

Monitoring of Fine Particulate Matter (PM_{2.5}) in the Comox Valley Regional District
December 2009

Appendix IV – Park Steward Notes

Summary of Beach Fire Program Data Related to Air Quality at Goose Spit Park

Date May 1 to Sept. 7, 2009	Weather		Beach Fires						Comments	
	Description	Wind Direction		Number of Beach Fires in Park (inside fire ring (black box), outside fire ring (grey box))		Number of Beach Fires Left Smoldering by User (asignalled by park computers)		Number of Beach Fires Burning Non-compliant Material		
		1630-1930	1930-2300	1630-1930	1930-2300	1630-1930	1930-2300	1630-1930		1930-2300
May 1	Clear	L SE	Calm, L SE	9	10+1=11	0	0	0	1	May 1 - Non-compliant fire outside park boundary
2 (Sat.)	L Rain	L SE	L SE	1	0	0	0	0	0	
3 (Sun.)	L Rain, Clouds, Part Cloud	M SE	M SE	4	3	2	3	1	2	
4	L Rain, M Rain	M SE	L SE, M SE	0	0	0	0	0	0	
5	Scattered Clds, Broken Clds	MSE	L SE	0	1	0	1	0	0	
6	Obscured Clouds, L Rain	Calm	Calm	0	1	0	1	0	1	
7	L Rain, Broken Clouds	M SW	L SW	0	1	0	0	0	0	
8	Clear	Calm	Calm	2	7	0	4	0	1	May 8 - Non-compliant fire outside park boundary
9 (Sat.)	Clear	L SE, Calm	Calm	8	8	0	0	2	0	
10 (Sun.)	Overcast, L/M Rain	Calm, L W	L W/SW	6	0	2	0	3	0	
11	Part Cloud	M S	M/L SW, L N	2	2	1	1	1	1	
12	Part Cloud	Calm	L N	1	5	0	1	1	1	
13	L/M Rain, L Rain	L/M SE	L SE	0	0	0	0	0	0	
14	Part Cloud	L W	L SW	5	4	1	2	2	3	
15	Part Cloud	L SE	L SE	8	5	0	0	3	0	May 15 - Smoldering fire noted by morning maintenance crew
16 (Sat.)	Mostly Cloud	L SE	L SE	7	9	0	1	1	2	
17 (Sun.)	Sunny, Clouds	L SE	L SE	10+2=12	9+1=10	0	2	1	0	May 17 - Smoldering fire noted by morning maintenance crew
18	Overcast, Part Cloud	M SE	L/M N	4	3	2	0	2	0	May 18 - Non-compliant fire outside park boundary
19	Showers, Part Cloud	L Variable	Calm	0	1	0	0	0	0	
20	Part Cloud	L SE	L N	4	3	0	0	2	0	
21	Clear	Calm	Calm	9+1=10	8	0	1	5	3	
22	Scattered Cloud, Clear	M NW	M NW	10+1=11	10	0	3	2	2	
23 (Sat.)	Clear	L N	L NE	10+1=11	10+1=11	0	2	1	1	
24 (Sun.)	Clear	Calm	Calm	10+3=13	10	1	2	6	3	May 24 - Non-compliant fire outside park boundary May 24 - Smoldering fire noted by morning maintenance crew
25	Overcast	L/M SE	M SW	0	1	0	0	0	0	
26	Part Cloud	L NE	L NE	5	2	1	0	2	0	
27	Part Cloud, Few Clouds	L W	Calm	5	5	1	1	2	2	
28	Mostly Clear, Clear	L SE	L SE	3	7	0	0	1	3	
29	Clear, Overcast	L SE	M N	10	10+1=11	2	3	0	0	
30 (Sat.)	Clear, Mostly Clear	L N/NW	L NW	10	10+2=12	0	1	0	1	
31 (Sun.)	Few Clouds	L N	L N	10	8	2	2	3	2	
June 1	Clear with Haze	Calm, L N	Calm	2	4	0	0	0	2	
2	Clear	L Variable (no dir.)	L Variable (no dir.)	7	6	0	2	0	0	
3	Clear	L S, Calm	Calm, L N	4+1=5	5	2	1	1	0	
4	Clear	Calm	L N	6	5	1	1	3	1	
5	Clear with Haze	Calm/L SE	L SE	10	10	0	2	1	1	
6 (Sat.)	Scattered Clouds, Clouds	L/M SE	M SE	7	6+2=8	0	2	0	2	
7 (Sun.)	Clear	L E	L S	7	6+1=7	0	2	2	1	
8	Part Cloud, Overcast	L Variable (no dir.)	Calm	3	4	0	0	0	0	
9	Clear	L SE	Calm	4+1=5	5	0	0	2	0	
10	Clear, Few Clouds	L E	L E	5	4	0	0	1	0	
11	Clear, Few Clouds	L S	L S	5	5	0	0	1	0	
12	Clear	L SE	L SE	5+1=6	8	0	2	1	1	
June 13	Clear	L SE	L SE	6	7	0	0	0	1	

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		Wind Direction		Number of Beach Fires in Park (inside fire ring ^(park head) , outside fire ring ^(park head))		Number of Beach Fires Left Smoldering by User <small>(established by park contractors)</small>		Number of Beach Fires Burning Non-compliant Material		
		1630-1930	1930-2300	1630-1930	1930-2300	1630-1930	1930-2300	1630-1930	1930-2300	
14 (Sun.)	Few Clouds	M S	M S	6	5	0	1	2	1	
15	Part Cloud	L SE	L SE	5	3+1=4	0	1	1	1	Nephelometer metering started.
16	L Rain	L SE	L S	0	0	0	0	0	0	
17	Few Clouds	Calm/L S	LS	2	4+1=5	0	1	0	1	
18	Few Clouds	S SE	M SE, L S	1	0	0	0	0	0	
19	Cloudy, Some Rain	M N, NW	M N	3	3	0	0	2	0	
20 (Sat.)	Mostly Cloudy	L SE	L NW	7	10	0	3	0	2	
21 (Sun.)	Clear	L SE	L N	7	8+1=9	0	2	0	1	
22	Overcast, Broken Clouds	L S	L S/SW	1	5	0	2	0	1	
23	Overcast, Very L Rain	L SE	L SE	1	4	0	0	0	0	
24	Broken Clouds, L Rain	M S	L S	0	1	0	0	0	0	
25	Overcast, L Rain	L N	L N	0	1	0	0	0	0	
26	Clear	L SE	L SE	7	6	1	3	0	1	
27 (Sat.)	Rain, Clouds	L S	L SE	0	0	0	0	0	0	
28 (Sun.)	Few Clouds	L N	L/M N	9	8	0	0	2	1	
29	Few Clouds	L/M N	L N	5	10	0	1	2	0	
30	Clear	L N	L N	10	10	0	0	2	2	
July 1	Clear	L N	L N	8	9	0	1	1	2	
2	Clear	L N	L N	8	8	0	1	1	1	
3	Clear	Calm	Calm	7	10	0	2	2	0	
4 (Sat.)	Clear, Thin Clouds	L N	L NW	10	8	0	0	1	0	
5 (Sun.)	Thin Clouds, Broken Clouds	Calm	L NW	8	6	0	3	1	1	
6	Overcast, Broken Clouds	M SE	L W	0	1	0	0	0	0	
7	Overcast, M Rain,	M SE	M SE	0	0	0	0	0	0	
8	Broken Clouds	Calm, L SE	L SE	0	4	0	2	0	2	
9	Few Clouds	L SE, Calm	L SE, Calm	7	9+1=10	0	0	0	2	
10	Clear	L SE	L SE, Calm	7	7+1=8	0	1	2	1	
11 (Sat.)	Clear	Calm, L SE	Calm	8	8+1=8	0	2	0	4	
12 (Sun.)	Clear	M/S SE	M SE	4	5	0	3	0	1	
13	Broken Clouds	L SE	L SE	6	5	3	2	0	0	
14	Clear, Few Clouds	L S	L S	8	7	2	1	2	1	
15	Thin Overcast, Part Cloud	L E	L E, Calm	10	10	0	2	2	0	
16	Few Clouds, Clear	L E	Calm	10	10	0	0	1	0	
17	Overcast, Broken/Few Clds	L SE	L/M NW	9	10	0	3	0	0	
18 (Sat.)	Part Clouds, Few Clouds	L E	L N	3	6	0	0	0	0	
19 (Sun.)	Clear	L S	L N	6	8	1	3	0	1	
20	Few Clouds, Clear	L S	L N	8	7	0	3	0	1	
21	Clear	L S, Calm	Calm, L N	8	8	0	2	2	1	
22	Clear	L N	L N	3	5	0	1	0	0	
23	Clear	L/M SE	L SE	9	6	1	1	1	1	July 23 - Non-compliant fire outside park boundary
24	Clear	Calm	L N	3	9	0	0	0	0	
25 (Sat.)	Clear, Part Cloud	L N	L N, L E	4	8	0	2	0	0	
26 (Sun.)	Clear	L E, Calm	L N	4	5	0	0	0	0	
27	Clear	L S, Calm	L N	5	3	0	0	0	0	
July 28	Clear	L Variable, Calm	Calm	2	6	0	0	0	1	
29	Clear with Haze, Clear	L NE, Calm	Calm	0	6	0	1	0	1	

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		Wind Direction		Number of Beach Fires in Park (inside fire ring ^(park head) , outside fire ring ^(park head))		Number of Beach Fires Left Smoldering by User <small>(as stipulated by park conditions)</small>		Number of Beach Fires Burning Non-compliant Material		
		1630-1930	1930-2300	1630-1930	1930-2300	1630-1930	1930-2300	1630-1930	1930-2300	
30	Clear with Haze, Clear	L NE	Calm	5	10	0	0	0	0	
31	Clear with Haze, Clear	L NE	Calm	0	0	0	0	0	0	CAMPFIRE BAN STARTS - Fire Rings Removed from Pa
1 (Sat.)	Clear with Haze	Calm, L N	L NW	0	0	0	0	0	0	
2 (Sun.)	Clear with Haze	L N	L NW	0	0	0	0	0	0	
3	Clear with Haze	L NE/NW	L NW	0	0	0	0	0	0	
4	Clear with Haze, Few Clouds	L SE	L SE	0	0	0	0	0	0	
5	Clear with Haze	L/M E	L/M E	0	0	0	0	0	0	
6	Clear with Haze	L NE, L E	L SE	0	0	0	0	0	0	
7	Part Cld, Broken, Overcast	L/M SE	M SE	0	0	0	0	0	0	
8 (Sat.)	Overcast, Broken, Part Cld	M/L SE	L SE	0	0	0	0	0	0	
9 (Sun.)	Broken Clouds, Overcast	M SE	L SE	0	0	0	0	0	0	
10	Broken Clouds	MSE	L SE	0	0	0	0	0	0	
11	Overcast, Brkn, Partial, Shwrs	L E	L E	0	0	0	0	0	0	
12	Scattered, Brkn, Overcast, L Rain	L N	L NW	0	0	0	0	0	0	
13	Part Cloud, Broken	L E	L E	0	0	0	0	0	0	
14	Clear, Part Cloud	L E	L N	0	0	0	0	0	0	
15 (Sat.)	Few Clouds, Part Cloud	L W	L W	0	0	0	0	0	0	
16 (Sun.)	Clear, Part Cloud, Few Cloud	L E	L W	0	0	0	0	0	0	
17	Broken Clds, Part Cld, Clear	M N	L NW	0	0	0	0	0	0	
18	Clear	L Variable (no dir.)	L W	0	0	0	0	0	0	
19	Clear with Haze	Calm	Calm, L NW	0	0	0	0	0	0	
20	Few Clouds, Part Cloud	M/L SE	M/L NW	0	0	0	0	0	0	
21	Part Cloud, Few Clouds	M SE	M/L NW	0	0	0	0	0	0	
22 (Sat.)	Part Cloud	L E	L N	0	0	0	0	0	0	
23 (Sun.)	Few Clouds	L E	L N	0	0	0	0	0	0	
24	Overcast	L S	L SE	0	0	0	0	0	0	
25	Part Cloud	L E	L SE	0	0	0	0	0	0	
26	Scattered Clds, Broken Clds	L E	L E	0	0	0	0	0	0	
27	Few Clouds	L E	Calm	0	0	0	0	0	0	
28	Overcast, Broken Clouds	L N	Calm	0	0	0	0	0	0	
29 (Sat.)	Clear	L E	L W	0	0	0	0	0	0	
30 (Sun.)	Clear	Calm	L NW	0	0	0	0	0	0	
31	Clear	L N	L W	0	0	0	0	0	0	
Sept. 1	Few Clouds	L E	L E	0	0	0	0	0	0	
2	Few Clouds, Part Clouds	L N	Calm	0	0	0	0	0	0	Nephelometer metering ended.
3	Broken Clouds, L Rain	M E	M E	0	0	0	0	0	0	
4	Overcast, L Rain, Broken Cld	L N	L W	0	0	0	0	0	0	
5 (Sat.)	Few, Part, Broken, Overcast	M E	M/L E/SE	0	0	0	0	0	0	
6 (Sun.)	Broken Clouds, L Rain	L E, Calm	Calm	0	0	0	0	0	0	
7	Broken Clouds, L Rain	L E	L W	0	0	0	0	0	0	

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SOURCE

Data compiled from park steward "Goose Spit Park Daily Survey" sheets and park maintenance contractor and park steward "Weekly Site Inspection" sheets.

NOTES

Goose Spit Park Daily Survey Sheets

Some May 1-22 time periods were not defined for data collection in the Goose Spit Park Daily Survey sheets. The time period that most closely matched the indicated time periods, with the highest number of beach fires was recorded in this table (beach fires in other time periods would be the same fires, [conversation park steward]).

Non-compliant Material - does not include clean, untreated building material.

ephelometer Metering

Refer to report, VIHA Preliminary Air Quality Monitor Data for Three Sites in the Comox Valley.

Abbreviations

Weather - from Weather Symbols Cheat Sheet provided by park steward (attached).

Words - abbreviated by removing vowels from words where necessary to facilitate table structure.

Weather Symbols Cheat Sheet Used by Park Steward

Class	Data Code	Equivalent Measured Wind Speed		
		Km/h	SI Units (m/s)	Typical Indicator
Calm	C	0	0	No air motion. Smoke rises vertically.
Light	L	1-25	1-7	Light to gentle breeze; flags and twigs in motion.
Moderate	M	26-40	8-11	Fresh breeze; small trees sway. Flags stretched. Sand begins to drift.
Strong	S	41-60	12-17	Strong breeze; whole trees in motion.
Extreme	X	>60	>17	Gale force or higher.

revised 24, 2009

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