NOTES:
This workbook contains **habitat functions** data downloaded directly from the Taurus database. Functions include those documented during the **Look Forward** process covering the **2016-2018** work window for Chinook.

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 Spring/Summer Chinook	Big Sheep Creek	BSC1	Lower Big Sheep and Little Sheep Creeks	1.1: Habitat Quantity: Anthropogenic Barriers	5.00%	85.5	100	100	90	85.5	90		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC1	Lower Big Sheep and Little Sheep Creeks	4.1: Riparian Condition: Riparian Vegetation	15.00%	50	50	50	60	50	75	Primarily private land.	In 2016 the expert panel determined that no actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC1	Lower Big Sheep and Little Sheep Creeks	6.2: Channel Structure and Form: Instream Structural Complexity	5.00%	50.1	50.1	50.1	55	50	60		In 2016 the expert panel determined that no actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC1	Lower Big Sheep and Little Sheep Creeks	7.2: Sediment Conditions: Increased Sediment Quantity	5.00%	50	50	50	75	50	85		in 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Big Sheep Creek	BSC1	Lower Big Sheep and Little Sheep Creeks	8.1: Water Quality: Temperature	15.00%	50	50	50	65	50	75		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC1	Lower Big Sheep and Little Sheep Creeks	8.2: Water Quality: Oxygen	5.00%	80	80	80	90	80	90	feedlot in low end of system approx. 1/2 mile	In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC1	Lower Big Sheep and Little Sheep Creeks	9.2: Water Quantity: Decreased Water Quantity	50.00%	30	30	30	80	30	80	Irrigation diversions; 90 cfs flows for a couple of months	in 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC2	Upper Big Sheep Creek	1.1: Habitat Quantity: Anthropogenic Barriers	16.66%	100	100	100	100	95	100		The expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this AU. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Big Sheep Creek	BSC2	Upper Big Sheep Creek	6.2: Channel Structure and Form: Instream Structural Complexity	16.66%	80	80	80	82	80	90		The expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC2	Upper Big Sheep Creek	7.2: Sediment Conditions: Increased Sediment Quantity	16.66%	50	50	50	65	50	75		In 2016 the expert panel did not evaluate any actions anticipated to benefit this limiting factor between 2013 and 2018 and deferred to the Forest Service for any updated information. Comment entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC2	Upper Big Sheep Creek	8.1: Water Quality: Temperature	16.68%	60	60	60	62	60	65		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC2	Upper Big Sheep Creek	8.2: Water Quality: Oxygen	16.66%	75	75	75	80	75	85		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Big Sheep Creek	BSC2	Upper Big Sheep Creek	9.2: Water Quantity: Decreased Water Quantity	16.68%	50	50	50	80	50	85		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC3	Big Sheep Creek Tributaries	1.1: Habitat Quantity: Anthropogenic Barriers	16.70%	90	99.6	100	100	95	100	The low bookend was increased from 60 to 95 11/16/2012.	No more known barriers after Lick Ck culvert. The Lick Creek culvert that will be addressed in 2017 will open 0.7 mile of habitat, yielding a 1% uplift. The expert panel expressed different views regarding the extent of Chinook distribution. The panel made a note to solicit Forest Service input on this action and the extent of fish distribution. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC3	Big Sheep Creek Tributaries	5.2: Peripheral and Transitional Habitats: Floodplain Condition	16.66%	95	95	95	100	95	100		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC3	Big Sheep Creek Tributaries	6.1: Channel Structure and Form: Bed and Channel Form	16.66%	75	75	75	77	75	80		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Big Sheep Creek	BSC3	Big Sheep Creek Tributaries	6.2: Channel Structure and Form: Instream Structural Complexity	16.66%	85.05	85.05	85.05	90	85.05	95		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC3	Big Sheep Creek Tributaries	7.2: Sediment Conditions: Increased Sediment Quantity	16.66%	50.25	50.25	50.25	65	50.35	75		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Big Sheep Creek	BSC3	Big Sheep Creek Tributaries	8.2: Water Quality: Oxygen	16.66%	80.1	80.1	80.1	85	80.1	90		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC1	Lower Imnaha Mainstem	7.2: Sediment Conditions: Increased Sediment Quantity	25.00%	80.25	80.25	80.25	85	80.05	90		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.

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 Spring/Summer Chinook	Imnaha River mainstem	IRC1	Lower Imnaha Mainstem	8.1: Water Quality: Temperature	25.00%	75	75	75	77	75	80		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC1	Lower Imnaha Mainstem	8.2: Water Quality: Oxygen	25.00%	70	70	70	80	70	85		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/206.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC1	Lower Imnaha Mainstem	9.2: Water Quantity: Decreased Water Quantity	25.00%	85	85	85	90	85	90		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC2	Cow, Lightening & Horse Cr.	6.1: Channel Structure and Form: Bed and Channel Form	25.00%								No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC2	Cow, Lightening & Horse Cr.	6.2: Channel Structure and Form: Instream Structural Complexity	25.00%								No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.

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 Spring/Summer Chinook	Imnaha River mainstem	IRC2	Cow, Lightening & Horse Cr.	7.2: Sediment Conditions: Increased Sediment Quantity	25.00%								No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/206.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC2	Cow, Lightening & Horse Cr.	8.1: Water Quality: Temperature	25.00%								No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC3	Upper Imnaha River Mainstem	1.1: Habitat Quantity: Anthropogenic Barriers	20.00%	75	75	75	100	75	100		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC3	Upper Imnaha River Mainstem	6.2: Channel Structure and Form: Instream Structural Complexity	20.00%	85	85	85	86	85	90		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered 5/31/2016 RM.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC3	Upper Imnaha River Mainstem	7.2: Sediment Conditions: Increased Sediment Quantity	20.00%	80	80	80	82	80	85		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.

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 Spring/Summer Chinook	Imnaha River mainstem	IRC3	Upper Imnaha River Mainstem	8.1: Water Quality: Temperature	20.00%	80	80	80	82	80	85		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC3	Upper Imnaha River Mainstem	8.2: Water Quality: Oxygen	20.00%	90	90	90	95	90	96		No actions applicable to this limiting factor are expected within the 2016-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	1.1: Habitat Quantity: Anthropogenic Barriers	10.00%	80	80	80	100	90	100	Raised low bookend from 60	Grouse Ck. rearing only for Chinook; total from 3 project about 3 miles improved access. No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	4.1: Riparian Condition: Riparian Vegetation	20.00%	60	60	60	62	60	65		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	6.1: Channel Structure and Form: Bed and Channel Form	10.00%	80	80	80	85	80	90		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.

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 Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	6.2: Channel Structure and Form: Instream Structural Complexity	10.00%	80	80	80	82	80	85		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	7.2: Sediment Conditions: Increased Sediment Quantity	20.00%	80	80	80	85	80	90		No actions applicable to this limiting factor will be performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	8.1: Water Quality: Temperature	20.00%	80	80	80	82	80	85		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	8.2: Water Quality: Oxygen	0.00%	75	75	75	80	75	85		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	9.1: Water Quantity: Increased Water Quantity	0.00%	70	70	70	72	70	75		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.

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 Spring/Summer Chinook	Imnaha River mainstem	IRC4	Upper Imnaha River Tribs.	9.2: Water Quantity: Decreased Water Quantity	10.00%	80	80	80	85	80	90		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Lookingglass Creek	LGC1	Lookingglass Creek	1.1: Habitat Quantity: Anthropogenic Barriers	40.00%	70	70	70	100	70	100		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Lookingglass Creek	LGC1	Lookingglass Creek	6.2: Channel Structure and Form: Instream Structural Complexity	60.00%	80	80	80	85	80	90		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Migration Corridor	MCC1	Mainstem Lower Grande Ronde River	4.1: Riparian Condition: Riparian Vegetation	20.00%								
Snake River Spring/Summer Chinook	Migration Corridor	MCC1	Mainstem Lower Grande Ronde River	6.2: Channel Structure and Form: Instream Structural Complexity	20.00%								
Snake River Spring/Summer Chinook	Migration Corridor	MCC1	Mainstem Lower Grande Ronde River	7.2: Sediment Conditions: Increased Sediment Quantity	20.00%								
Snake River Spring/Summer Chinook	Migration Corridor	MCC1	Mainstem Lower Grande Ronde River	8.1: Water Quality: Temperature	20.00%								

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 Spring/Summer Chinook	Migration Corridor	MCC1	Mainstem Lower Grande Ronde River	9.2: Water Quantity: Decreased Water Quantity	20.00%								
Snake River Spring/Summer Chinook	Migration Corridor	MCC2	Lower Grande Ronde Tributaries	1.1: Habitat Quantity: Anthropogenic Barriers	0.00%	100	100		100	100	100		
Snake River Spring/Summer Chinook	Migration Corridor	MCC2	Lower Grande Ronde Tributaries	4.1: Riparian Condition: Riparian Vegetation	25.00%	85	85		90	85	95		
Snake River Spring/Summer Chinook	Migration Corridor	MCC2	Lower Grande Ronde Tributaries	6.2: Channel Structure and Form: Instream Structural Complexity	25.00%	85	85		90	85	95		
Snake River Spring/Summer Chinook	Migration Corridor	MCC2	Lower Grande Ronde Tributaries	7.2: Sediment Conditions: Increased Sediment Quantity	25.00%	60	60		75	60	80	Wildcat road	
Snake River Spring/Summer Chinook	Migration Corridor	MCC2	Lower Grande Ronde Tributaries	8.1: Water Quality: Temperature	25.00%	80	80		85	80	90	naturally hot; spring rearing, presence limited in summer	
Snake River Spring/Summer Chinook	Migration Corridor	MCC2	Lower Grande Ronde Tributaries	9.2: Water Quantity: Decreased Water Quantity	0.00%	90	90		95	90	95	stock ponds - minimal impact;	
Snake River Spring/Summer Chinook	Lostine River	WLC1	Lower Wallowa River (Mouth to Minam R. & Howard Cr.)	6.2: Channel Structure and Form: Instream Structural Complexity	25.00%							No bookend values established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Lostine River	WLC1	Lower Wallowa River (Mouth to Minam R. & Howard Cr.)	7.2: Sediment Conditions: Increased Sediment Quantity	25.00%							No bookend values established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC1	Lower Wallowa River (Mouth to Minam R. & Howard Cr.)	8.1: Water Quality: Temperature	25.00%							No bookend values established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC1	Lower Wallowa River (Mouth to Minam R. & Howard Cr.)	9.2: Water Quantity: Decreased Water Quantity	25.00%							No bookend values established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC2	Middle Wallowa River (Minam R. to Dry Cr. And Deer Cr.)	6.2: Channel Structure and Form: Instream Structural Complexity	33.33%							No bookend values established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC2	Middle Wallowa River (Minam R. to Dry Cr. And Deer Cr.)	7.2: Sediment Conditions: Increased Sediment Quantity	33.33%							No bookend values established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.

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Snake River Spring/Summer Chinook	Lostine River	WLC2	Middle Wallowa River (Minam R. to Dry Cr. And Deer Cr.)	8.1: Water Quality: Temperature	33.34%							No bookend values established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	1.1: Habitat Quantity: Anthropogenic Barriers	5.00%	95.1	95.1	95.1	100	92	100		No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	4.1: Riparian Condition: Riparian Vegetation	10.00%	40.28	40.28	40.31	45	40.75	60		In 2016 the expert panel evaluated the Wallowa-Baker project that planted 0.6 mile on 1 bank and fenced 0.3 miles. The Baremore Project most likely will not be implemented prior to 2018. The calculation spreadsheet prorates the treatment at 1% resulting in 0.03% uplift expected. Comments entered RM 6/7/2016.

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Snake River Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	10.00%	35	35	36.8				Added limiting factor 5.1 and re-weighted other factors. Comments entered RM 5/31/2016. Panel's estimate of percentage of properly functioning condition in assessment unit. Lower end of assessment unit is in okay shape. Worse condition upstream. Not all reaches would have had side channels (e.g., canyon reach). Comments entered RM 5/31/2016.	Length to be treated: Wallowa-Baker: 0.6 mainstem miles. Panel prorated as 75% of properly functioning condition. Tamkaliks: 0.4 mile prorated at 70%. Yields 1.8% expected uplift. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	6.1: Channel Structure and Form: Bed and Channel Form	10.00%	40.8	40.8	42.6	65	40.75	80	In 2016 when limiting factor 5.1 was added this limiting factor was reweighted.	6 Ranch benefits were considered in 2012. In 2016 the Wallowa-Baker (0.45 mile of main side channel creation + additional 25 meters sinuous Spring Creek side channel connection) and the Tamkaliks (side channel creation project at the powwow grounds) were evaluated. Wallowa-Baker includes 3,917 feet of side channel. Per the calculation spreadsheet there was an estimated 1.8% uplift. Comments entered RM 6/2/2016.

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Snake River Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	6.2: Channel Structure and Form: Instream Structural Complexity	25.00%	40.8	40.8	44.1	65	50.4	80		In 2016 the expert panel evaluated the Wallowa-Baker Project that treated 3,917 ft of side channel with 689 pieces of wood and racked material equal to 32 pieces per 100 m and the Tamkaliks Project that treated 0.3 mile. The goal is to improve rearing habitat and add pool complexity. The benefits were prorated in calculation spreadsheet based on properly functioning condition expected to be achieved within the project area. Based on this the panel anticipates a 3.3% uplift. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	7.2: Sediment Conditions: Increased Sediment Quantity	20.00%	50.8	50.8	52.6	60	50.2	75		In 2012 the 6-Ranch Project 2 was evaluated for benefits. In 2016 the expert panel evaluated the Wallowa-Baker (8.2 acres of floodplain roughness and bank layback over 1.3 miles including the side channels and 0.6 mile of main channel were evaluated) project for the ability to capture sediment. Benefits were prorated at 75% of properly functioning condition within 2018 period. The panel also evaluated the Tamkaliks project that will create backwater rearing habitat in floodplain. Prorated at 75% of properly functioning condition within 2018 period. Based on these actions the panel estimated a 1.8% uplift expected. Comments entered RM 6/2/2016. Note to expert panel to check the accuracy of the 2018 estimate which may have a transcription error.
Snake River Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	8.1: Water Quality: Temperature	10.00%	85.1	85.1	85.14	87	85.1	90		In 2016 the panel evaluated flow benefits of a Wallowa-Baker 2017-2018 acquisition. Hyporheic benefits are anticipated. Monitoring will show actual changes in future. Sum of riparian and flow benefits yields 0.04% expected uplift. Comments entered RM 6/3/2016.

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Snake River Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	8.2: Water Quality: Oxygen	0.00%	70	70	70	80	70	85		In 2016 the panel determined that there were no actions that would benefit this limiting factor expected within the 2013-2018 period in this assessment unit. Therefore, there was no change in percent function. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	9.2: Water Quantity: Decreased Water Quantity	10.00%	80.6	80.6	80.61	85	80.6	90	The limiting factor was reweighted at 10% during the 2016 look forward. Comment entered RM 6/7/2016.	In 2016 the expert panel evaluated the Wallowa-Baker Project that is anticipated to be implemented between 2017 and 2018. That project will add 4-50 cfs of residual stock water 1,600 feet upstream from current location. There is known spawning in this area, as well as rearing. Flow denominator at this location is 207 cfs (95% low exceedance per Anderson Perry design report) end of summer baseflow. Based on this a 0.011% uplift is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC4	Hurricane Creek	1.1: Habitat Quantity: Anthropogenic Barriers	15.00%	50	50	50	100	50	100		In 2016 the panel determined that there were no actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.

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 Spring/Summer Chinook	Lostine River	WLC4	Hurricane Creek	4.1: Riparian Condition: Riparian Vegetation	15.00%	30	30	30	35	38	60		In 2016 there were no actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC4	Hurricane Creek	5.2: Peripheral and Transitional Habitats: Floodplain Condition	15.00%	30	30	30	50	30	60		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC4	Hurricane Creek	6.2: Channel Structure and Form: Instream Structural Complexity	15.00%	30	30	30	50	38	60		In 2016 the panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC4	Hurricane Creek	7.2: Sediment Conditions: Increased Sediment Quantity	4.00%	60	60	60	70	63	80		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.

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 Spring/Summer Chinook	Lostine River	WLC4	Hurricane Creek	8.1: Water Quality: Temperature	15.00%	70	70	70	72	70	75		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC4	Hurricane Creek	8.2: Water Quality: Oxygen	1.00%	70	70	70	80	70	80		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM. 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC4	Hurricane Creek	9.2: Water Quantity: Decreased Water Quantity	20.00%	40	40	40	90	40	95		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC5	Prairie Creek	1.1: Habitat Quantity: Anthropogenic Barriers	14.28%							Bookend values for this limiting factor have not been established. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Lostine River	WLC5	Prairie Creek	4.1: Riparian Condition: Riparian Vegetation	14.28%							Bookend values for this limiting factor have not been established. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC5	Prairie Creek	7.2: Sediment Conditions: Increased Sediment Quantity	14.30%							Bookend values for this limiting factor have not been established. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC5	Prairie Creek	8.1: Water Quality: Temperature	14.28%							Bookend values for this limiting factor have not been established. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC5	Prairie Creek	8.2: Water Quality: Oxygen	14.28%							Bookend values for this limiting factor have not been established. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC5	Prairie Creek	9.1: Water Quantity: Increased Water Quantity	14.28%							Bookend values for this limiting factor have not been established. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Lostine River	WLC5	Prairie Creek	9.2: Water Quantity: Decreased Water Quantity	14.30%							Bookend values for this limiting factor have not been established. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor are expected within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC6	Bear Creek	1.1: Habitat Quantity: Anthropogenic Barriers	10.00%	60	60	60	85	65	85	Old City of Wallowa irrigation diversion; seasonal juvenile & some adult barrier; Gobel diversion - partial barrier; another at upper Diamond Lane	In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC6	Bear Creek	6.2: Channel Structure and Form: Instream Structural Complexity	20.00%	40	40	40	70	40	80	bottom 5 miles channelized & incised, not much wood, lots of rock	In 2016 the expert panels determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC6	Bear Creek	7.2: Sediment Conditions: Increased Sediment Quantity	4.00%	70	70	70	75	70.05	80	pre-Dock Creek.	In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC6	Bear Creek	8.1: Water Quality: Temperature	10.00%	50	50	50	60	50	70		

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 Spring/Summer Chinook	Lostine River	WLC6	Bear Creek	8.2: Water Quality: Oxygen	1.00%	80	80	80	80	80	80		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC6	Bear Creek	9.2: Water Quantity: Decreased Water Quantity	55.00%	25	25	25	70	25	70	mid-late irrigation season functionally dewaters lower 5 miles; abt 12-15 miles above	In 201 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/3/2016.

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 Spring/Summer Chinook	Lostine River	WLC7	Lower Lostine River (Mouth to Silver Cr.)	1.1: Habitat Quantity: Anthropogenic Barriers	15.00%	25	25	70.1	100	95	100	In 2016 the panel adjusted the low bookend (25%) to account for known remaining passage flow deficiencies, thermal barriers, and diversion structures left to remedy by 2018 and beyond. This is the main assessment unit of concern for barriers (wilderness above). 30% remaining to do after 2018.	The 2016 calculation spreadsheet includes five passage projects with river miles and amount of access to be opened. Minimum flow project allows for passage where flow barriers exist. The 2016 expert panel prorated projects based on life stage and degree of blockage. Tully Hill at RM 2 diversion is partial barrier (5-6 months per year for juveniles and documented delays for adults) and is to be completely remedied for all species and life stages. Clearwater at RM 3 and Foster at RM 4 are the next barriers up, but are not complete blockages. Many of the remaining barriers are partial, but cause migration delays of adults (telemetry data) and/or block juvenile upstream migration. There are no known barriers upstream of the Sheep Ridge project. Sheep Creek is a juvenile barrier much of the

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 Spring/Summer Chinook	Lostine River	WLC7	Lower Lostine River (Mouth to Silver Cr.)	6.2: Channel Structure and Form: Instream Structural Complexity	30.00%	57.1	57.1	57.1	60	57	65		257 acres treated in WLC7 & WLC3. Estimate 200 acres and 2 stream miles affected in WLC7. No credit is assigned for protection and any benefits will be evaluated if active restoration occurs. In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC7	Lower Lostine River (Mouth to Silver Cr.)	7.2: Sediment Conditions: Increased Sediment Quantity	10.00%	50	50	50	65	50	70		Sheep and Tully Hill projects: roughened channels will restore sediment transport processes, but no measurable uplift. Comments entered RM 5/31/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC7	Lower Lostine River (Mouth to Silver Cr.)	8.1: Water Quality: Temperature	10.00%	78.2	78.2	90.9	77	77	80		In 2016 the expert panel used the weighted sum of limiting factor 9.2 flow projects in this assessment unit (6.8 cfs). Calculation spreadsheet includes 6 flow projects. Benefits were prorated based on expected effect on temperature (e.g., early season May-July) - leases have less of an effect. Water additions are similar temperature to stream, so although there is a mass buffer addition the water temperature is not cooler. Based on this the expert panel anticipated a 12.7% uplift. Comments entered RM 6/7/2016.

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 Spring/Summer Chinook	Lostine River	WLC7	Lower Lostine River (Mouth to Silver Cr.)	8.2: Water Quality: Oxygen	0.00%	75	75	75	80	75	90		In 2016 the expert panel determined that no actions applicable to this limiting factor would be implemented within the 2013-2018 period in this assessment unit. Therefore, no change in function percentage is expected. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC7	Lower Lostine River (Mouth to Silver Cr.)	9.2: Water Quantity: Decreased Water Quantity	35.00%	62.5	62.5	81.8	80	50	80		In 2016 the expert panel evaluated actions carried forward from the look back (this was included in the look back recommendations). The minimum flow project contributed additional flows, accounting for other enhancement. The Carlsen project contributes 2.2 cfs (May-Jul); 0.96 cfs (Aug-Sep). The Wolfe project contributes split flows in 3 lines to accommodate seasonal changes in the flow agreement: 12.5 cfs (May-Jul). It was unclear whether ecological benefits downstream would be realized given shifting climate conditions. Wolfe agreement contributes 9.5 cfs (Aug-Sep). In 2017 0 cfs will be dedicated instream due to Oregon Water Resources Department administrative issue. This instream allocation will renew in 2018. Denominator: 35 cfs baseflow. Caveat: deals with

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Snake River Spring/Summer Chinook	Lostine River	WLC8	Upper Lostine River (Silver Cr. To Headwaters)	7.2: Sediment Conditions: Increased Sediment Quantity	33.40%							Bookend values not established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC8	Upper Lostine River (Silver Cr. To Headwaters)	8.1: Water Quality: Temperature	33.30%							Bookend values not established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Summer Chinook	Lostine River	WLC8	Upper Lostine River (Silver Cr. To Headwaters)	8.2: Water Quality: Oxygen	33.30%							Bookend values not established for this limiting factor. Comment entered RM 6/7/2016.	No actions applicable to this limiting factor were performed within 2013-2018 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.