

Appendix F. Watershed Model Inputs

The following tables represent the Salish Sea Model watershed load inputs used in the selected scenario, Opt2_8. that collectively represent the watershed inflow targets in this plan. All loads are presented in lbs. These loads do not represent watershed-specific targets, rather the total sum of them represent the watershed targets in the main body of this plan. All loads are presented in lbs. of total nitrogen (TN). Monthly loads were calculated by summing the daily loads for each facility for each month. Daily loads are calculated by multiplying the daily TN concentration by the daily flow. Reduction values represent the percent of reduction in anthropogenic TN load from 2014 loads. The watershed specific percent reduction value was applied to both nitrogen and carbon in the Salish Sea Model (Example: If a watershed was assigned a 53.4% reduction, the anthropogenic loads from all forms of nitrogen and all forms of carbon were reduced 53.4%). For all reduction frameworks, flows were held constant at 2014 levels. Table 4 below describes the watershed specific nutrient reduction framework and their respective loads that represent the basis for the watershed targets in this plan.

The following maps display the watersheds within each of the eight Puget Sound basins. Freshwater inflow features represent the outlet of each watershed into Puget Sound, as defined by the Salish Sea Model, which is the location where the watersheds TN targets apply.

Appendices included:

- Appendix F.1. Watershed loads
- Appendix F.2. Watershed maps

Appendix F.1. Watershed loads by watershed

Watershed reduction frameworks

Basin(s)	Reduction in Anthropogenic Nitrogen and Carbon Loads
Northern Bays Whidbey	67.7% in large watersheds* 61.2% in all other watersheds
Main Basin	90% in watersheds draining to Sinclair Inlet and Liberty Bay 67.7% in large watersheds* 61.2% in all other watersheds
South Sound	90% in watersheds draining to Carr and Henderson Inlets 67.7% in large watersheds* 61.2% in all other
Hood Canal	90% in watersheds draining to Lynch Cove 53.4% in all other watersheds
Admiralty	53.4% in all watersheds
Strait of Juan de Fuca Strait of Georgia	No reductions

* Defined as average daily TN load greater than 1,000 kg/day

Northern Bays

Watershed	Size (km²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Chuckanut_Padden Creek	18.7	61.2	3395	2337	4255	1270	1107	159	75	32	100	827	2910	2800	19266
Colony Creek	27.3	61.2	2888	3131	6768	1918	1155	688	538	476	443	439	2066	2447	22957
Fidalgo Island N	17.0	61.2	114	133	282	238	170	125	105	91	80	89	91	101	1620
Joe Leary	44.3	61.2	2954	4630	14639	7253	5181	3064	2086	1759	1592	1532	1953	3902	50545
Nooksack R	758.9	67.7	297624	152119	476198	229280	218478	102735	77382	55997	71871	251327	447538	407855	2788403
Samish R	115.7	61.2	39242	21936	87523	36156	31747	5269	3241	2601	2778	14705	44754	41226	331178
Silver Creek	15.2	61.2	4233	3968	6437	2249	2337	1962	1592	1382	1175	1149	1825	3285	31594
Squalicum Creek	27.8	61.2	6614	7143	12699	2491	2469	401	631	209	624	2227	6063	9811	51381
Whatcom Creek	65.9	61.2	14484	8774	16248	9281	5335	904	802	811	1920	5159	11310	17571	92601
Total	1091		371548	204171	625049	290137	267979	115308	86452	63359	80582	277452	518509	488998	3389544

Whidbey

Watershed	Size (km²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Camano Island	39.1	61.2	47	76	220	46	23	9	4	3	2	3	31	76	541
Possession Sound	13.3	61.2	1213	1248	2359	1422	928	604	423	401	481	661	1640	2535	13916
Quilceda Creek	38.1	61.2	5049	5313	8664	3329	2070	1213	831	725	818	1422	4960	6878	41273
Skagit R	3195.2	61.2	504858	293214	703274	429901	476198	370376	279987	109790	117286	370376	824528	776026	5255814
Snohomish R	1782.3	67.7	562178	392422	824528	405650	337307	186952	98547	56438	69886	299828	696660	656977	4587373
Stillaguamish R	702.6	67.7	238099	123238	352739	167772	122577	41447	22046	11662	25574	191581	348330	279987	1925052
Tulalip Creek	31.3	61.2	1270	1314	2535	1142	728	317	231	269	414	829	957	1786	11793
Whidbey East	60.9	61.2	44	49	90	43	40	39	39	3	0	0	9	44	400
Whidbey Northeast	19.9	61.2	3902	4123	8796	4497	3153	1929	1228	952	906	1074	2227	4982	37770
Fidalgo Island S	26.2	61.2	983	1032	1318	1149	717	459	324	254	227	258	454	959	8133
Total	5909		1317643	822030	1904524	1014950	943740	603344	403661	180499	215594	866033	1879796	1730251	11882064

Main

Watershed	Size (km²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Bainbridge Island East	12.4	61.2	1045	2064	3902	1415	915	437	187	113	51	61	584	2932	13706
Bainbridge Island West	15.3	90.0	708	1265	3241	1091	549	267	107	78	74	0	289	2037	9706
Blackjack Cr	22.3	90.0	556	908	3660	1349	791	366	249	395	247	503	2174	5269	16466
Blake Island	0.8	61.2	42	98	219	73	57	33	26	25	23	32	88	147	865
Buenna	4.3	61.2	1113	1493	4652	1814	2061	884	511	428	379	534	1905	2888	18662
Chico Cr	24.3	90.0	2381	6019	9083	2954	1715	672	269	203	124	807	5071	8333	37632
Curley Cr	22.4	61.2	3792	7275	12412	4321	3064	1358	615	390	256	311	4012	10450	48257
Des Moines Cr	8.1	61.2	650	972	1636	694	558	206	209	231	229	778	864	1071	8100
Sinclair_Dyes Inlet	35.7	90.0	2315	5225	11486	4872	2976	1371	703	694	571	1129	6085	10053	47481
Ellisport	5.0	61.2	1217	1828	2844	1867	1920	1069	661	370	320	395	1164	2183	15838
Federal Way	5.8	61.2	434	613	959	534	628	752	847	913	622	595	769	961	8627
Gig Harbor	15.2	61.2	2198	4586	6724	2557	1927	1105	688	476	311	280	1889	4034	26775
Gorst Cr	14.8	90.0	1852	3307	5379	2048	1279	549	243	215	162	342	3042	5027	23443
Green R	498.8	67.6	158953	134041	277782	130734	77603	38360	27337	24030	28881	73193	168213	151016	1290144
Green Valley Cr	3.5	61.2	179	234	428	243	205	191	130	133	6	172	183	125	2227
Hylebos Cr	34.0	61.2	2125	2152	8510	2888	2932	2105	2712	2271	2359	2623	4057	3020	37754
Judd Cr	8.4	61.2	1003	2888	3902	1124	858	386	306	309	359	811	1585	2557	16089
Kitsap NE	9.8	61.2	298	686	1336	399	267	154	85	59	38	43	102	668	4134
Lake Washington	616.2	61.2	76280	79587	177913	63052	47179	14440	10075	8333	9480	34613	72312	104279	697542
Liberty Bay	23.8	90.0	1748	3549	7650	2998	1693	860	450	406	293	432	2026	5776	27882

Watershed	Size (km ²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Magnolia Bch	3.2	61.2	326	589	1093	342	280	120	80	76	97	206	333	459	4000
Maury Island	4.5	61.2	231	542	1217	406	313	183	146	139	127	178	487	816	4785
Miller Bay	26.1	90.0	1847	3395	7474	2712	1281	591	245	185	103	79	463	4034	22408
Miller Cr	22.7	61.2	1803	3263	5864	1914	1411	485	478	545	575	1726	1764	2513	22342
Olalla Cr	14.4	61.2	2337	5159	8951	2425	1653	780	346	199	112	110	2205	7297	31575
Puyallup R	1011.5	67.6	213628	207896	427696	139112	114420	57320	52249	41006	54013	106704	203707	255736	1873486
Saltwater St Pk	3.3	61.2	89	79	575	101	84	20	15	11	17	104	262	353	1710
Shingle Mill Cr	7.3	61.2	763	2174	3968	600	476	331	278	326	335	705	922	1607	12485
South Snohomish	21.5	61.2	213	238	575	258	169	99	65	77	78	110	302	439	2625
Tahlequah	5.1	61.2	273	855	2156	622	500	113	126	131	97	287	483	624	6268
Total	2500		480401	482978	1003288	375519	269765	125607	100438	82769	100338	227863	487341	596706	4333013

South Sound

Watershed	Size (km ²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Agate East	5.6	61.2	1085	1314	1766	772	606	205	108	71	74	247	1237	1830	9313
Agate West	1.0	61.2	203	247	333	146	114	39	21	14	14	47	234	344	1755
Anderson east	2.0	61.2	116	298	736	216	189	102	78	69	66	89	282	359	2601
Anderson west	6.1	61.2	357	919	2271	668	582	315	240	215	203	273	871	1111	8026
Artondale	12.0	61.2	1164	2712	5710	1887	1728	1085	908	763	681	829	2026	3638	23131
Burley Cr	12.8	90.0	957	2293	4519	1903	1660	994	732	688	657	873	1109	1224	17608
West Bay	2.4	61.2	478	926	1576	679	483	231	157	101	83	317	648	714	6395
Campbell Cr	6.9	61.2	470	849	1263	445	331	201	97	82	89	225	617	1010	5679
Chambers Cr	101.9	61.2	13338	24692	53572	22928	17571	9766	6680	5093	4079	6063	10803	17174	191758
Coulter Cr	16.6	61.2	888	1916	3417	1012	831	461	333	298	302	481	1786	2227	13951
Cranberry Cr	34.5	61.2	2249	4453	8223	2249	1978	1093	542	419	454	1263	3770	4475	31169
Dana Passage North	2.1	61.2	120	210	306	113	85	53	26	22	24	57	153	251	1420
Dana Passage South	3.0	90.0	443	802	1243	551	353	166	105	82	60	227	547	522	5102
Deer Cr	3.8	61.2	421	866	1510	564	443	178	151	135	99	170	560	661	5759
Deschutes R/Capitol Lake	169.0	61.2	42770	75618	104058	45415	31306	16491	11971	9348	7363	23589	48281	51368	467578
Dutcher Cove	4.2	61.2	461	831	1858	604	578	395	337	311	293	351	822	1274	8115
Ellis_Mission Cr	2.7	61.2	694	1296	1878	842	608	298	202	149	118	397	855	908	8247
Filucy Bay	6.1	61.2	353	785	1761	578	465	278	234	215	190	251	743	1168	7021
Fox Island	5.2	61.2	476	1111	2337	774	708	443	370	311	280	340	833	1490	9473
Frye Cove	3.3	61.2	624	888	1116	302	243	61	13	10	9	122	589	694	4671
Gallagher Cove	4.0	61.2	562	785	1279	624	496	187	116	92	89	209	725	948	6113

Watershed	Size (km ²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Glen Cove	5.9	90.0	273	547	1327	467	346	199	150	144	123	180	571	794	5122
Goldsborough Cr	67.7	61.2	9392	11310	15102	6482	5203	2147	1404	1085	1113	3020	11596	15146	83000
Grant East	1.6	61.2	95	169	249	90	67	41	20	17	18	45	123	201	1137
Grant West	3.2	61.2	202	359	529	191	142	87	43	36	39	96	262	428	2415
Green Cove	5.4	61.2	1047	1616	2039	708	644	320	65	43	40	243	968	1063	8794
Gull Harbor	3.8	61.2	862	1594	2293	1096	787	406	291	219	163	498	1003	1049	10261
Hale Passage	2.1	61.2	201	467	985	326	298	187	157	132	118	143	351	626	3990
Henderson Inlet	2.1	90.0	357	595	908	414	295	154	101	76	61	225	498	467	4153
Herron	3.4	61.2	200	381	893	384	317	184	144	136	141	186	406	586	3958
Hope Island	0.2	61.2	30	45	58	25	21	7	4	3	3	8	31	38	273
Jarrel Cove	3.7	61.2	183	351	642	168	144	84	43	34	36	102	313	366	2466
Johns Cr	12.0	61.2	1131	2447	5556	1349	957	425	315	340	204	344	1252	2130	16450
Kennedy_Schneider	32.2	61.2	11222	19467	25133	6393	5093	1074	191	122	111	1810	10384	12346	93344
Ketron	1.9	61.2	240	441	955	408	313	175	120	92	74	109	193	306	3426
Ketron Island	0.4	61.2	47	86	187	80	61	34	24	18	14	21	38	60	671
Mable Taylor Cr	1.5	61.2	171	351	611	229	179	72	61	55	40	69	227	269	2334
Mayo Cove	3.2	61.2	181	346	761	289	245	164	157	145	120	140	353	534	3434
McAllister Cr	42.0	61.2	14352	22928	29542	16072	9789	3351	2734	3836	1971	3814	12236	20238	140862
McCormick Cr	5.0	90.0	202	410	1019	355	258	144	106	103	89	132	423	571	3811
McLane Cove	6.5	61.2	269	518	774	311	251	150	88	68	60	181	470	769	3909
McLane Cr	16.2	61.2	3924	6019	7385	2059	1647	370	61	41	34	670	3417	4057	29684
McNeil Isl	6.9	61.2	366	699	1537	580	492	333	317	291	245	282	714	1076	6931
Mill Cr	32.7	61.2	11993	16557	17108	6570	5512	1682	862	472	591	2194	11111	15476	90127
Minter Cr	18.6	90.0	888	1775	4321	1521	1127	648	487	470	401	586	1858	2579	16663
Moxlie Cr	6.1	61.2	996	2932	4872	2690	2844	1407	1270	842	710	1660	1799	1437	23459
Nisqually R	716.3	61.2	94137	163583	306442	151016	89728	29542	21319	26896	15587	28660	91933	134482	1153325
Peale Passage	5.9	61.2	351	619	906	331	247	153	75	64	68	167	452	739	4172
Perry Cr	8.9	61.2	2579	3660	4542	1237	1003	254	54	42	39	505	2447	2844	19204
Purdy Cr	3.8	90.0	157	331	814	282	207	114	80	77	66	103	355	496	3081
Rocky Cr	22.1	61.2	653	1142	3571	1082	626	340	218	207	189	223	342	459	9050
Rosedale	7.8	90.0	388	703	1614	578	430	256	196	187	162	238	723	1019	6493
Schneider Cr	0.7	61.2	2712	1078	4916	1371	364	81	90	67	88	291	384	1265	12707
Sequalitchew Cr	55.2	61.2	7077	13029	28219	12037	9237	5159	3549	2712	2178	3219	5710	9039	101166
Sherwood Cr	35.6	61.2	1682	3373	5115	1989	1598	933	536	414	355	1151	3064	5004	25214
Skookum Cr	26.7	61.2	9105	17196	23149	5225	4167	787	129	95	66	1378	7959	8620	77874

Watershed	Size (km ²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Snodgrass Cr	1.9	61.2	302	421	690	335	267	101	62	50	48	112	390	509	3287
Squaxin Island East	1.0	61.2	98	141	152	69	61	29	17	12	14	38	90	129	849
Squaxin Island West	1.3	61.2	254	386	492	211	177	60	35	24	27	71	260	326	2324
Sun Pt	3.2	61.2	207	373	551	197	147	90	44	37	40	99	271	443	2499
Tolmie	6.1	61.2	2011	3086	4365	2169	1892	1113	802	586	489	1609	3042	2954	24121
University Place	6.3	61.2	802	1479	3197	1365	1047	586	403	309	249	366	648	1027	11479
Van Gelden	7.8	61.2	481	1060	2381	783	631	379	320	293	260	342	1005	1579	9513
Vaughn	5.2	61.2	331	624	1493	388	373	260	189	205	169	209	745	988	5973
Whitman Cove	6.5	61.2	390	747	1645	624	527	353	337	313	256	302	763	1155	7412
Wilson Pt	5.7	61.2	342	606	891	324	243	149	74	63	67	163	443	723	4087
Woodard Cr	10.7	90.0	1420	3505	2800	1876	1781	822	459	344	269	545	142	847	14809
Woodland Cr	29.2	90.0	2064	6415	5049	3461	3307	2011	1327	1327	833	1759	4277	4916	36747
Young Cove	3.4	61.2	659	939	1177	317	256	65	14	11	10	129	622	734	4932
Total	1661		255254	440720	729687	319795	216702	90522	62964	61640	43277	94857	264156	356303	2935877

Hood Canal

Watershed	Size (km ²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Big Quilcene	70.0	53.4	1261	1911	5335	1349	1543	930	681	443	467	3109	3351	10362	30743
Cushman No 2	-	53.4	545	1887	7452	5159	3285	743	423	269	7055	18894	29762	24912	100385
Dabob Bay	32.9	53.4	1468	3417	4630	871	584	315	317	653	355	952	928	9392	23883
Dosewallips	116.3	53.4	8179	10560	22046	12500	16887	11420	8069	3505	2469	8818	18078	34172	156704
Duckabush	76.4	53.4	1903	2088	6746	2756	4012	2008	928	571	895	9634	7760	11640	50942
Eagle Creek	13.9	53.4	608	1025	1466	417	353	73	46	34	30	531	1642	1702	7928
Finch Creek	19.1	53.4	392	511	840	147	207	59	42	30	33	348	756	816	4183
Fulton Creek	27.1	53.4	1287	2112	2976	655	487	100	74	58	53	977	2976	2822	14578
Hamma Hamma	84.0	53.4	15653	11707	25574	11751	9943	5930	3704	2998	1508	28219	22267	6746	145999
Kitsap_Hood	49.9	53.4	3109	9348	9149	4586	3131	959	520	357	392	3219	9943	19775	64487
Lilliwaup Creek	17.2	53.4	1179	1803	2690	690	677	118	71	52	47	1296	3395	2932	14951
Little Quilcene	35.7	53.4	1960	5534	7099	1647	1226	1025	637	507	311	1810	2006	10714	34476
Lower Dosewallips	3.9	53.4	54	115	178	67	68	39	32	32	34	44	97	133	894
Lynch Cove	69.4	90.0	3616	6878	9303	2800	2198	822	459	258	208	968	7672	11288	46470
Port Gamble	43.4	53.4	4740	9083	16270	5842	4034	2046	891	324	144	116	1274	15609	60373
Skokomish R	245.1	90.0	17064	19842	27999	12478	9436	2469	2491	1669	2756	26896	42329	45636	211064
Spencer Creek	15.8	53.4	386	1069	1290	265	151	57	57	48	44	84	595	1175	5222
Tahuya	85.9	90.0	4167	6371	8444	2822	2381	765	401	194	123	1881	11993	13757	53299

Watershed	Size (km²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Thorndyke Creek	41.1	53.4	306	1074	1312	741	461	113	56	49	71	531	1400	2271	8384
Total	1047		67877	96336	160798	67540	61065	29991	19900	12053	16996	108328	168226	225853	1034964

Admiralty

Watershed	Size (km²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Chimacum Valley	17.9	53.4	963	2447	1940	456	213	108	69	71	55	265	430	3858	10875
Port Townsend E	24.8	53.4	27	683	1673	328	254	206	302	256	99	36	49	1887	5801
Port Townsend W	37.4	53.4	121	754	862	132	47	20	13	21	15	143	167	1528	3824
Whidbey South	15.1	53.4	1118	1874	3748	1213	802	463	280	199	147	166	558	2070	12637
Whidbey West	54.3	53.4	1607	2712	5534	1420	774	328	160	95	65	46	681	3527	16949
Total	150		3837	8470	13757	3549	2090	1125	825	641	381	655	1885	12871	50085

Strait of Juan de Fuca

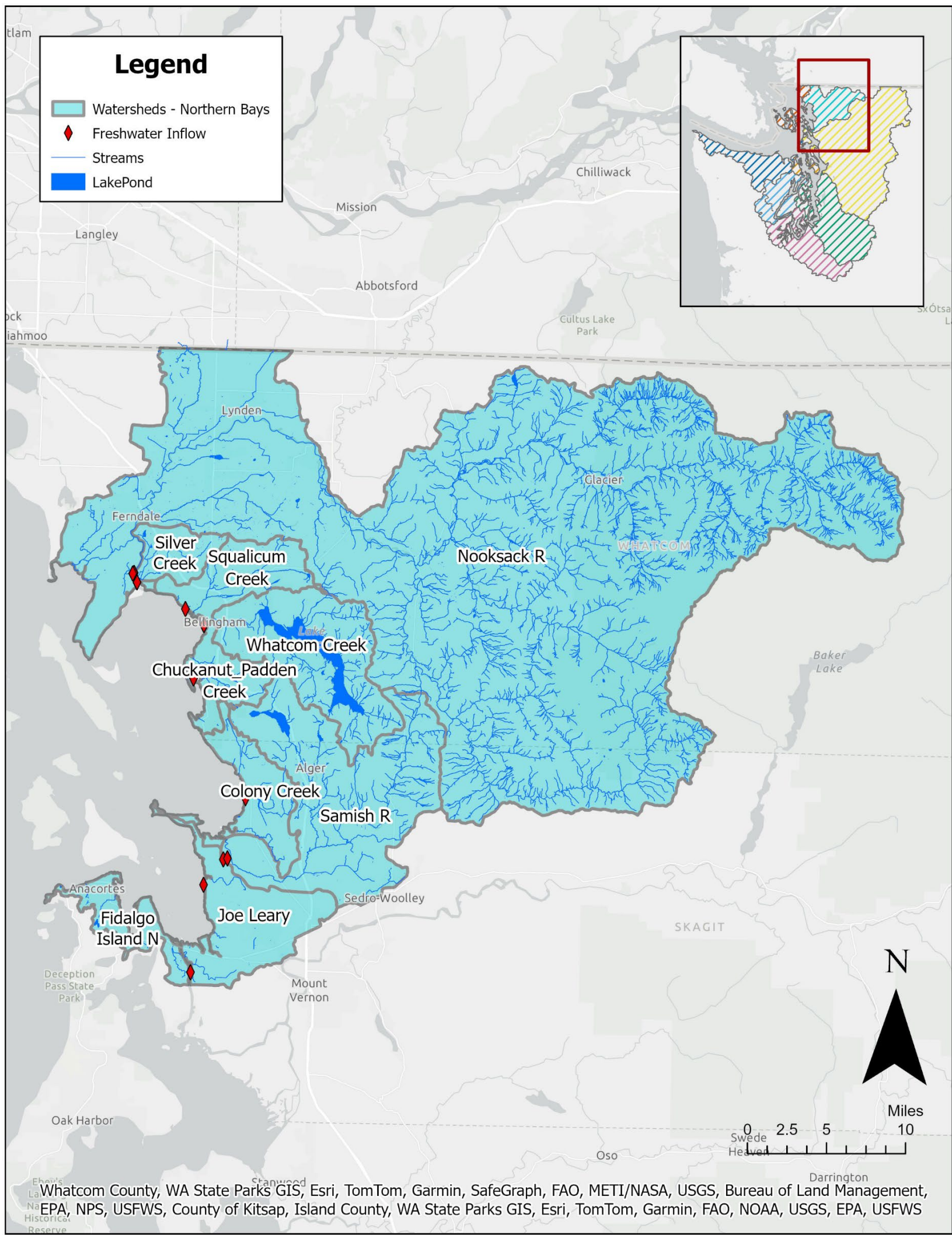
Watershed	Size (km²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Cassalery Creek	14.2	0.0	311	487	994	516	370	185	115	104	117	169	481	807	4657
Clallam Bay	165.4	0.0	37038	24471	44092	10648	4189	1296	1100	855	1043	29101	39683	48502	242019
Discovery Bay 1	38.7	0.0	346	498	2557	692	3946	6856	4960	1490	525	5666	4542	4608	36687
Discovery Bay 2	20.7	0.0	33	761	2513	628	520	412	679	558	209	48	19	571	6952
Discovery Bay 3	21.3	0.0	24	983	2668	492	377	331	529	454	152	37	45	2712	8803
Dungeness R	198.6	0.0	5181	5908	14198	5732	8201	5335	3042	1486	1451	7584	11133	23149	92400
Elwha R	320.8	0.0	13117	11244	43651	12765	18541	11729	7341	3836	2932	21407	42990	59525	249078
North Olympic	217.9	0.0	27778	17769	30644	8091	3571	1647	1303	895	1045	20856	27999	33510	175109
Port Angeles	161.6	0.0	3505	3946	9237	3770	5357	3483	2002	992	1003	4960	7275	14771	60303
Sequim Bay E	11.4	0.0	604	1208	1534	481	437	306	195	103	55	98	344	820	6185
Sequim Bay S	19.2	0.0	1986	1590	3483	814	386	300	240	102	84	606	366	3924	13881
Sequim Bay W	23.2	0.0	661	1479	1473	540	430	163	126	112	109	434	747	1307	7582
Whidbey Northwest	18.3	0.0	2119	2734	5357	3109	2119	1442	1034	802	701	778	1579	3527	25300
Total	1231		92703.83	73078.74	162403.33	48276.77	48444.32	33485.97	22667.46	11790.31	9425.63	91745.26	137202.37	197732.37	928956.36

Strait of Georgia

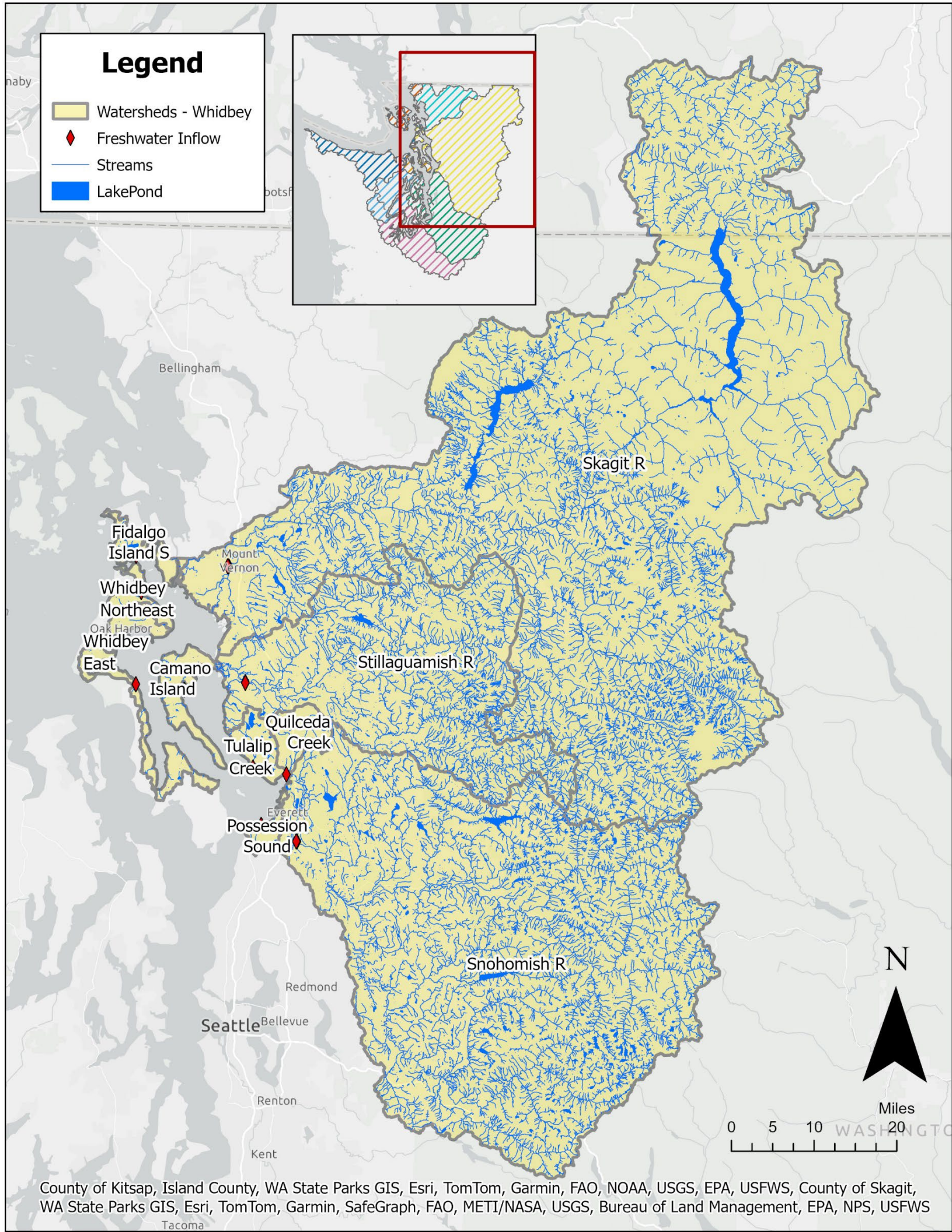
Watershed	Size (km²)	Reduction (%)	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual Total
Birch Bay	32.9	0.0	55997	24030	52470	8356	10009	4762	2579	1556	1784	6349	45195	84216	297304
Cypress_Guemes Is	18.1	0.0	97	88	190	181	105	103	101	48	0	0	5	100	1018
Drayton Harbor	52.9	0.0	85980	67241	124341	46738	47399	13647	6570	4321	3990	15036	61288	98767	575318
Lopez Island	40.0	0.0	1160	1160	1336	935	763	465	269	174	91	96	185	553	7186
Lummi Island E	6.7	0.0	3594	955	3571	1592	2646	1561	1210	496	390	1501	3285	4123	24923
Lummi Island W	3.7	0.0	1920	511	1876	849	1409	836	646	265	208	800	1735	2169	13224
Orcas Island	70.2	0.0	4123	3417	2954	1911	2006	1521	1019	584	439	494	1160	3373	23001
San Juan Island	61.1	0.0	35494	26235	27117	4850	4431	3417	2205	1265	866	855	3219	14595	124550
Total	286		188364	123637	213855	65412	68768	26311	14599	8709	7768	25132	116071	207896	1066524

Appendix F.2. Watershed maps

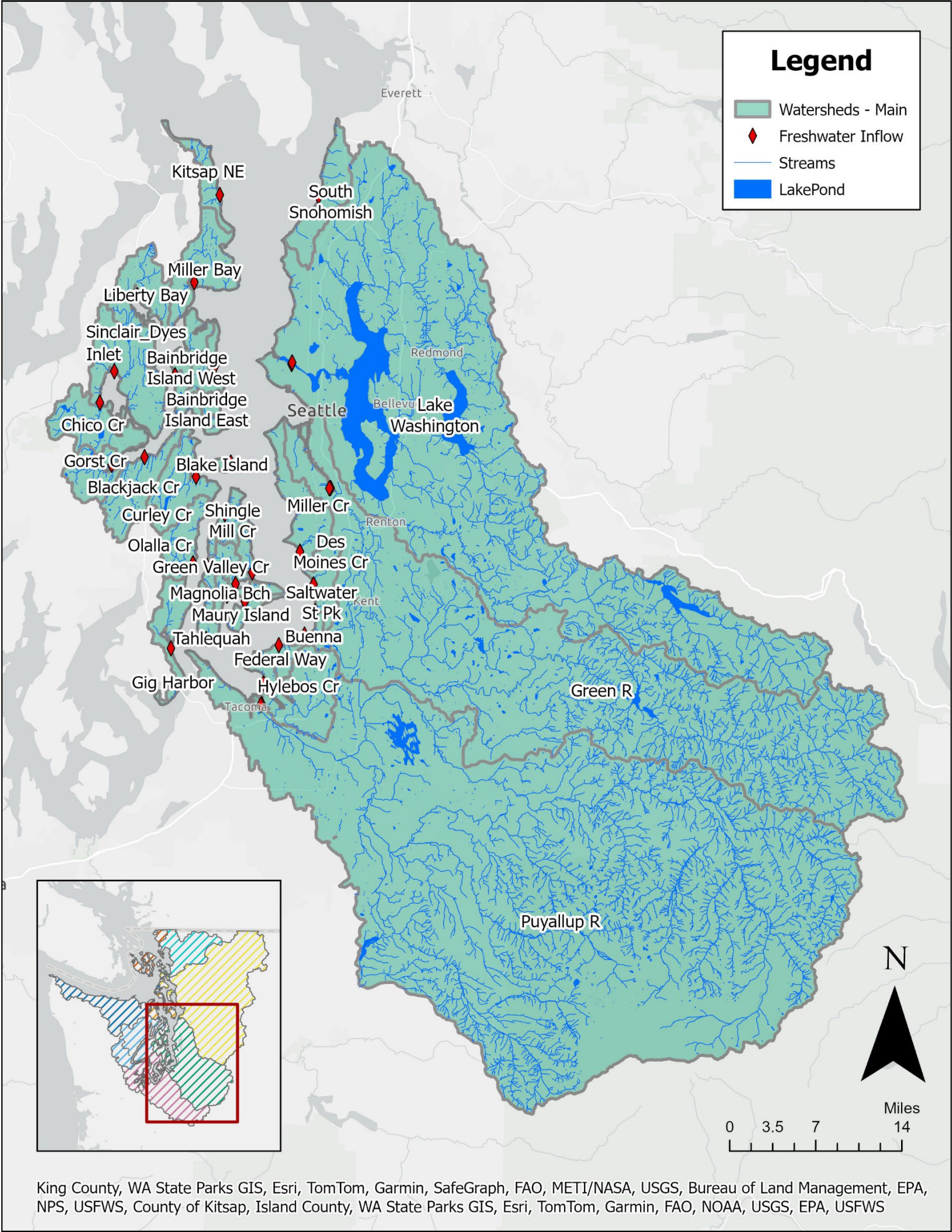
Northern Bays



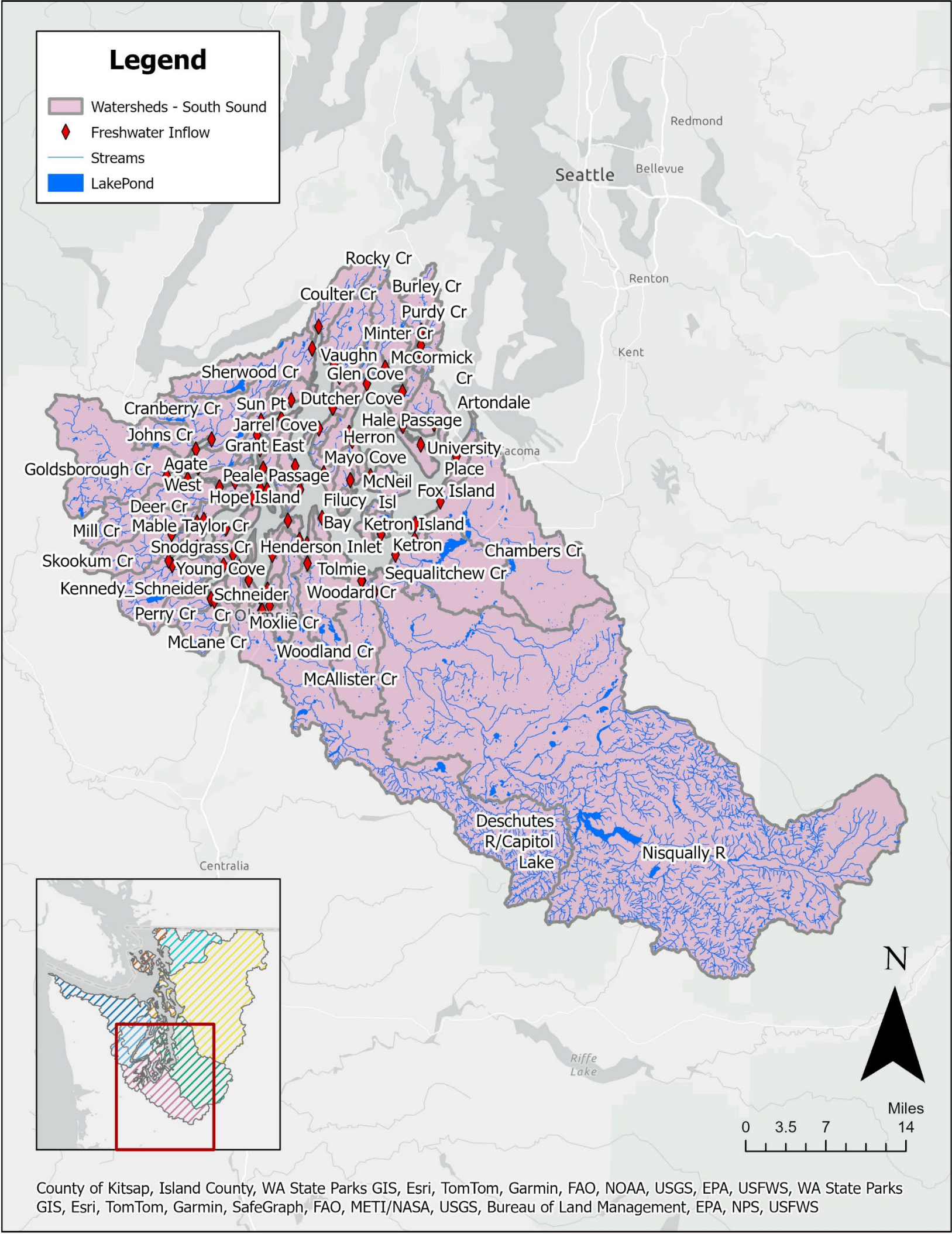
Whidbey



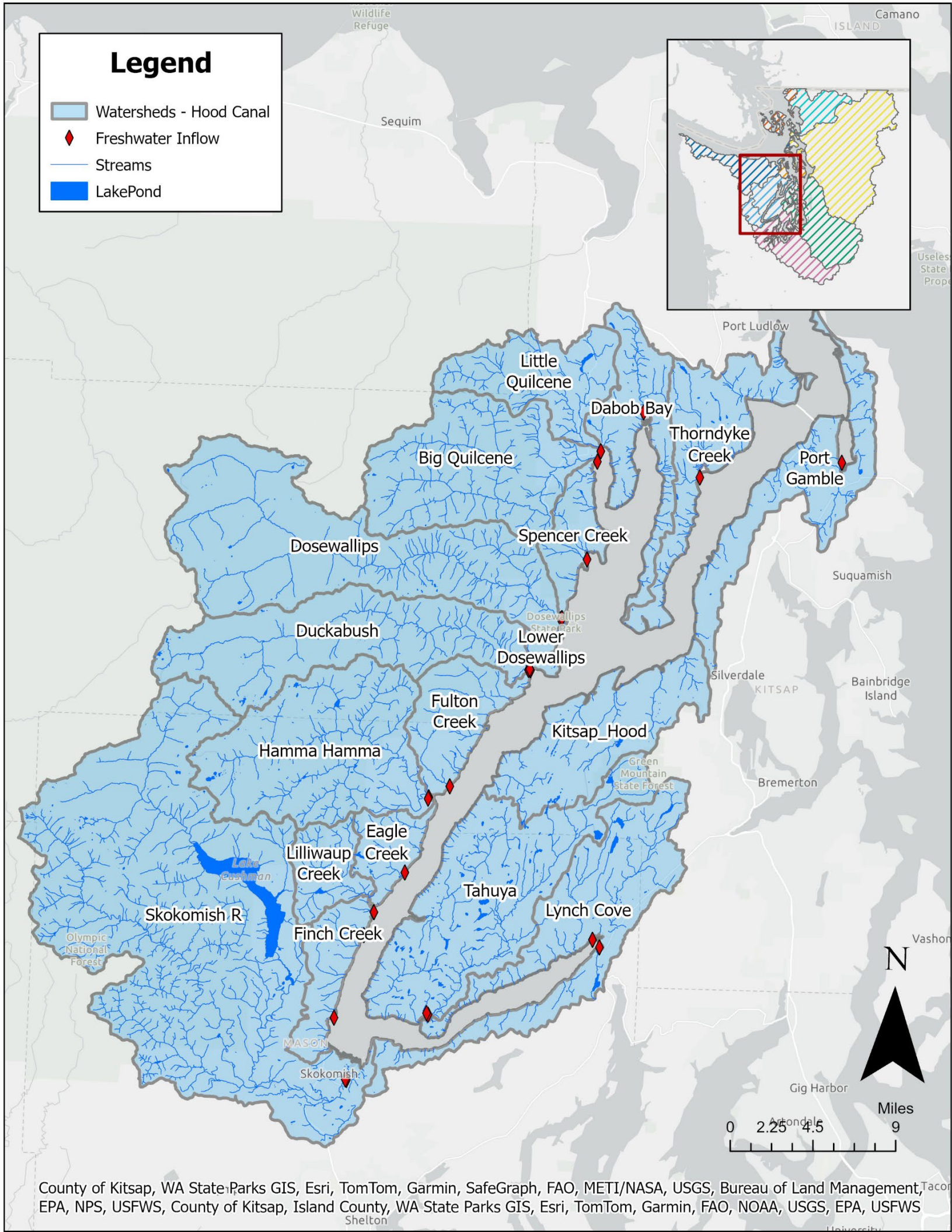
Main



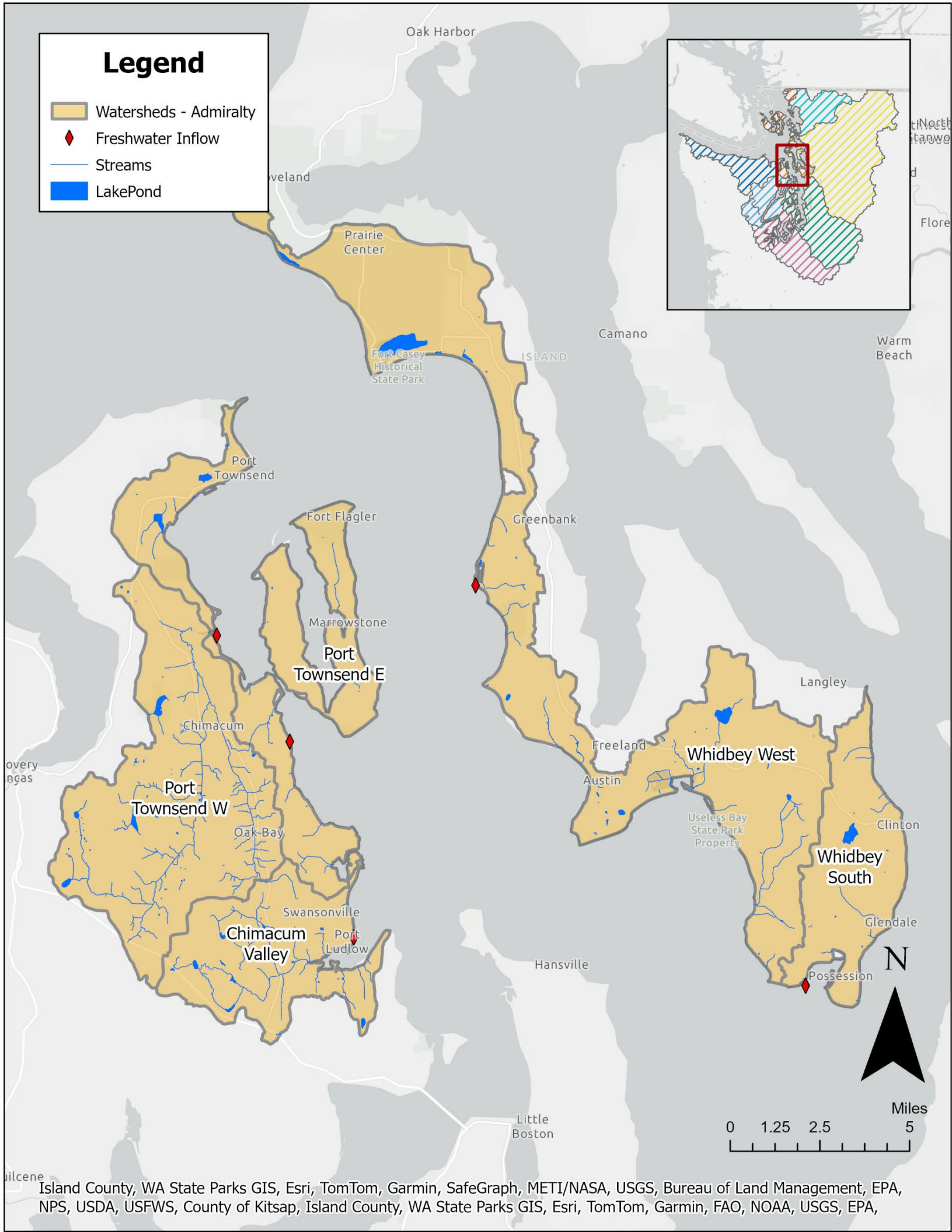
South Sound



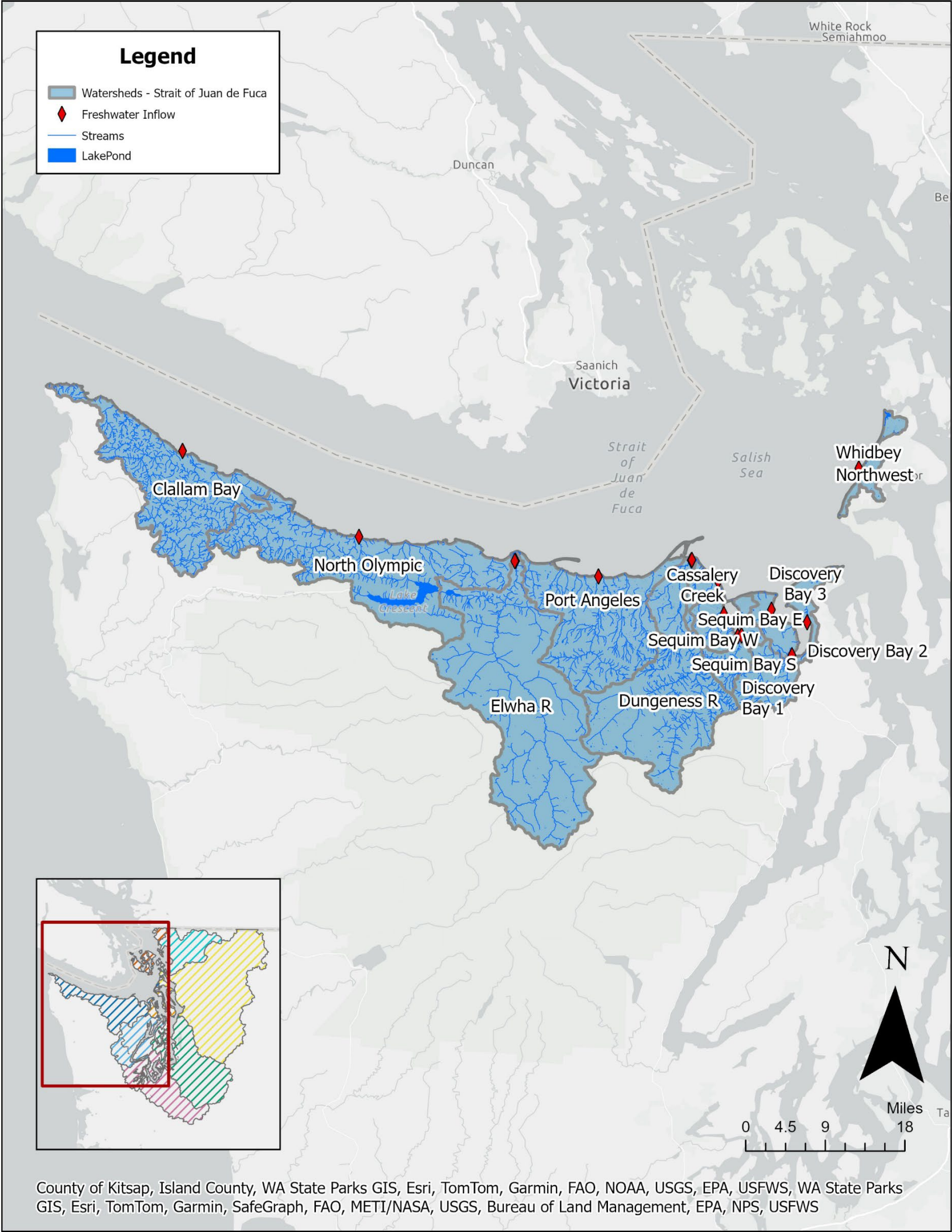
Hood Canal



Admiralty



Strait of Juan de Fuca



Strait of Georgia

