2011 Volunteer Salmon Watcher Program Annual Report

Lake Washington Watershed, Puget Sound WRIA 8 Streams, and other Puget Sound Streams

April 2012

King County

Department of Natural Resources and Parks
Water and Land Resources Division
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Seattle, WA 98104
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2011 Volunteer
Salmon Watcher Program

Lake Washington Watershed and Puget Sound WRIA 8 Streams

King County Water and Land Resources Division, in cooperation with:
Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Forum
Bellevue Stream Team
Cities of Bothell, Kirkland, Redmond, Renton, Seattle, and Woodinville
With support from King Conservation District

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Natural Resources and Parks
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201 South Jackson Street, Suite 600
Seattle, WA 98104

Summary

The purpose of the Salmon Watcher Program is to document the distribution of spawning adult salmon throughout the basin via an active public outreach and education program and subsequently consolidate all the information into a single resource (this report). These data can be used to inform how aquatic resources are managed, to protect salmon and trout species, and to enhance their habitat.

For the 2011 program, 116 volunteers surveyed 114 sites on 50 streams from September 3, 2011, to February 1, 2012. Surveyed streams were located throughout the Lake Washington Watershed, other WRIA 8 streams in Central Puget Sound, and other streams draining to Puget Sound. Because volunteers collect the data in this program, the partnering jurisdictions are able to obtain more information from far more locations than would otherwise be possible. However, data in this report should be used with the following factors in mind:

(1) All volunteers have been trained, but volunteer expertise in locating and identifying fish species varies from very high to very low;

(2) Geographic and temporal coverage of streams by volunteers was by no means complete or consistent:

- Volunteers view stream sites for relatively brief periods of time during the spawning season;
- Determination of survey sites is based on volunteer availability and site accessibility (and many survey locations change from year to year, even on the same creek);

(3) Adult fish can be difficult to see and therefore may have passed through reaches undetected; and

(4) Volunteer data indicate only where minimum fish distributions extend to, but do not indicate reaches where fish are definitively absent (in other words, the data may confirm fish presence but does not confirm absence).

Volunteers observed the following species: Chinook, sockeye, kokanee, coho, and chum salmon, as well as unspecified trout. The following results were compiled from volunteer observations: (1) Sockeye were seen in the greatest numbers (934 enumerated); (2) Chinook and coho were seen in 6 Lake Washington Watershed basins; (3) Sockeye were observed in 4 Lake Washington basins; (4) Kokanee were seen in the second greatest numbers (523 enumerated) and were observed in 4 Lake Washington basins; and (5) Chum were reported in 3 streams draining to Puget Sound. Additionally, kokanee were reported in Mercer Slough for the first time by volunteers in 2011 – this marks an expansion to the range of kokanee salmon as reported by Salmon Watcher volunteers.

This report is published on the Internet and can be found using the hyperlinks on this web page: http://www.kingcounty.gov/environment/animalsAndPlants/salmon-and-trout/salmon-watchers/reports.aspx.

Maps included in this report have been published on the Internet and can be found using the hyperlinks on this web page: http://www.kingcounty.gov/environment/animalsAndPlants/salmon-and-trout/salmon-watchers/maps.aspx.

The home page for the Salmon Watcher Program web site is here: http://www.kingcounty.gov/environment/animalsandplants/salmon-and-trout/salmon-watchers.aspx.

Acknowledgements

Many thanks to all the dedicated volunteers for spending many hours in what is often cold and wet weather to collect the information for this report—some for the fourteenth year in a row, and sometimes without ever seeing a single fish. Without the volunteers there would be no data, no maps, and no report. They help make a positive difference in King County, not only by reporting fish species, but by acting as the eyes and ears of the streams, reporting stream blockages as well as illegal and other suspect activities. They are the stewards of resources that make the Pacific Northwest so special. A *huge* Thank You to all our great volunteers!

We also want to acknowledge the various jurisdictions that support and participate in the program and their dedicated staff. Program partners are King County Water and Land Resources Division, Bellevue Stream Team, Redmond Stream Team, and the cities of Seattle, Bothell, Kirkland, Renton, and Woodinville. Thanks (in no particular order) to Laurie Devereaux, Debra Crawford, Barbara Sullivan, Peter Holte, Janet Geer, Gary Fink, Betsy Adams, Micah Bonkowski, Kollin Higgins, Bill Malatinsky, Beth Miller, Lisa McCrink, Wendy Collins, Suzi Wong-Swint, and Karren Gratt. Every year these folks meet and plan the program, organize and stage the training sessions, and invest lots of time attending to the questions of the volunteers.

Jennifer Vanderhoof, from King County Water and Land Resources Division, Science Section, is the program's technical lead and also writes these annual reports.

Finally, we would like to thank those who partially sponsored our funding: Lake Washington/Cedar/ Sammamish Watershed (WRIA 8) Forum through a King Conservation District grant.

Table of Contents

List of Tables

List of Figures

Introduction

The Salmon Watcher Program is a volunteer program that originated in 1996 and whose purpose is to record observations of adult fall-spawning salmonids. Volunteers are recruited and trained to identify and watch for spawning salmon throughout Water Resource Inventory Area 8 (WRIA 8), which includes the Lake Washington Watershed and some streams leading to Puget Sound (Figure 1). Regional agencies who participated in the Salmon Watcher Program along with King County during the 2011 season include the Bellevue Stream Team, the cities of Bothell, Kirkland, Issaquah, Redmond, Renton, Seattle, and Woodinville.

The Salmon Watcher Program was initiated to expand on current efforts undertaken by resource agencies (such as Washington Department of Fish and Wildlife) to document the distribution of spawning salmon in WRIA 8, including the Lake Washington Watershed. Basins that comprise the Lake Washington Watershed include Bear Creek, Cedar River, East Lake Washington, West Lake Sammamish, East Lake Sammamish, West Lake Sammamish, Issaquah Creek, and North Lake Washington (divided into the North Lake Washington tributaries and the Sammamish River tributaries). Other streams in WRIA 8 that were watched included Pipers, Venema, and Boeing creeks, all of which flow directly to Puget Sound.

Salmon Watcher volunteers annually collect information on the presence of fall-spawning salmonids, including Chinook, coho, sockeye, kokanee (resident form of sockeye), and chum salmon, as well as trout species. Data of this type become more important in the region as salmonid populations, in particular Puget Sound Chinook, are listed under the Endangered Species Act.

Because unpaid volunteers do this work, gathering a large volume of salmon presence data is accomplished with reduced agency resources. With current budget and time constraints of agency personnel, much of the data collected in this effort would not be collected otherwise. The Watershed's residents can become involved and educated at the same time, and this involvement enhances their appreciation for the resource and increases the likelihood they will implement salmon-friendly practices in daily life. Further, interactions with agency personnel foster positive relationships between the public and government agencies.

In addition to summaries of fish observed during the fall season, this 2011 report contains information and some statistics about the volunteers. It should be noted that this report summarizes data collected only by Salmon Watcher volunteers, and it is therefore in no way intended to be an exhaustive report of fish distribution in WRIA 8. Other fish surveys are conducted annually by county, state, city, and federal agencies and non-profit organizations. For example, surveys have been conducted by County staff to look specifically for kokanee and Chinook; the results of these surveys are reported separately and are not included here.

Figure 1. Basins and sites surveyed for the 2011 Salmon Watcher Program
(see http://your.kingcounty.gpv/dnrp/library/water-and-land/salmon/salmonwatcher/2011/1-surveyed_basins_2011.pdf).

Methods

Volunteers were recruited during late summer and early fall of 2011 to observe fish in streams throughout the Lake Washington Watershed[1] and other WRIA 8 streams. The 113 volunteers who surveyed in the project area, plus 3 watchers who observed outside the project area, are listed in Table 1 (totals: 116 individuals, pairs, or groups totaling 135 people).

Table 1. Volunteer observers for the 2011 Salmon Watcher Program.

Ann Aagaard	Preston Glidden	David L. Reitz
Staci Adman	Doug Greaves	Larry Reymann
Marisol Asselta	Ron Green	David Richardson
Russ Atkins	Faye Haas	Gail Robertson
Kathleen Auld	Rowena Hall	Shirley & Isaac Rowe
Danielle Bannier	Jeanne Hannah	Kathleen Ryan
Ed Barnes	Tom & Christine Harper	Wayne & Jody Sagawa
Cathleen Barry	Kate Harrington	Ed Schein
Judith Barry	Katie Hart	Bernice & Joe Schick
Mark Behringer	Cameron Haslam	David Schuh
Terri Benson	Evelyn Heath	Kiyomi, Allan, & Jesse Sharp
Marilyn & Tom Blue	Ruth Ihlenfeldt	Jim and Sue Shellooe
Mamie & Chuck Bolender	Pam Kelly	Patty & Dave Shelton
Janet Broadus	Cheri & Stewart Kirchmeier	Henry Shirinyan
Terry Bukowski	Bob Klee	Pamela Silimperi
Joe Carrol	Tatsu Komada	Neil Skilton
Kellene Collins	Janusz Komorowski	Ralph Smith
Gary & Alli Chevalier Conley	Tommy Kraft	Eric Soshea
Bridget & Margaret Cook	John Laible	John, Johnny, Becky Stephenson
Nancy Daar	Jim Laughlin	Mike Stults
James & Edna Dam	Mark & Jodi Linstead	Inge Theisen
Karen Dawson	Ginny Lodwig	Alexis Thurber
Megan DeSantis	Ken Mackey	Kay Tokuda
Chuck Dolan	Theresa Marshall	Gary Tribble
Nicola Donovan	Jim McRoberts	Terry Trimingham
Ken Dorsch	Dave Mickelson	Kent Tsang
Amelia Dumovic	Dana Miller	Laurie Tucker
Bridget DuRuz	Ethan Muhlestein	Mark & Janice Verburg
Ilya Elkin	Brian (Danny) Murray	Mary Vincent
Willie Elliot	Greta Nelson	Calvin Wang
Gary Emerson	Paul & Patty Olmstead	Leslie Waters
Mary Farley	Yoshiko Otonari	Andy Wickens
Dorothy Fischer	Tammy Parise	Mark Wilbert
Adrienne Fox	Betty Peltzer	David Wilbur
Heather Frankovic	Gary Pilawski	Jill Williams
Aileen Frederichs	John Poppe	Maggie Windus
Hon Cheung Fung	Ann Precup	Gaoyu Wong
Charlie Garrett	Katherine Quinn-Dumovic	Andy Wright
Charlie Gates	Grace Reamer	

[1] In this document, the Lake Washington Watershed means all waters draining through the Ballard Locks, and the subbasins of the Lake Washington Watershed are referred to as basins (e.g., Issaquah Creek Basin).

Volunteer Training

Agency staff held a total of 4 classroom training sessions in 2011. Approximately 95 people attended a training session, and of those, about 25 were returning volunteers from prior seasons. Returning volunteers are not required to attend a training every year; however, they are encouraged to attend a session every other year.

During training sessions, all volunteers were taught to identify adult spawning salmon species with a slide presentation, which was placed on King County's web site so volunteers could review it any time. During the training sessions, volunteers signed up for one or more sites to survey. They were given salmon identification materials, including color adult salmon identification cards and spawner timing charts. Volunteers were taught how to fill out and return data forms.

Some survey locations were prioritized by staff from each cooperating jurisdiction based on the need for information. However, sites were typically surveyed based on volunteer choice and availability. Volunteers were assigned to stream locations near their homes or customary walking places whenever possible. Volunteers were instructed to stay on public property (bridges, parks, etc.) unless they gained permission from the landowners to enter private property or the survey location was on their own property. Figure 1 shows all the sites watched by volunteers during the 2011 fall spawning season.

Data Collection

Surveys were conducted between September 3, 2011, to February 2, 2012, though most surveys began in September and were concluded in November or December (Table 2). Volunteers were asked to watch at their survey sites for at least 15 minutes, twice per week, and record any adult salmonids they observed. Actual survey frequency and duration varied greatly among volunteers.

Table 2. Number of surveys per month during 2011 Salmon Watcher season.

Month	Number of Surveys
September	209
October	950
November	763
December	434
January	17
February	2

Volunteers counted all live and dead adult salmonids they observed. If a volunteer surveyed the same site more than one time on the same day, the highest fish count was used; however, occasionally more than one volunteer surveyed the same site on a single day and their individual observations were used. Volunteers were asked to report only once those dead fish observed on more than one occasion and to note subsequent observations of the same fish in their comments. Juvenile fish were noted if present. Unidentified fish were counted and described when possible.

Volunteers also reported if they could tell whether the fish they saw had an adipose fin. Volunteers noted how many citizens they came into contact with during their streamside duties. They were also asked if they noticed anything at their site that needed to be reported and whether they reported it. All data were recorded onto field data forms (Appendix A), which were mailed to Salmon Watcher staff on a monthly basis.

Volunteers were asked to fill out a "First Fish ID" form the first time they saw a new species and to turn the forms in with their data. This form had several multiple-choice questions about various key characteristics for identifying fish. The purpose of this form is twofold: (1) to aid volunteers in identification by highlighting key characteristics, and (2) to aid Salmon Watcher staff in quality control.

Quality Assurance/Quality Control

Several means were used to assure that the data collected from volunteers were as accurate and consistent as possible during all phases of the program. Volunteers were provided with training by fish experts: data included in this report were collected either by returning volunteers or new volunteers who attended one of the training sessions for the 2011 season. Volunteers were provided laminated fish identification cards and a packet of training materials that included fish identification information. Duplicate as well as additional fish identification materials were placed on the Internet. Contact persons were made available to volunteers to answer questions and verify species identification when necessary; volunteers were encouraged to call upon these individuals if they were unsure of species identification.

Staff receiving volunteer data sheets screened them for anything requiring immediate attention such as an unusual fish sighting or potential water quality problems. If an unusual fish sighting was noticed on a data form, agency staff contacted the volunteer to further inquire about what characteristics were used to identify the fish. The First Fish ID forms were intended to provide another means by which fish identifications could be checked and verified.

Data were input into a SQL server database housed at King County. The database has been designed to catch anomalies in data entry, such as dates falling outside the sampling season. The database also poses questions when it detects that a count of a certain species has never been as high at that site in that month in previous years. These and other checks were built into the database software to increase accuracy of input data. Following data entry, the data were verified at least once by agency staff to ensure accuracy, as well as catch anything that might need addressing. The data reviewers are familiar with the basins and the fish runs typical for the basins.

Because of the limitations of data collected without the use of a rigorous scientific protocol (see Limitations of Volunteer Data, page 7), these data are intended to be used only to make preliminary evaluations of the distribution of spawning salmonids in the Lake Washington Watershed.

Results and Discussion

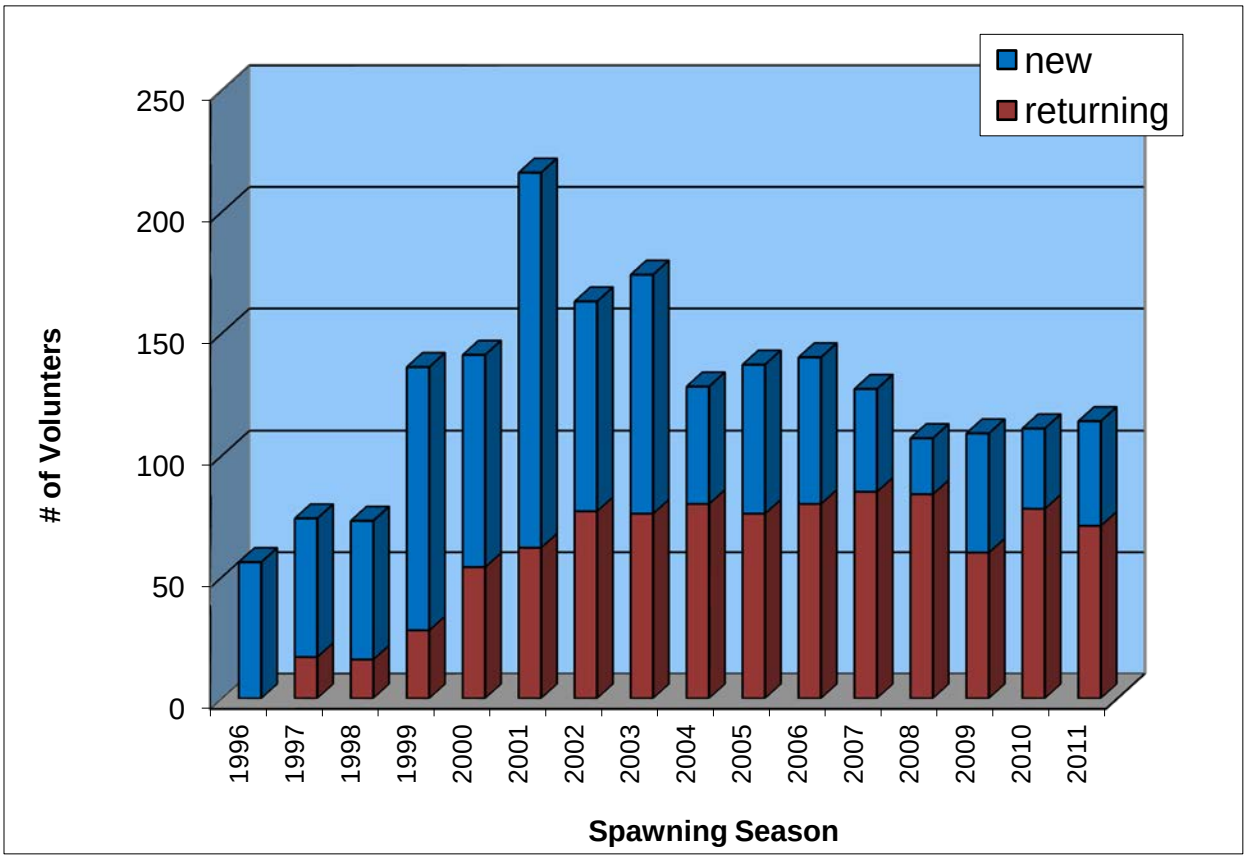
In 2011, a total of 114 sites on 50 streams were surveyed by 116 volunteers (Table 3).

Table 3. Numbers of streams, sites, and volunteers involved in the 2011 spawning season.

Area	# streams	# sites	# volunteers
Lake Washington Watershed	44	106	110
Other WRIA 8 streams	3	5	3
WRIA 9 streams	1	1	1
Vashon Island	2	2	2
Total	50	114	116

In 2011, 71 out of 113 volunteers (63 percent) watching in the official program area were returnees (Figure 2). Of the 71 returnees, 2 have surveyed every year since the program began.

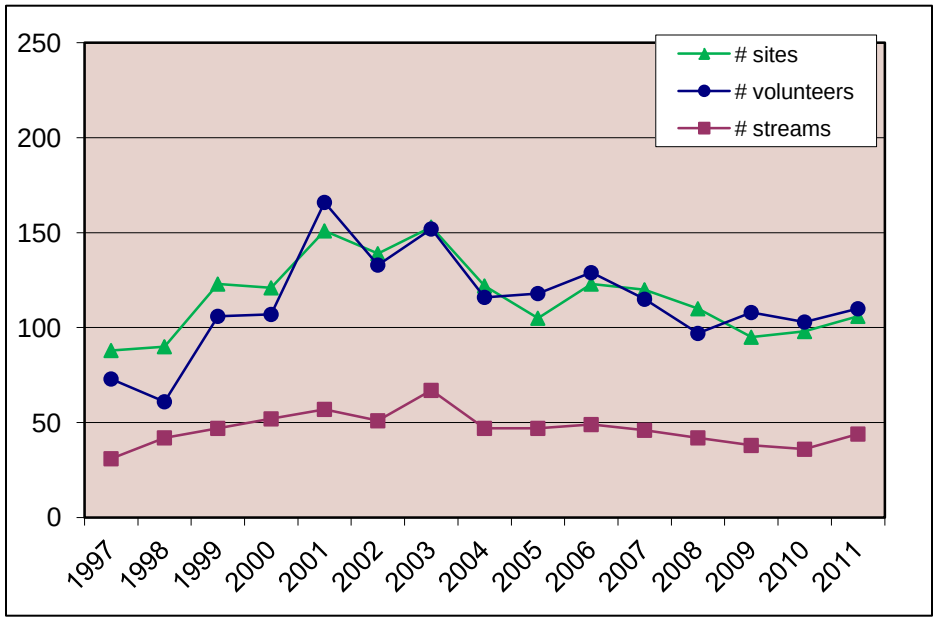
Figure 2. Total number of new and returning volunteers for each year of the Salmon Watcher Program.



Volunteer Activity

The trend in the number of volunteers participating in the Salmon Watcher Program has varied over the 16 years of the program (Figure 3; data for 1996 not cataloged). Many volunteers watch more than one site, and many sites have more than one volunteer watching at it. The trend since 2006 has been decreased volunteer participation, mostly with new recruits. Numbers of volunteers participating and numbers of sites and streams watched has remained relatively steady since 2004.

Figure 3. Number of volunteers (defined as an individual, pair, or group) watching in the Lake Washington Watershed from 1997[2] to 2011.



Contact with Citizens

Volunteers were asked to keep track of how many citizens they came into contact with during their time by the streams. Salmon Watcher volunteers spoke with at least 617citizens during the 2011 spawning season. Table 24 details the numbers of citizens who interacted with volunteers.

Table 4. Number of citizen contacts made by all Salmon Watcher volunteers in each of the surveyed basins.

Big Bear Creek	Cedar River	E. Lake Wash.	W. Lake Samm.	Issaquah Creek	N. Lake Wash.	Samm. River Tribs.	Puget Sound	Vashon
90	47	155	19	1	80	164	58	3

[2] See previous Salmon Watcher annual reports for details on yearly participation.

Time Spent by Volunteers

Salmon Watcher volunteers are asked to record the start and end times of each site visit. Those times are used to calculate the amount of time volunteers spend watching stream-side. Occasionally, some volunteers do not fill in that part of the data sheet. Additionally, some volunteers watched twice a day, and only one time period is included in these calculations. These factors result in an under-estimation of actual time volunteers watched for fish. Table 25 illustrates the approximate amount of time spent by volunteers in each basin. More than 766 hours were spent streamside by volunteers during the 2011 Salmon Watcher season.

Table 5. Number of hours spent by Salmon Watcher volunteers in each of the surveyed basins.

Big Bear Creek	Cedar River	E. Lake Wash.	W. Lake Samm.	Issaquah Creek	N. Lake Wash.	Samm. River Tribs.	Puget Sound	Vashon	Total
123.4	81.5	246.2	23.6	14.8	126.9	120.3	21.2	6.4	>766

Limitations of Volunteer Data

Several qualifications should be kept in mind when reviewing the data in this report and especially when using the data for any purpose other than describing fish presence.

Every year volunteers from previous years return and new volunteers enter the program who must learn to identify the different species of salmonids they might encounter in their assigned streams. (The number of returning volunteers has remained relatively consistent for the past 8 years at around 60 percent.) The level of expertise of the volunteers varies widely: some volunteers have past experience identifying fish through professional or school training, recreational fishing, or personal interest. Other volunteers learned to identify salmon for the first time from the Salmon Watcher training session.

Although training sessions are thorough, identification materials are provided, and technical experts are available for help with identification, some misidentifications will occur.

It is important to keep in mind that the absence of spawner sightings at a watched stream site (or in a stream) does not mean that spawning salmonids are not accessing that location or stream. It simply means that fish were not seen by the volunteer at the time of the survey. With very few exceptions, because most or all parameters (such as what sites were watched when, for how long, and by whom) are different for every stream surveyed from 1996 through 2011, comparisons of raw data likely would not yield valid information about changes in fish populations. Therefore, the best use for the fish data is in determining presence of fish and mapping fish distribution. For additional discussion on the limitations of volunteer data, please see previous reports (e.g., King County 2004).

Fish Observation Summaries

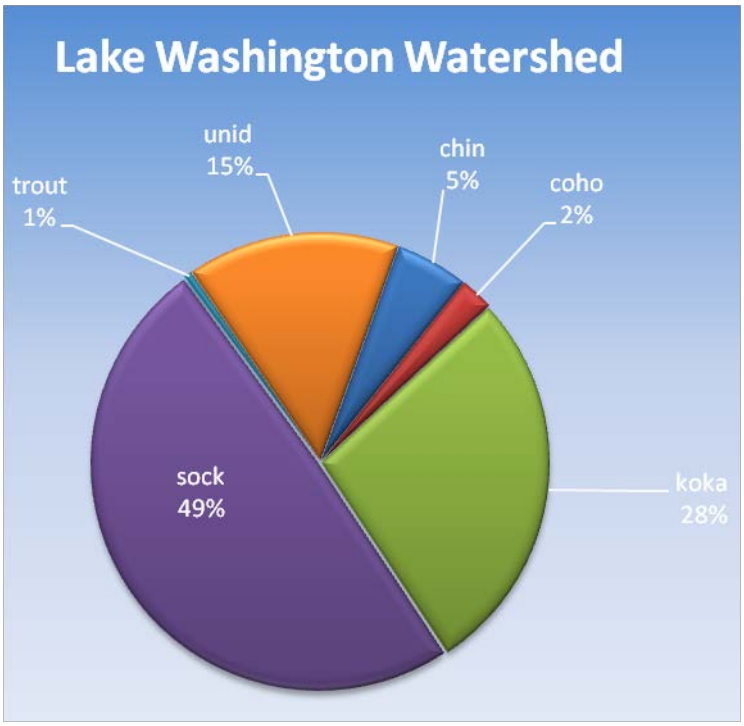
Salmon Watcher Program volunteers recorded observations of all salmonid fish located during their stationary surveys, including Chinook, coho, and sockeye salmon, kokanee, and trout (which may have been cutthroat or rainbow trout). The percentages of all fish observed (1,896), including unidentified fish, is depicted in Figure 4 for the Lake Washington Watershed.

Thirty-six fish were counted in WRIA 8 streams that drain directly to Puget Sound: 33 chum, 2 coho, and 1 fish of unidentified species. Nine coho were observed in Vashon streams. One coho and 1 unidentified fish were seen in Seattle's Longfellow Creek.

Of the 50 total streams surveyed in 2011, sockeye were found in 9 streams. Coho were found in 10 streams, Chinook in 11 streams, kokanee were reported in 6 streams, and trout were reported in 3 streams. Sockeye was the most abundant species counted by volunteers in the Lake Washington Watershed, followed by kokanee. Chum were observed in 3 streams draining to Puget Sound. Kokanee were reported in Mercer Slough for the first time by volunteers in 2011 – this marks an expansion to the range of kokanee salmon as reported by Salmon Watcher volunteers. Twenty-six streams had no adult salmonids reported.

If a volunteer was unable to positively identify what species a fish was, the fish was tallied as "unidentified" (reporting a fish as unidentified was preferable to misidentifying a species). Of the 1,943 total adult fish observed in the Lake Washington Watershed, other WRIA 8 streams, and other streams draining to Puget Sound in 2011, 288 were tallied as unidentified (15 percent). For more information, see the section called "Unidentified Species" below.

Figure 4. Percentage of total fish observed in 2011 by volunteers in the Lake Washington Watershed.



Chinook Salmon

Chinook were observed in 6 basins in the study area during the 2011 surveys (Figure 5). A total of 82 live fish and 16 carcasses were found in 11 streams throughout the Lake Washington Watershed. Streams in which Chinook were reported include (in order of most to least fish seen): Cottage Lake Creek (61), Issaquah Creek (9), Big Bear Creek (7), May Creek (7), North Creek (6), Cedar River Side Channel at Dorre Don (2), Peters Creek (2), Carey Creek (1), Cedar River (1), Little Bear Creek (1), and Mercer Slough (1).

Figure 5. Distribution of Chinook salmon in the program area based on Salmon Watcher observations.

See: http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2011/13-Chinook-distribution-map.pdf.

Sockeye Salmon

Sockeye were the most numerous fish counted by volunteers. Sockeye were observed in 4 basins (Figure 6). A total of 895 live fish and 39 carcasses were observed in 9 streams (in order of most to least fish seen): Cedar River (373), North Creek (250), Little Bear Creek (192), Big Bear Creek (67), Cedar River Side Channel at Dorre Don (27), May Creek (12), Taylor Creek (8), Coal Creek (4), and Cottage Lake Creek (1).

Figure 6. Distribution of sockeye salmon in the program area based on Salmon Watcher observations

See http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2011/14-sockeye-distribution-map.pdf.

Coho Salmon

Coho were observed in 6 Lake Washington Watershed basins (Figure 7). A total of 52 live coho and 5 carcasses were reported in 7 streams in the Lake Washington Watershed, 1 stream that drains to Puget Sound, and in 1 Vashon stream (in order of most to least fish seen): Sammamish River (18), North Creek (13), Judd Creek (9), Taylor Creek (8), Little Bear Creek (3), Boeing Creek (2), Issaquah Creek (1), May Creek (1), Peterson Creek (1), and Longfellow Creek (1).

Figure 7. Distribution of coho salmon in the program area based on Salmon Watcher observations.

See http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2011/15-coho-distribution-map.pdf.

Kokanee

Kokanee were observed in 4 Lake Washington Watershed basins (Figure 8). A total of 519 live fish and 4 carcasses were counted in 6 streams: Mercer Slough (1), Sammamish River (32), Little Bear Creek (55), Lewis Creek (57), May Creek (138), and North Creek (240). Kokanee were reported in Mercer Slough for the first time by volunteers in 2011.

Figure 8. Distribution of kokanee in the program area based on Salmon Watcher observations.

See http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2011/16-kokanee-distribution-map.pdf.

Chum

A total of 18 live chum and 15 carcasses were counted in 3 streams: In Pipers Creek, 18 live fish and 5 dead fish were counted, in Venema Creek, 9 dead chum were observed, and in Boeing Creek, 1 carcass was reported.

Unidentified Species

Fish of unidentified species were observed in 15 streams in 6 basins in the Lake Washington Watershed and in 2 streams that drain to Puget Sound: 197 live fish and 91 carcasses were unidentifiable. The number of fish that went unidentified was approximately 14.8 percent of fish reported.

Trout

Ten live trout (not identified to species) were reported in 3 creeks in the Lake Washington Watershed in 2011.

Marked Fish and Juvenile Fish

On the data forms (Appendix A), one column asked the volunteers to note the "# of fish without adipose." Hatcheries in the Lake Washington Watershed remove the adipose fins of Chinook and coho before they are released into the stream. Volunteers were instructed to focus on species identification first and foremost and only try to report on adipose fin clips when possible. Most volunteers did not fill in this column, or sometimes they noted they could not tell. Generally, water clarity must be excellent and the fish must be close and somewhat still in order to determine the presence of an adipose fin on a live fish.

No sockeye have their adipose fins clipped. However, volunteers reported 5 sockeye without adipose fins (Table 26). Because sockeye are too small to have their adipose fins clipped when they are released from hatcheries, their adipose fins remain intact. Therefore, if sockeye are reported with missing adipose fins, either the fish are sockeye with adipose fins that were difficult to see in the stream, or the fish were another species such as coho who were missing their adipose fins. Because it is often hard to determine the presence of adipose fins, and because sockeye were the most abundant species in 2011, it is likely these fish were all sockeye with their adipose fins intact. The final number of sockeye reported as being clipped in 2011 was extremely low (0.5 percent of all sockeye).

Table 6. Number of adipose fin clips as reported by volunteer Salmon Watchers.

Stream	Chinook	coho	sockeye*	unid.	total
Cottage Lake Creek	21			1	22
Issaquah Creek	5	1			6
May Creek	2				2
North Creek			5		5
Peters Creek	2				2
Taylor Creek		2			2
Total	30	3	5	1	39

*See text for discussion about sockeye reported with adipose clips.

In some years, certain species of salmon are tagged (usually near the base of the dorsal fin) for scientific research when they enter the Ballard Locks. Fish tagged elsewhere may stray into the Lake Washington Watershed. It is also possible a fish was tagged when straying, then it returned to its birth stream in the Lake Washington Watershed. Volunteers are asked to record when they see tagged fish, and they are asked to notify a staff member. In 2011, 200 Chinook were tagged at the Locks; however, no tagged fish were observed by volunteers.

Volunteers made note of 185 fry and/or juvenile fish in a total of 24 streams and 1 Lake Washington beach site in 8 basins.

Basin Summary

For the 2011 spawning season, Chinook were reported in the greatest numbers in Issaquah Creek Basin (Table 7). Sockeye were reported in the largest numbers in the Sammamish River Tributaries, followed by the Cedar River Basin. The most kokanee were observed in North Creek (Sammamish River Tributaries) and May Creek (East Lake Washington Basin). Coho were seen in the most number of basins.

Table 7. Species enumerated within surveyed basins during the 2011 Salmon Watcher season.

Basin	Chinook	Chum	Coho	Kokanee	Sockeye	Trout	Unid.[1]	Basin Total
Big Bear Creek	68				68		4	**140**
Cedar River	3		9		408		128	**548**
East Lake Washington	8		1	139	16	4	2	**170**
West Lake Sammamish				57			4	**61**
East Lake Sammamish								**0**
Issaquah Creek	10		1					**11**
North Lake Washington Tribs.	2		18	32		6	98	**156**
Samm. River Tribs.	7		16	295	442		50	**810**
Middle Puget Sound - WRIA 8		33	2				1	**36**
Central Puget Sound - WRIA 9			9					**9**
Vashon Island			1				1	**2**
Species Total	**98**	**33**	**57**	**523**	**934**	**10**	**288**	**1943**

[1] Unidentified species.

The following sections of the report present detailed results for each basin in the program. Data include stream name and state stream numbers as assigned in the "stream catalog" by Williams et al. (1975), corresponding stream sites (with Site ID and river mile), dates of surveys, number of surveys, number of surveyors, and number of each species observed. The unique Site ID numbers that correspond with each survey site are used to distinguish the sites. A site, with its unique ID number, will always have the same data associated with it, regardless of refined river mile (RM) designations. River mile designations are generally derived from the stream catalog combined with measurements made using King County's Geographic Information System. Additionally, a designated site may vary a few feet from year to year: (1) if a volunteer watches on the upstream side of a bridge versus the downstream side, (2) if a new volunteer happens to watch a few yards from where a previous watcher observed, (3) if a volunteer moves a few feet to observe in an area of better spawning habitat or visibility, or (4) if restoration and/or overgrown vegetation improves or obstructs the view.

Maps are presented for each basin in the program area and depict observations of sockeye, coho, Chinook, kokanee, and chum identified during the survey. The streams surveyed in the Lake Washington Watershed were grouped into the following basins: Big Bear Creek, Cedar River, East Lake Washington, East and West Lake Sammamish, Issaquah Creek, and North Lake Washington (split into North Lake Washington tributaries and Sammamish River tributaries). Salmonids were observed in all basins surveyed in 2011 except East Lake Sammamish. Trout and unidentified species were not mapped.

Big Bear Creek Basin

Volunteers surveyed 18 sites in 9 streams in the Big Bear Creek Basin in 2011 (Figure 1). From 1 to 7 sites were watched per stream, and the total number of surveys ranged from 5 to 44 per site (Table 8). Most sites were monitored by 1 or 2 volunteers, and one site had 5 volunteers.

Table 8. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers[3], and years the sites were watched for each stream surveyed in the Big Bear Creek Basin relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Big Bear Creek	080105	65	2.7	10/2 - 11/9	18	2	1997-2000, 2002-2011
		89	6.0	9/3 - 11/27	29	1	1998- 2011
		647	7.2	9/24 - 12/19	25	1	2009, 2011
		136	7.4	10/6 - 12/19	25	2	1998-2011
		503	7.85	10/2 - 12/26	30	1	2002, 2004-2007, 2009-2011
		106	10.0	9/29 - 12/4	16	2	1998, 2006-2008, 2010, 2011
		466	11.6	9/24 - 11/12	5	1	2001, 2006-2008, 2010, 2011
Unnamed Trib. to Bear Cr.	-	90	0.2	10/1 - 11/27	20	1	1998-2011
Trib. 0135 to Bear	080135	169	0.2	10/1 - 12/4	14	1	2011
Cold Creek	-	465	0.8	9/21 - 12/28	14	1	2001-2004, 2011
Cottage Lake Cr.	080122	660	2.2	9/24 - 1/1/12	44	1	2011
		50	2.5	9/19 - 11/24	43	5	1997, 1999-2011
		661	2.8	9/28 - 11/29	23	1	2011
		395	2.9	9/25 - 12/22	31	2	2002, 2003, 2008-2011
Trib. 0127 to Cottage Lake Cr.	080127	168	0.14	10/15 - 12/10	10	1	1999, 2000, 2002, 2004, 2007, 2009, 2011
Daniel's Creek	080122	620	0.5	10/4 - 12/10	14	2	2011
Mackey Creek	080115	15	0.5	9/25 - 11/25	12	2	1997-2003,2006, 2011
Struve Creek	080131	62	0.8	10/5 - 11/29	15	1	2011

Salmonids were found in 2 of the 9 streams observed in Big Bear Creek Basin (Table 9): Bear Creek and Cottage Lake Creek. Chinook and sockeye were all seen in Bear Creek and its primary tributary, Cottage Lake Creek. No coho were observed in this basin in 2011.

[3] "Volunteer," when used in this context, is defined as an individual, pair, or group of people who observed a stream site for adult spawning salmonids at a given time on a given date.

Table 9. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed in the Big Bear Creek Basin for the 2011 spawning season.

Stream	Site ID	RM	Chinook	Sockeye	Unid.
Big Bear Creek	65	2.7	5 (10/2 - 10/27)	52 (10/4 - 11/1)	-
	89	6.0	-	-	-
	647	7.2	2 (10/12 - 10/24)	14 (9/28 - 10/26)	1 (10/10)
	136	7.4	-	1 (10/12)	1 (10/21)
	503	7.85	-	-	-
	106	10.0	-	-	-
	466	11.6	-	-	-
Trib. to Bear	90	0.2	-	-	-
Trib. 0135 to Bear	169	0.2	-	-	-
Cold Creek	465	0.8	-	-	-
Cottage Lake Cr.	660	2.2	12 (10/7 - 11/14)	-	1 (10/27)
	50	2.5	7 (10/6 - 10/19)	-	-
	661	2.8	38 (9/28 - 10/18)	-	-
	395	2.9	4 (10/6)	1 (10/23)	1 (10/4)
Trib. 0127 to Cottage Lake Cr.	168	0.14	-	-	-
Daniel's Creek	620	0.5	-	-	-
Mackey Creek	15	0.5	-	-	-
Struve Creek	62	0.8	-	-	-

Cedar River Basin

Volunteers surveyed 12 sites in 5 streams in the Cedar River Basin in 2011 (Figure 2). From 1 to 5 sites were watched per stream, and the total number of surveys ranged from 3 to 41 per site (Table 7). Most sites were monitored by 1 or 2 volunteers, and one site had 3 volunteers.

Table 10. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed in the Cedar River Basin relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Cedar River	080299	199	1.0	9/29 - 12/15	11	1	1999, 2006, 2009-2011
		204	1.8	10/8 -10/22	3	1	1999, 2000-2002, 2010, 2011
		205	2.9	10/8 - 12/15	10	2	1999, 2001, 2005-2008, 2011
		207	5.3	9/21 - 12/19	33	1	1999-2003,2005-2007, 2011
(Cavanaugh Pond)		139	6.4	10/20 - 1/21/12	17	1	1997-2011
C.R. Side Channel	-	557	0.15	9/23 - 12/9	26	2	2003, 2005-2011
Madsen Creek	080305	16	0.9	10/6 - 12/17	10	1	1997, 1999, 2002, 2010, 2011
Peterson Creek	080328	25	1.5	9/30 - 12/31	20	1	2000,2002, 2011
Rock Creek	080338	410	0.2	10/3 - 12/13	17	1	2001-2011
Taylor Creek	080320	588	0.37	9/27 - 12/17	41	3	2004-2011
		596	0.5	10/3 - 12/13	17	1	2004-2011
		655	0.6	9/23 - 12/17	25	2	2010, 2011

Chinook were only observed in the Cedar River, and only 3 total were seen (Table 8). Sockeye were observed in only the Cedar River and Taylor Creek. Coho were reported in Taylor Creek as well as Peterson Creek.

Table 11. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed in the Cedar River Basin for the 2011 spawning season.

Stream	Site ID	RM	Chinook	Coho	Sockeye	Unidentified
Cedar River	199	1.0	-	-	157 (10/13 - 11/13)	11 (11/9 - 12/9)
	204	1.8	-	-	7 (10/8 - 10/15)	-
	205	2.9	-	-	15 (10/8 - 10/15)	40 (10/20 - 12/15)
	207	5.3	1 (9/29)	-	88 (9/21 - 12/8)	66 (9/21 - 11/9)
(Cavanaugh Pond)	139	6.4	-	-	106 (11/13 -1/8/12)	1 (12/4)
C.R. Side Channel	557	0.15	2 (10/11)	-	27 (10/11 - 11/7)	3 (10/11 - 12/8)
Madsen Creek	16	0.9	-	-	-	-
Peterson Creek	25	1.5	-	1 (12/31)	-	1 (11/25)
Rock Creek	410	0.2	-	-	-	-
Taylor Creek	588	0.37	-	4 (11/1 - 11/28)	3 (11/7)	3 (10/7 - 10/11)
	596	0.5	-	-	-	-
	655	0.6	-	4 (11/21 - 12/8)	5 (10/19 - 11/17)	3 (10/24 - 11/25)

East Lake Washington Basin

Volunteers surveyed 24 sites in 9 streams and 1 beach site in the East Lake Washington Basin in 2011 (Figure 2). From 1 to 7 sites were watched per stream, and the total number of surveys ranged from 3 to 94 per site (Table 9). Each site was monitored by 1 to 5 volunteers.

Table 12. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed in the East Lake Washington Basin relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Coal Creek	080268	656	1.4	9/18 - 12/31	39	1	2011
		443	1.7	9/22 - 12/23	20	1	2001, 2011
		441	2.0	9/22 - 12/30	27	1	2001-2008, 2010, 2011
		442	2.1	9/20 - 12/30	36	3	2001-2011
East Creek	-	514	0.2	9/22 - 11/30	17	1	2003, 2005-2011
Forbes Creek	080242	100	0.03	9/29 - 11/29	18	1	1998, 2000-2002, 2007, 2010, 2011
		654	0.26	9/16 - 9/28	3	1	2011
Goff Creek	080285	447	0.1	9/25 - 11/26	6	2	2003-2007, 2010, 2011
Kelsey Creek	080259	13	2.0	9/20 - 2/1/12	79	5	1997-2011
		124	2.4	9/19 - 12/31	23	1	1997-2011
		657	2.8	9/18 - 12/11	19	2	2011
		120	3.0	9/17 - 12/12	33	2	1997-2011
		216	4.5	9/16 - 11/17	17	1	1999, 2001, 2002, 2004, 2007-2009, 2011
		586	4.9	10/1 - 10/21	8	1	2004-2011
		45	5.0	9/17 - 12/17	39	2	1997-2000, 2003, 2006-2011
Lake Wa. Beach	080028	130	32.4	10/8 - 12/28	20	1	1998, 2007-2011
May Creek	080282	208	0.2	9/24 - 12/27	25	1	2001-2011
		432	0.5	9/24 - 12/27	23	1	2000, 2004-2011
Mercer Slough	080259	445	1.6	9/18 - 2/1/12	94	4	2001, 2003-2011
Richards Creek	080261	75	0.4	9/19 - 12/31	22	1	1998-2000, 2007-2011
		27	0.7	9/19 - 12/31	21	1	1997-2011
West Trib. Kelsey Cr.	080264	116	0.25	9/16 - 12/25	60	4	1998, 1999, 2001-2011
		325	0.7	10/3 - 12/21	28	1	1997, 2001-2007, 2009, 2011
		506	0.9	9/24 - 12/20	24	2	2002-2011

Salmonids were found in 4 of the 9 streams surveyed in 2011 (Table 10). Kokanee and Chinook were reported in May Creek and in Mercer Slough. Kokanee had never been previously reported in Mercer Slough by volunteers – this marks an expansion to the range of kokanee salmon as reported by Salmon Watcher volunteers. Sockeye were observed in only Coal and May creeks. A single coho was reported in May Creek. The only fish observed in Richards Creek were trout. No fish were observed in East, Forbes, Goff, Richards, or West Trib. Kelsey creeks or the one Lake Washington beach that was observed.

Table 13. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed in the East Lake Washington Basin for the 2011 spawning season.

Stream	Site ID	RM	Chinook	Coho	Kokanee	Sockeye	Unid.
Coal Creek	656	1.4	-	-	-	4 (10/4 - 11/12)	1 (12/18)
	443	1.7	-	-	-	-	-
	441	2.0	-	-	-	-	-
	442	2.1	-	-	-	-	-
East Creek	514	0.2	-	-	-	-	-
Forbes Creek	100	0.03	-	-	-	-	-
	654	0.26	-	-	-	-	-
Goff Creek	447	0.1	-	-	-	-	-
Kelsey Creek	13	2.0	-	-	-	-	-
	124*	2.4	-	-	-	-	1 (12/29)
	657	2.8	-	-	-	-	-
	120	3.0	-	-	-	-	-
	216	4.5	-	-	-	-	-
	586	4.9	-	-	-	-	-
	45	5.0	-	-	-	-	-
Lake Wa. Beach	130	32.4	-	-	-	-	-
May Creek	208	0.2	1 (10/4)	-	98 (11/8 - 11/17)	10 (10/30 - 11/17)	-
	432	0.5	6 (10/4 - 10/6)	1 (12/19)	40 (11/8 - 12/12)	2 (12/1)	-
Mercer Slough	445	1.6	1 (10/23)	-	1 (11/20)	-	-
Richards Creek	75	0.4	-	-	-	-	-
	27*	0.7	-	-	-	-	-
West Trib. Kelsey Cr.	116	0.25	-	-	-	-	-
	325	0.7	-	-	-	-	-
	506	0.9	-	-	-	-	-

*Trout observed at this location.

East Lake Sammamish Basin

One volunteers surveyed 1 site on Ebright Creek in the West Lake Sammamish Basin (Table 11) and viewed the site only 6 times.

Table 14. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed in the East Lake Sammamish Basin relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Ebright Creek	080149	664	1.1	11/15 - 12/22	6	1	2011

No fish were reported in Ebright Creek in 2011.

West Lake Sammamish Basin

Volunteers surveyed 4 sites in 2 streams in the West Lake Sammamish Basin in 2011 (Table 12).

Table 15. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed in the West Lake Sammamish Basin relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Lewis Creek	080162	327	0.05	9/23 -12/31	41	3	1997, 2001-2009, 2011
		598	0.37	10/12 - 12/31	31	1	2004, 2005-2009, 2011
		283	0.5	9/23 -12/31	22	2	1999, 2001-2009, 2011
Vasa Creek	080156	641	0.4	10/7 - 12/31	22	1	2009-2011

Salmonids were found in 1 of the 2 streams surveyed (Table 13). Kokanee were observed in Lewis Creek, as were fish of unidentified species. No fish were reported in Vasa Creek in 2011 by volunteers.

Table 16. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed in the West Lake Sammamish Basin for the 2011 spawning season.

Stream	Site ID	RM	Kokanee	Unidentified
Lewis Creek	327	0.05	20 (11/12 - 12/2)	1 (11/18)
	598	0.37	34 (11/12 -11/20)	3 (12/11)
	283	0.5	3 (11/13 - 11/22)	-
Vasa Creek	641	0.4	-	-

Issaquah Creek Basin

Volunteers surveyed 4 sites in 3 streams in Issaquah Creek Basin in 2011 (Figure 2). The total number of surveys ranged from 3 to 33 per site (Table 14). Each site was monitored by 1 or 2 volunteers.

Table 17. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed in the Issaquah Creek Basin relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Carey Creek	080218	635	1.7	9/4 - 12/31	33	2	2007-2011
Issaquah Creek	080178	662	3.43	9/25 -9/29	3	1	2011
		663	5.3	10/6 -11/13	13	1	2011
North Fork Issaquah Cr.	080181	579	2.0	11/10 - 12/22	7	1	2011

In 2011, a single Chinook was reported in Carey Creek (Table 15). Chinook were also seen in Issaquah Creek as was a single coho. No fish were observed in North Fork Issaquah Creek.

Table 18. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed in the Issaquah Creek Basin for the 2011 spawning season.

Stream	Site ID	RM	Chinook	Coho	Sockeye	Unid.
Carey Creek	635	1.7	1 (11/18)	-	-	-
Issaquah Creek	662	3.43	4 (9/26 - 9/29)	-	-	-
	663	5.3	5 (10/9 -10/27)	1 (11/8)	-	-
North Fork Issaquah Cr.	579	2.0	-	-	-	-

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North Lake Washington Tributaries

The North Lake Washington Tributaries are those streams flowing into the north end of Lake Washington (e.g., McAleer and Thornton creeks, the Sammamish River). Volunteers surveyed 22 sites in 7 streams in 2011 (Figure 2). From 1 to 7 sites were watched per stream, and the total number of surveys ranged from 3 to 34 per site (Table 19). Sites were monitored by 1 or 2 volunteers.

Table 19. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed in the North Lake Washington Tributaries relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Juanita Creek	080230	389	0	9/26 - 11/28	16	1	2000,2001, 2004-2007, 2011
		411	0.7	10/3 - 12/22	34	2	2000, 2004-2009, 2011
McAleer Creek	080049	498	0.79	10/11 -10/29	3	1	2001-2008, 2011
		266	0.8	11/9 - 11/28	3	1	1999- 2008, 2011
Peters Creek	080104	47	0	10/10 - 11/30	19	1	1998, 2003, 2009-2011
		510	0.6	9/17 - 1/2/12	33	1	2011
Sammamish River	080057	273	2.4	10/5 - 11/30	17	2	1999, 2003, 2011
		269	3.3	9/23 - 10/30	9	1	2009, 2011
		587	3.9	9/25 - 12/23	30	2	2006, 2011
		66	5	10/1 - 11/19	12	1	1998, 2002-2004, 2010, 2011
		270	8.7	10/1 - 10/16	2	1	1999,2000, 2011
		454	11.4	10/6 - 12/31	15	2	2002,2003, 2011
		271	12.5	10/6 - 12/23	20	1	1997,1999,2001-2004,2007,2009-2011
S. Fk. Thornton Cr.	080033	191	0.2	11/20 - 12/16	6	1	1999,2000,2006,2007, 2011
		526	0.8	10/8 - 12/29	16	1	2002, 2011
		527	1.15	10/1 - 12/21	33	2	2002-2011
Thornton Creek	080030	183	0.1	10/6 - 12/23	28	2	1997, 2000-2011
		186	0.9	10/14 - 12/20	16	1	1997, 1999-2002, 2006-2008, 2010, 2011
		386	1.1	10/14 - 12/20	16	1	2002, 2005, 2007, 2008, 2010, 2011
		606	1.22	10/6 - 12/19	16	1	2010, 2011
		24	1.3	10/10 -12/18	13	1	2009-2011
Willow Creek	080102	649	0.3	9/17 - 1/2/12	33	1	2010, 2011

Salmonids were found in 3 of the 7 streams surveyed in the North Lake Washington Tributaries (Table 20). As with 2009 and 2010, Chinook were observed in only Peters Creek in this subbasin. Kokanee and coho were both reported in only the Sammamish River. No salmonids were seen in Thornton Creek, South Fork Thornton Creek, Willow Creek or McAleer Creek. No sockeye were reported in this basin in 2011.

Table 20. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed in the North Lake Washington Tributaries for the 2011 spawning season.

Stream	Site ID	RM	Chinook	Coho	Kokanee	Unid.
Juanita Creek	389	0	-	-	-	1 (10/31)
	411	0.7	-	-	-	-
McAleer Creek	498	0.79	-	-	-	-
	266	0.8	-	-	-	-
Peters Creek	47	0	2 (10/16)	-	-	1 (11/2)
	510	0.6	-	-	-	-
Sammamish River	273	2.4	-	-	-	14 (10/5 - 11/18)
	269	3.3	-	-	-	-
	587*	3.9	-	18 (10/4 - 12/12)	-	56 (9/25 - 12/8)
	66	5	-	-	-	-
	270	8.7	-	-	-	3 (10/16)
	454	11.4	-	-	32 (12/3 - 12/17)	23 (11/12 - 12/10)
	271	12.5	-	-	-	-
South Fk. Thornton Creek	191	0.2	-	-	-	-
	526	0.8	-	-	-	-
	527	1.15	-	-	-	-
Thornton Creek	183	0.1	-	-	-	-
	186	0.9	-	-	-	-
	386	1.1	-	-	-	-
	606	1.22	-	-	-	-
	24	1.3	-	-	-	-
Willow Creek	649	0.3	-	-	-	-

*Trout also observed at this location (6 total).

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Sammamish River Tributaries

The Sammamish River Tributaries are those streams flowing into the Sammamish River from waters originating in Snohomish County (Little Bear, North, and Swamp creeks; Big Bear Creek is discussed separately above). Volunteers surveyed 21 sites on 6 Sammamish River tributaries in 2011 (Figure 2). The total number of surveys ranged from 1 to 50 per site (Table 21). Each site was monitored by from 1 to 3 volunteers.

Table 21. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed in the Sammamish River Tributaries relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Filbert Creek	-	543	0.4	10/7	1	1	2003, 2011
Junco Creek	-	542	0.3	10/7 - 12/29	27	1	2007, 2011
Little Bear Creek	080080	114	0	9/23 - 12/23	38	2	1999, 2001, 2002, 2005-2011
		175	0.3	10/3	1	1	1997, 2000, 2002, 2006-2011
		311	0.4	9/28 - 12/18	8	2	1997, 2001, 2004, 2010, 2011
		312	1.5	9/25 - 12/17	35	3	1997, 2002, 2003, 2010, 2011
		176	1.6	9/27 - 11/5	15	2	1997, 2000-2007, 2009-2011
		651	1.65	9/27 - 12/5	16	2	2010, 2011
		14	2.1	9/30 - 11/1	13	1	1999, 2000, 2002-2004, 2006-2011
Little Swamp Cr.	080060	505	0.24	10/2 - 11/30	19	1	2002-2008, 2011
North Creek	080070	112	0.9	10/7 - 12/19	11	1	1998-2011
		57	0.95	9/29 - 12/23	50	3	1998, 2001, 2004-2011
		408	1.05	10/7 - 12/19	11	1	2000-2009, 2011
		625	1.7	10/12 - 12/29	27	1	2007, 2008, 2011
		255	1.8	9/23 - 9/29	2	1	1999, 2000-2004, 2006, 2007, 2009-2011
		425	2.6	9/17 - 12/23	20	2	2006, 2008-2011
		254	2.8	9/23 - 11/29	18	1	2004, 2007, 2009, 2011
		253	3	9/26 - 12/19	49	2	1997, 1999-2001, 2006-2011
		23	3.1	10/2 - 10/29	3	1	2007, 2011
		636	3.3	9/16 - 11/7	15	1	2007, 2010, 2011
Swamp Creek	080059	34	0.3	10/2 - 11/30	16	1	1997, 1999, 2000, 2002-2008, 2011

Fish were only seen in North and Little Bear creeks: Chinook, coho, kokanee, and sockeye were all reported in both streams (Table 22).

Table 22. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed in the Sammamish River Tributaries for the 2011 spawning season.

Stream	Site ID	RM	Chinook	Coho	Kokanee	Sockeye	Unid.
Filbert Creek	543	0.4	-	-	-	-	-
Junco Creek	542	0.3	-	-	-	-	-
Little Bear Creek	114	0		1 (10/4)	55 (11/14 - 11/30)	129 (10/4 - 11/18)	
	175	0.3	-	-	-	-	-
	311	0.4	-	-	-	-	-
	312	1.5	-	-	-	4 (10/16)	9 (10/16 - 10/24)
	176	1.6	-	2 (10/18)	-	20 (9/27 - 10/26)	-
	651	1.65	-	-	-	17 (10/8 - 10/16)	-
	14	2.1	1 (10/13)	-	-	22 (9/30 - 11/1)	1 (10/25)
Little Swamp Cr.	505	0.24	-	-	-	-	-
North Creek	112	0.9			1 (12/9)	-	1 (10/19)
	57	0.95	3 (10/1)	13 (11/15 - 12/5)	22 (11/5 - 12/11)	55 (9/30 - 12/5)	12 (9/30 - 12/11)
	408	1.05	-	-	1 (12/9)	-	-
	625	1.7	-	-	208 (11/15 - 12/7)	-	24 (10/15 - 12/13)
	255	1.8	-	-	-	-	-
	425	2.6	-	-	-	68 (10/29 - 12/18)	2 (9/20 - 10/10)
	254	2.8	-	-	-	30 (9/29 - 10/17)	
	253	3	-	-	8 (11/1 - 11/30)	91 (9/28 - 11/11)	1 (10/25)
	23	3.1	-	-	-	5 (10/2 - 10/29)	-
	636	3.3	3 (9/27 - 9/28)	-	-	1 (10/5)	-
Swamp Creek	34	0.3	-	-	-	-	-

Puget Sound Streams

Streams draining to Puget Sound that were surveyed during the 2011 Salmon Watcher season are both inside and outside WRIA 8 (Table 23). Those streams within WRIA 8 include Boeing Creek, Pipers Creek, and Venema Creek. Longfellow Creek, watched annually, is part of WRIA 9[4]. A total of 6 sites in 4 streams draining to Puget Sound were watched in 2011. All sites were monitored by 1 volunteer.

Table 23. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed in the Central Puget Sound relevant to the 2011 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Boeing Creek*	080017	436	0.1	10/10 - 12/29	7	1	2000-2011
Longfellow Creek	090360	179	0.8	11/4 - 12/30	9	1	1998-2011
Pipers Creek*	080023	70	0	10/31 - 12/26	12	1	1999-2005, 2007, 2008, 2010, 2011
		98	0.4	10/31 - 12/26	12	1	1998-2002, 2007-2011
		99	0.53	10/31 - 12/26	13	1	1999, 2002-2004,2008, 2011
Venema Creek*	-	383	0.02	10/7 - 12/16	21	1	2000, 2001, 2004-2011

*Streams within WRIA 8.

Adult salmon were seen in all four creeks (Table 24). Chum were observed in Boeing, Pipers, and Venema creeks. A single coho was reported in Longfellow creek, and a single chum and two coho were reported in Boeing Creek.

Table 24. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed in Central Puget Sound for the 2011 spawning season.

Stream	Site ID	RM	Chum	Coho	Unidentified
Boeing Creek	436	0.1	1 (11/10)	2 (11/26)	-
Longfellow Creek	179	0.8	-	1 (11/27)	1 (11/4)
Pipers Creek	70	0	13 (10/31 - 11/30)	-	1 (12/4)
	98	0.4	10 (11/25 - 12/15)	-	-
	99	0.53	-	-	-
Venema Creek	383	0.02	9 (11/9 - 12/3)	-	-

[4] Fauntleroy Creek, a WRIA 9 stream that drains to Puget Sound, is also watched by volunteers; however, survey methods are different from those of this program. See Appendix B for a summary of salmonid observations at Fauntleroy Creek in 2011.

Vashon Island

Volunteers surveyed 1 sites on Shinglemill Creek and 1 sites on Judd Creek on Vashon Island in 2011 (Figure 2). The total number of surveys ranged from 3 to 16 per site (Table 22).

Table 25. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers, and years the sites were watched for each stream surveyed on Vashon Island relevant to the 2009 spawning season.

Stream	Stream #	Site ID	RM	2011			Years Watched
				Survey Dates	# Surveys	# Vols.	
Judd Creek	150129	494	1.0	10/13 - 11/26	16	1	2007, 2011
Shinglemill Creek	150159	148	0.5	10/26 - 12/5	3	1	1998, 2001-2003, 2005, 2006, 2008, 2009, 2011

Nine coho were reported in Judd Creek (Table 26). No fish were observed in Shinglemill Creek.

Table 26. Site ID, RM, and fish counts (live and dead) with dates seen at each stream surveyed on Vashon Island for the 2011 spawning season.

Stream	Site ID	RM	Coho
Judd Creek	494	1.0	9 (10/29 - 11/26)
Shinglemill Creek	148	0.5	-

References

King County. 2004. 2003 Volunteer Salmon Watcher Program: Lake Washington Watershed and Vashon Island. 48pp. {Vanderhoof author}

Williams, R.W., R.M. Laramie, and J.J. Ames. 1975. A Catalog of Washington Streams and Salmon Utilization, Volume 1, Puget Sound. Washington Department of Fisheries, Olympia, WA.

Appendix A

Data Collection Form used in 2011

2011 datasheet looks like this:

Salmon Watcher - Monthly Data Collection Form

Month / Year _____ Email _____

Name _____ Phone _____

AFFIX LABEL HERE

Or write in Site ID# _____

1. Use Pencil.
2. Record ALL observation dates and times, even when you see Zero fish.
3. If you can't identify a fish, record it as UNID.
4. One species per line.

Did you see mussels or mussel shells at your site?

☐ Yes ☐ No

Date MM-DD	Start Time	End Time	# Citizens Talked With	1" - 6" Juvenile Fish (Y or N)	Species Name* Only write here if you see adult salmon	# Live Adult per species	# Dead Adult per species	Total Adult Fish Count (live + dead per species)	# of fish with no adipose fin ("clipped")	Did you encounter anything requiring attention? If so, did you notify anyone?	Comments? Tags? (redds present, notable weather)

*Key: COHO-Coho, CHIN-Chinook, SOCK-Sockeye, CHUM-Chum, KOKA-Kokanee, TROU-Rainbow or cutthroat trout, UNID-Unidentified

Please return form during the first week of the following month.
If you have any questions, call **Jennifer Vanderhoof** at **206-263-6533** or **Laurie Devereaux** at **425-452-5200**. Thank you so much!

This project is sponsored by the Cedar/Sammamish/Lake Washington Watershed Forum, King County Water and Land Resources Division, Cities of Bellevue, Bothell, Issaquah, Kirkland, Renton, Redmond, Seattle, and Woodinville.

Please do not write below this line

Data entered on _____ Initial _____. Data checked on _____ Initial _____. Datasheet #: _____.

Appendix B

Fauntleroy Creek Salmon Watch 2011 Summary

11-30-11

The first **three** coho spawners to come into Fauntleroy Creek this year were spotted by volunteer Jack Lawless and friends on Saturday morning, Nov. 19.

The last **two** spawners were seen by watcher Anne Samenfink on Saturday morning, Nov. 26. They were the first fish that Anne has seen in **10** years of watching.

All told, **eight** creek volunteers spotted **14** coho during the season, compared to **zero** last year. Approximately half the spawners were hatchery fish.

Watchers also noted:

- **Three** spawning pairs (location of their redds marked)
- **Three** coho carcasses (examined by volunteer biologist Steev Ward)
- **20** Alki Cooperative Preschool kids, plus chaperones, seeing two spawners on their Nov. 21 field trip.
- About **100** people checking out spawning activity from the fish-ladder viewpoint (SW Director and upper Fauntleroy Way SW, across from the ferry terminal). Note: The viewpoint is a treat to visit anytime but is especially interesting during spawning season (Halloween to Thanksgiving).

Local volunteers joined the county-wide Salmon Watch program in 2000. Since then, watchers have tallied **479** spawners.