





Water

Long-Term Trends in Groundwater Levels in B.C.

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1 Introduction

Up to 1 million British Columbians are estimated to consume groundwater, and hundreds of groundwater aquifers provide water for industries, municipalities, farms, and rural homeowners in B.C. British Columbia operates a provincial observation well network of over 180 wells, which was established in 1961 to monitor groundwater availability in areas of high human use.

• Observation wells are not used for domestic or commercial use, but instead provide information on groundwater levels over time.







- Monitoring groundwater levels allows us to know how much groundwater is available given human use patterns, aquifer characteristics, weather and climate patterns.
- This indicator presents a statistical analysis of long-term trends in groundwater levels recorded at 119 observation wells that have been monitored for ten years or more and were active as of 2004.
- 78% of observation wells examined have water levels that are stable or increasing (with 4 wells showing increasing trends); 9% of observation wells show a large rate of decline in water levels (more than 10 cm per year), with a further 13% of wells showing a moderate rate of decline in water levels (between 3 and 10 cm per year).

2 Provincial summaries

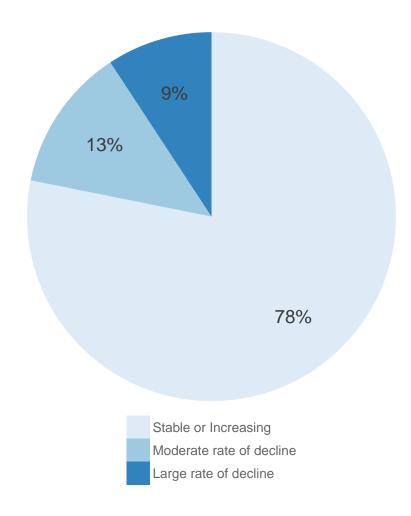
The charts below summarise the proportions of observation wells with groundwater levels in three long-term trend categories: large rate of decline (more than 10 cm/year), moderate rate of decline (3 to 10 cm/year), and stable or increasing. These summaries are also presented by region and aquifer type.







Percentage of observation wells in three categories of long-term trends in groundwater levels

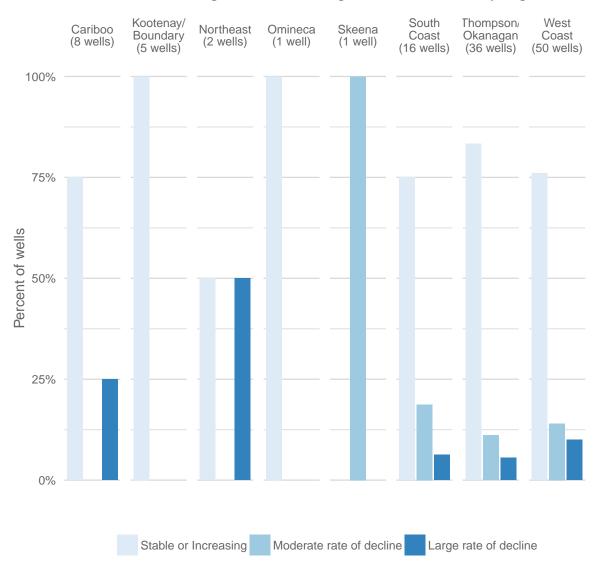








Variation in long-term trends in groundwater levels by region

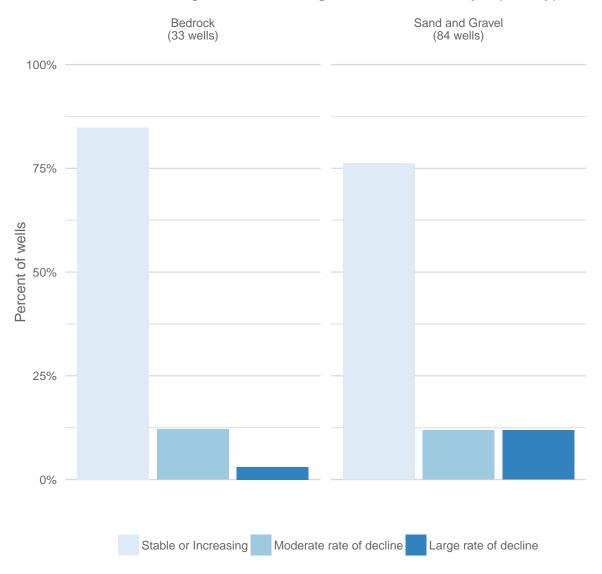








Variation in long-term trends in groundwater levels by aquifer type









3 Individual well statistics

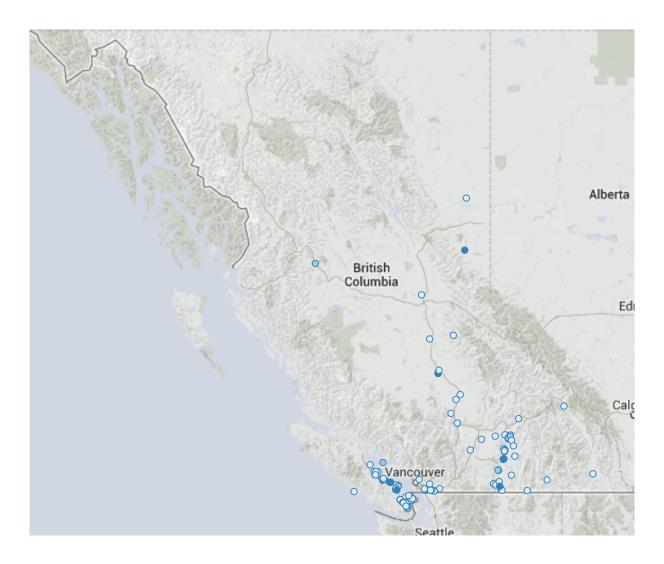
Groundwater levels are sensitive to precipitation, aquifer storage capacity, recharge rate, and human withdrawal. Groundwater level trends presented here indicate long-term changes in water level, but have not been corrected for changes in precipitation patterns or other factors. Thus, any significant trends are not necessarily directly attributable to human use. However, information on long-term trends can be useful for prompting further research and informing decision-making.







3.1 Locations of 119 groundwater observation wells that were included in the analysis



O Stable or Increasing O Moderate rate of decline Large rate of decline







Region	Well	Date Range	Slope (m/yr)	Sig	State
Cariboo	78	1978 - 2004	0.02	1	Stable
Cariboo	80	1975 - 2013	-0.01	0.087	Stable
Cariboo	81	1975 - 2014	0.02	0.578	Stable
	82	1975 - 2014 1975 - 2009	0.02	0.376	
Cariboo	88	1975 - 2009	-0.34		Stable
Cariboo Cariboo	260	1982 - 2014	0.06	p < 0.05 p < 0.05	Large rate of decline
					Increasing
Cariboo	261 289	1980 - 2012	-0.10	p < 0.05	Large rate of decline
Cariboo		1984 - 2011	0.06	p < 0.05 0.154	Increasing
Kootenay / Boundary	74	1983 - 2008	0.21		Stable
Kootenay / Boundary	217	1979 - 2011	-0.00	0.277	Stable
Kootenay / Boundary	291	1985 - 2014	0.00	0.75	Stable
Kootenay / Boundary	306	1989 - 2014	-0.01	p < 0.05	Stable
Kootenay / Boundary	309	1989 - 2014	-0.01	0.591	Stable
Northeast	124	1980 - 2006	0.00	0.402	Stable
Northeast	286	1989 - 2014	-0.10	p < 0.05	Large rate of decline
Omineca	293	1986 - 2008	-0.01	0.284	Stable
Skeena	89	1969 - 2006	-0.03	p < 0.05	Moderate rate of decline
South Coast	2	1966 - 2014	-0.02	0.168	Stable
South Coast	3	1962 - 2004	-0.01	0.141	Stable
South Coast	4	1962 - 2004	-0.06	p < 0.05	Moderate rate of decline
South Coast	7	1962 - 2004	-0.23	p < 0.05	Large rate of decline
South Coast	8	1962 - 2014	-0.03	p < 0.05	Moderate rate of decline
South Coast	12	1964 - 2004	-0.02	p < 0.05	Stable
South Coast	15	1974 - 2013	-0.01	0.153	Stable
South Coast	255	1983 - 2012	0.01	0.075	Stable
South Coast	259	1980 - 2013	-0.02	p < 0.05	Stable
South Coast	272	1981 - 2014	0.03	p < 0.05	Increasing
South Coast	273	1981 - 2006	0.01	0.168	Stable
South Coast	275	1981 - 2014	-0.00	0.698	Stable
South Coast	292	1985 - 2011	-0.03	p < 0.05	Moderate rate of decline
South Coast	299	1987 - 2014	0.02	0.095	Stable
South Coast	301	1988 - 2014	-0.01	0.481	Stable
South Coast	349	2001 - 2013	0.01	0.732	Stable
Thompson / Okanagan	35	1968 - 2014	-0.02	p < 0.05	Stable
Thompson / Okanagan	45	1965 - 2012	-0.03	p < 0.05	Stable
Thompson / Okanagan	47	1965 - 2013	-0.00	0.866	Stable
Thompson / Okanagan	54	1969 - 2006	-0.04	0.108	Stable
Thompson / Okanagan	75	1965 - 2011	-0.02	p < 0.05	Stable
Thompson / Okanagan	76	1966 - 2010	-0.01	p < 0.05	Stable
Thompson / Okanagan	96	1969 - 2011	-0.00	0.319	Stable
Thompson / Okanagan	100	1969 - 2008	-0.01	p < 0.05	Stable
Thompson / Okanagan	101	1969 - 2010	0.01	0.629	Stable
Thompson / Okanagan	105	1969 - 2009	-0.01	p < 0.05	Stable
Thompson / Okanagan	115	1973 - 2010	0.01	0.969	Stable
Thompson / Okanagan	117	1971 - 2014	-0.02	p < 0.05	Stable
Thompson / Okanagan	118	1971 - 2014	-0.04	p < 0.05	Moderate rate of decline
Thompson / Okanagan	119	1971 - 2007	-0.06	p < 0.05	Moderate rate of decline
Thompson / Okanagan	122	1977 - 2008	-0.00	0.475	Stable



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Thompson / Okanagan	153	1969 - 2007	-0.01	p < 0.05	Stable
Thompson / Okanagan	154	1969 - 2007	-0.01	•	Moderate rate of decline
Thompson / Okanagan				p < 0.05	
Thompson / Okanagan	158	1969 - 2007	-0.08	p < 0.05	Moderate rate of decline
Thompson / Okanagan	162	1972 - 2007	-0.02	0.061	Stable
Thompson / Okanagan	172	1977 - 2014	-0.02	p < 0.05	Stable
Thompson / Okanagan	173	1972 - 2004	-0.01	p < 0.05	Stable
Thompson / Okanagan	174	1972 - 2009	-0.00	p < 0.05	Stable
Thompson / Okanagan	175	1973 - 2006	0.00	p < 0.05	Stable
Thompson / Okanagan	176	1972 - 2006	-0.02	p < 0.05	Stable
Thompson / Okanagan	180	1975 - 2014	-0.09	0.11	Stable
Thompson / Okanagan	185	1974 - 2014	-0.01	p < 0.05	Stable
Thompson / Okanagan	203	1977 - 2014	-0.02	p < 0.05	Stable
Thompson / Okanagan	236	1979 - 2014	-0.13	0.061	Stable
Thompson / Okanagan	262	1980 - 2014	-0.13	p < 0.05	Large rate of decline
Thompson / Okanagan	282	1983 - 2011	-0.10	0.567	Stable
Thompson / Okanagan	294	1987 - 2014	-0.02	0.073	Stable
Thompson / Okanagan	296	1989 - 2014	-0.02	p < 0.05	Stable
Thompson / Okanagan	302	1988 - 2013	0.01	0.338	Stable
Thompson / Okanagan	332	1997 - 2010	-0.12	p < 0.05	Large rate of decline
Thompson / Okanagan	344	2000 - 2014	0.02	0.584	Stable
Thompson / Okanagan	346	2001 - 2014	-0.02	0.246	Stable
West Coast	58	1966 - 2014	0.03	0.168	Stable
West Coast	60	1966 - 2014	-0.00	0.204	Stable
West Coast	61	1970 - 2013	0.02	0.368	Stable
West Coast	62	1975 - 2004	0.00	0.613	Stable
West Coast	65	1975 - 2014	0.01	p < 0.05	Stable
West Coast	71	1976 - 2010	-0.01	0.976	Stable
West Coast	125	1972 - 2014	-0.01	0.845	Stable
West Coast	126	1972 - 2014	0.01	0.163	Stable
West Coast	128	1972 - 2013	0.00	0.465	Stable
West Coast	194	1972 - 2013	-0.02	p < 0.05	Stable
West Coast	194	1973 - 2007	0.02	•	Stable
West Coast	190	1979 - 2014	0.00	p < 0.05 0.865	Stable
	204				
West Coast		1977 - 2012	-0.03	p < 0.05	Stable Madarata rata of decline
West Coast West Coast	211 212	1976 - 2014	-0.03	p < 0.05	Moderate rate of decline
	212	1977 - 2010	0.15 0.00	0.188 0.688	Stable
West Coast		1954 - 2014			Stable
West Coast West Coast	232 233	1979 - 2010 1979 - 2014	-0.11 0.11	p < 0.05 0.798	Large rate of decline Stable
West Coast	240	1979 - 2014	-0.02	0.798	Stable
West Coast	258	1980 - 2013	-0.02	p < 0.05	Moderate rate of decline
West Coast	265	1980 - 2013	-0.03	p < 0.03	
West Coast	268	1981 - 2014	-0.09	0.505	Stable Stable
				0.505	
West Coast	281	1983 - 2014	0.00	0.415	Stable
West Coast	283	1983 - 2014	-0.01	0.659	Stable Madarata rata of decline
West Coast	284	1983 - 2013	-0.04	p < 0.05	Moderate rate of decline
West Coast	287	1984 - 2014	-0.06	p < 0.05	Moderate rate of decline
West Coast	288	1984 - 2014	-0.00	0.803	Stable
West Coast	290	1985 - 2014	-0.01	0.209	Stable
West Coast	295	1986 - 2014	0.13	p < 0.05	Increasing
West Coast	303	1988 - 2013	-0.23	p < 0.05	Large rate of decline







West Coast	304	1988 - 2013	-0.20	p < 0.05	Large rate of decline
West Coast	310	1990 - 2014	-0.01	0.13	Stable
West Coast	312	1991 - 2013	-0.05	p < 0.05	Moderate rate of decline
West Coast	314	1992 - 2013	-0.10	0.319	Stable
West Coast	316	1994 - 2014	-0.03	p < 0.05	Moderate rate of decline
West Coast	318	1993 - 2014	-0.02	0.976	Stable
West Coast	320	1992 - 2014	-0.01	0.91	Stable
West Coast	321	1994 - 2013	-0.14	0.059	Stable
West Coast	323	1993 - 2007	-0.04	0.155	Stable
West Coast	324	1993 - 2006	-0.13	0.059	Stable
West Coast	327	1995 - 2013	-0.01	0.649	Stable
West Coast	329	1995 - 2014	0.00	0.78	Stable
West Coast	330	1996 - 2007	-0.16	0.276	Stable
West Coast	331	1996 - 2007	-0.03	0.35	Stable
West Coast	337	1999 - 2011	-1.07	p < 0.05	Large rate of decline
West Coast	338	1998 - 2013	-0.04	p < 0.05	Moderate rate of decline
West Coast	340	1999 - 2013	-0.11	p < 0.05	Large rate of decline
West Coast	343	1998 - 2014	0.08	0.065	Stable
West Coast	345	1999 - 2014	-0.06	1	Stable
West Coast	351	2001 - 2014	0.02	0.583	Stable

4 References and Other Useful Links

Provincial Observation Well Network homepage: http://www.env.gov.bc.ca/wsd/data_searches/obswell/index.html

WELLS - Ground Water Wells and Aquifer Database: http://www.env.gov.bc.ca/wsd/data_searches/wells/

B.C. Water Information and Tools: http://www2.gov.bc.ca/gov/topic.page?id=F281F036D5394460B4C3CC01F47833A7

Wei, M., D. Allen, A. Kohut, S. Grasby, K. Ronneseth, and B. Turner. 2009. Understanding the Types of Aquifers in the Canadian Cordillera Hydrogeologic Region to Better Manage and Protect Groundwater. Streamline Water Management Bulletin. 13 (1): 10-18. http://forrex.org/sites/default/files/publications/articles/Streamline_Vol13_No1_Art3.pdf

5 Data

*By accessing these datasets, you agree to the license associated with each file, as indicated in parentheses below.

• Observation Well Attributes (License: B.C. OGL). Dataset Details







• Observation Well Groundwater Level Data (License: B.C. OGL). Dataset Details

Published and Available On-Line at Environmental Reporting BC (August 2014): http://www.env.gov.bc.ca/soe/indicators/water/wells/index.html







6 Appendix: Individual well maps and graphs

Three plots were created for each well, including a map of the well's location (upper left).

The graph to the right of the map shows the monthly groundwater levels relative to the annual average. This illustrates the seasonal nature of water levels recorded in that well; many wells will have higher than average water levels in the spring, and lower than average levels in the late summer and fall. The shaded blue area shows the range of variation within which 90% of observations in that month fall.

The bottom plot (called a "hydrograph") on each page shows the monthly ground-water levels for the history of the well, with the orange line representing the calculated trend in annual average groundwater levels. The slope and significance of the trend are given below the title. Red dots show missing values which were interpolated (see methods).



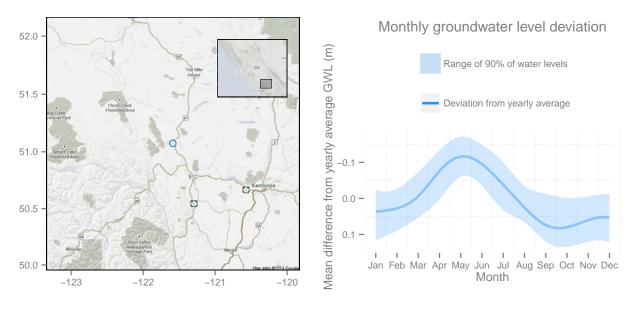


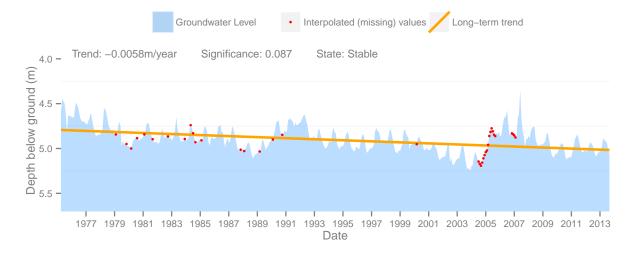


6.1 Cariboo

Observation Well #80 - Clinton (Rodeo Grounds Cariboo Hwy 97n)

This well is drilled into a Sand and Gravel aquifer, to a depth of 15m and has a period of record from April 01 1975 to September 01 2013





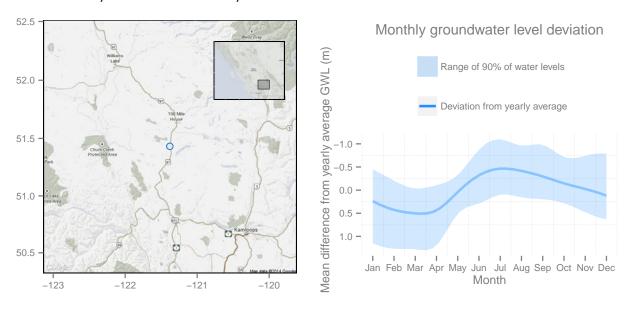


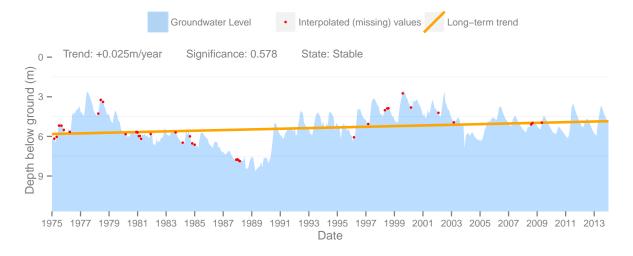




Observation Well #81 - 83 Mile (Cariboo Hwy 97n)

This well is drilled into a Bedrock aquifer, to a depth of 152m and has a period of record from January 01 1975 to January 01 2014





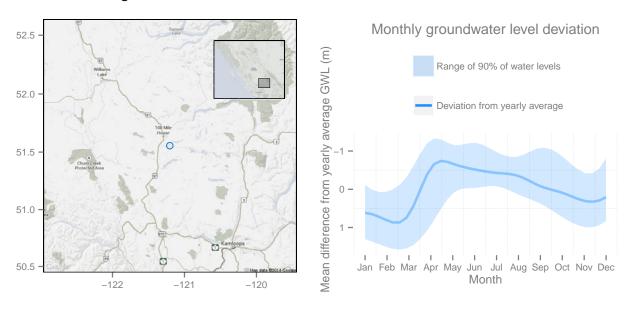


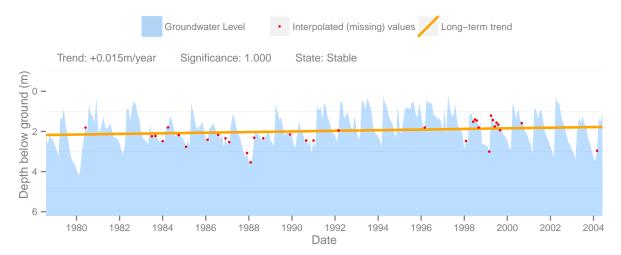




Observation Well #78 - Lone Butte Near Rail Station

This well is drilled into a Sand and Gravel aquifer, to a depth of 9m and has a period of record from August 01 1978 to June 01 2004





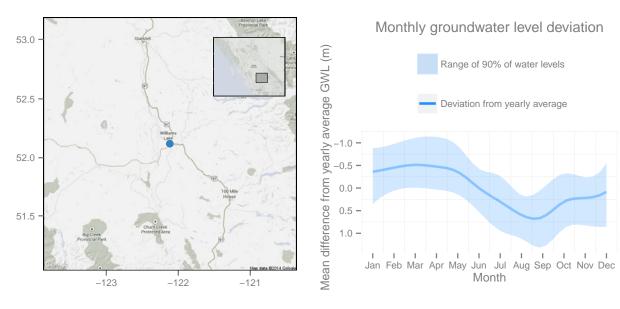


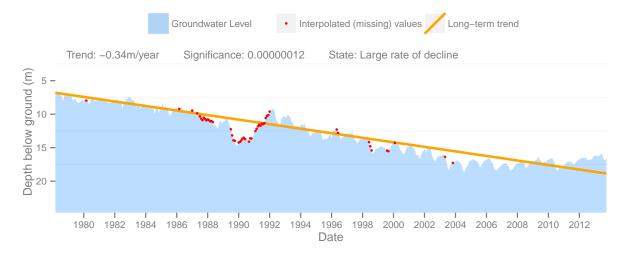




Observation Well #88 - Williams Lake (Scout Island)

This well is drilled into a Sand and Gravel aquifer, to a depth of 81m and has a period of record from March 01 1978 to October 01 2013





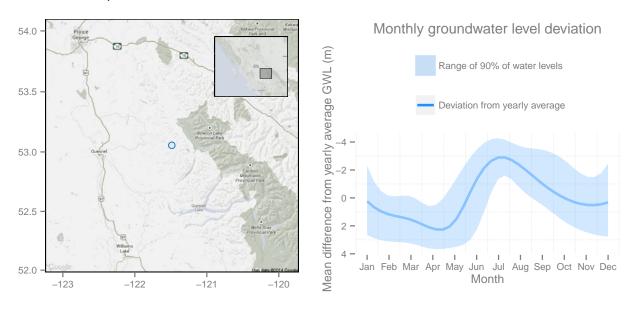


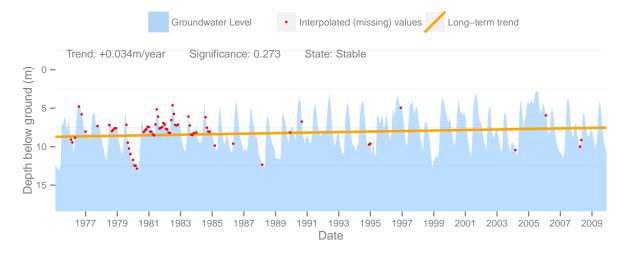




Observation Well #82 - Barkerville (Lower)

This well is drilled into a Bedrock aquifer, to a depth of 29m and has a period of record from February 01 1975 to December 01 2009





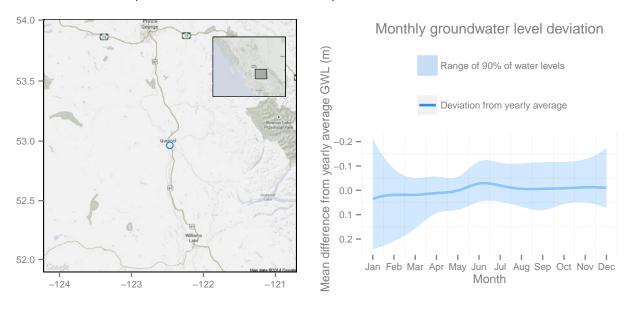


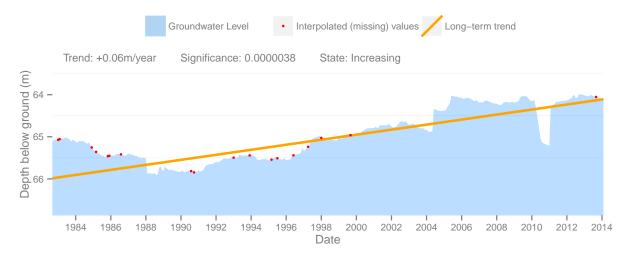




Observation Well #260 - Quesnel Red Bluff (Maple Drive & Borregard Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 75m and has a period of record from September 01 1982 to February 01 2014





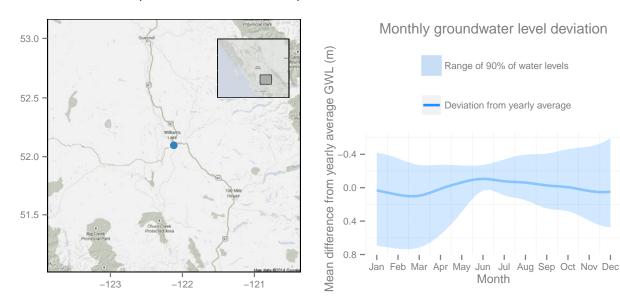


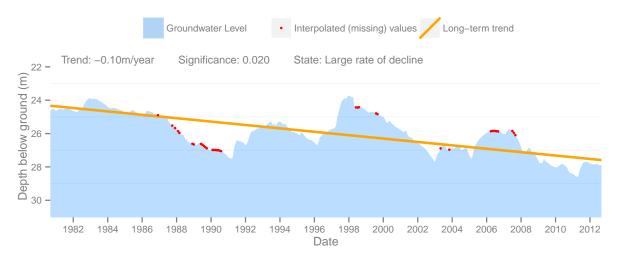




Observation Well #261 - Williams Lake (Dog Creek Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 79m and has a period of record from September 01 1980 to September 01 2012





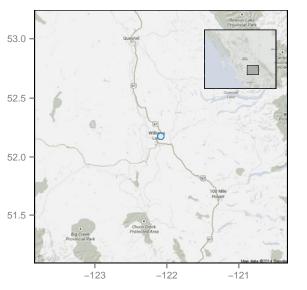


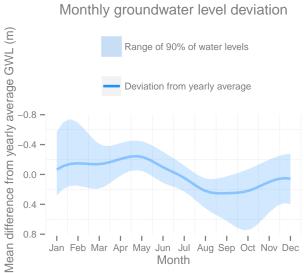


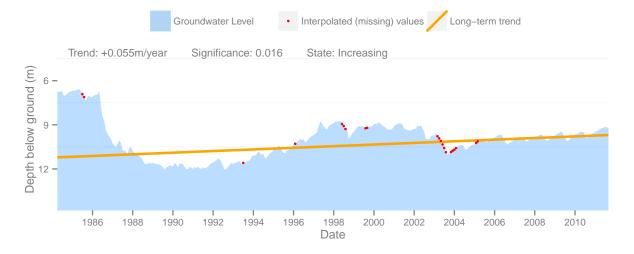


Observation Well #289 - Williams Lake (Pine Valley Subdividsion)

This well is drilled into a Sand and Gravel aquifer, to a depth of 30m and has a period of record from April 01 1984 to September 01 2011









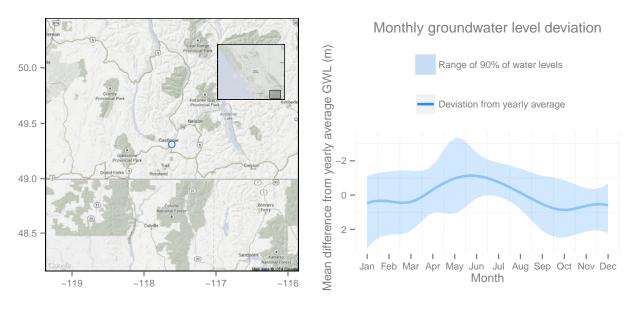


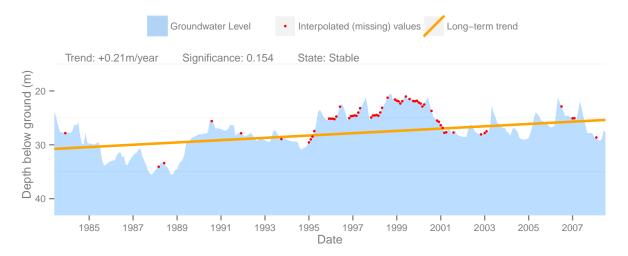


6.2 Kootenay / Boundary

Observation Well #74 - Ootischenia (Aaron Rd. - Castlegar Golf Course)

This well is drilled into a Sand and Gravel aquifer, to a depth of 37m and has a period of record from June 01 1983 to July 01 2008





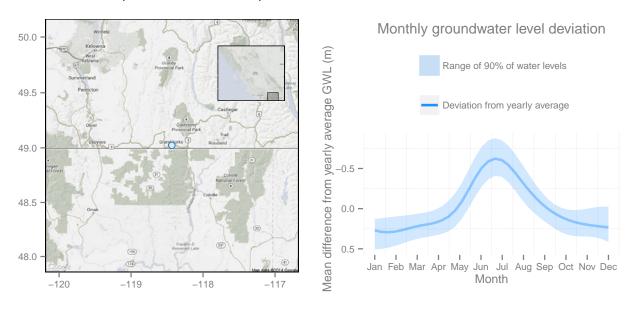


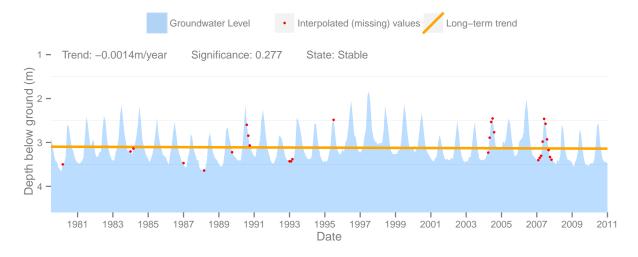




Observation Well #217 - Grand Forks (Richmond Ave.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 9m and has a period of record from July 01 1979 to January 01 2011





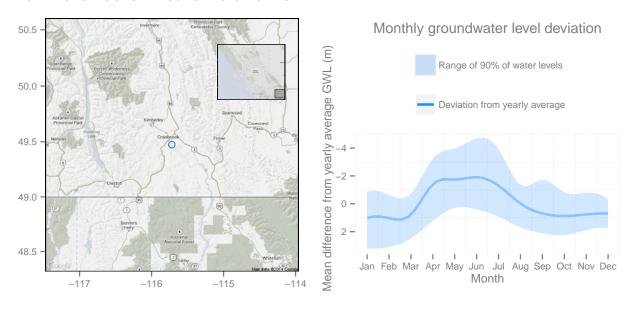


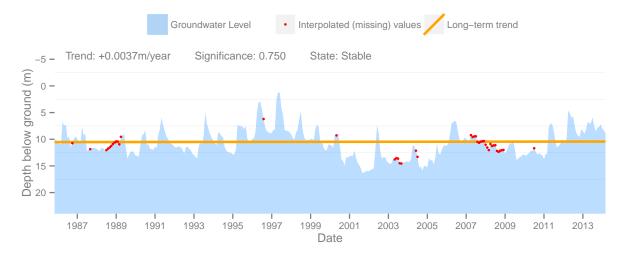




Observation Well #291 - Cranbrook (Gold Creek Rd. & 42nd Ave.)

This well is drilled into a Bedrock aquifer, to a depth of 76m and has a period of record from November 01 1985 to March 01 2014





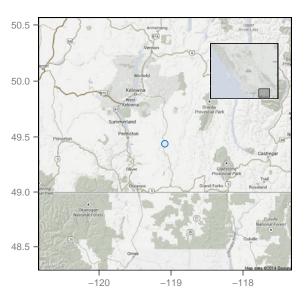


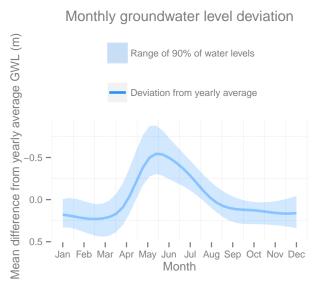


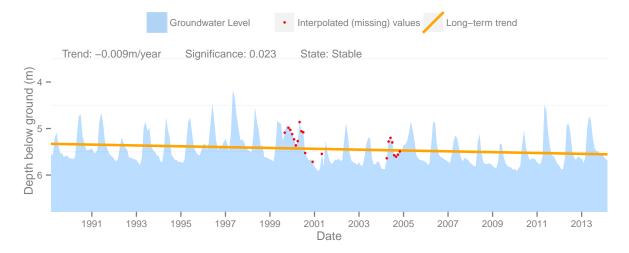


Observation Well #306 - Beaverdell (Hwy 33 & 42nd Ave.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 21m and has a period of record from March 01 1989 to March 01 2014







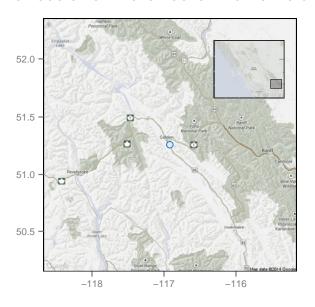


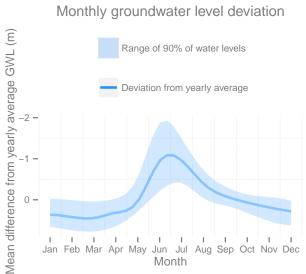


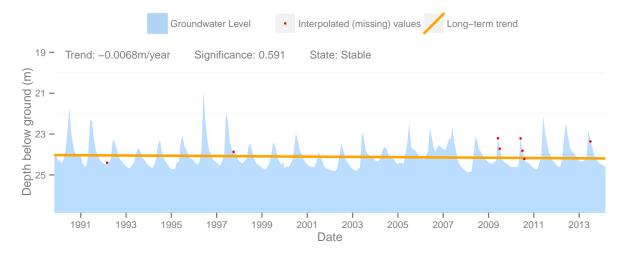


Observation Well #309 - Golden (Highway 95 & Almberg Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 45m and has a period of record from November 01 1989 to March 01 2014









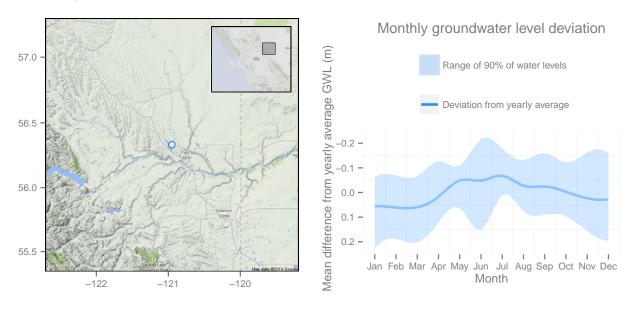


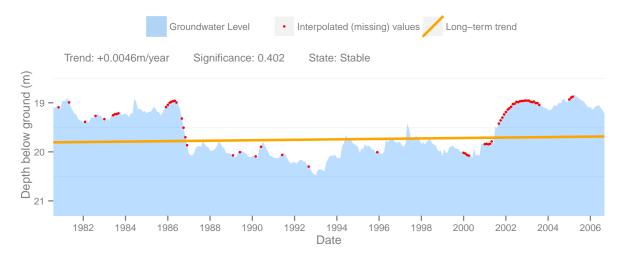


6.3 Northeast

Observation Well #124 - Charlie Lake

This well is drilled into a Bedrock aquifer, to a depth of 83m and has a period of record from August 01 1980 to September 01 2006





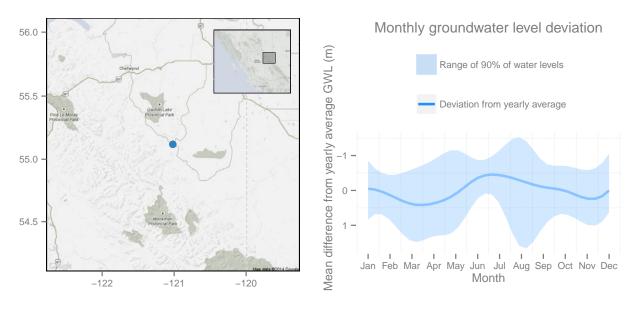


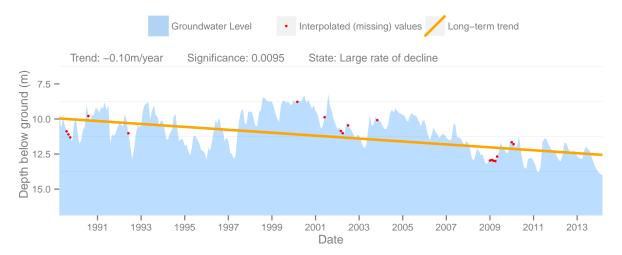




Observation Well #286 - Tumbler Ridge

This well is drilled into a Sand and Gravel aquifer, to a depth of 43m and has a period of record from April 01 1989 to March 01 2014







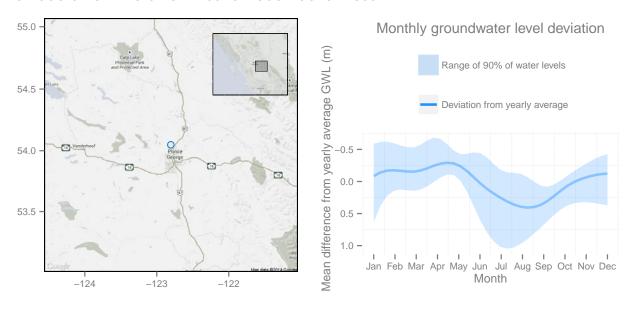


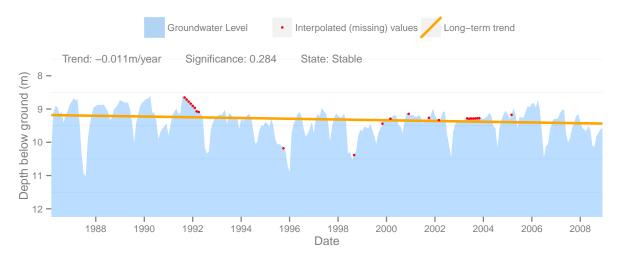


6.4 Omineca

Observation Well #293 - Ferguson Lake N. Kelly Rd.

This well is drilled into a Sand and Gravel aquifer, to a depth of 40m and has a period of record from March 01 1986 to December 01 2008







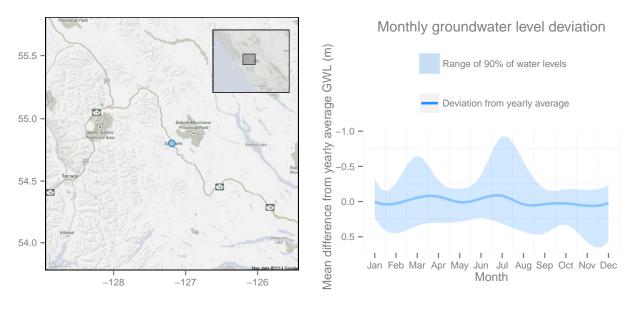


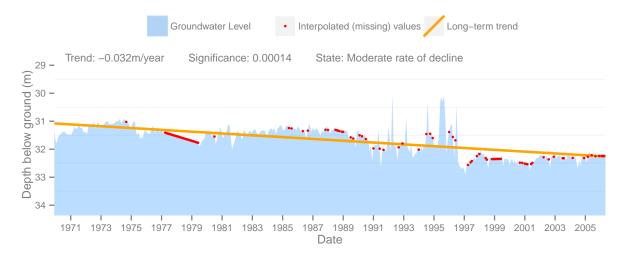


6.5 Skeena

Observation Well #89 - Smithers (Corner Powell & Lund)

This well is drilled into a Sand and Gravel aquifer, to a depth of 86m and has a period of record from December 01 1969 to May 01 2006







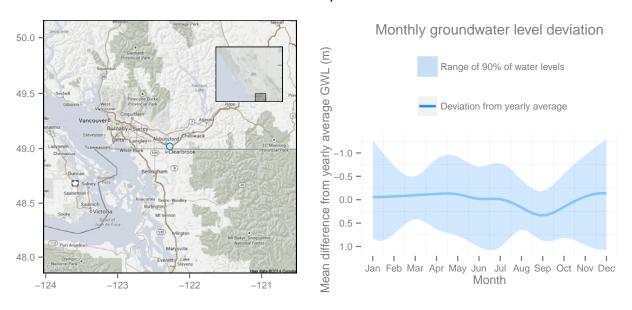


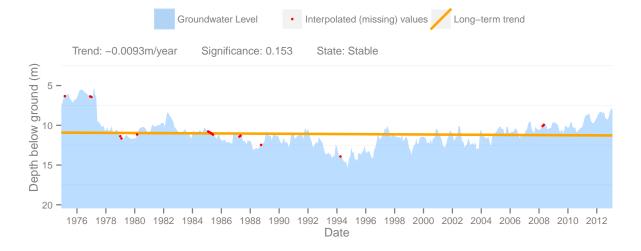


6.6 South Coast

Observation Well #15 - Abbotsford Fraser Valley Trout Hatchery Vye Rd)

This well is drilled into a Sand and Gravel aquifer, to a depth of 98m and has a period of record from December 01 1974 to February 01 2013





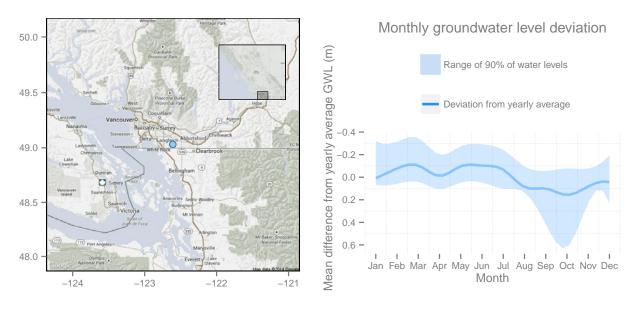


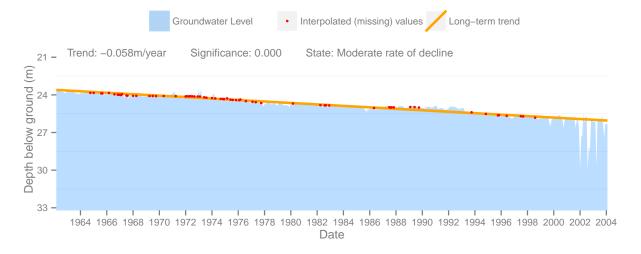




Observation Well #4 - Langley (22317 16 Ave)

This well is drilled into a Sand and Gravel aquifer, to a depth of 44m and has a period of record from March 01 1962 to February 01 2004





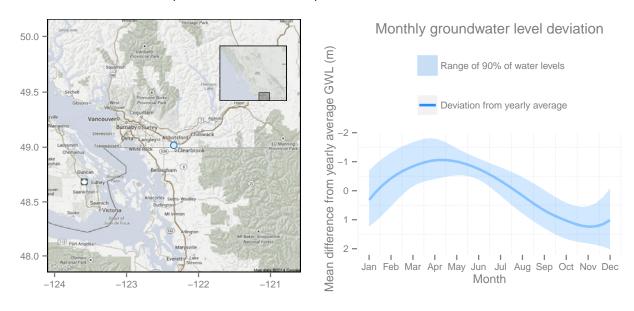


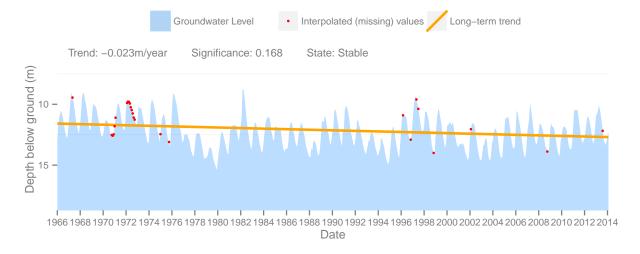




Observation Well #2 - Abbotsford (Airport Huntingdon Rd W Of Clearbrook Rd)

This well is drilled into a Sand and Gravel aquifer, to a depth of 19m and has a period of record from January 01 1966 to February 01 2014





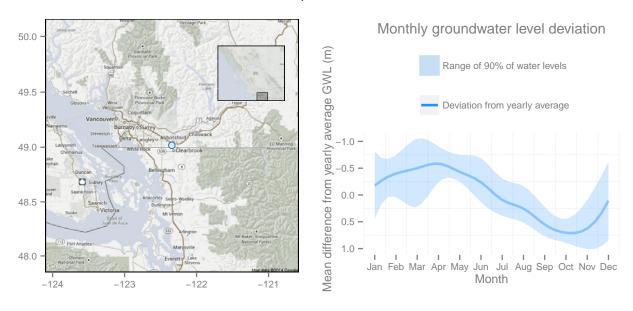


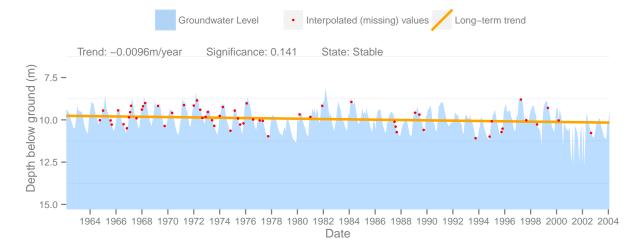




Observation Well #3 - Abbotsford (30244 Taylor Rd)

This well is drilled into a Sand and Gravel aquifer, to a depth of 19m and has a period of record from March 01 1962 to February 01 2004





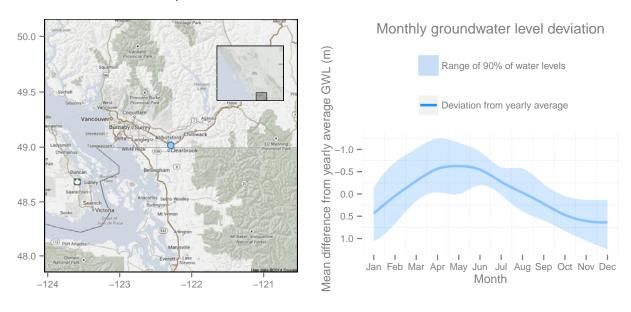


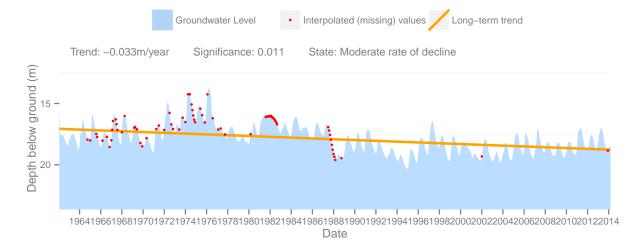




Observation Well #8 - Abbotsford (Vye Rd E Off Mccallum Rd)

This well is drilled into a Sand and Gravel aquifer, to a depth of 27m and has a period of record from February 01 1962 to March 01 2014





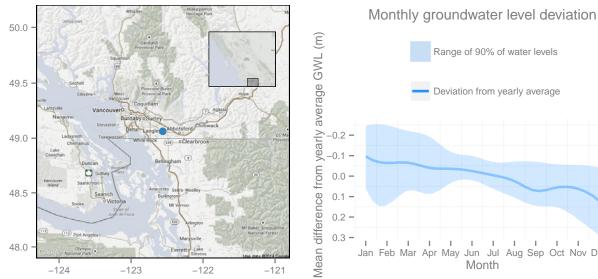




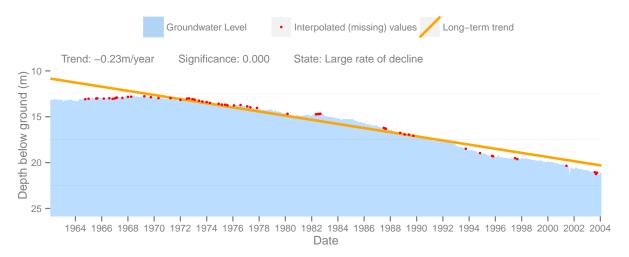


Observation Well #7 - Langley (3364 240 St)

This well is drilled into a Sand and Gravel aquifer, to a depth of 22m and has a period of record from February 01 1962 to February 01 2004



Range of 90% of water levels Deviation from yearly average Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



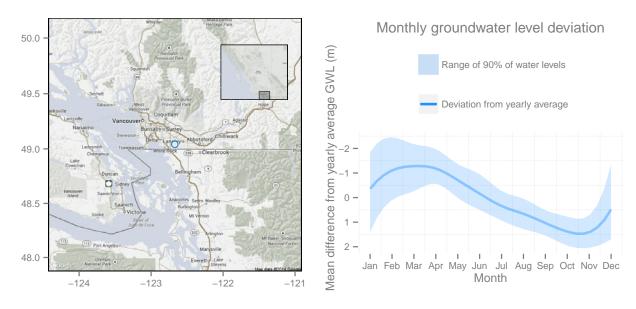


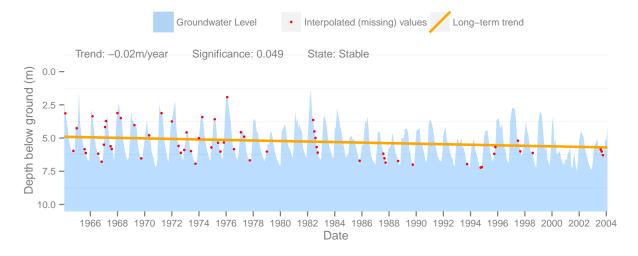




Observation Well #12 - Langley (2145 200 St)

This well is drilled into a Sand and Gravel aquifer, to a depth of 11m and has a period of record from February 01 1964 to February 01 2004





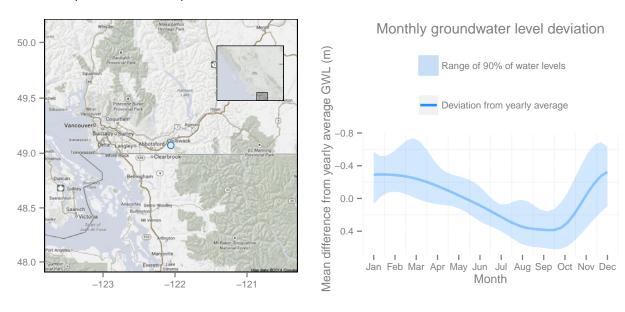


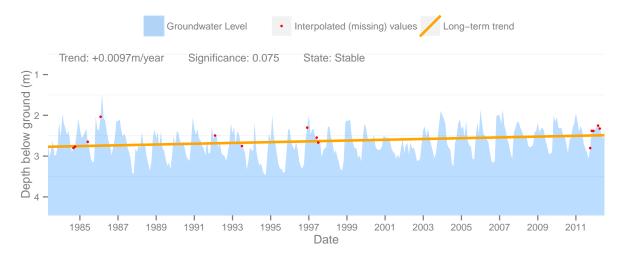




Observation Well #255 - Chilliwack (Yarrow Ratzlaff Rd)

This well is drilled into a Bedrock aquifer, to a depth of 37m and has a period of record from May 01 1983 to July 01 2012





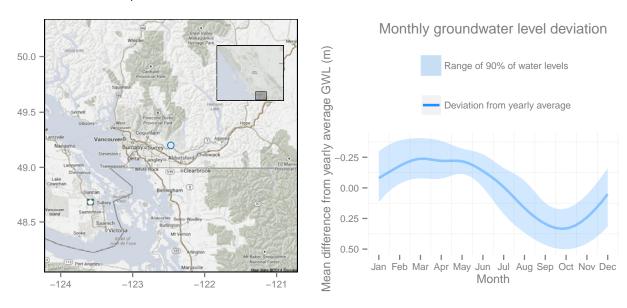


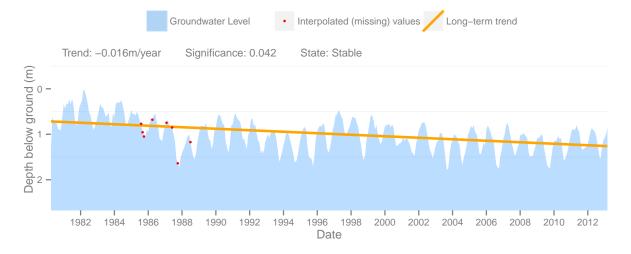




Observation Well #259 - Maple Ridge (Whonnock 272 St And 110 Ave)

This well is drilled into a Sand and Gravel aquifer, to a depth of 37m and has a period of record from April 01 1980 to March 01 2013





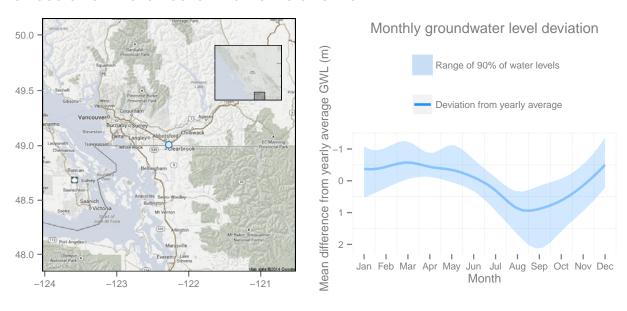


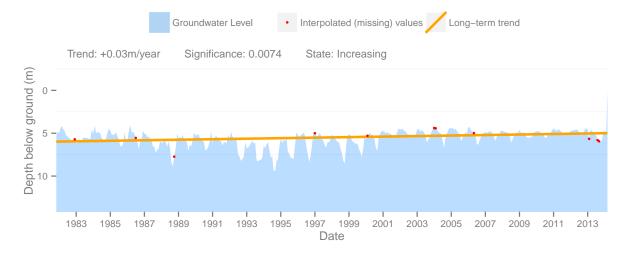




Observation Well #272 - Abbotsford (34288 Farmer Rd)

This well is drilled into a Sand and Gravel aquifer, to a depth of 36m and has a period of record from November 01 1981 to March 01 2014





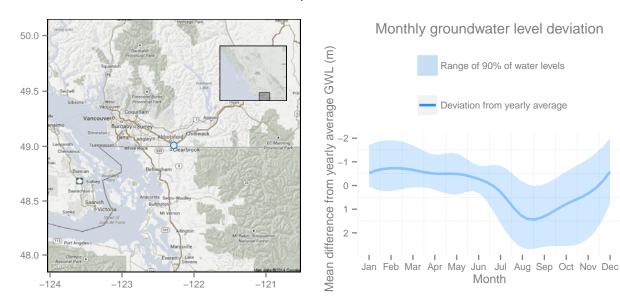


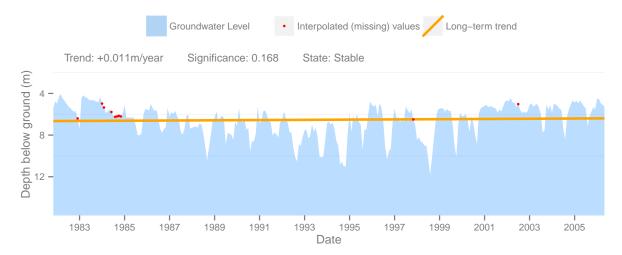




Observation Well #273 - Abbotsford (Farmer Rd Near Mckenzie Rd)

This well is drilled into a Sand and Gravel aquifer, to a depth of 34m and has a period of record from November 01 1981 to May 01 2006





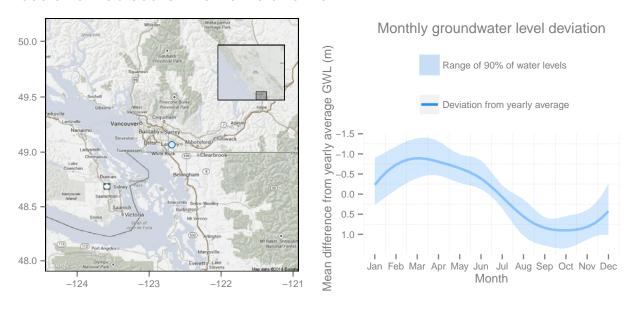


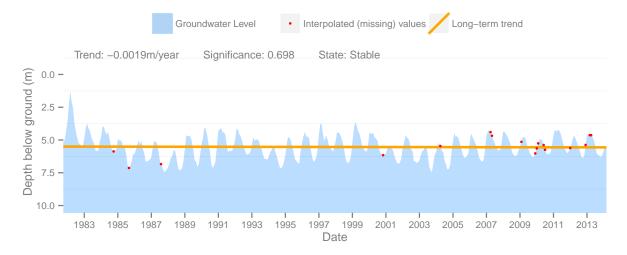




Observation Well #275 - Surrey (36th Ave Near 194th St.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 0m and has a period of record from October 01 1981 to March 01 2014





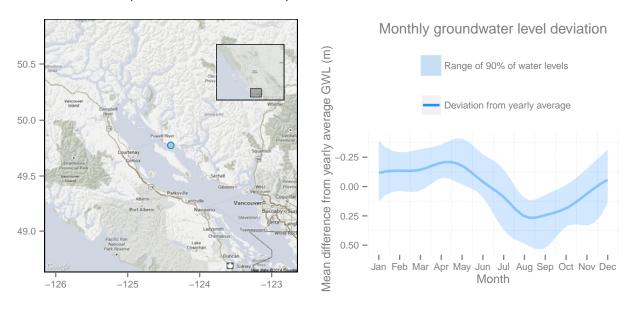


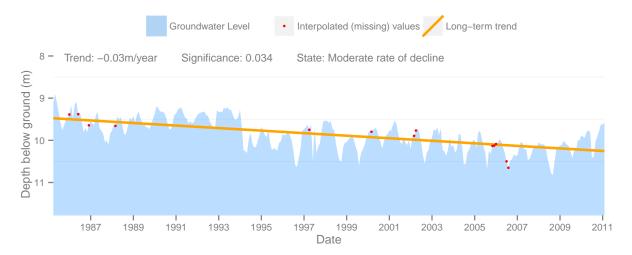




Observation Well #292 - Powell River (2214 Victory Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 27m and has a period of record from April 01 1985 to February 01 2011





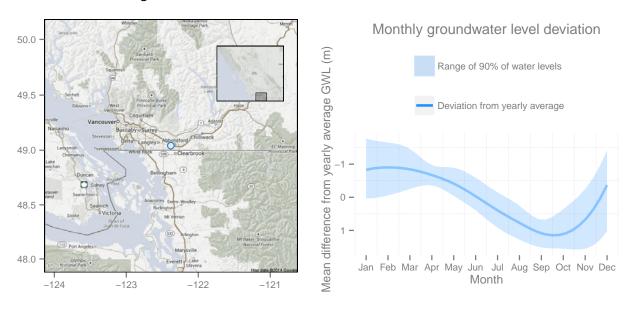


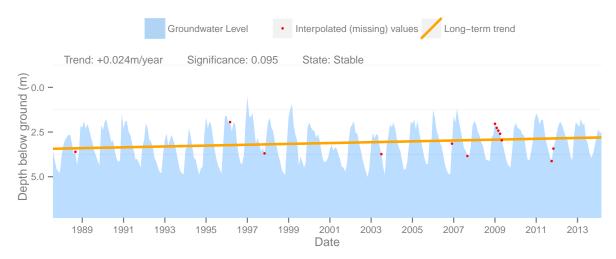




Observation Well #299 - Abbotsford (Mt Lehman Rd N Of Marshall Rd Extension)

This well is drilled into a Sand and Gravel aquifer, to a depth of 16m and has a period of record from August 01 1987 to March 01 2014





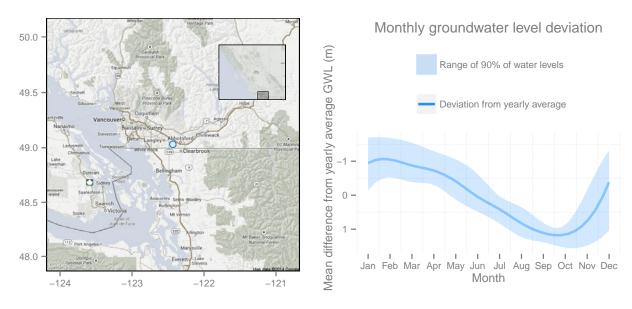


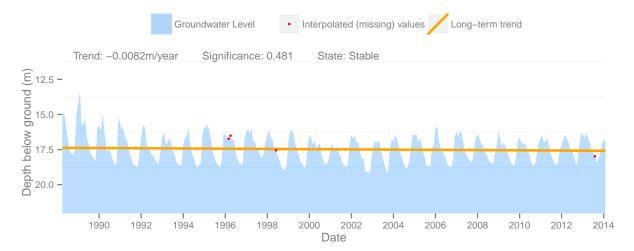




Observation Well #301 - Abbotsford (King Rd W Of Bradner Rd)

This well is drilled into a Sand and Gravel aquifer, to a depth of 41m and has a period of record from April 01 1988 to February 01 2014





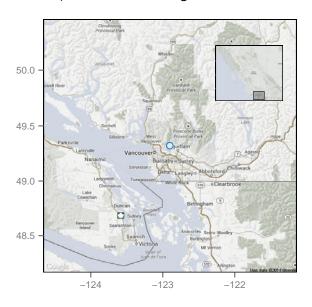


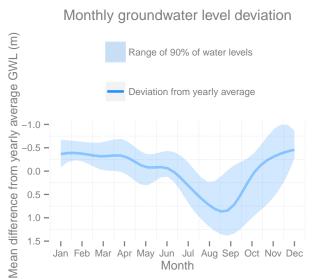


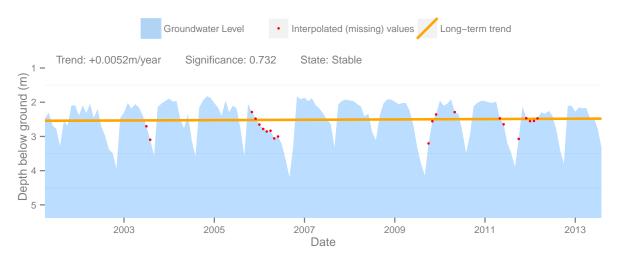


Observation Well #349 - Belcarra (3400-block Main Ave)

This well is drilled into a Bedrock aquifer, to a depth of 82m and has a period of record from April 01 2001 to August 01 2013









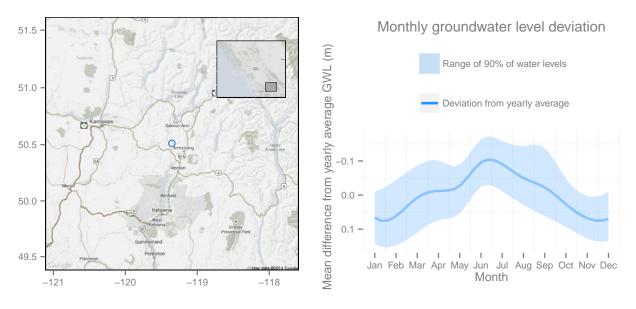


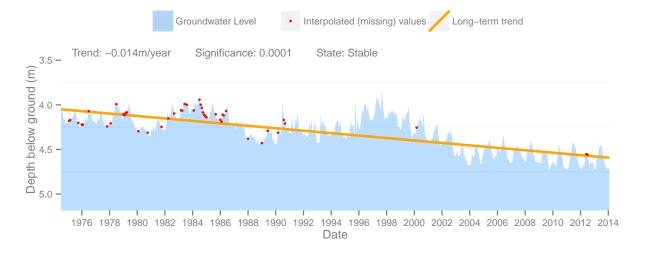


6.7 Thompson / Okanagan

Observation Well #185 - Salmon River (Salmon River Road Se Salmon Arm)

This well is drilled into a Sand and Gravel aquifer, to a depth of 10m and has a period of record from July 01 1974 to February 01 2014





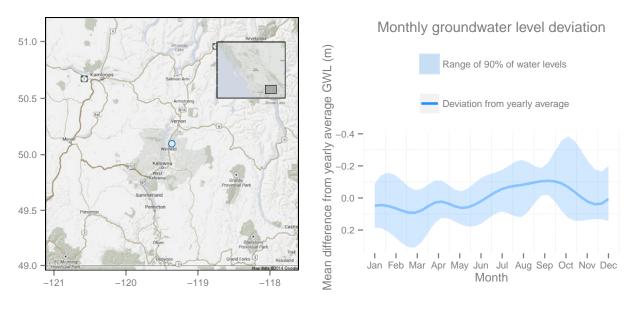


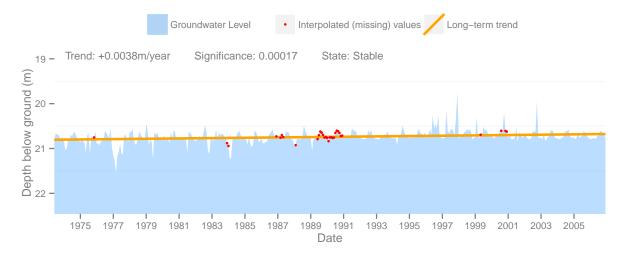




Observation Well #175 - Kalawoods

This well is drilled into a Sand and Gravel aquifer, to a depth of 23m and has a period of record from June 01 1973 to December 01 2006





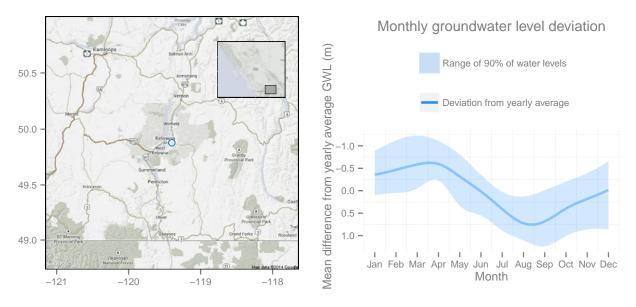


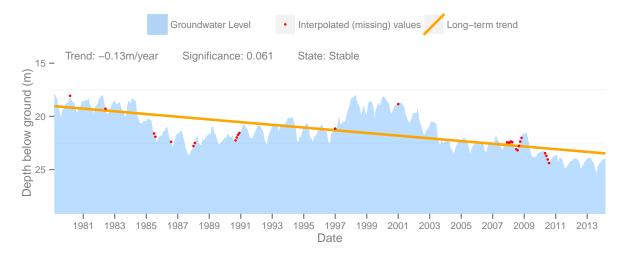




Observation Well #236 - Rutland (Timrick Court)

This well is drilled into a Sand and Gravel aquifer, to a depth of 43m and has a period of record from March 01 1979 to March 01 2014





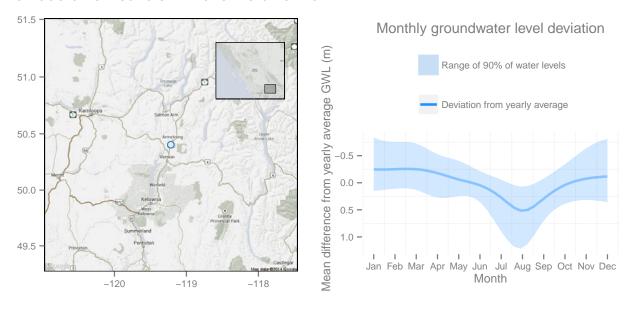


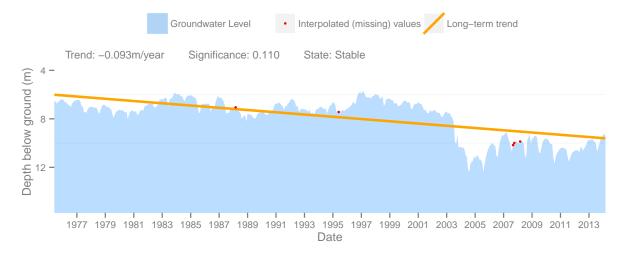




Observation Well #180 - Armstrong (Spallumcheen Way & Crozier Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 37m and has a period of record from June 01 1975 to March 01 2014





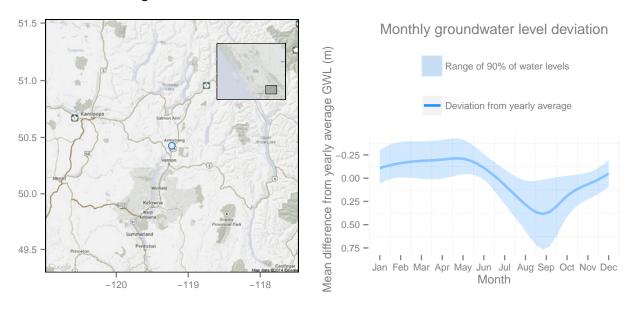


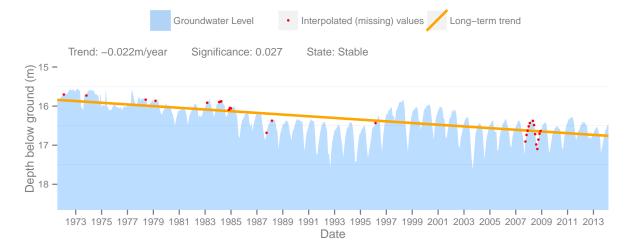




Observation Well #117 - Armstrong (Otter Lake Cross Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 577m and has a period of record from August 01 1971 to March 01 2014





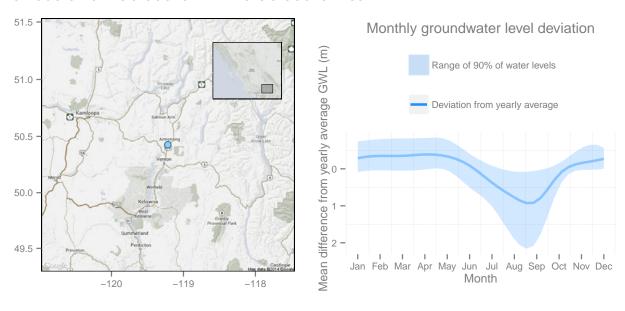


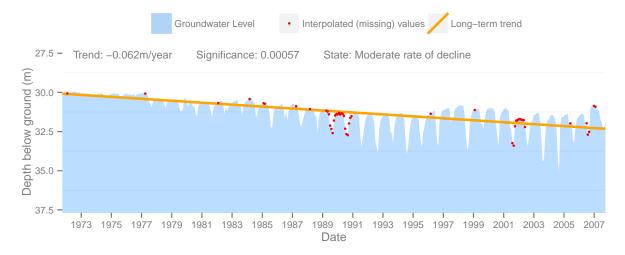




Observation Well #119 - Armstrong (Pleasant Valley Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 180m and has a period of record from October 01 1971 to October 01 2007





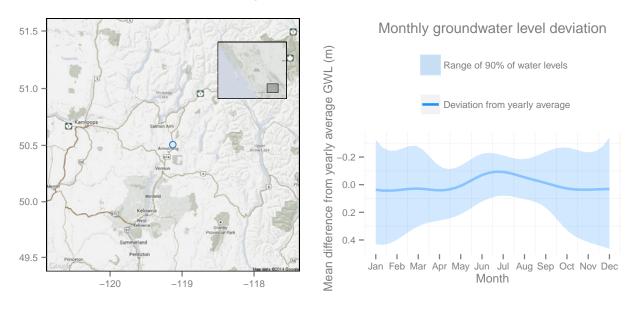


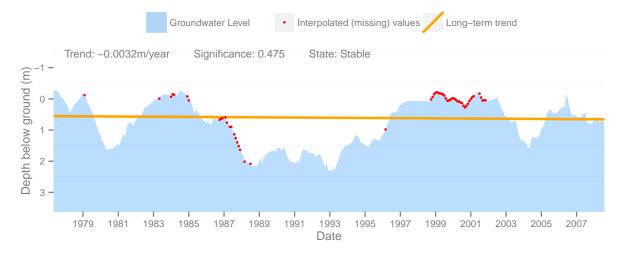




Observation Well #122 - Enderby (Hwy 97a)

This well is drilled into a Sand and Gravel aquifer, to a depth of 319m and has a period of record from May 01 1977 to August 01 2008





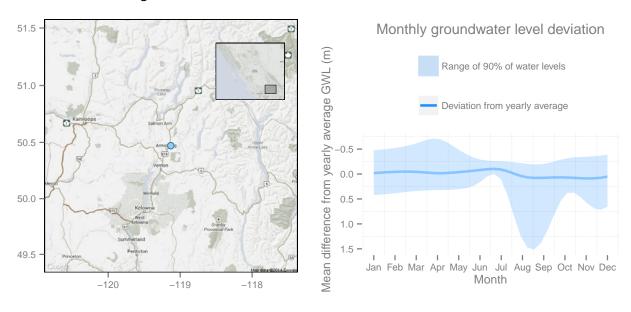


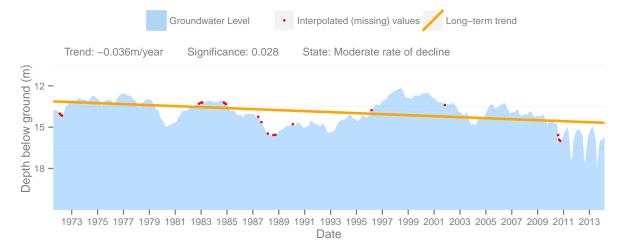




Observation Well #118 - Armstrong (Back Enderby Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 479m and has a period of record from August 01 1971 to March 01 2014





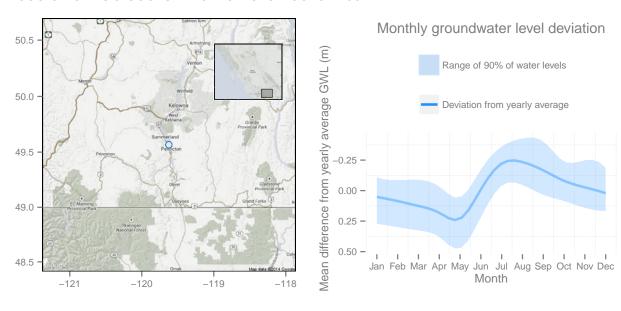


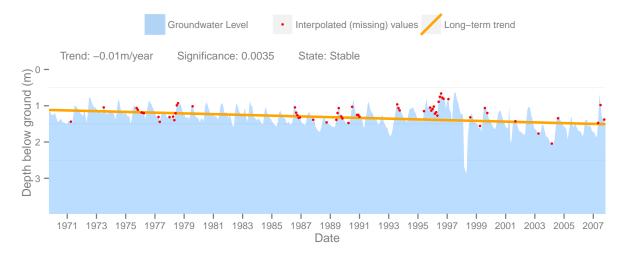




Observation Well #153 - Summerland

This well is drilled into a Sand and Gravel aquifer, to a depth of 7m and has a period of record from October 01 1969 to November 01 2007





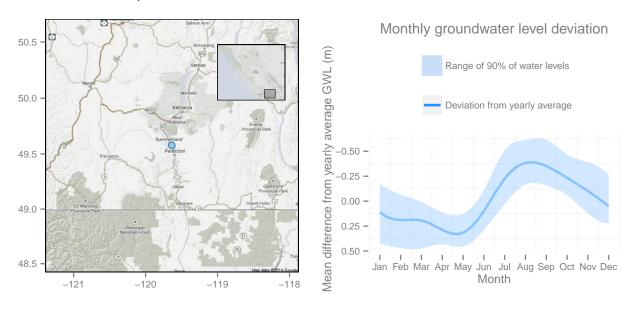


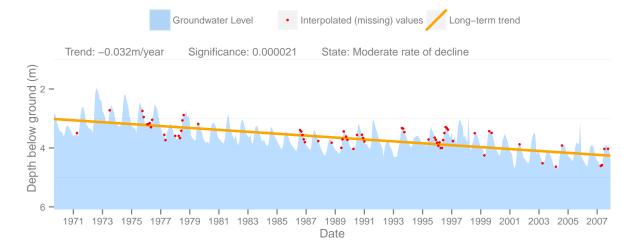




Observation Well #154 - Summerland (Hwy 97 & Thornber St.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 15m and has a period of record from September 01 1969 to December 01 2007





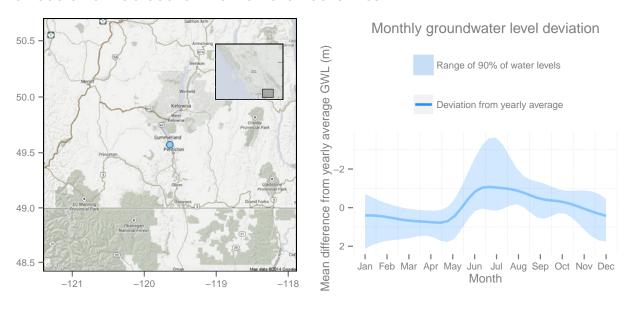


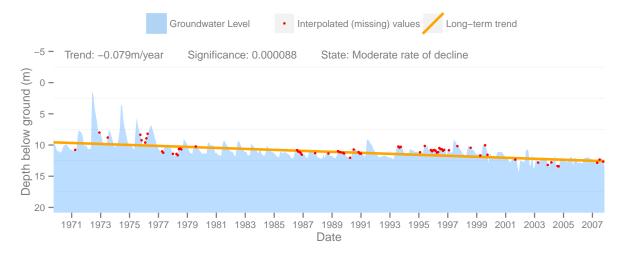




Observation Well #158 - Summerland North Of North Side Creek

This well is drilled into a Sand and Gravel aquifer, to a depth of 15m and has a period of record from October 01 1969 to November 01 2007





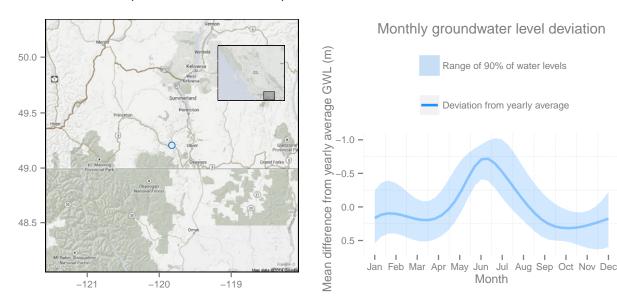


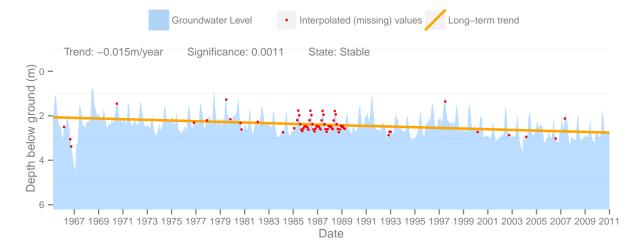




Observation Well #75 - Keremeos (6th Ave & 5th St.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 28m and has a period of record from April 01 1965 to January 01 2011





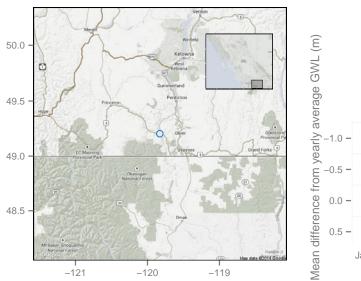


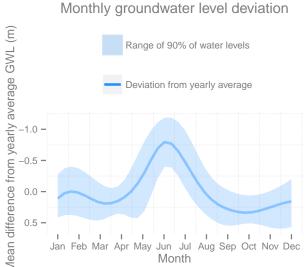


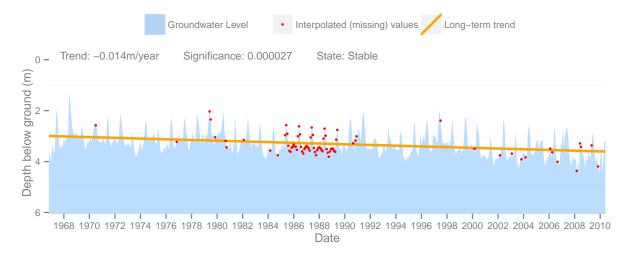


Observation Well #76 - Keremeos (9th Ave & 3rd St.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 23m and has a period of record from November 01 1966 to June 01 2010







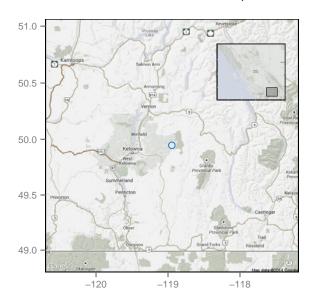


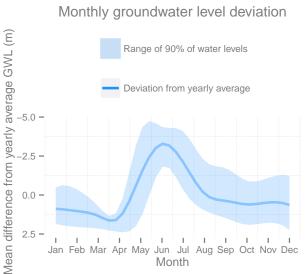


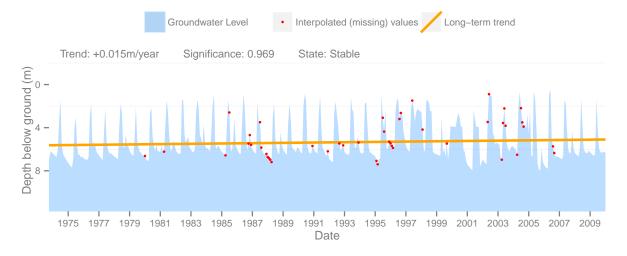


Observation Well #115 - Mission Creek

This well is drilled into a Bedrock aquifer, to a depth of 22m and has a period of record from October 01 1973 to January 01 2010







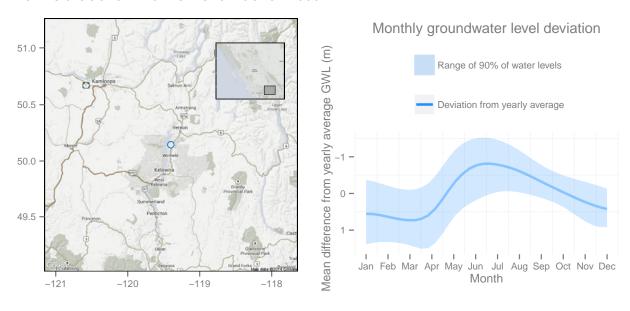


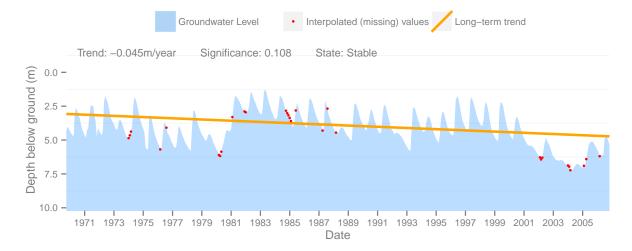




Observation Well #54 - Carrs Landing (Jersey Road)

This well is drilled into a Bedrock aquifer, to a depth of 14m and has a period of record from October 01 1969 to November 01 2006





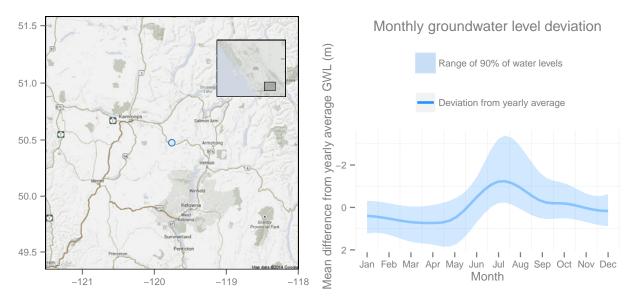


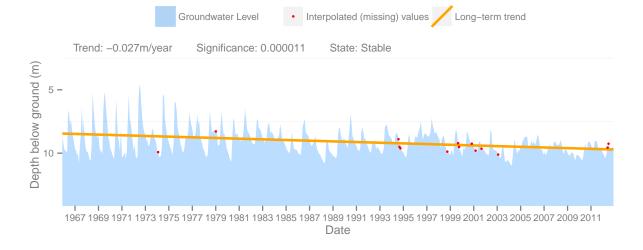




Observation Well #45 - Westwold (Station Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 17m and has a period of record from December 01 1965 to December 01 2012





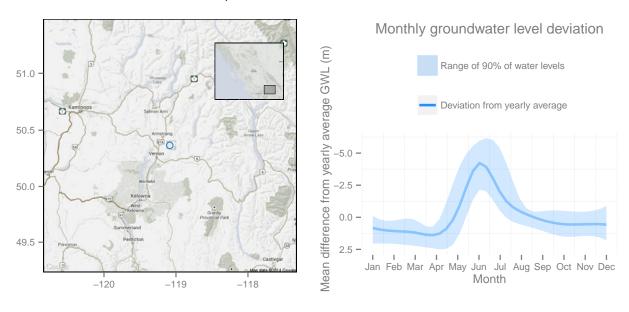


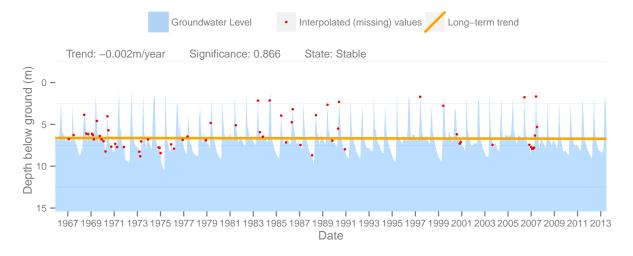




Observation Well #47 - Silver Star Mountian (Sovereign Lake Road)

This well is drilled into a Bedrock aquifer, to a depth of 91m and has a period of record from December 01 1965 to July 01 2013





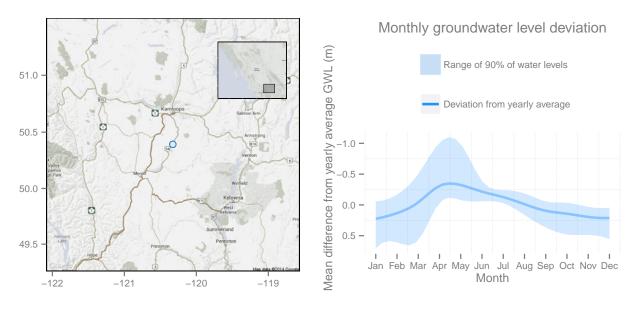


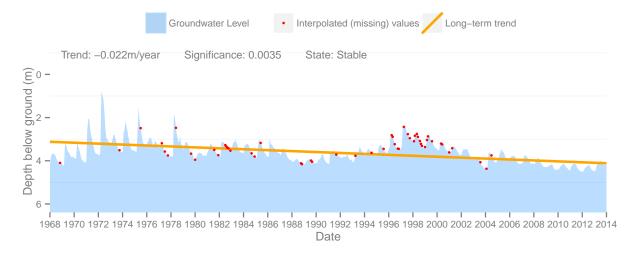




Observation Well #35 - Stump Lake (Hwy 5a & Old Kamloops Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 40m and has a period of record from January 01 1968 to January 01 2014





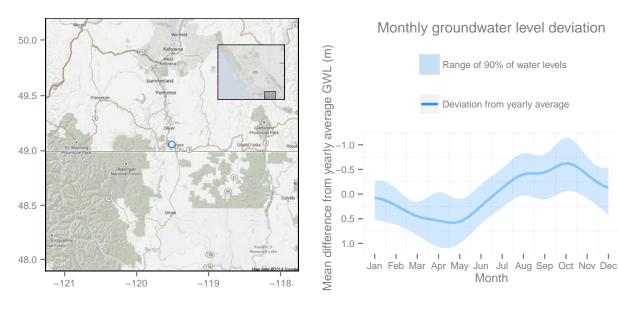


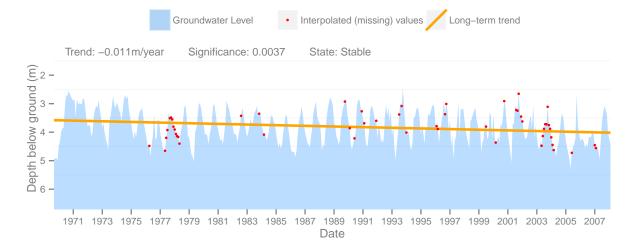




Observation Well #100 - Osoyoos

This well is drilled into a Sand and Gravel aquifer, to a depth of 19m and has a period of record from September 01 1969 to February 01 2008





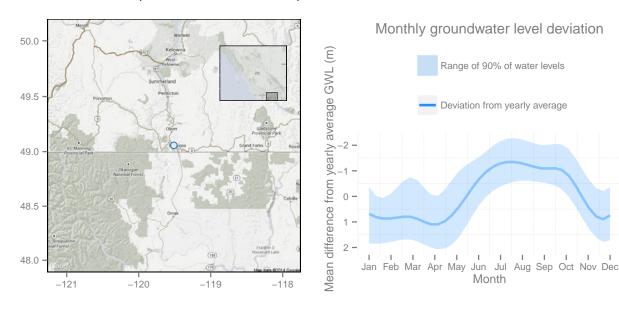


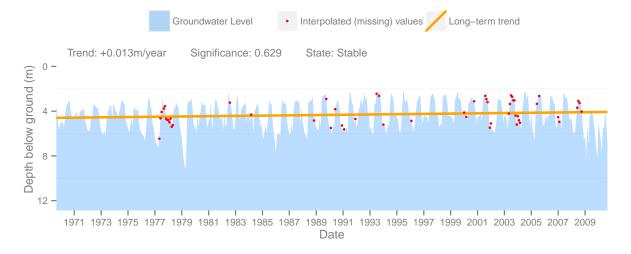




Observation Well #101 - Osoyoos (160th Ave & Hwy 97)

This well is drilled into a Sand and Gravel aquifer, to a depth of 20m and has a period of record from September 01 1969 to September 01 2010





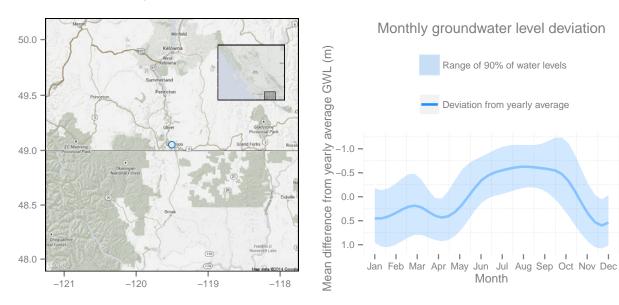


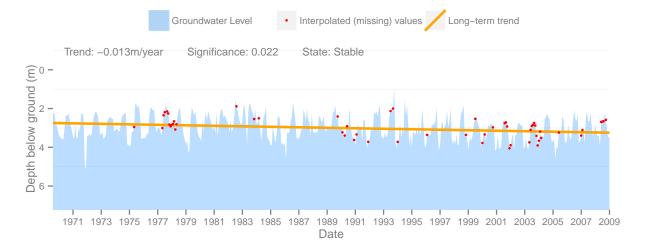




Observation Well #105 - Osoyoos (146th Ave & Hwy 97)

This well is drilled into a Sand and Gravel aquifer, to a depth of 13m and has a period of record from August 01 1969 to January 01 2009





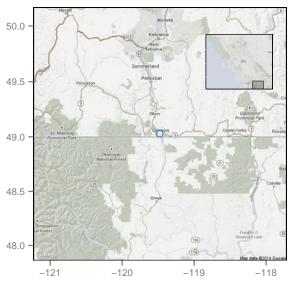


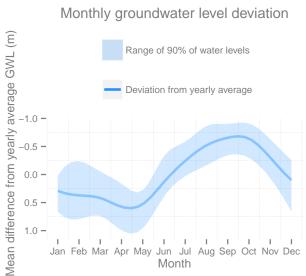


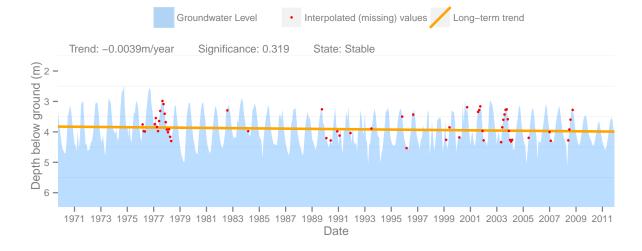


Observation Well #96 - Osoyoos (Wren Place)

This well is drilled into a Sand and Gravel aquifer, to a depth of 11m and has a period of record from October 01 1969 to December 01 2011







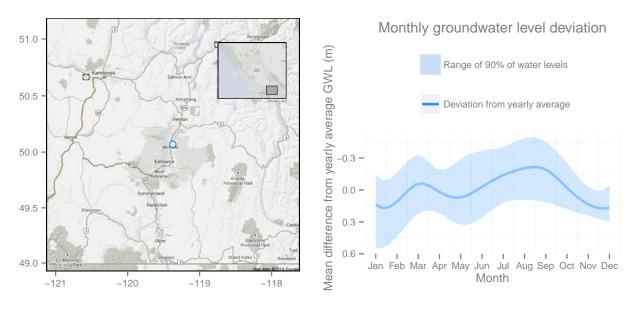


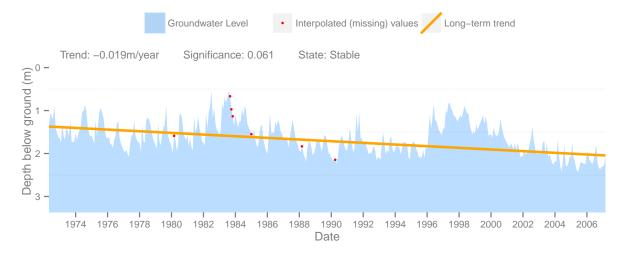




Observation Well #162 - Oyama (Trewhitt Road)

This well is drilled into a Bedrock aquifer, to a depth of 4m and has a period of record from May 01 1972 to March 01 2007





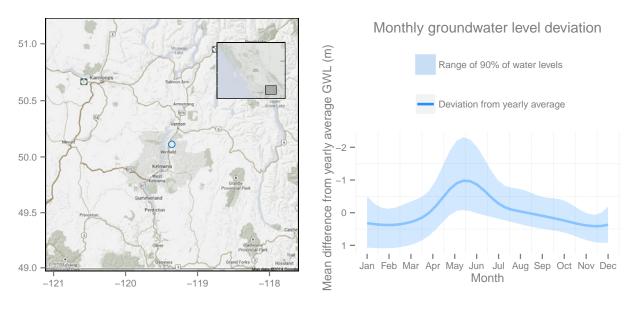


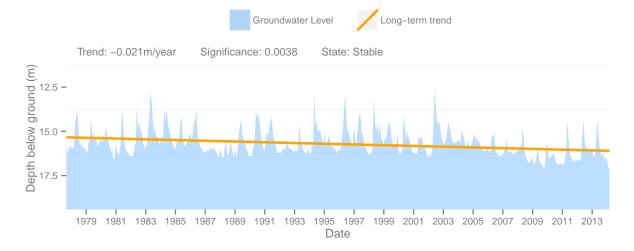




Observation Well #172 - Oyama (Sawmill Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 20m and has a period of record from September 01 1977 to March 01 2014





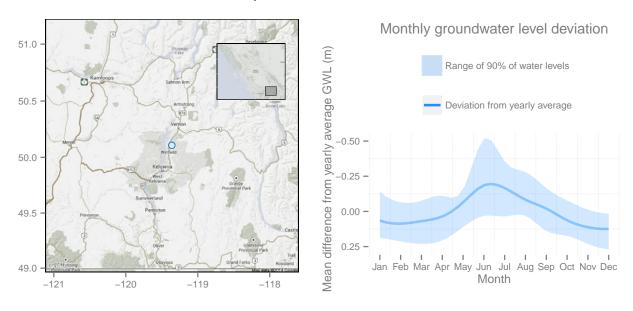


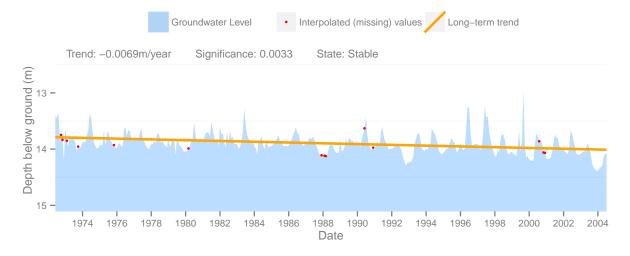




Observation Well #173 - Oyama (Sawmill Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 19m and has a period of record from June 01 1972 to July 01 2004





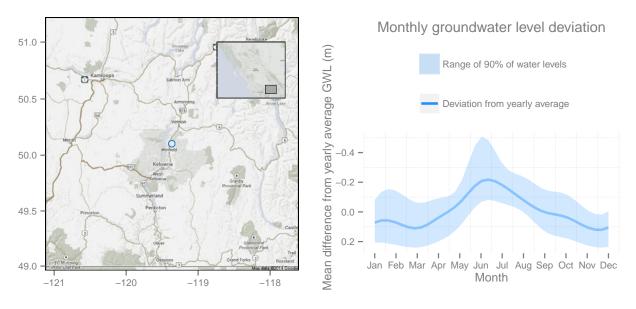


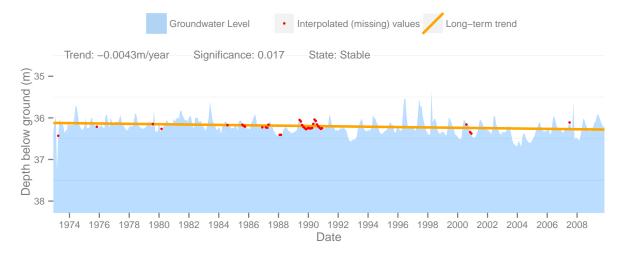




Observation Well #174 - Oyama (Oyama Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 41m and has a period of record from December 01 1972 to November 01 2009





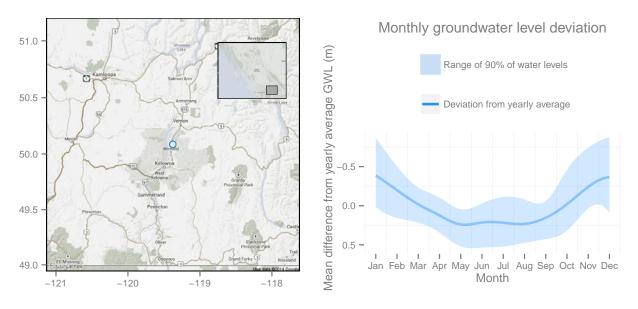


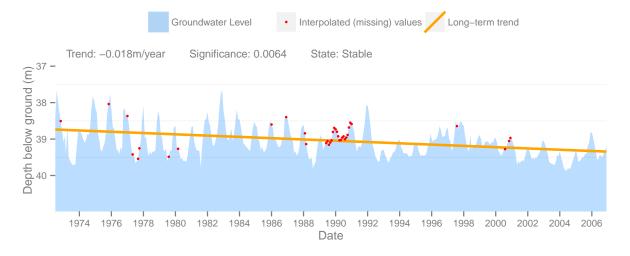




Observation Well #176 - Oyama (Broadwater Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 52m and has a period of record from July 01 1972 to December 01 2006





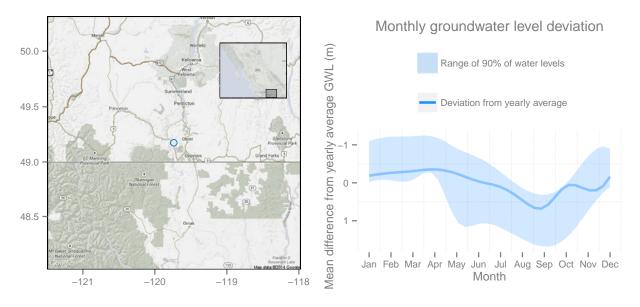


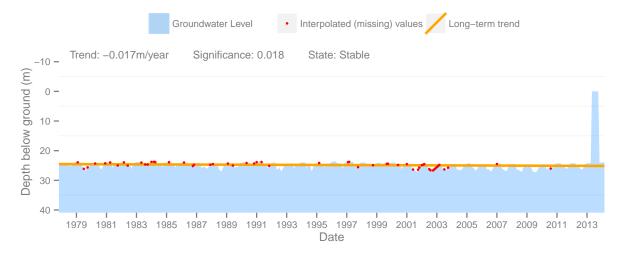




Observation Well #203 - Cawston (Barcello Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 61m and has a period of record from November 01 1977 to March 01 2014





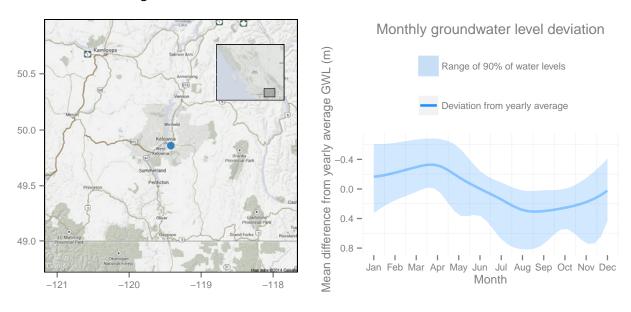


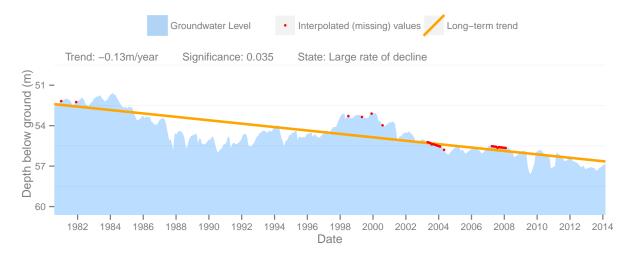




Observation Well #262 - Kelowna (Mcculloch Rd. & Klo Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 84m and has a period of record from August 01 1980 to March 01 2014





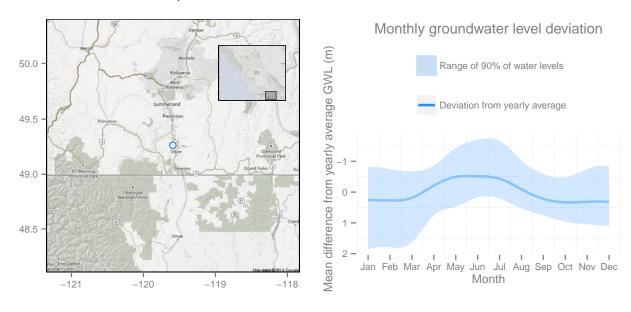


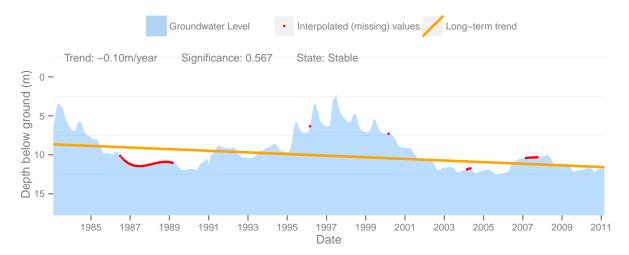




Observation Well #282 - Willowbrook/meyers Flats (Meyers Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 17m and has a period of record from February 01 1983 to March 01 2011





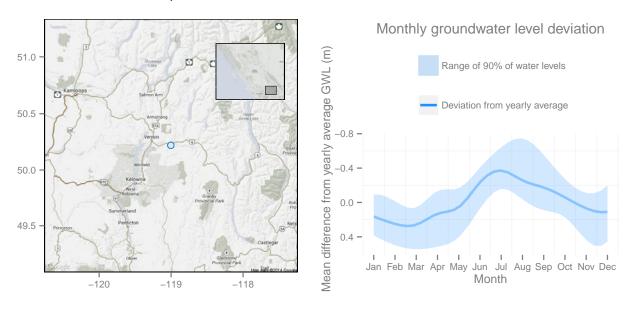


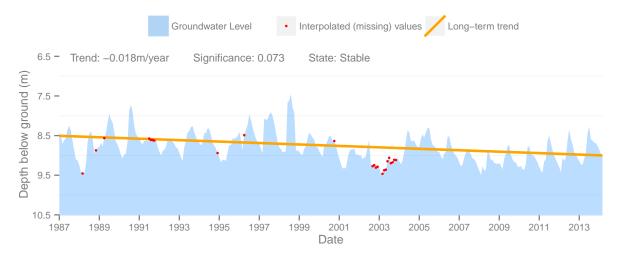




Observation Well #294 - Lumby (Whitevale Rd. & Horner Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 30m and has a period of record from January 01 1987 to March 01 2014





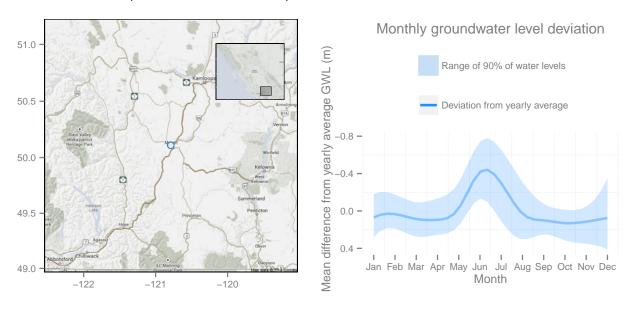


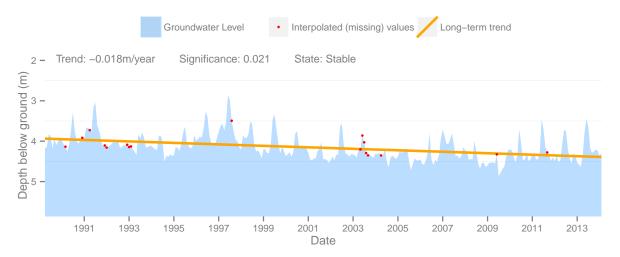




Observation Well #296 - Merritt (Garcia Road At Library)

This well is drilled into a Sand and Gravel aquifer, to a depth of 17m and has a period of record from April 01 1989 to February 01 2014





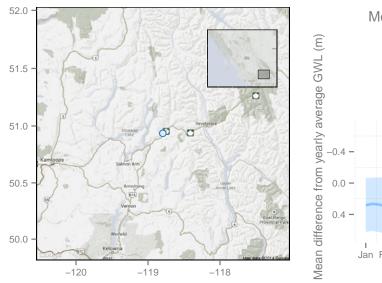


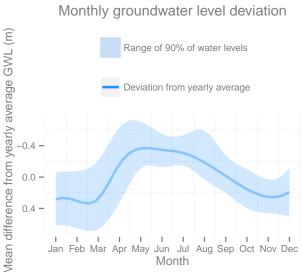


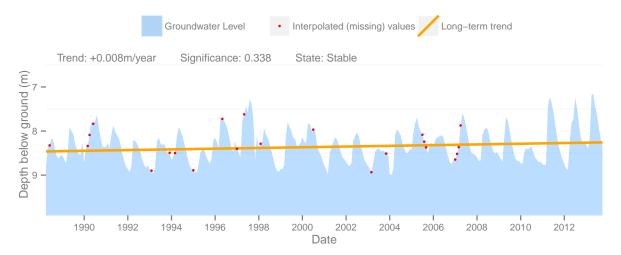


Observation Well #302 - Malakwa (Loftus Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 20m and has a period of record from April 01 1988 to October 01 2013







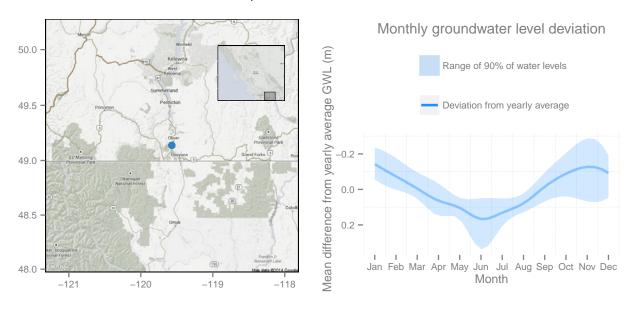


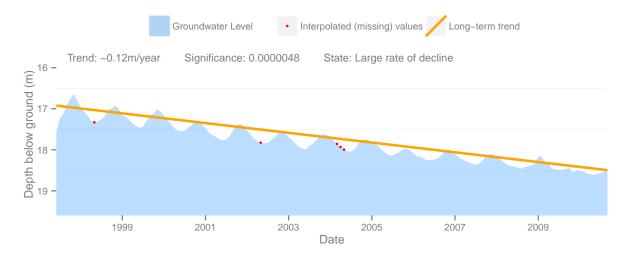




Observation Well #332 - Oliver (87th St.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 37m and has a period of record from June 01 1997 to September 01 2010





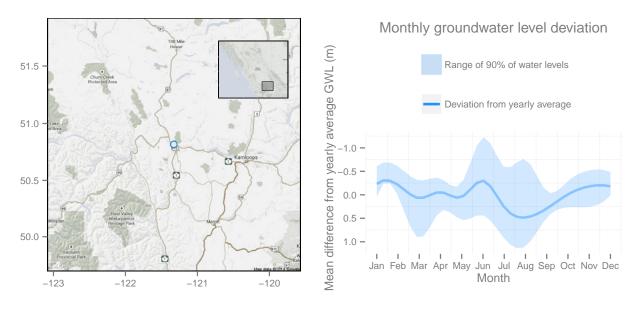


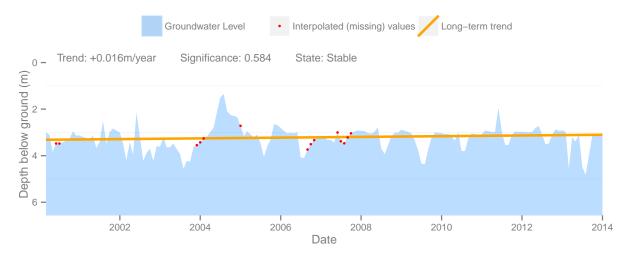




Observation Well #344 - Cache Creek (Jackson Park Valleyview Drive)

This well is drilled into a Sand and Gravel aquifer, to a depth of 34m and has a period of record from March 01 2000 to January 01 2014





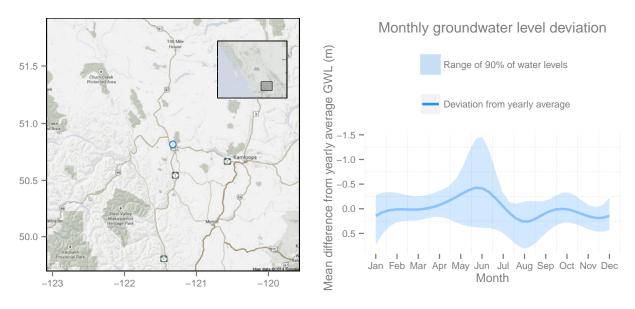


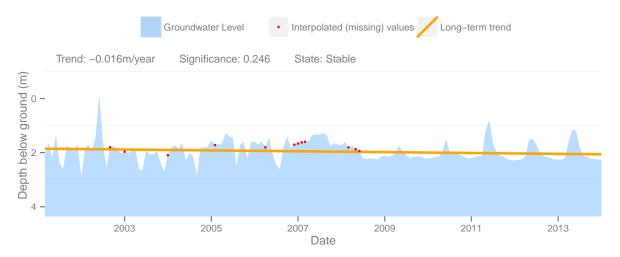




Observation Well #346 - Cache Creek (Jackson Park Valleyview Drive)

This well is drilled into a Sand and Gravel aquifer, to a depth of 10m and has a period of record from March 01 2001 to January 01 2014







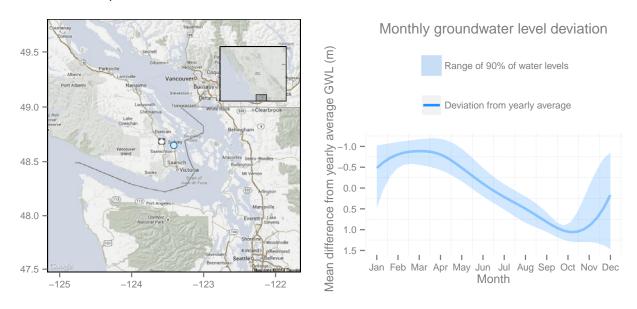


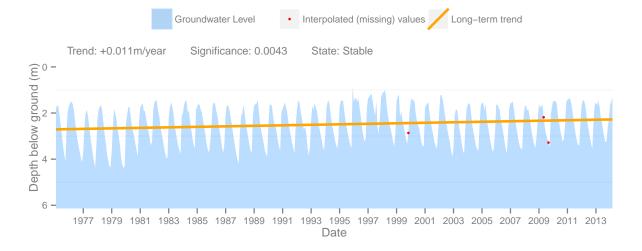


6.8 West Coast

Observation Well #65 - Sidney (Victoria International Airport)

This well is drilled into a Bedrock aquifer, to a depth of 154m and has a period of record from February 01 1975 to March 01 2014





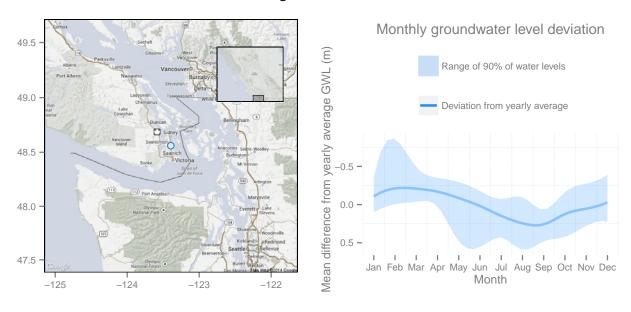


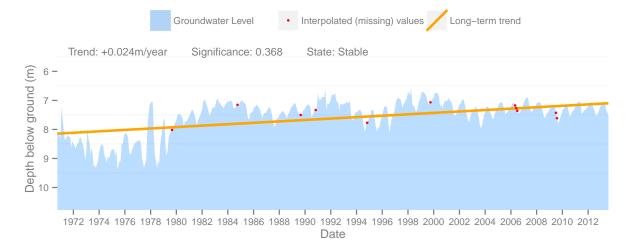




Observation Well #61 - South Saanich (Glidden Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 27m and has a period of record from October 01 1970 to August 01 2013





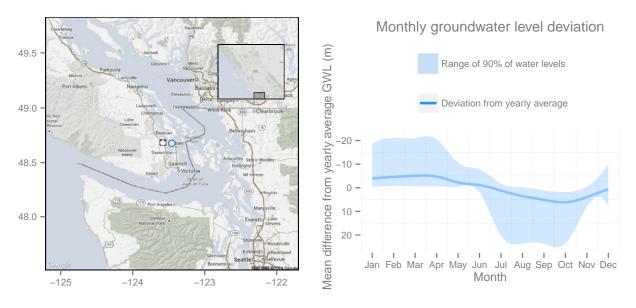


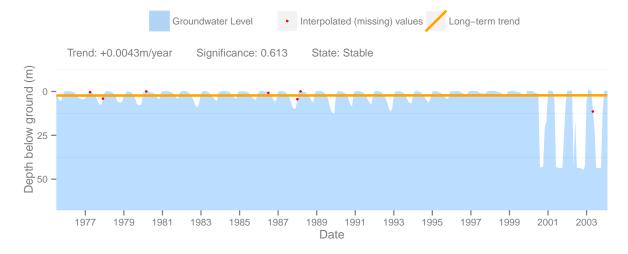




Observation Well #62 - North Saanich (Wain Road)

This well is drilled into a Bedrock aquifer, to a depth of 78m and has a period of record from July 01 1975 to February 01 2004





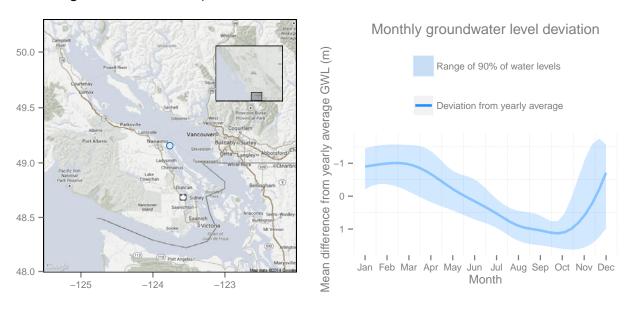


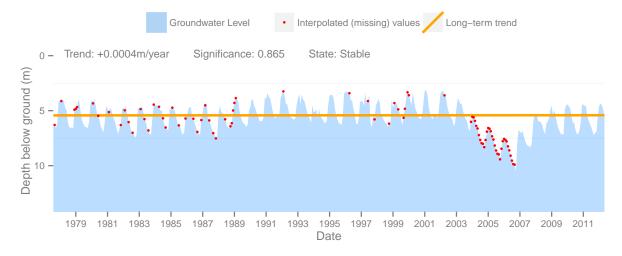




Observation Well #197 - Gabriola Island - (North Road)

This well is drilled into a Bedrock aquifer, to a depth of 84m and has a period of record from August 01 1977 to May 01 2012





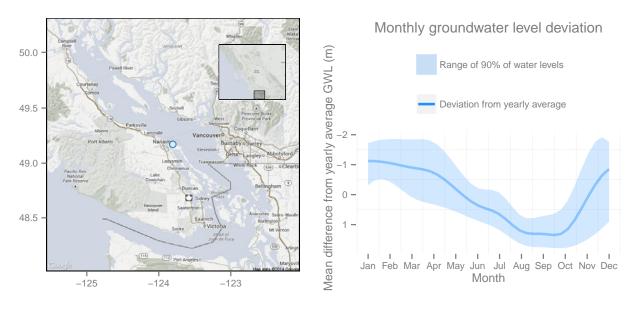


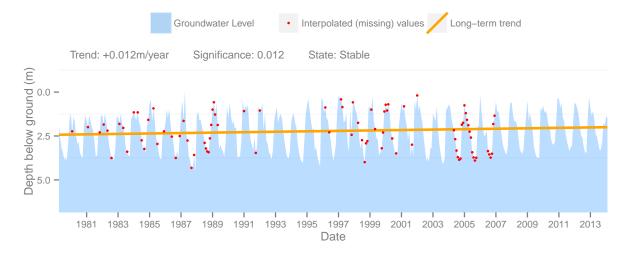




Observation Well #196 - Gabriola Island (Buttercup Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 99m and has a period of record from April 01 1979 to February 01 2014





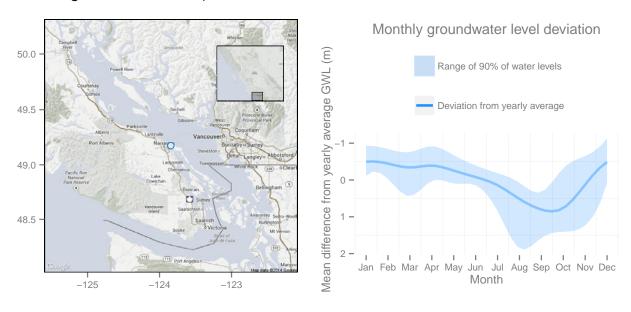


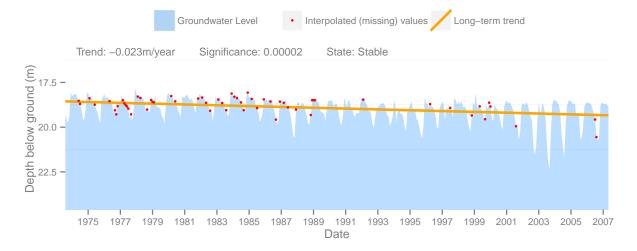




Observation Well #194 - Gabriola Island (Hwys Yard North Rd.)

This well is drilled into a Bedrock aquifer, to a depth of 76m and has a period of record from August 01 1973 to May 01 2007





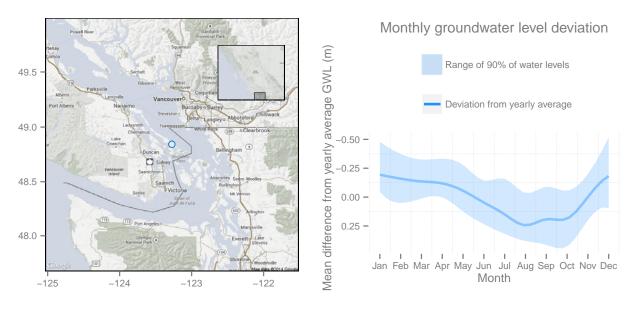


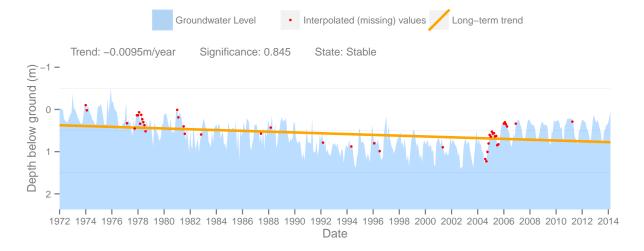




Observation Well #125 - Mayne Island (Horton Bay Rd.)

This well is drilled into a Bedrock aquifer, to a depth of 30m and has a period of record from January 01 1972 to March 01 2014





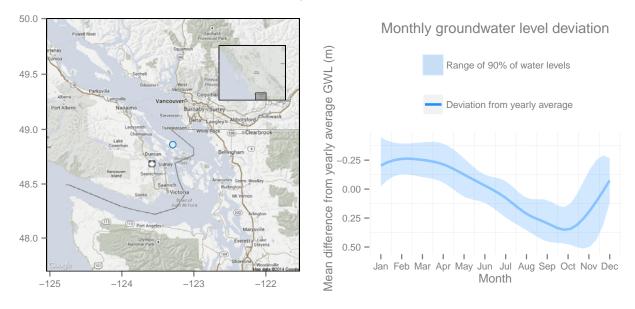


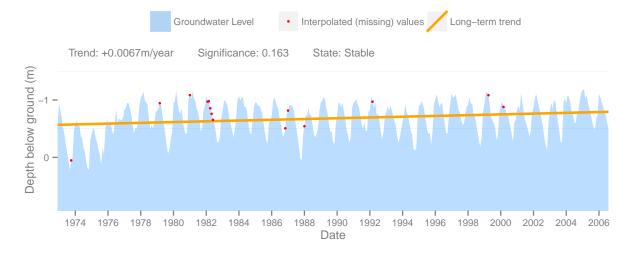




Observation Well #126 - Mayne Island (Georgina Point Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 71m and has a period of record from December 01 1972 to August 01 2006





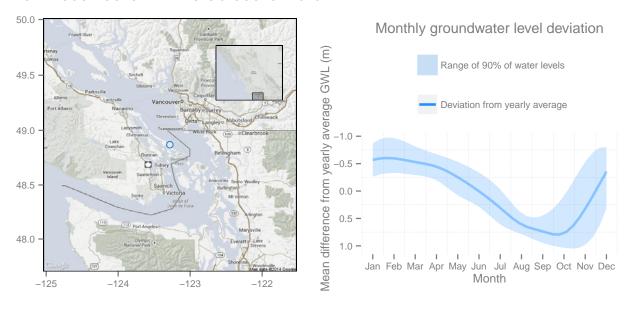


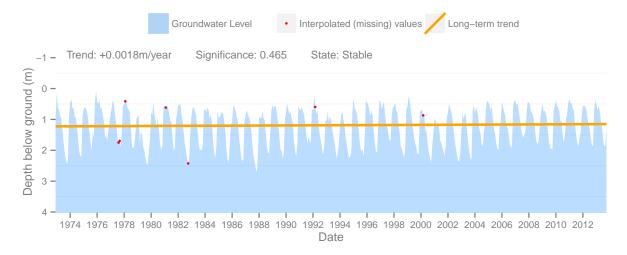




Observation Well #128 - Mayne Island (Skana Gate Road)

This well is drilled into a Bedrock aquifer, to a depth of 69m and has a period of record from December 01 1972 to October 01 2013





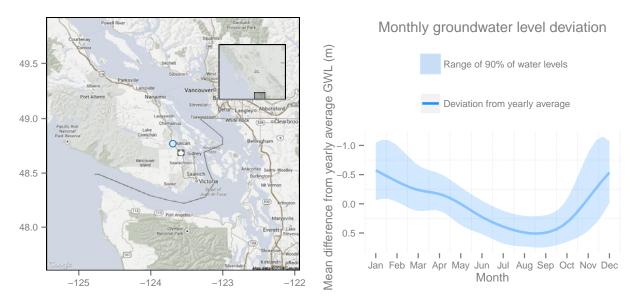


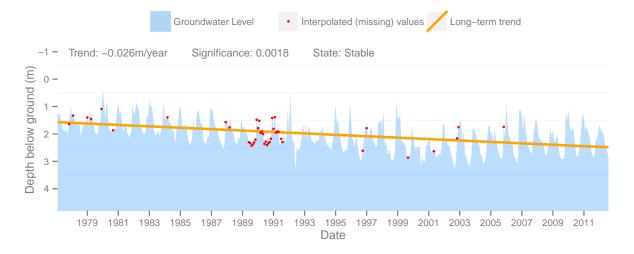




Observation Well #204 - Duncan (Duncan Rv Park North Boys Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 9m and has a period of record from February 01 1977 to August 01 2012





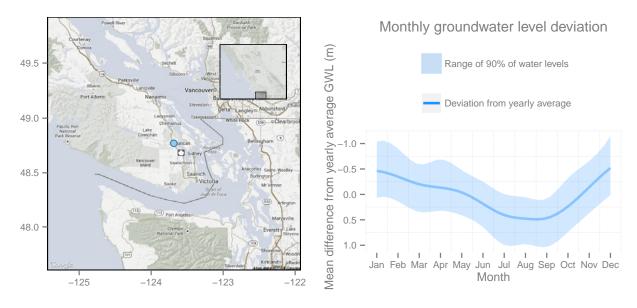


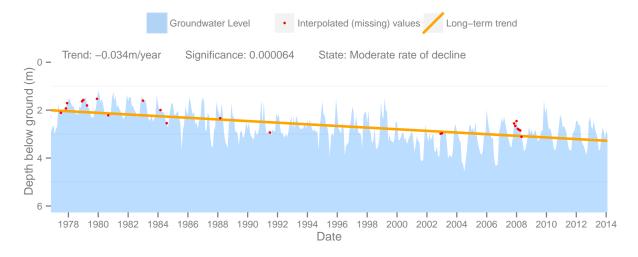




Observation Well #211 - Duncan (Marine Harvest Canada Boys Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 32m and has a period of record from November 01 1976 to February 01 2014





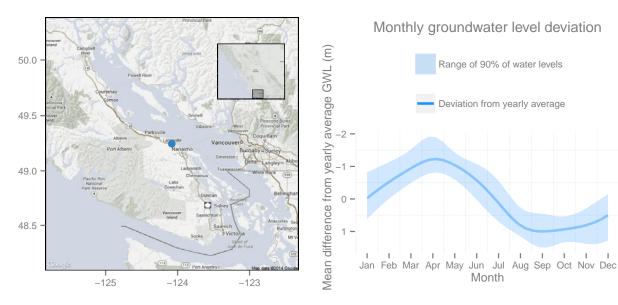


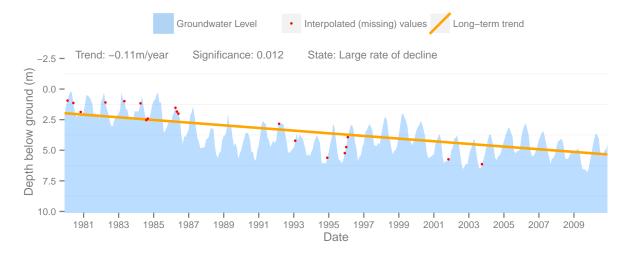




Observation Well #232 - Lantzville (Harby Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 28m and has a period of record from December 01 1979 to December 01 2010





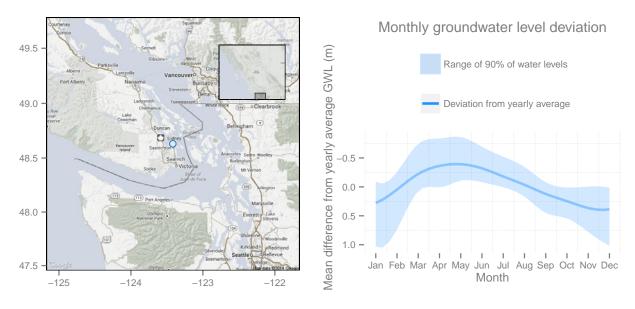


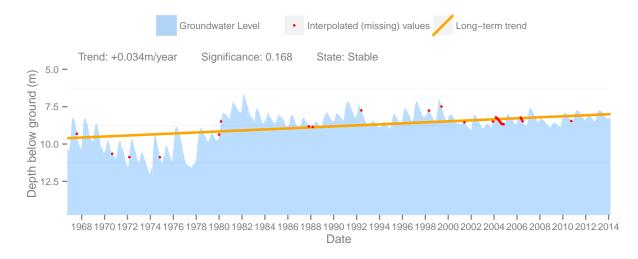




Observation Well #58 - North Saanich (Mainwaring Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 15m and has a period of record from October 01 1966 to March 01 2014





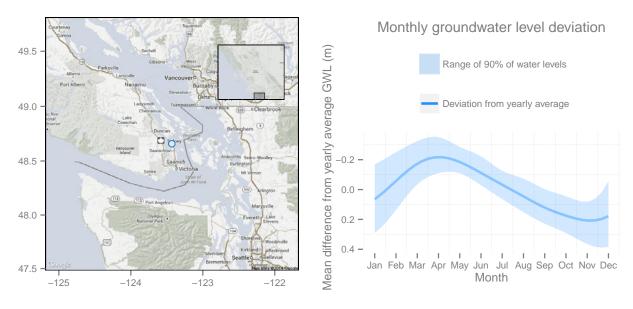


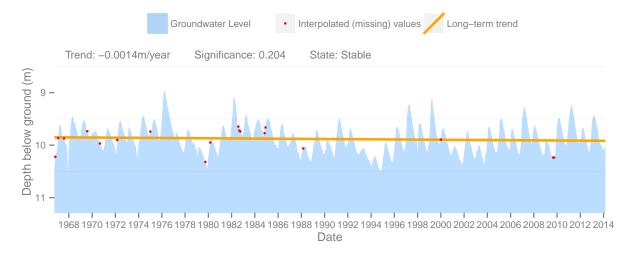




Observation Well #60 - North Saanich (Littlewood Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 16m and has a period of record from October 01 1966 to March 01 2014





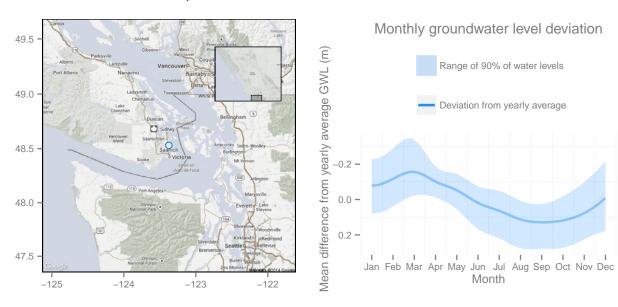


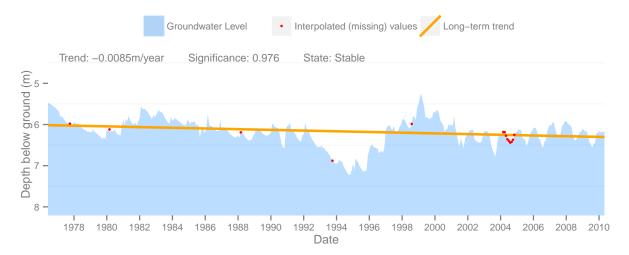




Observation Well #71 - Saanich (Cordova Bay Road)

This well is drilled into a Bedrock aquifer, to a depth of 17m and has a period of record from June 01 1976 to May 01 2010





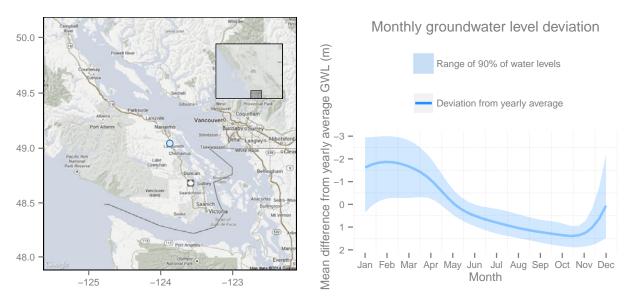


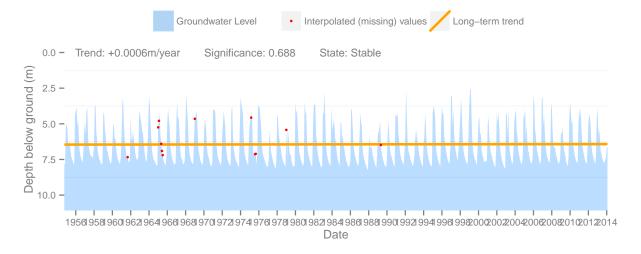




Observation Well #228 - Cassidy (Timberlands Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 40m and has a period of record from October 01 1954 to February 01 2014





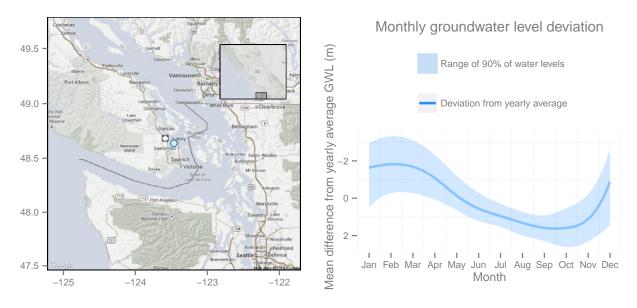


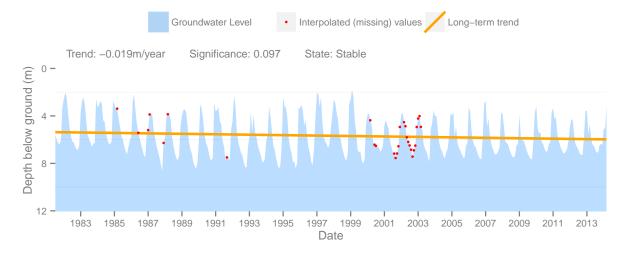




Observation Well #240 - North Saanich (Carnoustie Cr.)

This well is drilled into a Bedrock aquifer, to a depth of 152m and has a period of record from July 01 1981 to March 01 2014





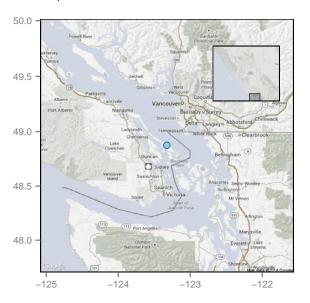


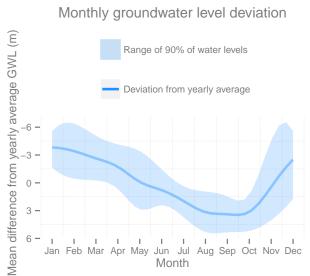


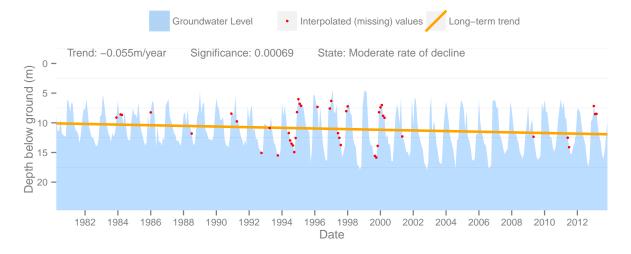


Observation Well #258 - Galiano Island (Shopland Rd.)

This well is drilled into a Bedrock aquifer, to a depth of 91m and has a period of record from April 01 1980 to November 01 2013







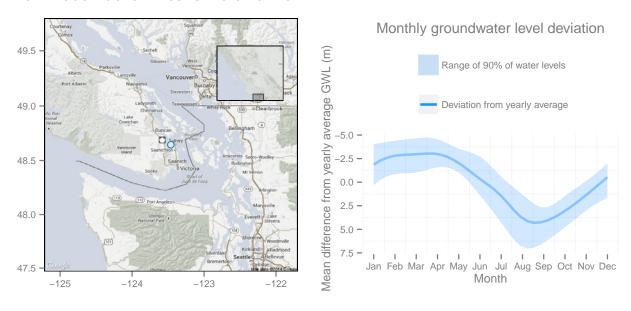


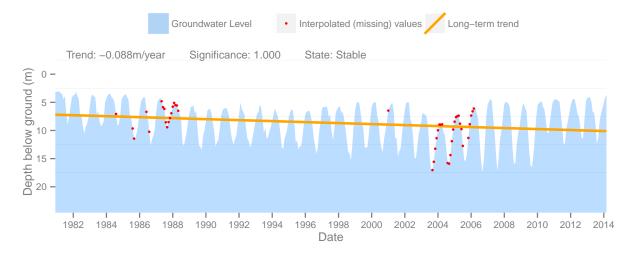




Observation Well #265 - North Saanich (Gleneg Road)

This well is drilled into a Bedrock aquifer, to a depth of 30m and has a period of record from December 01 1980 to March 01 2014





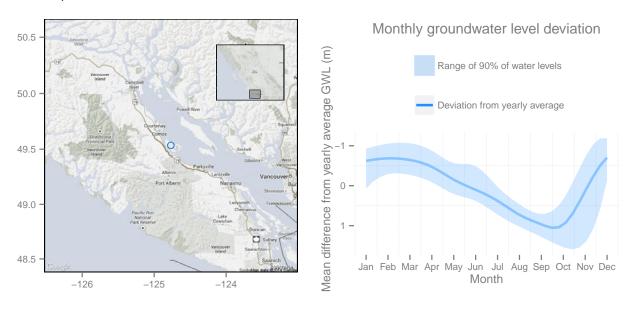


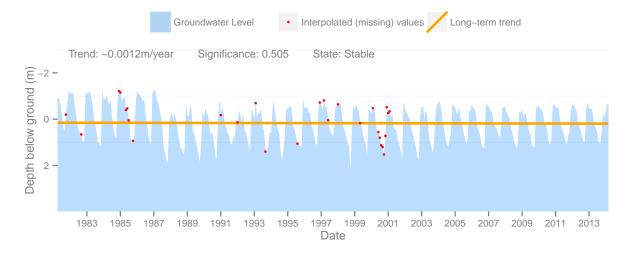




Observation Well #268 - Denman Island (Denman Road)

This well is drilled into a Bedrock aquifer, to a depth of 43m and has a period of record from April 01 1981 to March 01 2014





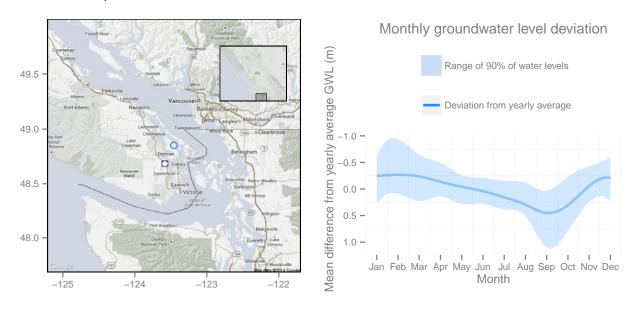


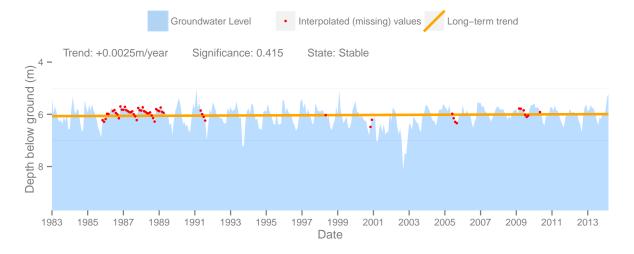




Observation Well #281 - Saltspring Island (Long Harbour Rd.)

This well is drilled into a Bedrock aquifer, to a depth of 107m and has a period of record from January 01 1983 to March 01 2014





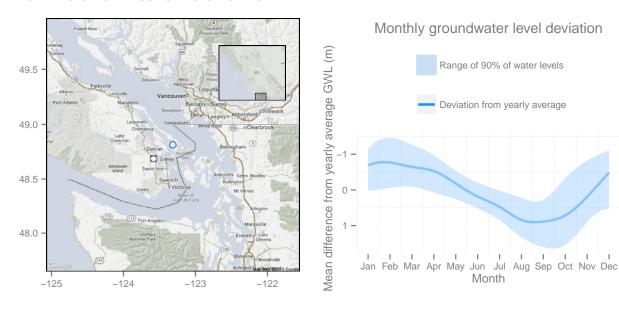


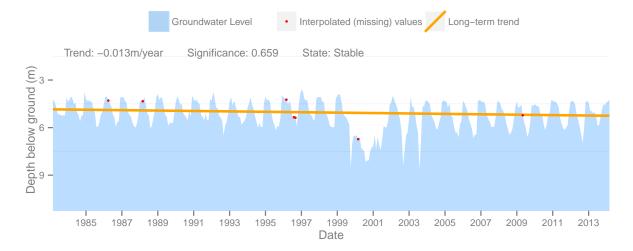




Observation Well #283 - Pender Island (Paisley Road)

This well is drilled into a Bedrock aquifer, to a depth of 93m and has a period of record from March 01 1983 to March 01 2014





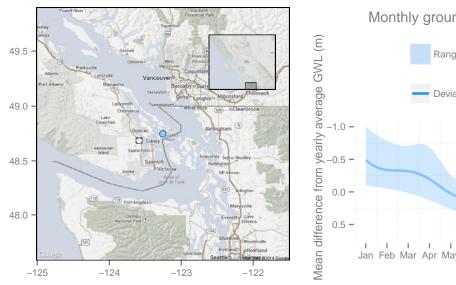


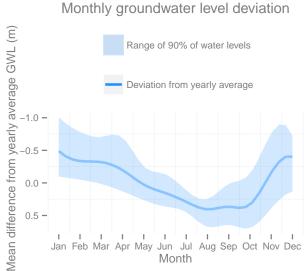


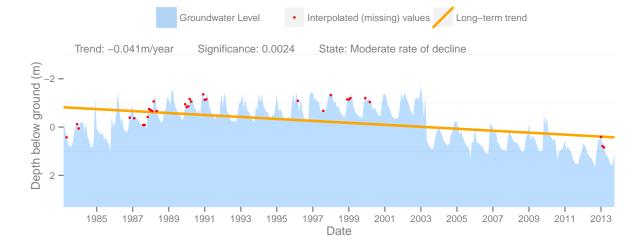


Observation Well #284 - Pender Island (Pirates Road)

This well is drilled into a Bedrock aquifer, to a depth of 93m and has a period of record from March 01 1983 to October 01 2013







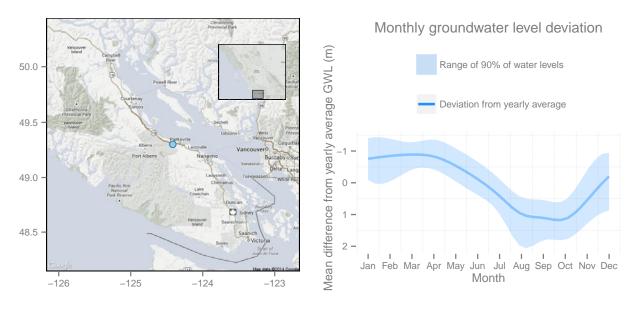


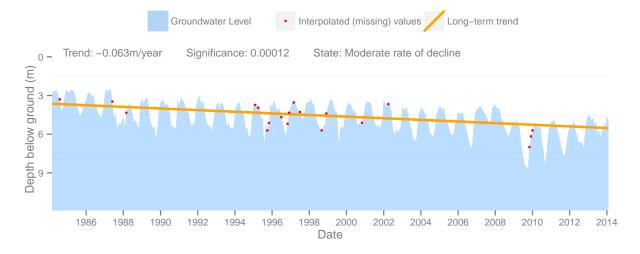




Observation Well #287 - Coombs (Burgoyne Road)

This well is drilled into a Bedrock aquifer, to a depth of 92m and has a period of record from March 01 1984 to February 01 2014





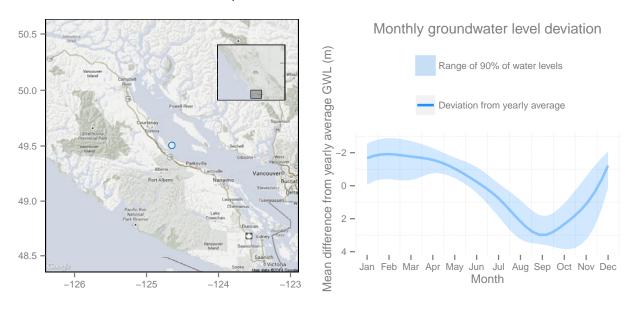


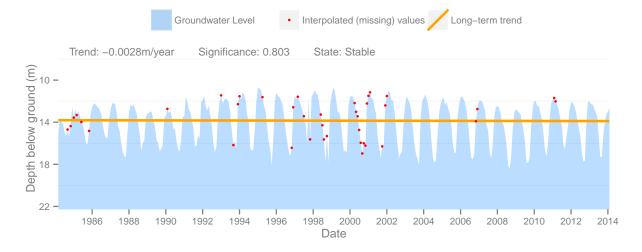




Observation Well #288 - Hornby Island (Central Rd. At Sandpiper Rd.)

This well is drilled into a Bedrock aquifer, to a depth of 76m and has a period of record from March 01 1984 to February 01 2014





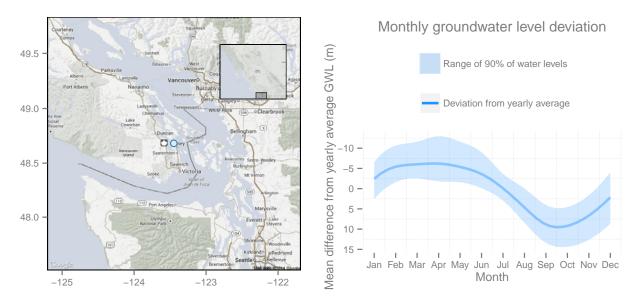


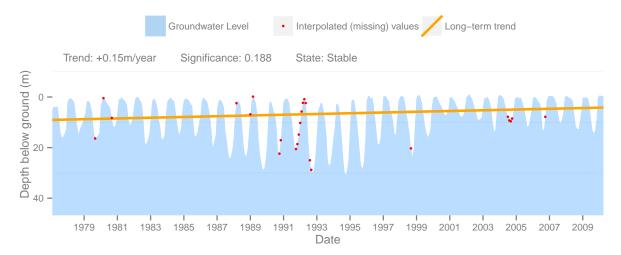




Observation Well #212 - North Saanich (Maple Rd.)

This well is drilled into a Bedrock aquifer, to a depth of 41m and has a period of record from February 01 1977 to April 01 2010





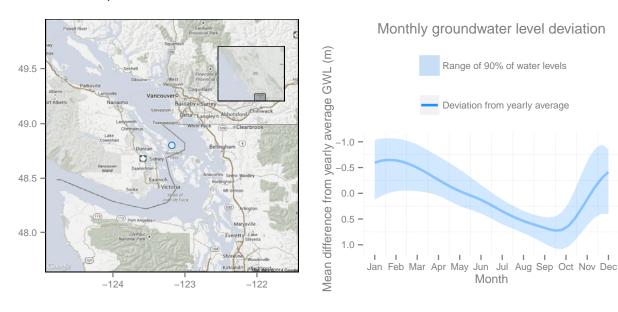


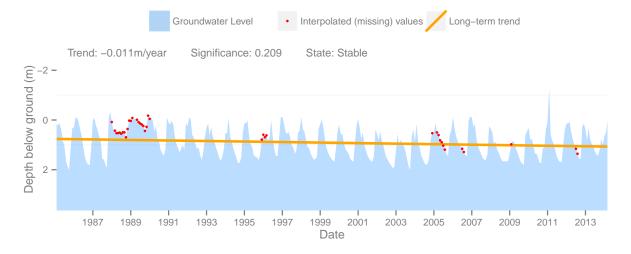




Observation Well #290 - Saturna Island (East Point Rd. At Gaines Rd.)

This well is drilled into a Bedrock aquifer, to a depth of 43m and has a period of record from February 01 1985 to March 01 2014





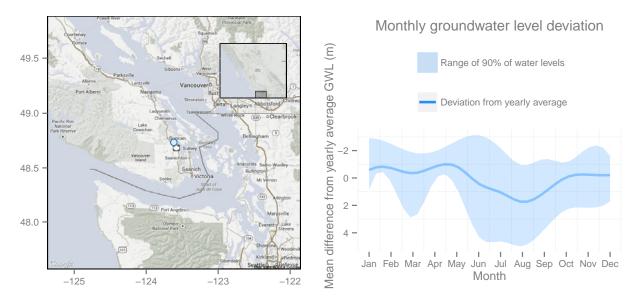


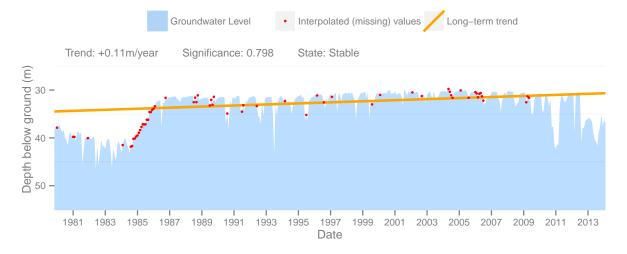




Observation Well #233 - Cowichan Bay (Vee Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 82m and has a period of record from November 01 1979 to February 01 2014





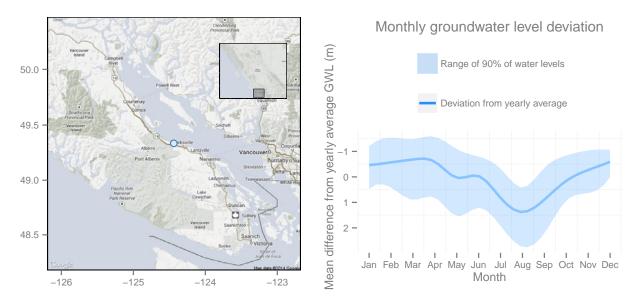


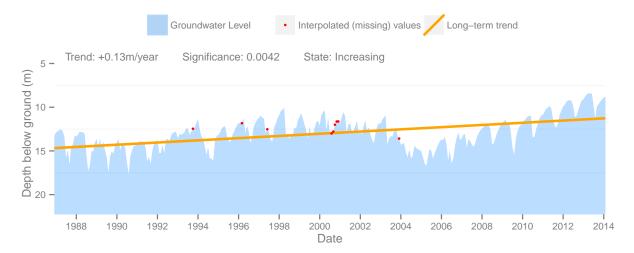




Observation Well #295 - Qualicum Beach (Berwick Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 28m and has a period of record from December 01 1986 to February 01 2014





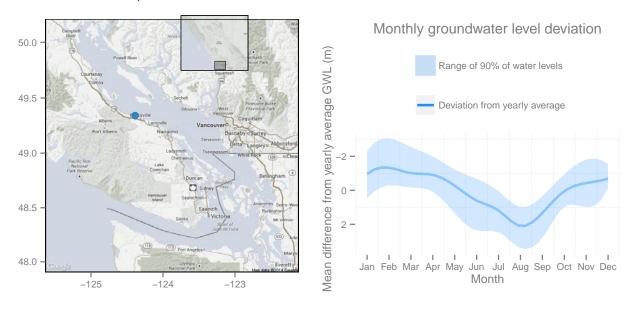


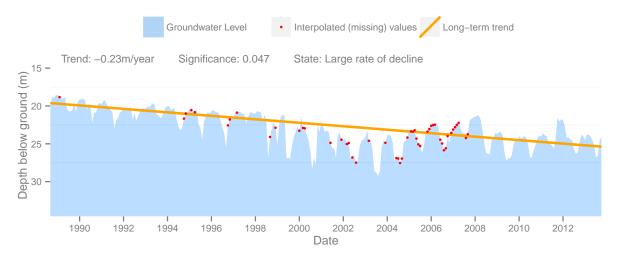




Observation Well #303 - Qualicum Beach (Yambury Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 49m and has a period of record from September 01 1988 to October 01 2013





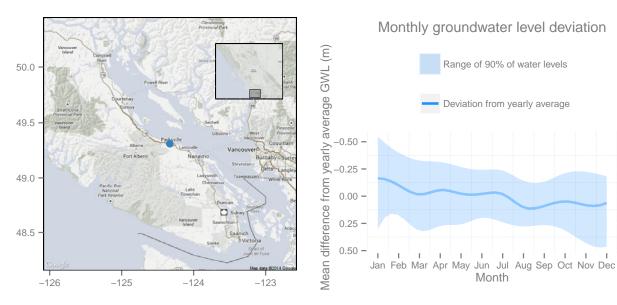


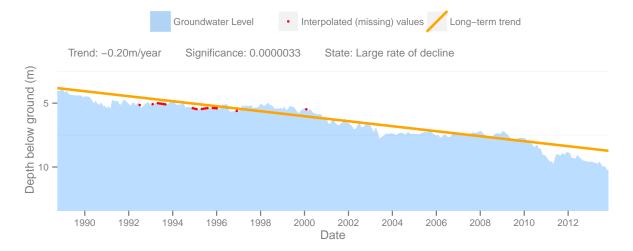




Observation Well #304 - Parksville (Despard Rd. At Springwood Park)

This well is drilled into a Sand and Gravel aquifer, to a depth of 22m and has a period of record from October 01 1988 to November 01 2013





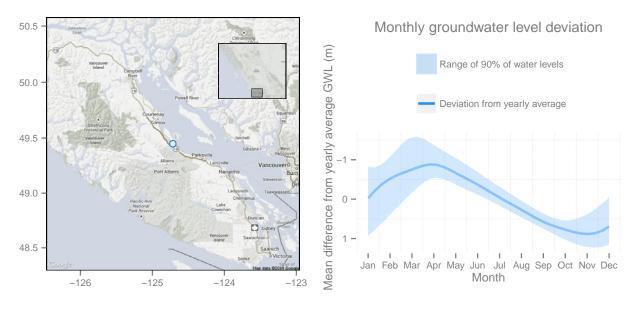


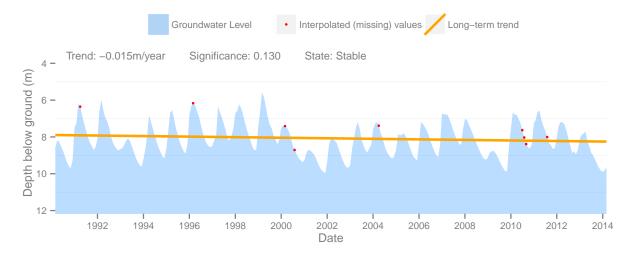




Observation Well #310 - Bowser (Deep Bay North At Gainsburg Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 25m and has a period of record from March 01 1990 to March 01 2014





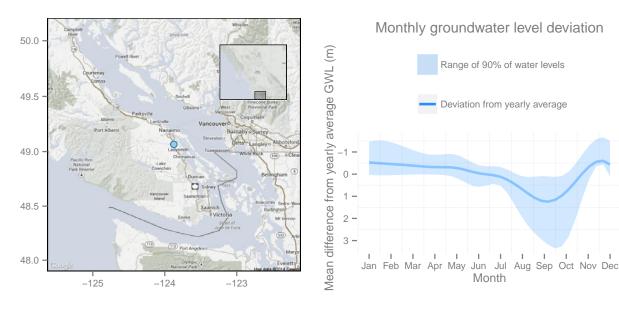


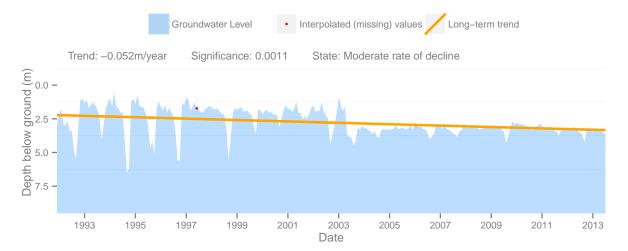




Observation Well #312 - Cassidy (Haslam Creek On T-bridge Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 24m and has a period of record from December 01 1991 to July 01 2013





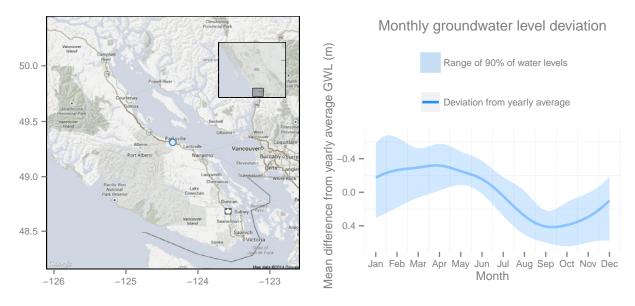


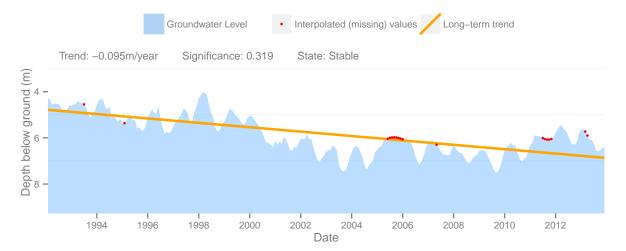




Observation Well #314 - Parksville (Springhill Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 32m and has a period of record from February 01 1992 to December 01 2013





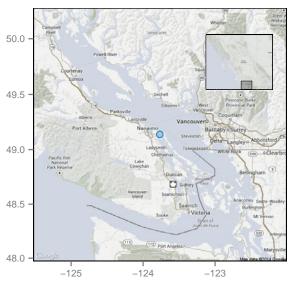


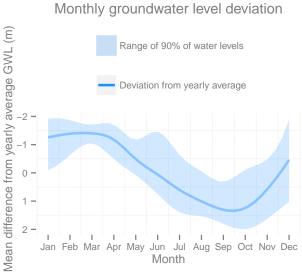


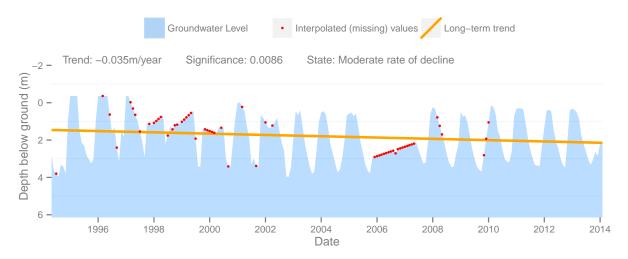


Observation Well #316 - Gabriola Island (Oyster Way)

This well is drilled into a Unknown aquifer, to a depth of 13m and has a period of record from May 01 1994 to February 01 2014







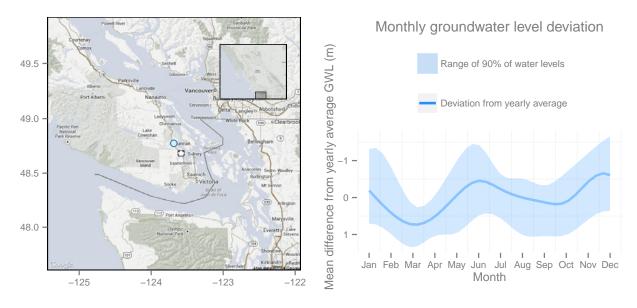


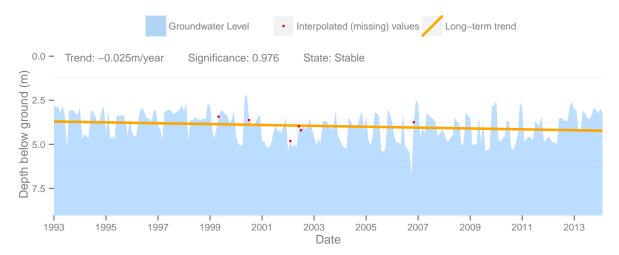




Observation Well #318 - Duncan Fish Hatchery (Wharncliffe Rd.)

This well is drilled into a Sand and Gravel aquifer, to a depth of 30m and has a period of record from January 01 1993 to February 01 2014





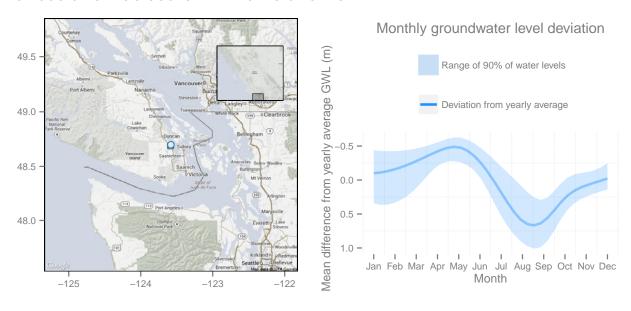


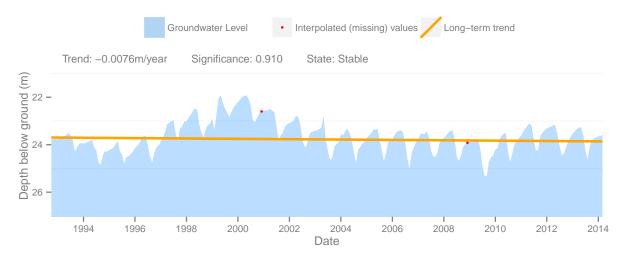




Observation Well #320 - Cobble Hill (Braithwaite Estates)

This well is drilled into a Sand and Gravel aquifer, to a depth of 36m and has a period of record from October 01 1992 to March 01 2014





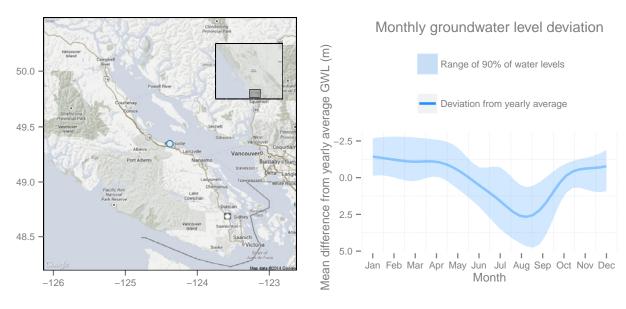


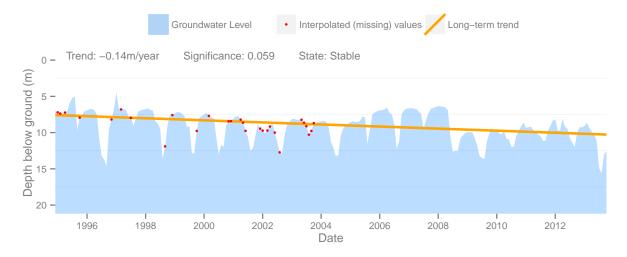




Observation Well #321 - Qualicum (Leeward Way)

This well is drilled into a Sand and Gravel aquifer, to a depth of 42m and has a period of record from December 01 1994 to October 01 2013





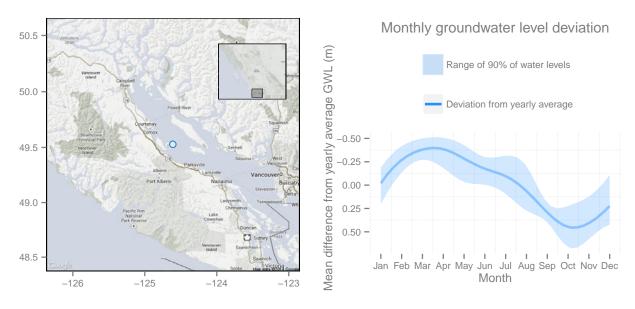


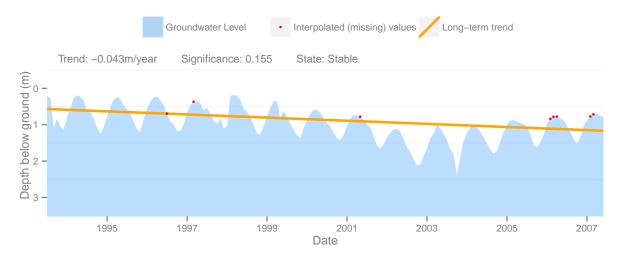




Observation Well #323 - Hornby Island (Whaling Station Bay)

This well is drilled into a Bedrock aquifer, to a depth of 82m and has a period of record from July 01 1993 to June 01 2007





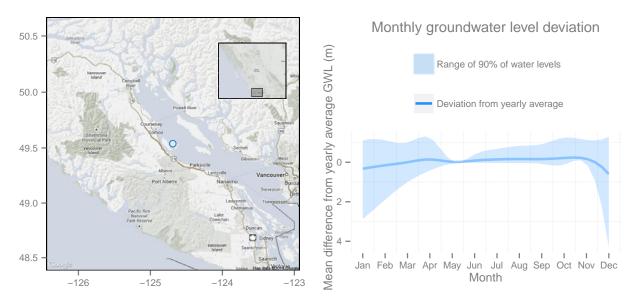


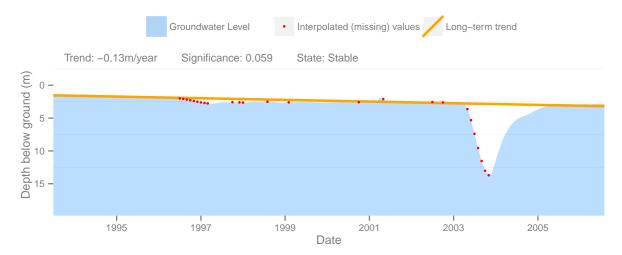




Observation Well #324 - Hornby Island

This well is drilled into a Sand and Gravel aquifer, to a depth of 34m and has a period of record from July 01 1993 to August 01 2006





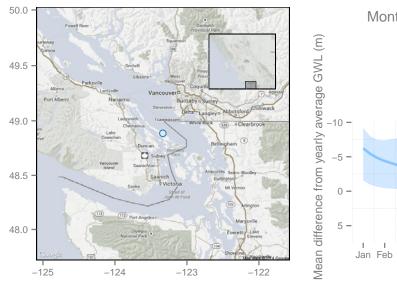


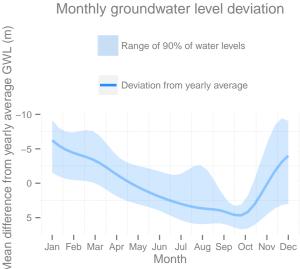


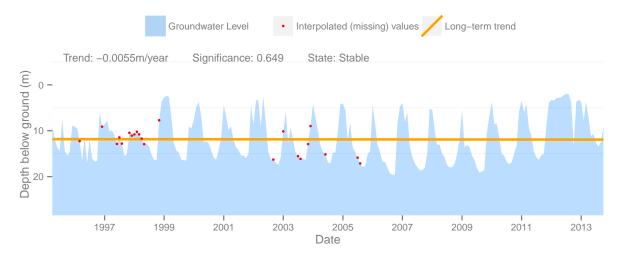


Observation Well #327 - Galiano Island (Community School)

This well is drilled into a Bedrock aquifer, to a depth of 30m and has a period of record from April 01 1995 to October 01 2013







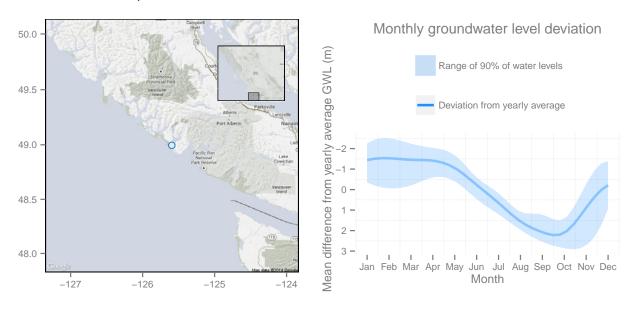


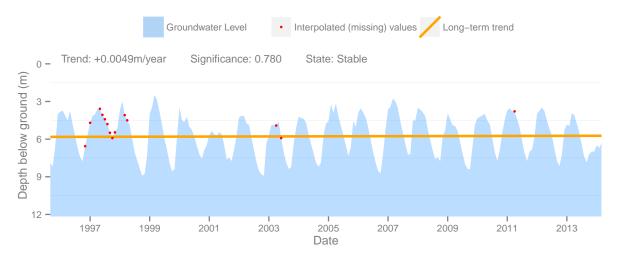




Observation Well #329 - Ucluelet (Hwys Yard)

This well is drilled into a Sand and Gravel aquifer, to a depth of 18m and has a period of record from September 01 1995 to March 01 2014





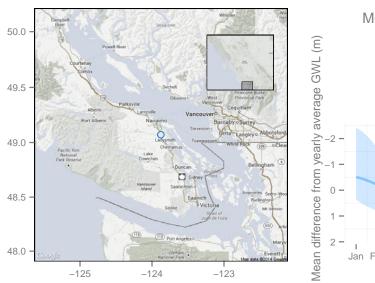


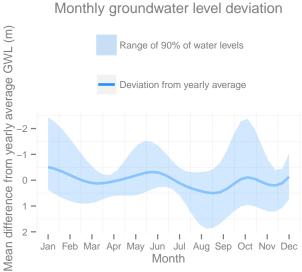


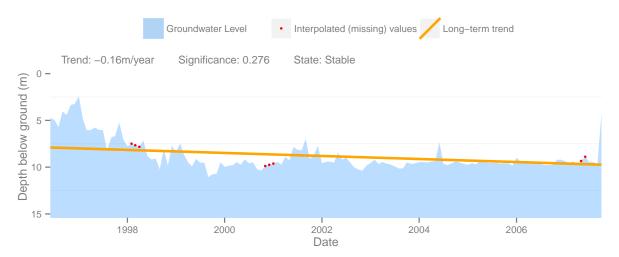


Observation Well #330 - Cassidy (Nanaimo River At Harmac)

This well is drilled into a Sand and Gravel aquifer, to a depth of 24m and has a period of record from June 01 1996 to October 01 2007







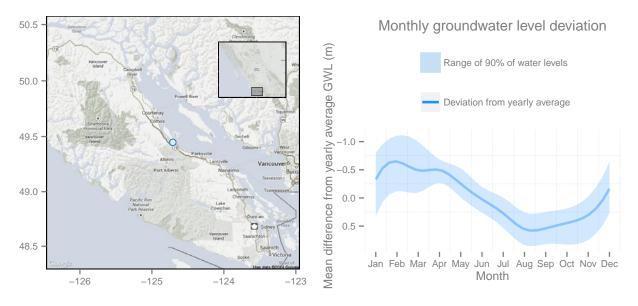


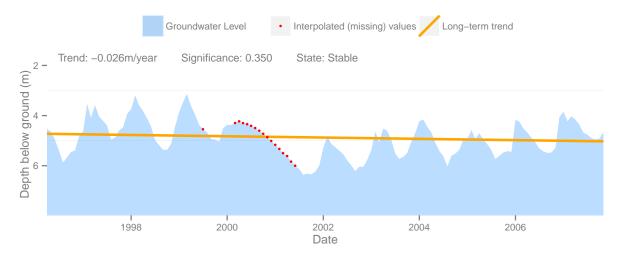




Observation Well #331 - Bowser (Deep Bay South)

This well is drilled into a Sand and Gravel aquifer, to a depth of 21m and has a period of record from April 01 1996 to November 01 2007





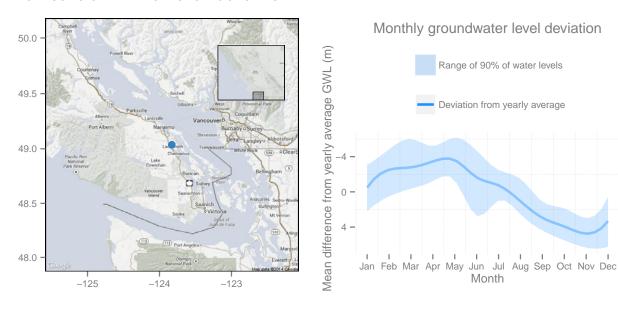


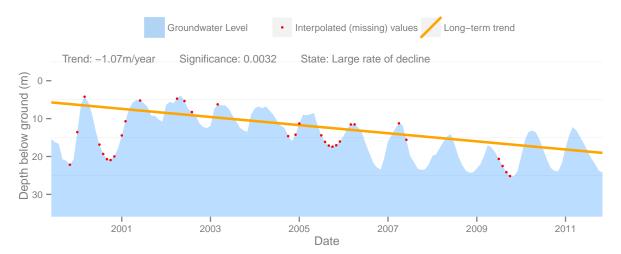




Observation Well #337 - Ladysmith (Woodley Range)

This well is drilled into a Bedrock aquifer, to a depth of 253m and has a period of record from June 01 1999 to November 01 2011





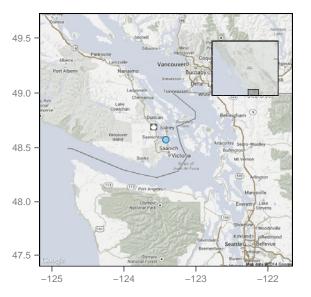


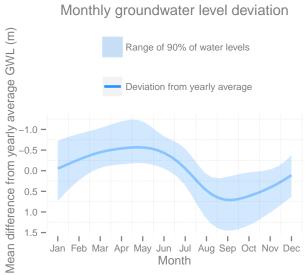


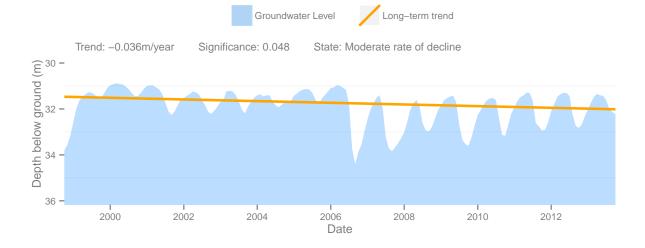


Observation Well #338 - Central Saanich (Seabrook Rd.)

This well is drilled into a Bedrock aquifer, to a depth of 213m and has a period of record from October 01 1998 to October 01 2013







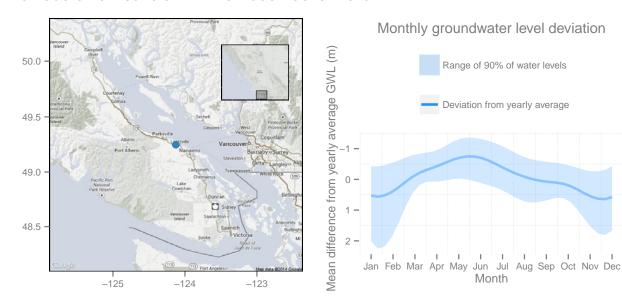


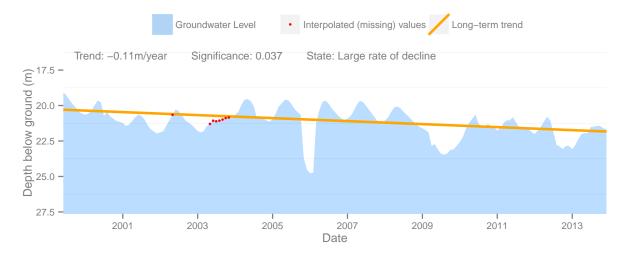




Observation Well #340 - Lantzville (Valmar Road)

This well is drilled into a Sand and Gravel aquifer, to a depth of 66m and has a period of record from June 01 1999 to December 01 2013





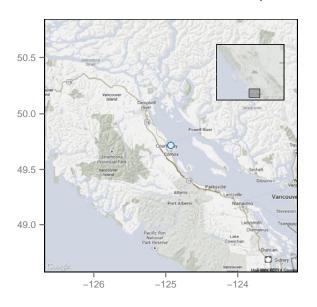


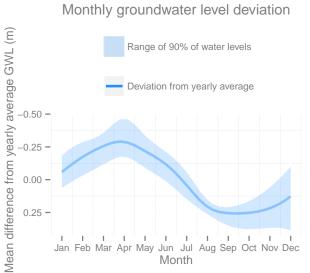


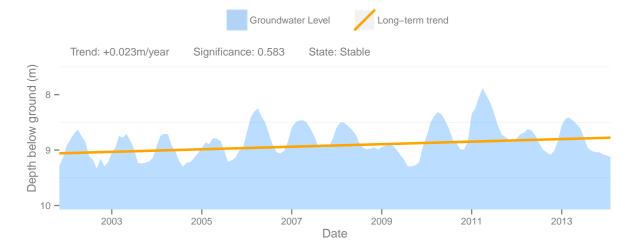


Observation Well #351 - Comox (Greenwood Rd.)

This well is drilled into a Unknown aquifer, to a depth of 24m and has a period of record from November 01 2001 to February 01 2014









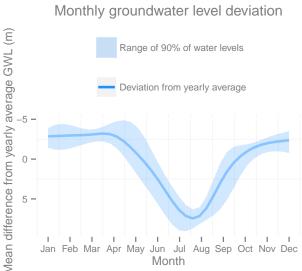


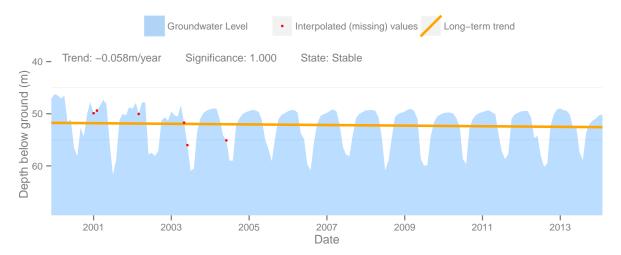


Observation Well #345 - Cobble Hill (Arbutus Ridge)

This well is drilled into a Sand and Gravel aquifer, to a depth of 87m and has a period of record from December 01 1999 to February 01 2014













Observation Well #343 - Central Saanich (Mt Newton X Road)

This well is drilled into a Bedrock aquifer, to a depth of 152m and has a period of record from April 01 1998 to March 01 2014

