AVISTA CORPORATION

REVISED

LAKE SPOKANE FISHERY ENHANCEMENT AND CREEL SURVEY PLAN

LICENSE ARTICLE 406

Spokane River Hydroelectric Project
FERC Project No. 2545

Revised By:
Avista Corporation
in Coordination with the
Washington Department of Fish and Wildlife

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1.0 Background

On June 18, 2009, the Federal Energy Regulatory Commission (FERC) issued Avista Corporation (Avista) a new license (License) for the Spokane River Hydroelectric Project, FERC Project No. 2545-091 which includes the Long Lake Hydroelectric Development (HED). The reservoir for the Long Lake HED is called Lake Spokane. FERC staff evaluated the fishery enhancement supplementation and monitoring recommendations in its Final Environmental Impact Statement (FEIS), which was issued in 2007. Article 406 of the License requires Avista to enhance recreational fishing opportunities by annually stocking 155,000 catchable-sized sterile rainbow trout into Lake Spokane for five consecutive years. The Article also requires Avista to conduct creel surveys to monitor the success of the stocking program, develop specific protocols to determine whether the program is successful in creating a viable put-and-take recreational fishery for rainbow trout, document the results of the program, and include proposals for future stocking.

The FERC approved the "Lake Spokane Fishery Enhancement and Creel Survey Plan" (Normandeau 2010) on August 5, 2010. Avista began to implement the FERC approved plan but could not secure a source that could provide fish for the stocking program. On June 7, 2011 FERC granted Avista an extension of time to arrange for a reliable supply of fish to complete the stocking program.

In 2011, Avista completed the initial baseline creel survey (Landau 2012). Results from that survey, of which 31 anglers were interviewed, found that Lake Spokane is a popular bass fishery and that the majority of anglers were satisfied. The number of anglers interviewed during the survey period was low, with the highest number in summer, less in spring, and very few in the fall. Following the first year baseline creel survey and based on a number of meetings pertaining to the stocking program and creel survey with Washington Department of Fish and Wildlife (WDFW) staff Avista and the WDFW determined that the fish stocking schedule should be extended to a ten (10) year period to commence in June of 2014. Avista coordinated with the WDFW to revise the creel survey and fish stocking plan.

This Revised Lake Spokane Fishery Enhancement and Creel Survey Plan (Revised Plan) provides a detailed description for implementing the revised stocking and creel survey program. The Revised Plan includes an implementation schedule for annually stocking of sterile rainbow trout in Lake Spokane over a ten year period, and a detailed description of a creel survey designed to assess the new put-and-take trout fishery as it develops during the stocking period. This Revised Plan was developed in cooperation with Washington Department of Fish and Wildlife (WDFW). (Correspondence with WDFW is included in Appendix A.) If, during the 10 year period and based on concerns including interim creel survey assessments, health of the stocked fish, public input, etc., Avista and WDFW agree that early termination

of the stocking program is necessary, they will make the determination collaboratively and submit a joint recommendation to FERC for approval.

2.0 Study Area

Lake Spokane is located approximately 20 miles northwest of the city of Spokane in Spokane, Stevens, and Lincoln Counties, Washington (Figure 1). Lake Spokane is approximately 24 miles in length, with a maximum surface area of approximately 5,060 acres and an average depth of about 45 feet. Lake Spokane is a narrow reservoir that is classified as eutrophic to mesotrophic (CH2MHill 2004), and is supplied with water from the Spokane and Little Spokane rivers. The Little Spokane River is a tributary of the Spokane River and contributes about 10% of the inflow into Lake Spokane (Pfieffer 1985).

The upper 3 miles of Lake Spokane is riverine and has limited shoreline development (Pfieffer 1990). The next 15 miles of the reservoir transitions into more lacustrine habitat and is substantially developed with residential properties, particularly on the north shoreline. This section is also characterized by having gentle, sloping shorelines and shallow bays. Heavy growths of emergent macrophytes occur in this section and comprise most of the reservoir's littoral habitat (Bennett and Hatch 1990). The lower most 6 miles of the reservoir closest to the Long Lake Dam has limited littoral habitat, minimal shoreline development, and is characterized by steep, sandy banks and rocky shorelines. This lower section contains the reservoir's widest (3,609 ft) and deepest (180 ft) points (Pfieffer 1990). Lake Spokane stratifies thermally during the summer (Bennett and Hatch 1990).

Avista uses water stored in Lake Spokane to generate electricity at Long Lake Dam (river mile [RM] 34). The License requires Avista to limit drawdowns of Lake Spokane to no more than 14 feet except under emergency flow conditions. In recent years, depending on river flow and several other considerations, Lake Spokane has occasionally been lowered to approximately 14 feet but more typically within 3 feet of full pool during the winter. During the summer recreation season, the reservoir is typically maintained within 1 foot of the full-pool elevation (FEIS 2007).

Lake Spokane is a popular recreation spot with the highest use occurring during late-spring and summer (Louis Berger Group 2004). Both Riverside State Park's Nine Mile Recreation Area and Washington Department of Natural Resources' (DNR) Lake Spokane Campground have public boat launches, and provide seasonal day use as well as camping facilities. Project operations during the late-spring, summer and fall, normally do not affect access to the reservoir. The only time operations affect access is during the winter and early-spring drawdown period, which is unpredictable and varies in depth and duration annually.

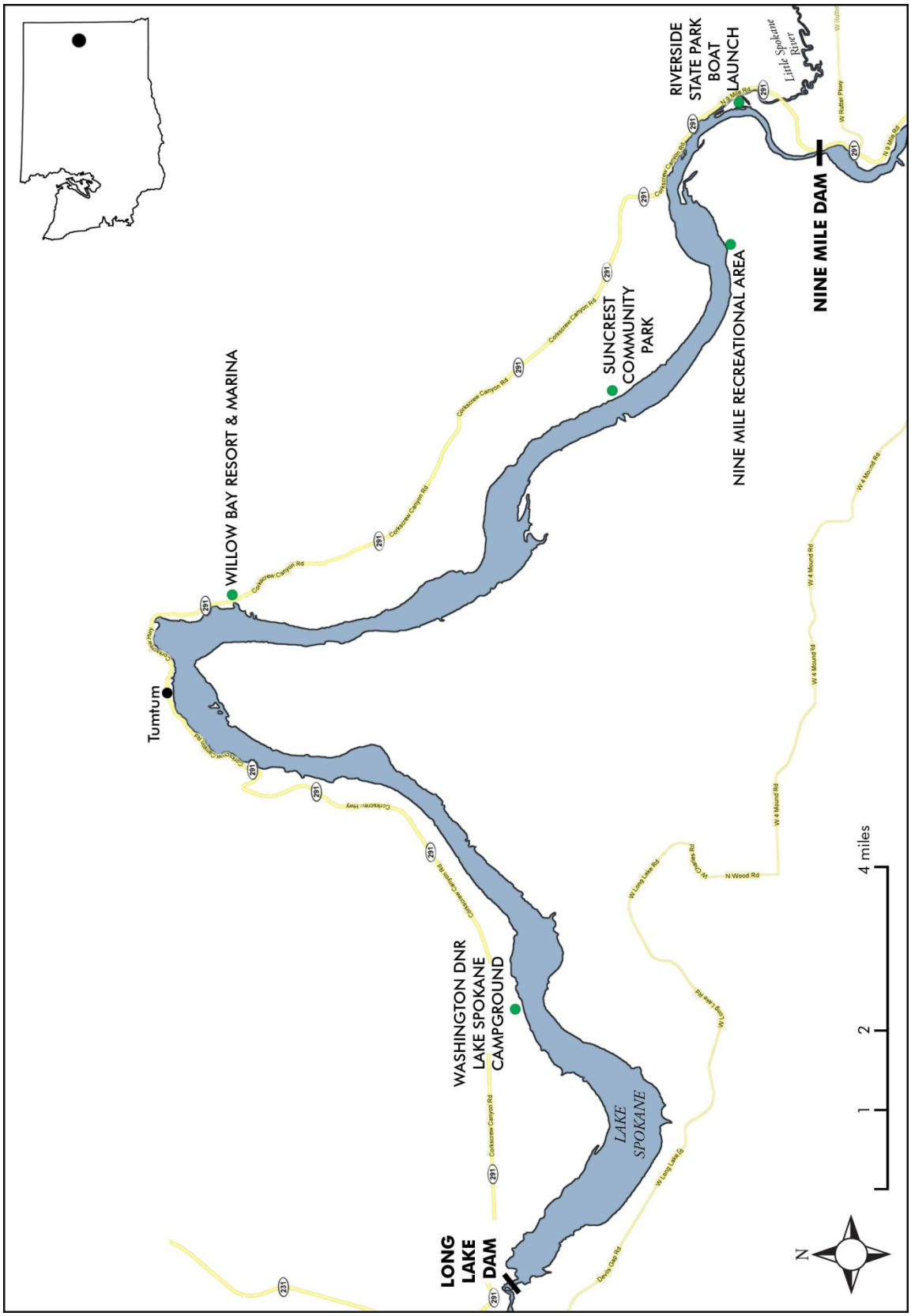

Figure 1. Map of Lake Spokane, Washington. Green dots represent public and private boat access points

3.0 Plan Overview

Avista will implement this Revised Plan following FERC approval, which is anticipated in 2013. Avista worked closely with WDFW to develop the schedules and protocols for stocking the trout and for the creel survey. The annual stocking of 155,000 sterile rainbow trout, which take between one and one and a half years to raise, is scheduled to commence in June of 2014 and will continue for ten consecutive years until June 2023. Creel surveys will resume in spring 2016 according to the schedule in Table 1and conclude in fall 2022. Protocols for determining the success of the stocking program will be developed cooperatively by Avista and WDFW in 2020. Following the final 2022 creel survey, Avista, in cooperation with WDFW will conduct a comprehensive evaluation of the data derived from the creel surveys utilizing the protocols for success to determine if a viable put-and-take trout fishery has been created. The results of that evaluation will be summarized in a final report, collaboratively reviewed by Avista and WDFW, and then submitted to FERC by December 31, 2023. The annual timeline and brief description of tasks to be accomplished is provided in Table 1.

Table 1. Annual timeline for stocking sterile rainbow trout and creel survey in Lake Spokane.

Year	Tasks to be accomplished
2011	Conducted base-line creel survey to determine existing angler use prior to stocking sterile rainbow trout.
2014 - 2023	Stock 155,000 sterile rainbow trout annually for ten consecutive years (2014-2023).
2016	Conduct creel survey.
2018	Conduct creel survey.
2020	Conduct creel survey; Develop protocols for success
2022	Complete creel survey.
2023	Prepare comprehensive report describing the trout stocking program and whether it created a successful viable put-and-take trout fishery in Lake Spokane. The final report describing the new put-and-take recreational trout fishery will be prepared in consultation with WDFW and submitted to FERC no later than December 31 2023.

4.0 Trout Stocking

Avista is required to stock 155,000 catchable-sized sterile rainbow trout into Lake Spokane annually for ten years. The term "catchable" as defined in the license refers to trout ranging in size from 6 to 8 inches in total length.

4.1 Procurement and Criteria

Avista currently plans to purchase the required 155,000 catchable sized sterile rainbow trout from Troutlodge Inc., a commercial provider located in Washington, or from WDFW's Spokane Hatchery, located in Spokane, Washington. The majority, or 105,000 of the annual allotment of trout, is initially expected to come from Troutlodge, however, the amount may vary over the years, dependent on WDFW's fish rearing capacity. Troutlodge will also initially provide triploided sterile rainbow trout eggs to WDFW, which will raise approximately 50,000 of the required 155,000 six to eight inch fish for the stocking program. In the instance that neither Troutlodge Inc. nor WDFW can provide the necessary number of rainbow trout, Avista will acquire 155,000 trout of the same specifications as described hereinafter from other certified fish production sources.

The following criteria will be specified for the trout stocked in Lake Spokane:

- Sterile or "triploid" rainbow trout must have a triploid rate of 98 percent (±2 percent) or greater;
- Greater than 95 percent of the stocked trout must be female to reduce the risk of potential spawning habitat competition with native rainbow trout present in the system;
- Stocked trout must meet a coefficient of variation of 8 to 10 percent or less from that designated as "catchable" (i.e., 8 to 10 percent variation in size of the released population);
- Stocked trout must be of coastal origin which possess diet preferences that are skewed more towards being insectivore/zooplanktivore; and
- Adipose fins of stocked trout must be clipped for external identification and to support the current monitoring program downstream in Lake Roosevelt in the event that fish are entrained and survive passage through Long Lake Dam.

4.2 Stocking Schedule and Location

Avista will begin stocking the trout in Lake Spokane during June of 2014 and will continue for ten consecutive years. Annual stocking of sterile rainbow trout will occur in the spring, and will coincide with periods of descending river in-flow (i.e., longer water retention), cool surface water temperature, and

adequate primary and secondary food production. Stocking under these conditions will be done to promote long-term survival and hold-over in Lake Spokane. Avista and WDFW agree that the best time for stocking the trout in Lake Spokane is during the first two weeks of June, however, in-flows may require the stocking to occur during the last two weeks of the month.

The trout will be released in the lower, more pelagic segment of the reservoir extending from the Lake Spokane Campground (RM 39) upstream to the Highway 291 pullouts near the town of Tumtum, WA (RM 46). Approximately fifty percent of the fish will be stocked near each access point; however, during high flow years, a higher portion of fish may be released at the Highway 291 pullouts to minimize potential entrainment through Long Lake Dam. The stocking schedule and locations may be re-evaluated depending on annual conditions, fish supply, creel survey results or other factors, and implemented as agreed to by Avista and WDFW.

5.0 Creel Survey

To assess the effectiveness of the new stocking program, a creel survey that monitors overall angler use will be implemented. The cooperatively developed protocols will be used to o assess the success of the put-and-take recreational trout fishery upon completion of the creel surveys in 2022. Four creel surveys will be conducted during the ten-year stocking period and compared to the baseline creel survey conducted in 2011. The surveys will ensure that the overall recreational fishery in Lake Spokane is monitored and that any changes resulting from implementation of the trout stocking program can be characterized. Additionally, the creel survey will be used to help determine the success of the stocking program in establishing a recreational put and take trout fishery in Lake Spokane. . The current survey design was adapted considering the information gained from the baseline 2011 survey and may be further adapted following information gained from other surveys and implemented as agreed to by WDFW and Avista.

5.1 Survey Design Overview

As used in the 2011 baseline survey, a complemented survey design that incorporates both instantaneous count and access point angler interviews will continue to be used to characterize angler use in Lake Spokane (Malvestuto 1996). Angler counts will be used to determine effort (i.e., angler hours), while access point interviews will obtain catch data and angler characteristics. The overall creel survey design will be conceptually similar to traditional methods used by WDFW (Hahn et al. 2000).

Angler use will be monitored over an eight-month timeframe in each of the subsequent survey years, which will be stratified into three seasons that reflect seasonal changes in angler accessibility and use patterns at Lake Spokane. The seasonal strata will be defined as follows:

- Spring: 1 March – 27 May;
- Summer: 28 May – 15 September; and
- Fall: 16 September – 30 November.

Sampling days within each season will be randomly selected and further stratified temporally within each season based on month, weekday and weekend days, and time-of-day. Federally designated U.S. holidays will be considered weekend days.

Winter months (December through February) will be excluded from the survey period on account of limited angler access. During these months the public boat launches are closed and access to the reservoir is limited. In addition, most of the landowners that have private access to the reservoir (i.e., personal docks) remove their boats from the water due to winter drawdowns and freezing conditions. [Although Lake Spokane does occasionally freeze, it does not typically freeze enough to support ice fishing opportunities].

5.2 Angler Counts

Counts of fishing boats and shore anglers will be made during each sampling season by a survey boat traveling from one end of the reservoir to the other similar to the methods described by Pfeiffer (1990). Anglers will be identified by location, activity, and visible fishing gear. The starting location of each count will be randomly selected between upstream (starting at Riverside State Park) and downstream (starting at Lake Spokane Campground) directions using a flip of a coin. Angler counts are anticipated to be completed in about 75 to 90 minutes. If boating conditions are limited by inclement weather or other factors, counts may be made from the shore from a vehicle instead.

Stratified systematic random sampling will be used to distribute angler counts throughout each season and between weekday and weekend day strata as appropriate. This approach will ensure that angler count days are selected randomly, but are evenly distributed across the entire seasonal strata. Weekend and weekday strata will be used to reduce variability associated with typically higher and more consistent angler use occurring on the weekends and lower and less consistent angler use on the weekdays.

A total of 10 angler counts will be conducted during the spring season, 14 during the summer season, and 8 during the fall season of each survey year (Table 2). During each survey year, an approximate even number of weekday and weekend days will be surveyed for each season. The days will alternate between

randomly selected weekday and weekend days. Counts will be scheduled to coincide with the expected period of maximum angler use based on data collected from the angler interviews. The rationale for non-random scheduling of count times is provided principally in Lockwood et al. (2001), but also in Dauk and Schwarz (2001). Counting anglers during times of expected maximum use results in fishing pressure estimates based on the maximum amount of data and the minimum amount of data expansion to represent effort for the respective stratum, while reducing variability associated with count expansion.

5.3 Access Point Surveys

Since public shoreline access is limited at Lake Spokane, it is anticipated that the majority of fishing pressure will occur by boat anglers or by shore anglers utilizing designated access points. The majority of access point surveys will be conducted from Memorial Day weekend to just after Labor Day weekend (i.e., summer strata) to coincide with when most public boat launches and primary access points are opened. Some access point surveys may be scheduled during the spring and fall strata depending on the timing of when primary access points are opened and angler use.

Survey days will be selected using a stratified systematic random sampling scheme to ensure that angler interviews occur evenly across the entire season as appropriate. Access point surveys will be conducted weekly, and will alternate between one or two weekdays and one weekend day randomly selected per week. A total of 36 access point surveys will be scheduled during the summer; of these, 21 will occur on weekdays and 15 will occur on weekend/holidays (Table 2). An additional 14 access point surveys will be scheduled during the return trip (one access point survey each trip) of each of the angler count surveys during summer of each survey year. The access point will be alternated between the Long Lake Campground and the Nine Mile Resort depending on the rotation of the angler count. An additional 7 days (4 weekday and 3 weekend days) will be scheduled in spring and 5 days (3 weekday and 2 weekend days) will be scheduled in the fall.

The time and location of the access point interviews will be selected randomly among a series of potential starting times (e.g., half-hour intervals between 0730 h – 1730 h) that may be adjusted to account for day

Table 2. Schedule for instantaneous angler counts and access point surveys conducted during the initial angler survey in 2011.

		Angler Counts			Access Point Surveys			
		Weekday	Weekend		Weekday		Weekend	
Seasonal Strata	Month	Days of the Month	Days of the Month	Days Surveyed	Days of the Month	Days Surveyed	Days of the Month	Days Surveyed
Spring	March	8, 31	5, 20	4	9	1	27	1
	April	13	10, 30	3	27	1	16	1
	May	13, 23	21	3	6, 26	2	22	1
Summer	May	-	30	1	-		29	1
	June	1, 23	18	3	3, 8, 9, 13 14, 22, 30	7	5, 11, 19, 25	4
	July	8, 19	3, 17	4	7, 12,13,18 28,29	6	4, 9, 16 23, 31	5
	Aug.	9, 25	7, 20	4	4, 8, 16, 17 24, 26	6	6, 14, 21, 28	4
	Sept.	7	3	2	2, 6	2	4	1
Fall	Sept.	19	-	1	23	1	-	-
	Oct.	6, 26	1, 15	4	18	1	9	1
	Nov.	17	12, 25	3	3	1	26	1

length, and five boat ramps currently identified as potential access points that could be surveyed (Table 3). During each selected day, a total of two boat ramps will be surveyed for a total of three hours. For instance, a creel clerk would arrive at a predetermined access point at a selected time of 0900 h, and then depart that access point at 1200 h. From there the creel clerk would then travel to the next predetermined access point and remain at that location for the next three hours interviewing all returning anglers. A time of approximately one half-hour will be estimated for travel times between locations.

Individual survey locations will be selected and assigned to each survey period randomly. However, as additional information becomes available on the distribution of angler use at each access point, survey locations may be selected based on proportional use rather than a simple random distribution. One creel clerk will be used to cover the reservoir, and all data will be recorded on a standard data form (Appendix B).

Once arriving at the boat launch, the creel clerk will interview all departing anglers to gather information including: angler party size; target species; number of fish caught (released and harvested) by species; number of fish kept (harvested) by species; number of hours fished; and residence (zip code; Appendix B). Additional questions to obtain more specific information on angler trip satisfaction will be asked during the interview. If multiple anglers are present, one angler will be randomly selected (e.g., angler with the most recent birthday) to participate in the additional survey. Length and weight data from harvested trout will be obtained when possible by creel clerks. The number of anglers that refused to be interviewed will be recorded.

While it is anticipated that the majority of public fishing pressure will be encountered at the designated access points, it is common however for shoreline anglers to establish high use areas in response to changes in the fishery such as seasonal differences in fish behavior. These areas will be identified from angler count surveys and would be included in the monthly survey schedule to collect additional angler information.

Additional angler interviews will be conducted in conjunction with angler count surveys during the spring and fall strata when public access to the reservoir is limited and angler use is presumed to be low and less concentrated. These interviews will be conducted during the return trip down the reservoir once the angler count survey is completed. Attempts will be made to contact all boat and shoreline anglers observed to gather angler use and trip (partial or complete) information. Since the angler may continue fishing after the interview, this data will be identified as a partial trip.

Table 3. List of developed public and private access points located at Lake Spokane, Washington.

Access Point	Accessibility	RM
Lake Spokane Campground	Public	39
Willow Bay Resort and Marina	Private	46
Suncrest Community Park and Boat Launch	Private	52
Nine Mile Recreational Area	Public	56
Riverside State Park Boat Launch	Public	57

Ten boat roving surveys will be conducted in the spring and 8 in the fall strata.

5.4 Computational Methods

Data collected from angler interviews and instantaneous counts will be used to calculate descriptive statistics that will characterize angler use across years. The focus of the analysis will be on evaluating changes in angler characteristics towards the new recreational trout fishery and whether the goals set in the new License regarding this fishery have been met.

5.4.1 Estimating Angler Effort

Effort estimates for boat and shore anglers will be calculated following the proportional method for estimating angler hours described by McNeish and Trial (1991) and more recently by Lockwood et al. (2001). This methodology will provide a similar estimate of angler effort as more traditional methods described by Hahn et al. (2000), but is more efficient for surveys that occur over multiple years. The proportional method uses information collected from completed trip angler interviews to construct a distribution of angling activity or "angler use profile" over a designated time period (i.e., seasonal stratum). This distribution of angler activity is then used to expand instantaneous counts of anglers taken when angling effort is the greatest to estimate total angler effort during a given time period. The factors e_{pt} for expanding counts for i = 1-24 hours are defined as:

(1) $$e_{pt} = \frac{1}{b_{pt}} \sum_{i=1}^{24} b_{pi}$$

where:

e_{pt} = count expanding factor;

b_{pi} = the number of fishing boats or shore anglers each hour of the day during the period;

b_{pt} = the total number of fishing boats or shore anglers during the period.

Each individual count (B_{pt}) can then be expanded by e_{pt} and the number of days in the period (D_p) to estimate effort (E_{pt}) by:

(2) $$E_{pt} = B_{pt} \cdot D_p \cdot e_{pt}$$

Mean effort ($\overline{E}_p$) for each period can then be estimated by averaging over *n* counts in the period.

Estimated variance for $\overline{E}_p$ can be calculated as:

(3) $$\hat{Var}(\overline{E}_p) = 1 - \frac{n_p}{D_p}\left(\frac{\sum_{i=1}^{n_p}(\overline{E}_p - E_{pi})^2}{n_p(n_p - 1)}\right)$$

To estimate boat angler hours ($\hat{E}_{ap}$) for each period, the mean number of anglers per boat (A_p) derived from access point interviews will be multiplied by $\overline{E}_p$. Variance of the estimated boat angler hours will be calculated as:

(4) $$\hat{Var}(\overline{E}_{ap}) = \overline{E}_p{}^2 \, \hat{\text{v}}\text{ar}(A_p) + A_p{}^2 \, \hat{\text{v}}\text{ar}(\overline{E}_p) - \hat{\text{v}}\text{ar}(A_p)\,\hat{\text{v}}\text{ar}(\overline{E}_p)$$

Effort in angler trips will be estimated based on methods described by Malvestuto (1996), where the estimate of angler effort in angler hours for each stratum is divided by the mean length of completed fishing trips in each stratum. Total angler trips will be the aggregate of individual stratum.

Estimates of angler hours and trips will be calculated overall and for those anglers targeting rainbow trout. The proportions of estimated total angler effort and of anglers specifically targeting trout will be compared across years. This comparison will provide an index of rainbow trout angler use as it relates to overall angler use in Lake Spokane, and assist in determining whether the trout stocking program has been successful at creating a viable fishery.

5.4.2 Catch and Harvest Rates

Catch and harvest rates will be developed for rainbow trout using completed trip interviews. A ratio-of-means estimator (Jones et al. 1995; Lockwood 1997; Pollock et al. 1997) will be used to calculate catch and harvest rates for boat and shore anglers in each stratum separately. All rates will be expressed as fish per angler-hour. The ratio-of-means estimator is calculated by dividing the total catch or harvest by the total effort of all interviewed anglers with the stratum.

The estimator is defined as:

(5) $$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{\sum_{i=1}^{n} c_i}$$

where:

$\bar{x}$ = mean catch rate or harvest rate from the stratum;

n = the number of party interviews in the stratum;

x_i = the catch or harvest of the ith party i=1,….n;

c_i = the total angler hours expended by the ith party.

The estimate of variance of the mean catch or harvest rates will be calculated using a single cluster sampling with replacement formula described by Jones et al. (1995):

(6) $$\hat{Var}(x) = \frac{1}{N(\bar{x})^2}\left(\frac{\sum_{i=1}^{n}(x_i - \bar{x}c_i)^2}{n}\right)$$

where:

$\hat{Var}(x)$ = estimated variance of the mean catch rate or harvest rate;

$\bar{x}$ = mean catch rate or harvest rate from the stratum;

n = the number of party interviews in the stratum;

x_i = the catch or harvest of the ith party i=1,….n;

c_i = the total angler hours expended by the ith party.

Catch and harvest rates will be combined with estimates of total angler effort to derive estimates of total catch and harvest similar to methods described by Pollock et al. (1994). Estimates of total catch and harvest for rainbow trout will be used to estimate return rates on trout stocking and calculate catch and harvest per angler visit (trip).

Information on catch and harvest data will be also used to help evaluate the size structure of trout caught across years to determine whether hold-over is occurring, and provide an additional measure of quality for the fishery.

5.5 Angler Perspective

In addition to angler effort and harvest metrics, changes in angler perspectives regarding the recreational fishery in Lake Spokane over the creel survey period (2011- 2022) will also be evaluated and reported in the final report.

6.0 Project Evaluation and Reporting Timeline

Avista and WDFW collaboratively determined the timing sequence for the remaining four creel surveys over the ten-year period and will collaboratively determine the definition of a successful fishery in 2020. Avista, after each creel survey, will provide raw creel data to WDFW, and for WDFW produced fish, WDFW will provide Avista with annual reporting on their stocking efforts, by providing the date(s) of stocking, the specific location(s) where stocking occurred, and the total numbers of trout stocked. WDFW will contribute survey data collection (tags, etc.) to increase data utilization and confidence in the determination of success. Creel survey information, additional WDFW data collected, and the determination of success will be used by Avista and WDFW to determine how best to proceed in the future, after the initial 10-year stocking period, in regards to the Lake Spokane stocking program.

Following the final 2022 creel survey, Avista, in cooperation with WDFW will conduct a comprehensive evaluation of the data derived from the creel surveys utilizing the protocols for success to determine if a viable put-and-take trout fishery has been created. The results of that evaluation will be summarized in a final report, reviewed by WDFW, and then submitted to FERC by December 31, 2023. The final report will include an Avista and WDFW joint proposal for future actions in regard to the Lake Spokane Fishery Enhancement Program.

If, after the initial ten years, it is demonstrated that the Lake Spokane trout stocking effort is successful, WDFW and Avista will jointly present this information to the Washington Department of Ecology. Avista may continue to assess Lake Spokane's habitat condition through this and other programs related to Avista's Lake Spokane Dissolved Oxygen Water Quality Attainment Plan.

It is in both parties interest to manage the Lake Spokane stocked trout fishery in a collaborative manner with a foundation based on positive working relationships. Primary contact for the Spokane River Project

for WDFW will be the Regional Director. Avista's primary contact will be the Spokane River Project License Manager. Both parties will engage or direct their respective staffs' participation as needed for success of the project.

7.0 References

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Appendix A

Record of Consultation

State of Washington
DEPARTMENT OF FISH AND WILDLIFE

Mailing Address: 600 Capitol Way N · Olympia, WA 98501-1091 · (360) 902-2200, TTY (800) 833-6388
Office Location: Wenatchee District Office · 3860 Chelan Hwy North · Wenatchee, WA 98801

March 15, 2013

Speed Fitzhugh
Spokane River License Manager
Avista Corporation
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P.O. Box 3727
Spokane, WA 99220-3727

Subject: Lake Spokane Fishery Enhancement and Creel Survey Plan (Revised March 2013).
License Article 406, Spokane River Project, FERC No. 2545

Dear Mr. Fitzhugh:

I am writing to express the Washington Department of Fish and Wildlife (WDFW) support for the revised Lake Spokane Fishery Enhancement and Creel Survey Plan (March 2013) being submitted to the Federal Energy Regulatory Commission for approval according to License Article 406. As you are aware WDFW worked in collaboration with Avista staff to develop the revised plan and appreciates Avista's dedication to the work involved. We look forward to continuing this partnership as this plan is implemented.

Please contact me at (509) 662-0503 or by email graham.simon@dfw.wa.gov should you have any questions.

Sincerely,

Graham Simon
Renewable Energy Habitat Biologist

cc: Steve Pozzanghera, WDFW
Travis Nelson, WDFW
Rich Watson, WDFW
John Whalen, WDFW

Appendix B

Sample Creel Survey Form

Appendix B:

The following information will be included on the questionnaire administered to anglers by creel clerks during access point surveys and will also be included on the Internet-based survey. Wording may be slightly modified between access point and Internet-based versions to refer to the site visit in past or present tense. Some questions may also only occur on the access point surveys (e.g., the size of the angler's harvested fish), and some may only occur on the Internet-based survey (e.g., Where did you launch your boat today?).

1. Survey location: _____
    a. *See list of access points below.*

2. Interview date/start time: _____

3. Weather conditions: _____
    a. Clear
    b. Partly cloudy
    c. Overcast
    d. Raining
    e. Windy
    f. Foggy
    g. Snow

4. Fishing mode: _____
    a. Boat
    b. Shore

5. Fishing method: _____ (mark all that apply)
    a. Bait
    b. Artificial lure
    c. Fly
    d. Other

6. a. How many people are in your group today? _____
    b. How many people are fishing in your group today? _____

7. a. What is your zip code? _____
    What is the zip code(s) of the other people fishing today?

    b. Zip code #1:_____ number of anglers_____

    c. Zip code #2:_____ number of anglers_____

    d. Zip code #3:_____ number of anglers_____

8. What time did you start fishing today? _____

9. Is your fishing trip completed today?

    a. Yes: _____ Fishing stop time:_____

    b. No: _____

10. What kind of fish were you trying to catch today? _____
    a. *See species codes below*

11. Were you participating in a fishing tournament?

    a. Yes: _____

    b. No: _____

    c. Practicing: _____

12. Did you catch or harvest any fish today?

    a. _____ Yes, go to 13.

    b. _____No, go to 14.

13. The following information will be recorded on angler's catch/harvest:

Species Name[a]	Species Code[a]	Released Count	Harvested Count	Measured Count[b]		Length (inches)	Weight (oz)		Remarks Code[c]

[a] See common species list and codes below.

[b] Length and weight data will only be collected for rainbow trout that were harvested; for all other species, only the number released and harvested will be recorded.

[c] Remarks codes: (A) adipose clipped rainbow trout; (B) no catch or harvest information, reluctant angler; (C) tagged fish; (D) fish with physical deformities

Following the general creel survey questions above, a series of additional questions will be asked to obtain more specific information on angler trip satisfaction. If multiple anglers are present, one angler will be randomly selected (e.g., angler with the most recent birthday), and asked the following questions:

14. What was the primary purpose for visiting Lake Spokane today? _____
    a. Fishing
    b. Recreational boating
    c. Picnicking
    d. Camping
    e. Swimming
    f. Walking/hiking
    g. Viewing wildlife
    h. Special event
    i. Other (specify):_____

15. Is this your first fishing trip to Lake Spokane?

    a. Yes: _____

    b. No: _____, continue below:

        i. Have you completed a creel survey at Lake Spokane this year?

            1. Yes: _____, continue below:

                a. Approximately how many surveys have you completed? _____

            2. No: _____

        ii. On average, how many days per year do you fish at Lake Spokane? _____

                a. < 5 days/year

                b. 5 – 20 days/year

                c. > 20 days/year

        iii. How many days do you typically fish at Lake Spokane between the first of December and the end of February? _____

16. *If fishing from a boat:* Where did you launch your boat today?

    a. Public boat launch: _____, if so, which one? _____

    b. Private or community owned boat launch: _____, if so, which one? _____

    c. Private dock: _____

17. Where on Lake Spokane did you fish today: _____ *see map for reference*[1].
    a. Zone 1
    b. Zone 2
    c. Zone 3 *etc.*

[1] A map that divides the reservoir into specific zones (e.g., upper, middle, and lower) will be developed and provided as reference to the anglers.

18. How satisfied were you with your fishing experience today? _____, if "d" or "e", continue below

    a. Very satisfied
    b. Satisfied
    c. Neutral
    d. Dissatisfied
    e. Very dissatisfied.

        i. Why were you dissatisfied? (Please specify reason): _____

19. How would rate your fishing success today? _____
    a. Excellent
    b. Good
    c. Fair
    d. Poor

20. *If fishing for rainbow trout:* Based on your fishing success today for rainbow trout will you likely return to Lake Spokane to fish for trout?

    a. Yes: _____

    b. No: _____

21. Interviewer notes gender: _____

22. What is your age? _____

23. Thank you very much for your time. Do you have any additional comments that you would like to make about the Lake Spokane recreational fishery?

List of access points

Access Code	Location
101	Washington DNR Lake Spokane Campground
102	Willow Bay Resort and Marina
103	Suncrest Community Park
104	Nine Mile Recreation Area
105	Riverside State Park Boat Launch

Common fish species collected in Lake Spokane (from Osborne et al. 2003)

Species Code	Common Name	Scientific Name
000	No species caught	
480	Anything	
472	Mountain whitefish	*Prosopium williamsoni*
031	Rainbow trout	*Oncorhynchusmykiss*
451	Chinook salmon	*Oncorhynchus tshawytscha*
324	Kokanee	*Oncorhynchus nerka*
032	Brown trout	*Salmo trutta*
129	Black crappie	*Pomoxis nigromaculattus*
094	Channel catfish	*Ictalurus punctata*
090	Bullhead catfish	*Ameriurus species*
054	Carp	*Cyprinus carpio*
492	Tench	*Tinca tinca*
473	Chiselmouth	*Acrocheilus alutaceus*
475	Northern pikeminnow	*Ptychocheilus oregonensis*
080	Suckers	*Catostomus species*
127	Largemouth bass	*Micropterus salmoides*
126	Smallmouth bass	*Micropterus dolomieui*
124	Pumpkinseed	*Lepoomis gibbosus*
142	Yellow perch	*Perca flavescens*