

# **North Coast Regional Emergency Management Plan**

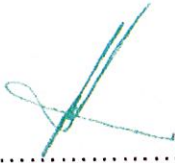


## Part 1 – Administration

### Authority

The North Coast Regional Emergency Management Plan (EMPLAN) has been prepared by the North Coast Regional Emergency Management Committee in compliance with the State Emergency & Rescue Management Act 1989.

APPROVED



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**Superintendent Paul Fehon APM**

**Deputy Regional Emergency Operations Controller**

**North Coast Regional Emergency Management Committee Chair**

Dated: 28 November 2018

ENDORSED

Out of session by

**NSW State Emergency Management Committee**

Dated: 11 June 2019

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## Purpose

Details arrangements for, prevention of, preparation for, response to and recovery from emergencies within the Emergency Management Region covered by this plan.

It encompasses arrangements for:

- emergencies controlled by combat agencies;
- emergencies controlled by combat agencies and supported by the Regional Emergency Operations Controller (REOCON);
- emergency operations for which there is no combat agency;
- circumstances where a combat agency has passed control to the REOCON; and,
- demobilisation and transition of control from response to recovery.

## Objectives

The objectives of this plan are to:

- support Local Emergency Management Plans (EMPLANs) and augment them when required;
- identify trigger points for regional level activation, escalation and demobilisation;
- define participating organisation and Functional Area roles and responsibilities in preparation for, response to and recovery from emergencies;
- set out the control, co-ordination, support and liaison arrangements at the Regional level;
- detail activation and alerting arrangements for involved agencies at the Regional level; and
- detail arrangements for the acquisition and co-ordination of resources at the Regional level.

## Scope

The plan describes the arrangements at Regional level to prevent, prepare for, respond to and recover from emergencies and also provides policy direction for the preparation of Sub Plans and Supporting Plans. Further:

- This plan relies on effective implementation of the Governance framework for Emergency Management;
- Arrangements detailed in this plan are based on the assumption that the resources upon which the plan relies are available when required; and
- The effectiveness of arrangements detailed in this plan are dependent upon all involved agencies preparing, testing and maintaining appropriate internal instructions, and/or standing operating procedures.

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## Principles

The following principles are applied in this plan:

- a) The Emergency Risk Management (ERM) process is to be used as the basis for emergency planning in New South Wales. This methodical approach to the planning process is to be applied by Emergency Management Committees at all levels.
- b) Responsibility for preparation, response and recovery rests initially at Local level. If Local agencies and available resources are not sufficient they are augmented by those at Regional level.
- c) Control of emergency response and recovery operations is conducted at the lowest effective level.
- d) Agencies may deploy their own resources from their own service from outside the affected Region if they are needed.
- e) The Regional Emergency Operations Controller (REOCON) is responsible, when requested by a combat agency, to co-ordinate the provision of resources support. EOCONs would not normally assume control from a combat agency unless the situation can no longer be contained. Where necessary, this should only be done after consultation with the State Emergency Operations Controller (SEOCON) and agreement of the combat agency and the appropriate level of control.
- f) Emergency preparation, response and recovery operations should be conducted with all agencies carrying out their normal functions wherever possible.
- g) Prevention measures remain the responsibility of authorities/agencies charged by statute with the responsibility.

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## Activation, Escalation & Demobilisation

There are a number of Activation, Escalation and Demobilisation triggers that initiate and conclude this Regional EMPLAN or elevation of the emergency to a State level.

### Activation Triggers:

#### *Support*

- Designated Combat Agency has a regional level plan for emergency response;
- Whenever there is an impending or unforeseen emergency operation and Regional level support resources may be required;

#### *Control*

- Where there is no designated Combat Agency and a regional level response is required;
- Where it is necessary to coordinate two or more local level operations which are controlled by Emergency Operations Controllers;
- When the REOCON considers it necessary;
- When directed by the SEOCON to take control of an emergency response.

### Escalation Triggers:

#### *Local to Regional*

- When an emergency grows beyond the capability of a Local EOC;
- When the emergency crosses two or more local emergency management boundaries and the change in control level may improve the situation;
- When significant Political, Environmental, Social, Technological or Economic impacts are foreseen;
- When directed by the SEOCON.

#### *Regional to State*

- When an emergency grows beyond the capability of a Regional EOC;
- When the emergency crosses two or more Regional emergency management boundaries and the change in control level may improve the situation;
- When significant Political, Environmental, Social, Technological or Economic impacts are foreseen;
- When directed by the SEOCON.

### Demobilisation Triggers:

- When it is determined that the incident has scaled back to the extent a regional level response is no longer required;
- When the response has transitioned into a longer-term recovery process and an appropriate handover to a recovery coordinator or committee occurs;
- When it is determined that no further control or support is required for the emergency.

**Note:** The REMC may identify specific Regional triggers for activation, escalation and demobilisation beyond those listed above.

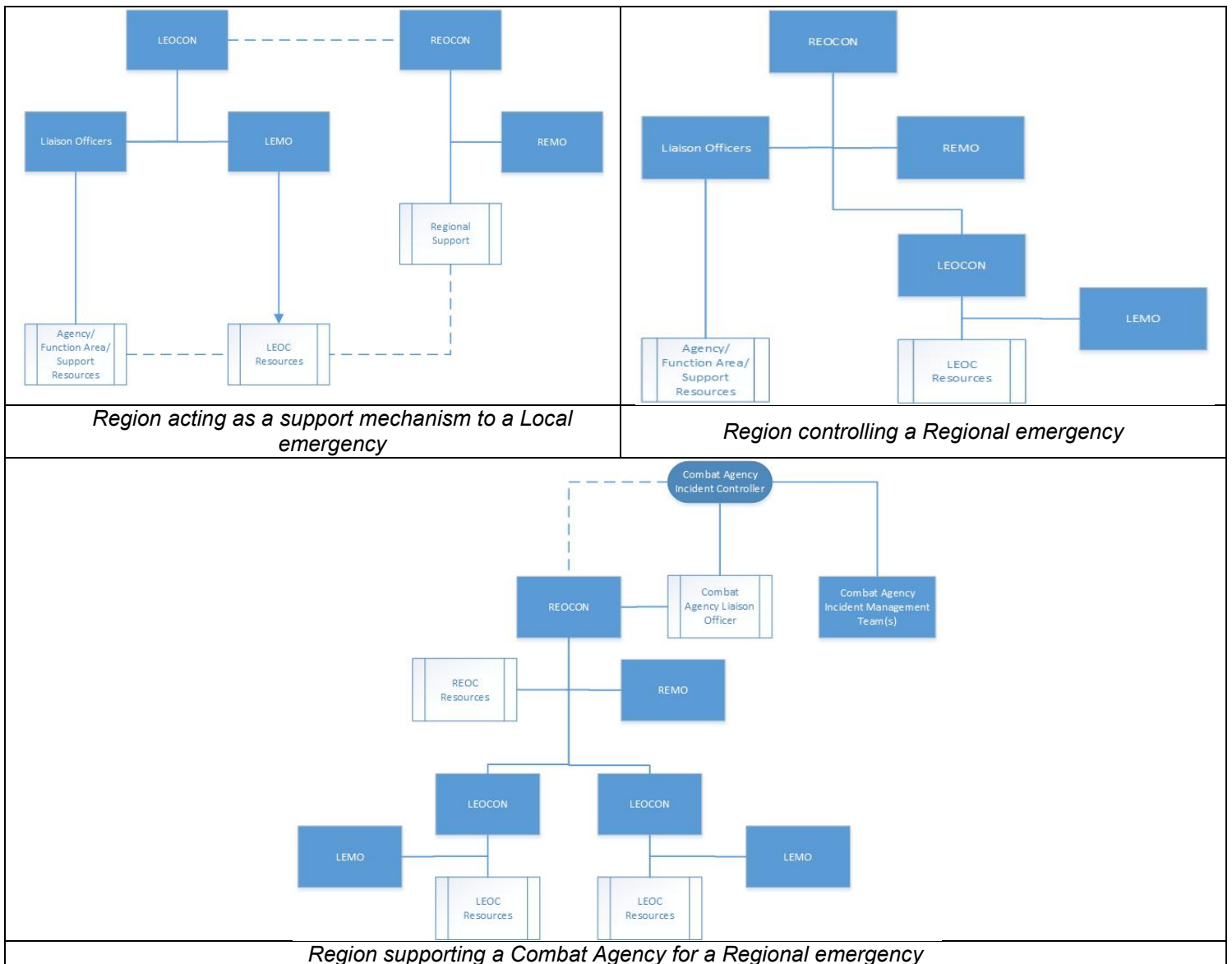
## Control, Command and Coordination Structure

The Control, Command and Coordination (CCC) structure will vary according to the role that the Regional level response is taking. There are three standard structures that typically arise according to the role taken by the REOCON and REMC:

1. The Region acting as a support mechanism to a Local emergency;
2. The Region supporting a Combat Agency for a Regional emergency;
3. The Region controlling a Regional emergency.

A solid line indicates a direct link and a dotted line represents an information link.

**Note:** the specific CCC structure can vary according to the type of emergency and should be confirmed on each occasion between stakeholders with the standard arrangements considered.





## Test and Review Process

The North Coast Regional Emergency Management Committee (REMC) will review this Plan every three (3) years as a part of the continuous improvement cycle, or following any:

- Significant Regional change such as boundary changes, Agency/Functional Area/Supporting organisation changes, facilities, etc;
- activation of the Plan in response to an emergency;
- legislative changes affecting the Plan;
- reviews, inquiries and lessons learned that are relevant to the purpose of the plan;
- exercises conducted to test all or part of the Plan.

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## Part 2 – Context & Risk Assessment

### Annexure A – Regional Profile

#### General

The area covered by this plan known as the North Coast Emergency Management Region comprising the Local Government Areas of Ballina, Bellingen, Byron, Clarence Valley, Coffs Harbour, Mid Coast, Kempsey, Kyogle, Lismore, Port Macquarie-Hastings, Nambucca, Tweed, and Richmond Valley.

The Region includes Lord Howe Island managed by Lord Howe Island Board. There is a focus on Lord Howe Island in this plan because of its remote location in the Pacific Ocean approximately 600km east of Port Macquarie. There is a close working relationship between Lord Howe Island Board and the Port Macquarie Hastings Council, and LEMC agencies for initial emergency management response and impact assessment but any significant emergency management response would require coordination of resources at Region and perhaps State Level for specialist/functional area resources.

The North Coast Regional area also comprises the State Waters adjacent the coastal areas extending to three nautical miles seawards. The thirteen Local Government Areas and Lord Howe Island encompass an approximate area of 42350 square kilometres along the coastline from just north of Newcastle to the Queensland border.

Local Emergency Management Areas and related Local Emergency Management Committees are based on Local Government boundaries except for those that have formally combined for emergency management purposes as per Section 27 State Emergency & Rescue Management Act 1989. The following LGAs in the North Coast Emergency Management Region have formally combined for the purposes of emergency management: Tweed and Byron referred to as Tweed-Byron. Kyogle, Lismore and Richmond Valley referred to as Northern Rivers. Coffs Harbour and Bellingen referred to as Coffs Harbour - Bellingen.

The NSW Emergency Management Regions that adjoin the North Coast Region are the New England Region to the west and Hunter-Central Coast Region to the south.

The QLD Disaster Districts in south-east Queensland that border immediately to the north of the region are Gold Coast, Logan and Warwick.

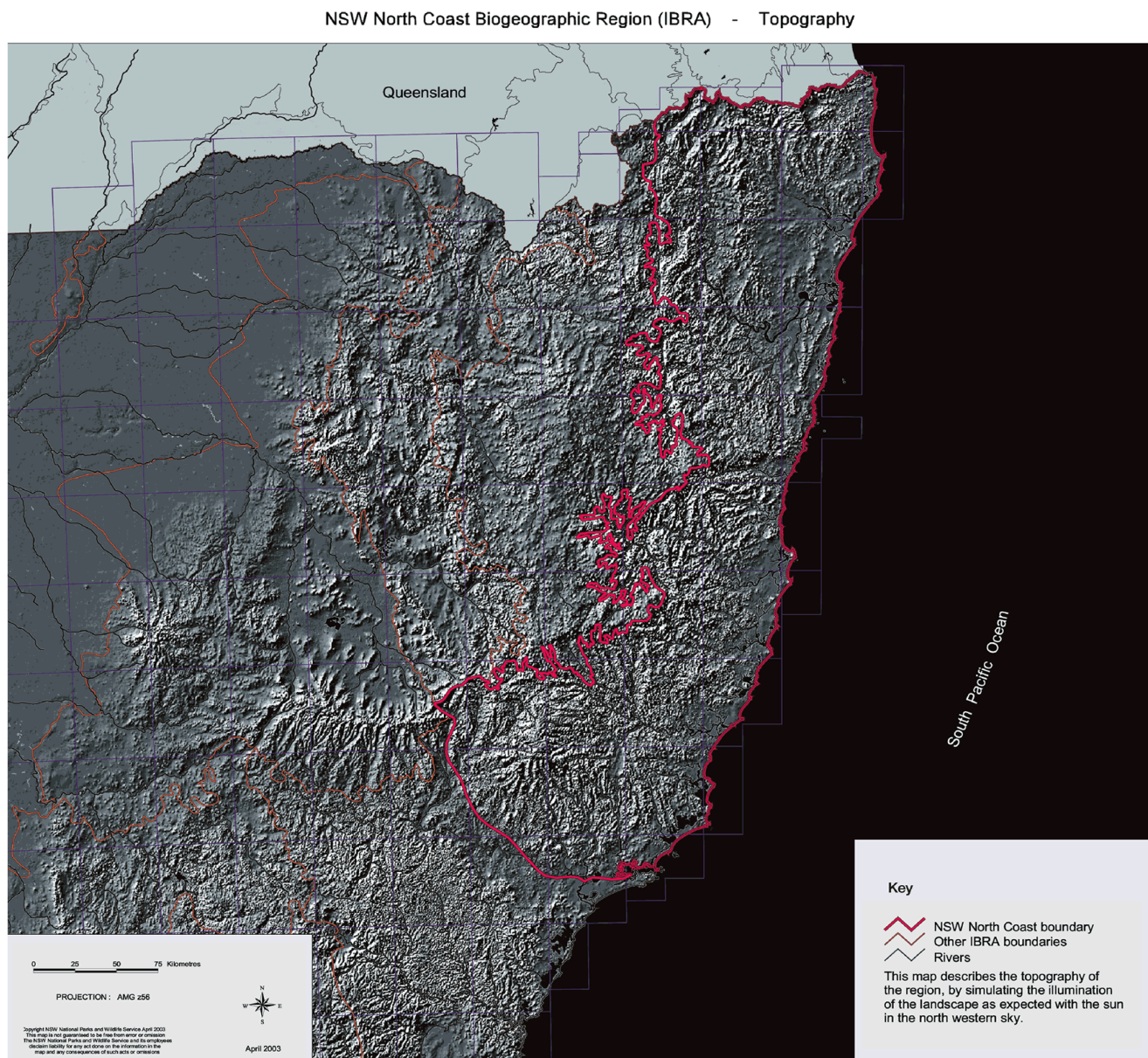


## Landform and Topography

The North Coast includes a range of landscape elements including coastal plains, escarpments, rivers, estuaries, lakes, native forests, grasslands and a magnificent natural coastline inclusive of 81 National Parks.

(Reference: NSW National Parks and Wildlife Service, 2018, *Overview North Coast Region*)

<http://www.nationalparks.nsw.gov.au/visit-a-park/regions/north-coast>



(Reference: Office of Environment and Heritage, 2018, *North Coast – Landform*):

<http://www.environment.nsw.gov.au/bioregions/NorthCoast-Landform.htm>

The Lord Howe Island Group (LHIG) was inscribed on the World Heritage Register (link is external) under the United Nations' World Heritage Convention (link is external) in recognition of its superlative natural phenomena and its rich terrestrial and marine biodiversity as an outstanding example of an island ecosystem developed from submarine volcanic activity. The LHIG World Heritage Property covers an area of 146,300 hectares comprised of Lord Howe Island, the Admiralty Islands (North Rocks, Tenth of June, South Island and Roach Island), Mutton Bird Island, Blackburn Island, Gower Island, Balls Pyramid and offshore islets) and 145,000 hectares of marine environment.

Lord Howe Island, the largest island in the LHIG, has an area of 1,455 hectares and is 11 km long and 2.8 km wide at its widest point and is characterised by sandy beaches, subtropical forests and clear waters. The island is home to seabird colonies, including masked boobies.

### Climate

The general trend from east to west is from a sub-tropical climate on the coast with hot summers, through sub-humid climate on the slopes to a temperate climate in the uplands in the western part of the region, characterised by warm summers and no dry season. A montane climate occurs in a small area in the southwest of the region at higher elevations.

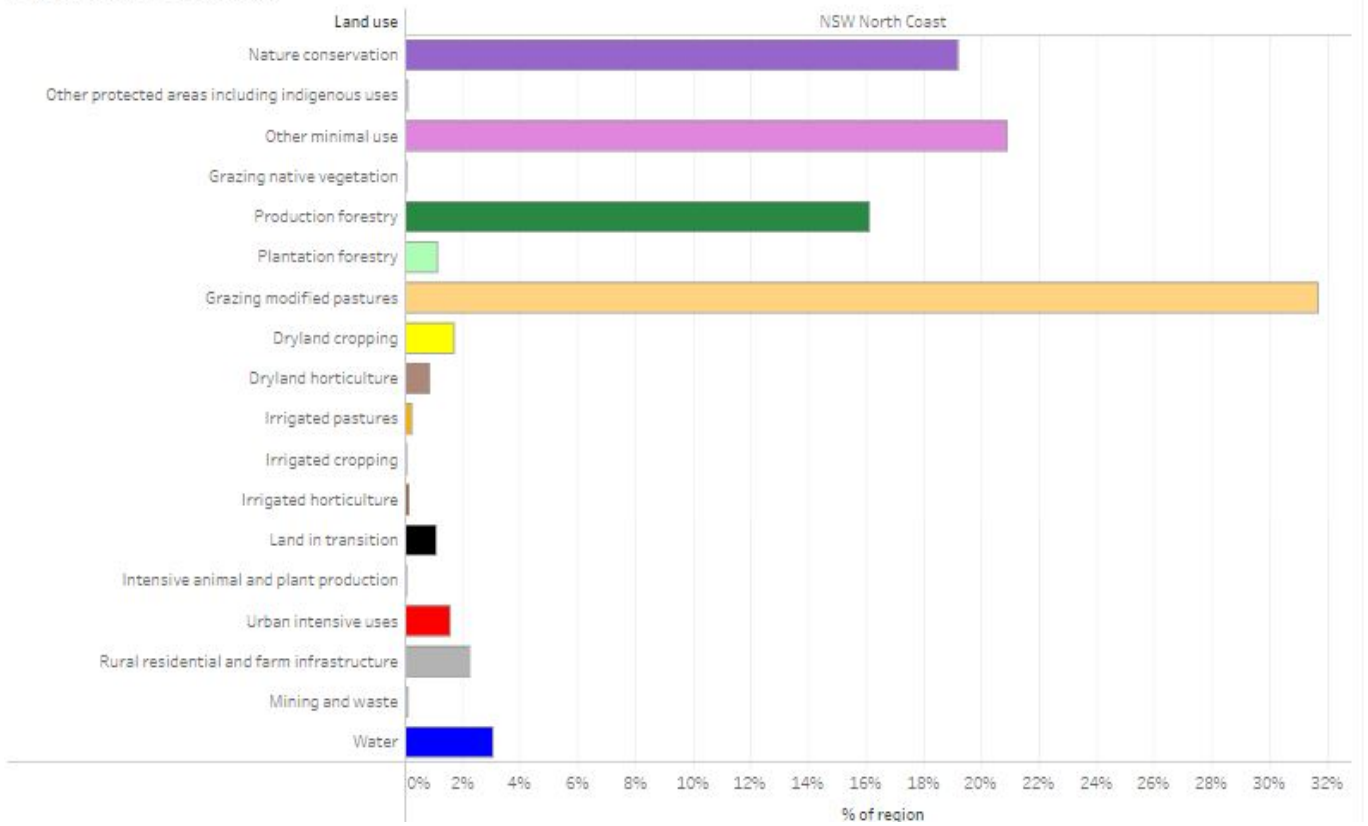
Mean annual temperature	8-20°C
Minimum average monthly temperature	-2.8-9.8°C
Maximum average monthly temperature	20.3-30.9°C
Mean annual rainfall	607-2912mm
Minimum average monthly rainfall	30-99mm
Maximum average monthly rainfall	76-499mm

(Reference: Office of Environment and Heritage, 2018, *North Coast – Climate*):

<http://www.environment.nsw.gov.au/bioregions/NorthCoast-Climate.htm>

## Land Use

Regional land use summary



<https://public.tableau.com/profile/australian.bureau.of.agricultural.and.resource.economics.and.sci#!/vizhome/Australianlanduseprofiles/Story>

The region's main waterways are:

<b>Waterway</b>	<b>LGA</b>
Tweed River and its tributaries	Tweed
Cudgen Creek and Mooball Creek	Tweed
Brunswick River and its tributaries	Byron
Belongil Creek	Byron
Lake Ainsworth	Ballina
Wilson's River and its tributaries	Byron, Lismore, Richmond Valley
Richmond River and its tributaries	Ballina, Richmond Valley, Kyogle
Evans River and Jerusalem Creek	Richmond Valley
Clarence River and its tributaries	Coffs Harbour, Bellingen, Clarence Valley, Kyogle
Lake Arragan and Lake Cakora	Clarence Valley
Sandon and Wooli Rivers	Clarence Valley
Bellingen and Kalang Rivers & tributaries	Bellingen
Nambucca River and its tributaries	Nambucca
Macleay River and its tributaries	Kempsey
Hastings River and its tributaries	Port Macquarie-Hastings
Watson Taylor, Queens, Cathie, Innes and Saltwater Lakes	Port Macquarie-Hastings
Manning River and its tributaries	Mid Coast
Myall, Wang Wauk, Crawford, Wallambah and Karuah Rivers	Mid Coast
The Broadwater and Myall, Smiths and Wallace Lakes	Mid Coast





## Population and People

Data for this section was sourced from ABS Census data.

### Population

	Males	Females	Persons
<b>Total persons</b>	272,356	286,977	559,333
<b>Age groups:</b>			
0-4 years	16,507	15,566	32,073
5-14 years	36,244	34,734	70,978
15-19 years	18,228	17,134	35,362
20-24 years	12,365	11,968	24,333
25-34 years	22,741	24,716	47,457
35-44 years	31,134	35,125	66,259
45-54 years	39,126	42,836	81,962
55-64 years	41,166	41,619	82,785
65-74 years	30,364	31,520	61,884
75-84 years	18,520	21,531	40,051
85 years and over	5,962	10,227	16,189
<b>Indigenous persons:</b>			
Aboriginal	11,622	12,153	23,775
Torres Strait Islander	416	375	791
Both Aboriginal and Torres Strait Islander(a)	426	383	809
Total	12,464	12,911	25,375

### Projected Population by Local Government Area

LGA	2011	2016	2021	2026	2031	2036	Total Change	Total % Change	Annual % Change
Ballina	40,750	42,100	43,250	44,300	45,150	45,850	5,100	12.5%	0.5%
Bellingen	12,900	13,050	13,100	13,100	13,000	12,850	-50	-0.4%	0.0%
Byron	30,700	32,400	33,850	35,250	36,650	37,950	7,250	23.5%	0.8%
Clarence Valley	51,300	52,800	54,450	55,800	56,800	57,450	6,150	12.0%	0.5%
Coffs Harbour	70,950	75,850	80,450	84,800	88,900	92,650	21,700	30.6%	1.1%
Kempsey	29,150	29,800	30,300	30,700	30,850	30,850	1,700	5.9%	0.2%
Kyogle	9,550	9,600	9,650	9,650	9,600	9,550	0	0.1%	0.0%
Lismore	44,350	46,200	47,850	49,350	50,700	51,750	7,400	16.7%	0.6%
Mid-Coast	88,800	91,250	93,300	94,850	95,850	96,250	7,450	8.4%	0.3%
Nambucca	19,250	19,800	20,250	20,550	20,800	20,850	1,650	8.5%	0.3%
Port Macquarie-Hastings	75,250	79,650	83,900	87,900	91,500	94,700	19,450	25.9%	0.9%
Richmond Valley	22,700	23,550	24,300	24,850	25,350	25,650	2,950	12.9%	0.5%
Tweed	88,450	94,450	100,000	105,450	110,600	115,350	26,900	30.4%	1.1%
Lord Howe Island	392								

Language Spoken at Home

	Males	Females	Persons
Speaks English only	251,116	265,629	516,745
Speaks other language:			
Arabic	227	145	372
Assyrian	4	4	8
Australian Indigenous Languages	169	174	343
Chinese languages:			
Cantonese	292	308	600
Mandarin	579	349	928
Other(b)	67	69	136
Total	646	696	1,342
Croatian	80	95	170
Dutch	412	507	919
French	451	524	975
German	952	1,151	2,103
Greek	197	1,332	1,529
Hungarian	71	90	161
Indo-Aryan Languages:			
Bengali	46	29	75
Hindi	93	108	201
Punjabi	628	596	1224
Sinhalese	32	30	62
Urdu	37	23	60
Other(c)	52	51	103
Total	888	837	1725
Iranic Languages:			
Dari	3	0	3
Persian (excluding Dari)	38	37	75
Other(d)	3	0	3
Total	44	37	81
Italian	825	823	1648
Japanese	237	357	594
Khmer	16	12	28
Korean	53	62	115
Macedonian	12	15	27
Maltese	78	83	161
Polish	109	144	253
Portuguese	134	131	265
Russian	52	88	140
Samoan	35	46	81
Serbian	28	53	81
Southeast Asian Austronesian Languages:			
Filipino	68	266	334
Indonesian	103	131	234
Tagalog	99	384	483
Other (e)	37	88	125
Total	307	869	1176
Spanish	395	464	859
Tamil	31	29	60
Thai	148	295	443
Turkish	27	30	57
Vietnamese	152	135	287
Other(f)	1,754	1,752	3506
Total	8,507	9,859	18,366
Language spoken at home not stated	12,732	11,488	24,220
Total	272,355	286,976	559,331

## Motor Vehicles by Dwellings

	Dwellings
No motor vehicles	16,774
One motor vehicle	89,645
Two motor vehicles	75,655
Three motor vehicles	20,884
Four or more motor vehicles	8,542
Total	211,500
Number of motor vehicles not stated	7625
Total	219,125

## Dwelling Types

	Dwellings	Persons
Occupied private dwellings:		
Separate house	172,435	437,171
Semi-detached, row or terrace house, townhouse etc. with:		
One storey	14,792	26,629
Two or more storeys	6,811	13,475
Total	21,603	40,104
Flat, unit or apartment:		
In a one or two storey block	13,946	22,486
In a three storey block	2,564	4,361
In a four or more storey block	1,972	3,412
Attached to a house	471	791
Total	18,953	31,050
Other dwelling:		
Caravan, cabin, houseboat	4,949	7,597
Improvised home, tent, sleepers out	207	370
House or flat attached to a shop, office, etc.	791	1542
Total	5947	9508
Dwelling structure not stated	189	372
Total occupied private dwellings	219,127	518,206
Unoccupied private dwellings	32401	
Total private dwellings	251,528	518,206

## Tenure and Rental

	Dwelling structure					Total
	Separate house	Semi-detached, row or terrace house, townhouse etc.	Flat, unit or apartment	Other dwelling	Not stated	
Owned outright	75,011	6,775	3,781	3,331	42	88,940
Owned with a mortgage(b)	55,257	3,308	1,720	341	31	60,657
Rented:						
Real estate agent	18,193	5,730	7,426	219	34	31,602
State or territory housing authority	3,451	1,461	1,730	10	4	6,656
Person not in same household(c)	11,805	2,025	2,057	392	38	16,317
Housing co-operative/community/church group	926	464	433	18	12	1,853
Other landlord type(d)	1,387	218	301	1,063	10	2,979
Landlord type not stated	1,245	173	193	104	0	1,715
Total	37,007	10,071	12,140	1,806	98	61,122
Other tenure type(e)	1,152	594	398	127	3	2,274
Tenure type not stated	4,007	854	916	344	12	6,133
Total	172,434	21,602	18,955	5,949	186	219,126

## Employment

Employed persons aged  
15 years and over

Industry	
Agriculture, forestry and fishing	9,679
Mining	1,263
Manufacturing	14,382
Electricity, gas, water and waste services	3,113
Construction	19,130
Wholesale trade	5,833
Retail trade	28,058
Accommodation and food services	19,603
Transport, postal and warehousing	7,922
Information media and telecommunications	2,369
Financial and insurance services	3,967
Rental, hiring and real estate services	3,683
Professional, scientific and technical services	9,092
Administrative and support services	6,655
Public administration and safety	11,777
Education and training	19,002
Health care and social assistance	32,487
Arts and recreation services	3,021
Other services	8,137

Inadequately described/Not stated 4553  
 Total 213726

Method of Travel to Work

	Males	Females	Persons
<b>One method:</b>			
Train	82	48	130
Bus	622	625	1,247
Ferry	38	12	50
Tram (includes light rail)	22	5	27
Taxi	150	157	307
Car, as driver	71,614	65,717	137,331
Car, as passenger	5,764	6,785	12,549
Truck	3,616	113	3,729
Motorbike/scooter	1,374	168	1,542
Bicycle	1,600	544	2,144
Other	930	442	1,372
Walked only	4,487	4,354	8,841
Total one method	90,299	78,970	169,269
<b>Two methods:</b>			
Train and:			
Bus	8	16	24
Ferry	0	0	0
Tram (includes light rail)	0	0	0
Car, as driver	49	25	74
Car, as passenger	9	6	15
Other	9	5	14
Total	75	52	127
Bus and:			
Ferry	4	0	4
Tram (includes light rail)	0	0	0
Car, as driver	24	21	45
Car, as passenger	36	92	128
Other	20	15	35
Total	84	128	212
Other two methods	865	465	1,330
Total two methods	1,024	645	1,669
<b>Three methods:</b>			
Train and two other methods	35	29	64
Bus and two other methods (excludes train)	14	15	29
Other three methods	65	18	83
Total three methods	114	62	176
Worked at home	6,734	7,619	14,353
Did not go to work	9,565	15,011	24,576
Method of travel to work not stated	1,968	1,720	3,688
Total	109,704	104,027	213,731

## Transport Routes and Facilities

### Main roads

The Pacific Highway (A1 & M1) is the major north-south vehicle transport thoroughfare between Sydney and Brisbane. It is currently in transition to upgrading to two lanes in each direction.

The Bruxner, Gwydir and Oxley Highways are key east-west connections from the coast to west of the ranges.

The Summerland Way, Orara Way, Waterfall Way, Bucketts Way and The Lakes Way Road systems are other key thoroughfares in the region.



### Rail

The Australian Rail Track Corporation Network maintains a rail link from Newcastle to the Queensland Border. This is the only operational network in the Northern Region and services both passenger and freight trains. The track is non-electrified and includes sections of both dual and single track with many level road crossings.

### Air Services

Major north–south air routes between Sydney and Queensland pass over the North Coast Region and regular passenger air services exist throughout the region. Regular commuter services operate from Ballina, Lismore, Grafton, Coffs Harbour, Lord Howe Island, Port Macquarie, Taree and Gold Coast airports. Ballina, Coffs Harbour, Port Macquarie and Gold Coast Airports are utilised by large passenger aircraft. Some aircraft using the Gold Coast Airport fly directly to/from international destinations. On occasions Coffs Harbour Airport has received International flights for special events in the Region. The Gold Coast Airport has part of its operational footprint in NSW and this is recognised in various plans/planning arrangements.

### Shipping

There are major coastal and international shipping routes off the coast between Great Lakes and Tweed Heads. Yamba is a designated port controlled by Sydney Ports Corporation. Port Macquarie is the home berth of the 'Island Trader' which services Lord Howe Island. Other major harbours for commercial and recreational vessels include Forster/Tuncurry, Coffs Harbour, Yamba/Iluka, Ballina and Tweed Heads.

## Economy and Industry

The region has developed in response to environmental and economic influences over the past 150 years. From early timber and agricultural beginnings, the natural environment has been a major influence in attracting retirees, alternative lifestyleers and sea/tree changers. Tourism is a major contributor to the region's economy. The region has coastal and hinterland national parks and state forests, major river systems, 700 kilometres of beaches and many major communities. These, especially the coastal areas, attract large numbers of local and international visitors. There are many major and evolving industries across the region.

Primary Production – avocados, bananas, beef, blue berries, coffee, cropping, dairy, macadamia and nuts, seafood/fishing, sugar cane, tea-tree, timber, vegetables.

Service Industries - aged care, building construction, administration ie councils and government departments, education, finance, health, retail industry and tourism.

Creative and knowledge industries – artists, writers, film and film production, Computer technology, on-line learning and multimedia technologies, e-business, Design arts, musicians, performers and theatre practitioners.

Evolving industries - boat building, herbs, organic fruits and vegetables, bush foods, aquaculture, mining, alternative energy sources and eco-tourism.

## Historical Events

### Biosecurity Emergencies

Animal biosecurity emergencies in the region are infrequent in part due to prevention and surveillance activities, better on-farm biosecurity practices and reporting requirements. Emergency animal diseases such as Hendra and Lyssa virus do occur in the region sporadically although incidences are dealt with locally and generally do not trigger emergency response arrangements. Both cattle tick and Banana Bunchy Top Virus remain the subject of eradication programs that have been operating since the 1920s. NSW remains committed to the national program to eradicate Red imported fire ant (RIFA) from South East Queensland. Since the discovery of RIFA the region has been the subject of several surveillance public awareness programs. Following the identification recently of Panama disease Tropical Race 4 in North Queensland, legislation was put in place with the objective of preventing its movement into the NSW and impacting the local banana industry. Myrtle rust and the yellow crazy ant have also been the subject of emergency responses in the past. Unfortunately, myrtle rust is now widespread however the infestation of yellow crazy ant at Goodwood Island was successfully eradicated. The increasing movement of livestock, crops, nursery stock, freight, people and vehicles into and within the region means that the risk of introducing new pest animal species, diseases and weeds which could result in a major biosecurity emergency is significant.

### Bush and grass fires.

A typical annual bushfire season starts in October through to March each year known as the Bush Fire Danger Period. However the Bush Fire Danger period may be altered to suit conditions. This allows the Rural Fire Service some control over burning off with permits required. Bushfires are historically a regular occurrence in the landscape and emergency management support is managed locally, with Bushfire Response operations managed at Zone or Area Level. Major fires are managed by Section 44 Bushfire Emergency Declarations ensuring a coordinated response across Fire Fighting bodies via appointment of an Incident Controller coming under the overall management of the Commissioner of the Rural Fire Service. Refer below excerpts of Bush Fire Management Committee Bushfire Risk Management Plans summarising fire activity across the Region within Rural Fire Service Zone/Areas:-

#### **Far North Coast**

Across the Far North Coast BFMC area, fire agencies attend an average of approximately 460 bush, grass and/or scrub fires per year. The main sources of ignition in the Far North Coast BFMC area are fire escape from legal or illegal fires (mainly prior to the introduction of the bush fire danger period), arson, and lightning strikes.



**Northern Rivers**

The Northern Rivers BFMC area has on average 140 bush fires per year, of which 10 on average can be considered to be major fires. The main sources of ignition in the Northern Rivers BFMC area are: • Pre-bush fire danger period burns • Illegal burning-off • Arson • Escapes from legal burning-off • Lightning

**Clarence Valley**

The Clarence Valley BFMC area has on average 159 bush fires per year, of which 45% on average can be considered to be major fires. The main sources of ignition in the Clarence Valley BFMC area are: • incendiaries • indiscriminate and irresponsible burning off practices • long term re-ignitions • lightning strikes • illegal burning off.

**Mid North Coast**

The Mid North Coast BFMC area has on average of approximately 300 bush fires per year, of which 2 on average can be considered to be major fires.

The main sources of ignition in the Mid North Coast BFMC area are: arson / incendiarism, irresponsible and /or illegal burning off and lightning strikes. A significant amount of fires occur as a result of car dumping.

**Lower North Coast**

The Lower North Coast BFMC area has on average 365 bush fires per year, of which five (5) % on average can be classified as significant fires. During the period from 2002/03 – 2007/08 there have been four (4) emergencies declarations under Section 44 of the Rural Fires Act 1997, three within the Kempsey LGA and one (1) in the Nambucca LGA.

**Mid Coast**

The southern boundary of the Mid Coast BFMC area starts approximately 50 Km North of Newcastle and extends another 170km along the mid north coast of New South Wales and includes the former Local Government Area/s of Gloucester, Great Lakes and Greater Taree. The current LGA of Port Macquarie Hastings is also included. The area covered by the Mid Coast BFMC is 1,310,882 hectares. The Mid Coast BFMC area has on average 730 bush and grass fires per year, of which 82\*\* on average can be considered to be major fires. The main sources of ignition in the Mid Coast BFMC area are:- Escapes from legal burning off, Incendiarism/arson, re-ignition of previous wildfire or hazard reduction, illegal burning off, lightning

*Climate change reports indicate drier winter periods and warmer summers and an increase in bushfire activity.*

**Climate change sea level rise & potential impact on Infrastructure**

The potential implications of sea level rise over time include:

- Higher projected storm surge and inundation levels.
- Landward recession of sandy shorelines: Depending on the rate and scale of sea level rise, the environmental, social and economic consequences of recession within low lying inter-tidal areas, in particular, may be significant in the medium-long term.

- Salt water intrusion and landward advance of tidal limits within estuaries: This may have significant implications in the medium-long term for freshwater and saltwater ecosystems and development margins, particularly building structures and foundation systems within close proximity to the shoreline.

Existing coastal gravity drainage, stormwater infrastructure and sewerage systems may become compromised over time as mean sea level rises.

Sea level rise will influence the entrance opening regimes for intermittently closed and open lakes and lagoons (ICOLLs) and alter catchment flood behaviour over time.

The level of protection provided by existing seawalls and other hard engineering structures will decrease over time due to the increasing threat from larger storm surges and inundation at higher projected water levels.

These reports suggest that these sorts of events will increase over time.

*Tweed Heads Water Supply was compromised during 2017 due to ingress of salt water up the river system and over Bray Street weir where Tweed Heads water supply is drawn from. Analytical reports commissioned by Tweed Council indicate that this event was related to a combination of low river flows, sea level rise, high tides and weather system pressures affecting sea levels.*

### **Cyclone /East Coast Lows, Riverine Flooding, Flash Floods, Severe Storm & Coastal Erosion/ Significant Landslips**

The North Coast regularly experiences Cyclone weather remnants referred to as ex Tropical Cyclones or East Coast Lows which have resulted in a combination of riverine flooding to major levels, flash flooding, severe storm with related wind damage (inclusive of Tornadoes), coastal erosion and landslips. These weather events can be either localised or affect wider areas. They can also impact Lord Howe Island regards flash flooding, coastal erosion and wind damage.

Major Flood events have overtopped or threatened levee systems protecting significant coastal communities. Flood events are exacerbated in coastal areas when related storm surge corresponds with high tides. Multiple events have been experienced in a close timeframe across the Region requiring consideration of Regional support or a Regional Recovery focus. Minor to Moderate level flooding events are generally considered to be Combat Agency managed events. Other severe weather rain events not related to east coast lows can also cause riverine flooding or flash flooding to major flood levels. Flood events can originate west of the North Coast Region boundaries but affect connected tributaries flowing east resulting in floods within the North Coast Region.

Coastal inundation and recession are also an issue on the north coast. The whole coastline can be subject to this event however the known reoccurring hot spots for coastal erosion/recession impacting residential areas are Byron Bay LGA - Belongil, Clarence Valley LGA- Wooli, Kempsey LGA – Hat Head, Port Hastings LGA Lake Cathie, Mid Coast

LGA - Old Bar, Manning Point, & Jimmys Beach. Coastal break walls and the Coffs Harbour Marina are also key impact areas, as well as Council and National Parks beach access related infrastructure.

East Coast Lows or other rain events/ flash events provide opportunity for significant Landslips with the Region. Landslips affecting roadways are common on local roads and the western traversing highways in the Region and are usually dealt with locally by local Councils or RMS resources. Landslip hotspots that have directly affected residential property have occurred in areas around Nambucca in the Nambucca LGA, Yamba foreshore in the Clarence Valley, various areas of the Tweed and Byron areas. Shortly after Ex Tropical Cyclone Oswald passed through the area, the community of Upper Coopers Creek, Byron Bay LGA, was isolated for a significant period from February 2013 due to the discovery of a potential landslip with the identified danger requiring the Council to close the only access road. SES coordinated Helicopter operations to resupply the community. A Local EOC was established to support the local community and gain/provide emergency access and needs until the usual access was rectified. Necessary Regional Functional Area support was provided to the Local EOC.

*Climate change reports indicate higher sea levels.*

### **Recent East Coast Low Events.**

#### **March – April 2017**

The remnants of an ex tropical cyclone Debbie impacted the Northern Rivers and Tweed area of the north coast. The Local Government areas of Tweed Heads, Byron Bay, Lismore City, Kyogle and Richmond Valleys were all affected. Significant impacts were to Tweed Heads, Murwillumbah and South Murwillumbah, Byron Bay and associated satellite communities impacted with flash flooding coinciding with high tides/storm surge and major flooding. Levee systems in Lismore were overtopped and North, South and Central Lismore were all flooded with significant damage to CBD business area. A Regional Recovery Coordinator was appointed by the SERCON to assist with the management of recovery of the affected communities.

#### **June 2016**

An intense East Coast Low stretched along the entire NSW coast and over three days brought widespread rainfall, damaging winds and flash flooding to the Northern and Southern coastal regions, Sydney Northern Beaches and South West Metropolitan region. The severe weather event impacted agricultural and fisheries industries. Coastal erosion damage was significant at various locations along the east coast from the Tweed to South Coast. The Coffs Harbour Marina sustained approximately 2 million dollars in estimated damage. The SERCON appointed former Deputy Police Commissioner David Owens as Recovery Coordinator to oversee recovery operations from the impacts of this event.

**April 2015**

An East Coast Low event impacted the area of the lower mid north coast and the adjoining Hunter Central Coast. A significant rain event from this system resulted in a flood event described as flash flooding washing a number of houses away in Dungog with loss of life. Great Lakes Council communities of Booral and Stroud suffered significant impact also from this event. A Regional Recovery Coordinator was appointed for the Hunter Central Coast with the lower Mid North Coast included in the footprint of this recovery.

**February 2013**

In January 2013, ex-Tropical Cyclone Oswald impacted the North Coast, two low pressure systems later impacted the Mid North Coast. Area. These two systems brought gale force winds, heavy rain, damaging surf and flooding to the Macleay River as well as the adjacent Hastings River, Camden Haven River and Manning River. A Recovery Coordinator was appointed to oversee recovery operations in the mid and Lower North Coast areas.

**2009 Events**

Flooding on the north coast occurred five times during summer, autumn and spring 2009. Major rainfall produced by an East Coast Low (ECL) between 13th - 17th of February caused major flooding on the Mid North Coast, including Maitland and Bellinger. This was followed by very heavy falls at the start of April, causing major flooding at many locations within the Mid North Coast and Northern Rivers districts. Between the 19th and 23rd of May heavy falls (although comparatively lower than those in April) preceded by persistent wet conditions, caused flooding on the north coast, affecting Grafton and Kempsey. On the 27th October Coffs Harbour flooded for the fourth time and with little time to recover more rainfall caused flooding in Coffs Harbour between the 6th and 9th of November.

<http://www.bom.gov.au/climate/current/annual/nsw/archive/2009.summary.shtml>

During May 2009 former Police Commissioner Ken Moroney was appointed by the SERCON as North Coast Region Recovery Coordinator to assist with coordination of Recovery.

**March 2001**

The development of a low-pressure system off the New South Wales North Coast caused torrential rain on 2 March before dissipating as it entered Queensland. Heavy rainfall intensified over the following days, particularly in the Coffs Harbour and Port Macquarie regions. River systems in the region were at capacity and tidal systems in correlation with the king tides also caused water levels to rise. The following river systems were affected; Richmond, Clarence, Bellinger, Nambucca, Macleay, Hastings, Manning, Paterson and Hunter. The rising water exceeded levees in

Kempsey and the traffic bridge at Kempsey peaked at a height of 7.44 metres (AHD). A reported 94 businesses suffered damage, with an estimated direct cost of \$28,000 per business, while streets were closed to traffic. At the Mirriwinni Gardens settlements, 50 kilometres north-west of Kempsey, 100 people were evacuated. The Clarence River also threatened to exceed levees, causing precautionary evacuations of more than 1000 people, including 80 patients from the Grafton Hospital. The Grafton levee bank was able to hold the water within the river system, which finally peaked at 7.75 metres. The effects of the flooding were wide spread and inundations and dislocation of services affected up to 28 local government areas. The Pacific Highway, the main route in many of these regions, was cut for several days. It was also reported that some rail services were suspended. Further flood impact was reported at Yamba, which was isolated by flood waters, while sewerage infrastructure failure was reported at Gladstone and Smithtown, and at Ulmarra (population of 470), residents were ordered to evacuate. Bellingen, Thora, Kalang and Darkwood, South West Rocks, Hat Head, and Crescent Head were also isolated and required food and medical drops by helicopter. The response units included; State Emergency Services (SES) with a contingent of 1300 volunteers from 83 units, Rural Fire Service (RFS), New South Wales Fire Brigade (NSWFB), Volunteer Rescue Association (VRA), Police, and Council workers. Additional supporting equipment used in the response included; ten heavy tankers, 12 flood boats, and 11 helicopters. Estimated costs of damage to roads and bridges was \$3 million, and water and sewerage infrastructure damage reported at \$500,000. The enormity of the recovery resulted in the Premier establishing a whole of Government task force to coordinate the operation. Brigadier Philip McNamara was appointed the regional coordinator for the recovery effort and was based at Coffs Harbour. The Insurance Council of Australia estimated the 2001 damage at \$25 million, with a 2011 estimated normalised cost of \$45 million.

(Reference: Australian Institute for Disaster Resilience, 2018, *Knowledge Hub/ March 2001 Flood North Coast New South Wales*):

<https://knowledge.aidr.org.au/resources/flood-graft-kempsey-and-north-coast-new-south-wales/>

## **Dam Failure**

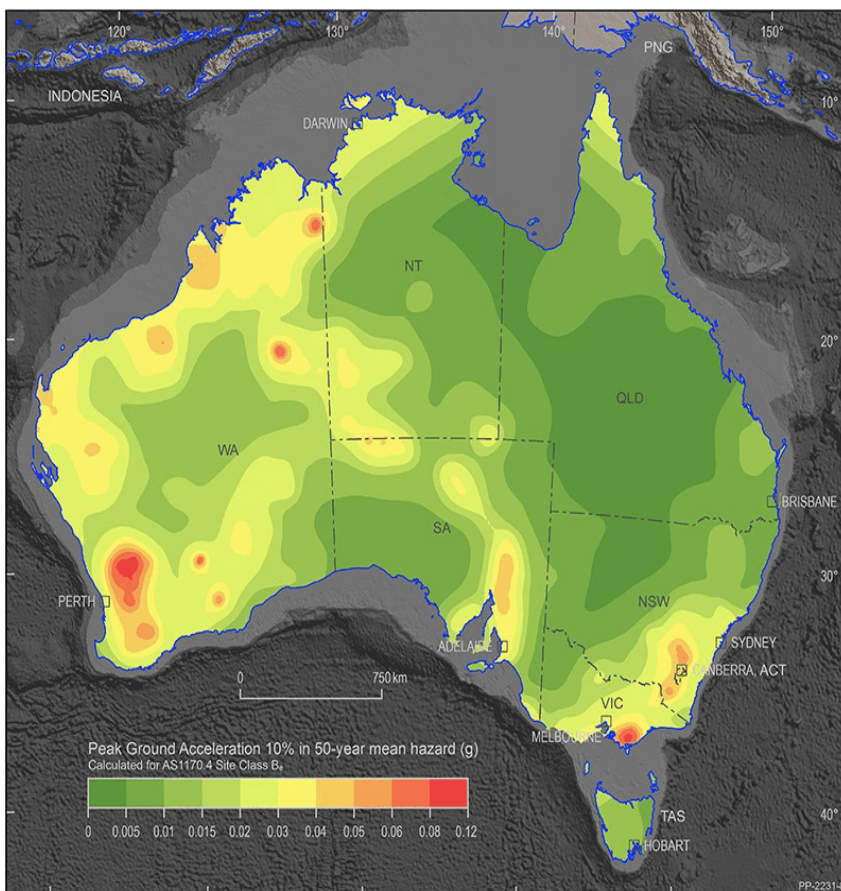
There is no information regards dam failures having occurred in the North Coast region. However, during recent flood events there have been some warnings issued in line with Dam Safety Emergency Plans concerning on stream storages. The failure of the on - stream storage structures of Clarrie Hall Dam -Tweed LGA, Rocky Creek Dam- Lismore City LGA and Emigrant Creek – Ballina LGA during major flood events would increase the impact of the flood event and may attract Regional recovery significance. Failure of any off - stream dam structures within the region is considered to be a local level managed event in terms of flood emergency response. The loss of a water supply dam structure where

community supply is solely or highly dependent would be likely to require Regional Functional Area involvement/support.

### Earthquakes:

[Australian Journal of Emergency Management April 2019 edition](#) - **Earthquakes happen in Australia, but are we prepared?**

Australia records at least one magnitude 5 earthquake every year and a magnitude 6 approximately every ten years. In 1968, the small town of Meckering in the wheatbelt of Western Australia was devastated by a magnitude 6.5 earthquake. The **Newcastle earthquake** occurred on 28 December 1989, with its epicentre in Bolaroo. The shock measured 5.6 on the Richter magnitude scale and was one of Australia's most serious natural disasters, killing 13 people and injuring more than 160.



National Seismic Hazard Assessment of Australia map. Image: Geoscience Australia

<https://knowledge.aidr.org.au/resources/ajem-april-2019-earthquakes-happen-in-australia-but-are-we-prepared/>

Geoscience Australia emergency info and notifications:

<https://earthquakes.ga.gov.au/>

Precis of recent information from NSW SEOC operations website regards swarms of small earthquakes experienced in the Mid North Coast Area in January 2018.

- There were approximately 17 small quakes detected in the period 20-31 January 2018, ranging from 1.9 – 3.3 magnitude resulting in over 500 felt reports due to the soft sediment in the coastal areas.
- Small clusters of small quakes like these are not uncommon and are not necessarily a precursor to a bigger event. These events could go on for months.
- Although the epicentre of the earthquakes has been calculated inland towards Dorrigo/Armidale, the majority of felt reports (in the hundreds) are coming from closer to the coast towards Nambucca Heads/Bellingen area.
- The area has not experienced seismic activity for an extended period of time. There is a build-up of stress/pressure which is being released through these small earthquakes.
- Multiple small earthquakes are a good sign that this stress is being released gradually, rather than all at once at a larger magnitude. The trend is expected to continue with a magnitude between approximately 2.0 – 3.0, and is unlikely to increase in size.

### **Lord Howe Island history of Major Incidents/Emergencies requiring coordination of support.**

A British warship grounded on Wolfe Rock 7 July 2002. Special quarantine dispensation was required to bring perishables and other materials ashore to be burned. Minimal resources at Lord Howe Island for resupply including fresh water. Vessels of other nations which were in the area came to assist.

There have been at least two East Coast Low events or severe weather events requiring engineering support to be sent out to the island to inspect the airport tarmac June 1996 floods & 18 April 2009 storm damage. The LHI Board now have Senior Manager with mandatory engineering qualifications – able to provide all manner of engineering assessments if required.

There have been a number of airlifts by Defence for rescues and medical retrievals where NSW resources were not suitable or adequate for the purpose. For medical retrievals it is usually for night operations as the air ambulance King Airs have some limitations regarding night retrievals. Civilian aircraft have also flown patients out in night-time hours. Defence flew in support crews (Sea Hawks) for the June 1996 floods as the runway was unserviceable. Defence provided patient retrieval on Mount Gower 17 May 2011. Patient had to remain overnight on the mountain until helicopters arrived (2 deployed for safety reasons). Defence have assisted with civilian operations – C130 Hercules flew in the Islands crane in 1982.

The old Power House caught fire on 13 November 2009. The diesel powered generator sets were able to continue working with some shoring of the building and continuous air monitoring in the vicinity for asbestos. Strict controls for any entry to the unstable building required. When the New Power House was built (open in Dec 2012) 4 x temporary generator sets were brought to the Island to provide the Island's power while shifting from the old to the new. One of these generator sets was installed at the southern end of the

Island. This generator is capable of providing back-up power for the whole Island

Damage to Airport required recovery works 18 April 2009 – included damage to runway and taxiway wearing surface, flooding of runway and airport road, bank collapse and undermining of seawall just north of the runway, ancillary wall collapse at power house, minor landslips at golf club causing destruction of 80,000lt water tank, golf club green keeper shed collapse due to windloads. Other large rain events have required airport recovery works but able to handle in-house. Extensive drainage works have been undertaken around the aerodrome which, to date, have alleviated flooding and associated damage.

Lord Howe Island Trader got stuck on rocks in the bay with potential marine oil spill risk on 17 October 2011. Oil Spill containment booms had to be deployed late afternoon early evening. A Marine Oil Spill incident Controller was deployed from the mainland. Took several days before refloat – booms had to be monitored/adjusted continuously day and night.

Tsunami warning evening of 15 July 2009 people moved from lower grounds for a night. Short lead time between warning and estimated time of impact. Approx. 130 pax moved to high ground – Northern Assembly Area: Old Met Station Site east side of Island. Majority were Lodge guests and staff. Limited time for checks on low lying areas Priority plant and equipment moved to higher ground. No facility for hospital patients (1 in-patient at the time)

## Tsunami

### History of Tsunami

May 23, 1960	NSW, QLD, SA, TAS, VIC, SA	Central Chile	Slight to moderate damage to boats in harbours at Evans Head, Newcastle, Sydney and Eden
April 2, 2007	NSW	Solomon Islands	Dangerous rips and currents reported at Coffs Harbour
February 28, 2010	NSW, QLD, TAS	Chile	50cm wave at Norfolk Island, 42cm wave at Gold Coast QLD, 29cm wave at Port Kembla NSW, and a 28cm wave at Southport TAS
March 11, 2011	NSW, TAS	Japan	56cm wave at Norfolk Island, 35cm wave at Port Kembla NSW, and a 23cm wave at Spring Bay TAS. Unusual currents noted at Port Kembla and Sydney Harbour. Several swimmers washed into a lagoon at Merimbula NSW

(Reference: Australian Government Bureau of Meteorology, 2018, *Past Tsunami Events*):

<http://www.bom.gov.au/tsunami/history/index.shtml>

For Tsunami potential impact areas for North Coast refer

<https://www.ses.nsw.gov.au/tsunamisafe/evacuation-map/tsunami-evacuation-map/>



## Annexure B – Hazards and Risks Summary

The North Coast Regional Emergency Management Committee (NCREMC) has endeavoured to identify the level of control, emergency management support coordination, and risk controls for those hazards that may have the potential to cause loss of life, property, utilities services, and / or the community's ability to function within its normal capacity. To determine those of regional concern and involvement the NCREMC has based its decision making on a process of reviewing the risk rating information from the respective LEMC Local EMPLAN Risks and summary processes which required reference to Local ERM Studies. The NCREMC agreed criteria for determining/allocating a regional residual risk priority are as follows:-

Criteria	Regional Risk Priority
Emergency event managed at Local level, unlikely to require Region emergency management support coordination	Low
Emergency event managed at Local level, but may require Region emergency management support coordination in extreme events	Medium
Will require Region emergency management support coordination in extreme events – consider region CMG	High
State wide operation - Region emergency management support required in extreme events - region CMG required	Critical

Although the control/emergency management support coordination levels, risk controls and region risk priorities have been identified and recorded for the purposes of this document, the following factors may affect this information:-

Any “emergency” may happen to escalate requiring control intervention/coordination of support from higher levels and the NSW emergency management arrangements/structure cater for this.

As per AIIMS/ICS principles a Combat Agency may raise their level of control/coordination in accordance with their plan or to meet operational needs inclusive of coordinating out of area resources. However, it should be noted that the coordination of support to a Combat Agency by EOCONS to deal with community impacts may be achievable at lower management levels than the combat agency is utilising and may also be achievable with or without the activation of a multiagency EOC.

It is not the intention of the Regional EMPLAN to replace the role of a Local EMPLAN.

The table below provides a Regional level summation and priority for identified hazards and risks.

Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Biosecurity Emergency (Animal/Plant)	Pest plants, pest animals as well as a serious plant and animal disease outbreak would pose a risk to primary industries, the land and marine environments, community and the economy.	Designated Combat Agency. Considered to be a state level managed event. Activation of State Biosecurity (Animal and Plant) Emergency sub plan and related arrangements in Region CMG and relevant Local CMGs. REOCON to activate Region EOC and LEOCONS Local EOCS, coordinate support as required as part of State Response and Recovery. Combat Agency coordinated surveillance, advice on-farm practices, reporting, eradication, public education, containment, restrictions on movement, quarantine, treatment, vaccination, disposal.	High	Department of Primary Industries
Bridge Collapse	Failure of a major bridge structure with or without warning due to structural failure /external/ internal events or other hazards/ incidents.	Considered to be a local level managed event via Site Control or Local EOC established as required. LEOCON to activate respective Local EMPLAN arrangements and CMG as relevant. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. RMS/TMC related plans regards alternate routes on major highways. State Major Structural Collapse Sub Plan	Low	LEOCON
Building Collapse	Collapse of building due to structural failure or impact from external/internal event of other hazards /incidents.	Considered to be a local level managed event via Site Control or Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. State Major Structural Collapse Sub Plan. State Asbestos Emergency Sub Plan	Low	FRNSW (USAR) LEOCON
Communicable Disease (Human)	Pandemic illness that affects, or has potential to affect, large portions of the human population	Designated Combat Agency. State level managed event. State Human Influenza Pandemic Sub Plan. Local, State and Federal plans have been developed Promotion of Influenza vaccination regimes as relevant. Health promotion of hand hygiene, and respiratory etiquette Relevant Local CMGs. REOCON to activate Region EOC and LEOCONS/ Local EOCS, respond to SEOCON or Combat Agency directions, coordinate support as required as part of State Response and Recovery. Activation of agency business continuity plans.	High	Department of Health

Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Dam Failure	A dam is compromised that results in localised or widespread flooding.	<p>Considered to be a local level managed event.</p> <p>Activation of respective Dam Safety Emergency Plans by dam owners &amp; via local SES Flood Plans.</p> <p>Refer respective Local EMPLAN arrangements and CMGs as considered relevant by LEMCs.</p> <p>LEOCON to monitor &amp; coordinate any necessary Functional Area support as identified in CMG if not available locally via REOCON.</p> <p>State Major Structural Collapse Sub Plan.</p> <p>Refer to Utilities failure regards potential loss of Water Supply.</p>	Low	Dam Owners NSW SES
Earthquake	Earthquake of significant strength that results in localised or widespread damage.	<p>Geoscience Australia monitoring and warnings via BOM</p> <p>Any earthquake event of significance considered to be a state level managed event.</p> <p>As directed by SEOCON, REOCON to activate Region and Local EMPLAN arrangements, activate Region EOC and relevant LEOCONS/Local EOCS, control response, determine &amp; report impact, coordinate support as required as part of State Response and Recovery.</p> <p>State Major Structural Collapse Sub Plan.</p> <p>State Hazardous Materials/Chemical, Biological, Radiological and Nuclear sub plan</p> <p>State Asbestos Emergency Sub Plan</p> <p>Activation of agency business continuity plans</p>	Medium	SEOCON REOCON LEOCONS FRNSW (USAR)
East Coast Low	Varying combinations and impacts of Riverine Flooding, Flash Flooding, Severe Storm and Coastal Erosion	<p>BOM ECL Severe Weather Warnings, related Flood Watches &amp; Warnings Designated Combat Agency.</p> <p>Refer Controls allocated for Riverine Flooding, Flash Flooding, Severe Storm (Coastal Erosion)</p>	High	SES

Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Fire (Bush or Grass)	Major fires in areas of bush or grasslands.	Designated Combat Agency and identified firefighting coordination structure for emergency events. Firefighting efforts generally managed at Zone/Area/District levels with Regional Support Coordination moving to the RFS State Operations Centre during periods of significant operational activity. (Section 44 Declarations) Section 52 Operations Plans & Section 52 Bush Fire Risk Management Plans as approved by Bushfire Coordinating Committee. RFS Concept of operations for Catastrophic Fire Weather. Fire Permits. Total Fire Bans, Neighbourhood safer places Prevention /Hazard Reduction activities by land managers & RFS as described in "Planning for Bush Fire Protection 2006" Considered that the coordination of non fire fighting support would normally be able to be managed locally with Functional Area support. Local EMPLAN - CMG as determined by LEMC REOCON to monitor impact of significant fires over multiple LGAS on forecast Catastrophic fire weather days. Where multiple LEOCs involved in consultation with Combat Agency/LEOCONS consider establishment of REOC/ coordinate resources/ impact assessments LEOCONS/EOCS/LEMCs Consider requirement for Regional Recovery via REMC.	High	NSW RFS FRNSW Land Management Agencies
Fire (Industrial)	Serious industrial fire in office complexes and/or warehouses within industrial estates.	Designated combat agency. Considered to be a local level managed event via Site Control or Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. State Major Structural Collapse Sub Plan. State Hazardous Materials/Chemical, Biological, Radiological and Nuclear sub plan State Asbestos Emergency Sub Plan	Low	FRNSW NSW RFS

Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Fire (Commercial)	Serious commercial fires in shopping centres, aged persons units, nursing homes and hospitals.	Designated combat agency. Considered to be a local level managed event via Site Control or Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. State Major Structural Collapse Sub Plan. State Hazardous Materials/Chemical, Biological, Radiological and Nuclear Sub Plan State Asbestos Emergency Sub Plan	Low	FRNSW NSW RFS
Fire (Residential)	Serious residential fire in medium/high rise apartments.	Designated combat agency. Considered to be a local level managed event via Site Control or Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. State Major Structural Collapse Sub Plan. State Hazardous Materials/Chemical, Biological, Radiological and Nuclear Sub Plan State Asbestos Emergency Sub Plan	Low	FRNSW NSW RFS
Fire (Shipping at Port or Cargo Wharf)	Large scale toxic material release. Explosion risk requiring evacuation. Prolonged fire evolution with a risk of vessel foundering and pollutant spill.	Designated combat agency. Level of combat agency management scalable as to environmental impacts. Support Coordination considered to be a local level managed via Site Control or Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. State Hazardous Materials/Chemical, Biological, Radiological and Nuclear Sub Plan State Asbestos Emergency Sub Plan North Coast Marine Oil and Chemical Spill Plan	Low	FRNSW Port Authority

Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Flood (Flash)	Heavy rainfall causes excessive localised flooding with minimal warning time	BOM Severe Weather Warnings and SES advices. Designated Combat Agency, Established SES Units across the Region. Local Flood Plans, Flood Action Cards, Community Reference Groups, Community engagement, Local Exercising of plans Links on NSW SES website to "What to do during a flood" <a href="https://www.ses.nsw.gov.au/floodsafe/prepare-your-home/during-a-flood/">https://www.ses.nsw.gov.au/floodsafe/prepare-your-home/during-a-flood/</a> Participation in Floodplain Risk Management Committees Considered to be a local level managed event. Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally.	High	NSW SES
Flood (Riverine)	River flows exceed the capacity of normal river systems resulting in flood waters escaping and inundating river plains, to major flood levels, overtopping of levee systems protecting residential communities & related central business districts.	Designated Combat Agency BOM Flood Watches and Warnings & SES advices. Local Flood Plans, Flood Action Cards Community Reference Groups, Community engagement Local Exercising of plan. Links on NSW SES website to "What to do during a flood" <a href="https://www.ses.nsw.gov.au/floodsafe/prepare-your-home/during-a-flood/">https://www.ses.nsw.gov.au/floodsafe/prepare-your-home/during-a-flood/</a> Floodplain Risk Management Committees Established SES Units across the Region Considered to be a local level managed event. Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. In consultation with Combat Agency/LEOCONS where multiple EOCs involved consider establishment of REOC/ coordinate resources/ impact assessments LEOCONS/EOCS/LEMCs Activation of Agency business continuity plans. Consider requirement for Regional Recovery via REMC	High	NSW SES
Hazardous Release	Hazardous material release as a result of an incident or accident.	Designated Combat Agency Considered to be a Local Level managed event via Site Control or Local EOC established as required. LEOCON to activate respective Local EMPLAN arrangements and CMG as relevant. State Hazardous Materials/Chemical, Biological, Radiological and Nuclear Sub Plan	Low	FRNSW

Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Heatwave	A sequence of abnormally hot conditions as ie three or more days of high maximum and minimum temperatures that are unusual for that location having the potential to affect a community adversely.	BOM heatwave Warnings State Heatwave Sub Plan NSW Health Warnings Health advice regarding staying safe – drink water, airconditioned environments, monitoring the elderly. Monitoring Emergency Department presentations Considered to be a State driven operation. As directed by SEOCON, REOCON activate Region and Local EMPLAN arrangements, activate Region EOC as required and relevant. LEOCONS/Local EOCs, determine & report impact, coordinate support as required as part of State Response and Recovery. Activation of agency business continuity plans Refer utilities failure and bushfire risk controls as relevant.	Medium	SEOCON REOCON LEOCON/s
Landslip	Landslip/landslide resulting in localised or widespread damage.	Determined to be a local level managed event via Site Control or Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. State Major Structural Collapse Sub Plan	Low	LEOCON FRNSW USAR
Major Hazardous Facilities (MHF)	N/A	Not Applicable as at Nov 2018. No Major Hazardous Facilities identified in the North Coast Emergency Management Region	N/A	FRNSW
Remoteness of Lord Howe Island and finite local resources	Escalation of incidents or emergencies beyond local capability, expertise and capacity threatening local community/environment requiring a timely and coordinated response from the mainland.	Regular LEMC meetings and annual exercising of LHI EMPLAN. LHI LEMO/LEMC Chair attendance at NC REMC annually/progress reporting. North Coast Region Functional Agency liaison by teleconference with LHI LEMO/LEMC Combat agencies / LHI LEOCON via Port Hastings LEMC/EOC monitor situations as required and provide/coordinate any immediate response beyond local capacity/expertise via REOCON & SEOCON as required. LHI EMPLAN and CMGS LHI Marine Oil and Chemical Spill Contingency Plan LHI Tsunami Plan Welfare Services Functional Area Concept of Operations - Lord Howe Island	High	Responsible Combat agencies  LEOCON

Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Storm	Severe storm with accompanying lightning, hail, wind, and/or rain (includes tornado& coastal erosion) that causes severe damage and/or localised flooding and or causes coastal wave action which threatens/inundates damages coastal residential areas or key infrastructure	BOM Severe Weather Warnings & SES advices. State Storm Plan. Storm Safe Week. Agency exercises Links on NSW SES Website "What to do during a storm". <a href="https://www.ses.nsw.gov.au/stormsafe/simple-things-you-can-do/during-a-storm/">https://www.ses.nsw.gov.au/stormsafe/simple-things-you-can-do/during-a-storm/</a> Community engagement Established SES Units across the Region. Considered to be a local level managed event with any local evacuations managed by SES and supported by the Police/LEOCON as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. Local Govt Coastal Erosion Management Plans and related emergency procedures.	High	NSW SES
Transport Emergency (Air)	Aircraft crashes in LGA resulting in large number of fatalities, injuries and/or damage to property.	State Aviation Emergency Sub Plan and or Airport Emergency Procedures/Plans The crash of a large jet aircraft is considered of considerable political interest at the State level and Commonwealth level, REOCON to consider Region EOC or closely oversight operations and coordinate functional area support and specialist resources as required with LEOCONS managing forward activities from EOC or site control as required. Airport Emergency Plan/procedures as relevant and Local CMG as considered appropriate by LEMCs. State Hazardous Materials/Chemical, Biological, Radiological and Nuclear Sub Plan.	Medium	SEOCON REOCON LEOCON/s
Transport Emergency (Road)	A major vehicle accident that disrupts one or more major transport routes that can result in risk to people trapped in traffic jams, restrict supply routes and/or protracted loss of access to or from the area.	Considered to be a local level managed event via Site Control or Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. REOCON to monitor & coordinate any necessary Functional Area support as identified in CMG if not available locally. Refer TMC/RMS plans for alternate routes/traffic controls on major thoroughfares /highways.	Low	LEOCON



Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Transport Emergency (Rail)	A major rail accident that disrupts one or more major rail routes that can result in risk to restriction of supply routes and/or protracted loss of access to or from the area.	Considered to be a local level managed event via Site Control or Local EOC established as required. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. Activation of ARTC/Rail Network owner emergency plans via Police VKG Newcastle to Train Transit Manager ARTC Newcastle. REOCON to monitor & coordinate any necessary functional Area support as identified in CMG if not available locally.	Low	LEOCON
Transport Emergency (Maritime)	A major accident that results in potential environmental damage and major recovery operation	Small Marine Oil and Chemical spills are regularly managed as local level incidents in the Region by the responsible Combat Agency dependant on location. A medium to major spill is considered a state level combat agency managed event and may require support from LEOCON in the first instance in provision of appropriate forward incident control/coordination facility. Depending on the scale of event the LEOCON and or REOCON will monitor and coordinate support resources as requested to the Combat Agency as per arrangements in the North Coast Marine Oil and Chemical Spill Plan and consider need for local/region recovery. State Hazardous Materials/Chemical, Biological, Radiological and Nuclear Sub Plan re inland waterways. Refer respective Local EMPLAN arrangements and CMG as considered by LEMCs. Lord Howe Island Marine Oil and Chemical Spill Plan when relevant.	High	Relevant Port / Maritime / FRNSW
Tsunami	A tsunami wave of magnitude that presents a risk to land and marine elements.	Geoscience Australia monitoring and warnings via BOM & SES. Designated Combat Agency. Considered to be a state Level operation. REOCON to activate Region EOC and LEOCONS Local EOCS, respond to Combat Agency/SEOCON directions, coordinate support to combat agency, coordinate and report Region impact as part of State Response and Recovery. State Tsunami Plan Mid North Coast Region Tsunami Plan Lord Howe Island Tsunami Response Plan Exercising of Plans, Community engagement Established SES Units across the Region Tsunami Capability Working Group Activation of agency business continuity plans	Critical	NSW SES FRNSW USAR

Hazard	Risk Description	Risk Controls	Regional Residual Risk Priority	Combat /Responsible Agency
Utilities Failure Emergency	Major failure of Water, Sewer Utilities for unreasonable periods of time due to a natural or man-made occurrence.	Utility provider responsible for restoration. Considered to be a locally managed event regards community impacts. Refer local CMG as considered appropriate by LEMCs. Local EOC/s established as required REOCON to monitor coordinate functional area support and key information available from EUSFAC. Agency business continuity plans.	Medium	LEOCON/s
	Telecommunications	Agency business continuity plans. Revert to Agency Radio Communications in the event of telecommunications failure.	Medium	TECOFAC
	Major failure of Power Utilities due to nil or unstable supply generation.	Supply Generator/ Regional provider responsible for restoration. State level managed operation in conjunction with relevant Commonwealth Agencies refer NSW State Energy & Utility Services Functional Area Supporting Plan (EUSPLAN). REOCON respond to SEOCON directions & EUSFAC coordinating advice and activate Region EOC and LEOCONS Local EOCS as required, coordinate Functional Area support and to and from the local level and to State, coordinate and report Region impact as part of State Response and Recovery. Maintenance of communication and coordination links with Essential Energy operations management (North Coast Regional Power Provider). In the event of NBN phone system failure revert to Mobile Phone and Agency Radio Communications Activation of Agency business continuity plans. Refer Heatwave & Bushfire Risk Controls as relevant	High	SEOCON REOCON LEOCONS

## Part 3 – Local Emergency Management Plans

It is inherent that the Regional EMPLAN have a strong link to the Local EMPLANS to ensure that the community requirements and major hazards and risks identified are catered for. The REMC have clear governance responsibilities to ensure that the standard of all Local EMPLANS meet the prescribed standard and enable the Region to prepare for and provide support to LEMCs as anticipated. Annexure C provides a summary of all endorsed Local EMPLANS.

### Annexure C – Local EMPLAN Inventory

LEMC	Endorsed Date	Review Date	Key Regional Planning Considerations	References
<b>Tweed Byron</b>	21/09/2016	21/09/2019	Borders Queensland with Gold Coast City Council. Gold Coast Airport straddles Queensland & NSW Borders. Growth area. East Coast Low - Major flood implications inundation of CBD and residential areas various community's Tweed Heads and Byron LGAs also implications of adjoining LEMC areas with similar issues at same time. Potential for Regional Recovery Operation from ECL/Major Flood events. Tunnels on M1. Previous landslip isolating community required Regional Functional Area support.	Gold Coast City Council and Tweed Heads Cross Border Plan. Gold Coast Airport Emergency Plan. Tweed Heads and Byron LGA Flood Plans. RMS Tunnel Emergency Plans CMGS
<b>Ballina</b>	21/09/2016	21/09/2019	Major flood impacts LGA along with associated adjoining LGAs and potential for Regional Recovery ECL Major Flood Events.	Ballina LGA Flood Plan CMGS

LEMC	Endorsed Date	Review Date	Key Regional Planning Considerations	References
<b>Northern Rivers</b>	29/11/2017	29/11/2020	Major Flood implications Kyogle, Richmond Valley LGAs, South Lismore and Lismore CBD – Lismore City LGA. Evacuations South and North Lismore and CBD. Potential for coordination of Regional impact assessment & Recovery Operation from ECL/Major Flood events affecting numerous North Coast rivers systems in similar period/event.	Kyogle, Richmond Valley and Lismore City LGA Flood Plans  CMGS
<b>Clarence Valley</b>	30/03/2016	30/03/2019	Major Flood events and overtopping of Grafton CBD/residential area and South Grafton levees also other levee systems protecting communities downstream of Grafton and subsequent evacuations. Severe Storm Damage to Major Community. Potential for coordination of Regional impact assessment & Recovery Operation from ECL/Major Flood events affecting numerous North Coast rivers systems in similar period/event.	Grafton Levee Overtop Flood Evacuation Plan/CMG. Clarence Valley Flood Plan Clarence Valley Storm CMG

LEMC	Endorsed Date	Review Date	Key Regional Planning Considerations	References
<b>Coffs Harbour Bellingen</b>	29/03/2017	29/03/2020	Flash Flooding to Major Levels in the Coffs Harbour CBD and Industrial precincts inclusive of area occupied by Coffs Harbour Base Hospital. Major Flood levels on Bellinger, Kalang and Scotchman. Potential for coordination of Regional impact assessment & Recovery Operation from ECL/Major Flood events affecting numerous North Coast rivers systems in similar period/event.	Coffs Harbour and Bellingen Flood Plans
<b>Nambucca</b>	30/03/2016	30/03/2019	Potential for coordination of Regional impact assessment & Recovery Operation from ECL/Major Flood events affecting numerous North Coast rivers systems in similar period/event.	Nambucca Flood Plans & CMGS
<b>Kempsey</b>	30/03/2016	30/03/2019	Potential for coordination of Regional impact assessment & Recovery Operation from ECL/Major Flood events affecting numerous North Coast rivers systems in similar period/event.	Kempsey Flood Plans and CMGs
<b>Port Hastings</b>	30/03/2016	30/03/2019	Potential for coordination of Regional impact assessment & Recovery Operation from ECL/Major Flood events affecting numerous North Coast rivers systems in similar period/event.	Port Macquarie Hastings Flood Plans and CMGs

LEMC	Endorsed Date	Review Date	Key Regional Planning Considerations	References
<b>Mid Coast</b>	29/11/2017	29/11/2020	Potential for coordination of Regional impact assessment & Recovery Operation from ECL/Major Flood events affecting numerous North Coast rivers systems in similar period/event.	Mid Coast Flood Plans & CMGS
<b>Lord Howe Island</b>	29/03/2017	29/03/2020	Finite local resources, capability and capacity and remote location from mainland	Refer Lord Howe Island Local EMPLAN & Region CMG

## Part 4 – Sub Plans and Supporting Plans

Responsibility for the preparation and maintenance of appropriate sub and supporting plans rests with the relevant Combat Agency or the relevant Functional Area. They form a critical element that outlines the arrangements that are in place to deliver support or control at a Regional and Local level as emergencies arise. There are some specific REMC sub and supporting plans that have also been developed to assist with delivering the outcomes of this EMPLAN. The sub/supporting plans are developed in consultation with the North Coast REMC and the community.

The plans listed in Annexure D are supplementary to this EMPLAN. The sub/supporting plans have been endorsed by the REMC and are determined as compliant and complimentary to the arrangements listed in this EMPLAN.

These plans are retained by the REMO on behalf of the REMC and public release versions are available on the NSW Emergency Website.

### Matrices Description

- *Combat Agency/Functional Area* – The entity that is responsible for sub plan or supporting plan.
- *Sub-Supporting Plan* – The name/title of the plan.
- *Triggers* – Events or occurrences will result in the activation of the plan.
- *Area(s)* – Geographic area that the supporting plan covers.
- *Access* – who from the agency or area will be the contact for activating and maintaining the plan.

## Annexure D – Regional Sub Plan and Supporting Plan Matrices

Combat Agency	Sub Plan	Triggers	Access
NSW State Emergency Service Clarence Nambucca Region	Local Flood Plans -LGAs Clarence Valley, Coffs Harbour, Bellingen, Nambucca,	BOM Warnings/forecast predictions	NSW SES North Zone Commander
NSW State Emergency Service Mid North Coast Region	Local Flood Plans -LGAs Great Lakes, Taree, Gloucester – transitioning to Mid Coast) Kempsey, Port Macquarie Hastings,  Mid North Coast Tsunami Response Plan, Lord Howe Island Tsunami Plan	BOM Warnings/forecast predictions	NSW SES Region Controller Mid North Coast
NSW State Emergency Service Richmond Tweed Region	Local Flood Plans -LGAs Ballina, Byron, Kyogle, Lismore City, Richmond Valley, Tweed	BOM Warnings/forecast predictions	NSW SES Region Controller Richmond Tweed
Transport Roads & Maritime Services	Marine Oil and Chemical Spill Contingency Plans:- NSW North Coast Lord Howe Island	Marine Oil or Chemical Spill in State Waters	Senior Emergency Planning Officer, State Wide Coordination Roads and Maritime Services, 33 James Craig Road, Rozelle NSW 2039



Functional Area	Supporting Plan	Area(s)	Access
Agriculture and Animal Services	North Coast Agriculture and Animal Services Functional Area utilises the arrangements in the State Agriculture and Animals Services Functional Area Supporting Plan and has developed the North Coast Agriculture Animal Services Functional Area Concept of Operations.	Ballina, Bellingen, Byron, Clarence Valley, Coffs Harbour, Kempsey, Kyogle, Lismore City, Lord Howe Island, Midcoast, Nambucca, Port Macquarie Hastings, Richmond Valley, Tweed	North Coast Agriculture and Animal Services Functional Area Coordinator, Regional Director North Coast, Department of Primary Industries, 1243 Bruxner Hwy, Wollongbar NSW.
Health Services	Mid North Coast Local Health District Functional Area Supporting Plan	Coffs Harbour, Bellingen, Kempsey, Nambucca, Port Macquarie Hastings	Mid North Coast Local Health District, Health Services Functional Area Coordinator, 43 Gordon St, Coffs Harbour.
	Northern NSW Local Health District Functional Area Supporting Plan	Ballina, Byron, Clarence Valley, Kyogle, Lismore City, Richmond Valley, Tweed	Northern NSW Local Health District , Health Services Functional Area Coordinator, Tweed Hospital, Powel St Tweed Heads
	Hunter New England Local Health District Functional Area Supporting Plan	MidCoast	Hunter New England Health Services Functional Area Coordinator
	South Eastern Sydney Local Health District Functional Area Supporting Plan	Lord Howe Island	South Eastern Sydney Health Services Functional Area Coordinator

Functional Area	Supporting Plan	Area(s)	Access
Energy and Utilities Services	State Level Function	N/A	State Level Function
Engineering Services	North Coast Region – Regional Engineering Services Functional Area Plan	Ballina, Bellingen, Byron, Clarence Valley, Coffs Harbour , Kempsey, Kyogle, Lismore City, Lord Howe Island , MidCoast, Nambucca, Port Macquarie Hastings, Richmond Valley, Tweed	North Coast Region Engineering Functional Area Coordinator, Public Works Offices, 359 Harbour Drive, Coffs Harbour NSW 2450.
Environmental Services	Arrangements as described in the State Environmental Services Functional Area Plan	Ballina, Bellingen, Byron, Clarence Valley, Coffs Harbour , Kempsey, Kyogle, Lismore City, Lord Howe Island , MidCoast, Nambucca, Port Macquarie Hastings, Richmond Valley, Tweed	Manager Regional Operations – North Coast NSW Environment Protection Authority, 49 Victoria Street, Grafton NSW.
Public Information Services	State Level Function	N/A	State Level Function
Transport Services	Arrangements as described in the State Transport Services Functional Area Plan	Ballina, Bellingen, Byron, Clarence Valley, Coffs Harbour, Kempsey, Kyogle, Lismore City, Lord Howe Island , Midcoast, Nambucca, Port Macquarie Hastings, Richmond Valley, Tweed	Area Manager - North Coast Rural & Regional Service Delivery & Performance Infrastructure & Services Transport for NSW, Unit 2, 16 Isles Drive, Coffs Harbour NSW

Functional Area	Supporting Plan	Area(s)	Access
Welfare Services	<p>Click here to enter text.</p> <p>Mid North Coast Welfare Services Functional Area Supporting Plan &amp; Disaster Welfare Concept of Operations - Lord Howe Island</p>	<p>MidCoast, Bellingen, Coffs Harbour, Kempsey, Nambucca, Port Macquarie Hastings, Lord Howe Island</p>	<p>Click here to enter text.</p> <p>Mid North Coast District WELFAC, FACS/Housing NSW, 51 Moonee Street, Coffs Harbour NSW</p>
	<p>North Coast Welfare Services Functional Area:- Arrangements as described in the State Transport Services Functional Area Plan</p>	<p>Ballina, Byron, Clarence Valley, Kyogle, Lismore City, Richmond Valley, Tweed</p>	<p>Northern NSW WELFAC, FACS Offices, 89 Tamar Street, Ballina</p>
Telecommunications Services	State Level Function	N/A	State Level Function

## Annexure G – Consequence Management Guides

The following consequence management guides relate to hazards for which significant Regional level coordination is anticipated and where a Local EMPLAN defers or refers to a Regional Level.

- Biosecurity Animal or Plant
- Lord Howe Island provision of support - Escalation of major incident or an emergency beyond local capability/capacity.
- Tsunami