

Attachment A: Stibnite Gold Project Fish Resources SDEIS Compilation Table

A-1: Fisheries and Aquatic Resources

Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	1	2-260	3.12.2	3	PRII	Passage beginning: " <i>As a result, stream flows in the watershed...</i> " - These are modeling results and should not be included in a description of baseline conditions. Please remove. As to the content of this passage, the cited 6.6C increase appears in the description of the analysis area in other chapters as well. The paragraph introduction is with respect to the entire analysis area and includes all streams upstream of Sugar Creek. This 6.6 increase refers only to the restored stream channels on the MTS, a small part of Meadow Creek. As a general comment to the inclusion of results in Chapter 3: We recommend results from the SPLNT modeling not be included in the existing environment section but rather in Chapter 4. In addition, the spatial scale of these predicted stream temperatures needs to be described so it is clear that these temperatures changes are not sitewide.
Fish	2	2-260	3.12.2	4	PRII	Passage beginning: " <i>Predicted flow reductions in Sugar Creek attributable to the SGP...</i> " - These are modeling results and should not be included in a description of baseline conditions. Please remove. We recommend results from surface water flow modeling and the SPLNT modeling not be included in the existing environment section but rather in Chapter 4.
Fish	3	3-271	3.12.4.1	Table 3.12.1	PRII	[Cell with 12-19 values] - This 12C minimum is resulting in a decrease in thermally suitable migration habitat in the effects analysis because it was determined that temperatures were too cold (i.e. fall below 12C) for the migration period under proposed conditions. In reviewing the EPA 2019a reference, there doesn't appear to be a minimum threshold. Suggest removing the minimum value.
Fish	4	3-273	3.12.4.1	1	PRII	" <i>...the length of proposed mine site streams within these temperature thresholds was estimated (Table 3.12-1).</i> " - We recommend results from the SPLNT modeling not be included in the existing environment section but rather in Chapter 4. Also, Table 3.12-1 does not mention that the lengths include the proposed streams.
Fish	5	3-273	3.12.4.1	2	PRII	" <i>The entire 12.93 km of potential habitat ...</i> " - From the previous paragraph, IP and Critical Habitat were used to define the spatial extent from which temperature was evaluated. This report also identifies 26.5 km of Chinook salmon critical habitat upstream of the YPP barrier. Please clarify how there is only 12.93 km of potential habitat evaluated (roughly half of what is available for juvenile rearing). It appears only the IP stream segments were evaluated. Also, please provide an explanation why all DCH was not considered as potential habitat.

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Fish	6	3-276	3.12.4.1	5	PRII	"The flow productivity analysis predicts changes in productivity based solely on streamflow changes and it does not factor in additional habitat changes that would also occur in the analysis area (e.g., direct loss of habitat, water temperature changes, etc.)." - It is recommended that also habitat gain be considered from restoration and enhancement of streams at the SGP.
Fish	7	3-277	3.12.4.1	1	PRII	"The IP model was used to estimate the potential for spawning and rearing habitat in the headwaters of the East Fork SFSR ..." - Incorrect. IP was used for spawning, incubation, and early rearing, but critical habitat was used for all other juvenile rearing. Please clarify.
Fish	8	3-277	3.12.4.1	3	PRII	"The IP model was used to evaluate over 51 km of stream habitat." - Please note/clarify here that IP does not evaluate habitat. It evaluates stream width, valley width, and stream gradient. IP and other models (OM, PHABSIM, Critical Habitat, Temperature, and Flow/Productivity) are being used as proxy data to evaluate habitat despite readily available habitat data (See comments below regarding omission of Habitat WCI metrics; page 3-315).
Fish	9	3-281	3.12.4.1	1	PRII	"...the length of proposed mine site streams..." - We recommend results from modeling not be included in the existing environment section but rather in Chapter 4. Also, Table 3.12-1 does not mention that the lengths include the proposed streams.
Fish	10	3-281	3.12.4.1	1	PRII	"...thermally suitable habitat for all life stages." - Stream segments were not evaluated for thermally suitable conditions at all life stages. See Table 3.12-4 below: Adult migration and spawning were both omitted because there were no SPLNT temperature data for those times. The reason there are no SPLNT data is because temperatures do not approach critical ranges in the spring. Rather than omitting the temperature analysis for these two life stages, they should be included with the caveat that temperatures were not modeled for these time periods but expected to be will within optimal temperature ranges based on the time of year.

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Fish	11	3-281	3.12.4.1	Table 3.12-4	PRII	Column " <i>Total Stream Length Above YPP/ Below YPP</i> " - No analysis was conducted upstream of the YPP because there is no designated critical habitat upstream of the YPP. This gives the impression that there is no available habitat upstream, which is not correct. There is IP upstream, and the Fisheries Specialist Report states in Section 7.2.3.5 for Integrated Effects for Steelhead that "Following the establishment of passage into the upper watershed, NMFS may designate Critical Habitat in the upper watershed." Please evaluate the temperature suitability of the IP stream segments.
Fish	12	3-281	3.12.4.1	Table 3.12-4	PRII	12-19 value - There should not be a minimum temperature for migration; no such threshold is reported in the EPA 2003 reference.
Fish	13	3-283	3.12.4.1	4	PRII	Incorrect "Johnson Creek" reference. Should be Lemhi River.
Fish	14	3-287	3.12.4.1	4	PRII	"... <i>the length of proposed mine site streams...</i> " - We recommend results from modeling not be included in the existing environment section but rather in Chapter 4. Also, Table 3.12-1 does not mention that the lengths include the proposed streams.
Fish	15	3-287	3.12.4.1	5	PRII	"Overall, there are 26.21 km of available habitat, none of it is within optimal thresholds for incubation/emergence, almost half of it is optimal for juvenile rearing, approximately 6 percent is within the thresholds for adult spawning ." - Recommend including acknowledgement that bull trout occurrence is widespread across the project area, which shows that when temperatures are not always optimal, fish can survive and even thrive.
Fish	16	3-292	3.12.4.1	Table 3.12-7	PRII	In addition to Low, Medium Low, Medium High, and High, a 5th and new category was added called "Unavailable OM Stream Habitat" as shown in Figure 6-10 of the Fisheries Specialist Report. There needs to be discussion of this new category and its parameters and how a stream segment falls into this category. Please revise.
Fish	17	3-293	3.12.4.1	1	PRII	"... <i>the PHABSIM study compared representative streams that contained similar hydrological and geographical characteristics to the stream characteristics at the proposed mine site.</i> " - The language used by ESS 2019g who conducted the model is " <b>It should be noted that the differences in the site parameters influence habitat values. The PHABSIM data are approximately 30 years old and were performed for another project. They represent available data that provide reference information and should not be viewed as directly transferable to the project site.</b> " Yet, these PHABSIM data are being directly transferred to the project site. Please revise the discussion of PHABSIM to include its limitations in inference.

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Fish	18	3-295	3.12.4.1	Table 3.12-10	PRII	<i>Adult Migration</i> - Same comment as Chinook. There should not a be a minimum value to the migration life stage based on EPA 2003.
Fish	19	3-295	3.12.4.1	Table 3.12-10	PRII	<i>Adult Spawning</i> - Same comment as above for Steelhead. No analysis was conducted for Adult Migration and Spawning because there are not SPLNT Temp data for the spring time period, because no temperature concerns are expected to occur in the spring. Please complete the evaluation for these additional life stages with the caveat that no temperature data were available, but it is expected temperature thresholds will be optimal in the spring.
Fish	20	3-298	3.12.4.1	Table 3.12-11	PRII	Same comment as bull trout (Comment 16). There is a 5th category shown on Figure 6-12 in the Fisheries Specialist Report called "Unavailable OM Stream Habitat." The parameters of this new category need to be explained.
Fish	21	3-308	3.12.4.3	Table 3.12-16	PRII	<i>Habitat Access</i> - Please clarify/validate as to why Sugar Creek gets a FUR score here but FA score for barriers in Table 3.12-17.
Fish	22	3-312	3.12.4.3	2	PRII	" <i>The lake also displays thermal stratification (i.e., order), but resuspension of sediments due to turnover is not expected. The bottom velocities necessary for turnover ...</i> " - These statements from IDEQ 2002 are inaccurate. The lake does not display thermal stratification or "turnover" which is precisely why it buffers max and min temperatures so well. See the Brown and Caldwell SPLNT model report. It is correct that the lake captures sediment. We recommend revising this paragraph or deleting it.
Fish	23	3-313	3.12.4.3	4	PRII	" <i>This reach has a short section with a 9 percent gradient, shallow depths, and few pools, which may be a partial fish migration barrier at low flows</i> ". Please reference the fish barrier memo completed by Bioanalysts. This is considered a partial barrier, and even though spawning adults have been transplanted in close proximity downstream to this partial barrier, no redds have been documented upstream.
Fish	24	3-316	3.12.4.3	Table 3.12-17	PRII	<i>Habitat Access</i> - Please clarify/correct: How does the EF South Fork Salmon River get a FA score for physical barriers when there is a complete barrier to all migratory fish just 3km downstream?

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	25	3-318	3.12.4.3	Table 3.12-18	PRII	Reported Baseline Temperatures - Please review these numbers; see notes on Table 6-4 in the fisheries report. Also, the footnote indicates that the Meadow Creek upstream of EFMC confluence uses a distance weighted statistic while there is similar footnote for other reaches; this is not called out on Table 6-4 in the fisheries report but it is footnoted later on Table 7-5 of the fisheries report. Please clarify what methods were used.
Fish	26	3-318	3.12.4.3	Table 3.12-18	PRII	"Meadow Creek upstream of EFMC confluence" - Reporting 14C for baseline summer max in Meadow Creek upstream of Blowout Creek is misleading. Only a very small portion of this stream segment is reported at 14C with the vast majority of the stream segment reporting higher temperatures ranging from 14C to 19C.
Fish	27	3-318	3.12.4.3	2	PRII	"The SPLNT model did not account for changes to stream temperatures caused by changing climate conditions." - As we provided to USFS in April 2022, for clarity, we request that this sentence be changed to "The SPLNT model did not account for changes to stream temperatures caused by changing climate conditions in the comparative modeling; however, the models were developed using the warmest, driest periods in the summer and fall. During model development, sensitivity analyses were conducted to test the effects of changing air temperature. Increasing air temperature every hour of the day by 5C had the effect of raising water temperatures by 0.5C."

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	28	3-318	3.12.4.3	3	PRII	" <i>The NorWeST model ...</i> " - Please clarify this paragraph for the reader considering the following information: The NorWEST models rely on percent canopy derived from the NLCD 2011 USFS Tree Canopy Cartographic land use data to estimate percent canopy for stream reaches; the percent canopy was then reduced based on U.S. Forest Service burn severity data to account for wildfires that occurred between 2001 and 2008. The NorWest models predicting out to 2099 do not account for natural or human-assisted regrowth and revegetation along streams and rather assume that percent canopy remains at current conditions. In areas recently affected by wildfires, the NorWest models may overpredict stream temperatures due to rising air temperatures if percent canopy under current conditions is low. The SGP includes planting of trees along enhanced and restored channels that would increase stream shading over time. The SPLNT model did account for climate change in the sensitivity analyses conducted using the existing conditions model. Considering the site-specific data on diffuse flow temperatures, stream flows, and canopy cover at a much more refined scale than the NorWest models, increasing air temperature every hour of the day by 5C had the effect of raising water temperatures by 0.5C for the baseline condition.
Fish	29	3-318	3.12.4.3	Table 3.12-19	PRII	<i>YPP Lake Headwater</i> - We are unclear/unsure of the spatial designation for this reach; recommend providing explanation in the text or as a table footnote. Also, please clarify these baseline modeled values; are they averages of the entire Creek, specific points, etc.? And does the spatial extent of the NorWest Model conform to the SPLNT locations selected for this table?
Fish	30	3-319	3.12.4.3	2	PRII	" <i>...climate change may have important biological impacts that were not considered in the SPLNT modeling.</i> " - Please provide additional information around this statement: as presented it is not correct. We did simulate a 5C increase every hour of the day which generated a 0.5C increase in streams. The streams can only get so warm given the stream flow, air temperatures, and solar inputs; assuming a consistent increase across all reaches is not appropriate. In general, where climate change text is presented in the SDEIS and specialist report, it does not consider or include the extensive restoration plantings and mitigation measures associated with the SGP. The NorWest models may provide a good assessment of a No Action temperature increase, but it is not a good approximation without considering these project design features.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	31	3-320	3.12.4.3	1	PRII	"The chemical contaminants WCI, the analysis area is "functioning at risk or unacceptable risk" (Table 3.12-17) due to existing levels of legacy mining contamination. No stream on the SGP mine site is considered within acceptable risk levels for chemical contaminants ." - Please provide additional explanation for the WCI methodology. [i.e. FA = No chemical contaminants exceed thresholds; FR = 1 exceeds thresholds; FUR = 2 or more exceed thresholds.] This is important because even if several chemical contaminants are fixed and/or concentrations lowered, the stream/reach WCI score may not change because the threshold for change is so high. That is generally the case with this WCI Category as the WCI Chemical Contaminants score only changes over the course of the mine life for 2 reaches (and none of the sDEIS stream segments) despite huge reductions in some chemical contaminants.
Fish	32	4-325	4.12.1	4	PRII	"Change in amount of total useable Chinook salmon IP habitat. " - Please clarify what is "useable" habitat vs just IP habitat, which is already divided up into levels of suitability/useability, and whether it connotes accessibility. Same for steelhead.
Fish	33	4-325	4.12.1	4	PRII	"Loss of Chinook salmon Critical Habitat. " - Evaluating loss rather than change implies any potential benefit has not been evaluated. Please update "Loss" to "Change" here and for bull trout in same bullet list.
Fish	34	4-325	4.12.1	5	PRII	"The impacts definitions for intensity, duration (FSH 1909.15, 152b), and context are provided in Table 4.1-1. " - Resource area specific Impact Definitions were developed for some resources and not others, e.g. not done for Fish Resources and Fish Habitat. We recommend that Resource area specific Impact Definition should be developed for Fish Resources and Fish Habitat, as the more generic ones in 4.1-1 are not tailored enough.
Fish	35	4-329	4.12.2	3	PRII	"There is a lack of a site-specific, two-dimensional hydraulic-based habitat suitability model. " - Recommend this be clarified to state that habitat suitability models are not widely available in riverine systems and the best scientifically available data were used to support the impact analyses. Also, please relate this to the Weighted Usable Area (PHABSIM) section for bull trout on PHABSIM habitat modeling, and include mention that some of these streams ARE used in the analysis as "surrogate" sites (Summit, Sugar). The reader may not understand the "hydraulic-based habitat suitability model" statements here are related to PHABSIM, which is THE hydraulic-based habitat suitability model being referenced.

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Fish	36	4-329	4.12.2.1	4	PRII	<i>No Action Alternative</i> - Recommend updating the description of the No Action Alternative to be more complete for the reader only reviewing the fish section and not other sections where the description is more complete.
Fish	37	4-330	4.12.2.2	2	PRII	"...the effects described are expected to be similar for all fish species in the analysis area ." - There is no rationale for this statement provided that informs the reader that all fish are impacted equally. This should either be clarified or edited to reflect that only T&E or sensitive species were analyzed for potential impacts and all other species are either not affected, at least to the degree the targeted species could potentially be.
Fish	38	4-330	4.12.2.2	3	PRII	"Fish salvage would be required for dewatering and all in- water work at stream crossings in all fish-bearing water bodies and fish impacts would be limited to minor (less than 10 percent) ..." - This statement infers that 10% of all fish die but yet the effects are considered "negligible, temporary and localized" from dewatering, fish salvage and relocation. Recommend providing additional context what the 10% percent represents.
Fish	39	4-331	4.12.2.2	1	PRII	"Salvage and relocation of fish from the Yellow Pine pit lake (19,267 square meters) would require a larger and longer effort than fish salvage in dewatered stream reaches ." - We disagree with this assertion and suggest it would take about the same length of time as diversion and dewatering of a longer stream segment. Note that later in this document it states: "In other respects, dewatering and fish salvage in the Yellow Pine pit lake would be similar to other areas of the SGP ..." Please revise.
Fish	40	4-334	4.12.2.2	3	PRII	"This would result in a major, long-term, localized impact to bull trout. " - According to the Impact Definitions, this would mean that the "change would affect the majority of a resource or population...significant modification of the overall population." Please verify that this is supportable for bull trout due to temporary loss of the YPP. No quantitative analysis or numbers are provided.
Fish	41	4-334	4.12.2.2	4	PRII	"Stream enhancements in the East Fork SFSR and lower Meadow Creek ..." - These enhancements are acknowledged, but it is not apparent if or where are they incorporated into the Effects Analysis. Please verify whether these enhancements are habitat elements that have been excluded from the effects analysis.



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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	42	4-334	4.12.2.2	5	PRII	"This would result in a major, long-term, localized impact to bull trout.trap and truck alternative s". - According to the Impact Definitions, this would mean that the "change would affect the majority of a resource or population...significant modification of the overall population." Please verify that this is supportable for bull trout due to temporary loss of the YPP. No quantitative analysis or numbers are provided.
Fish	43	4-334	4.12.2.2	6	PRII	"The restoration activities , particularly providing volitional passage in the East Fork SFSR, would result in a major, permanent, regional, and beneficial effect on Chinook salmon, steelhead, bull trout, and westslope cutthroat trout within the vicinity of the min e." -This is a positive thing for BT and is not adequately incorporated into the overall effects to the species.
Fish	44	4-335	4.12.2.2	Figure 4.12-1	PRII	Portions of West End are shown as fish-bearing (blue) but should be non-fish-bearing (gray). Also, it is unclear why the map shows mostly restored streams, but includes some diversions (West End) and some baseline streams that are moved (lower Garnet Creek). Also, please clarify why lower Garnet Creek would be considered fish-bearing at baseline, but not after restoration (blue line vs gray line).  This map is missing restoration of Garnet Creek, Hennessy Creek, and Midnight Creek, and it does not appear these streams were included in any of the analyses supporting the effects analysis. Hennessy and Midnight Creeks especially need to be included as significant effort was undertaken in the design to create usable habitat in the lower portion of both of these streams. Please revise.
Fish	45	4-336	4.12.2.2	5	PRII	"In the East Fork SFSR upstream from Meadow Creek, water temperatures tend to be cooler than the downstream reaches because this consists of the headwaters ". - When considering temperatures for fish, accessibility to cold-water refugia is an important consideration that has been left out of this discussion. If portions of Meadow Creek end up warmer, but huge portions of the upper EFSFSR become accessible, we suggest there is a net benefit to fish seeking cold water refugia. Also, temperatures tend to be cooler downstream because they are well-vegetated reaches...not because they are headwaters.

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Fish	46	4-337	4.12.2.2	5	PRII	"EFMC experiences an increase in summer and fall maximum water temperatures during mine operations and closure/reclamation activities (Mine Year 6 through 18) and post-closure until Mine Year 52,..." - Please verify this statement. Our documents indicate that the cited increase is up to 0.3C in Mine Year 6 based on SPLNT model results comparing the maximum temperatures in the area...and temperatures are lower by EOY12 due to the rock drain.
Fish	47	4-337	4.12.2.2	5	PRII	"By Mine Year 112, summer maximum water temperatures in the East Fork SFSR between Yellow Pine pit and Sugar Creek are about 0.4°C higher than baseline conditions,..." - The values in Table 4.12-2 are not correct and therefore the last sentence in paragraph is wrong. The baseline warmest temp downstream of YPP and above Sugar Creek is 14.5 simulated and 14.8 observed. For EOY 6 the simulated warmest temp is 16.1 (correct in the table) but by EOY 12 it is 14.4. The sentence should read: 'By Mine Year 12, summer and fall maximum temperatures in the East Fork SFSR between YPP and Sugar Creek are within 0.3C warmer than baseline temperatures.'
Fish	48	4-337	4.12.2.2	6	PRII	"The effects of the SGP on fish caused by changes to water temperature..." - Recommend this statement reflect those changes including both increases and decreases.
Fish	49	4-337	4.12.2.2	7	PRII	"...and East Fork SFSR downstream from Yellow Pine pit..." - EFSFSR downstream of YPP should be grouped with the beneficial reaches. By EOY12 temperatures are at baseline and further out they continuously decline to be cooler than baseline - see table 4.9-24.
Fish	50	4-338	4.12.2.2	1	PRII	"Sediment and Turbidity" - There is no quantitative analysis of sediment. This entire section is speculation and assumption. The Kuzis 1997 report has an entire appendix on sediment production based on the BOISED model that was developed for use in the Boise and Payette National Forests. At a minimum, the Kuzis data should be referenced, and we recommend that the BOISED model be used to evaluate and quantify potential sediment production.

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Fish	51	4-341	4.12.2.2	2	PRII	<i>"The effects of the SGP construction of temporary roads and transmission lines on sedimentation on fish and aquatic habitat are expected to be moderate, short-term, and localized".</i> - Recommend providing context as to how this conclusion was determined. All of the information provided above is generic and speculative (i.e. these actions could increase sediment, but no analysis to evaluate or quantify how much if at all). This comment is applicable throughout this section. Moreover, there is only 1 sentence mentioning "substantial decrease in sediment input" from Blowout Creek and lots of speculation about the "potential" for increased sediment from other operations. Please clarify what analysis was done to show that the speculative increases to sediment would exceed the known decreases in sediment from Blowout. The Kuzis (1997) report used the BOISED model developed for the Boise and Payette National Forests to predict and quantify sediment inputs both from roads and hillslopes. Kuzis (1997) calculated roughly 47.56 tons/year of sediment from Blowout Creek = the largest single source in the entire EFSFSR watershed. Notably, this calculation used a conservative erosion rate of 30 tons/acre for the steep chute, where as most other areas (including the Blowout meadow incision) used a 60 tons/acre estimate. If the 60 tons/acre were used for the Blowout chute, the total would be 78.8 tons/year. With all the BMPS and other sediment control measures going into place as part of the project, please clarify how the analysis predicts that the increased sediment produced from the mine/roads would exceed the 47.56 T/yr conservative (or 78.8 T/yr less conservative) saved from Blowout Creek resulting in a "moderate, permanent, and localized" effect.
Fish	52	4-342	4.12.2.2	4	PRII	<i>" During the construction of the Burntlog Route or of temporary roads, culverts would be constructed or replaced. Surveys were conducted to identify fish bearing streams along the Burntlog Route (Rio ASE 2021). "</i> Inaccurate citation. Rio ASE measured conditions at crossings but did not make any kind of determination regarding fish presence/absence or passage.
Fish	53	4-342	4.12.2.2	4	PRII	<i>"The potential re-establishment of access upstream of these culverts could affect the composition of the aquatic community... ."</i> - This conclusion does not provide rationale for a speculative assumption. Recommend providing additional context for rationale.

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Fish	54	4-342	4.12.2.2	6	PRII	"The effects of the SGP on fish access during construction of temporary roads are expected to be negligible, short-term, and localized." - This effects conclusion contradicts with the Fisheries Specialist Report, which indicates "minor". Recommend assessing and editing to be consistent.
Fish	55	4-344	4.12.2.2	Table 4.12-3	PRII	<i>Fiddle Creek (04)</i> - This barrier would not be removed. Also, please clarify how removal of the barrier would result in -0.72km of habitat for bull trout and cutthroat occupancy potential.
Fish	56	4-344	4.12.2.2	Table 4.12-3	PRII	<i>East Fork Meadow Creek: Artificial - Gradient</i> - This is incorrect. Surface flow and passage equal to baseline would be restored during reclamation. Recommend adding a footnote or relevant text stating that surface flow and passage are equal with the No Action Alternative and would be restored during reclamation (i.e. rock drain barrier removed; not a new barrier).
Fish	57	4-348	4.12.2.2	1	PRII	"...impacts of spills ..." - Recommend providing rationale for this impact assessment
Fish	58	4-348	4.12.2.2	2	PRII	"The West End pit lake would not be reclaimed or restored and would therefore have impacts on fish in perpetuity." - West End Creek is non-fish-bearing. The West End pit lake is not expected to fill and spill, therefore would not contribute surface water to fish-bearing reaches downstream. It is unclear how therefore it would have "impacts on fish in perpetuity." It would be more accurate to say that "West End Creek is non-fish-bearing, therefore impacts on fish are expected to be minor despite changing conditions from non-perennial stream channel to open pit lake." Please revise.
Fish	59	4-348	4.12.2.2	3	PRII	"...impacts to fish would be minor, long-term, and localized." - Please clarify the rationale or evidence for this impact via an explanation or reference.
Fish	60	4-349	4.12.2.2	Table 4.12-4	PRII	The criteria provided in this table appear to not take into account duration and frequency components altogether as well as not accounting for the magnitude of streamflows.

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Fish	61	4-353	4.12.2.2	2	PRII	"Section 4.8 and the SGP Water Quantity Specialist Report (Forest Service 2022e) provides additional descriptions of how much streamflow changes as a function of mine operations, including locations without gaging data (i.e., downstream of Sugar Creek)." - Similar impacts to streamflows are provided in Table 4.8-4 but uses "predicted reductions" versus "percent change". Recommend editing to show comparable and consistent presentation of the results to avoid potential misinterpretation of the results in regards to streamflow. [This comment also applicable to Table 4.12-5].
Fish	62	4-353	4.12.2.2	4	PRII	"Table 4.12-5 shows predicted (simulated) monthly stream flows during the August to March low flow period at five USGS gaging stations" - The table only includes 3 USGS stations. Please revise.
Fish	63	4-353	4.12.2.2	4	PRII	"...average baseline low flow period stream flows ..." - The "average baseline" appears to be the "No Action" scenario. Please clarify what "baseline" means, especially when referencing USGS stations. This suggests that "average baseline" could be observed data when it appears to be the No Action scenario at SFA reaches.
Fish	64	4-355	4.12.2.2	Table 4.12-5	PRII	Figure 4.12-3 on the previous page shows the greatest flow reduction is around 22.5%, but this shows 36.4%. Please verify the correct value. Also we recommend evaluating the duration of this reduction in flow and the increase back towards baseline well before post-closure.
Fish	65	4-356	4.12.2.2	3	PRII	"Not all WCI indicators summarized for baseline conditions are of equal value in determining the potential impacts ..." - Recommend extrapolating what is not equaled and how incorporated into the evaluation, as it is unclear what WCIs are not considered equal compared to other WCIs
Fish	66	4-357	4.12.2.2	Table 4.12-6	PRII	<i>Sediment and Turbidity</i> - Summary changes for sediment are mostly positive or negligible and should be reflected in the incremental change between the No Action and the MMP. Please revise.
Fish	67	4-357	4.12.2.2	Table 4.12-6	PRII	<i>Physical barriers: MC and EFMC</i> - Physical Barriers WCI represents a tradeoff: Greatly improved access to most areas with reduced access to upper Meadow Creek. Result is a large net benefit, which is not recognized. Please revise.
Fish	68	4-358	4.12.2.2	Table 4.12-6	PRII	<i>Chemical Contaminants</i> - Chemical Contaminants WCI changes are mostly positive with some negligible. Please revise.

Attachment A: Stibnite Gold Project Fish Resources SDEIS Compilation Table

A-1: Fisheries and Aquatic Resources

Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	69	4-359	4.12.2.2	4	PRII	"There would be a decrease in habitat conditions for migrating adults upstream from the Yellow Pine pit lake cascade barrier that meet the temperature criteria because water temperatures are lower than the thermal requirements ." - This statement contradicts the EPA 2013 reference for migration and the Fisheries Specialist Report (p. 135) and this document on page 4-366 states that "While there is a modeled loss of thermally suitable habitat for adult migration of Chinook salmon, this is primarily caused by water temperatures below the temperature criteria, which would not result in impaired movement." Recommend clarifying why there is a decrease in habitat, similarly reported Table 4.12-7.
Fish	70	4-360	4.12.2.2	Table 4.12-7	PRII	Row: <i>Adult Migration2</i> - This reported reduction is due to temperatures being too low, which were concluded in the Fisheries Specialist Report and this document on page 4-366 to "not result in impaired movement" and therefore should not represent a reduction in reported thermally suitable habitat. Please correct these values accordingly.
Fish	71	4-363	4.12.2.2	Table 4.12-9	PRII	<i>Meadow Creek and EFMC: 'High' row</i> - Notably roughly 1/2 of the all IP (and roughly half of the "High" IP) in Meadow Creek is above a partial barrier located just upstream of the Blowout Creek confluence. No Chinook salmon redds have been reported in that area. This portion of the IP should be qualified as inaccessible at baseline. Please revise.
Fish	72	4-365	4.12.2.2	1	PRII	"Notably, most of the medium IP that remains in Meadow Creek at Mine Year 23 is also blocked by a physical barrier to Chinook salmon so is not accessible ." - This statement appears to not match with the data presented in Figure 7-6 of the Fisheries Specialist Report. Recommend revised and updating accordingly. Additionally, no redds have been documented above that barrier.
Fish	73	4-365	4.12.2.2	4	PRII	Critical Habitat subheader - The specialist report does at one point explain this is modeled habitat and not designed critical habitat. This should be explained and footnoted/referenced. Also, re: paragraph 5 on 3-365; this is assumed DCH based on the FR narrative because modeled habitat was not determined downstream of the mine footprint.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	74	4-366	4.12.2.2	6	PRII	"While there is a modeled loss of thermally-suitable habitat for adult migration of Chinook, this is primarily caused by water temperatures below the temperature criteria, which would not result in impaired movement ." - Recommend amending results to address low temperatures and how this directly (or indirectly) impacts Chinook salmon and their associated movements.
Fish	75	4-366	4.12.2.2	7	PRII	"Activities during mine operations would result in major reductions ..." - Recommend providing context for this conclusion.
Fish	76	4-369	4.12.2.2	3	PRII	"At the Meadow Creek, East Fork SFSR at Stibnite, and East Fork SFSR above Sugar Creek sites, the effects of the 2021 MMP on steelhead productivity ..." - This is misleading. Current productivity is zero, because there are no steelhead upstream of YPP; therefore the reduction in productivity should be described as a reduction in potential productivity that would be gained, still resulting in a vast (mathematically infinite) improvement above the YPP barrier. In other words, it should be described as a reduced benefit, but still a significant benefit rather than a reduction compared to baseline.
Fish	77	4-373	4.12.2.2	3	PRII	"Overall, the effects of the 2021 MMP are expected to result in minor, long-term, and localized impacts to the steelhead Critical Habitat. " - Recommend providing explanation of the impact assessment while the resulting analyses presented show a net benefit.
Fish	78	4-375	4.12.2.2	7	PRII	"Table 4.12-13 presents the length of streams that have positive bull trout occupancy probability that fall within the temperature threshold categories for bull trout life stages ." - Recommend amending this statement that it is potentially misleading to suggest fish wouldn't be in the reaches that exhibit max temperatures outside of those thresholds, especially considering that is already the case for many reaches at baseline.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	79	4-375	4.12.2.2	7	PRII	<p>"For Meadow Creek, the impacts on bull trout habitat are major, long-term, and localized ." - Only 2 flow reductions were used from Summit Creek (87% reduction and 44% reduction) to extrapolate reductions to habitat in Summit Creek, which was then directly applied to Meadow Creek. Two points is a limited dataset from which to build a regression, and there are potentially many differences between Summit and Meadow Creeks. Finally, there is no discussion of improving habitat conditions in Meadow Creek through restoration (LWD, pools, floodplain connection, off-channel habitat, etc.). These improvements would offset some of the potential losses from reduced flow. This should at least be mentioned.</p> <p>Same comment applies to next two paragraphs (p. 376). For East Fork SFSR above Sugar Creek; only 2 data points representing 90% and 44% flow reductions; no discussion of improved habitat offsetting some of the calculated loss from reduced flow. For the EFSFSR, only 2 data points representing 60% and 45% flow reductions; no discussion of improved habitat offsetting some of the calculated loss from reduced flow.</p>
Fish	80	4-377	4.12.2.2	1	PRII	<p>"The East Fork SFSR upstream of the Yellow Pine pit lake and the Meadow Creek drainage all have increased occupancy probabilities for bull trout over time ." - We understand this to mean that baseline is the lowest occupancy probability, and the probability generally increases through the course of the project with the maximum occupancy probability occurring after closure (for all 4 stream segments evaluated (see Table 4.12-15 below). Please clarify.</p>
Fish	81	4-377	4.12.2.2	Table 4.12-15	PRII	<p>Here, baseline (km)equal 33.9km total. In the DEIS Appendix J, there was 41.7km of occupancy potential at baseline for bull trout. Please clarify the difference (7.8km) and the changes that occurred in the analysis between the DEIS and sDEIS.</p>



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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	82	4-378	4.12.2.2	6	PRII	"Post-closure, a net decrease in quality and quantity of bull trout habitat would occur despite removal of passage barriers and an increase of lake habitat for bull trout including: ..." - The Critical Habitat paragraph describes large benefits to Critical Habitat by removing the YPP barrier (opening 20km of habitat) and impacts by creating a new barrier in upper Meadow Creek (blocking less than 10km of habitat). On the balance it would seem the benefit of the much larger barrier removal would outweigh the impact of the much smaller barrier addition (i.e. 20>10), but the conclusion here is a "major" impact. Please clarify how this conclusion was reached. Another way of looking at it is an impact to the currently small, isolated subpopulation of bull trout above the YPP, and a benefit to the much larger watershed population by providing access above the YPP. Providing a larger amount of access to the much larger population would seem to outweigh the impact of blocking a smaller amount of access to a much smaller population.
Fish	83	4-379	4.12.2.2	6	PRII	"The other life stages are outside the summer – fall modeled parameters, and therefore are not included in the analysis." - Relevant to all species, it is recommended that the EIS recognize that winter/fall temperatures will be comparable to baseline and not impacting various fish species. Conditions will be thermally suitable.
Fish	84	4-380	4.12.2.2	Table 4.12-16	PRII	<i>Below Yellow Pine Pit: Total Available Habitat</i> - Please demonstrate where the loss of 0.35km comes from; it does not appear to be temperature related, but reduction of "available" habitat. Please clarify what "available" habitat means and how these values are calculated.
Fish	85	4-380	4.12.2.2	Table 4.12-16	PRII	<i>Above YPP: Total Available Habitat</i> - It is demonstrated here that gains in thermally suitable habitat for incubation/emergence and for juvenile rearing are indicated, but equate to a loss in total available habitat. Please clarify where is the loss in "available" habitat derives. Table 4.12-18 shows a net increase in occupancy potential, and as stated for bull trout, the removal of the YPP barrier creates net positive access compared to the addition of the new barrier at the TSF buttress.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	86	4-380	4.12.2.2	3	PRII	"Based on modeled results, the effects of the SGP on westslope cutthroat trout caused by changes to thermally suitable habitat are expected to be minor, permanent, and localized ." - From the bullets above, there would be decreases in thermal suitability for several years, but a net increase for both life stages evaluated after closure. Please clarify the rationale for permanent, minor impact. If anything there would a long-term impact (between 3 and 20 yrs) followed by a permanent benefit, certainly not a permanent impact.
Fish	87	4-381	4.12.2.2	4	PRII	"For the East Fork SFSR at Stibnite site, the impacts on cutthroat trout habitat are moderate, long-term and localized. " - Appears to be inconsistent with the Fisheries Specialist Report; recommend reconciling and address flows rebounding near baseline
Fish	88	4-383	4.12.2.2	2	PRII	"Based on the current known extent westslope cutthroat trout occupancy, fish in the upper headwaters of Meadow Creek would remain isolated. " - Cutthroat trout population would persist, isolated above the TSF buttress, but earlier in this document it was assumed bull trout would be extirpated. Both need explanation as to why one species would persist but the other would not. Please revise.
Fish	89	4-383	4.12.2.2	5	PRII	"Following reclamation, the net effect would be a minor loss of both quantity and quality of habitat for westslope cutthroat trout including:" - Please clarify the post-closure (following reclamation) conclusion that there would be a loss of quantity and quality of habitat given the outcomes of each analysis. As with similar comments, the methods of "integration" needs to be explained. It is difficult to understand the summary of effects as reported: Water Chem = unknown benefit Habitat = benefit Temp = benefit Flow Change = negligible Barriers = negligible Occupancy = benefit
Fish	90	4-383	4.12.2.2	5	PRII	"The primarily net reduction in water temperatures in the East Fork SFSR and Meadow Creek..." - Here it is stated there would be a net reduction in water temperature, but for bull trout it was stated there would be a net increase. Please clarify the difference.

## Attachment A: Stibnite Gold Project Fish Resources SDEIS Compilation Table

## A-1: Fisheries and Aquatic Resources

Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish	91	4-384	4.12.2.3	3	PRII	"The potential for surface water quality impacts from accidental fuel or chemical spills along the mine access roads would be comparable between the action alternatives ." - This is not the case, as is stated later in the paragraph. Please revise.
Fish	92	4-385	4.12.4.1	7	PRII	"Under the No Action Alternative there would be no irreversible or irretrievable commitment of fish and aquatic habitat resources. " - This summary of "no action" does not appear consistent with the other action alternatives. The YPP barrier would still continue to block roughly 35 miles of perennial streams and associated habitat. Below, for the Modified Mine Plan, the TSF buttress barrier is considered an irretrievable commitment because it blocks fish access to upper Meadow Creek.
Fish	93	4-386	4.12.4.2	2	PRII	"The direct mortality of fish would be an irreversible impact that could occur under the Action Alternatives. " - No rationale for this statement. Some fish dying would not limit the future options for use of the "resource" which I assume would be defined as populations of fish. Fish populations would still be maintained and there would still be options for their use in the future. Please revise.
Fish	94	4-386	4.12.5.2	8	PRII	"During construction and operations, some sections of aquatic habitat would be removed ..." - Recommend rewording to recognize the improvements to streams rather than suggesting they would be removed.
Fish	95	4-386	4.12.5.2	8	PRII	"In the long-term restoring fish passage upstream of the Yellow Pine pit would result in an increase in available habitat for anadromous and resident fish in the analysis area. " - This statement summarizes that "restoring fish passage upstream of the Yellow Pine pit would result in an increase in available habitat for anadromous and resident fish" but for both bull trout and cutthroat trout thermally suitable habitat analyses above there is a reported reduction in "available" habitat. Please clarify which conclusion is correct.
Fish	96	4-387	4.12.5.2	1	PRII	"Short-term changes to aquatic habitat in Meadow Creek include diverting a portion of the creek just south of the proposed Hangar Flats open pit, and the loss of habitat where the TSF and TSF Buttress would be located ". - Recommend rewording such that it is not concluded that actual stream reaches are removed, which is inaccurate.
Fish Specialist Report	97	1	1.0	2	PRII	"The SGP would have a life (construction, operation, closure, and reclamation) ", Closure and post-closure activities were not fully considered in the habitat impact analyses, such as stream restoration improvements, riparian improvements, and others. See additional comments within this report.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	98	5	2.3	5	PRII	"...except for the TSF which would require an additional 9 years... ". Please clarify that TSF closure begins in EOY 23 (Not 9 years after 5 years of reclamation, as presented).
Fish Specialist Report	99	14	2.4	Table 2-3	PRII	Row 2: Bull trout do not dominate the fish assemblage in the lake, whitefish do. Please revise.
Fish Specialist Report	100	14	2.4	Table 2-3	PRII	Row 4: Trap and haul details are provided in the FOMP and will be subject to conditions outlined by the Services during ESA Section 7 formal consultation.
Fish Specialist Report	101	14	2.4	Table 2-3	PRII	Row 5: Also, a CCTV system will be in place to monitor for fish passage as well as maintenance needs to allow passage
Fish Specialist Report	102	14	2.4	Table 2-3	PRII	Row 9: This action was removed. This was addressed during consultation and during a follow up field trip with the agencies. The information is detailed in the barrier assessment TM.
Fish Specialist Report	103	15	2.4	Table 2-3	PRII	Row 5: The RIBS were removed and are not part of the 2021 MMP
Fish Specialist Report	104	15	2.4	Table 2-3	PRII	Row 11: Recommend providing clear distinction between activities covered under the ASAOC and therefore the No Action Alternative versus addressing historical mining impacts
Fish Specialist Report	105	19	4.2	5	PRII	"The SGP may cause changes in fish habitat in the analysis area that may affect aquatic species, including federally listed fish species and aquatic habitat (e.g., designated Critical Habitat) and Management Indicator Species within and downstream from the SGP area " - SGP activities also include fish salvage and fish handling. These are direct effects to ESA listed species. Please revise.
Fish Specialist Report	106	19	4.2	5	PRII	"Change in length of stream and lake habitat directly impacted by channel removal " - This appears to only evaluate channel removal but not also channel restoration. Needs to also evaluate closure and reclamation as specified in Section 1 (Introduction). Please revise.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	107	20	4.2	1 and for all indicators	PRII	"Loss of Chinook salmon Critical Habitat " - Indicating "Loss" upfront seems biased. The indicator should evaluate "Change". Please revise.
Fish Specialist Report	108	20	4.2	1	PRII	"Change in access to bull trout lake habitat. " - Bullet should just state "change in physical access to stream and lake habitat". This would be a logical step in assessing access to habitats important (i.e., OM, IP, DCH) to the species identified.
Fish Specialist Report	109	20	5.1	2	PRII	"Forest Service Handbook [FSH] 1909.15, 15.2a " - Section 15 of this FSH handbook (Estimate Effects on Each Alternative) explicitly states: "...analyze and document the environmental effects, including the effectiveness of the mitigation measures that would result from implementing each alternative." Later in the same section: "Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial." Both of these statements support the need to include the mitigation measures in the effects analyses. Please revise.
Fish Specialist Report	110	21	5.1	3	PRII	<p>"As a result, stream flows in the subwatershed would be reduced by up to 30 percent during operations. While project design features and regulatory requirements maintain water chemistry conditions, removal of riparian shading increases predicted stream temperatures by up to 6.6°C until a time that restoration efforts would effectively shade stream flows and reduce temperatures toward baseline conditions. " - 1) Reduction in flows up to 30% is not representative of the entire project area and is therefore misleading. 2) The project does more than "maintain water chemistry" it significantly reduces contaminant concentrations. The WCI analysis thresholds are too high to capture these improvements. 3) This statement is misleading about project impacts on temperature. Water temperatures only increase by 6.6C in one small section of the project for a short period. Most of the project area realizes temperature reductions for most of the project timeline. Please revise.</p> <p>In general, these statements speaking to effects seem out of place to include in a description of the Analysis Area. Please revise.</p>

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	111	21	5.1	3	PRII	"When the tools utilized to evaluate fish habitat (e.g., intrinsic potential, occupancy, and flow productivity modeling) ..." - These tools do not evaluate habitat. The "Habitat" WCI metrics do. Please revise.
Fish Specialist Report	112	21	5.1	4	PRII	"Application of fish habitat evaluation tools ..." - Unclear what the evaluation tools are; recommend adding explanation for these and how they address the extent of changes for the effects analyses.
Fish Specialist Report	113	21	5.1	5	PRII	"Because of the minimal SGP effects anticipated to Sugar Creek, the focus of the environmental consequences analyses is on the headwaters of the East Fork SFSR." - State the level of impact as defined in the document under section 7.1. State whether the impact is minor or negligible. Better to express such statements in environmental consequences and dismiss from further analyses. Please revise.
Fish Specialist Report	114	30	6.1.1	6	PRII	"The same description of the pathways and WCIs can be found in Table B-1, Appendix B of each Forest Plan (Forest Service 2003, 2010a)." - Please clarify if the Forest Plan WCI methodology was used or Rio ASE 2021 SFA methodology.
Fish Specialist Report	115	32	6.1.1	Table 6-1	PRII	Footnotes: Rio ASE 2019 is out-of-date. Should be updated to reflect 2021 report/data. Please confirm the updated SFA was used.
Fish Specialist Report	116	34	6.1.1	Table 6-1	PRII	Headwaters EFSFSR column: These results match Rio's SFA for the metrics that Rio evaluated in the SFA with the exception of RCA Disturbance (Rio shows FA and this report shows FUR). Unclear where/how results were generated for metrics not in Rio's SFA. Please clarify.
Fish Specialist Report	117	35	6.1.2.1	Subsection header	PRII	The section that follows is a stream by stream general description of the affected environment. The functional ratings provide the overall subwatershed condition but please clarify how the assessment arrived at the functional ratings in the mine site.
Fish Specialist Report	118	37	6.1.2.1	1	PRII	"The lake also displays thermal stratification..." - This is incorrect. The fact that the lake is not stratified and is well-mixed is what provides maximum and minimum temperature buffering observed.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	119	40	6.1.3	1	PRII	"For these reasons, five WCIs that have the greatest potential to accurately identify potential impacts ..." - Please provide rationale as to why these 5 WCI are of greater importance than the other 12 with regard to the "detailed analysis." Please clarify how all of the habitat elements (substrate embeddedness, pool frequency, pool quality, LWD, and off-channel habitat) are either not of historical interest, not affected by the SGP, not well quantified, or irrelevant. This report uses proxies to evaluate habitat (including IP, OM, PHABSIM) rather than measuring actual habitat; please explain why.
Fish Specialist Report	120	41	6.1.3	Table 6-3	PRII	Physical Barriers: Please clarify how the EFSFSR upstream of YPP barrier can get a FA score for physical barriers. We suspect there was an error in an earlier draft of the SFA Ledger that showed no barrier in the upper EFSFSR upstream of Meadow Creek. This has since been fixed; please verify and correct these entries.
Fish Specialist Report	121	43	6.1.3.1	Table 6-4	PRII	<p>Table 6-4 values are inconsistent with the values listed for No Action (which represents baseline) in Table 4.9-24. For example, Meadow Creek upstream of East Fork Meadow Creek includes well vegetated reaches and poorly vegetated reaches, and baseline temperatures are up to 17.9C. The 14C only pertains to the upper part of this area. Please correct these values.</p> <p>Based on the footnote to Table 7-5, it appears the 14.0 in this table is the "1 Temperatures based on distance weighted average of all QUAL2K reaches." That metric is not noted on this table and it is not used anywhere else in Table 7-5 or in the SDEIS chapters. Mixing and matching metrics across locations and when comparing baseline to potential impacts is very confusing to the reader and may result in a misunderstanding of the results and impacts. Please clarify the methods used for each reach in this table.</p>

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	122	43	6.1.3.1	4	PRII	"The SPLNT model did not account for changes to stream temperatures caused by changing climate conditions ." - Please clarify this statement. As we provided in April 2022, this sentence should be changed to "The SPLNT model did not account for changes to stream temperatures caused by changing climate conditions in the comparative modeling; however, the models were developed using the warmest, driest periods in the summer and fall. During model development, sensitivity analyses were conducted to test the effects of changing air temperature. Increasing air temperature every hour of the day by 5C had the effect of raising water temperatures by 0.5C."
Fish Specialist Report	123	44	6.1.3.1	Table 6-5	PRII	YPP Lake Headwater: Recommend defining what this reach is spatially and how the data were calculated.
Fish Specialist Report	124	44	6.1.3.1	3	PRII	"Into the future, baseline estimates for water temperatures would increase by as much as an additional degree (2070-2099). Depending on the salmonid species, climate change may have important biological impacts. " - We suggest this passage be clarified as follows: "These modeling results indicate that, depending on stream reach, climate change could increase water temperatures from baseline estimates to the end of the mining operations (2030-2059) by as much as 0.1° to 2.0°C if no additional plantings or restoration were to occur on site. Depending on the salmonid species, climate change could have important biological impacts particularly in areas affected by historic mining and wildfires if riparian vegetation is not restored that were not considered in the SPLNT modeling."
Fish Specialist Report	125	45	6.1.3.3	1	PRII	Physical Barriers: This section presents data/reference to information that would support a functional condition conclusion. State the functional condition based on what is presented.
Fish Specialist Report	126	47	6.1.3.3	Table 6-6	PRII	Footnotes: - Please define what is considered usable habitat. Or simply state the length of IP, DCH, OM that is upstream. Please define what is Available Habitat. Please define the level of occupancy probability that was used. The probability level allows the reader to understand the difference between upstream of barrier and total available. Please define usable IP.



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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	127	48	6.1.3.4	3	PRII	"In sum, for the chemical contaminants WCI, the analysis area is "functioning at risk" or "functioning at unacceptable risk" (Table 6-3) due to existing levels of legacy mining contamination. No stream on the SGP mine site is considered functioning acceptably for chemical contaminants." - Please explain the WCI methodology. FA = No chemical contaminants exceed thresholds; FR = 1 exceeds thresholds; FUR = 2 or more exceed thresholds. This is important because even if several chemical contaminants are fixed and/or concentrations lowered, the stream/reach WCI Score may not change because the threshold for change is so high. That is generally the case with this WCI Category as the WCI Chemical Contaminants score only changes over the course of the mine life for 2 reaches (and none of the sDEIS stream segments) despite huge reductions in chemical contaminants.
Fish Specialist Report	128	50	6.1.3.4	Table 6-7	PRII	This table does not match Table 3.9-10a from Section 3.9. Recommend reviewing and reconciling any discrepancies.
Fish Specialist Report	129	54	6.2	Section	PRII	There are unadjusted fish densities available throughout the analysis area. These would be good to present for areas outside the mine site.
Fish Specialist Report	130	59	6.2.2	1	PRII	"No estimates were made for steelhead " - Recommend referencing as steelhead/rainbow trout
Fish Specialist Report	131	60	6.3.1	Section	PRII	Recommend comparing available abundance estimates to the recovery status goal for abundance.
Fish Specialist Report	132	61	6.3.1.2	1	PRII	"...26.5 km of modeled Chinook salmon Critical Habitat upstream from the YPP lake barrier ..." - Reconcile with value presented in Table 6-6.
Fish Specialist Report	133	63	6.3.1.4	1	PRII	"Chinook salmon have different temperature requirements or limitations for their various life stages. Exceeding thresholds could impact various life-stages and could cause fish to avoid areas or even mortality. " - Recommend elaborating as to what makes a stream temperature optimal (i.e., regulatory constraint, long-term survival, etc.)

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	134	63	6.3.1.4	2	PRII	"...the segments in which there was modeled Intrinsic Potential (IP) habitat (see Section 6.3.1.1) were evaluated for thermally suitable habitat (based on MWMT) for all life stages except juvenile rearing..." - Based on this approach of removing a segment if a threshold is only briefly exceeded is misleading and suggest fish don't use these areas at all. Please revise.
Fish Specialist Report	135	63	6.3.1.4	3	PRII	"It is assumed that juvenile Chinook salmon are able to access a larger range of habitat conditions than the other life stages, and therefore, less restrictive habitat conditions were applied in the analysis." - Recommend clarifying that IP is a measure of habitat but solely the likelihood of spawning based on stream slope, channel width, and valley width despite actual habitat. Other metrics (i.e.. population density, accessibility, etc.) are also compounding factors.
Fish Specialist Report	136	63	6.3.1.4	4	PRII	"It is important to note that they do experience significant diurnal variations, and that for mobile life stages (i.e., adults and juveniles), if MWMT are above the thresholds, fish may avoid areas within streams if they are able, such as finding thermal refuges". - Use the example in the comment above for temp/IP to revise.
Fish Specialist Report	137	65	6.3.1.5	1	PRII	"Between 2008 and 2017 (excluding 2014), Chinook salmon spawners were released into Meadow Creek when there are surplus adults from the McCall Fish Hatchery South Fork Salmon River Chinook Salmon Mitigation Program." - Recommend listing the numbers released each year.
Fish Specialist Report	138	67	6.3.1.5	1	PRII	"The SGP flow-productivity model uses proxy data from nearby Johnson Creek and assumes that the physical and biological conditions in Johnson Creek are relatable to the mine site streams." - In previous paragraph it says SGP flow-productivity model that was developed using the flow-productivity modeling approach for the Big Creek Water Diversion Project (NMFS 2013). Please clarify which is correct.
Fish Specialist Report	139	67	6.3.1.5	2	PRII	"The model outputs help to show the relative effects of flow modifications on Chinook salmon productivity at the reach level." - Please note that the flow-productivity model developed by Morrow 2018 is NOT a reach level analysis tool, but rather is a watershed-wide tool for Johnson Creek. From this perspective, its application here for reach-level analysis is limited and that should be explicitly stated. Please revise.
Fish Specialist Report	140	70	6.3.1.5	Table 6-14	PRII	Total Length Evaluated: Should explain why only this much was evaluated and indicate that some streams are physically too small to ever have an IP that isn't considered none, and that is not a metric that can be changed by a proposed action.

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A-1: Fisheries and Aquatic Resources

Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	141	73	6.3.2.4	Table 6-15 and Table 6-16	PRII	Total Stream Length Above YPP/ Below YPP - Recommend evaluating area upstream of the YPP barrier. Data is misleading as presented, suggesting that none of the area upstream of the YPP barrier is potentially habitable. The Chinook analysis (Table 6-11) used both IP and modeled Critical Habitat to inform the length of stream above the YPP barrier to evaluate. Recommend something similar here with focus on suitable habitat still being now accessible that isn't DCH. DCH does not equal only suitable (Apply comment to steelhead analysis Table 6-16).
Fish Specialist Report	142	81	6.3.3.4	6	PRII	<i>"Overall, there are 26.21 km of available habitat, none of it is within optimal thresholds for incubation/emergence, almost half of it is optimal for juvenile rearing, approximately 6 percent is within the thresholds for adult spawning ."</i> - Although the SDEIS states none of this available habitat is within optimal thresholds, there are still known reproducing populations of bull trout in these stream reaches. This point should be made as part of these statements.
Fish Specialist Report	143	82	6.3.3.4	Table 6-17	PRII	The analysis implies that they only important thermal habitat is based on OPTIMAL water temperatures and that other than optimal habitats and water temperatures are used successfully in the Project streams and other nearby streams (bull trout populations and Chinook spawning and rearing in EFSFR and tribs). These data SHOW that the impacts based on OPTIMAL habitat only are misleading. Please revise discussion.
Fish Specialist Report	144	82	6.3.3.4	1	PRII	<i>"Therefore, while fall MWMT may show zero miles of suitable spawning and incubation habitat, this may not be a true representation of the conditions in the river ."</i> - This is important and makes the data in Table 6-17 confusing to the reader without context. Please revise discussion of Table.
Fish Specialist Report	145	83	6.3.3.5	3 and global comment on OM	PRII	<i>"The mine site OM quantifies potential habitat ..."</i> - OM does not quantify habitat. It predicts occupancy based on channel and valley geometries. It has nothing to do with habitat and makes its predictions despite habitat. Global comment. Please revise.
Fish Specialist Report	146	83	6.3.3.5	2	PRII	<i>"PHABSIM was used for bull trout and cutthroat trout because there was no similar flow-productivity analysis as was applied for Chinook salmon and steelhead using a NMFS-derived tool (ESS 2019g) ."</i> - This comment is misleading, as PHABSIM does not predict productivity based on what it models. Please revise.

## Attachment A: Stibnite Gold Project Fish Resources SDEIS Compilation Table

## A-1: Fisheries and Aquatic Resources

Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	147	87	6.3.3.5	1	PRII	"For example, Meadow Creek and the East Fork SFSR upstream from Meadow Creek are represented by Stream Index 1, both of which are similar to the Summit Creek site of the PHABSIM study ." - Recommend providing additional context that provides the basis for this statement
Fish Specialist Report	148	89	6.3.4.2	Table 6-22	PRII	Adult Migration row: Recommend evaluating migration and spawning periods as well.
Fish Specialist Report	149	90	6.3.4.2	1	PRII	"Additionally, if MWMT for mobile life stages (i.e., adults and juveniles) are above the thresholds, fish may avoid areas within streams if they are able, such as finding thermal refuges." - Recommend incorporating this sentence in the SDEIS impact statements
Fish Specialist Report	150	95	7.1	Section header	PRII	These impact definitions do not address the proportion of the population potentially impacted for fish. Recommend including consideration of the overall population potentially being impacted.
Fish Specialist Report	151	97	7.2.2	2	PRII	"In the absence of the SGP, current uses by Perpetua on patented mine/mill site claims, and on PNF and BNF would continue. Uses of NFS lands include mineral exploration, dispersed and developed recreation, such as ..." - Recommend more completely characterizing the description and impacts of the No Action Alternative for the activities occurring and expected to occur over the same duration and spatial scale as the MMP.
Fish Specialist Report	152	97	7.2.3.1	6	PRII	"Fish salvage would be required for dewatering and all in- water work at stream crossings in all fish-bearing water bodies and fish impacts would be limited to minor (less than 10 percent) incidental take associated with fish salvage ." - Incidental take is ESA terminology, and it is recommended to replace with terms like fish loss or mortality for the SDEIS.
Fish Specialist Report	153	99	7.2.3.1	1	PRII	"However, impacts to fish species present and incidental mortality are expected to be similar." - Recommend provide additional information as to how this was determined
Fish Specialist Report	154	102	7.2.3.1	6	PRII	"Relative to baseline conditions, construction during the active life of the mine would result in a maximum of 4 percent loss ..." - Please clarify: 4% loss of stream channel habitat (length) above Sugar Creek during mining replaced by 4% increase in channel habitat (length) after restoration.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	155	106	7.2.3.1	1	PRII	"Stream enhancements in the East Fork SFSR and lower Meadow Creek would include improvements to physical channel processes and habitat largely within the existing stream channel. This would be accomplished by selectively installing large woody debris and rock structures, creating pools, enabling improved sediment sorting, and generally increasing hydraulic and habitat diversity. Enhancement efforts also may include floodplain reconnection and establishment of riparian vegetation, achieved by excavation of legacy fill material down to bankfull level (Rio ASE 2021 )." - This is an example of a benefit from the stream enhancements that should be more fully incorporated into the effects analyses. Please revise.
Fish Specialist Report	156	106	7.2.3.1	3	PRII	"The restoration activities, particularly providing volitional passage in the East Fork SFSR, would result in a major, permanent, regional and beneficial effect on Chinook salmon, steelhead, bull trout, and westslope cutthroat trout within the vicinity of the mine ." - As an example from this statement, the SDEIS should provide clearer statements as to whether effects or beneficial or adverse throughout the document. Stating that an effect is major or minor as example, does not provide reader whether the magnitude is beneficial or adverse.
Fish Specialist Report	157	106	7.2.3.2	7	PRII	"A summary of predicted water temperatures under the 2021 MMP are presented in Table 7-5. " - As stated in comments for Section 4.12 and in separate comments provided for the fisheries resource area, we recommend many of the values in this table be rechecked and corrected as necessary.
Fish Specialist Report	158	107	7.2.3.2	2	PRII	"In the East Fork SFSR upstream from Meadow Creek, water temperatures tend to be cooler than the downstream reaches because this consists of the headwaters " - When considering temperatures for fish, accessibility to cold-water refugia is an important consideration that has been left out of this discussion. If portions of Meadow Creek end up warmer, but huge portions of the upper EFSFSR become accessible, that is presumably a net benefit to fish seeking cold water refugia.
Fish Specialist Report	159	107	7.2.3.2	3	PRII	"...than average temperatures over the entirety of Meadow Creek..." - It is misleading to compare simulated temps across the TSF to "the average temperatures over the entirety of Meadow Creek" which based on Table 7-5 isn't actually the entirety of Meadow Creek but only reaches above Blowout Creek. Spatial references should remain consistent across comparisons to prevent confusion by the reader and an incorrect interpretation of the impacts analysis.

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## A-1: Fisheries and Aquatic Resources

Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	160	107	7.2.3.2	4	PRII	"East Fork Meadow Creek experiences an increase in summer and fall maximum water temperatures during mine operations and closure/reclamation activities..." - Recommend incorporating: ...by up to 0.3C.... (based on the values in Table 7-5 which often mischaracterize baseline temps)
Fish Specialist Report	161	107	7.2.3.2	4	PRII	"...the difference ..." - please change to "the reduction"
Fish Specialist Report	162	107	7.2.3.2	4	PRII	"By Mine Year 112, the difference in water temperature between the meadow and the lower East Fork Meadow Creek is around 0.5°C for both the summer and fall maximums." - Based on Table 7-5, by 112 all of the temps are LOWER than existing conditions. This paragraph is misleading (see previous comment) and seems to indicate that even by 112, the temps are about a half degree warmer. Please revise for clarity.
Fish Specialist Report	163	107	7.2.3.2	5	PRII	"...though not as high as baseline conditions ..." - It would be more clear to say "but still 1 to 2 C cooler than baseline conditions,"
Fish Specialist Report	164	108	7.2.3.2	Table 7-5	PRII	As commented on Table 6.4, most of these baseline temperatures appear incorrect and only the statistics used in the Meadow Creek area have a footnote indicating the use of a distance-weighted approach. Please evaluate and revise.
Fish Specialist Report	165	108	7.2.3.2	Table 7-5	PRII	East Fork SFSR between YPP and Sugar Creek: - These numbers for EFSFSR b/w YPP and Sugar are inconsistent with Figure 4.9-27 from Section 4.9 of the SDEIS. Aside from EOY6, there is very little difference from existing conditions. It's unclear where these numbers for EFSFSR b/w YPP and Sugar come from, especially just upstream and just downstream of the lakes. Please review and clarify.
Fish Specialist Report	166	109	7.2.3.2	1	PRII	"By Mine Year 112, summer maximum water temperatures in the East Fork SFSR between YPP and Sugar Creek are about 0.4°C higher than baseline conditions ,..." - The values in Table 7-5 are not correct and therefore the last sentence in paragraph is wrong. The baseline warmest temp downstream of YPP and above Sugar Creek is 14.5 simulated and 14.8 observed. For eoy6 the simulated warmest temp is 16.1 (correct in the table) but by eoy12 it is 14.4. The sentence should read: "By Mine Year 12, summer and fall maximum temperatures in the East Fork SFSR between YPP and Sugar Creek are below baseline temperatures."

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	167	109	7.2.3.2	2	PRII	"The effects of the SGP on fish caused by changes to water temperature are expected to be minor to moderate ..." - This effects conclusion does not correctly identify global warming as the increase in temperature. Regardless, there are major, permanent localized benefits due to temperature identified for the key spawning reaches of Meadow Creek and for most of the EFSFSR within the project area. Please revise.
Fish Specialist Report	168	109	7.2.3.2	2	PRII	EFSFSR downstream of YPP should be grouped with the beneficial reaches. By EOY12 temperatures are at baseline and further out they continuously decline to be cooler than baseline. Please revise.
Fish Specialist Report	169	109	7.2.3.2	4	PRII	"Construction and use of roads can accelerate erosion and sediment delivery to streams and have been identified as the primary contributor of sediments to stream channels in managed watersheds ..." - Recommend including the improvements to Blowout Creek, which has been documented to be the largest of sediment in the entire EFSFSR and the benefit that will provide.
Fish Specialist Report	170	110	7.2.3.2	4	PRII	"During the Burntlog Route construction..." - We should highlight the construction and improvements of roads will incorporate measures to minimize impacts, as pointed out in the BMPs earlier in the chapter. Please revise.
Fish Specialist Report	171	110	7.2.3.2	1	PRII	"If not properly designed, constructed, and maintained, culverts and bridges could constrict natural stream flow leading to an increase in water velocity at the downstream end of the structure ." - In this paragraph, please clarify that they will be designed and installed per USFS design recommendations for fish passage.
Fish Specialist Report	172	110	7.2.3.2	2, 3	PRII	Recommend referencing design measures that will minimize and mitigate for these potential impacts during construction.
Fish Specialist Report	173	111	7.2.3.2	4	PRII	"The effects of the SGP construction of temporary roads and transmission lines on sedimentation on fish and aquatic habitat are expected to be moderate, short-term, and localized " Please support this conclusion as to how/why impact was judged to be moderate, and which part of the definition of "moderate" was considered the most important. See Table 4.1-1 Impact Definitions.
Fish Specialist Report	174	111	7.2.3.2	7	PRII	"Potential Project-related sediment impacts on fish ..." - Recommend incorporating the erosion and sediment control measures PRII will be required to keep in place.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	175	111	7.2.3.2	7	PRII	"...the impacts of sediment in surface water to fish are predicted to be measurable but not severe ..." - Recommend providing additional context for how these will be measurable with no analysis completed as part of this SDEIS
Fish Specialist Report	176	112	7.2.3.2	2	PRII	<p>"The effects of the SGP on sediment and turbidity on Chinook salmon, steelhead, bull trout, and westslope cutthroat trout would be moderate, permanent, and localized. ". There is only 1 sentence mentioning "substantial decrease in sediment input" from Blowout Creek and lots of speculation about the "potential" for increased sediment from other operations. What analysis was done to show that the speculative increases to sediment would exceed the known decreases in sediment from Blowout?</p> <p>The Kuzis (1997) report used the BOISED model developed for the Boise and Payette National Forests to predict and quantify sediment inputs both from roads and hillslopes. Kuzis (1997) calculated roughly 47.56 tons/year of sediment from Blowout Creek = the largest single source in the entire EFSSR watershed. This calculation, by the way, used what could be considered a conservative erosion rate of 30 tons/acre for the steep chute, where as most other areas (including the Blowout meadow incision) used a 60 tons/acre estimate. If the 60 tons/acre were used for the Blowout chute, the total would be 78.8 tons/year. With all the BMPs and other sediment control measures going into place as part of the project, please validate how it can be asserted that the increased sediment produced from the mine/roads would exceed the 47.56 T/yr conservative (or 78.8 T/yr less conservative) saved from Blowout Creek resulting in a "moderate, permanent, and localized" effect. Please add to the sedimentation discussion.</p>
Fish Specialist Report	177	112	7.2.3.2	5	PRII	"Furthermore, establishing or increasing access could allow non-native species to access upstream habitat that is currently blocked, such as brook trout... ." - This paragraph could reasonably conclude that "Therefore the likelihood of impacts due to brook trout are low." Recommend adding verbiage to this effect.
Fish Specialist Report	178	112	7.2.3.2	6	PRII	"The effects of the SGP on fish access during construction of temporary roads and the culverts are expected to be minor, short-term, and localized. " - Please provide additional context as to how improving fish passage results in a minor, short-term, and localized negative effect but not a long-term benefit, or revise.



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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	179	113	7.2.3.2	3	PRII	"With the gradient barrier that would be created along the TSF, there would be no mechanism by which bull trout would be able to volitionally (i.e., naturally) recolonize the reaches upstream from or on top of the TSF. Based on the current known extent westslope cutthroat trout occupancy, fish in the upper headwaters of Meadow Creek would remain isolated." - Unclear why the conclusion is that bull trout would be extirpated but westslope cutthroat trout would remain isolated. Please review and revise.
Fish Specialist Report	180	113	7.2.3.2	3	PRII	"...but for bull trout and westslope cutthroat trout the effects are expected to be major, permanent, and localized impacts." - Unclear, especially for bull trout, how extirpation of a small, isolated population from Upper Meadow Creek is more negative than providing access to cold water refugia for the entire regional population. Similar for cutthroat trout. Please revise.
Fish Specialist Report	181	114	7.2.3.2	Table 7-6	PRII	Row - Fiddle Creek (04) - Recommend reviewing the accuracy of the loss of habitat given the removal of barrier providing more accessibility of habitat.
Fish Specialist Report	182	114	7.2.3.2	Table 7-6	PRII	Row - East Fork Meadow Creek Artificial – Gradient : - This is incorrect. Surface flow and passage equal to existing conditions would be restored during reclamation (i.e. barrier removed not a new barrier).
Fish Specialist Report	183	117	7.2.3.2	6	PRII	"...making impacts of spills moderate, temporary and localized depending on the type of material releases ..." - In addition to previous comments on the risk of spills in Section 4.12, these effects analyses are qualitative and the actual risk has not been quantified to justify this impact statement. Recommend providing additional context to support this statement.
Fish Specialist Report	184	118	7.2.3.2	1	PRII	"The West End pit lake, unlike other active mine and facility areas, would not be reclaimed or restored and would therefore have impacts on fish in perpetuity ." - Recommend providing additional context as to why these impacts would be in perpetuity, noting that the conclusions at the end of the paragraph indicate that effects would be "minor, permanent, and localized". See comments on Chap 4.
Fish Specialist Report	185	118	7.2.3.2	5 and 6	PRII	Cu and Al, As and Sb - "Therefore, the effects of the SGP on fish are expected to be minor, long-term, and localized ." - This is another example as to whether the effect should be considered beneficial or adverse given the reduction in the copper, aluminum, arsenic and antimony from the project.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	186	123	7.2.3.2	3	PRII	"...Meadow Creek flows downstream from the TSF would be reduced by a maximum of 36.4 percent during mine operations." - Recommend reviewing the streamflow modeling results. The text shows a 36% reduction while Figure 7-3 shows a 22% reduction. The modeling completed by BC matches with the 22% reduction. Please revise.
Fish Specialist Report	187	124	7.2.3.2	1	PRII	"Permanent effects from changes in streamflow, that occur during the post-closure are negligible across all of the mine sites." - This is important because the SDEIS points to flow and temperature for impacts to bulltrout regardless of accessibility and overall habitat improvements from stream restoration. This contradicts the flow considerations for saying habitat is degraded for bulltrout.
Fish Specialist Report	188	125	7.2.3.3	Table 7-9	PRII	"Summary of Changes to Key Watershed Condition Indicators at the Mine Site" - As discussed earlier, all habitat WCI (and others) have been excluded from analysis; please include explanation. FYI - All 5 habitat WCI change negatively or negligibly during mine operations and change positively or negligibly post closure. See examples in subsequent comments. Please revise.
Fish Specialist Report	189	125	7.2.3.3	Table 7-9	PRII	"Water Temp" - All Temperature WCI changes are negligible or positive for all stream segments across the life of the project. Please revise discussion.
Fish Specialist Report	190	125	7.2.3.3	Table 7-9	PRII	"Sediment and Turbidity" - All Sediment and Turbidity WCI changes are mostly positive with some negligible. Please revise discussion.
Fish Specialist Report	191	125	7.2.3.3	Table 7-9	PRII	"Physical Barriers" - Physical Barriers WCI illustrate a trade off: Greatly improved access to most areas with reduced access to upper Meadow Creek. Result is a large net benefit. Please revise discussion.
Fish Specialist Report	192	125	7.2.3.3	Table 7-9	PRII	"Change in Peak/Base Flow" - Changes in Peak/Base Flow WCI are mostly negative showing impacts during mine operations and negligible change from baseline post closure. Please revise discussion.
Fish Specialist Report	193	126	7.2.3.3	Table 7-9	PRII	"Chemical Contaminants" - Chemical Contaminants WCI changes are mostly positive with some negligible. Please revise discussion.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	194	126	7.2.3.4	3	PRII	"The highest modeled temperatures (i.e., maximum weekly summer temperatures) from SPLNT modeling (Brown and Caldwell 2019a) for a stream reach were compared to accepted stream temperature thresholds/ranges to determine the baseline length of available habitat ." - Please provide consistent terminology when using maximum to optimal. These are very different in the context of potential effects on fish.
Fish Specialist Report	195	127	7.2.3.4	2	PRII	"There would be a decrease in habitat conditions for migrating adults upstream from the YPP lake cascade barrier that meet the temperature criteria because water temperatures are lower than the thermal requirements." - Please provide clarification or additional information to support low temperatures being adverse during the migration period. (Same comment P. 135 paragraph 9).
Fish Specialist Report	196	127	7.2.3.4	8	PRII	"Creeks in the mine site area do experience significant seasonal and diurnal variations ,..." - Recommend clarifying that these variations are up to 6C.
Fish Specialist Report	197	131	7.2.3.4	Table 7-12	PRII	"Total IP Habitat" row - For the project upstream of the YPP barrier, there is a roughly 1/3km loss of IP for Chinook during operations, and a roughly 1/4km gain after closure.
Fish Specialist Report	198	133	7.2.3.4	1	PRII	"By Mine Year 3, Meadow Creek would lose all high and negligible and over half medium and low-quality IP habitat because the mining activities along the TSF would block fish access. " - While this is accurate for proposed conditions, it should be noted that all IP in Meadow Creek upstream of Blowout Creek is also above a barrier (partial gradient barrier) and no redds have ever been documented in that area." Please revise discussion.
Fish Specialist Report	199	136	7.2.3.4	1	PRII	"There would, as a result, be a net decrease in flow-productivity, particularly for the spawning life stage caused by a reduction in flow. " - As with the temperature discussion above, it should also be noted here that the project would have a nearly 6 km increase to spawning habitat that would presumably more than offset any predicted productivity losses due to flow reductions. Please revise discussion.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	200	136	7.2.3.4	5	PRII	"Following closure and reclamation, the overall net effect from the SGP would be a net increase in available habitat, however, flows and temperatures make the additional habitat less optimal." - Less optimal habitat determined not by measuring any habitat metrics. Less optimal habitat has been determined by a temperature analysis identifying migration temperatures that are too cold, which was already stated above not to actually affect migration, and by a tiny fraction lower flow (at closure). Also, not mentioned is the vast amount of actual habitat improvement in the form of LWD, pools, accessible floodplain, and reduced sediment. This would make the additional habitat more optimal. Please revise discussion.
Fish Specialist Report	201	140	7.2.3.5	2	PRII	"At the Meadow Creek, East Fork SFSR at Stibnite, and East Fork SFSR above Sugar Creek sites, the effects of the SGP on steelhead productivity are expected to be moderate, long-term (occur during mine operations), and localized". - Recommend providing details as to whether this is considered a beneficial effect, as the statements lend to that effect.
Fish Specialist Report	202	144	7.2.3.5	2	PRII	"However, no Critical Habitat is identified for steelhead trout upstream from the barrier." - This is a good example of how the barrier removal at the YPP will provide access to suitable habitat not accessible under the No Action Alternative.
Fish Specialist Report	203	144	7.2.3.5	3	PRII	"Overall, the effects of the SGP are expected to result in minor, long-term, and localized impacts to the steelhead Critical Habitat." - Recommend providing context how barrier removal is determined to be an impact.
Fish Specialist Report	204	144	7.2.3.5	9	PRII	"Changes in flows would result in a net decrease in productivity between baseline conditions and post-closure conditions." - As noted above, this should be described as a calculated reduction of the potential benefit, but a major benefit to productivity overall because there are currently no steelhead and therefore zero productivity upstream of YPP.
Fish Specialist Report	205	145	7.2.3.5	6	PRII	"Table 7-16 presents the length of streams that have positive bull trout occupancy probability that fall within the temperature threshold categories ..." - These are optimal thresholds, so it is potentially misleading to suggest fish wouldn't be in the reaches that exhibit max temperatures outside of those thresholds, especially considering that is already the case for many reaches at baseline. Please revise.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	206	145	7.2.3.5	8	PRII	"There would be a net decrease in thermally suitable conditions for spawning because water temperatures are higher than the thermal requirements ." - Fall maximum SPLNT values show an decrease in temperatures for a few mine years in upper Meadow Creek and while the tunnel is in place for lower EFSFSR below YPP, otherwise all other areas/times are lower temperature than no action. It appears that about 8.5km of habitat have been removed, but unclear where and why (applies to following bullets as well). Please revise.
Fish Specialist Report	207	147	7.2.3.5	4	PRII	"For Meadow Creek, the impacts on bull trout habitat are major, long-term, and localized. " - Recommend providing additional details how the flow reductions from summit Creek can be used to assess effects in Meadow Creek and how these data are applicable for the SGP. In addition, the PHABSIM results do not account for the improvements in habitat conditions from restoration of Meadow Creek. (Applies also to P. 148 paragraph 1 - "Analysis of relevant PHABSIM modeling from the region indicates SGP discharge impacts on physical habitat would be major, long-term, and localized. ")
Fish Specialist Report	208	148	7.2.3.5	3	PRII	"The East Fork SFSR upstream from the YPP lake and the Meadow Creek drainage all have increased occupancy probabilities for bull trout over time ." - Meaning, baseline is the lowest occupancy probability, and the probability generally increases through the course of the project with the maximum occupancy probability occurring after closure (for all 4 stream segments evaluated (see Table 7-17 below). Please revise.
Fish Specialist Report	209	149	7.2.3.5	3	PRII	"The approximately upper 10 km of Meadow Creek would remain blocked in perpetuity due to the high-gradient stream segments flowing off the TSF, ..." - Recommend providing additional detail whether the 10km is stream length or OM length.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	210	149	7.2.3.5	5	PRII	"An analysis of designated Critical Habitat currently blocked due to passage barriers indicates that the largest impacts to Critical Habitat for bull trout would come from barrier removal" - A great example of increased accessibility from barrier removal for bull trout. Also applicable to statement in same Paragraph "Overall, the effects of the SGP on bull trout access to Critical Habitat within the mine area would be major , permanent, and localized." - The paragraph describes large benefits to Critical Habitat by removing the YPP barrier and impacts by creating a new barrier in upper Meadow Creek. On the balance it would seem the benefit of the much larger barrier removal would outweigh the impact of the much smaller barrier addition, but the conclusion here is a "major" impact. Please explain the rationale.
Fish Specialist Report	211	151	7.2.3.5	2	PRII	"Detailed data for steelhead..." - Recommend providing edit to reflect cutthroat and not steelhead.
Fish Specialist Report	212	151	7.2.3.5	6	PRII	"Based on modeled results, the effects of the SGP on westslope cutthroat trout caused by changes to thermally suitable habitat are expected to be minor , permanent, and localized. " - If there are going to be decreased in thermal suitability for several years after closure, we recommend additional justification for this conclusion.
Fish Specialist Report	213	152	7.2.3.5	Table 7-19	PRII	Below Yellow Pine Pit Cascade Barrier - Total Available Habitat - Similar to bull trout, recommend reevaluating the change from baseline based on the restoration of the EFSFSR over the backfilled pit
Fish Specialist Report	214	152	7.2.3.5	Table 7-19	PRII	Above Yellow Pine Pit Cascade Barrier - Total Available Habitat - Recommend reviewing these numbers as there appears to be a difference of 2.44 km not accounted for in this table.
Fish Specialist Report	215	153	7.2.3.5	2	PRII	"For the East Fork SFSR at Stibnite site, the impacts on cutthroat trout habitat are moderate, permanent and localized. " - Recommend provide additional rationale for how these impacts are permanent if the flow rebound to near baseline conditions.
Fish Specialist Report	216	155	7.2.3.5	6	PRII	"The primarily net reduction in water temperatures in the East Fork SFSR and Meadow Creek would provide a net minor benefit for westslope cutthroat trout ." - This statement contradicts with the conclusions for bull trout where it state there will be a net increase in temperature. Recommend comparing for consistency.

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Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	217	156	7.2.4.2	8	PRII	"The effects of the Johnson Creek Route Alternative of sedimentation would be moderate , long-term, and localized." - The rationale for this conclusion should be provided.
Fish Specialist Report	218	157	7.4.1	8	PRII	"East Fork Salmon River Restoration and Access Management Plan ", - Please edit to reflect the EFSFSR
Fish Specialist Report	219	157	7.4.1	10	PRII	"Stallion Gold Horse Heaven Project " - It should be demonstrated that this project is reasonably foreseeable. Please clarify whether this is referencing exploration or an operating project (it is exploration). [Bullet is repeated below.]
Fish Specialist Report	220	158	7.4.2	No Action Alternative	PRII	As another example, the No Action Alternative appears to indicate as if no impacts would occur and does not incorporate climate change or other ongoing activities scalable for the geographic or temporal scale similar to the MMP. Also, Recommend including the passage barrier at the YPP be included in the description for the reader to understand existing conditions.
Fish Specialist Report	221	158	7.4.3	4	PRII	"The South Fork Restoration and Access Management Plan and the East Fork Salmon River Restoration and Access Management Plan ..." - Please edit to reflect the EFSFSR
Fish Specialist Report	222	159	7.5.1	2	PRII	"Consequently, no short-term use would occur that would affect fisheries resources, ..." - Need to consider the existing fish barrier at the YPP continuing to exclude access to roughly 35 miles of perennial streams and associated habitat. Please revise.
Fish Specialist Report	223	160	7.6.1	4	PRII	"Under the No Action Alternative there would be no irreversible or irretrievable commitment of fish and aquatic habitat resources ." - This is actually incorrect. Recommend addressing the existing barriers from historic mining and the ongoing impacts from historic mining to the downstream reaches.
Fish Specialist Report	224	160	7.6.2	6	PRII	"These "takes" of fish in the mine site ..." - Recommend excluding use of ESA terminology and instead using fish impacts or mortality.
Fish Specialist Report	225	160	7.6.2	9	PRII	"Portions of Meadow Creek upstream from the southern extent of the TSF would be irretrievable and unavailable to downstream fish within Meadow Creek during construction and operations. " - This may be a IICR in the long term, but there is a net benefit of accessibility to suitable habitat from the removal of the YPP barrier and should be reflected as a net improvement of resources.

Attachment A: Stibnite Gold Project Fish Resources SDEIS Compilation Table

A-1: Fisheries and Aquatic Resources

Resource	Comment Number	Page # or Global	Section	Paragraph (count from top of page)	Reviewer Initials	Comment
Fish Specialist Report	226	161	7.6.2	1	PRII	<p><i>"...but a fish barrier would remain in place and access to upstream habitat would keep the upstream populations isolated."</i> - If a new barrier as a consequence of the TSF is considered a IICR, then the existing barrier at the YPP should be included at the YPP for impacts comparison between the No Action and the MMP Alternatives.</p>