

Supplementary Material

Channelling flows in the Hunter Valley

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Table S1. The list of wind events that met the criteria of the high-end wind events in section 4.2

Dates (DD/MM/YYYY)	Location(s) where mean winds ≥ 22 knots for ≥ 3 h	Location(s) where the daily max. gust ≥ 44 knots	Location of the highest wind gust	The highest gust SPD (knots)	The highest gust DIR (DDD)	Time of the highest gust (HHMM)	Detail (synoptic feature; type of channelling involved)
01/08/2010	NBB	NBB	NBB	44.9	277	2022	Cold Front
03/08/2010	YWLM, NBB	NBB	NBB	55.0	210	527	ECL; Coastal Trough
12/08/2010	NBB	NBB	NBB	44.9	316	23	Forced Channelling; Downward Momentum Transport
26/08/2010	NBB	NBB	NBB	44.9	285	1302	Pressure Driven Channelling
05/09/2010	NBB	YWLM, NBB	NBB	54.1	300	1020	Pressure Driven Channelling
10/09/2010	NBB	NBB, YSCO	NBB	47.0	273	1557	Cold Front; Thunderstorms
16/10/2010	NBB	YWLM, NBB	NBB	50.9	279	917	Pressure Driven Channelling
20/12/2010	NBB	NBB	NBB	46.1	296	1152	Pressure Driven Channelling
07/06/2011	NBB	NBB	NBB	44.9	296	1325	Trough; Downward Momentum Transport
15/06/2011	NBB	NBB	NBB	47.0	135	134	ECL; Coastal Trough
21/06/2011	NBB	NBB	NBB	50.0	305	1205	Forced Channelling; Downward Momentum Transport
10/07/2011	NBB	YWLM	YWLM	44.9	294	919	Pressure Driven Channelling
20/07/2011	NBB	NBB	NBB	50.9	190	1352	ECL; Coastal Trough
20/09/2011	NBB	NBB	NBB	44.9	308	1327	Downward Momentum Transport; Cold Front
29/09/2011	NBB	NBB, YSCO	NBB	49.0	276	1525	Pressure Driven Channelling; Thunderstorms
05/06/2012	NBB	NBB	NBB	50.9	191	2005	ECL; Coastal Trough
10/08/2012	NBB	YWLM, NBB	NBB	56.0	200	1345	ECL; Coastal Trough
11/08/2012	NBB	NBB	NBB	47.0	210	1341	ECL; Coastal Trough
18/08/2012	NBB	YWLM, NBB	NBB	47.0	316	1432	Pressure Driven Channelling
22/10/2012	NBB, YWLM	NBB	NBB	47.0	27	1619	ECL; Coastal Trough
23/02/2013	NBB	YWLM	YWLM	46.1	85	1849	ECL; Coastal Trough
26/09/2013	NBB	YWLM, NBB, YSCO	NBB	51.7	291	1306	Cold Front; Downward Momentum Transport
01/10/2013	YSCO	YWLM, YSCO, MERW	YSCO	56.0	277	1351	Cold Front
13/10/2013	NBB, YSCO	YWLM, NBB, YSCO	NBB	50.9	315	1318	Downward Momentum Transport; Thunderstorms
17/10/2013	MERW	NBB, YSCO, MERW	MERW	46.1	294	1441	Cold Front; Downward Momentum Transport
05/12/2013	YWLM	YWLM	YWLM	51.9	283	1708	Pressure Driven Channelling
24/06/2014	YWLM	YWLM, NBB	YWLM	50.9	290	1334	Pressure Driven Channelling
29/06/2014	YWLM	YWLM, NBB	YWLM	49.0	293	1141	Pressure Driven Channelling
21/04/2015	NBB	YWLM, NBB	NBB	73.1	352	500	ECL; Coastal Trough
22/05/2015	NBB	NBB	NBB	48.0	195	1457	ECL; Coastal Trough
23/09/2015	NBB	NBB	NBB	51.9	184	1840	ECL; Coastal Trough
06/01/2016	NBB	NBB	NBB	44.9	181	717	ECL; Coastal Trough
04/06/2016	NBB	NBB	NBB	57.0	68	2322	ECL; Coastal Trough; Gusty showers
20/06/2016	NBB	YWLM, NBB	YWLM	50.0	306	2148	Cold Front
24/06/2016	YWLM, NBB, YSCO	YWLM, NBB, YSCO	YWLM	46.1	301	1658	Pressure Driven Channelling; Cold Front
06/07/2016	NBB	YWLM, NBB	NBB	49.0	306	1336	Pressure Driven Channelling
13/07/2016	NBB	YWLM, NBB	YWLM	47.0	304	1029	Pressure Driven Channelling
23/07/2016	NBB	YWLM, NBB, YMND	YWLM	49.0	288	1256	Pressure Driven Channelling
03/09/2016	NBB	NBB, YMND	YMND	49.0	306	1302	Pressure Driven Channelling
30/09/2016	NBB	NBB	NBB	50.0	304	1536	Pressure Driven Channelling
18/01/2017	NBB	YSCO	YSCO	49.0	244	1759	Cold Front; Thunderstorms
30/03/2017	NBB	NBB	NBB	47.0	204	2230	Cold Front; Gusty Showers
04/08/2017	NBB	NBB	NBB	46.1	295	1427	Pressure Driven Channelling
18/08/2017	NBB, YSCO	YWLM, NBB, YSCO	YSCO	53.1	273	2142	Pressure Driven Channelling; Cold Front
19/08/2017	NBB	NBB	NBB	46.1	208	2044	ECL; Coastal Trough
30/10/2017	YSCO, NBB	YSCO	YSCO	46.1	268	1806	Cold Front
15/08/2018	NBB	NBB	NBB	44.9	313	1452	Pressure Driven Channelling
15/09/2018	NBB	NBB	NBB	44.9	171	2313	Cold Front
22/11/2018	YWLM	YWLM, NBB	YWLM	46.1	303	1542	Forced Channelling; Downward Momentum Transport
23/11/2018	YWLM	YWLM, NBB, YMND	YWLM	50.0	306	1141	Pressure Driven Channelling
28/11/2018	NBB	NBB, YMND	YMND ^A	50.9	172	1919	Coastal Trough; Thunderstorms

Dates (DD/MM/YYYY)	Location(s) where mean winds ≥ 22 knots for ≥ 3 h	Location(s) where the daily max. gust ≥ 44 knots	Location of the highest wind gust	The highest gust SPD (knots)	The highest gust DIR (DDD)	Time of the highest gust (HHMM)	Detail (synoptic feature; type of channelling involved)
02/12/2018	MERW, NBB	MERW	MERW	47.0	307	1422	Downward Momentum Transport; Cold Front
31/01/2019	YWLM	YWLM	YWLM	46.1	207	2247	Cold Front
11/05/2019	NBB	YWLM, NBB	NBB	46.1	301	55	Cold Front
27/05/2019	NBB	YWLM, NBB, YMND	NBB	50.9	267	1451	Pressure Driven Channelling
29/05/2019	NBB	NBB	NBB	46.1	306	1505	Pressure Driven Channelling
09/08/2019	NBB	YWLM, NBB	NBB	53.1	306	1004	Pressure Driven Channelling
10/08/2019	NBB, YSCO	YWLM, YSCO	YSCO	49.0	274	2247	Pressure Driven Channelling; Cold Front
06/09/2019	YSCO	YWLM, NBB, YSCO	YSCO	50.9	265	1827	Cold Front
07/09/2019	NBB	YWLM	YWLM	47.0	297	945	Pressure Driven Channelling
17/09/2019	NBB	NBB	NBB	50.0	155	2255	ECL; Coastal Trough
26/10/2019	NBB, YSCO	YWLM, NBB, YSCO	NBB	50.9	305	1445	Downward Momentum Transport; Cold Front
26/11/2019	YSCO	YSCO	YSCO	50.9	256	1429	Cold Front
02/12/2019	YSCO	YSCO	YSCO	44.9	259	1355	Cold Front; Gusty Showers
05/01/2020	NBB	NBB	NBB	48.0	204	139	Cold Front
09/02/2020	NBB	NBB	NBB	49.0	126	740	ECL; Coastal Trough
30/04/2020	NBB	YWLM, NBB	NBB	46.1	303	1855	Cold Front
02/05/2020	YWLM	YWLM, NBB, YMND	YWLM	53.1	295	1100	Pressure Driven Channelling
24/05/2020	NBB	NBB	NBB	47.0	208	1352	Cold Front

Dates are the 2 consecutive days are counted as one event if their highest maximum wind gusts occurred within 12 h. Locations are not the exhaustive list of the station(s) that recorded 10-min mean wind speeds ≥ 22 knots ($\sim 40.7 \text{ km h}^{-1}$) for more than 3 h in the Hunter.

^AThe highest wind gusts were recorded at YMND from the storm outflow ahead of a southerly change. The speed of the highest wind gust was from YMND. The direction was from the second highest wind gust observed at NBB.