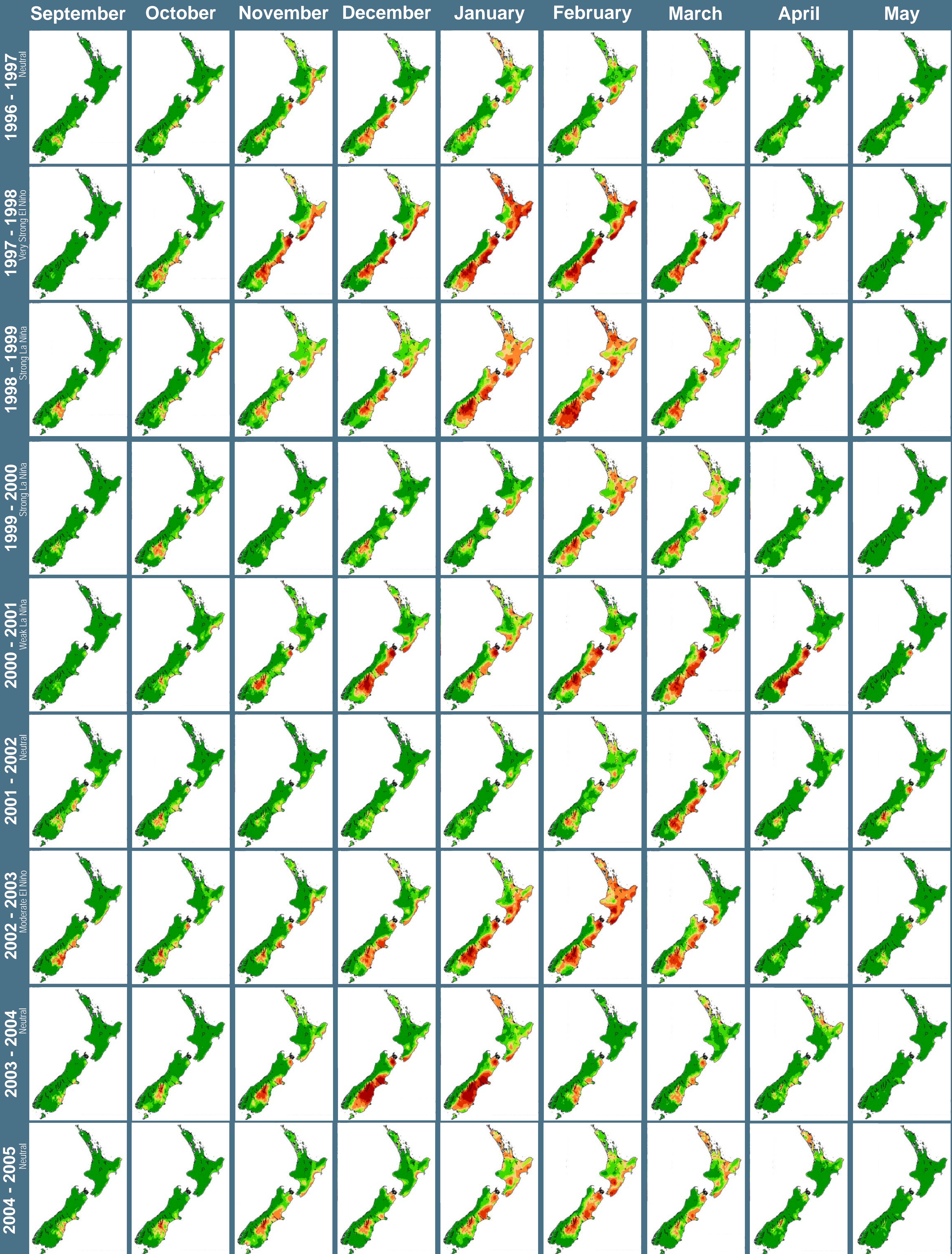
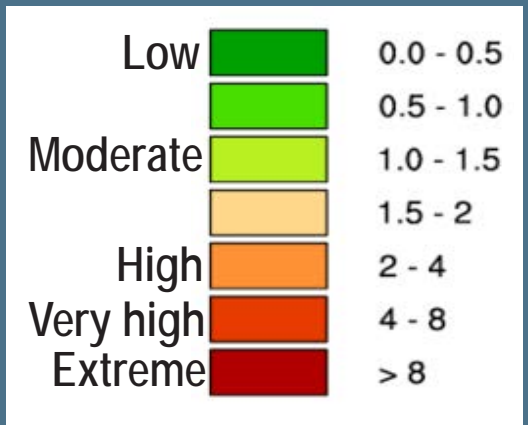


New Zealand Fire Season Severity

Monthly Severity 1996 - 2005



September

October

November

December

January

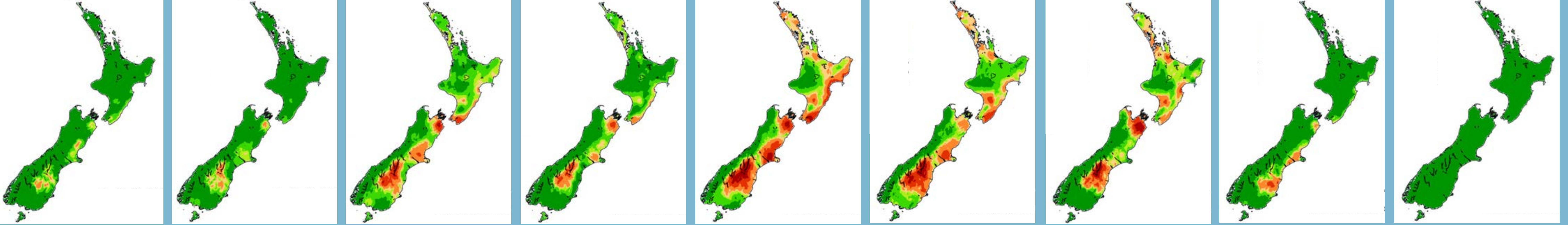
February

March

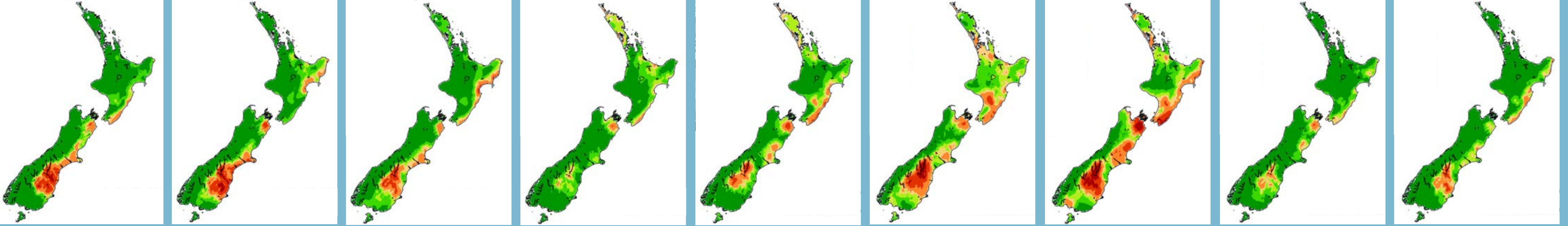
April

May

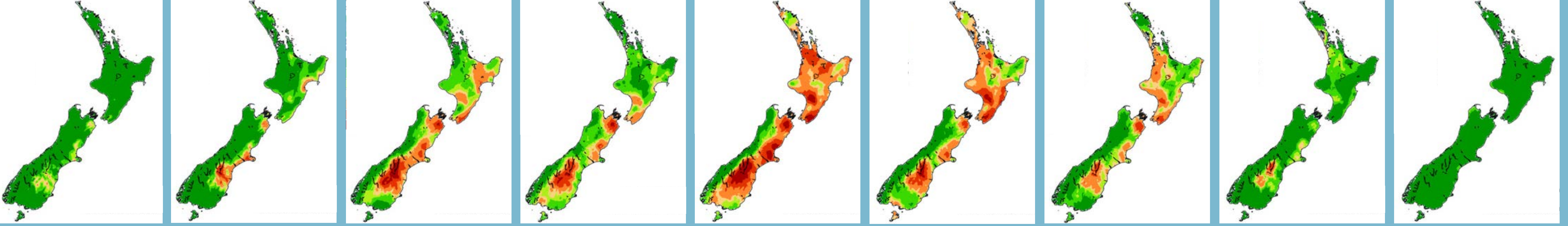
2005 - 2006
Weak La Niña



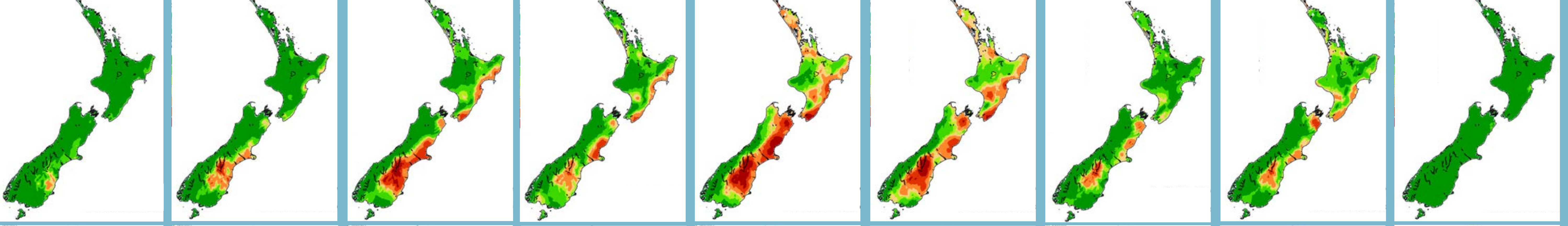
2006 - 2007
Weak El Niño



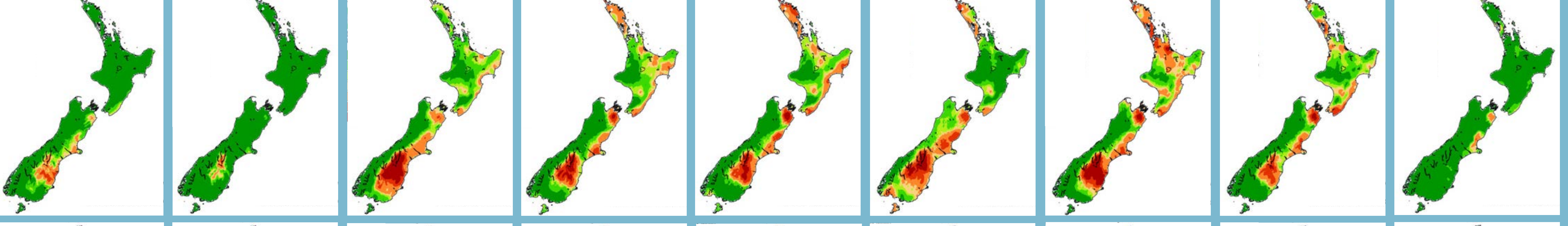
2007 - 2008
Strong La Niña



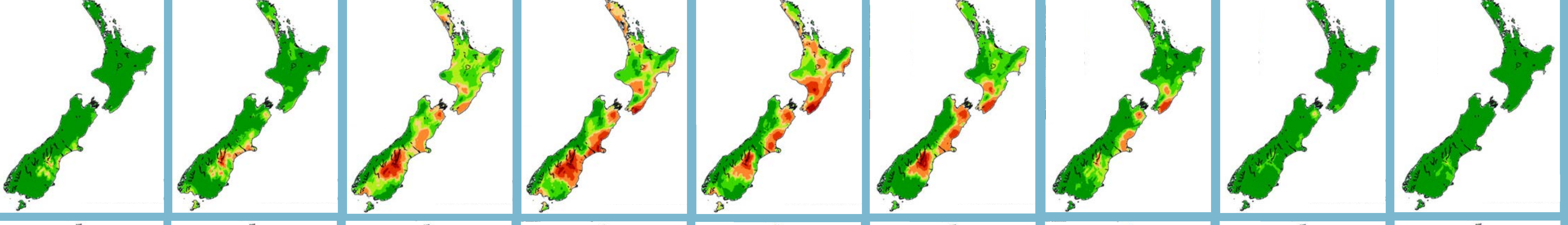
2008 - 2009
Weak La Niña



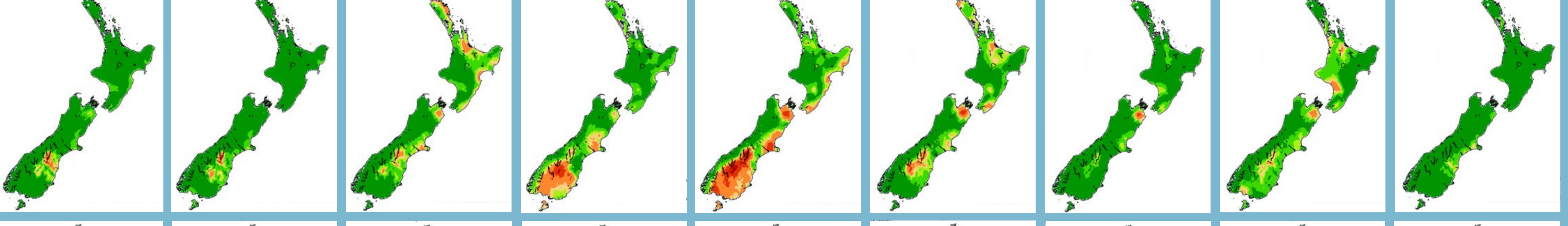
2009 - 2010
Moderate El Niño



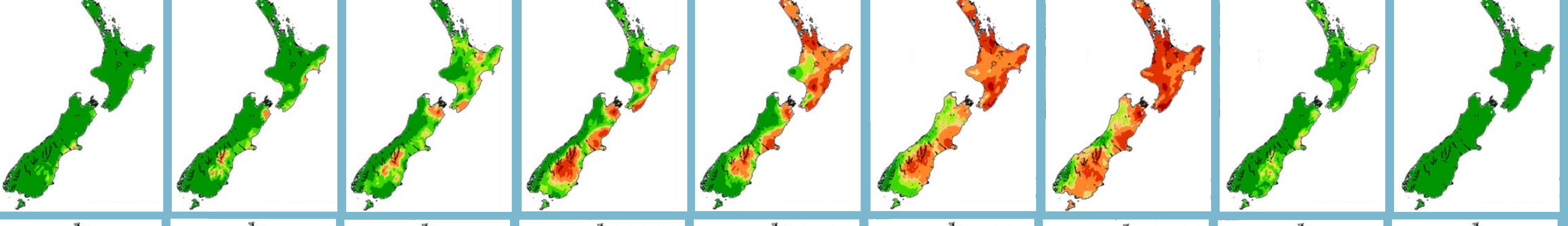
2010 - 2011
Strong La Niña



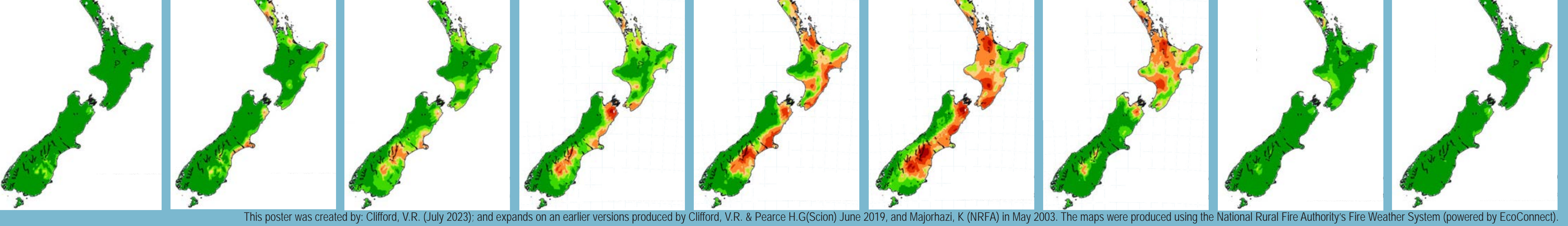
2011 - 2012
Moderate La Niña



2012 - 2013
Neutral

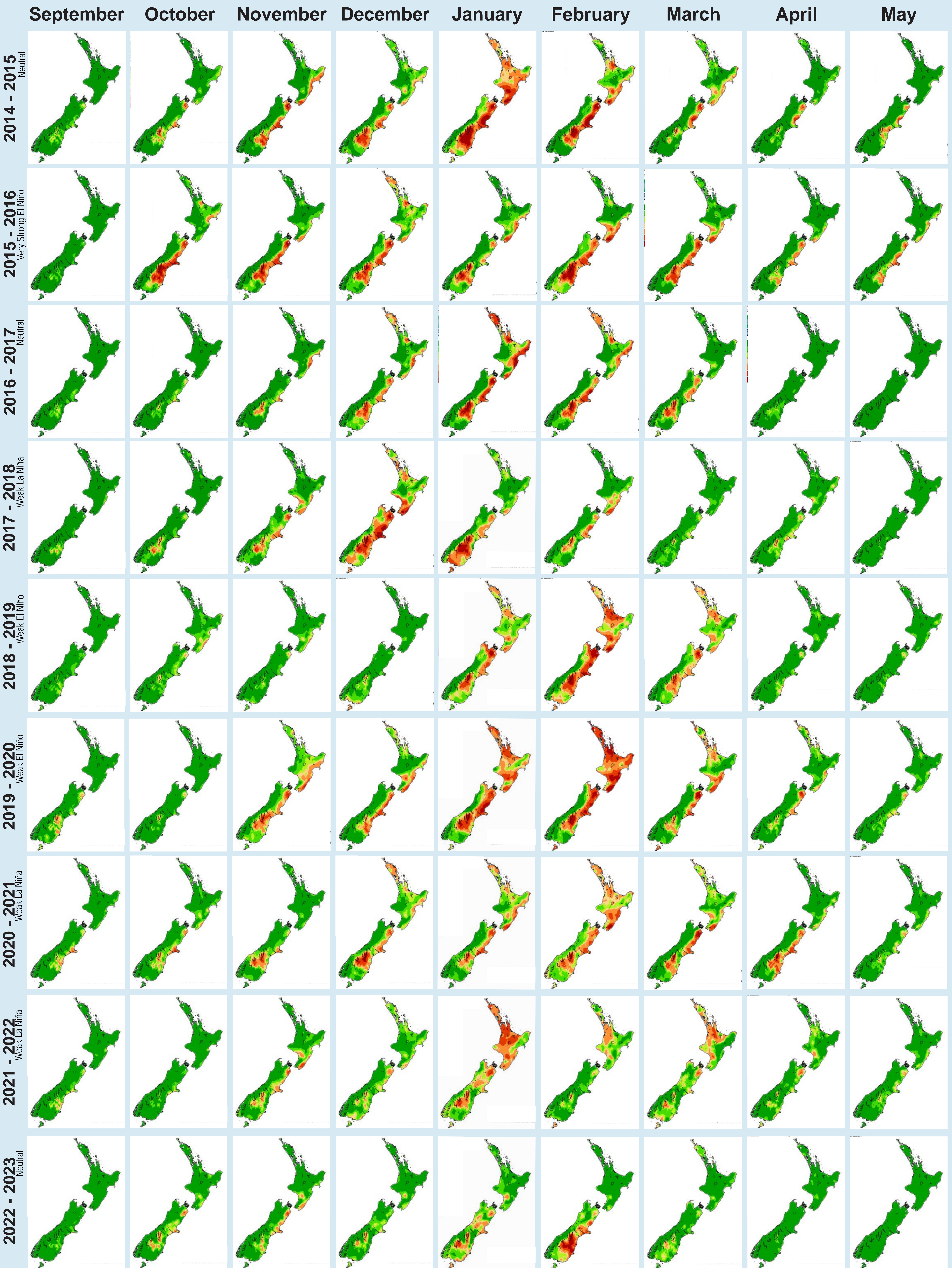
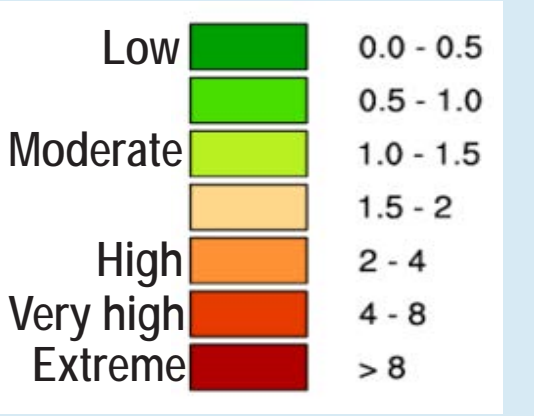


2013 - 2014
Neutral



New Zealand Fire Season Severity

Monthly Severity 2014 +



New Zealand Fire Season Severity

Monthly Severity historical analogues

September October November December January February March April May

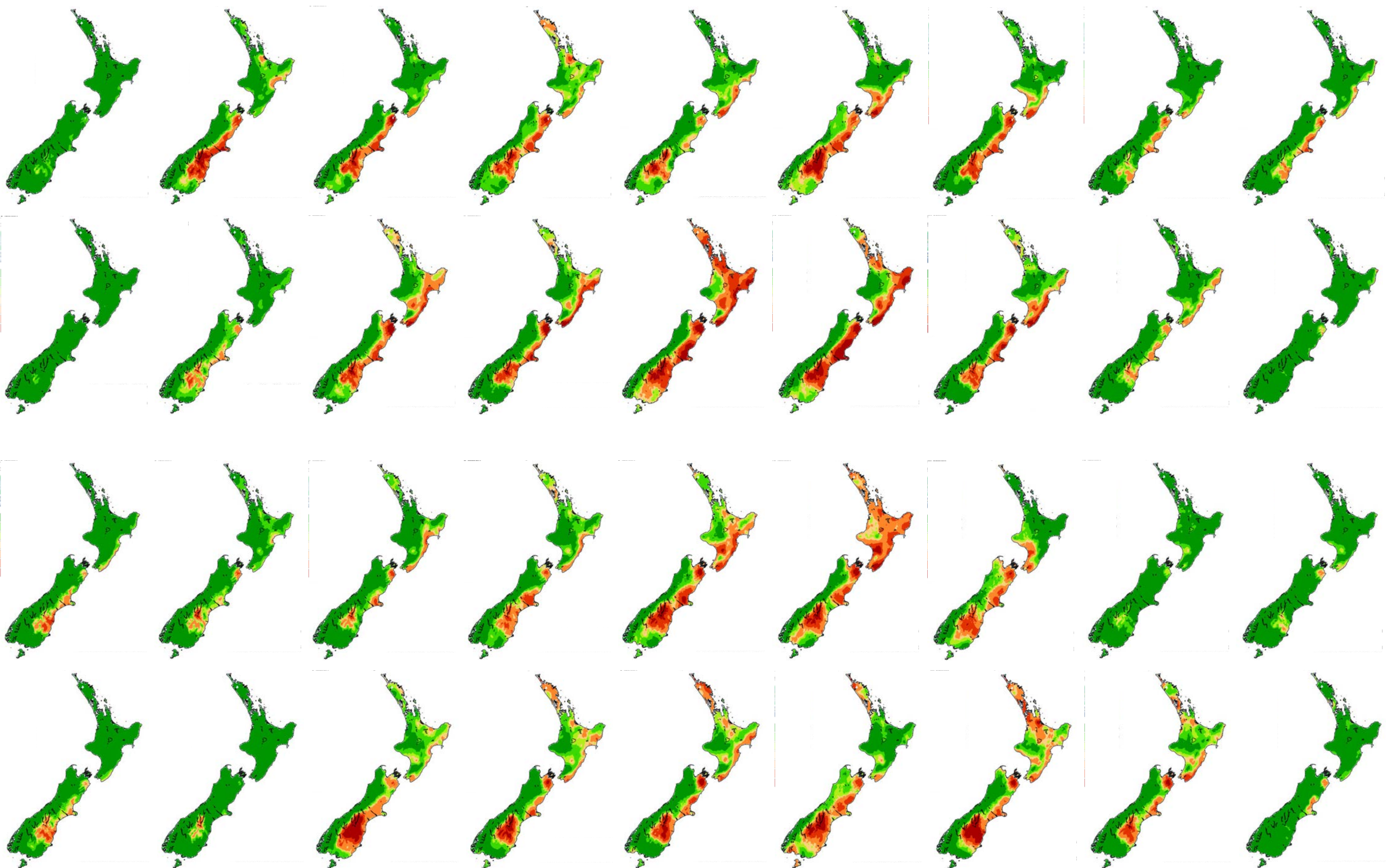
2023/24
current season

2015/16
Very Strong El Niño

1997/98
Very Strong El Niño

2002/03
Moderate El Niño

2009/10
Moderate El Niño



Expected Monthly Severity Rating

To help understand what the fire season could look like, recent past events (historical analogues) reminiscent of a strong El Niño included 2015/16, 1997/98 and 1991/92. These years are potentially good indicators for what to expect this coming fire season. The following seasons coinciding with a moderate strength El Niño events occurred in 1994/95, 2002/03, 2009/10.

Observed Monthly Severity Rating

Monthly Severity Rating (MSR) is the average of the Daily Severity Rating (DSR) values of the Fire Weather Index System (FWI). The DSR is a function of the FWI value and was developed for use in comparing different years and weather stations. The DSR and MSR captures the effects of both wind and fuel dryness on potential fire intensity, and therefore control difficulty and the amount of work required to suppress a fire. It allows researchers to compare the severity of fire weather in one year to another.

DSR values of less than one equate to low fire behaviour potential, 1-3 moderate fire potential, 3-7 high to very high fire potential, and above 7 extreme fire behaviour potential.

El Niño, Neutral and La Niña Years

El Niño, Neutral and La Niña seasons as identified from the combination of the Southern Oscillation Index (SOI) and Niño 3.4 Sea Surface Temperature (SST) anomaly. Event intensities are based on the NOAA classification: Weak (between 0.5 to 0.9 anomaly), Moderate (1.0 to 1.4), Strong (1.5 to ≥ 2.0) events are classed as such if that equalled or exceeded the threshold for at least 3 consecutive 3-month periods. Based on information from: http://www.cpc.noaa.gov/products/analysis_monitoring/ensostuff/ensoyears.shtml

What do these mean for New Zealand?

El Niño years are typically characterised by increased W/SW winds, meaning wetter conditions in the west and south of both islands, and drier in the east and north. Whereas La Niña years typically bring reduced westerlies and more E/NE winds producing wetter conditions in the north and east of both islands and drier in the west and south. When neither El Niño nor La Niña are present, weather patterns are said to be in "neutral" or normal conditions. Neutral conditions encourage far more variability in weather patterns for New Zealand, whereas El Niño or La Niña tend to have more predictable patterns.

	El Niño			Neutral		La Niña		
	Strong	Moderate	Weak			Weak	Moderate	Strong
	1957/58	1951/52	1953/54	1950/51	1990/91	1954/55	1955/56	1973/74
	1965/66	1963/64	1958/59	1952/53	1992/93	1964/65	1970/71	1975/76
	1972/73	1968/69	1969/70	1956/57	1993/94	1971/72	1995/96	1988/89
	1982/83	1986/87	1976/77	1959/60	1996/97	1974/75	2011/12	1998/99
	1991/92	1987/88	1977/78	1960/61	2001/02	1983/84		1999/00
	1997/98	1994/95	1979/80	1961/62	2003/04	1984/85		2007/08
	2015/16	2002/03	2004/05	1962/63	2012/13	2000/01		2010/11
		2009/10	2006/07	1966/67	2013/14	2005/06		
			2014/15	1967/68	2016/17	2008/09		
			2018/19	1978/79	2022/23	2017/18		
			2019/20	1980/81		2020/21		
				1981/82		2021/22		
				1985/86				
				1989/90				