## 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 Chinook.

ESU	Population	Code	Assessme	2012 Standardized Limiting Factor		Low Bookend	2018		High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River Spring/Sum mer Chinook		BSC1	Sheep and Little	1.1: Habitat Quantity: Anthropogenic Barriers	5.00%	85	85.5	100	90	85.5		of chinook use in Little Sheep Creek. Camp Creek not documented Chinook stream. Approx. 1/2 - 1mile	Although NOAA considers this population functionally extirpated, hatchery Chinook outplants use this tributary. The Buhler Irrigation and Fis Passage project completed in 2012 whot evaluated by the previous expert panel. The action evaluated addresses the only known barrier in the assessment unit. Because the action moved the uplift beyond 100% the paspeculated whether the low bookend was initially too high. The project addressed a 3-ft drop and opened 10 miles of habitat extending into BSC2. The denominator was set at 22.2 miles (Streamnet). No other barriers are known above this location. Because there "could be an unknown barrier upstream, the panel prorated benefit by life stage and the extent the barrier each life stage. Little Sheep Creek was considered only juvenile habitat. But Chinook have been observed spawning above the location of the barrier, so benefits to both adults and juveniles were considered. This translated to a 23.6% uplift. Later the panel revised the estimate based on the rationale that the continuation of the continuation of the stage.
Snake River Spring/Sum mer Chinook		BSC1	Sheep and Little	Condition:	15.00%	50	50	50	60	50	75	Primarily private land.	EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is r change in function percentage.  Comments entered RM 6/7/2016.
Snake River Spring/Sum mer Chinook		BSC1	Sheep and Little Sheep	6.2: Channel Structure and Form: Instream Structural Complexity	5.00%	50.1	50.1	50.1	55	50	60		EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable this LF performed within 2012-2015 period in this AU. No change in function percentage. Comments entered RM of 5/25/2016

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	Original 2018 Estimate		High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River	Big Sheep	BSC1	Lower Big	7.2: Sediment	5.00%	50	50	50	75	50	85		EP LB 2015: No actions, no change
Spring/Sum	Creek		Sheep	Conditions:									MAH.4.5.2016. No actions applicable to
mer			and Little	Increased									this limiting factor were performed
Chinook			Sheep	Sediment									within 2012-2015 period in this
			Creeks	Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.
Snake River	Big Sheep	BSC1	Lower Big	8.1: Water	15.00%	50	50	50	65	50	75		EP LB 2015: No actions, no change
Spring/Sum	Creek		Sheep	Quality:									MAH.4.5.2016. No actions applicable to
mer			and Little	Temperature									this limiting factor were performed
Chinook			Sheep										within 2012-2015 period in this
			Creeks										assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.
Snake River	Big Sheep	BSC1	Lower Big	8.2: Water	5.00%	80	80	80	90	80	90	feedlot in low end of	EP LB 2015: No actions, no change
Spring/Sum	Creek		Sheep	Quality:								system approx. 1/2 mile	MAH.4.5.2016. No actions applicable to
mer			and Little	Oxygen									this limiting factor were performed
Chinook			Sheep										within 2012-2015 period in this
			Creeks										assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/3/2016.
Snake River	Big Sheep	BSC1	Lower Big	9.2: Water	50.00%	30	30	30	80	30	80	Irrigation diversions; 90	EP LB 2015: No actions, no change
Spring/Sum	Creek		Sheep	Quantity:								cfs flows for a couple of	MAH.4.5.2016. No actions applicable to
mer			and Little	Decreased								months	this limiting factor were performed
Chinook			Sheep	Water									within 2012-2015 period in this
			Creeks	Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.

			Assessme	2012 Standardized			Original 2018	Updated 2018	High 2018	Original 2033	High 2033	LF Weight and	
ESU	Population	Code	nt Unit	Limiting Factor	LF Weight	Bookend	Estimate	Estimate	Bookend	Estimate	Bookend	Bookends Comments	Estimates Comments
Snake River	Big Sheep	BSC2	Upper Big	1.1: Habitat	16.66%	95	95	100	100	95	100		The Buhler Irrigation and Fish Passage
Spring/Sum	Creek		Sheep	Quantity:									project addressed the only barrier in this
mer			Creek	Anthropogenic									AU. Buhler Irrigation and Fish Passage
Chinook				Barriers									project discussed for assessment unit
													BSC1 also benefited BSC2. Denominator
													used was 18.8 Chinook miles per
													Streamnet, but the panel discussed
													habitat use (natural versus hatchery
													outplants). Panel initially assumed that
													this was a full juvenile barrier, but then
													adjusted proration to 33% as a partial
													barrier. This yields a 33% uplift.
													Comments entered RM 6/7/2016. Panel
													should confirm that this note matches
													the rationale applied elsewhere
													regarding full/partial barrier and uplift.
Snake River	Big Sheep	BSC2	Upper Big	6.2: Channel	16.66%	80	80	80	82	80	90		EP LB 2015: No actions, no change
Spring/Sum	Creek		Sheep	Structure and									MAH.4.5.2016. No actions applicable to
mer			Creek	Form: Instream									this limiting factor were performed
Chinook				Structural									within 2012-2015 period in this
				Complexity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.
Snake River	Big Sheep	BSC2	Upper Big	7.2: Sediment	16.66%	50	50	50	65	50	75		EP LB 2015: No actions, no change
Spring/Sum	Creek		Sheep	Conditions:									MAH.4.5.2016. No actions applicable to
mer			Creek	Increased									this limiting factor were performed
Chinook				Sediment									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.
Snake River		BSC2		8.1: Water	16.68%	60	60	60	62	60	65		EP LB 2015: No actions, no change
Spring/Sum	Creek			Quality:									MAH.4.5.2016. No actions applicable to
mer			Creek	Temperature									this limiting factor were performed
Chinook													within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.

	Population		Assessme nt Unit	2012 Standardized Limiting Factor	LF Weight	Low	Original 2018 Estimate	Updated 2018 Estimate	High 2018 Bookend	Estimate		LF Weight and Bookends Comments	Estimates Comments
Snake River Spring/Sum		BSC2		8.2: Water Quality:	16.66%	/5	/5	/5	80	/5	85		EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable to
mer	CIEEK			· ·									this limiting factor were performed
Chinook			Creek	Oxygen									within 2012-2015 period in this
CHIHOOK													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.
Snake River	Rig Shoon	BSC2	Unner Rig	9.2: Water	16.68%	50	50	50	80	50	85		EP LB 2015: No actions, no change
Spring/Sum		D3C2		Quantity:	10.0076	30	30	30	80	30	65		MAH.4.5.2016. No actions applicable to
mer	CIEEK		1 '	Decreased									this limiting factor were performed
Chinook				Water									within 2012-2015 period in this
CHIHOOK				Quantity									assessment unit. Therefore, there is no
				Quantity									change in function percentage.
													Comments entered RM 6/7/2016.
Snake River	Rig Sheen	BSC3	Rig Sheen	1.1: Habitat	16.70%	90	95	99.6	100	95	100	The low bookend was	2012: No more known barriers after Lick
Spring/Sum		D3C3		Quantity:	10.7070	50	33	33.0	100	55	1	increased from 60 to 95	
mer	Creek			Anthropogenic								on 11/16/2012.	In 2016 the expert panel evaluated the
Chinook				Barriers								011 11, 10, 2012.	Buhler Irrigation and Fish Passage
Cililook			ľ	Barriers									project and benefits to assessment unit
													BSC1 and BSC3. The panel decided that
													benefits depend on how far juvenile
													Chinook migrate upstream. The panel
													adjusted the proration to account for
													the fact that most rearing habitat value
													is downstream. Panel also considered
													how much of the observed rearing is
													from hatchery outplants rather than
													naturally spawned fish. There is a
													barrier known in this assessment unit
													near the campground at Lick Creek
													confluence. Streamnet mileage is 6.8
													miles for Chinook; removed last 0.3 mile
													of Lick Creek, so 6.5 miles treated. Panel
													prorated improvement at 10%, resulting
													in 9.6% uplift. The panel included a note
													to re-examine the low bookend during
													look forward. Comments entered RM
													6/7/2016.

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ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018	Updated 2018 Estimate	High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River	_	BSC3		5.2: Peripheral	_	95	95	95	100	95	100		EP LB 2015: No actions, no change
Spring/Sum			Creek	and									MAH.4.5.2016. No actions applicable to
mer			Tributarie	Transitional									this limiting factor were performed
Chinook			S	Habitats:									within 2012-2015 period in this
				Floodplain									assessment unit. Therefore, there is no
				Condition									change in function percentage.
													Comments entered RM 6/7/2016.
Snake River	Big Sheep	BSC3	Big Sheep	6.1: Channel	16.66%	75	75	75	77	75	80		EP LB 2015: No actions, no change
Spring/Sum	Creek		Creek	Structure and									MAH.4.5.2016. No actions applicable to
mer			Tributarie	Form: Bed and									this limiting factor were performed
Chinook			S	Channel Form									within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.
Snake River	Big Sheep	BSC3	Big Sheep	6.2: Channel	16.66%	85.05	85.05	85.05	90	85.05	95		EP LB 2015: No actions, no change
Spring/Sum	Creek		Creek	Structure and									MAH.4.5.2016. No actions applicable to
mer			Tributarie	Form: Instream									this limiting factor were performed
Chinook			S	Structural									within 2012-2015 period in this
				Complexity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.
Snake River		BSC3			16.66%	50.25	50.25	50.25	65	50.35	75		EP LB 2015: No actions, no change
Spring/Sum	Creek			Conditions:									MAH.4.5.2016. No actions applicable to
mer			Tributarie	Increased									this limiting factor were performed
Chinook			S	Sediment									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.
Snake River		BSC3			16.66%	80.1	80.1	80.1	85	80.1	90		EP LB 2015: No actions, no change
Spring/Sum	Creek		1	Quality:									MAH.4.5.2016. No actions applicable to
mer			Tributarie	Oxygen									this limiting factor were performed
Chinook			S										within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.

ESU	Population	Code	Assessme	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate		High 2018 Bookend			LF Weight and Bookends Comments	Estimates Comments
Snake River	Imnaha	IRC1	Lower	7.2: Sediment	25.00%	80.05	80.05	80.25	85	80.05	90		Marr project: Avoided riprap by
Spring/Sum	River		Imnaha	Conditions:									bioengineering 350 feet of formely
mer	mainstem		Mainstem	Increased									eroding bank: logs, sticks, cattle
Chinook				Sediment									exclusion. Planted vegetation. Log
				Quantity									deflector structure, but maintained side
													channel. Project expected to affect
													sediment conditions up to 5 miles
													downstream, but is more likely
													measurable within 1 mile only.
													Denominator was set at 36.3 miles
													based on Streamnet, resulting in 0.2%
													uplift.
Snake River	Imnaha	IRC1	Lower	8.1: Water	25.00%	75	75	75	77	75	80		2016: No actions during the 2012-2015
Spring/Sum	River		Imnaha	Quality:									timeframe. Marr project is not yet
mer	mainstem		Mainstem	Temperature									affecting water quality. No change in
Chinook													function. Comments entered RM
													5/31/2016.
Snake River	Imnaha	IRC1	Lower	8.2: Water	25.00%	70	70	70	80	70	85		EP LB 2015: No actions, no change
Spring/Sum	River			Quality:									MAH.4.5.2016. No actions applicable to
mer	mainstem		Mainstem	Oxygen									this limiting factor were performed
Chinook													within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River		IRC1	Lower	9.2: Water	25.00%	85	85	85	90	85	90		EP LB 2015: No actions, no change
Spring/Sum	River			Quantity:									MAH.4.5.2016. No actions applicable to
mer	mainstem		Mainstem	Decreased									this limiting factor were performed
Chinook				Water									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River		IRC2	Cow,	6.1: Channel	25.00%								EP LB 2015: No actions, no change
Spring/Sum	River			Structure and									MAH.4.5.2016. No actions applicable to
mer	mainstem			Form: Bed and									this limiting factor were performed
Chinook			Cr.	Channel Form									within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016

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ESU	Population	Code	Assessme	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate		High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River	Imnaha	IRC2		6.2: Channel	25.00%								EP LB 2015: No actions, no change
Spring/Sum	River			Structure and									MAH.4.5.2016. No actions applicable to
-	mainstem			Form: Instream									this limiting factor were performed
Chinook			Cr.	Structural									within 2012-2015 period in this
				Complexity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC2	Cow,	7.2: Sediment	25.00%								EP LB 2015: No actions, no change
Spring/Sum	River		Lightening	Conditions:									MAH.4.5.2016. No actions applicable to
mer	mainstem			Increased									this limiting factor were performed
Chinook			Cr.	Sediment									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC2	Cow,	8.1: Water	25.00%								EP LB 2015: No actions, no change
Spring/Sum	River		Lightening	Quality:									MAH.4.5.2016. No actions applicable to
mer	mainstem			Temperature									this limiting factor were performed
Chinook			Cr.										within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC3	Upper	1.1: Habitat	20.00%	75	75	75	100	75	100		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Quantity:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Anthropogenic									this limiting factor were performed
Chinook			Mainstem	Barriers									within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC3	Upper	6.2: Channel	20.00%	85	85	85	86	85	90		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Structure and									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Form: Instream									this limiting factor were performed
Chinook			Mainstem	Structural									within 2012-2015 period in this
				Complexity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC3	Upper	7.2: Sediment	20.00%	80	80	80	82	80	85		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Conditions:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Increased									this limiting factor were performed
Chinook			Mainstem	Sediment									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.

ESU	Population	Code		2012 Standardized Limiting Factor		Low	Original 2018 Estimate		High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River	Imnaha	IRC3	Upper	8.1: Water	20.00%	80	80	80	82	80	85		EP LB 2015: No actions, no change
Spring/Sum	River		1	Quality:									MAH.4.5.2016. No actions applicable to
	mainstem		River	Temperature									this limiting factor were performed
Chinook			Mainstem										within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC3	Upper	8.2: Water	20.00%	90	90	90	95	90	96		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Quality:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Oxygen									this limiting factor were performed
Chinook			Mainstem	''									within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Commented entered RM 5/31/2016.
Snake River	Imnaha	IRC4	Upper	1.1: Habitat	10.00%	80	80	80	100	90	100	Raised low bookend	2012: Grouse Ck. rearing only for
Spring/Sum	River		Imnaha	Quantity:								from 60	Chinook; total from 3 project about 3
mer	mainstem		River	Anthropogenic									miles improved access. / EP LB 2015: No
Chinook			Tribs.	Barriers									actions, no changeMAH.4.5.2016. No
													actions applicable to this limiting factor
													were performed within 2012-2015
													period in this assessment unit.
													Therefore, there is no change in function
													percentage. Comments entered
													5/31/2016.
Snake River	Imnaha	IRC4	Upper	4.1: Riparian	20.00%	60	60	60	62	60	65		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Condition:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Riparian									this limiting factor were performed
Chinook			Tribs.	Vegetation									within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC4	Upper	6.1: Channel	10.00%	80	80	80	85	80	90		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Structure and									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Form: Bed and									this limiting factor were performed
Chinook			Tribs.	Channel Form									within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.

				2012			Original	Updated		Original			
			Assessme	Standardized		Low	2018	2018	High 2018	2033	_	LF Weight and	
ESU	Population	Code	nt Unit	Limiting Factor	LF Weight	Bookend	Estimate	Estimate	Bookend	Estimate	Bookend	Bookends Comments	Estimates Comments
Snake River	Imnaha	IRC4	Upper	6.2: Channel	10.00%	80	80	80	82	80	85		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Structure and									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Form: Instream									this limiting factor were performed
Chinook			Tribs.	Structural									within 2012-2015 period in this
				Complexity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC4	Upper	7.2: Sediment	20.00%	80	80	80	85	80	90		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Conditions:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Increased									this limiting factor were performed
Chinook			Tribs.	Sediment									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC4	Upper	8.1: Water	20.00%	80	80	80	82	80	85		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Quality:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Temperature									this limiting factor were performed
Chinook			Tribs.										within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC4	Upper	8.2: Water	0.00%	75	75	75	80	75	85		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Quality:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Oxygen									this limiting factor were performed
Chinook			Tribs.										within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC4	Upper	9.1: Water	0.00%	70	70	70	72	70	75		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Quantity:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Increased									this limiting factor were performed
Chinook			Tribs.	Water									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Imnaha	IRC4	Upper	9.2: Water	10.00%	80	80	80	85	80	90		EP LB 2015: No actions, no change
Spring/Sum	River		Imnaha	Quantity:									MAH.4.5.2016. No actions applicable to
mer	mainstem		River	Decreased									this limiting factor were performed
Chinook			Tribs.	Water									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.

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ESU	Population	Code	Assessme	2012 Standardized Limiting Factor		Low Bookend	Original 2018 Estimate		High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River	Lookingglass	LGC1	Lookinggl	1.1: Habitat	40.00%	70	70	70	100	70	100		EP LB 2015: No actions, no change
Spring/Sum	Creek		ass Creek	Quantity:									MAH.4.5.2016. No actions applicable to
mer				Anthropogenic									this limiting factor were performed
Chinook				Barriers									within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Lookingglass	LGC1	Lookinggl	6.2: Channel	60.00%	80	80	80	85	80	90		EP LB 2015: No actions, no change
Spring/Sum	Creek		ass Creek	Structure and									MAH.4.5.2016. No actions applicable to
mer				Form: Instream									this limiting factor were performed
Chinook				Structural									within 2012-2015 period in this
				Complexity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 5/31/2016.
Snake River	Minam	MRC1	Lower	6.2: Channel	50.00%								
Spring/Sum	River		Minam	Structure and									
mer			River,	Form: Instream									
Chinook			mouth to	Structural									
			Couger	Complexity									
			Creek										
Snake River		MRC1	Lower		50.00%								
Spring/Sum	River			Conditions:									
mer			River,	Increased									
Chinook			mouth to										
			_	Quantity									
			Creek										
Snake River		MRC2			100.00%								
Spring/Sum	River			Structure and									
mer				Form: Instream									
Chinook			_	Structural									
			l .	Complexity									
			Little										
			Minam										
Snake River	Minam	MRC3	River	6.2: Channel	100.00%								
		IVIKC3	Lower		100.00%								
Spring/Sum	River			Structure and									
mer Chinook			River, Little	Form: Instream Structural									
CHIHOOK			l .										
				Complexity									
			River to headwate										
			rs							<u> </u>			

ESU	Population	Code	Assessme	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate	High 2018 Bookend	_	LF Weight and Bookends Comments	Estimates Comments
Snake River	Minam	MRC4		6.2: Channel	100.00%						
Spring/Sum	River		Minam	Structure and							
mer			River,	Form: Instream							
Chinook			mouth to	Structural							
			headwate	Complexity							
			rs								
Snake River	Lostine	WLC1	Lower	6.2: Channel	25.00%					No bookend values	No actions applicable to this limiting
Spring/Sum	River		Wallowa	Structure and						established for this	factor were performed within 2012-
mer			River	Form: Instream						limiting factor.	2015 period in this assessment unit.
Chinook			(Mouth to	Structural						Comment entered RM	Therefore, there is no change in function
			Minam R.	Complexity						6/7/2016.	percentage. Comments entered RM
			& Howard								6/7/2016.
			Cr.)								
a 1 a:		04	<u> </u>		<b>27</b> 222/						
		WLC1		7.2: Sediment	25.00%					No bookend values	No actions applicable to this limiting
Spring/Sum	River			Conditions:						established for this	factor were performed within 2012-
mer				Increased						limiting factor.	2015 period in this assessment unit.
Chinook			(Mouth to							Comment entered RM	Therefore, there is no change in function
			Minam R.	1						6/7/2016.	percentage. Comments entered
			& Howard Cr.)								6/7/2016.
			(1.)								
Snake River	Lostine	WLC1	Lower	8.1: Water	25.00%					No bookends	No actions applicable to this limiting
Spring/Sum				Quality:						established for this	factor were performed within 2012-
mer				Temperature						limiting factor.	2015 period in this assessment unit.
Chinook			(Mouth to	l '						Comment entered RM	Therefore, there is no change in function
			Minam R.							6/7/2016.	percentage. Comments entered RM
			& Howard							, ,	6/7/2016.
			Cr.)								
Snake River	Lostine	WLC1	Lower	9.2: Water	25.00%					No bookends	No actions applicable to this limiting
Spring/Sum	River		Wallowa	Quantity:						established for this	factor were performed within 2012-
mer			River	Decreased						limiting factor.	2015 period in this assessment unit.
Chinook			(Mouth to	Water						Comment entered RM	Therefore, there is no change in function
			Minam R.	Quantity						6/7/2016.	percentage. Comments entered RM
			& Howard								6/7/2016.
			Cr.)								

ESU	Population	Code		2012 Standardized Limiting Factor		Low	Original 2018 Estimate	Updated 2018 Estimate	High 2018 Bookend	1	LF Weight and Bookends Comments	Estimates Comments
Snake River Spring/Sum mer Chinook	Lostine River	WLC2	Wallowa River (Minam R.	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 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Sum mer Chinook		WLC2	Middle Wallowa River (Minam R. to Dry Cr. And Deer Cr.)	Conditions: Increased Sediment	33.33%						No bookend values established for this limiting factor. Comment entered 6/7/2016.	No actions applicable to this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Sum mer Chinook		WLC2	1	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 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.

				2012			Original	Updated		Original			
			Assessme	Standardized		Low	2018	_	High 2018	_	  High 2033	LF Weight and	
ESU	Population	Code		Limiting Factor	LF Weight		Estimate		Bookend		_	Bookends Comments	Estimates Comments
Snake River	•	WLC3	Upper	_	5.00%		92	95.1			100		2012: Only Lower Alder considered for
Spring/Sum	River		Wallowas										estimate
mer			River (Dry	Anthropogenic									Calculation spreadsheet contains 2
Chinook			Cr. To	Barriers									actions: Trout Creek/Alpine Meadows
			Wallowas										project (spring-fed cool water - removed
			Lake)										small irrigation push-up dam and pump
													pool, which was a seasonal barrier, but
													not to Chinook; project opened 2 miles
													of channel to Chinook) and the Cross
													Canal (seasonal check log: mid-July
													onward through irrigation season, now
													replaced by roughened channel; 15
													miles of upstream habitat affected).
													Panel prorated based on life
													stage/timing and degree of blockage.
													But Streamnet Chinook extent does not
													extend up to Trout Creek site (so
													prorated to 0% for limiting factor 1.1).
													Cross Canal: location is low in system
													and affected many fish, but was not a
													complete barrier and was seasonal
													(placed log and mounded substrate up
													against in) - thus, 10% proration. Four or
													five other barriers also exist. Panel
													calculated a 4.1 % uplift. Comments
		00	<u> </u>		40.000/			10.00		40 ==			entered RM 5/31/2016.
Snake River		WLC3		· ·	10.00%	40.25	40.25	40.28	45	40.75	60		2012: 6 Ranch Project 2 benefits.
Spring/Sum	River			Condition:									In 2016 the expert panel evaluated the
mer			River (Dry	· .									Six Ranch Project that was implemented
Chinook				Vegetation									in 2015. The action treated 0.38 miles.
			Wallowas										The panel discussed methods of
			Lake)										prorating based on riparian growth
													average in the Beechie paper. No major
													benefit expected till 30 years out.
													Alternately, assigning 1% per year,
													assuming that it takes 100 years to reach riparian shade properly
													functioning condition and linear growth
													yields a 3% proration and 0.03% uplift.
													Comments entered RM 6/7/2016.
													Comments entered RIVI 0/ // 2010.
	l			<u> </u>					l	l	l		

FCII	Demulation	Code		2012 Standardized		Low	Original 2018		High 2018		_	LF Weight and	Estimates Comments
	Population			Limiting Factor			Estimate 40.5		Bookend 65		Bookend 80	Bookends Comments	
Snake River		WLC3	1	6.1: Channel Structure and	15.00%	40	40.5	40.8	05	40.75	80		2012: 6 Ranch benefits.
Spring/Sum	Rivei		l .										2016:Six Ranch project: Panel discussed
mer				Form: Bed and									degree of new sinuosity versus
Chinook				Channel Form									constraints from railroad and
			Wallowas Lake)										maturation time re: percent of properly functioning condition by 2018. Now able
			Lake										to access floodplain, but is wood
													structure constraining plan form
													dynamics? Now set up for channel
													processes to work at next flood.
													l'
													Improvement prorated to 75% in
													calculation spreadsheet, resulting in 0.8 % uplift. Comments entered RM
													6/2/2016.
Snake River	Lostina	WLC3	Upper	6.2: Channel	25.00%	40.3	40.3	40.8	65	50.4	80		2012: 30 mile reach channelized.
Spring/Sum		VVLCS	1	Structure and	23.0070	40.5	40.5	40.0	03	30.4	00		In 2016 the expert panel evaluated the
mer	litivei		l .	Form: Instream									Six Ranch Project that included wood
Chinook				Structural									loading along 0.38 mile. Previously had
Cimiook				Complexity									almost no rearing value. Panel used
			Lake)	Complexity									Minam large wood loading reference
			Lancy										condition of 27 pieces per 100 m. Post-
													implementation 67 pieces per 100 m
													were recorded. The panel determined
													that this far exceeded properly
													functioning condition. The treatment
													affect also increased pools and riffles.
													Because 50% of the logs were put in
													place for bank stability rather than
													instream structure/cover, the
													improvement was prorated at 50%. The
													panel prorated the cross-canal grade
													control and channel roughening rock
													and at 0% because the treatment was
													intended for passage rather than
													instream structure. Overall result was a
													0.5% uplift. Comments entered RM
													6/7/2016.

ESU	Population	Code	Assessme	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate		High 2018 Bookend			LF Weight and Bookends Comments	Estimates Comments
Snake River Spring/Sum mer Chinook	Lostine	WLC3	Upper Wallowas River (Dry	7.2: Sediment Conditions: Increased Sediment	20.00%	50.1	50.2	50.8			75		In 2012 the 6-Ranch Project 2 was evaluated for benefits. In 2016 it was determined that one goal of projects to address this limiting factor was to restore natural sediment transport processes. The calculation spreadsheet includes two projects: Six Ranch (which addressed bank sedimentation and substrate embeddedness within the project footprint) and Cross-Canal (which had less benefit than the Six Ranch - length treated was 0.9 mile to result in less sediment moving through now than before and a function of the timing of cross-log placement during a time when major sediments were not moving. Therefore little benefit was concluded. Improvements were prorated based on the percentage of properly functioning condition achieved to 2018 period, taking into account upstream sources and on-site improvements as a function of riparian vegetation maturation (60% and 30%). Based on this the expert panel estimated a 0.7% uplift. Comments entered RM 6/2/2016.
Snake River Spring/Sum mer Chinook		WLC3	Wallowas	8.1: Water Quality: Temperature	10.00%	85.1	85.1	85.1	87	85.1	90		In 2016 the panel determined that there were no measurable benefits to this limiting factor from flow acquisition actions. Comments entered RM 6/3/2016.
Snake River Spring/Sum mer Chinook		WLC3	Upper Wallowas River (Dry Cr. To Wallowas Lake)	Quality:	0.00%	70	70	70	80	70	85		EP LB 2015: No actions, no change MAH.4.5.2016 No measurable benefits to this limiting factor from the flow acquisition projects evaluated. Comments entered RM 6/3/2016.

ESU	Population		Assessme nt Unit	2012 Standardized Limiting Factor		Low Bookend	Original 2018 Estimate	Estimate	High 2018 Bookend	Estimate	Bookend	LF Weight and Bookends Comments	Estimates Comments
Snake River Spring/Sum mer Chinook		WLC3	Wallowas River (Dry	Decreased Water	15.00%	80.1	80.6	80.6	85	80.6	90		In 2016 the expert panel evaluated the Trout Creek Project that includes a permanent transfer of 1 cfs back to the stream during irrigation season (verifiable by pump data). Using the average baseflow as the denominator (150 cfs in Aug-Sep) yields a 0.5% uplift. The calculation spreadsheet includes flow benefits per year for the period of assessment. No flow benefit is expected from the Cross Canal Project.  Comments entered RM 6/7/2016.
Snake River Spring/Sum mer Chinook		WLC4	Creek	1.1: Habitat Quantity: Anthropogenic Barriers	15.00%	50	50	50	100	50	100		EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable to this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage.  Comments entered RM 6/3/2016.
Snake River Spring/Sum mer Chinook		WLC4	Creek	4.1: Riparian Condition: Riparian Vegetation	15.00%	30	30	30	35	38	60		2012: Hurricane Ck/Tippet Project applies. / EP LB 2015: No actions, no changeMAH.4.5.2016 No actions applicable to this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.
Snake River Spring/Sum mer Chinook		WLC4	Creek	5.2: Peripheral and Transitional Habitats: Floodplain Condition	15.00%	30	30	30	50	30	60		EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable to this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.
Snake River Spring/Sum mer Chinook		WLC4	Creek	6.2: Channel Structure and Form: Instream Structural Complexity	15.00%	30	30	30	50	38	60		2012: 1 of 6 miles improved. EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable to this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.

				2012			Original	Updated		Original			
ESU	Population	Codo		Standardized	I E Woight	Low	2018 Estimate		High 2018 Bookend			LF Weight and Bookends Comments	Estimates Comments
	Lostine	WLC4		Limiting Factor 7.2: Sediment	4.00%	60	60	60	<u> </u>	63	80	Bookenas Comments	2012: Hurricane Ck/Tippet project
Spring/Sum		VV LC4	Creek	Conditions:	4.00%	00	00	00	170	03	00		applies - bank stabilization./ EP LB 2015:
mer	Kivei		CIEEK	Increased									No actions, no changeMAH.4.5.2016.
Chinook				Sediment									No actions applicable to this limiting
Cilliook				Quantity									
				Quantity									factor were performed within 2012- 2015 period in this assessment unit.
													· ·
													Therefore, there is no change in function
													percentage. Comments entered RM
Condon Divers	Lastina	)A/I C4	11	0.4.14/545	45.000/	70	70	70	72	70	75		6/3/2016.
Snake River		WLC4		8.1: Water	15.00%	70	70	70	72	70	75		EP LB 2015: No actions, no change
Spring/Sum	River		Creek	Quality:									MAH.4.5.2016. No actions applicable to
mer				Temperature									this limiting factor were performed
Chinook													within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/3/2016.
Snake River		WLC4		8.2: Water	1.00%	70	70	70	80	70	80		EP LB 2015: No actions, no change
Spring/Sum	River		Creek	Quality:									MAH.4.5.2016. No actions applicable to
mer				Oxygen									this limiting factor were performed
Chinook													within 2012-2015 period in this
													assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/3/2016.
Snake River		WLC4	Hurricane	9.2: Water	20.00%	40	40	40	90	40	95		EP LB 2015: No actions, no change
Spring/Sum	River		Creek	Quantity:									MAH.4.5.2016. No actions applicable to
mer				Decreased									this limiting factor were performed
Chinook				Water									within 2012-2015 period in this
				Quantity									assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/3/2016.
Snake River		WLC5	Prairie	1.1: Habitat	14.28%							Bookend values for this	No actions applicable to this limiting
Spring/Sum	River		Creek	Quantity:								limiting factor have not	factor were performed within 2012-
mer				Anthropogenic								been established.	2015 period in this assessment unit.
Chinook				Barriers								Comment entered RM	Therefore, there is no change in function
												6/7/2016.	percentage. Comments entered RM
													6/7/2016.
Snake River	Lostine	WLC5	Prairie	4.1: Riparian	14.28%							Bookend values for this	No actions applicable to this limiting
Spring/Sum	River		Creek	Condition:								limiting factor have not	factor were performed within 2012-
mer				Riparian								been established.	2015 period in this assessment unit.
Chinook				Vegetation								Comment entered RM	Therefore, there is no change in function
												6/7/2015.	percentage. Comments entered RM
	1												6/7/2016.

				2012			Original	Updated		Original			
			Assessme	Standardized			2018	1 '	High 2018	_	High 2033	LF Weight and	
ESU	Population	Code		Limiting Factor			Estimate		Bookend		_	_	Estimates Comments
Snake River	Lostine	WLC5	Prairie	7.2: Sediment	14.30%							Bookend values for this	No actions applicable to this limiting
Spring/Sum	River		Creek	Conditions:									factor were performed within 2012-
mer				Increased								been established.	2015 period in this assessment unit.
Chinook				Sediment								Comment entered RM	Therefore, there is no change in function
				Quantity								6/7/2016.	percentage. Comments entered RM 6/7/2016.
Snake River	Lostine	WLC5	Prairie	8.1: Water	14.28%							Bookend values for this	No actions applicable to this limiting
Spring/Sum	River		Creek	Quality:								limiting factor have not	factor were performed within 2012-
mer				Temperature								been established.	2015 period in this assessment unit.
Chinook												Comment entered RM	Therefore, there is no change in function
												6/7/2016.	percentage. Comments entered RM 6/7/2016.
Snake River	Lostine	WLC5	Prairie	8.2: Water	14.28%							Bookend values for this	No actions applicable to this limiting
Spring/Sum	River		Creek	Quality:								limiting factor have not	factor were performed within 2012-
mer				Oxygen								been established.	2015 period in this assessment unit.
Chinook												Comment entered RM	Therefore, there is no change in function
												6/7/2016.	percentage. Comments entered RM
													6/7/2016.
Snake River	Lostine	WLC5	Prairie	9.1: Water	14.28%							Bookend values for this	No actions applicable to this limiting
Spring/Sum	River		Creek	Quantity:								limiting factor have not	factor were performed within 2012-
mer				Increased								been established.	2015 period in this assessment unit.
Chinook				Water							l	Comment entered RM	Therefore, there is no change in function
				Quantity								6/7/2016.	percentage. Comments entered RM
													6/7/2016.
Snake River		WLC5	Prairie	9.2: Water	14.30%								No actions applicable to this limiting
Spring/Sum	River		Creek	Quantity:								· ·	factor were performed within 2012-
mer				Decreased									2015 period in this assessment unit.
Chinook				Water								Comment entered RM	Therefore, there is no change in function
				Quantity								6/7/2016.	percentage. Comments entered RM
													6/7/2016.
Snake River		WLC6	Bear	1.1: Habitat	10.00%	60	60	60	85	65	85	Old City of Wallowa	EP LB 2015: No actions, no change
Spring/Sum	River		Creek	Quantity:									MAH.4.5.2016. No actions applicable to
mer				Anthropogenic								•	this limiting factor were performed
Chinook				Barriers								some adult barrier;	within 2012-2015 period in this
												·	assessment unit. Therefore, there is no
												barrier; another at	change in function percentage.
												upper Diamond Lane	Comments entered RM 6/3/2016.

ESU Snake River Spring/Sum mer Chinook	Code WLC6		2012 Standardized Limiting Factor 6.2: Channel Structure and Form: Instream Structural Complexity	20.00%	Low Bookend 40	Original 2018 Estimate 40		High 2018 Bookend	Estimate	<b>Bookend</b> 80	bottom 5 miles channelized & incised,	Estimates Comments  EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable to this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.
Snake River Spring/Sum mer Chinook	WLC6	Bear Creek	7.2: Sediment Conditions: Increased Sediment Quantity	4.00%	70	70	70	75	70.05	80	pre-Dock Creek.	2012: City of wallowa diversion. / EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable to this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.
Snake River Spring/Sum mer Chinook	WLC6	Bear Creek	8.1: Water Quality: Temperature	10.00%	50	50	50	60	50	70		EP LB 2015: No actions, no change MAH.4.5.2016. No actions applicable to this limiting factor were performed within 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/3/2016.
Snake River Spring/Sum mer Chinook	WLC6	Bear Creek	8.2: Water Quality: Oxygen	1.00%	80	80	80	80	80	80		EP LB 2015: No actions, no change MAH.4.5.2016
Snake River Spring/Sum mer Chinook	WLC6	Bear Creek	9.2: Water Quantity: Decreased Water Quantity	55.00%	25	25	25	70	25		season functionally	EP LB 2015: No actions, no change MAH.4.5.2016. 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 6/3/2016.

ESU	Population	Code	Assessme	2012 Standardized Limiting Factor	LF Weight	Low	2018	Updated 2018 Estimate	High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River	Lostine	WLC7	Lower	1.1: Habitat	15.00%	85	95	100	100	95	100		2012: Partial barrier - adult chinook
Spring/Sum	River		Lostine	Quantity:									pass, significant juvenile barrier
mer			River	Anthropogenic									especially during summer; important
Chinook			(Mouth to	Barriers									rearing & spawning area.
			Silver Cr.)										Flow is only known remaining barrier
													The 2016 calculation spreadsheet
													contains all the fish passage actions and
													habitat accessed, the uplift which was
													prorated for each life stage that benefits
													and based on the extent of the blockage
													for that life stage. Some were partial
													barriers to adults and juveniles (e.g.,
													both low-flow and high-flow velocity
													barriers). Project benefits were adjust
													for the mileage extent of habitat for
													each life stage in the assessment unit
													and were adjusted to avoid double-
													counting. Streamnet shows 14.1
													Chinook miles, which was used as the
													denominator. There are additional
													partial barriers upstream of City of
													Lostine diversion. Lostine minimum flow
													agreement affects the entire area.
													Intent of flow projects was to help pass
													adults. Combined this amounts to 3
													miles effected with the upper extent
													reaching to RM 5. Telemetry data show
													delays at site, but not blockage.
		ı		1	I	I	ı	1	I	I	ı	I	h

ESU	Population	Code	Assessme	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate		High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River	Lostine	WLC7	Lower	6.2: Channel	30.00%	57	57	57.1	60	57	65		2012: 257 acres in wlc7 & wlc3;
Spring/Sum	River		Lostine	Structure and									estimate 200 ac. in WLC 7; est 2 stream
mer			River	Form: Instream									miles; no credit for protection - benefits
Chinook			(Mouth to	Structural									will be added if active restoration
			Silver Cr.)	Complexity									occurs.
													In 2016 the expert panel reviewed the
													City of Lostine project that built
													roughened channel and grade break;
													boulder pods and a small number (10
													pieces) increased complexity. Emphasis
													of that action was on passage, so
													channel complexity was a secondary
													benefit. Improvement prorated to 15%,
													yielding 0.1% uplift. Comments entered
													RM 6/7/2016.
Snake River	Lostine	WLC7	Lower	7.2: Sediment	10.00%	50	50	50	65	50	70		No actions applicable to this limiting
Spring/Sum	River		Lostine	Conditions:									factor were performed within 2012-
mer			River	Increased									2015 period in this assessment unit.
Chinook			(Mouth to	Sediment									Therefore, there is no change in function
			Silver Cr.)	Quantity									percentage. Comments entered RM
													5/31/2016.

ESU	Population	Code	Assessme	2012 Standardized Limiting Factor		Low	Original 2018 Estimate		High 2018 Bookend		_	LF Weight and Bookends Comments	Estimates Comments
Snake River		WLC7		8.1: Water		77	77	78.2	77		80	bookerius comments	2016: Expert Panel had a very difficult
Spring/Sum		VVLC7		Quality:	10.00%	' '	''	70.2	''	' '	00		time agreeing on a methodology to
mer	litivei		River	Temperature									quantify the benefit to temperature.
Chinook			(Mouth to	· ·									They all agree the benefit is not zero.
Cilliook			Silver Cr.)										Panel considered effect of limiting factor
			Silver Cr.										9.2 flow projects on temperature and
													concluded that Minimum Flow
													Agreement provided measurable
													benefit, but not other projects. Water in
													this area (above Cross-Country Canal) is
													cooler than in main river. Panel
													discussed fish occupancy in reach
													affected by project. Major spawning is upstream of this area, so no benefit
													1 -
													there. Contributes at RM 5. Contributes
													15 cfs of 14 degree water into 80 cfs
													(Lostine River) at 17-20 degrees C at RM
													5.5. Reach was previously dry in mid-
													August to mid-September. Wallowa
													River mainstem is too big to see benefits
													downstream. Panel prorated benefit in
													calculation spreadsheet for each reach
													(RM 0-5.5 and RM 5.5-9). Panel
													examined water temperature logger
													data showing extent of downstream
													effects (3 degree difference). Project
													started in 2005, but minimum flow
													increased in 2015. Discussion of
Snake River	Lostine	WLC7	Lower	8.2: Water	0.00%	75	75	75	80	75	90		EP LB 2015: No actions, no change
Spring/Sum	River		Lostine	Quality:									MAH.4.5.2016. No actions applicable to
mer				Oxygen									this limiting factor were performed
Chinook			(Mouth to										within 2012-2015 period in this
			Silver Cr.)										assessment unit. Therefore, there is no
													change in function percentage.
													Comments entered RM 6/7/2016.

				2012			Original	Updated		Original			
			Assessme	Standardized		Low	_	_	High 2018		High 2033	LF Weight and	
ESU	Population	Code	nt Unit	Limiting Factor					Bookend		_	Bookends Comments	Estimates Comments
Snake River	Lostine	WLC7	Lower	9.2: Water		50			80	50	80		2012: Improvement from lease already
Spring/Sum	River		Lostine	Quantity:									accounted for in 2010-12 period.
mer			River	Decreased									Comment From the 2012
Chinook			(Mouth to	Water									lookforward:Lostine minimum flow
			Silver Cr.)										agreement and permanent agreement
			,	,									not to divert (two separate projects but
													the first being the annual lease and the
													second beign the permanent acquisition
													of water). Acounted for also in the
													lookback.
													In 2016 the expert panel evaluated
													three flow projects that are included in
													the calculation spreadsheet. Carlsen
													(BPA-funded staff time): 1 cfs, but only
													biologically relevant during fish presence
													period. 2012-2018 benefits not counted
													in previous panels, so counted here
													(May 2016). 2.22 cfs early season May -
													July rate for 90 days, and less 0.73 cfs
													(1/3) later in the season (Aug -Sept: 60
													days). For fish, the later portion is more
													critical, but in some years, late July is
													1
													important, depending on fish
													migration/holding timing. Denominator:
													natural (without irrigation) baseflow
													estimated as 35 cfs. Restoration target
													in Recovery Plan is 25 cfs, but properly
													functioning condition is higher. Panel
Snake River	Lostine	WLC8	Upper	7.2: Sediment	33.40%							Bookend values not	No actions applicable to this limiting
Spring/Sum	River		Lostine	Conditions:								established for this	factor were performed within 2012-
mer			River	Increased								limiting factor.	2015 period in this assessment unit.
Chinook			(Silver Cr.	Sediment								Comment entered RM	Therefore, there is no change in function
			То	Quantity								6/7/2016.	percentage. Comments entered RM
			Headwate										6/7/2016.
			rs)										
Snake River	Lostine	WLC8	Upper	8.1: Water	33.30%							Bookend values not	No actions applicable to this limiting
Spring/Sum	River		Lostine	Quality:								established for this	factor were performed within 2012-
mer			River	Temperature								limiting factor.	2015 period in this assessment unit.
Chinook			(Silver Cr.									Comment entered RM	Therefore, there is no change in function
			То									6/7/2016.	percentage. Comments entered RM
			Headwate										6/7/2016.
			rs)										
	1			1	1							I	ı

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate	High 2018 Bookend	_	LF Weight and Bookends Comments	Estimates Comments
Snake River Spring/Sum mer Chinook	Lostine River	WLC8	Upper Lostine River (Silver Cr. To Headwate rs)	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 2012-2015 period in this assessment unit. Therefore, there is no change in function percentage. Comments entered RM 6/7/2016.
Snake River Spring/Sum mer Chinook		WRC1	Lower	6.2: Channel Structure and Form: Instream Structural Complexity	50.00%						
Snake River Spring/Sum mer Chinook		WRC1		8.1: Water Quality: Temperature	50.00%						
Snake River Spring/Sum mer Chinook		WRC2	1	8.1: Water Quality: Temperature	100.00%						