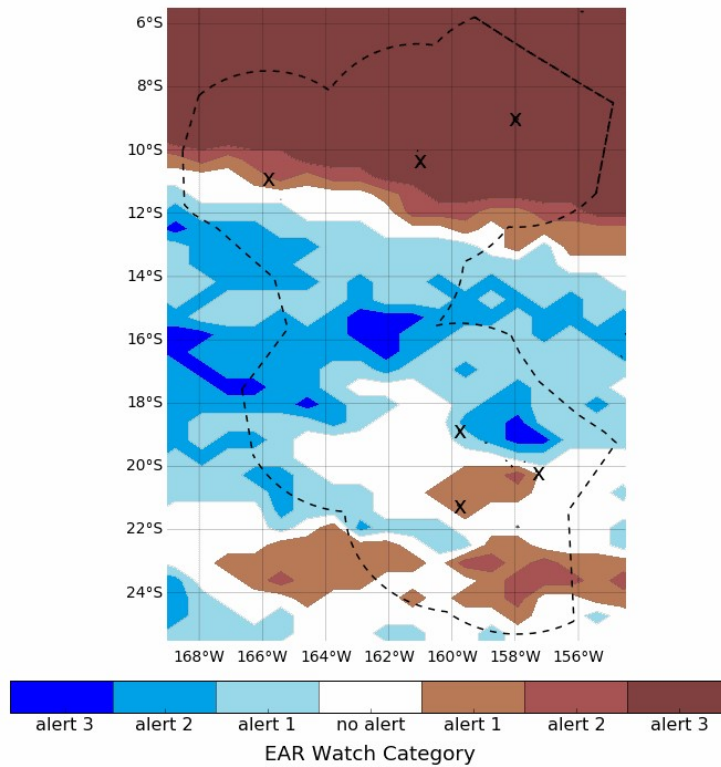
EAR Watch Categorical forecast for September 2020



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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: 01/09/2020
 Base period: 1990-2012
 Model: ACCESS-S1

EAR Watch Categorical forecast for September to 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: 01/09/2020
 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.

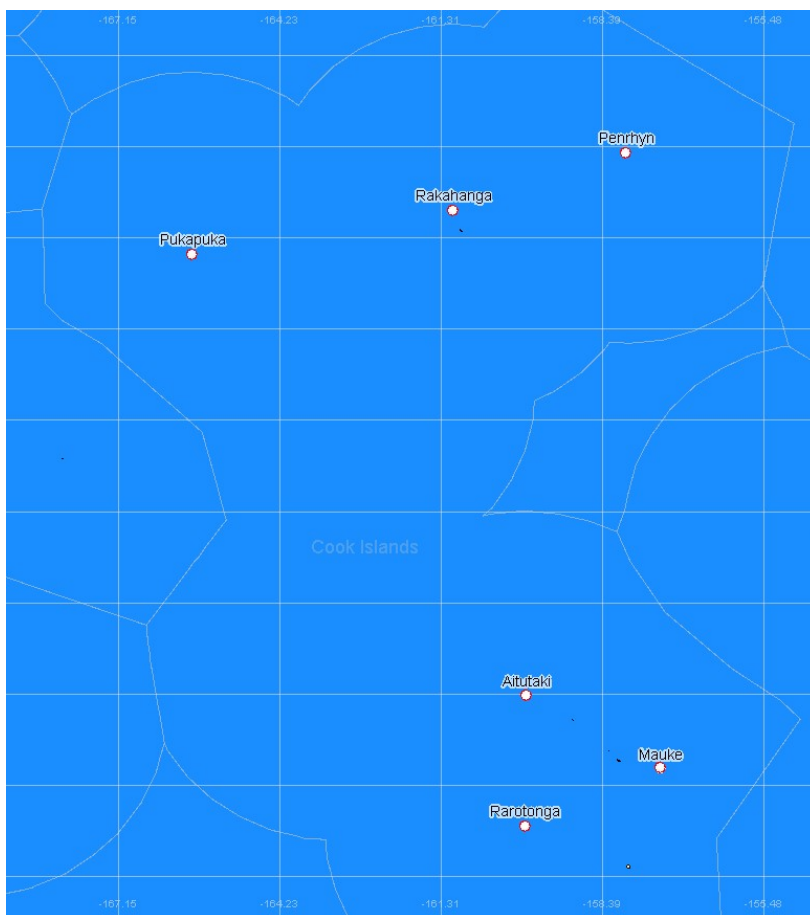
After the specified period of below or above average rainfall, the following primary agricultural and hydrological variables and secondary socio-economic and health variables may be impacted. Note the periods are estimates only. Allow for uncertainty associated with island size, topography, geology and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

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