

Orcas Watersheds 'Averages & Annual Averages'

Water Condition Category #

- 1- dry/no data
- 2-pooled
- 3- trickle
- 4-slow run
- 5- running
- 6- rushing

Orcas Site HC1 Red= Geomean

Date	Ave Annual Air Temp	Overall Air Temp	Ave Annual Water Temp	Overall Water Temp	Ave Annual DO	Overall Dissolved Oxygen	Ave Annual pH	Overall pH	Ave Annual Turbidity	Overall Turbidity	Fecal Coliform	Annual Geomean	Overall Geomean	Water Condition	Water Condition Category #	Ave Annual Nitrates	Overall Nitrates	Ave Annual Phosphates	Overall Phosphates
3/1/06	13.40	13.40	5.57	5.57	10.95	10.95	7.13	7.13	4.53	4.53	8	8	8	running	5	0.4	0.4	0.04	0.04
4/14/06	9.90	9.90	8.50	8.50	10.16	10.16	7.13	7.13	9.96	9.96	9	9	9	running	5	0.6	0.6	0.05	0.05
5/24/06	19.20	19.20	12.73	12.73	7.20	7.20	7.29	7.29	8.25	8.25	47	47	47	running	5	0.2	0.2	0.05	0.05
7/11/06	19.60	19.60	13.20	13.20	9.92	9.92	6.88	6.88	4.54	4.54	1509	1509	1509	running/low volume	4	0.2	0.2	0.12	0.12
8/10/06														dry	1				
9/20/06														dry	1				
11/6/06	15.70	15.70	11.47	11.47	9.52	9.52	7.16	7.16	18.10	18.10	370	370	370	rushing/ high flow	6	0	0	0.17	0.17
Averages	15.56	15.56	10.29	10.29	9.55	9.55	7.12	7.12	9.08	9.08	22	22	22	running	5	0.11	0.11	0.04	0.04
2/8/07	10.50	10.50	6.10	6.10	12.46	12.46	7.80	7.80	7.96	7.96	22	22	22	running	5	0.32	0.32	n/a	n/a
3/27/07	13.20	13.20	7.60	7.60	11.72	11.72	7.99	7.99	5.52	5.52	5	5	5	rushing	6	0.04	0.04	0.06	0.06
5/7/07	17.50	17.50	11.10	11.10	11.33	11.33	8.06	8.06	6.02	6.02	29	29	29	running	5				
7/4/07														dry	1				
8/21/07														dry	1				
10/17/07	11.50	11.50	9.10	9.10	9.23	9.23	7.72	7.72	1.47	1.47	36	36	36	pooled	2	0.05	0.05	0.09	0.09
12/4/07	12.70	12.70	8.60	8.60	10.63	10.63	7.70	7.70	18.67	18.67	155	155	155	running, w/ sedimen	5	0.16	0.16	0.12	0.12
Averages	13.08	13.08	8.50	8.50	11.07	11.07	7.85	7.85	7.93	7.93	19	19	19	running	5	0.2	0.2	0.03	0.03
1/23/08	5.3	5.3	1.5	1.5	13.64	13.64	8.04	8.04	2.33	2.33	19	19	19	running	5	0.09	0.09	0.02	0.02
3/27/08	7	7	7.5	7.5	13.52	13.52	7.61	7.61	3.07	3.07	4	4	4	running	5	n/a	n/a	n/a	n/a
5/7/08	14.6	14.6	9.3	9.3	12.22	12.22	8.00	8.00	4.15	4.15	352	352	352	slow run	4	0.18	0.18	0.07	0.07
6/19/08	19	19	11.5	11.5	12.16	12.16	7.90	7.90	5.50	5.50	377	377	377	slow run	4				
8/6/08														dry	1				
9/30/08														dry	1				
11/20/08	12.1	12.1	6.9	6.9	10.5	10.5	7.91	7.91	1.48	1.48	28	28	28	running	5	0.02	0.02	0.02	0.02
Averages	11.6	13.41	7.33	8.71	12.41	11.01	7.89	7.62	3.31	6.77	28	49.01	46.08	running	5	0.12	0.18	0.04	0.07

Orcas Site WS3

Date	Ave Annual Air Temp	Overall Air Temp	Ave Annual Water Temp	Overall Water Temp	Ave Annual DO	Overall Dissolved Oxygen	Ave Annual pH	Overall pH	Ave Annual Turbidity	Overall Turbidity	Fecal Coliform	Annual Geomean	Overall Geomean	Water Condition	Water Condition Category #	Ave Annual Nitrates	Overall Nitrates	Ave Annual Phosphates	Overall Phosphates
3/1/06	13.4	13.4	5.4	5.4	11.46	11.46	7.03	7.03	6.82	6.82	8	8	8	running	5	0.4	0.4	0.14	0.14
4/14/06	10.6	10.6	8.9	8.9	10.33	10.33	7.21	7.21	12.33	12.33	47	47	47	running	5	0.4	0.4	0.07	0.07
5/24/06	19.0	19.0	13.0	13.0	9.08	9.08	7.21	7.21	1.32	1.32	155	155	155	running	5	0.2	0.2	0.2	0.2
7/11/06	20.0	20.0	15.4	15.4	6.81	6.81	6.84	6.84	3.69	3.69	2327	2327	2327	running	5	0	0	0.25	0.25
8/10/06	20.7	20.7	15.0	15.0	2.00	2.00	7.31	7.31	5.28	5.28	3590	3590	3590	pooled	2	error	error	0.36	0.36
9/20/06	14.1	14.1	12.0	12.0	4.22	4.22	7.61	7.61	5.21	5.21	247	247	247	running	6	0	0	0.56	0.56
11/6/06	17.7	17.7	11.2	11.2	7.81	7.81	6.86	6.86	21.03	21.03	701	701	701	rushing	2	0.08	0.08	0.34	0.34
12/19/06	9.6	9.6	4.8	4.8	13.66	13.66	7.61	7.61	5.98	5.98	19	19	19	rushing	6	0.2	0.2	0.16	0.16
Averages	15.6	15.6	10.7	10.7	8.17	8.17	7.71	7.71	7.74	7.74	19	187.73	187.73	running	5	0.18	0.18	0.26	0.26
2/8/07	12.0	12.0	6.2	6.2	13.70	13.70	7.89	7.89	24.03	24.03	167	167	167	running/hi vol	6	0.02	0.02	0.06	0.06
3/27/07	11.4	11.4	6.9	6.9	13.00	13.00	7.99	7.99	7.68	7.68	14	14	14	rushing	6	0.08	0.08	n/a	n/a
5/7/07	19.0	19.0	11.5	11.5	11.31	11.31	8.21	8.21	6.59	6.59	24	24	24	running	5	0.05	0.05	0.09	0.09
7/4/07	24.5	24.5	16.8	16.8	7.81	7.81	7.51	7.51	4.41	4.41	5000	5000	5000	slow run	4	0	0	0.21	0.21
8/21/07	17.3	17.3	15.0	15.0	5.84	5.84	7.62	7.62	4.15	4.15	150	150	150	slow run	4	0.02	0.02	0.28	0.28
10/17/07	12.3	12.3	9.1	9.1	3.10	3.10	7.50	7.50	3.41	3.41	3	3	3	kle/greenish milky/l	3	0.01	0.01	0.55	0.55
12/4/07	13.5	13.5	7.1	7.1	10.93	10.93	7.34	7.34	16.50	16.50	342	342	342	rushing	6	0.65	0.65	0.07	0.07
Averages	15.71	15.71	10.37	10.37	9.38	9.38	7.72	7.72	9.54	9.54	342	90.06	90.06	running	6	0.12	0.12	0.21	0.21
1/23/08	11	11	1.3	1.3	14.20	14.20	7.99	7.99	6.56	6.56	14	14	14	running	6	0.23	0.23	0.06	0.06
3/27/08	7.5	7.5	5.9	5.9	15.35	15.35	8.28	8.28	4.32	4.32	11	11	11	running	5	0.08	0.08	0.12	0.12
5/7/08	14.2	14.2	9.2	9.2	12.10	12.10	8.10	8.10	3.84	3.84	17	17	17	running	5	n/a	n/a	n/a	n/a
6/19/08	16.7	16.7	10.8	10.8	10.49	10.49	7.65	7.65	10.26	10.26	251	251	251	slow run	4	0.14	0.14	0	0
8/6/08	23.6	23.6	16.9	16.9	10.37	10.37	7.75	7.75	8.16	8.16	1520	1520	1520	trickle/no flow	2	0	0	0.68	0.68
9/30/08	13.8	13.8	11.9	11.9	7.42	7.42	7.67	7.67	8.65	8.65	10	10	10	movement/can't he	2	0	0	0.51	0.51
11/20/08	10.8	10.8	6.7	6.7	9.27	9.27	7.92	7.92	1.68	1.68	1	1	1	running	5	0.06	0.06	0.07	0.07
Averages	13.94	15.1	8.96	10.05	11.31	9.56	7.91	7.60	6.21	7.81	28.13	81.44	81.44	running	5	0.09	0.13	0.24	0.24

Orcas Site ES5

Date	Ave Annual Air Temp	Overall Air Temp	Ave Annual Water Temp	Overall Water Temp	Ave Annual DO	Overall Dissolved Oxygen	Ave Annual pH	Overall pH	Ave Annual Turbidity	Overall Turbidity	Fecal Coliform	Annual Geomean	Overall Geomean	Water Condition	Water Condition Category #	Ave Annual Nitrates	Overall Nitrates	Ave Annual Phosphates	Overall Phosphates
3/1/06	12.3	12.3	5.9	5.9	11.3	11.3	7.3	7.3	2.8	2.8	2	2.0	2.0	running	5	0.6	0.6	0.05	0.05
4/14/06	10	10	8.4	8.4	10.10	10.10	7.2	7.2	9.2	9.2	87	87	87	running	5	0.6	0.6	0.05	0.05
5/24/06	22.3	22.3	16.3	16.3	9.67	9.67	8.0	8.0	1.4	1.4	15	15	15	running	5	0.8	0.8	0.1	0.1
7/11/06														dry/drip	2				
8/10/06	21.6	21.6	19.0	19.0	8.15	8.15	7.5	7.5	38.7	38.7	286	286	286	low flow/volume	3	error	error	0.23	0.23
9/20/06	13.5	13.5	14.2	14.2	9.14	9.14	7.9	7.9	207.7	207.7	2008	2008	2008	dark grey from rain	5	error	error	0.5	0.5
11/6/06	14.5	14.5	12.5	12.5	9.48	9.48	6.8	6.8	51.8	51.8	1452	1452	1452	rushing	6	0.13	0.13	0.15	0.15
12/19/06	9.3	9.3	5.6	5.6	12.72	12.72	7.5	7.5	3.0	3.0	9	9	9	running	5	2	2	0.04	0.04
Averages	14.79	14.79	11.70	11.70	10.08	10.08	7.45	7.45	44.94	44.94	286	78.50	78.50	running	5	0.83	0.83	0.16	0.16
2/8/07	11.5	11.5	7.3	7.3	11.51	11.51	7.7	7.7	15.4	15.4	128	128	128	running	5	0.25	0.25	0.04	0.04
3/27/07	16.8	16.8	7.6	7.6	11.47	11.47	7.93	7.93	4.14	4.14	23	23	23	running	5	0.32	0.32	n/a	n/a
5/7/07	22.1	22.1	12.6	12.6	12.27	12.27	8.34	8.34	2.81	2.81	66	66	66	running	5	0.07	0.07	0.05	0.05
7/5/07	26	26	17.1	17.1	11.25	11.25	8.25	8.25	0.92	0.92	202	202	202	small trickle	3	0.05	0.05	0.17	0.17
8/21/07	18.3	18.3	18.5	18.5	8.85	8.85	7.86	7.86	25.30	25.30	6380	6380	6380	oad run off-blakish/c	5	0.18	0.18	0.07	0.07
10/27/07														dry	1				
12/4/07	11.6	11.6	8.7	8.7	9.80	9.80	7.52	7.52	10.33	10.33				rushing	6	0.55	0.55	0.05	0.05

Averages	10.50	14.57	8.43	10.88	12.00	10.87	7.97	7.76	3.54	21.73		13.70	61.01			0.29	0.45	0.13	0.13
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Orcas Site BB7a

Date	Ave Annual Air Temp	Overall Air Temp	Ave Annual Water Temp	Overall Water Temp	Ave Annual DO	Overall Dissolved Oxygen	Ave Annual pH	Overall pH	Ave Annual Turbidity	Overall Turbidity	Fecal Coliform	Annual Geomean	Overall Geomean	Water Condition	Water Condition Category #	Ave Annual Nitrates	Overall Nitrates	Ave Annual Phosphates	Overall Phosphates
3/1/06	12.3	12.3	5.7	5.7	11.1	11.1	7.0	7.0	4.0	4.0	8	8	8	running	5	0.8	0.8	no reading	no reading
4/14/06	7.9	7.9	8.2	8.2	8.7	8.7	6.7	6.7	4.3	4.3	14	14	14	running	5	0.8	0.8	0.03	0.03
5/24/06	20.9	20.9	15.4	15.4	6.6	6.6	6.8	6.8	3.3	3.3	61	61	61	inning/pooled in area	5	0	0	0.07	0.07
7/11/06	23	23	16.6	16.6	2.7	2.7	6.4	6.4	15.8	15.8	90	90	90	trickle/pooled	3	0	0	0.25	0.25
8/10/06	22	22	15.0	15.0	0.6	0.6	6.5	6.5	20.2	20.2	390	390	390	pooled	2	0	0	0.83	0.83
9/20/06	15.2	15.2	12.8	12.8	0.4	0.4	7.0	7.0	68.0	68.0	99	99	99	pooled	2	0	0	1.26	1.26
11/6/06	16.6	16.6	11.0	11.0	7.3	7.3	6.8	6.8	9.0	9.0	1331	1331	1331	rushing	6	0.6	0.6	0.05	0.05
12/19/06	9.5	9.5	5.0	5.0	12.1	12.1	6.8	6.8	1.9	1.9	7	7	7	running (foamy)	5	0	0	0.04	0.04
Averages	15.9		11.2		6.2		6.7		15.8			61.95				0.3		0.4	
2/8/07	11.6	11.6	6.6	6.6	10.5	10.5	7.5	7.5	2.8	2.8	34	34	34	running	5	0.28	0.28	0.04	0.04
3/27/07	11.8	11.8	7.4	7.4	11.1	11.1	7.7	7.7	3.3	3.3	22	22	22	running	5	0.15	0.15	n/a	n/a
5/7/07	16.3	16.3	11.5	11.5	10.2	10.2	7.5	7.5	2.8	2.8	31	31	31	running	5	0.01	0.01	0	0
7/4/07	24	24	19.2	19.2	4.4	4.4	7.1	7.1	2.0	2.0	2	2	2	ar flow/many fish sw	4	0.06	0.06	0.29	0.29
8/21/07	20	20	16.2	16.2	3.0	3.0	7.1	7.1	16.3	16.3	2	2	2	l/small trickle out of	2	0.01	0.01	0.77	0.77
10/17/07	13.1	13.1	9.7	9.7	5.1	5.1	7.1	7.1	7.9	7.9	7	7	7	trickle/pool	2	0.01	0.01	0.66	0.66
12/4/07	12.7	12.7	7.8	7.8	11.2	11.2	7.5	7.5	11.7	11.7	140.0	140.0	140.0	running	4	1.8	1.8	0.01	0.01
Averages	15.6		11.2		7.9		7.4		6.7			11.95				0.3		0.3	
1/23/08	6.5	6.5	1.6	1.6	11.5	11.5	7.6	7.6	2.0	2.0	10.0	10.0	10.0	rushing	6	1.2	1.2	0.33	0.33
3/27/08	6.8	6.8	6.1	6.1	12.9	12.9	7.5	7.5	3.1	3.1	12.3	12.3	12.3	running	5	0.98	0.98	0	0
5/7/08	14.1	14.1	11.5	11.5	11.8	11.8	7.7	7.7	2.6	2.6	4.7	4.7	4.7	slow run	4	n/a	n/a	n/a	n/a
6/19/08	16.5	16.5	15.9	15.9	12.4	12.4	8.1	8.1	2.1	2.1	2.0	2.0	2.0	slow run	4	0.03	0.03	0.12	0.12
8/6/08	32.4	32.4	17.5	17.5	6.9	6.9	7.2	7.2	3.9	3.9	69.0	69.0	69.0	trickle / pool	2	0	0	0.44	0.44
9/30/08	17.3	17.3	13.0	13.0	6.7	6.7	7.1	7.1	9.8	9.8	2.0	2.0	2.0	pooled/trickle/duckwe	2	0	0	0.48	0.48
11/20/08	9.3	9.3	6.6	6.6	6.5	6.5	7.4	7.4	6.6	6.6	6.0	6.0	6.0	out of culvert/ pooled	5	0.31	0.31	0.1	0.1
Averages	14.7	15.45	10.3	10.92	9.81	7.90	7.50	7.17	4.29	9.25		1.3	14.84			0.42	0.34	0.25	0.30

Orcas Site DB8

Date	Ave Annual Air Temp	Overall Air Temp	Ave Annual Water Temp	Overall Water Temp	Ave Annual DO	Overall Dissolved Oxygen	Ave Annual pH	Overall pH	Ave Annual Turbidity	Overall Turbidity	Fecal Coliform	Annual Geomean	Overall Geomean	Water Condition	Water Condition Category #	Ave Annual Nitrates	Overall Nitrates	Ave Annual Phosphates	Overall Phosphates
3/1/06	11	11	5.7	5.7	11.54	11.54	6.98	6.98	2.13	2.13	103	103	103	running	5	1.6	1.6	0.14	0.14
4/14/06	8	8	7.8	7.8	10.67	10.67	6.96	6.96	10.15	10.15	124	124	124	running	5	1.2	1.2	0	0
5/24/06	15.6	15.6	11.1	11.1	9.87	9.87	7.18	7.18	6.80	6.80	330	330	330	running	5	1	1	0.03	0.03
7/11/06	15.2	15.2	12.2	12.2	9.48	9.48	6.52	6.52	5.98	5.98	1023	1023	1023	running	5	0.2	0.2	0.05	0.05
8/10/06	18.5	18.5	12.5	12.5	5.57	5.57	6.86	6.86	7.07	7.07	12900	12900	12900	pooled/slow flow	2	0.2	0.2	0.01	0.01
9/20/06	16.2	16.2	11.4	11.4	7.58	7.58	7.81	7.81	3.1	3.1	178	178	178	pooled/slow run	3	0.2	0.2	0.04	0.04
11/6/06	17	17	10.7	10.7	10.51	10.51	6.86	6.86	45.9	45.9	641	641	641	rushing	6	1.6	1.6	0.04	0.04
12/19/06	9	9	6.2	6.2	13.23	13.23	7.38	7.38	2.13	2.13	9	9	9	running	5	1.6	1.6	0.22	0.22
Averages	13.81		9.70		9.81		7.07		10.41			293.3				0.95		0.07	
2/8/07	12.7	12.7	6.8	6.8	11.70	11.70	7.92	7.92	7.03	7.03	73	73	73	running	5	0.38	0.38	0	0
3/27/07	11.4	11.4	6.9	6.9	13.00	13.00	7.99	7.99	3.33	3.33	15	15	15	rushing	6	0.28	0.28	n/a	n/a
5/7/07	18	18	9.9	9.9	11.99	11.99	8.06	8.06	4.78	4.78	162	162	162	running	5				
7/4/07	23.6	23.6	12.8	12.8	11.63	11.63	7.85	7.85	4.37	4.37	597	597	597	unning/small stream	4	0.05	0.05	0.05	0.05
8/21/07	18	18	13.7	13.7	8.45	8.45	7.69	7.69	5.02	5.02	1503	1503	1503	small slow trickle	3	0.32	0.32	0.45	0.45
10/17/07	11.2	11.2	9.2	9.2	8.91	8.91	7.61	7.61	2.8	2.8	191	191	191	slow tickle/shallow	3	0.01	0.01	0.01	0.01
12/4/07	12.7	12.7	7.8	7.8	11.16	11.16	7.50	7.50	23.77	23.77	167	167	167	rushing	6	3.4	3.4	0	0
Averages	15.37		9.59		10.98		7.80		7.30			175.13				0.74		0.10	
1/23/08	3	3	2.2	2.2	13.06	13.06	7.87	7.87	4.74	4.74	82	82	82	rushing	6	1.6	1.6	0.1	0.1
3/27/08	7.5	7.5	5.2	5.2	16.36	16.36	7.99	7.99	2.46	2.46	16	16	16	running	5	1	1	0.9	0.9
5/7/08	13.2	13.2	8.6	8.6	12.76	12.76	8.04	8.04	2.39	2.39	45	45	45	running	5	n/a	n/a	n/a	n/a
6/19/08	16.9	16.9	10.3	10.3	12.63	12.63	7.98	7.98	4.64	4.64	577	577	577	running	5	0.86	0.86	0.02	0.02
8/6/08	20.7	20.7	13.1	13.1	11.59	11.59	7.84	7.84	5.73	5.73	2436	2436	2436	trickle	3	0	0	0.06	0.06
9/30/08	12.8	12.8	10.7	10.7	10.92	10.92	7.59	7.59	26.27	26.27	170	170	170	trickle/pool	2	0.15	0.15	0.14	0.14
11/20/08	11.1	11.1	7.6	7.6	12.73	12.73	8.00	8.00	2.2	2.2	21	21	21	running/can hear	5	n/a	n/a	0.02	0.02
Averages	12.17	13.79	8.24	9.20	12.86	11.15	7.90	7.57	6.92	8.31		116.95	186			0.72	0.82	0.21	0.12