




Emergency management of coastal hazards in NSW


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Overview

- Emergency Management Arrangements in NSW
- Prevention, Preparedness, Response, Recovery
- Storms, Floods and Tsunami
- Community engagement programs StormSafe, FloodSafe and TsunamiSafe

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Cost of Natural Disasters

Australia's 10 worst natural disasters
2011 adjusted dollar amounts

Event	Year	Location	Loss (\$m)	Normalised loss* (\$m)
1 Hailstorms	1999	Sydney	1700	4296
2 Cyclone Tracy	1974	Darwin	200	4090
3 Earthquake	1989	Newcastle	862	3240
4 Flood	1974	Brisbane	68	2645
5 Flood	2010/11	QLD	2380	2380
6 Hailstorm	1985	Brisbane	180	2063
7 Ash Wednesday bushfires	1983	VIC/SA	176	1796
8 Severe storm	2007	NSW	1480	1742
9 Cyclone Madge	1973	QLD/NT/WA	30	1492
10 Cyclone Yasi	2011	QLD	1300	1352

*Loss normalisation is used to estimate the losses sustained if past events were to affect present society
Source: Insurance Council of Australia

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Deadliest hazards

Table 1: Summary of deaths in natural hazards in Australia: 1788-2003.

Peril	First recorded Death	Number of Deaths	% Total Deaths
Earthquake	1902	16	0.3
Landslide	1842	95	1.6
Bushfire	1850	696	11.4
Thunderstorm	1824	774	12.7
Tornado	1861	52	0.9
Cyclone	1839	2163	35.5
Flood	1790	2292	37.6
Tsunami		0	0.0
Total		6088	100.0


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Emergency Management in NSW

- Legislation (SERM Act, SES Act, LG Act, etc)
- Emergency Management Committees (EMPLAN)
- Combat agencies (Hazard sub plans)
- Functional areas (Functional area supporting plans)
- Supporting agencies
- Recovery Coordinator/Committees (Recovery Plan)
- Other related National, State and Local (DSC, FRM, CRM, BoM, LG, EP&A, ANZEMC, JATWC, ATAG, NFRAG, AGD EMA, AFAC)

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The NSW State Emergency Service


- A volunteer emergency and rescue agency dedicated to assisting the community
- Founded in 1955 after disastrous floods over much of NSW
- Based on the concept of local expertise and resources
- 10,000 volunteers across the state, organised in 232 local units, grouped into 17 Regions. 250 staff.
- Roles of SES defined by legislation SES Act (1989)

Roles and activities

- Preparing for floods, storms and tsunami (training, planning)
- Flood, storm and tsunami response
- Community education about flood, storm and tsunami safety
- The majority of road-crash rescue outside metropolitan areas
- Bush search & rescue and vertical rescue
- Assistance to other services
- Community events


Hazards

Flood




Lismore Flooding 2011 (NSW SES)

Storm



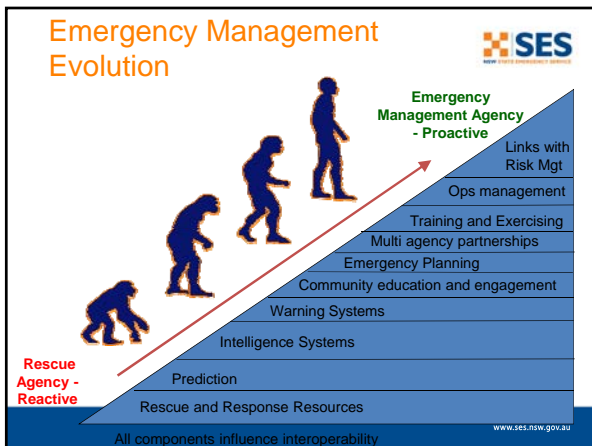
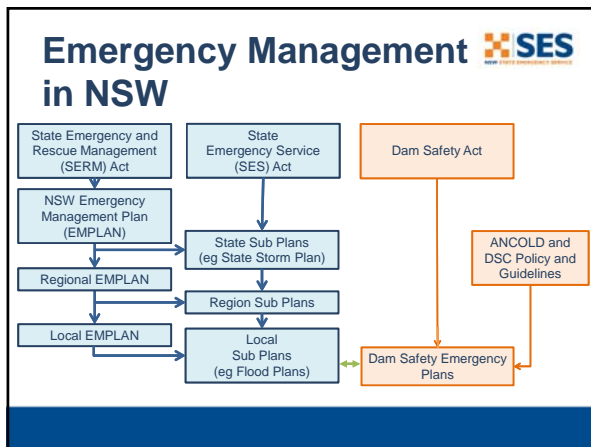
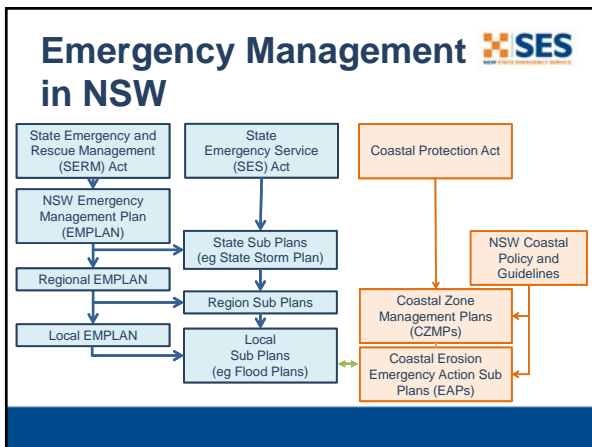
Sydney Storm 2004 (NSW SES)

Tsunami



Japanese Tsunami 11 March 2011
(The Telegraph News)

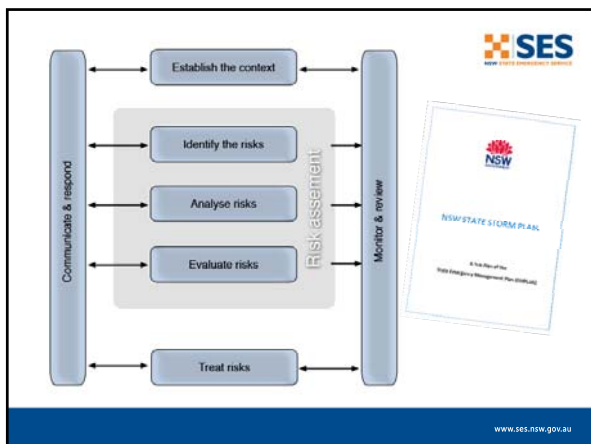
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General principles

- **Prevention** (landuse planning, mitigation)
- **Preparedness** (hazard, risk and social research, emergency planning, intelligence, community engagement, training, exercising, capability development)
- **Response** (information, warning, evacuation, rescue, resupply, property protection)
- **Recovery** (impact assessment, restoration)

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Plan for the effects on the community

SES

- Floodplain classifications
- Evacuation capability assessment

High Flood Island

Low Flood Island

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Flood Intelligence

Bureau predicts height (vertical)

8m

60 homes

20 businesses

School

Nursing home

Road closures

Caravan park

Rural land

INUNDATION

ISOLATION

SES translates effects (horizontal)

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NSW Coastal Erosion Hot Spots

SES

Belongil Beach (Byron Bay) 2001

Old Bar Beach (Taree) 2013

North Entrance (Tuggerah) 2009

Photos Courtesy Tony Day (NSW SES) and Phil Watson (GEH)

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Tsunami Risk Assessment

SES

10000yr PUY HAT
02:28hrs
Ww 5.1-9.2
Wave Amp 7.42m
at 5m depth
Max Runup 8.26m

Lake Macquarie - Swanses
Depth from ground or seafloor

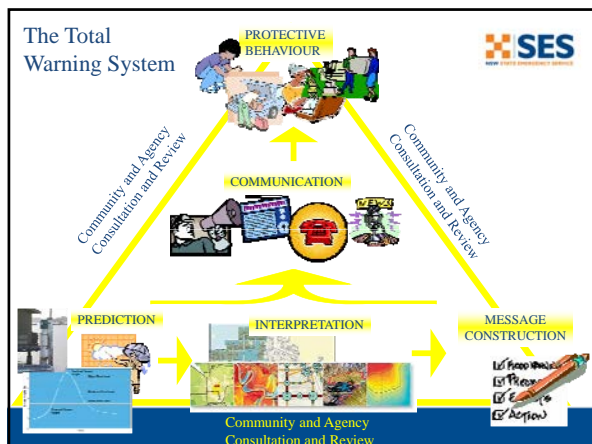
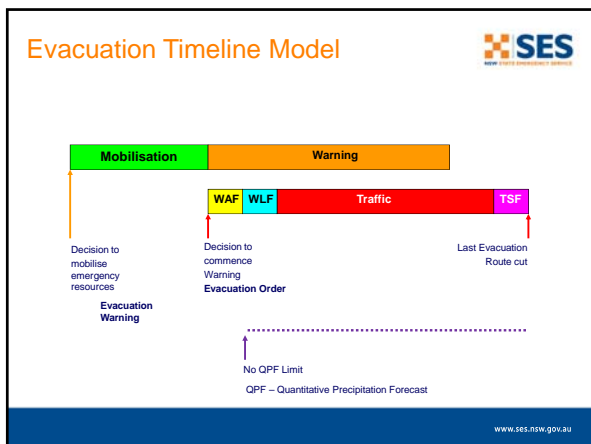
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SES

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The Australian Joint Tsunami Warning Centre

- Geoscience Australia (seismic detection)
- Bureau of Meteorology (forecasting)

JATWC: Joint Australian Tsunami Warning Centre

Geoscience Australia and Bureau of Meteorology

The image shows the JATWC control room with staff monitoring multiple computer screens displaying maps and data. Below, a large tsunami buoy is being hoisted by a crane, with workers in safety gear visible.

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Links

- NSW State Storm, Flood and Tsunami Plans www.emergency.nsw.gov.au
- NSW SES Coastal Erosion StormSafe Guide www.stormsafe.com.au
- OEH Guidelines available at www.environment.nsw.gov.au



Questions ?

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