NOTES:
This workbook contains **habitat functions** data downloaded directly from the Taurus database. Functions include those documented during the **Look Back** process covering the **2012-2015** work window for steelhead.

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate	Updated 2018 Estimate	High 2018 Bookend	Original 2033 Estimate	High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Big, Camas, and Loon Creek	MLS1A	Lower Big Creek	7.2: Sediment Conditions: Increased Sediment Quantity	100.00%	95	95	95	96	95	96	LOC rating of 4) Lower Big Creek is completely encompassed within the Frank Church Wilderness area. Sediment sources for this area would be limited to trails, private in holdings and historic mine sites. The lower BC AU is as close to pristine as you can get in the lower 48 states. Restoration work occurring upstream in the Upper BC AU could have positive impacts in the lower BC. There are no current restoration plans for this AU.	2012: Minor trails and old mines in mostly pristine condition 2016:One project was discussed, but was a barrier project. Sediment is the only limiting factor in this assessment unit. Therefore, no actions and no percent change.
Snake River Steelhead	Big, Camas, and Loon Creek	MLS1B	Upper Big Creek	1.1: Habitat Quantity: Anthropogenic Barriers	20.00%	85	85	85	89	87	89	LOC Rating of 3) There are 7 identified fish (CH and ST) passage barriers and 1-3 diversion barriers in this watershed. We have three AOP projects proposed in the look forward before 2018.	2012: Barriers are not as important to Chinook as they are steelhead; 7 identified passage barriers and 1-3 diversion barriers. 2016: No actions, therefore no change in estimate.
Snake River Steelhead	Big, Camas, and Loon Creek	MLS1B	Upper Big Creek	7.2: Sediment Conditions: Increased Sediment Quantity	70.00%	65	65	65.2	85	72	87	LOC Rating of 3)The bulk of the sediment effecting Big Creek watershed is coming from roads followed by mining activities. There are roughly 57 miles of known (keep in mind ongoing surveys can increase this number) nonsystem roads in this watershed. Forty percent of these roads are in Riparian Conservation areas meaning they are close to rivers. There are many obstacles including a current lawsuit that could slow road obliteration in this watershed. Mining habitat restoration will occur in this watershed but due to the large scale size of the mining sites it will take quite some time to fully complete. FS has numerous years of sediment data for this watershed and despite the remote nature of this area is still has unacceptable levels of fines at spawning areas.	2012: Low bookend is less than Secesh based on Forest Service monitoring data. 2016: Trail improvement projects treated 0.248 stream miles over 140 stream miles in the Assessment Unit. Therefore, there was a 0.2 % improvement in sediment conditions.
Snake River Steelhead	Big, Camas, and Loon Creek	MLS1B	Upper Big Creek	8.7: Water Quality: Toxic Contaminants	10.00%	85	85	85	87	86	89	LOC rating or 4)There are several historic mines and one mine site that is currently conducting test pit drilling (Golden Hand) in this watershed. We are looking to do some mine rehabilitation at the Thunder Mountain site to reduce this.	2012: Benefits from Dewey mine and Sunnyside Pit restorations. 2016: No actions, therefore no change in estimate.
Snake River Steelhead	Secesh River	SES1	Secesh River	1.1: Habitat Quantity: Anthropogenic Barriers	20.00%	90	90	91.4	95	92	95	LOC ranking of 3)There has been five culverts and one diversion on Zena Creek have been identified for inadequate fish passage potential in this watershed. In 2012 we are replacing Burgdorf Culvert with an AOP structure. In 2017 Jeneatte Creek is slated to be replaced with an AOP structure. AOP culvert engineering designs work have already been completed in Three Mile Creek, Jeanette Creek, Willow Creek and Burgdorf Creek.	2012: Barriers more important in tribs for steelhead than Chinook. Burgdorf, Jeneatte, Willow, and Threemile cks. Five culverts and one diversion (on Zena) have been identified but only two will be resolved. Zena Creek Reservoir? 2016: Burgdorf Culvert Replacement Project opened 2.1 stream miles over 152.1 miles of steelhead fish habitat in this assessment unit = 1.4% improvement.

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Snake River Steelhead	Secesh River	SES1	Secesh River	7.2: Sediment Conditions: Increased Sediment Quantity	80.00%	75	75	75.6	87	77	88	LOC ranking of 3)Roughly 140 miles of nonsystem roads have been identified in this watershed. Roughly 20 miles are slated for full obliteration, 10 miles in Lake Creek road decomossioning project in 2015 and 10 miles in the Secesh Face project area in 2018.	2012: 20 miles slated for decommissioning of the 140 miles of non system roads. 2016: Recognizing that riparian plantings require time to grow to full improvement value, the projects implemented were prorated to reflect their value to 2018. Therefore, with a total realized improvement of 0.86 stream miles over 152.1 steelhead bearing stream miles in the assessment unit, these projects resulted in a 0.6% improvement for sediment.
Snake River Steelhead	South Fork Salmon River	SSS1A	EFSF Salmon and Tribs	1.1: Habitat Quantity: Anthropogenic Barriers	30.00%	65	65	65	65	65	65	LOC rating of 3) There are some large scale fish passage barriers in this watershed. The Glory Hole is a large scale fish passage barrier occuring at the Golden Meadows mine site. It is a waterfall feature created from mining activities that blocks passage to the bulk of the spawning grounds. There are several additional fish passage barriers in this watershed. Due to current mining activities we do not have any work planned in this watershed prior to 2018. Once the mining activities cease numerous restoration projects will need to be implemented in this watershed.	2012: Estimates stay the same due to no restoration performed due to current mining activity 2016: no actions, no change in estimate
Snake River Steelhead	South Fork Salmon River	SSS1A	EFSF Salmon and Tribs	7.2: Sediment Conditions: Increased Sediment Quantity	60.00%	60	60	60	63	60	63	LOC rating of 3)170 miles of unauthorized (non-system roads)have been identified in this watershed. Because the system road runs along the edge of this river road resurfacing could have a large impact in sediment reduction. Mining activities have produced large area of non-vegetated landscape contributing to this sedimentation. In the past millions of dollars have been spent for mine restoration work in this site resulting in an increase in returning adult Chinook and Steelhead. It has currently been given a lower priority due to ongoing mining activities. Once the mining ceases this watershed has great potential to respond to restoration activities.	2012: Estimates stay the same due to no restoration performed due to current mining activity. If mining activity ceases this watershed has great potential to respond to watershed restoration activities. 2016: No actions, no change in estimate
Snake River Steelhead	South Fork Salmon River	SSS1A	EFSF Salmon and Tribs	8.1: Water Quality: Temperature	5.00%	80	80	80	81	80	83	LOC rating of 3)In the upper EFSR due to mining activities there is very little riparian vegetation due channel modification. Due to this lack of riparian vegetation water temperatures are increased. Reports have shown that some of the tributaries to the upper EFSF are above 16C (daily average) in temperature. This is the temperature where fish and amphibians become stressed.	2012: Estimates stay the same due to no restoration performed due to current mining activity. If mining activity ceases this watershed has great potential to respond to watershed restoration activities. 2016: No actions, no change in estimate
Snake River Steelhead	South Fork Salmon River	SSS1A	EFSF Salmon and Tribs	8.7: Water Quality: Toxic Contaminants	5.00%	65	65	65	66	65	67	LOC rating of 3)This watershed was listed in 1998 as having impaired waterbodies under Section 303(d) of the clean water act. The pollutions of concern are heavy metals associated with mining activities. Restoration activities geared toward reducing these contaminants will resume once the mining activities cease.	2012: Estimates stay the same due to no restoration performed due to current mining activity. If mining activity ceases this watershed has great potential to respond to watershed restoration activities. 2016: no actions, no change in estimate

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Snake River Steelhead	South Fork Salmon River	SSS1B	Johnson Creek	1.1: Habitat Quantity: Anthropogenic Barriers	80.00%	80	80	80.2	88	85	88	LOC rating of 3)Roughly 14 culverts have been identified as barriers to fish passage in the Johnson Creek Watershed. Two AOP projects are planned in this watershed (Landmark Creek 2016) and Sheep Creek (2018). There are natural barriers that need to be evaluated in the future.	2012: Sheep Creek and Landmark Creek are largest factors. 2016: Cox Creek culvert replacements opened 0.4 miles of juvenile steelhead habitat, so the benefits were prorated to reflect that it was an improvement for juveniles only (50%). Therefore 0.2 stream miles created over the 101.8 steelhead bearing stream miles in the assessment units yields a in 0.2% improvement.
Snake River Steelhead	South Fork Salmon River	SSS1B	Johnson Creek	7.2: Sediment Conditions: Increased Sediment Quantity	10.00%	75	75.25	75.4	76	75.5	78	LOC rating of 3)There are roughly 30 miles of unauthorized (closed system roads) in the Johnson Creek watershed. Because this area was not logged as heavily as surrounding watersheds there are less unauthorized roads. We are scheduled to decommission 10 miles of roads in the Burntlog area in 2012. In order to reduce sediment further we would need to consider road resurfacing along Johnson Creek road after 2018.	2012: Sedimentation LF weight was raised to 90% to better reflect its impacts 2016:Road decommissioning project improved sediment quantity over 0.45 stream miles. Considered over the 101.8 steelhead bearing stream miles in the assessment unit, the improvement for LF 7.2 = 0.45/101.8*100 = 0.4%.
Snake River Steelhead	South Fork Salmon River	SSS1B	Johnson Creek	8.1: Water Quality: Temperature	10.00%	75	75	75.2	76	75.1	78	LOC rating of 3)This watershed is listed as an impaired waterbodies under the 2010 Section 303(d) of the clean water act for exceeding temperature standards. Riparian planting can make small temperature changes to tributaries to Johnson Creek. Changes to water temperature in the mainstem Johnson Creek can take years to bring about.	2012: Small increase reflects the planting work completed. Temperature is an issue in Johnson Creek but it is very hard to reduce temperature. LF weight was reduced to 10% 2016: Fencing and planting projects treated 0.4 stream miles, but with the recognition that some improvement projects take time to be fully realized, the panel adjusted the benefits down 50% to reflect the improvement value to 2018=0.2 stream miles. Taken over the 101.8 steelhead bearing stream miles in the assessment unit, the improvement for this limiting factor is 0.2%
Snake River Steelhead	South Fork Salmon River	SSS2	Upper SF Salmon Tribs above EFSF Salmon (High Idaho Batholith Tribs - from the headwaters to the mouth of EFSF Salmon)	1.1: Habitat Quantity: Anthropogenic Barriers	5.00%	85	85	85	89	88	89	LOC rating of 3) Roughly 4 (PNF) and 13 (BNF) culverts have been identified as barriers to fish passage in the Upper SF. There are ongoing culvert surveys so this number represents a low estimate . A bridge is proposed for 2013 in this watershed.	2012: Add action Rice Ck and Rice Ck trib 3.5 miles Steelhead only 2016: No actions, therefore no change in estimate
Snake River Steelhead	South Fork Salmon River	SSS2	Upper SF Salmon Tribs above EFSF Salmon (High Idaho Batholith Tribs - from the headwaters to the mouth of EFSF Salmon)	7.2: Sediment Conditions: Increased Sediment Quantity	95.00%	75	78	83.7	85	80	87	LOC rating of 3)There are roughly 226 known unauthorized (closed system roads) in the upper SF. Due to intensive past logging activities road densities are high in this area. We are looking to actively decommission 60 and resurface 15 miles between work done on the Boise and Payette before 2018. There are numerous system roads contributing to the sedimentation of this system.	2012: Actions benefit Steelhead, Chinook and Bull trout. There are numerous system roads contributing to the sedimentation of the this system. 2016:97.9 miles of road decommissioned from 2012 to 2015, 17.59 of which were in riparian zone. Restored 143 stream crossings, and replaced culverts with bridges at fords. Have higher-resolution aerial imagery and LiDAR now versus 3 years ago, and more miles of road needing work have been identified. ,Due to the need for adjusting the low bookend down during Look Forward (it is too high to allow accounting for all the good work done), the panel chose to move two projects (2 &6 Bit and Nickel & Dime) to Look Forward for credit there. Thus, three projects effectively treating 12.836 stream miles across the 146.7 steelhead bearing stream miles in the assessment unit reveals an improvement of 8.7%
Snake River Steelhead	South Fork Salmon River	SSS3	Lower SF Salmon Tribs below EFSF Salmon (Hot Dry Canyon Tribs - from mouth of EFSF Salmon to mouth of SF Salmon)	7.2: Sediment Conditions: Increased Sediment Quantity	100.00%	80	80	80	83	82	85	LOC rating of 3)There are roughly 40 miles of unauthorized (closed system roads) in the Lower SF. 10 miles of road to trail conversion on the Davis Ranch Road are planned in this watershed in 2014.	2012: Actions benefit Steelhead, Chinook and Bull trout. 2016: no actions, therefore no change in estimate

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Snake River Steelhead	South Fork Salmon River	SSS4	Mainstem SF Salmon	7.2: Sediment Conditions: Increased Sediment Quantity	100.00%	70	70	72.2	78	74	80	LOC rating of 3)The cumulative effect of decommissioning roads on tributaries to the SFSR will help reduce sediment to the Mainstem SF. Projects like the projected Hamilton Bar road to trail (2014) can reduce sediment from flowing directly into the mainstem SF. Road resurfacing project can also reduce the amount of sediment entering into the SFSR.	2012: Incidental benefit accrued from Secesh, Johnson, EF, SF tribs. After reviewing the work we will performing in this AU we felt the % increase should be slightly higher 2016: Several projects treating 3.78 stream miles were prorated to account for anticipated benefits in 2018 recognizing that some actions require more time to fully mature - thus the realized stream miles treated = 1.9507. Considered over all steelhead bearing stream miles in the assessment unit, improvement for this limiting factor = 2.2%