



Skagit County Salmon Habitat Survey Monitoring Program Summary of the 2009 Sites Survey

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2009 was the fifth year in a Skagit County's Salmon Habitat Monitoring Project. This project was started in 2004 in response to Skagit County Resolutions #R20030210 and #R20040211. The purpose of this ongoing survey is to analyze whether Skagit County Code 14.24.120, Ongoing Agriculture, is adequately protecting critical areas near agricultural lands. At its onset in 2004, the project aimed to survey 60 randomly selected Wadeable, salmonid-bearing stream reaches within Water Resource Inventory Areas (WRIAs) 3 and 4, which are under County jurisdiction. The intent of this program is to measure a variety of stream parameters over time in order to determine if there is a significant difference in habitat characteristics for streams in land that is zoned Agricultural/Rural Resource-Natural Resource Land (from here on referred to as Ag-NRL) and other lands under County jurisdiction (from here on referred to as Non-Ag)

The study design was built on the Environmental Protection Agency (EPA) based Environmental Monitoring and Assessment Program (EMAP) which required a minimum of 60 stream reaches to be sampled on a 5 year cycle. This program also required that 20 of the original 60 stream reaches be sampled annually. A variety of factors contributed to incomplete sampling over the course of this study. The 2004 survey was not totally completed until 2005, and only 40 reaches were sampled (16 Ag-NRL, 24 Non-Ag); the 2006, 2007, and 2008 surveys sampled 16, 15 and 18 reaches respectively (8/8/9 Ag-NRL, 8/7/9 Non-Ag). Because 2009 was the fifth year of the study, in addition to the 20 annual sites, another 40 randomly selected reaches were established for sampling. Nineteen of the 20 annual sites were sampled (permission was not granted by the new owners of the Ag-NRL zoned Friday Creek site) and 39 of the intended 40 new reaches were sampled (with one Non-Ag zoned site missing). Sampling was conducted from May 2009-Dec 2009 by Skagit County employees Emily Derenne, Margo Gillaspay, Rick Haley, and Jeff McGowan and Technical Interns Will Barany and MarySutton Carruthers.

The 2009 survey documented some major changes in stream characteristics for many of the annual sites due to extreme flood events in January 2009. An uncharacteristically dry summer meant many intended sample reaches were dry, extending the field season much longer than planned, and ultimately concluding it before all sites were sampled. The extended season meant that some streams were sampled after leaves had begun to fall, potentially confounding some parameters such as canopy cover, overhanging vegetation, and riparian composition. Such parameters were still measured when possible, but were noted as being 'suspect' measurements.

As outlined in the *Skagit County Salmon Habitat Monitoring Program 2004 Baseline Report*, data collected from this year and previous years will be used to assess trends in salmon habitat characteristics over time and to determine whether habitat conditions are improving, degrading, or remaining static in Ag-NRL zoned lands. Additionally, these data will be used to assess whether there is a difference in the trends seen in Ag-NRL lands compared to Non-Ag lands.

Table 1 - Salmon Habitat Monitoring Program: 2009 Non-Annual Survey Sites

Site Number	Stratum	2009 Sample Date	Latitude	Longitude	Stream Name
32	Ag	6/10/2009	48.566016	-122.303862	Trib to Samish
162	Ag	6/16/2009	48.4841	-122.1387	Stevens Creek
42	Ag	6/18/2009	48.3709	-122.335	Big Ditch
160	Ag	6/25/2009	48.514053	-121.874468	Trib to Skagit
269	Non-Ag	6/26/2009	48.596799	-122.32717	Friday Creek
256	Non-Ag	6/29/2009	48.55333	-121.853296	Grandy Creek
251	Non-Ag	6/30/2009	48.599754	-122.221264	Thunder Cr
257	Non-Ag	7/7/2009	48.303515	-122.28759	Trib to Fisher
260	Non-Ag	7/9/2009	48.5534	-121.9788	Muddy Creek
357	Non-Ag	7/10/2009	48.4594	-121.5908	Trib to Sauk
49	Ag	7/14/2009	48.548	-122.3399	Bob Smith Creek
157	Ag	7/15/2009	48.5128	-121.8851	Mill Creek
172	Ag	7/16/2009	48.452147	-122.413614	Ditch
369	Non-Ag	7/20/2009	48.37887	-122.181116	Walker Creek
358	Non-Ag	7/22/2009	48.4938	-121.4939	Trib to Illabot
362	Non-Ag	7/24/2009	48.5981	-122.3184	Trib to Butler
35	Ag	7/27/2009	48.5121	-122.1676	Coal Creek
167	Ag	7/31/2009	48.5884	-122.2333	Samish River
47	Ag	8/5/2009	48.527786	-122.149157	Coal Creek
263	Non-Ag	8/10/2009	48.534615	-122.081513	Child's Creek
170	Ag	8/11/2009	48.5247	-122.421742	Samish River
372	Non-Ag	8/12/2009	48.565347	-121.417959	Diobsud Cr
373	Non-Ag	8/20/2009	48.640415	-122.370472	Bear Creek
181	Ag	8/21/2009	48.518154	-121.481116	Corkindale Cr
176	Ag	8/26/2009	48.551379	-122.302357	Samish River
253	Non-Ag	9/3/2009	48.568765	-121.786697	Grandy Creek
364	Non-Ag	9/9/2009	48.576472	-122.336766	Friday Creek
255	Non-Ag	9/10/2009	48.639234	-121.755312	Trib to Bear
166	Ag	9/15/2009	48.341731	-122.322344	Hill Ditch
370	Non-Ag	9/18/2009	48.395892	-122.203735	Walker Creek
360	Non-Ag	9/25/2009	48.505802	-121.77602	Finney Creek
180	Ag	9/29/2009	48.568599	-122.399258	Ditch
183	Ag	10/5/2009	48.305958	-122.348	Ditch
267	Non-Ag	10/6/2009	48.485697	-122.032194	Day Creek
186	Ag	10/13/2009	48.439588	-122.217333	Turner Creek
185	Ag	10/20/2009	48.600502	-122.233177	Thunder Cr
37	Ag	10/28/2009	48.505194	-122.085507	Morgan Cr
39	Ag	10/29/2009	48.325874	-121.548417	Trib to Sauk
366	Non-Ag	12/3/2009	48.588614	-121.772118	Grandy Creek

Table 2 - Salmon Habitat Monitoring Program: Annual Survey Sites

Site Number	Stratum	2009 Sample Date	2008 Sample Date	2007 Sample Date	2006 sample date	2005 Sample Date	2004 Sample Date	Latitude	Longitude	Stream Name
3	Ag	9/23/2009	7/13/2008	HWL	7/13/06	7/25/2005	8/19/04	48.52084	-122.1974	Hansen Creek
6	Ag	9/8/2009	HWL	HWL	HWL	8/25/2005	8/3/04	48.52601	-122.33811	Thomas Creek
9	Ag	6/17/2009	7/31/2008	9/12/2007	7/26/2006	9/1/2005		48.56907	-122.24621	Samish River
133	Ag	5/27/2009	6/9/2008	10/4/2007	Creek Dry	6/14/2005	9/27/04	48.5295	-122.02406	Red Cabin Creek
139	Ag	6/23/2009	6/23/2008	7/3/2007	7/14/2006	6/27/2005	9/10/04	48.33812	-122.20718	Lake Creek
142	Ag	9/14/2009	8/6/2008	8/3/2007	8/9/2006	7/20/2005		48.35841	-122.20704	Lake Creek
149	Ag	6/3/2009	7/7/2008	6/29/2007	7/7/2006	8/7/2005		48.4966	-122.10976	Sorenson Creek
164	Ag	NEW OWNER – no access	9/10/2008	8/8/2007	8/23/2006	7/15/2005		48.63142	-122.35617	Friday Creek
165	Ag	8/18/2009	9/29/2008	9/20/2007	7/20/2006	8/11/2005		48.58217	-122.27977	Samish River
169	Ag	8/3/2009	7/14/2008	7/16/2007	8/10/2006	9/28/2005		48.42667	-122.20745	Mundt Creek
221	Non-Ag	9/22/2009	7/24/2008	Creek Dry	8/29/2006	9/15/05		48.62098	-122.32529	Trib to Butler
222	Non-Ag	5/28/2009	6/27/2008	Creek Dry	Creek Dry	6/29/05	9/2/04	48.49475	-121.54555	Sutter Creek
223	Non-Ag	7/30/2009	8/18/2008	8/23/2007	8/2/2006	7/27/05	6/24/04	48.45074	-121.60555	Trib to the Sauk
225	Non-Ag	6/8/2009	7/9/2008	9/6/2007	8/3/2006	7/13/05	7/12/04	48.3007	-122.33263	Kennel Creek
226	Non-Ag	6/15/2009	7/23/2008	7/6/2007	9/7/2006	7/14/05	8/5/04	48.63915	-122.36001	Friday Creek
228	Non-Ag	8/5/2009	9/22/2008	8/15/2007	6/29/2006	8/8/05		48.53609	-122.04509	Jones Creek
230	Non-Ag	8/19/2009	8/29/2008	8/30/2007	9/14/2006	8/4/05	6/17/04	48.60721	-122.39473	Whitehall Creek
347	Non-Ag	6/1/2009	7/30/2008	7/20/2007	7/24/2006	9/19/05	9/3/04	48.33742	-122.29823	Bulson Creek
355	Non-Ag	6/24/2009	Creek Dry	Creek Dry	Creek Dry	8/31/05	8/11/04	48.58834	-122.36692	Colony Creek
359	Non-Ag	6/23/2009	8/28/2008	7/11/2007	8/16/2006	9/5/05		48.62031	-121.74765	Bear Creek

HWL = High Water Level