
2015 Volunteer Salmon Watcher Program Annual Report: Lake Washington Watershed and other Puget Sound Streams

May 2016



King County

Department of Natural Resources and Parks
Water and Land Resources Division

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2015 Volunteer Salmon Watcher Program Annual Report: Lake Washington Watershed and other Puget Sound Streams

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

Submitted by:

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Department of
Natural Resources and Parks

Water and Land Resources Division

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Many thanks to all the dedicated volunteers for spending many hours in what is often cold and wet weather to collect the data that are in this report—some for the twentieth year in a row, and some years 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, by reporting potential stream blockages as well as occasionally 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 and their staff that support and participate in the program. Program partners are King County Water and Land Resources Division, Bellevue Stream Team, and the cities of Seattle, Bothell, Kirkland, Renton, and Issaquah, and the Friends of the Cedar River Watershed. Thanks (in no particular order) to Laurie Devereaux, Janet Geer, Gary Fink, Betsy Adams, Bill Malatinsky, Micah Bonkowski, Charlotte Spang, Dani Kendall, Kollin Higgins, Henry Daehnke, Wendy Collins, and Karren Gratt. Every year these folks meet and plan the program, organize and stage the training sessions, work behind the scenes providing database and graphics support, and invest lots of time attending to the volunteers.

Jennifer Vanderhoof, from King County Water and Land Resources Division, Science and Technical Support Section, is the program's technical lead.

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EXECUTIVE SUMMARY

The Salmon Watcher Program documents the distribution of spawning adult salmon throughout the greater Lake Washington Watershed via an extensive volunteer-based monitoring effort that engages local residents. In addition to promoting environmental stewardship among the Salmon Watcher volunteers, the data gathered can be used to inform how aquatic resources are managed for the protection of salmon and trout species and their habitat. This report presents methods and results for the 2015 spawning season (August 22, 2015, through January 1, 2016).

For the 2015 program, 86 volunteers surveyed 90 sites on 36 streams. Surveyed streams were located throughout the Lake Washington Watershed and also at a few sites at other streams and tributaries in Central Puget Sound (primarily Water Resources Inventory Area 8). Because volunteers collect the data in this program, the partnering jurisdictions are able to obtain more information from far more locations than would be possible through the use of paid staff, although there are some limitations. Data in this report indicate fish distributions in 2015 only in areas watched by volunteers in the Salmon Watcher Program. The 2015 data do not indicate reaches where fish are definitively absent, nor do the data provide a comprehensive survey of fish distributions in the Lake Washington Watershed. However, over the 20 years of the program, these data collectively provide substantial documentation about fish distributions.

This report describes the program methods, participation, and results. During the 2015 season, 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 (718, or 49 percent of all fish observed, and 54 percent of fish observed in the Lake Washington Watershed) and were seen in 5 out of 7 Lake Washington basins watched in 2015; (2) Chinook were also seen in 5 Lake Washington Watershed basins; (3) coho were seen in 4 Lake Washington basins and 2 small basins draining to Puget Sound; (4) kokanee were seen in 3 Lake Washington basins, though the observations in the Cedar River may have been another life history form of sockeye; and (5) chum were reported in 2 small basins draining to Puget Sound. In 2015, Chinook salmon were reported in two streams by volunteers for the first time: Swamp Creek and Tributary 0273 to Coal Creek. Additionally, coho were reported for the first time in Maplewood Creek by a volunteer.

The home page for the Salmon Watcher Program web site is here:

<http://www.kingcounty.gov/environment/animals-and-plants/salmon-and-trout/salmon-watchers.aspx>.

Annual reports and maps are linked to from this home page.

The Salmon Watcher Program was funded by a King County Flood Control District Cooperative Watershed Management Grant for the 2015 season.

1.0 INTRODUCTION

The Volunteer Salmon Watcher Program originated in 1996 with the purpose of recording observations of adult fall-spawning salmonids including Chinook, coho, sockeye, kokanee (resident form of sockeye), and chum salmon, as well as trout species. 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 2015 season include the Bellevue Stream Team, and the cities of Bothell, Kirkland, Issaquah, Renton, and Seattle.

Basins in the Lake Washington Watershed that were viewed by Salmon Watchers during the 2015 spawning season include Big Bear Creek, Cedar River, East Lake Washington, West Lake Washington, North Lake Washington (divided into the North Lake Washington tributaries and the Sammamish River tributaries), and West Lake Sammamish. Streams in WRIA 8 draining directly to Puget Sound that were watched included Boeing, Piper's, and Venema creeks. Additionally, Longfellow Creek is watched annually, as the stream is within the City of Seattle's jurisdiction and outreach and education purview. Because the City of Seattle is a program partner and because their volunteers attend a training session, follow the same data-collection protocols, and submit their observation data, their data are included in this report.

Because unpaid volunteers do this work, the program allows for gathering a large volume of salmon presence data with reduced agency resources. With current budget and time constraints of agency staff, much of the data collected in this effort would not be collected otherwise. Watershed 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. Residents were encouraged to attend a training even if they chose to not record data. Further, interactions with agency staff foster positive relationships between the public and government agencies.

In addition to summaries of fish observed during the fall season, this 2015 report contains information and some statistics about the volunteers, including some results of three surveys that were administered at the training and after the season ended. It should be noted that this report summarizes data collected only by Salmon Watcher volunteers, and it is not an exhaustive report of fish distribution in WRIA 8. Other fish surveys may be conducted on a regular or irregular basis by county, state, city, and federal agencies and non-profit organizations; results of these other surveys are not included here.

Figure 1. Basins and sites surveyed for the 2015 Salmon Watcher Program

http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2015/fig1_2015.pdf

2.0 METHODS

Program partners recruited volunteers during late summer and early fall of 2015 to observe fish in streams throughout the Lake Washington Watershed¹ and other WRIA 8 streams plus one stream within City of Seattle’s jurisdiction that is in WRIA 9. Some watershed residents attended training to learn about salmon, salmon identification, and stormwater issues but did not turn in data. The Salmon Watcher Program teamed up with Cedar River Salmon Journey for the second year to recruit people for a joint training held in Renton. The 86 volunteers who turned in data in 2015 are listed in Table 1 (totals: 81 individuals, pairs, or groups totaling 86 people).

Table 1. Volunteer observers for the 2015 Salmon Watcher Program who reported data.

Ann Aagaard	Pam Kelly	Kelly Rau
Staci Adman	Bob Klee	Cindy Reed
Ed Barnes	Janusz Komorowski	David L. Reitz
Hilary Barnes	Barbara Koran	Larry Reymann
Cathleen Barry	David Korthals	Adrienne Ross
Marilyn & Tom Blue	Tommy Kraft	Kathleen Ryan
Andy Bohlin	Leslie Kreher	Ed Schein
Janet Broadus	Maia Kreis	Martha Schindler
Greg Cassell	John Laible	Drew and Brett Seutter
Rob Christian	Jim Laughlin	Susan and Derek Seutter
Samantha Dammrose	Rich Leighton	Frank Shasky
Gary Emerson	Kristina Lowthian	Patty & Dave Shelton
Kelly Fine	Malorie Macklin	Lauren Soliday
Hon Cheung Fung	Connie McCleery	Krys Tierney
Daniel Garcia	Thomas McElroy	Tobias Tillemans
Laurie Gogic	Lynn McKay	Kay Tokuda
Doug Greaves	Jim McRoberts	Gary Tribble
Ron Green	Jeff Mendenhall	Terry Trimmingham
Erica Halford	Dana Miller	Mary Vincent
Jeanne Hannah	Greta Nelson	Andy W
Cameron Haslam	Henry Noble	Leslie Waters
Alicia & Andrew Hoare	Tammy Parise	Sean Wellander
Charles Johnson	Janis Pelekis	George Willard
Orlay Johnson	Mary Pelekis	Barb Williams
Jeremy Jones	Andrea Penski	Gregg Wilson
Robert Jones	Gary Pilawski	Karen Winter
Leah Juhle	Meredith Radella	Ramalee and Lucas Wulf

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).

2.1 Volunteer Training

Agency staff held a total of 4 regular classroom training sessions (held in Renton, Bellevue, Bothell, and Seattle) in 2015. Approximately 108 people attended one of the training sessions. Of those 108, approximately 35 were returning volunteers from prior seasons attending for a refresher. Returning volunteers are not required to attend a training session every year; however, they are encouraged to attend every other year. There were 43 returning volunteers who did not attend a workshop in 2015. Watershed residents were encouraged to attend a training session even if they did not intend to turn in data.

During all training sessions, all attendees were taught to identify adult spawning salmon species with a PowerPoint presentation, which was placed on King County's web site so volunteers could review it any time. Attendees were given salmon identification materials, including color adult salmon identification cards and spawner timing charts. And at all the training sessions with the exception of Renton (described below), everyone was taught how to fill out data forms, which are intended to be used in conjunction with online data entry. Volunteers were also given a brief tutorial for using the online database.

For the second consecutive year, the Salmon Watcher Program conducted the Renton training in partnership with the Cedar River Salmon Journey program staff. At this workshop, attendees were given the fish identification presentation like at all the other workshops. At the Renton training, attendees were additionally given an expanded talk on stormwater as well as an update of information specific to the Cedar River Watershed. Then, anyone signing up to become a Salmon Watcher was given a website address so they could watch a video presentation at home that covered the part of the workshops that include filling out data forms and entering data using the online system.

During the training sessions, most attendees signed up to watch at one or more sites. 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 a landowner to enter private property or the survey location was on their own property. Figure 1 (above) shows all the sites watched by volunteers during the 2015 fall spawning season.

2.2 Data Collection

Volunteers conducted surveys between August 22, 2015, and January 1, 2016, though most surveys began in September or October and were concluded in November or December (Table 2). It was recommended that volunteers 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 (see observation data tables for each basin in Basin Summary section below).

Table 2. Number of surveys per month during 2015 Salmon Watcher season.

Month	Number of Surveys
August	2
September	179
October	616
November	483
December	139
January	1

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 separate 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 recorded 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. Data were recorded on field data forms (Appendix A) and then subsequently entered into the online database by the volunteers. In 2015, four volunteers mailed in their forms to be input by Salmon Watcher staff.

2.3 Quality Assurance/Quality Control

Program staff used several means to assure that the data collected from volunteers and entered into the database 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 2015 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.

Data were input into a SQL server database hosted by King County. For the third year, almost all data were input into the online database by the volunteers and most data forms were not mailed to program staff for entry or checking. 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 numbers for a given species were higher than reported in previous years at the same site and in the same month. These and other checks were built into the database software to increase accuracy of input data.

If program staff noticed anything they considered unusual in terms of fish sightings, they contacted the volunteer to ascertain whether the data were input correctly.

Because of the limitations of data collected without the use of a rigorous scientific protocol (see “Data Limitations”), these data are intended to be used only to make preliminary assessments of the distribution of spawning salmonids in the observed streams.

3.0 RESULTS AND DISCUSSION

In 2015, a total of 90 sites on 36 streams were surveyed by 81 volunteer “units” (individuals, pairs, or groups) (Table 3).

Table 3. Numbers of streams, sites, and volunteers involved in the 2013 spawning season.

Area	# sites	# streams	# volunteers
Lake Washington Watershed	80	32	75
Puget Sound Streams	10	4	6
Total	90	36	81

In 2015, 63 out of 81 volunteer units² (78 percent) participating in the program area were returnees (Figure 2).

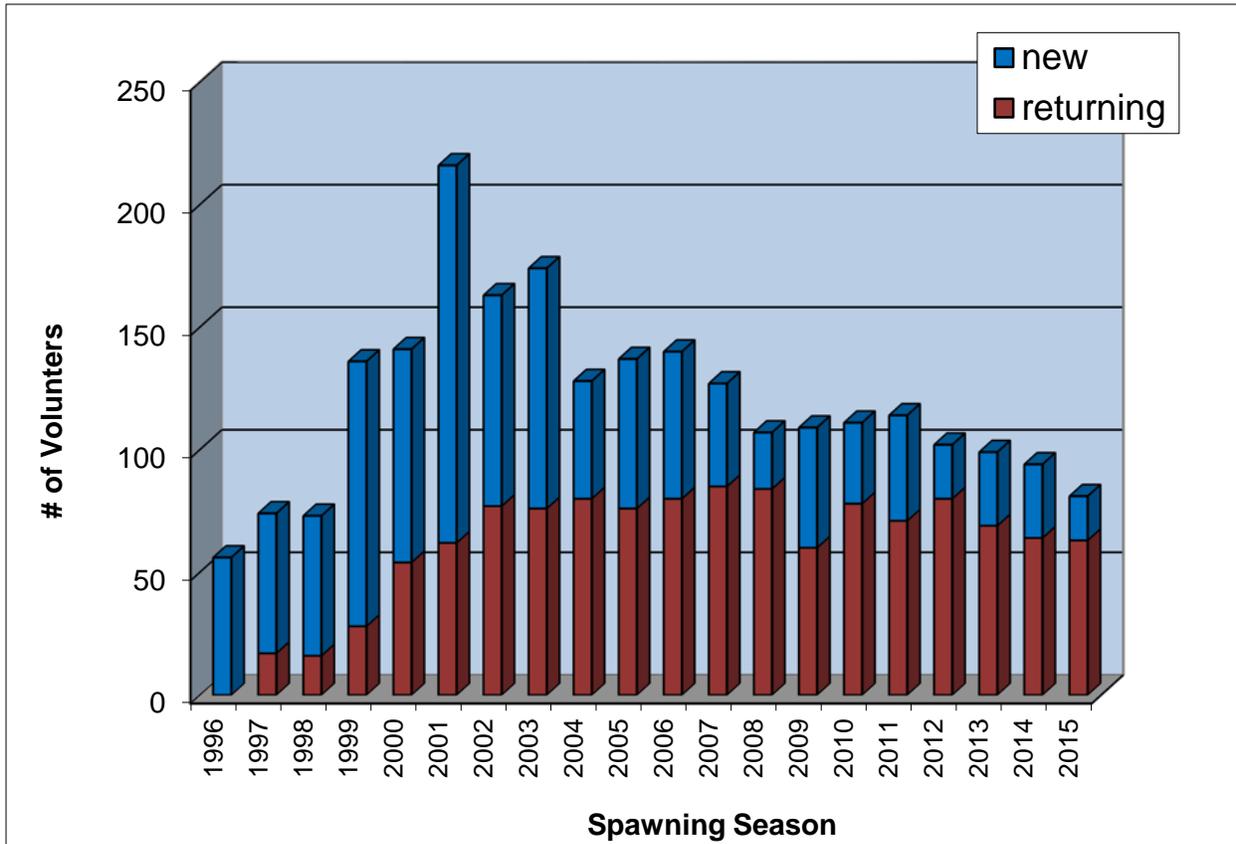


Figure 2. Total number of new and returning volunteers for each year of the Salmon Watcher Program.

² Volunteer “units” are individuals, pairs, or groups who watch together and submit reports as a single unit.

3.1.1 Volunteer Activity

The trend in the number of volunteers participating in the Salmon Watcher Program has varied over the 20 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 assigned volunteer. Both the numbers of volunteers participating and the numbers of sites and streams watched have slightly decreased since 2006 after peaking in the early 2000s.

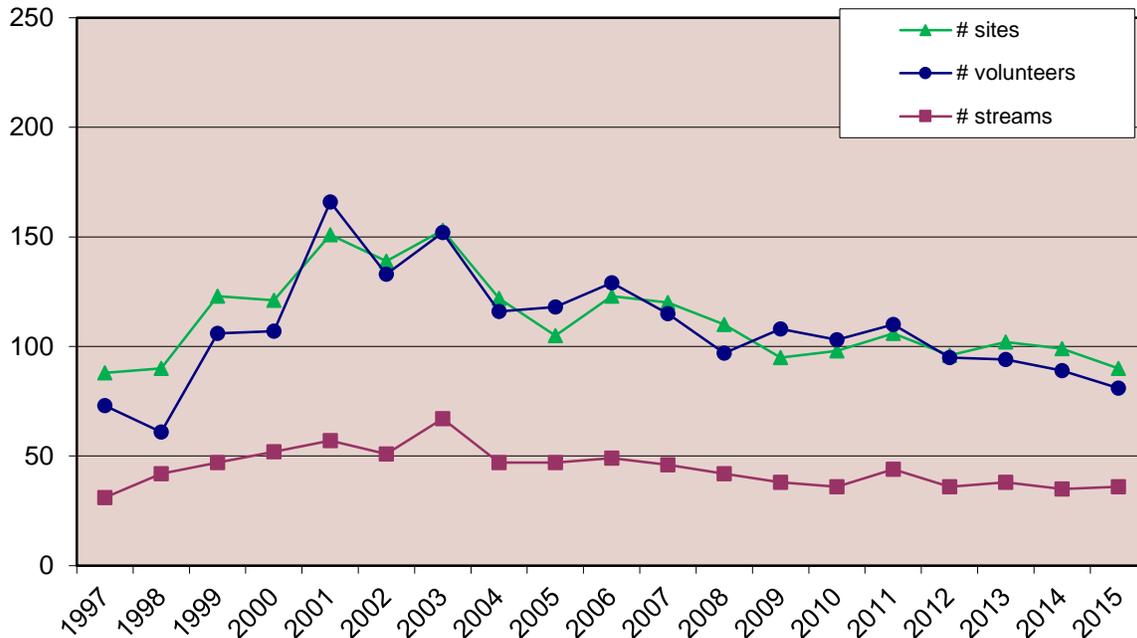


Figure 3. Number of sites, streams, and volunteer “units” (individuals, pairs, or groups) in the Lake Washington Watershed from 1997³ to 2015.

3.1.2 Contact with Residents

Volunteers were asked to keep track of how many people they came into contact with to engage in conversation about any topic related to the program during their time by the streams. Salmon Watcher volunteers spoke with at least 639 people during the 2015 spawning season. Table 4 details the numbers of people who interacted with volunteers.

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

Big Bear Creek	Cedar River	E. Lake Wash.	N. Lake Wash.	Samm. River Tribs.	W. Lake Samm.	W. Lake WA	Puget Sound	Total
61	37	122	85	226	0	5	103	639

³ See previous Salmon Watcher annual reports for details on yearly participation.

3.1.3 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 streamside. 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 5 illustrates the approximate amount of time spent by volunteers in each basin. More than 445.5 hours were recorded as spent streamside by volunteers during the 2015 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.	N. Lake Wash.	Samm. River Tribs.	W. Lake Samm.	W. Lake WA	Puget Sound	Total
42.1	47.6	128.7	84.9	95.2	4.1	3.6	39.3	445.5

3.1.4 Data Limitations

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 9 years at 60 percent or above.) 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, whereas 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 inevitably 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 2015, 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 the 2003 annual report (King County 2004).

3.2 Fish Observation Summaries

Salmon Watcher Program volunteers recorded observations of all salmonid fish observed during their stationary surveys, including Chinook, coho, kokanee, and sockeye salmon, and trout (which may have been cutthroat or rainbow trout).

Of the 36 streams surveyed in 2015, Chinook were found in 12 streams, sockeye were seen in 8 streams, coho were found in 8 streams, kokanee were reported in 3 streams, chum were observed in 3 streams, and trout were reported in 2 streams. Eighteen streams had no adult salmonids reported.

If a volunteer was unable to positively identify a fish species, the fish was tallied as “unidentified” (reporting a fish as unidentified was preferable to misidentifying a species). Of the 1,480 adult fish observed in the Lake Washington Watershed, other WRIA 8 streams, and other streams draining to Puget Sound in 2015, 189 were tallied as unidentified (12.8 percent). For more information, see the section called “Unidentified Species” below.

The percentages of all fish observed in the Lake Washington Watershed (1,336 including unidentified fish), are depicted in Figure 4. Sockeye was the most abundant species counted by volunteers in the Lake Washington Watershed.

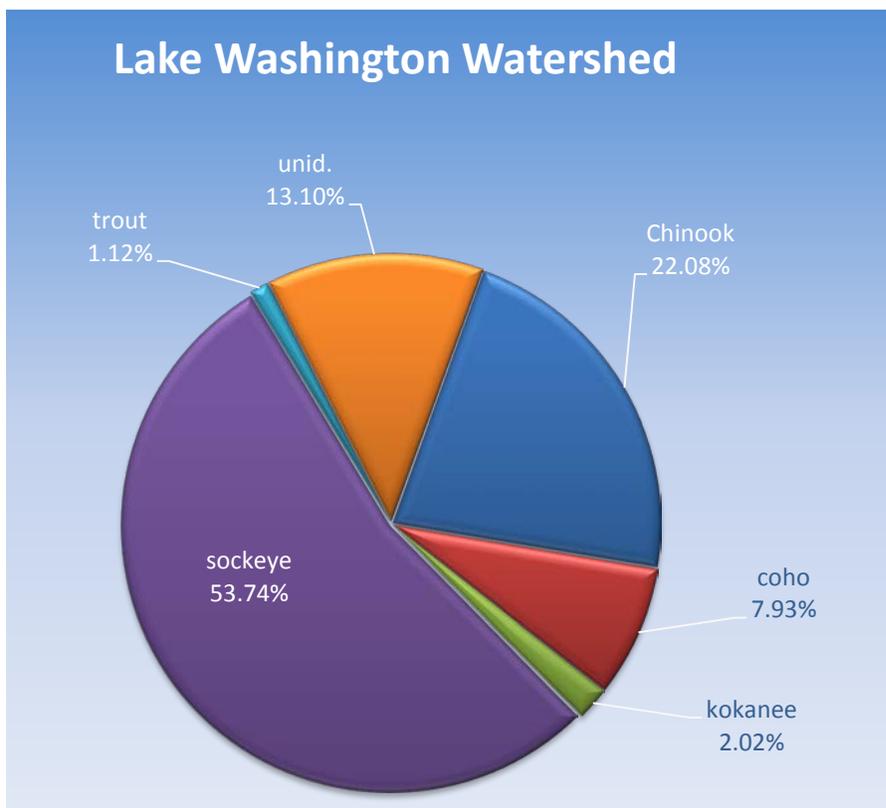


Figure 4. Percentages of total fish observed in 2015 by volunteers in the Lake Washington Watershed.

3.2.1 Chinook Salmon

Chinook were observed in 5 of the 7 Lake Washington basins observed during the 2015 surveys (Figure 5). A total of 235 live fish and 60 carcasses were found in 12 streams and tributaries throughout the Lake Washington Watershed. Streams in which Chinook were reported include (in order of most to least fish seen): North Creek (172), Big Bear Creek (37), Cottage Lake Creek (33), Sammamish River (21), Cedar River Side Channel at Dorre Don (8), Taylor Creek (6), Little Bear Creek (5), Maplewood Creek (4), Cedar River (4), Coal Creek (3), Trib to Coal Creek (1), and Swamp Creek (1).

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

(<http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2015/Fig5ChinDist2015.pdf>)

3.2.2 Sockeye Salmon

Sockeye were the most numerous fish counted by volunteers. Sockeye were observed in 5 Lake Washington basins (Figure 6). A total of 651 live fish and 67 carcasses were observed in 8 streams (in order of most to least fish seen): Cedar River (360), North Creek (196), Little Bear Creek (82), Sammamish River (33), Big Bear Creek (24), Cottage Lake Creek (14), May Creek (7), and Taylor Creek (2).

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

(<http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2015/Fig6SockDist2015.pdf>)

3.2.3 Coho Salmon

Coho were observed in 4 Lake Washington Watershed basins plus 2 catchments draining to Puget Sound (Figure 7). A total of 112 live coho and 4 carcasses were reported in 8 streams in the Lake Washington Watershed and 2 stream that drains to Puget Sound (in order of most to least fish seen): Sammamish River (92), Longfellow Creek (9), Peterson Creek (8), Cedar River (3), Boeing Creek (1), Coal Creek (1), Little Bear Creek (1), and Maplewood Creek (1).

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

(<http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2015/Fig7CohoDist2015.pdf>)

3.2.4 Kokanee

Kokanee were reported in 2 Lake Washington Watershed basins (Figure 8). A total of 26 live fish and 1 carcass were counted in 3 streams: Little Bear Creek (13), North Creek (9), and Cedar River (5). The kokanee reported in the Cedar River were seen with sockeye. It is possible they were jack (one-year old) sockeye or “residual” sockeye and not kokanee. In fact, all past sightings of kokanee by Salmon Watcher volunteers in the past have been alongside

sockeye. Therefore, although this program has reported kokanee in the Cedar River in the 2015 and past seasons, these sightings were never verified by professional biologists, so the fish should be considered an unknown life history of *Onchorhynchus nerka*.

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

(<http://your.kingcounty.gov/dnrp/library/water-and-land/salmon/salmonwatcher/2015/Fig8KokDist2015.pdf>)

3.2.5 Chum

A total of 90 live chum and 30 carcasses were counted 3 streams, all in Central Puget Sound (WRIA 8): Pipers Creek (71), Boeing Creek (29), and Venema Creek (20).

3.2.6 Unidentified Species

Fish of unidentified species (157 live fish and 32 carcasses) were observed in 10 streams in 5 basins in the Lake Washington Watershed and 3 streams in 2 catchments draining to Puget Sound. Streams in which fish of unidentified species were reported include (in order of most to least fish seen): Sammamish River (96), Cedar River (32), North Creek (26), Pipers Creek (10), Coal Creek (9), Cottage Lake Creek (3), Longfellow Creek (3), Peterson Creek (3), Cedar River Side Channel at Dorre Don (2), Taylor Creek (2), Little Bear Creek (1), May Creek (1), and Venema Creek (1).

The number of unidentified fish was approximately 12.8 percent of all fish reported.

3.2.7 Trout

Trout spawn later in the winter than the other salmonids that are the focus of the Salmon Watcher Program. They are occasionally seen, especially as fry, but their low numbers in this report do not reflect actual spawning population numbers – just incidental observations. Fifteen live trout were reported in two creeks in the Lake Washington Watershed in 2015. Streams in which trout were reported include (in order of most to least fish seen): Little Bear Creek (10) and North Creek (5).

3.2.8 Marked 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 so that when the fish return as adults, the hatchery fish can be distinguished from wild fish. Volunteers were instructed to focus on species identification first and foremost and only try to report on adipose fin clips when possible. As a result, most volunteers do not fill in this column, or sometimes they note that they could not tell. Generally, water clarity must be excellent and the fish must be close and somewhat still (or dead) in order to determine the presence of an adipose fin. In 2015, 8 fin clips were reported (Table 6). Sockeye are too small when released from the hatchery to have their adipose fins clipped, so all sockeye have their adipose fins, and therefore hatchery sockeye are indistinguishable from wild sockeye.

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

Stream	Chinook	Coho
Big Bear Creek	7	
Boeing Creek		1

In some years, certain species of salmon are tagged (usually near the base of the dorsal fin) for scientific research when they enter the Hiram M. Chittenden Locks (“Ballard Locks”). In 2015, no fish were tagged at the Ballard Locks. However, it is still possible tagged fish may be observed in the Lake Washington Watershed: fish tagged elsewhere may stray into the Lake Washington Watershed. Additionally, it is possible that a fish was tagged when straying, then it returned to its birth stream in the Lake Washington Watershed. Volunteers are asked to record and report a tagged fish. No tagged fish were reported in 2015.

3.2.9 Juvenile Fish

Volunteers made note of small resident fish, fry, and juvenile fish in a total of 13 streams: Big Bear Creek, Boeing Creek, Coal Creek, Cochran Springs Creek, Cottage Lake Creek, Little Bear Creek, Little Swamp Creek, Longfellow Creek, North Creek, Peters Creek, Sammamish River, Swamp Creek, and West Trib. Kelsey Creek.

3.3 Basin Summary

For the 2015 spawning season, sockeye were reported in the largest numbers in the Cedar River followed by the Sammamish River Tributaries (Table 7). Chinook were reported in the greatest numbers in the Sammamish River Tributaries. Chinook and sockeye were reported in the greatest number of Lake Washington basins (5). Kokanee were reported in 2 basins.

Table 7. Species enumerated within surveyed basins during the 2015 Salmon Watcher season.

Basin	Chinook	Chum	Coho	Kokanee	Sockeye	Trout	Unid.*	Basin Total
Big Bear Creek	70	0	0	0	38	0	3	111
Cedar River	22	0	12	5	362	0	39	440
East Lake Washington	4	0	1	0	7	0	10	22
West Lake Washington	0	0	0	0	0	0	0	0
North Lake Washington Tribs	21	0	92	0	33	0	96	242
Sammamish River Tribs.	178	0	1	22	278	15	27	521
West Lake Sammamish	0	0	0	0	0	0	0	0
Central Puget Sound (WRIA 9)	0	0	9	0	0	0	3	12
Middle Puget Sound (WRIA 8)	0	120	1	0	0	0	11	132
Grand totals	295	120	116	27	718	15	189	1480

*Unidentified species.

The remainder of this report presents 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.

The streams surveyed in the Lake Washington Watershed were grouped into the following seven basins: Big Bear Creek, Cedar River, East Lake Washington, West Lake Washington, North Lake Washington (split into North Lake Washington tributaries and Sammamish River tributaries), and West Lake Sammamish. Salmonids were observed in five of the seven basins surveyed in 2015; no salmonids were observed in West Lake Washington or West Lake Sammamish.

3.3.1 Big Bear Creek Basin

Volunteers surveyed 12 sites in 5 streams in the Big Bear Creek Basin in 2015 (Figure 1). From 1 to 6 sites were watched per stream, and the number of surveys ranged from 2 to 41 per site (Table 8). All sites were monitored by 1 volunteer except sites 65 and 50, which were both monitored by 2 volunteers.

Table 8. Stream number, site ID, site location (listed in river miles, RM), survey dates, total number of surveys, number of volunteers⁴, and years the sites were watched for each stream surveyed in the Big Bear Creek Basin relevant to the 2015 spawning season.

Stream	Stream #	Site ID	RM	2015			Years Watched
				Survey Dates	# Surveys	# Vols.	
Big Bear Creek	080105	65	2.7	9/2 - 11/29	16	2	1997-2000, 2002-2015
		290	3.2	10/11 - 11/29	2	1	1997, 2000, 2002-2004, 2006, 2009, 2012, 2015
		101	4.9	9/26 - 10/10	3	1	1997-2010, 2012-2015
		89	6	8/24 - 12/2	12	1	1998-2011, 2014-2015
		136	7.4	9/14 - 11/22	17	1	1998-2013, 2015
		503	7.85	9/24 - 12/15	27	1	2002, 2004-2007, 2009-2015
Trib. To Bear Cr.		367	0.1	9/22 - 12/2	12	1	2003, 2014-2015
Cottage Lake Cr.	080122	660	2.2	10/1 - 11/9	2	1	2011-2015
		50	2.5	9/17 - 12/6	41	2	1997, 1999-2015
		395	2.9	9/14 - 11/22	17	1	2002-2003, 2008-2011, 2013, 2015
Seidel Creek	80129	378	0.95	9/27 - 11/30	8	1	2003, 2015
Struve Creek	80131	583	1.3	9/27 - 11/9	5	1	2004-2005, 2015

Salmonids were found in two of the five streams observed in Big Bear Creek Basin: Bear Creek and Cottage Lake Creek (Table 9). Chinook and sockeye were seen in both creeks. Additionally, unidentified species were seen in only Cottage Lake Creek.

⁴ "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, river mile (RM), and total number of fish (live plus dead) with date ranges for seen at each stream surveyed in the Big Bear Creek Basin for the 2015 spawning season.

Stream	Site ID	RM	Chinook	Coho	Sockeye	Unid.
Big Bear Creek	65	2.7	12 (9/8 - 9/22)	-	5 (9/21 - 9/28)	-
	290	3.2	-	-	-	-
	101	4.9	3 (10/3 - 10/10)	-	15 (10/3 - 10/10)	-
	89	6	22 (9/22 - 10/4)	-	4 (9/22 - 9/30)	-
	136	7.4	-	-	-	-
	503	7.85	-	-	-	-
Trib. To Bear Cr.	367	0.1	-	-	-	-
Cottage Lake Cr.	660	2.2	1 (10/1)	-	-	-
	50	2.5	13 (9/20 - 10/13)	-	14 (9/30 - 10/14)	3 (9/21 - 10/17)
	395	2.9	19 (9/19 - 10/27)	-	-	-
Seidel Creek	378	0.95	-	-	-	-
Struve Creek	583	1.3	-	-	-	-

3.3.2 Cedar River Basin

Volunteers surveyed 10 sites in 6 streams/river in the Cedar River Basin in 2015 (Figure 1). From 1 to 4 sites were watched per stream, and the total number of surveys ranged from 3 to 28 per site (Table 10). All sites were monitored by 1 volunteer except site 206, which was monitored by 2 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 2015 spawning season.

Stream	Stream #	Site ID	RM	2015			Years Watched
				Survey Dates	# Surveys	# Vols.	
Cedar River (Cavanaugh Pond)	080299	199	1	10/16 - 11/4	3	1	1999, 2006, 2009-2015
		201	1.3	9/17 - 11/28	28	1	2001, 2005, 2007-2009, 2013-2015
		206	4.3	9/26 - 12/4	13	2	1999, 2001-2002, 2009-2010, 2013-2015
		139	6.4	10/3 - 12/27	13	1	1997-2015
C.R. Side Channel		557	0.15	10/4 - 11/23	11	1	2003, 2005-2015
Madsen Creek	080305	156	0.2	10/16 - 11/7	4	1	1999-2000, 2012, 2014-2015
Maplewood Creek	-	593	0.4	10/10 - 11/11	6	1	2005, 2013-2015
Peterson Creek	080328	25	1.5	9/7 - 12/14	24	1	2000, 2002, 2011-2015
Taylor Creek	080320	588	0.37	10/4 - 11/23	11	1	2004-2015
		655	0.6	10/4 - 11/23	11	1	2010-2015

Chinook were observed in four of the six streams observed in the Cedar River basin: Cedar River, Cedar River side channel, Maplewood Creek, and Taylor Creek (Table 11). Sockeye were also reported in every site in the Cedar River proper as well as Taylor Creek. Kokanee were reported in the Cedar River along with sockeye; it is possible that these fish were more likely “jack” sockeye – which are one-year-old sockeye that have come back to the

river early; for further discussion on this topic, refer to Section 3.2.4 Kokanee, above. One coho was reported in Maplewood Creek by a volunteer for the first time in 2015. Coho were also seen in the Cedar River and Peterson Creek. Unidentified species were seen in the Cedar River, the Cedar River side channel, Peterson Creek, and Taylor Creek. No fish were seen in Madsen Creek.

Table 11. Site ID, river mile (RM), and total number of fish (live plus dead) with date ranges for seen at each stream surveyed in the Cedar River Basin for the 2015 spawning season.

Stream	Site ID	RM	Chinook	Coho	Kokanee	Sockeye	Unid.
Cedar River	199	1	-	-	5 (10/16)	109 (10/16 - 11/4)	4 (10/16 - 11/4)
	201	1.3	4 (9/17 - 10/27)	-	-	175 (9/17 - 11/8)	28 (9/17 - 11/13)
	206	4.3	-	3 (10/30)	-	59 (9/26 - 12/4)	-
(Cavanaugh Pond)	139	6.4	-	-	-	17 (12/20 - 12/27)	-
C.R. Side Channel	557	0.15	8 (10/7 - 10/28)	-	-	-	2 (10/7 - 10/14)
Madsen Creek	156	0.2	-	-	-	-	-
Maplewood Creek	593	0.4	4 (10/16 - 11/7)	1 (10/25)	-	-	-
Peterson Creek	25	1.5	-	8 (11/6 - 12/6)	-	-	3 (11/6 - 12/6)
Taylor Creek	588	0.37	-	-	-	-	-
	655	0.6	6 (10/12 - 10/14)	-	-	2 (10/12)	2 (10/12 - 10/14)

3.3.3 East Lake Washington Basin

Volunteers surveyed 24 sites in 9 streams in the East Lake Washington Basin in 2015 (Figure 1). From 1 to 8 sites were watched per stream, and the total number of surveys ranged from 2 to 55 per site (Table 12). 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 2015 spawning season.

Stream	Stream #	Site ID	RM	2015			Years Watched
				Survey Dates	# Surveys	# Vols.	
Coal Creek	80268	440	0.1	9/16 - 9/21	2	1	2001-2004, 2008, 2013-2015
		439	0.6	9/30 - 12/10	20	2	2001-2005, 2008, 2013-2015
		443	1.7	9/17 - 12/15	39	3	2001, 2011-2015
		678	2.2	9/19 - 12/15	55	5	2015
		682	2.25	11/6 - 12/15	7	1	2015
		441	2.3	9/19 - 12/15	31	5	2001-2008, 2010-2015
		442	2.4	10/11 - 12/15	14	2	2001-2015
Trib. 0273 to Coal Cr.		212	0.02	9/17 - 12/15	40	4	1999, 2002-2004, 2006, 2009, 2012-2013, 2015
Cochran Springs Creek	80253	197	0.15	9/20 - 11/23	9	1	2000, 2005-2006, 2008, 2013, 2015
Kelsey Creek	80059	13	2	9/18 - 11/15	27	3	1997-2015
		657	2.8	9/20 - 11/8	7	1	2011-2015
		120	3	9/20 - 11/22	8	1	1997-2015
		115	3.5	9/21 - 11/12	11	1	1998, 2004, 2010, 2012-2015
		217	3.7	10/15 - 11/12	7	1	1999, 2010, 2013, 2015
		216	4.5	10/6 - 11/29	18	1	1999, 2001-2002, 2004, 2007-2009, 2011, 2015
		614	4.7	10/12 - 11/4	5	1	2006, 2012-2013, 2015
		45	5	10/5 - 12/14	21	1	1997-2000, 2003, 2006-2015
May Creek	80282	208	0.2	10/8 - 12/21	10	1	2001-2015
		432	0.5	10/8 - 12/21	10	1	2000, 2004-2015
Mercer Slough	80259	445	1.6	9/13 - 12/24	26	3	2001, 2003-2015
Richards Creek	80261	80	1.6	10/1 - 12/23	7	1	1998, 2002-2010, 2013-2015
Sunset Creek	-	446	0.1	10/1 - 11/22	5	1	2009-2010, 2013-2015
West Trib. Kelsey Creek	80264	116	0.25	8/22 - 12/30	48	3	1998-1999, 2001-2015
		506	0.9	9/19 - 11/21	19	2	2002-2015

Salmonids were found in three of the nine streams surveyed in 2015 (Table 13). Chinook were reported in Coal Creek and a tributary to Coal Creek. The one Chinook reported in the tributary 0273 to Coal Creek was the first time a Chinook had been seen in that stream by a volunteer. The Chinook was reported at the Coal Creek Parkway Trail, about 50 feet upstream from the confluence with Coal Creek. A single coho was reported in Coal Creek. Sockeye were seen only in May Creek. Unidentified species were reported in Coal and May

creeks. No fish were observed in Cochran Springs Creek, Kelsey Creek, Mercer Slough, Richards Creek, Sunset Creek, or West Trib Kelsey Creek.

Table 13. Site ID, river mile (RM), and total number of fish (live plus dead) with date ranges for seen at each stream surveyed in the East Lake Washington Basin for the 2015 spawning season.

Stream	Site ID	RM	Chinook	Coho	Sockeye	Unidentified
Coal Creek	440	0.1	-	-	-	-
	439	0.6	-	-	-	1 (10/8)
	443	1.7	-	1 (11/3)	-	-
	678	2.2	-	-	-	1 (10/27)
	682	2.25	-	-	-	1 (11/6)
	441	2.3	3 (10/18)	-	-	6 (10/3 - 11/20)
	442	2.4	-	-	-	-
Trib. 0273 to Coal Cr.	212	0.1	1 (10/3)	-	-	-
Cochran Springs Creek	197	0.15	-	-	-	-
Kelsey Creek	13	2	-	-	-	-
	657	2.8	-	-	-	-
	120	3	-	-	-	-
	115	3.5	-	-	-	-
	217	3.7	-	-	-	-
	216	4.5	-	-	-	-
	614	4.7	-	-	-	-
45	5	-	-	-	-	
May Creek	208	0.2	-	-	2 (10/29)	-
	432	0.5	-	-	5 (10/22 - 10/29)	1 (12/1)
Mercer Slough	445	1.6	-	-	-	-
Richards Creek	80	1.6	-	-	-	-
Sunset Creek	446	0.1	-	-	-	-
West Trib. Kelsey Creek	116	0.25	-	-	-	-
	506	0.9	-	-	-	-

3.3.4 West Lake Washington

One volunteers surveyed 1 site on Mapes Creek in the West Lake Washington Basin in 2015 (Figure 1). The volunteer conducted a total of 13 observations (Table 14) but saw no fish.

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 the one stream surveyed in the West Lake Washington Basin relevant to the 2015 spawning season.

Stream	Stream #	Site ID	RM	2015			Years Watched
				Survey Dates	# Surveys	# Vols.	
Mapes Creek	-	680	0.05	10/6 - 12/9	13	1	2015

3.3.5 North Lake Washington Tributaries

The North Lake Washington Tributaries are those streams flowing into the north end of Lake Washington (e.g., Thornton Creek, Sammamish River). Volunteers surveyed 15 sites along 6 streams in 2015 (Figure 1). From 1 to 5 sites were watched per stream, and the total number of surveys ranged from 5 to 30 per site (Table 15). Sites were monitored by 1 or 2 volunteers.

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 North Lake Washington Tributaries relevant to the 2015 spawning season.

Stream	Stream #	Site ID	RM	2015			Years Watched
				Survey Dates	# Surveys	# Vols.	
Denny Creek	080228	5	0.1	10/5 - 11/14	5	1	1997, 2000, 2002-2003, 2005-2007, 2010, 2012, 2015
Juanita Creek	080230	389	0	9/27 - 11/28	9	1	2000-2001, 2004-2007, 2011-2015
		68	0.2	9/27 - 11/28	9	1	1998, 2000-2001, 2003, 2009, 2014-2015
Peters Creek	080104	47	0	9/17 - 12/16	24	1	1997-1998, 2003, 2009-2015
Sammamish River	080057	587	3.9	9/19 - 12/12	10	1	2006, 2011-2012, 2015
		41	7.3	9/21 - 11/9	26	1	1998-1999, 2001-2003, 2005-2007, 2014-2015
		508	9.4	10/4 - 12/13	15	2	2002, 2015
		454	11.4	9/18 - 12/17	25	1	2002-2003, 2011-2015
		271	12.5	9/24 - 11/11	13	2	1997, 1999, 2001-2004, 2007, 2009-2015
S. Fork Thornton Creek	080033	191	0.2	10/7 - 12/4	9	1	1999-2000, 2006-2007, 2011, 2014-2015
		54	0.3	10/7 - 12/4	9	1	1998, 2007, 2014-2015
Thornton Creek	080030	183	0.1	12/18/2014 - 12/29	30	2	1997, 2000-2015
		184	0.2	11/16 - 12/29	12	1	1999-2003, 2006-2008, 2015
		386	1.1	10/21 - 12/16	13	1	2002, 2005, 2007-2008, 2010-2012, 2014-2015
		387	1.15	10/21 - 12/16	14	1	2001, 2006, 2014-2015

Salmonids were found in one of the six streams surveyed in the North Lake Washington Tributaries (Table 16). Chinook, coho, sockeye, and unidentified species were all observed in the Sammamish River. No salmonids were seen in Denny Creek, Juanita Creek, Peters Creek, Thornton Creek, or South Fork Thornton Creek.

Table 16. Site ID, river mile (RM), and total number of fish (live plus dead) with date ranges for seen at each stream surveyed in the North Lake Washington Tributaries for the 2015 spawning season.

Stream	Site ID	RM	Chinook	Coho	Sockeye	Unidentified
Denny Creek	5	0.1	-	-	-	-
Juanita Creek	389	0	-	-	-	-
	68	0.2	-	-	-	-
Peters Creek	47	0	-	-	-	-
Sammamish River	587	3.9	-	-	-	-
	41	7.3	-	-	21 (10/6 - 10/24)	-
	508	9.4	-	-	-	7 (10/7 - 10/21)
	454	11.4	21 (9/18 - 10/30)	-	12 (10/2 - 10/28)	52 (9/18 - 11/30)
	271	12.5	-	92 (10/8 - 10/13)	-	37 (9/3- 10/8)
South Fork Thornton Creek	191	0.2	-	-	-	-
	54	0.3	-	-	-	-
Thornton Creek	183	0.1	-	-	-	-
	184	0.2	-	-	-	-
	386	1.1	-	-	-	-
	387	1.15	-	-	-	-

3.3.6 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 17 sites on 4 Sammamish River tributaries in 2015 (Figure 1). The total number of surveys ranged from 1 to 38 per site (Table 17). Each site was monitored by from 1 to 3 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 Sammamish River Tributaries relevant to the 2015 spawning season.

Stream	Stream #	Site ID	RM	2015			Years Watched
				Survey Dates	# Surveys	# Vols.	
Little Bear Creek	080080	114	0	9/16 - 12/8	27	2	1999, 2001-2002, 2005-2015
		67	0.2	9/20 - 12/16	15	1	1997-1999, 2001-2009, 2012-2015
		312	1.5	9/18 - 11/6	15	2	1997, 2002-2003, 2010-2015
		176	1.6	10/20 - 10/20	1	1	1997, 2000-2007, 2009-2015
		651	1.65	9/29 - 9/29	1	1	2010-2012, 2014-2015
Little Swamp Cr.	080060	505	0.24	9/15 - 12/15	19	1	2002-2008, 2011-2015
North Creek	080070	112	0.9	9/17 - 12/13	17	2	1997-2015
		57	0.95	9/23 - 12/13	22	1	1998, 2001, 2004-2015
		408	1.05	10/5 - 10/28	7	1	2000-2009, 2011-2015
		113	1.5	9/17 - 10/25	13	1	1998, 2000-2001, 2003, 2006-2010, 2012, 2014-2015
		255	1.8	10/14 - 10/18	2	1	1999-2004, 2006-2007, 2009-2015
		425	2.6	10/1 - 12/15	26	3	2006, 2008-2015
		254	2.8	9/13 - 11/26	14	1	2004, 2007, 2009, 2011-2015
		253	3	9/19 - 12/20	38	3	1997, 1999-2001, 2006-2015
		676	3.02	9/4 - 12/3	20	1	2013-2015
636	3.3	10/1 - 12/15	5	1	2007, 2010-2012, 2015		
Swamp Creek	080059	34	0.3	9/15 - 12/15	18	1	1997, 1999-2000, 2002-2008, 2011-2015

Fish were seen in three of the four streams surveyed in the Sammamish River Tributaries (Table 18). Chinook were observed in all three streams with salmonid observations. In North Creek, they were seen at six sites, including the uppermost site watched at river mile 3.3. They were also seen at the mouth of Little Bear Creek. The one Chinook reported in Swamp Creek marks the first time a volunteer has seen a Chinook salmon in this creek. Swamp Creek has been watched by volunteers every year since the program began in 1996 with only the exception of 2010, and this marks the first sighting of a Chinook by a volunteer. Furthermore, this volunteer is very experienced and reliable, so it was likely that the identification was correct. The observation occurred at RM 0.3, below Bothell Way NE.

A single coho was observed in Little Bear Creek. Sockeye were reported at all 10 sites watched in North Creek, as well as three of the four sites in Little Bear Creek. Kokanee and

unidentified species were also reported in Little Bear Creek and North Creek. No fish were seen in Little Swamp Creek.

Table 18. Site ID, river mile (RM), and total number of fish (live plus dead) with date ranges for seen at each stream surveyed in the Sammamish River Tributaries for the 2015 spawning season.

Stream	Site ID	RM	Chinook	Coho	Kokanee	Sockeye	Unid.
Little Bear Creek	114	0	5 (9/16 - 10/5)	-	10 (10/9 - 10/30)	30 (10/2 - 10/17)	-
	67*	0.2	-	-	2 (10/3 - 10/23)	13 (10/3 - 10/7)	-
	312	1.5	-	1 (10/8)	1 (10/8)	38 (10/3 - 10/27)	-
	176	1.6	-	-	-	1 (10/20)	-
	651	1.65	-	-	-	-	1 (9/29)
Little Swamp Creek	505	0.24	-	-	-	-	-
North Creek	112*	0.9	58 (9/21 - 10/28)	-	-	67 (9/17 - 10/25)	7 (10/8 - 12/13)
	57	0.95	23 (9/23 - 10/25)	-	-	2 (10/11)	4 (10/4 - 10/17)
	408	1.05	7 (10/5 - 10/9)	-	-	12 (10/5 - 10/17)	-
	113*	1.5	72 (9/19 - 10/25)	-	-	33 (9/17 - 10/9)	12 (9/19 - 10/13)
	255	1.8	-	-	-	6 (10/18)	-
	425	2.6	9 (10/6 - 10/29)	-	9 (10/25 - 11/12)	68 (10/1 - 10/27)	1 (10/15)
	254	2.8	-	-	-	1 (10/17)	-
	253*	3	-	-	-	5 (10/15 - 10/16)	-
	676	3.02	-	-	-	1 (10/8)	1 (10/8)
636	3.3	3 (10/9)	-	-	1 (10/9)	1 (11/4)	
Swamp Creek	34	0.3	1 (10/12)	-	-	-	-

*Trout reported at these sites.

3.3.7 West Lake Sammamish Basin

One volunteer surveyed 1 site on Vasa Creek in the West Lake Sammamish Basin in 2015 (Figure 1). The volunteer conducted a total of 16 observations (Table 19) but saw no fish.

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 West Lake Sammamish Basin relevant to the 2015 spawning season.

Stream	Stream #	Site ID	RM	2015			Years Watched
				Survey Dates	# Surveys	# Vols.	
Vasa Creek	080156	641	0.4	9/20 - 11/29	16	1	2009-2015

3.3.8 Puget Sound Streams

Streams draining to Puget Sound that were surveyed during the 2015 Salmon Watcher season are both inside and outside WRIA 8 (Figure 1). Those streams within WRIA 8 include Boeing, Piper's, and Venema creeks. Longfellow Creek, watched annually, is part of WRIA 9⁵. Data were reported for a total of 10 sites in 4 streams draining to Puget Sound in 2015 (Table 20). The total number of surveys ranged from 2 to 33 per site. Each site was monitored by 1 or 2 volunteers.

Table 20. 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 2015 spawning season.

Stream	Stream #	Site ID	RM	2015			Years Watched
				Survey Dates	# Surveys	# Vols.	
Boeing Creek*	080017	436	0.1	10/12 - 12/16	8	1	2000-2012, 2014-2015
Longfellow Creek	090359	177	0.6	10/1 - 12/23	33	2	1999-2007, 2009-2010, 2015
		178	0.7	10/1 - 11/28	20	1	1999-2000, 2002-2005, 2015
		179	0.8	10/1 - 1/1/2016	27	2	1998-2015
		180	0.9	10/1 - 11/28	20	1	1999-2004, 2006, 2010, 2013-2015
Piper's Creek*	080023	182	0.43	10/22 - 12/9	15	1	1999, 2003, 2005, 2015
		382	0.45	10/30 - 12/9	13	1	2004-2005, 2015
		99	0.53	10/22 - 10/23	2	1	1999, 2002-2004, 2008, 2011-2012, 2015
Venema Creek*	-	383	0.02	10/3 - 12/8	19	1	1997, 2000-2001, 2004-2015
		222	0.03	10/3 - 12/8	19	1	1999, 2005, 2012-2015

*Streams within WRIA 8.

Coho were the only species observed in Longfellow Creek (Table 21). Chum as well as a single coho were observed in Boeing Creek. Chum and unidentified species were observed in both Piper's Creek and Venema Creek, a tributary to Piper's Creek.

⁵ 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. Typically this Salmon Watcher report includes a summary of what the volunteers at Fauntleroy Creek have seen. But according to Judy Pickens, who coordinates the watch there, no spawners were reported in 2015.

Table 21. Site ID, river mile (RM), and total number of fish (live plus dead) with date ranges for seen at each stream surveyed in Central Puget Sound for the 2015 spawning season.

Stream	Site ID	RM	Chum	Coho	Unidentified
Boeing Creek	436	0.1	29 (11/6 - 12/3)	1 (11/22)	-
Longfellow Creek	177	0.6	-	1 (11/3)	-
	178	0.7	-	-	-
	179	0.8	-	7 (11/3 - 11/20)	-
	180	0.9	-	1 (11/3)	-
Piper's Creek	182	0.43	48 (10/30 - 12/3)	-	7 (11/7 - 11/25)
	382	0.45	23 (11/6 - 11/24)	-	3 (11/6 - 12/1)
	99	0.53	-	-	-
Venema Creek	383	0.02	18 (11/6 - 11/24)	-	1 (11/24)
	222	0.03	2 (10/30 - 11/15)	-	-

4.0 REFERENCES

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