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 steelhead.

	•	Code	Assessment Unit		LF Weight	Low Bookend	2018 Estimate	Estimate	High 2018 Bookend	Estimate	High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS1	Middle Grande Ronde River Mainstem, Wallowa River to Lookingglass Creek	4.1: Riparian Condition: Riparian Vegetation	10.00%	80	80	80	80	80	80		2016 EP LF: No actions, no changeMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS1	Middle Grande Ronde River Mainstem, Wallowa River to Lookingglass Creek	6.2: Channel Structure and Form: Instream Structural Complexity	10.00%	90	90	90	90	90	90		2016 EP LF: No actions, no changeMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS1	Middle Grande Ronde River Mainstem, Wallowa River to Lookingglass Creek	7.2: Sediment Conditions: Increased Sediment Quantity	10.00%	80	80	80	80	80	80		2016 EP LF: No actions, no changeMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS1	Middle Grande Ronde River Mainstem, Wallowa River to Lookingglass Creek	8.1: Water Quality: Temperature	30.00%	50	50	50	50	50	50		2016 EP LF: No actions, no changeMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS1	Middle Grande Ronde River Mainstem, Wallowa River to Lookingglass Creek	8.2: Water Quality: Oxygen	10.00%	50	50	50	51	50	51		2016 EP LF: No actions, no changeMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS1	Middle Grande Ronde River Mainstem, Wallowa River to Lookingglass Creek	9.2: Water Quantity: Decreased Water Quantity	30.00%	50	50	50	51	50	51		2016 EP LF: No actions, no changeMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS2	Middle Grande Ronde River Mainstem - Lookingglass Creek to Catherine Creek	4.1: Riparian Condition: Riparian Vegetation	25.00%	40	40	40	50	41	60		EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16

				2012									
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		LF Weight and Bookends Comments	Estimates Comments
River Steelhead	Grande Ronde River upper mainstem	UGS2	Ronde River Mainstem - Lookingglass Creek to	6.2: Channel Structure and Form: Instream Structural Complexity	20.00%	40	40	40	45	41	50		EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS2	Middle Grande Ronde River Mainstem -	7.2: Sediment Conditions: Increased Sediment Quantity	10.00%	30	30	30	32	30.1	35		EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS2	Middle Grande Ronde River Mainstem - Lookingglass Creek to Catherine Creek	8.1: Water Quality: Temperature	10.00%	30	30	30	31	30	32		Projects would not provide enough water to provide temperature improvements yet, but would contribute to improvements if more water is secured over time. EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS2	Middle Grande Ronde River Mainstem - Lookingglass Creek to Catherine Creek	8.2: Water Quality: Oxygen	5.00%	50	50	50	51	50	51		EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS2	Middle Grande Ronde River Mainstem - Lookingglass Creek to Catherine Creek	9.2: Water Quantity: Decreased Water Quantity	30.00%	30	30	30	31	30	32		Estimate based on not knowing if water is protected; improvements would be estimated if water is protected. EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	1.1: Habitat Quantity: Anthropogenic Barriers	2.00%	90	90	90	95	90	95	Riverside Park/Spruce St Bridge, trib through tunnel @ Perry + barriers in Conley Cr + Wright Slough	Estimate considers benefits from Voelz project. EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no change MAH5.24.16

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate	Updated 2018 Estimate	High 2018 Bookend		High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	4.1: Riparian Condition: Riparian Vegetation	10.00%	45	45	45	55	45	60		Estimate based on about 4.5 MI riparian planting. EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no change MAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	4.2: Riparian Condition: LWD Recruitment	10.00%	45	45	45	45	45	60		2033 estimate based on projects listed in LF 4.1. EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no change MAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	6.1: Channel Structure and Form: Bed and Channel Form	10.00%	30	30	30	35	30	40		No actions, no changeMAH 5/24/16
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	6.2: Channel Structure and Form: Instream Structural Complexity	10.00%	30	30	30	35	30	40		EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	7.2: Sediment Conditions: Increased Sediment Quantity	5.00%	30.9	30.9	30.9	32	30.9	35		EP LB 2015: Voelz push-up dam was constructed. Removing this provides sediment benefit. Should be 0.2 mi /22.4 miles = 0.9% uplift. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	8.1: Water Quality: Temperature	28.00%	30	30	30	31	30	32		EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	8.2: Water Quality: Oxygen	5.00%	80	80	80	90	80	90		EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS3	Middle Grande Ronde River Mainstem - Grande Ronde Valley	9.2: Water Quantity: Decreased Water Quantity	20.00%	30	30	30	40	30	40		Assume Voelz provides 0.5 cfs w/ 1863 water right and 3 cfs from FWT project. EP LB 2015: No actions, no change. / 2016 EP LF: No actions, no change MAH5.24.16

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				2012 Standardized Limiting		Low	2018		High 2018		High 2033		
		Code	Assessment Unit		LF Weight				Bookend			Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS4	Ronde River	4.1: Riparian Condition: Riparian Vegetation	14.00%	50	50	50	60	51.6	70		NOTE TO AA'S: SHOULD THIS HAVE THE SAME ESTIMATE AS UGC2 OR DO PROJECTS LISTED ONLY BENEFIT CHINOOK? NO IMPROVEMENTS ESTIMATED IN 2012 EP WORKSHOP. kpfisher - 7/10/12 / Workshop notes indicate that EP called for steelhead HFchanges to be same as those for chinook. jms-7/13/12 // EP LB 2015: No actions, no change. // 2016 EP LF: No improvement by 2018. Uplift of 1.6% in 2033. See UGC2 for rationaleMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS4	Ronde River	4.2: Riparian Condition: LWD Recruitment	10.00%	50	50	50	60	50.8	70		EP LB 2015: No actions, no change. / 2016 EP LF: No uplift by 2018. Uplift of 0.8% by 2033. See UGC2 rationaleMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS4	Upper Grande Ronde River Mainstem - Upstream End of Grande Ronde Valley to	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	10.00%	50	50	58.1		59.7			2016 EP LF: Added this Limiting Factor at 2016 EP. Panel agreed on a 50% functioning bookend, and calculated a 8.1% uplift for 2018. An additional 1.6% uplift by 2033; see UGC2 rationaleMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS4	Ronde River Mainstem - Upstream End of Grande Ronde	5.2: Peripheral and Transitional Habitats: Floodplain Condition	10.00%	50	50	58.1		59.7			2016 EP LF: Added this Limiting Factor at 2016 EP. Panel agreed on a 50% functioning bookend, and calculated a 8.1% uplift for 2018. An additional 1.6% uplift by 2033; see UGC2 rationaleMAH5.24.16

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ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
	Grande	UGS4		6.1: Channel			53		60	59.7	70		Estimate based on total of abt. 6
	Ronde River		1	Structure and	10.0070	30		30.1		33.7			miles improved channel, floodplain
Steelhead				Form: Bed and									connectivity, morphology. EP LB
	mainstem		Upstream End of										2015: No actions, no change. /
			Grande Ronde										2016 EP LF: Panel calculated an
			Valley to										8.1% uplift for 2018. An additional
			Meadow Creek										1.6% uplift by 2033; see UGC2 rationaleMAH5.24.16
													Tationale: -WAH5.24.10
	Grande	UGS4	1	6.2: Channel	15.00%	50	56	58.1	60	59.7	70		Estimate considers about 20 miles
	Ronde River			Structure and									total improved complexity (does
Steelhead			Mainstem -	Form:									not include USFS LGR Project). EP
	mainstem		Upstream End of										LB 2015: No actions, no change. //
				Structural									2016 EP LF: Panel calculated an
			Valley to Meadow Creek	Complexity									8.1% uplift for 2018. An additional
			Meadow Creek										1.6% uplift by 2033; see UGC2 rationaleMAH5.24.16
Snake	Grande	UGS4	Upper Grande	7.2: Sediment	5.00%	70	72	75.4	75	76.5	80		Rock Ck is main sediment
River	Ronde River		Ronde River	Conditions:									producer. EP LB 2015: No actions,
Steelhead	upper		Mainstem -	Increased									no change. // 2016 EP LF: Panel
	mainstem		Upstream End of	Sediment									calculated a 5.4% uplift for 2018,
			Grande Ronde	Quantity									and an additional 1.1% uplift by
			Valley to										2033; see UGC2 rationale
			Meadow Creek										MAH5.24.16
	Grande	UGS4	1	8.1: Water	25.00%	40	40	40	41	41.1	45		Estimate considers improvements
	Ronde River			Quality:									from projects listed under other
Steelhead			Mainstem -	Temperature									UGC2 LFs. EP LB 2015: No actions,
	mainstem		Upstream End of										no change. // 2016 EP LF: No uplift
			Grande Ronde										for 2018, but a calculated uplift of
			Valley to Meadow Creek										1.1% by 2033; see UGC2 rationale MAH5.24.16
Snake	Grande	UGS4	Upper Grande	9.2: Water	1.00%	50	50	50	51	50	52		Conservative estimate based on 3
	Ronde River		Ronde River	Quantity:		-							cfs permanent acquisition. 2015 EP
Steelhead				Decreased									LB 2015: No actions, no change
	mainstem		Upstream End of										MH // 2016 EP LF: No actions, no
			1 '	Quantity									changeMAH5.24.16
			Valley to	-									_
			Meadow Creek										

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ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate	Updated 2018 Estimate	High 2018	Original 2033 Estimate	High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
River Steelhead	Grande Ronde River upper mainstem	UGS5	Lookingglass Creek and Tributaries	1.1: Habitat Quantity: Anthropogenic Barriers	20.00%	80	80	80	90	80	90	passes all steelhead; lookingglass weir stress w/handling	EP LB 2015: No actions, no change. // 2016 EP LF: No actions. Some land acquisitions in the works, but no benefit expected to 2018. Actions here will be beyond 2018 periodMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS5	Lookingglass Creek and Tributaries	4.1: Riparian Condition: Riparian Vegetation	20.00%	80	80	80	85	80	90		EP LB 2015: No actions, no change. // 2016 EP LF: No actions. Some land acquisitions in the works, but no benefit expected to 2018. Actions here will be beyond 2018 periodMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS5	Lookingglass Creek and Tributaries	4.2: Riparian Condition: LWD Recruitment	20.00%	80	80	80	80	80	85		EP LB 2015: No actions, no change. // 2016 EP LF: No actions. Some land acquisitions in the works, but no benefit expected to 2018. Actions here will be beyond 2018 periodMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS5	Lookingglass Creek and Tributaries	6.2: Channel Structure and Form: Instream Structural Complexity	40.00%	75	75	75	80	75	85		EP LB 2015: No actions, no change. // 2016 EP LF: No actions. Some land acquisitions in the works, but no benefit expected to 2018. Actions here will be beyond 2018 periodMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS6	Phillips, Clark, Cabin and Gordon Creeks, Duncan and Rysdam Canyons, and tributaries	1.1: Habitat Quantity: Anthropogenic Barriers	10.00%	70	70	70	80	70	80	Several diversions on Cabin, etc.	EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS6		4.1: Riparian Condition: Riparian Vegetation	10.00%	50	50	50	55	50	65		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16

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ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
River Steelhead	Grande Ronde River upper mainstem	UGS6	Phillips, Clark, Cabin and Gordon Creeks, Duncan and Rysdam Canyons, and tributaries	Condition: LWD Recruitment	10.00%	50	50	50	50	50	55		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS6	Phillips, Clark, Cabin and Gordon Creeks, Duncan and Rysdam Canyons, and tributaries	6.1: Channel Structure and Form: Bed and Channel Form	15.00%	50	50	50	55	50	65		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS6	Phillips, Clark, Cabin and Gordon Creeks, Duncan and Rysdam Canyons, and tributaries	6.2: Channel Structure and Form: Instream Structural Complexity	15.00%	50	50	50	55	50	65		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS6	Phillips, Clark, Cabin and Gordon Creeks, Duncan and Rysdam Canyons, and tributaries	7.2: Sediment Conditions: Increased Sediment Quantity	10.00%	40	40	40	45	40	50		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
	Grande Ronde River upper mainstem	UGS6	Phillips, Clark, Cabin and Gordon Creeks, Duncan and Rysdam Canyons, and tributaries	8.1: Water Quality: Temperature	15.00%	50	50	50	55	50	65		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS6	1 ' '	9.2: Water Quantity: Decreased Water Quantity	15.00%	40	40	40	41	40	1	flow big issue on Phillips Cr	EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018	1	High 2018 Bookend	Estimate	High 2033	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS7	Indian Creek and Tributaries	1.1: Habitat Quantity: Anthropogenic Barriers	5.00%	75	75	75	100	75	100		EP LB 2015: No action, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS7	Indian Creek and Tributaries	4.1: Riparian Condition: Riparian Vegetation	20.00%	65	65	65	75	65	85		Estimate based on Little Indian Ck. Project; not enough project info at 2012 EP workshop to estimate improvements from USFS Riparian Mtnce & Thinning project. EP LB 2015: No known actions, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS7	Indian Creek and Tributaries	6.2: Channel Structure and Form: Instream Structural Complexity	20.00%	65	65	65	75	65	85		EP LB 2015: No action, no change. EP discussed spatial and temporal variability for SH habitat and suggested GIS methods to map habitat. // 2016 EP LF: No actions, no changeMAH5.26.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS7	Indian Creek and Tributaries	7.2: Sediment Conditions: Increased Sediment Quantity	15.00%	55.7	55.7	55.7	65	55.7	75		EP LB 2015: No action, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS7	Indian Creek and Tributaries	8.1: Water Quality: Temperature	25.00%	60	60	60	65	60	70		EP LB 2015: No action, no change. // 2016 EP LF: No actions, no changeMAH5.26.16
Snake River Steelhead	Grande Ronde River	UGS7	Indian Creek and Tributaries	9.2: Water Quantity: Decreased Water Quantity	15.00%	50	50	50	60	50	65		EP LB 2015: No action, no change. // 2016 EP LF: No actions, no changeMAH5.26.16

				2012									
ESU	Population	Code		Standardized Limiting	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River	UGS8	Willow Creek and Tributaries		5.00%		70.7		90		90		2012- Dry Cr upper obstruction, Willow Cr. Huber Diversion lower obstruction. Basin managers need to address up to 8 additional partial obstructions b/w upper & lower obstructions addressed by projects. McKenzie project - addressed 4 trib partial barriers. / 2015 EP LB: Culverts on several tribs removed. Coon Cr (0.42 mi of new access from drop structure removal [not in database? Need to add to Willow Cr entry]). In database: Lanman Cr Culvert Removal (2013), 1.4 mi]. Keep Willow Cr, (1.1 mi). Dry Cr Upper Obstruction was not removed. See EP's table of actions = 2.4 mi of new access, prorated by usable habitat, as informed by intrinsic potential model, and modified using field observations of conditions and other barriers. Note that IP doesn't always match field obs and that other barriers still exist on Willow Creek and tribs. Many fish up Dry
Snake River Steelhead	Grande Ronde River upper mainstem	UGS8	Willow Creek and Tributaries	4.1: Riparian Condition: Riparian Vegetation	10.00%	60	60	60	65	61.3	70		Creek. Denominator: 64.7 SH mi (Creek. OAF (Creek. OAF property. Consider in Look FWD. No change in percentage. // 2016 EP LF: Willow Creek OAF (2016): 157 acres: 5.52 miles of Willow, Dry, and Fir Creeks. Also Dry Creek 2018 Project would treat 0.21 miles for all limiting factors. Panel determined no short-term uplift from riparian planting by 2018, but 1.3% uplift by 2033MAH5.26.16

				2012 Standardized			Original	Updated		Original		LF Weight and	
				Limiting		Low	2018	2018	High 2018		High 2033		
ESU	Population	Code	Assessment Unit	Factor	LF Weight	Bookend	Estimate	Estimate	Bookend	Estimate	Bookend	Comments	Estimates Comments
Snake	Grande	UGS8	Willow Creek	4.2: Riparian	10.00%	60	60	60	60	60.7	65		Per EP LB 2015: Willow C- Coon Cr.
River	Ronde River		and Tributaries	Condition:									Project: No planting yet completed
Steelhead	upper			LWD									by action agencies. OAF property.
	mainstem			Recruitment									Consider in Look FWD. No change
													in percentage. // 2016 EP LF:
													Willow Creek OAF (2016): 157
													acres: 5.52 miles of Willow, Dry,
													and Fir Creeks. Also Dry Creek
													2018 Project would treat 0.21
													miles for all limiting factors. Panel
													determined no short-term uplift
													from riparian planting by 2018, but
													0.7% uplift by 2033(half of the
													uplift expected for LF4.1)
													MAH5.26.16

				2012 Standardized			Original	Updated		Original		LF Weight and	
				Limiting			2018	-	High 2018	_	High 2033	_	
ESU	Population	Code	Assessment Unit	Factor	LF Weight	Bookend	Estimate	Estimate	Bookend	Estimate	Bookend	Comments	Estimates Comments
Snake	Grande	UGS8	Willow Creek	6.1: Channel	10.00%	62.8	62.8	63	65	63	70		2012 -McKenzie Project would
River	Ronde River		and Tributaries	Structure and									reactivate 1 mile historic channel.
Steelhead	upper			Form: Bed and									/ Per 2015 EP LB: Side channel
	mainstem			Channel Form									created: 1 mi of reactivated
													historic channel + 4 miles of
													enhancement (wood additions).
													Wood added both complexity and
													bank stabilization: multiple benefit
													types from same action. Helped
													w/d ratio, sediment sorting, etc. 5
													mi treated out of 64.7 mi = 7.7%
													uplift. EP thought this total was
													too high, and so prorated (25%
													estimated function for time lag in
													LWD effects; 80% function for side
													construction) = 2.8% uplift. Low
													gradient system which forms some
													pools w/o wood, but wood helps
													maintain them. Reach has a range
													of sediment conditions. Now
													seeing more sediment sorting post
													construction. Takes time to
													achieve all channel structural
													changes. This differs from previous
													estimate because of the additional
													LWD installations (originally
													anticipated only 1 mile of chan
													reactivate). // 2016 EP LF: Panel

				2012									
				Standardized			Original	Updated		Original		LF Weight and	
				Limiting			2018	_	High 2018	_	High 2033	_	
ESU	Population	Code	Assessment Unit	Factor	LF Weight	Bookend	Estimate		Bookend			Comments	Estimates Comments
Snake	Grande	UGS8	Willow Creek	6.2: Channel	10.00%	62.8	62.8	63.1	65	63.1	70		2012 - WEST LEVEE PROJECT NOT
River	Ronde River		and Tributaries	Structure and									CONSIDERED IN THE
Steelhead	upper			Form:									WORKSHOP(ADDING LWD TO 1.2
	mainstem			Instream									STREAM MILES OF APPROX 20 MI
				Structural									REACH) - IS THIS WHY CHINOOK
				Complexity									ESTIMATE IS 5% IMPROVEMENT
													AND STEELHEAD IS 1%? McKenzie -
													118 wood additions to 4 miles
													stream. / EP LB 2015: Per 2015 EP
													LB: Same project actions as for LF
													6.1. See EP's table. 73 structures
													installed; 650-700 pieces. Lots of
													racking and roughness. 73 pools
													created by this wood = 7.3
													pc/100m large pcs. Compare to
													Minam 20 pc/100m reference?
													Still in "poor" range, but a big
													improvement. 37% improvement
													in wood load/function. Note that
													engineered structs vs natural
													accumulation: different. Total =
													2.8% uplift. This differs from
													previous EP's estimate because
													now based on empirical wood
													loading data. // 2016 EP LF: Panel
													calculated a 0.3% uplift for the Dry
													Creek Project for 2018, and no
													additional uplift by 2033. Dry

				2012									
				Standardized			Original	Updated		Original		LF Weight and	
				Limiting		Low	2018	2018	High 2018	_	High 2022	Bookends	
ESU	Population	Code	Assessment Unit		LF Weight	_	Estimate		Bookend		_	Comments	Estimates Comments
Snake	Grande	UGS8	Willow Creek			52.9	52.9	52.9	55	53.6	60	Comments	2012-WHY IS CHINOOK ESTIMATE
River	Ronde River	0030	and Tributaries	Conditions:	13.0070	32.3	32.3	32.3		33.0			2% AND STEELHEAD ESTIMATE
Steelhead			and modules	Increased									1%?McKenzie Project - eliminates
Steemeau	mainstem			Sediment									18000 ft of eroding streambank. /
	linamstem			Quantity									Per 2015 EP LB: Same project
				Quartity									actions as for LF 6.1 and LF 6.2. See
													EP's table. Project decreased
													sediment input and increased
													gravel sorting. Total of 9000 linear
													ft of bank that was actively eroding
													that was addressed. This (1 mile of
													chan reconstruction) took care of
													~50-90% of erosion problems in
													this reach, but veg still has to
													grow, so lengths in table are
													prorated accordingly. LWD project
													element accounted for 34% of
													length in project area, but targeted
													the most active erosion areas in
													both the project reach and the
													entire AU. Floodplain
													recconnection reduces erosive
													power too. Prorated to 50% and
													34%. Denom: 64.7 miles; = 2.9%
													uplift.This uplift number is higher
													than previous EP's estimate, but it
													is more empirically based. May
													need to adjust bookends in next
													Lasternal // 2046 FD LF. Daniel
Snake	Grande	UGS8	Willow Creek	8.1: Water	20.00%	40	40	40	42	40.4	45		EP LB 2015: To early for
River	Ronde River		and Tributaries	Quality:									temperature benefits. No change.
Steelhead				Temperature									// 2016 EP LF: Panel determined
	mainstem												there would be no immediate
													effect from the 2 projects to get a
													measurable uplift in 2018, but
													estimated a 0.4% uplift in 2033
													based on projected growth
					00.0557								MAH5.26.16
Snake	Grande	UGS8	Willow Creek	9.2: Water	20.00%	45	45	45	47	45	50		EP LB 2015: No actions in this AU
River	Ronde River		and Tributaries	Quantity:									that affected this LF. No change. //
Steelhead				Decreased									2016 EP LF: No flow actions, no
	mainstem			Water									changeMAH5.26.16
				Quantity									

		1		2242					ı	ı			I
ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
River Steelhead	Grande Ronde River upper mainstem	UGS9A	Tributaries	1.1: Habitat Quantity: Anthropogenic Barriers		90	90	90	100	90	100	Elmer	2012 EP: MORE PASSAGE ISSUES ON MILL CK AND LITTLE CK. / 2015 EP LB: No actions, no change. // 2016 EP LF: No actions, no change. -MAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS9A		2.1: Injury and Mortality: Predation	0.00%							small mouth bass; invasive spp noted, but impacts unknown	
River Steelhead	Grande Ronde River upper mainstem	UGS9A	(mainstem	3.3: Food: Altered Prey Species Composition and Diversity	0.00%							altered food web- carp, panfish impacts unknown	
River Steelhead	Grande Ronde River upper mainstem	UGS9A		4.1: Riparian Condition: Riparian Vegetation	10.00%	45	45	45	50	45	60		2015 EP LB: Panel estimated a 0% improvement prorate factor for 0.25 miles treated for 1 project, as the vegetation has not matured enough to uplift LF 4.1 or 4.2. 0% uplift. // 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS9A	Lower Catherine Creek and Tributaries (mainstem migration corridor only)	4.2: Riparian Condition: LWD Recruitment	10.00%	45	45	45	45	45	50		2015 EP LB: Panel estimated a 0% improvement prorate factor for 0.25 miles treated for 1 project, as the vegetation has not matured enough to uplift LF 4.1 or 4.2. 0% uplift. // 2016 EP LF: No actions, no changeMAH5.24.16
River Steelhead	Grande Ronde River upper mainstem	UGS9A	Creek and Tributaries (mainstem	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	10.00%	20.3	20.3	20.3	35	20.3		<25 percentage levies; many oxbows have been truncated	2015 EP LB: Panel estimated a 50% improvement prorate factor for 0.25 miles treated for 1 project, resulting in a 0.3% uplift over the 36 mile steelhead presence reach. // 2016 EP LF: No actions, no changeMAH5.24.16

				2012 Standardized Limiting		Low	Original 2018	Updated 2018	High 2018	Original 2033	High 2033	LF Weight and Bookends	
ESU	Population	Code	Assessment Unit	Factor	LF Weight	Bookend	Estimate	Estimate	Bookend	Estimate	Bookend	Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS9A	Lower Catherine Creek and Tributaries (mainstem migration corridor only)	5.2: Peripheral and Transitional Habitats: Floodplain Condition	10.00%	40.3	40.3	40.3	50	40.3	55	been truncated	2015 EP LB: Panel estimated a 50% improvement prorate factor for 0.25 miles treated for 1 project, resulting in a 0.3% uplift over the 36 mile steelhead presence reach. // 2016 EP LF: No actions, no changeMAH5.24.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS9A	Lower Catherine Creek and Tributaries (mainstem migration corridor only)	6.1: Channel Structure and Form: Bed and Channel Form	10.00%	40.03	40.03	40.03	50	40.03	55	been truncated	2015 EP LB: Panel estimated a 5% improvement prorate factor for 0.25 miles treated for 1 project, resulting in a 0.03% uplift over the 36 mile steelhead presence reach. // 2016 EP LF: No actions, no changeMAH5.24.16
Snake River Steelhead	mainstem	UGS9A	corridor only)	Structure and Form: Instream Structural Complexity	15.00%	25.03	25.03	25.03	35	25.03	40		2015 EP LB: Panel estimated a 5% improvement prorate factor LF6.1 and LF6,2 for 0.25 miles treated for 1 project, resulting in a 0.03% uplift over the 36 mile steelhead presence reachMAH 2/3/16 // 2016 EP LF: No actions, no changeMAH5.24.2016
Snake River Steelhead	Grande Ronde River upper mainstem	UGS9A	Lower Catherine Creek and Tributaries (mainstem migration corridor only)	7.2: Sediment Conditions: Increased Sediment Quantity	5.00%	50	50	50	55	50	55	more of a non- point issue, many uncontrolled contributions, but bank erosion issue also contributes	2015 EP LB: No action, no change. // 2016 EP LF: No actions, no changeMAH5.24.2016
Snake River Steelhead	Grande Ronde River upper mainstem	UGS9A	Lower Catherine Creek and Tributaries (mainstem migration corridor only)	8.1: Water Quality: Temperature	10.00%	40	40	40	40	40	45	adult passage; combination of other LFs over time will be needed to affect a chance in temp	2015 EP LB: No measurable benefits from actions listed in LF 9.2 because not enough water and solar radiation too high. Temperature readings show above lethal for rearing. Not enough flow to significantly affect this LF. 20-22 deg C. A few cfs is not enough to decrease temps measurably, especially given backwater from Davis Dam. No % change. // 2016 EP LF: No actions, no change MAH5.24.2016

				2012									
				Standardized			Original	Updated		Original		LF Weight and	
				Limiting			2018	-	High 2018	_	High 2033	_	
ESU	Population	Code	Assessment Unit	_	LF Weight			1	Bookend		_	Comments	Estimates Comments
Snake	Grande	UGS9A	Lower Catherine		5.00%	40	40	40		40	45	Links to flow &	2015 EP LB: No actions, no change.
	Ronde River	003371		Quality:	3.0070	10			.5	10		temp	// 2016 EP LF: No actions, no
Steelhead				Oxygen								i comp	changeMAH5.24.2016
Steemieaa	mainstem		(mainstem	O Nygen									
	manistern		migration										
			corridor only)										
Snake	Grande	UGS9A	Lower Catherine	9.2: Water	10.00%	32.2	32.2	35.8	35	32.2	35	m/s migration	2015 EP LB: 14 leases total
	Ronde River	003371		Quantity:	10.0070	32.2	32.2	33.0		32.2			between 2012-2015. Average of
Steelhead				Decreased								refugia @ mouths	leases was 2.8025 cfs annually, but
Steemieaa	mainstem		(mainstem	Water								of tribs	that volume was weighted based
	ascc		1,	Quantity								0	on locations of leases and an
			corridor only)	Quarterty									overall steelhead presence of 36
													miles. Discussion: But is that water
													usable (due to temperature and LH
													timing re: migration seasons)?
													Davis Dam consultation considered
													other ecological benefits of flow,
													even when temps are high. Used
													to have leakage, but no longer, so
													basline has changed. Discussion of
													thresholds: at what point does
													flow augmentation benefit fish? At
													what point is it inhabitable by fish?
													Not a 1:1 linear relationship.
													Depends on channel cross-section
													and temperature regime. Also
													considered location in reach of
													flow addition. Flow additions are
													during critical summer months.
													Check basin flow data for
													denominator. The weighted
													average of 0.76 cfs annually, based
													on release location and timing,
													was divided by the determined
													1, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,

				2012									
ESU	Population	Code		Standardized Limiting	LF Weight	Low	2018		High 2018 Bookend		High 2033		Estimates Comments
	Grande	UGS9B	Lower Catherine				61.6			61.6			2015 EP LB: Little Creek diversion
	Ronde River	00335		Quantity:	3.0070	01.0	01.0	01.0		01.0		l ' ' '	Removal in 2012, was a partial
Steelhead				Anthropogenic								Traini Gran	juvenile barrier 2-3 ft tall.
	mainstem			Barriers									Upstream the next (partial) barrier
	indinsteni		area and	Barriers									is LC2 (a few inches), LC3 (1-2 ft)
			tributaries only)										LC4 (tall barrier). These barriers
													are 1.5 miles upstream, so 1.5 mi
													of improved access. Ladd Highway
													203 Bridge replaced undersized
													culvert (partial barrier?) in 2013,
													associated with primary aim of
													channel reconnect at Ladd (had
													been ditched to run along RR, so
													new channels built and then
													reconnected; crossing location was
													changed by ~1.1 miles). Steelhead
													in Ladd Cr now have 1 more mile
													of new channel, but this was
													determined not applicable to LF
													1.1, only under LF 6.1. Uplift was
													calculated as 1.5 miles improved
													access 50% of the year, divided by
													a total streamnet fish presence
													length of 47 miles = 1.6% uplift. //
													2016 EP LF: No actions, no change.
													-MAH5.24.2016
					0.000/								
	Grande	UGS9B	Lower Catherine		0.00%						1	· ·	2015 EP LB: No actions. No weight
	Ronde River			Mortality:							l		for this LF at this time. No change.
Steelhead				Predation							1	but impacts	
	mainstem		(contributing									unknown	
			area and										
Snake	Grande	UGS9B	tributaries only) Lower Catherine	2 2: Eood:	0.00%							altered food web-	2015 EP LB: No actions. No weight
	Ronde River	סכנטטן		Altered Prey	0.00/0								for this LF at this time. No change.
Steelhead				Species							1	impacts unknown	ioi tiiis er at tiiis tiille. No tiialige.
	mainstem		(contributing	Composition								inipacts unknown	
	mamotelli		1.	and Diversity									
			tributaries only)	and Diversity									
<u> </u>			minutaries offis)	<u> </u>	l	l	l	1	l	l	l	I	

				Г								Т	
				2012 Standardized			Original	Updated		Original		LF Weight and	
				Limiting			2018	-	High 2018	_	High 2033	_	
ESU	Population	Code	Assessment Unit		LF Weight			1	Bookend		_	Comments	Estimates Comments
Snake	Grande	UGS9B	Lower Catherine	4.1: Riparian	10.00%	60	60	60	60.1	60	80		2015 EP LB: No actions that
River	Ronde River		Creek and	Condition:									contributed to LF 4.1, although
Steelhead	upper		Tributaries	Riparian									some vegetation management was
	mainstem		(contributing	Vegetation									completed on exposed banks in a
			area and										small area near reconnected
			tributaries only)										channel. No uplift. // 2016 EP LF:
													No actions, no change
													MAH5.24.2016
Snake	Grande	UGS9B	Lower Catherine	4.2: Riparian	10.00%	60	60	60	60.1	60	70		2012 EP: ESTIMATES COPIED
River	Ronde River		Creek and	Condition:									FROM CCC2B / 2015 EP LB: No
Steelhead	upper		Tributaries	LWD									actions, no change. // 2016 EP LF:
	mainstem		(contributing	Recruitment									No actions, no change
			area and										MAH5.24.2016
			tributaries only)										
	Grande	UGS9B	Lower Catherine	l '	10.00%	65	65	65	75	65	80		2012 EP: COPIED ESTIMATE FROM
	Ronde River			and									CCC2B - kpfisher, 7/10/12 // 2015
Steelhead			Tributaries	Transitional									EP LB: No actions, no change. //
	mainstem		(contributing	Habitats: Side									2016 EP LF: No actions, no change.
				Channel and									-MAH5.24.2016
				Wetland									
				Conditions									
Snake	Grande	UGS9B	Lower Catherine	5.2: Peripheral	10.00%	66.9	66.9	66.9	75	66.9	80		2012 EP: COPIED ESTIMATE USED
	Ronde River			and									FOR CCC2B - kpfisher, 7/10/12 /
Steelhead			Tributaries	Transitional									2015 EP LB: Hwy 203 Bridge
	mainstem			Habitats:									Replacement channel
			1.	Floodplain									reconnection at Ladd Creek. Total
				Condition									1.1 mile project length, and a total
			,,										of 47 miles steelhead miles in this
													AU per Streamnet. Percent current
													function status was determined to
													be 80% of the 1.1 miles, divided by
													47 miles total fish use = 1.9%
													uplift. // 2016 EP LF: No actions,
													no changeMAH5.24.2016

				2012									
				Standardized			Original	Updated		Original		LF Weight and	
				Limiting			2018	-	High 2018	_	High 2033	_	
ESU	Population	Code	Assessment Unit	Factor	LF Weight	Bookend	Estimate	Estimate	Bookend	Estimate	Bookend	Comments	Estimates Comments
Snake	Grande	UGS9B	Lower Catherine	6.1: Channel	10.00%	67.1	67.1	67.1	75	67.1	80		2015 EP LB: Hwy 203 Bridge
River	Ronde River		Creek and	Structure and									Replacement channel
Steelhead	upper		Tributaries	Form: Bed and									reconnection at Ladd Creek. Total
	mainstem		(contributing	Channel Form									1.1 mile project length, and a total
			area and										of 47 miles steelhead miles in this
			tributaries only)										AU per Streamnet. Percent current
													function status for LF6.1 was
													determined to be 90% of the 1.1
													miles, divided by 47 miles total fish
													use = 2.1% uplift. // 2016 EP LF: No
													actions, no change
													MAH5.24.2016
	Grande	UGS9B	Lower Catherine		15.00%	65.1	65.1	65.1	75	65.1	80		2012 EP: ESTIMATE COPIED FROM
	Ronde River			Structure and									CCC2B. / 2015 EP LB: Hwy 203
Steelhead				Form:									Bridge Replacement channel
	mainstem		Ι΄ .	Instream									reconnection at Ladd Creek. Total
			area and	Structural									1.1 mile project length, and a total
			tributaries only)	Complexity									of 47 miles steelhead miles in this
													AU per Streamnet. Percent current function status for LF6.2 was
													determined to be only 5% of the
													1.1 miles, divided by 47 miles total
													fish use = 0.1% uplift. // 2016 EP
													LF: No actions, no change
													MAH5.24.2016
Snake	Grande	UGS9B	Lower Catherine	7.2: Sediment	5.00%	50	50	50	55	50	55		2015 EP LB: No actions, no change.
	Ronde River		Creek and	Conditions:									// 2016 EP LF: No actions, no
Steelhead	upper		Tributaries	Increased								Ladd	changeMAH5.24.2016
	mainstem		(contributing	Sediment									
			area and	Quantity									
			tributaries only)										
Snake	Grande	UGS9B	Lower Catherine	8.1: Water	10.00%	40	40	40	40.1	40	45		2012 EP: ESTIMATE COPIED FROM
	Ronde River		Creek and	Quality:									CCC2C (Lower Catherine Ck). /
Steelhead	upper		Tributaries	Temperature									2015 EP LB: Existing temperatures
	mainstem		(contributing										exceed 20 deg between 81% and
			area and										100% of days (20-22 deg C) so flow
			tributaries only)										increases are insufficient to help
													fish and cause uplift. No uplift at
													this time. // 2016 EP LF: No
1													actions, no change
													MAH5.24.2016

				2012	l		1	1			1		
ESU	Population	Code		Standardized Limiting	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
	Grande	UGS9B	Lower Catherine		0.00%	DOOKEIIU	LStilliate	LStilliate	DOOKEIIU	LStillate		need to quantify;	2015 EP LB: No actions. No weight
	Ronde River	00396	Creek and	Quality:	0.00%						1		for this LF at this time. No change.
Steelhead				Oxygen							1	reaches- some	ior this Li at this time. No change.
	mainstem		(contributing	Oxygen							l	issue d/s	
	mamstern		area and									13346 4/3	
			tributaries only)										
Snake	Grande	UGS9B	Lower Catherine	9.2: Water	15.00%	30.6	30.6	31	35	31	35	several diversions	2012 EP: Conservative estimate -
	Ronde River			Quantity:							1		assumes 3 cfs from water
Steelhead	upper		Tributaries	Decreased							1	Ladd Crs	transactions. / 2015 EP LB: The EP
	mainstem		(contributing	Water									reviewed upstream AU flow action
			area and	Quantity									benefits and weighted for effect to
			tributaries only)										this AU using Little Cr mileage
													affected portion relative to total
													AU miles. 4 total leases were
													identified to impact this AU: Boyd
													Little Creek SSL (4 entries) 0.21 cfs
													lease 2012-2015. 0.15 cfs, 0.15 cfs,
													0.38 cfs, 0.38 cfs. Freshwater Trust
													2014 0.15 cfs. Umatilla Tribe
													(CTUIR) Water Transaction 0.38
													cfs. Total average of leases from
													2012-15 was calculated to be
													0.6875 cfs. However, the AU
													includes several tributaries and
													Little Cr. is only a small part of the
													whole AU (22-29% of Catherine Cr
													total flows [avg 25%]), so these
													leases were prorated to a weight
													of 6% of the entire AU. The base
													flow in this stretch was estimated
													to be 7.5 cfs. Total calculated %
													uplift was therefore ((.6875cfs x
													6%) / 7.5cfs) = 0.6% upliftMH
													2/3/2016 // 2016 EP LF: 2 flow
Snake	Grande	UGS10A	Middle	1.1: Habitat	2.00%	95	95	95	100	95	100	increased from 80	2016 EP LF: No actions, no change.
	Ronde River		Catherine Creek	Quantity:								partial juvenile	MAH5.25.16
Steelhead	upper			Anthropogenic								barrier at mouth of	
	mainstem		1	Barriers								Pyles Ck	
			Swackhammer						1				

				2012 Standardized Limiting			Original 2018	Updated 2018	High 2018	Original	High 2033	LF Weight and	
ESU	Population	Code	Assessment Unit	_	LF Weight			1	Bookend		_	Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River	UGS10A	Middle Catherine Creek	4.1: Riparian		45	45	45	47		60		2016 EP LF: No actions, no change in 2018. A 1.3% uplift expected by 2033, in addition to 3% uplift from lookback projects = 49.3%. Identical to CCC3A: same actions and denominatorMAH5.25.16
River Steelhead	Grande Ronde River upper mainstem	UGS10A	and Tributaries -	4.2: Riparian Condition: LWD Recruitment	6.50%	45	45	45	45.1	45.7	60		Estimate considers improvements from LF 4.1 projects. // 2016 EP LF: No actions, no change in 2018. A 0.7% uplift expected by 2033, in addition to a 1.5% uplift from lookback actions = 47.2% in 2033. Identical to CCC3A: same actions and denominatorMAH5.25.16
River Steelhead	Grande Ronde River upper mainstem	UGS10A	Catherine Creek and Tributaries -	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	10.00%	22.2	22.2	23	30	23.1		Potential u/s of Union (confined and semi-confined reaches); less below Union (unconfined)	CC-37, 38 & 39 PROJECTS PROVIDE CHANNEL ADDITION AND WETLAND CONNECTION. // 2016 EP LF: Panel calculated a 0.8% uplift by 2018, and an additional 0.1%uplift by 2033. The panel used Identical rationale as CCC3A: same actions and denominator MAH5.25.16
River Steelhead	Grande Ronde River upper mainstem	UGS10A	Middle Catherine Creek and Tributaries - Pyles Creek to Swackhammer	5.2: Peripheral and Transitional Habitats: Floodplain Condition	10.00%	25.1	25.1	25.2	30	25.3	35		Implementation planned for CC 37 in 2012, CC 36 in 2014, 38 & 39 in 2015/16.// 2016 EP LF: Panel calculated a 0.1% uplift by 2018, and an additional 0.1% uplift by 2033. The panel used Identical rationale as CCC3A: same actions and denominatorMAH5.25.16
River Steelhead	Grande Ronde River upper mainstem	UGS10A	Catherine Creek and Tributaries -		10.00%	48.1	48.1	49	45	49			2016 EP LF: Panel calculated a 0.9% uplift by 2018, with no additional uplift estimated by 2033. The panel used Identical rationale as CCC3A: same actions and denominatorMAH5.25.16

		•	•		T		1	ı			•		
				2012									
				Standardized				Updated		Original		LF Weight and	
				Limiting		Low	2018	1	High 2018		High 2033		
	Population	Code	Assessment Unit		LF Weight		+		Bookend			Comments	Estimates Comments
Snake	Grande	UGS10A		6.2: Channel	10.00%	50.1	50.1	56.9	65	56.9	80		2016 EP LF: Panel calculated a
	Ronde River		Catherine Creek	Structure and									6.8% uplift by 2018, with no
Steelhead	upper		and Tributaries -	Form:									additional benefit or uplift by
	mainstem		Pyles Creek to	Instream									2033. The panel used Identical
			Swackhammer	Structural									rationale as CCC3A: same actions
				Complexity									and denominatorMAH5.25.16
Snake	Grande	UGS10A	Middle	7.2: Sediment	10.00%	45.7	45.7	48.1	45	50.8	50		2016 EP LF: Panel calculated a
River	Ronde River		Catherine Creek	Conditions:									2.4% uplift by 2018, and an
Steelhead	upper		and Tributaries -	Increased									additional 0.7% uplift by 2033. The
	mainstem		1 '	Sediment									2033 estimate includes an
			Swackhammer	Quantity									additional 2.0% uplift estimated
													from lookback projects, for a total
													of 50.8%. The panel used Identical
													rationale as CCC3A: same actions
													and denominatorMAH5.25.16
Snake	Grande	UGS10A	Middle	8.1: Water	15.00%	20	20	20	41	20	42	lower third temp	Estimate considers benefits from
River	Ronde River		Catherine Creek	Quality:								limited;	CC-44 & other upstream projects
Steelhead	upper		and Tributaries -	Temperature									plus conservative assumption of 3
	mainstem		Pyles Creek to										cfs for upstream water
			Swackhammer										transactions. //2016 EP LF: Panel
													calculated a 0% uplift for 2018 and
													2033 for this limiting factor. The
													panel used Identical rationale as
													CCC3A: same actions and
													denominatorMAH5.25.16
Snake	Grande	UGS10A	Middle	8.2: Water	0.00%							Associated	
River	Ronde River		Catherine Creek	Quality:								w/flow/temp; non-	
Steelhead	upper		and Tributaries -	Oxygen								point sources	
	mainstem		Pyles Creek to									need more info to	
			Swackhammer									quantify	
Snake	Grande	UGS10A	Middle	8.4: Water	0.00%							Point discharge	
	Ronde River		Catherine Creek	Quality:								between RM 38-	
Steelhead	upper		and Tributaries -	Turbidity								39;	
	mainstem		Pyles Creek to									need more info to	
			Swackhammer									quantify impact	

				2012									
				Standardized			_	Updated		Original		LF Weight and	
ESU	Population	Code	Assessment Unit	Limiting	LF Weight		2018 Estimate		High 2018 Bookend		High 2033 Bookend	Comments	Estimates Comments
	Grande			9.2: Water		25	25	34.3	50				Conservative estimate based on 3
	Ronde River		Catherine Creek		20.00%	23	23	34.3	130	34.3		this reach	cfs. // 2016 EP LF: Panel calculated
				Decreased									a 9.3% uplift by 2018, but could
Steelhead	mainstem			Water									' '
	mamstem		Pyles Creek to Swackhammer	Quantity									not project that same uplift out to 2033. The panel used Identical
			Swackilallillel	Qualitity									rationale as CCC3A: same actions
													and denominatorMAH5.25.16
													and denominatorWANS.25.10
Snake	Grande	UGS10B	Middle	1.1: Habitat	2.00%	100	100	100	100	100	100	one diversion	***CONFIRM 2016 EP Look
River	Ronde River		Catherine Creek	Quantity:								structure ~ rm 41	Forward ESTIMATES (MAH-
Steelhead	upper		and Tributaries -	Anthropogenic								impedes juvenile	5.25)*** Estimate based on CC 44
	mainstem		Swackhammer	Barriers								movement	project; may be more steelhead
			to North and										barriers not yet
			South Forks										known/identified.// 2016 EP LF:
													Panel calculated a 27% uplift by
													2018, starting with a 114.6%
													bookend. Anything above 100%
													cannot be inputted into taurus, so
													the numbers below reflect 100%,
													even though the panel calculations
													totaled a 141.6% 2018 update, and
													same by 2033. The panel used
													Identical rationale as CCC3A: same
													actions and denominator
													MAH5.25.16
	Grande		Middle		6.50%	60	60	60	65	62.9	75		Estimate does not consider USFS
	Ronde River		Catherine Creek										Catherine Ck Riparian Mtnce &
Steelhead				Riparian									Thinning Project - not enough
	mainstem		Swackhammer	Vegetation									project information known to
			to North and										estimate improvements at 2012 EP Workshop. // 2016 EP LF: Panel
			South Forks										l '''
													calculated no uplift by 2018,
													however a realized 2% uplift by 2033 plus 0.9% uplift realized by
													2033 from lookback projects.
													Same actions and rationale as
													CCC3B, but different denominator
													used in calculation tables
													MAH5.25.16
					l	l	l						IVIAI 13.43.10

			2012									
			Standardized			Original	l lodatad		Original		LE Maight and	
						Original 2018	Updated 2018	High 2018	Original	High 2033	LF Weight and	
ulation	oho		Limiting Factor					_				Estimates Comments
											Comments	Estimate considers improvement
			•	0.5070	00	00	00	00	01.5	70		from 4.1 LF projects. // 2016 EP LF:
												Panel calculated no uplift by 2018,
												however a realized 1% uplift by
11316111			Recruitment									2033 on top of a realized 0.5 uplift
												from lookback projects = 61.5%.
		South Forks										Same actions and rationale as
												CCC3B, but different denominator
												used in calculation tables
												MAH5.25.16
nde U	JGS10B	Middle	5.1: Peripheral	15.00%	68.9	68.9	79.5	70	79.5	75	lower 4 miles	Estimate based on CC44 project -
de River			·									5.5 miles restoration potential.
er		and Tributaries -	Transitional									Little benefit from water
nstem			Habitats: Side									transactions until channels are
		to North and	Channel and								-	formed. // 2016 EP LF: Panel
		South Forks	Wetland								upstream	calculated a 10.6% uplift, with no
			Conditions									additional uplift by 2033. Same
												actions and rationale as CCC3B,
												but different denominator used in
												calculation tablesMAH5.25.16
_												
			·	10.00%	65.3	65.3	71.1	70	71.1			Conservative estimate due to
de River												uncertain project designs, etc. at
												time of 2012 EP workshop. // 2016
nstem											, ,	EP LF: Panel calculated a 5.8%
			-									uplift, with no additional uplift by
		South Forks	Condition								•	2033. Same actions and rationale
												as CCC3B, but different denominator used in calculation
												tablesMAH5.25.16
nde U	IGS10R	Middle	6.1. Channel	10 00%	62.3	62.3	68.3	70	68.3	75		Conservative estimate due to
de River				10.00/0	02.3	02.3	00.3	'0	00.3	, ,		uncertain project designs, etc. at
												time of 2012 EP workshop. // 2016
nstem												EP LF: Panel calculated a 6% uplift,
												with no additional uplift by 2033.
												Same actions and rationale as
		JOHEN TOTAL										CCC3B, but different denominator
												used in calculation tables
												MAH5.25.16
nd de er ns:	e River tem e River tem e River tem e River tem	e Niver UGS10B e River tem e River tem UGS10B e River tem UGS10B e River tem uGS10B e River tem	e River e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks e River b River e River	e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and Swackhammer to North and Channel Form: Bed and Channel Form to North and	e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks e UGS10B Middle Catherine Creek and Tributaries - 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Swackhammer to North and South Forks e UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and Swackhammer to North and Channel Form Edel and Edel Edel Edel Edel Edel Edel Edel Ede	Middle	River River River Britanner Creek and Tributaries - Swackhammer to North and South Forks UGS10B Middle Catherine Creek and Tributaries - Swackhammer to North and South Forks LWD Recruitment LWD Recruit

	l			2012									
				2012 Standardized			Original	l landata d		Original		LF Maight and	
				Limiting			Original 2018	Updated 2018	High 2018	Original	High 2033	LF Weight and	
ESU	Population	Code	Assessment Unit	_	LF Weight				Bookend		_	Comments	Estimates Comments
Snake	Grande	UGS10B					64.3	77	70	77	75	Comments	7 of 9 miles treated; conservative
River	Ronde River	003100	Catherine Creek		13.00%	04.5	04.5	' '	/0	''	/3		estimate due to uncertainty of
Steelhead				Form:									· ·
Steemeau	mainstem		Swackhammer	l									design at time of 2012 EP workshop. // 2016 EP LF: Panel
	Illanisteni			Instream Structural									I
			South Forks										calculated a 12.7% uplift, with no
			South Forks	Complexity									additional uplift by 2033. Same
													actions and rationale as CCC3B,
													but different denominator used in
													calculation tablesMAH5.25.16
Snake	Grande	UGS10B	Middle	7.2: Sediment	5.00%	65.4	65.4	68	65	69.4	75		Conservative estimate due to
River	Ronde River		Catherine Creek	Conditions:									uncertain project designs, etc. at
Steelhead	upper		and Tributaries -	Increased									time of 2012 EP workshop. // 2016
	mainstem		Swackhammer	Sediment									EP LF: Panel calculated a 2.6%
			to North and	Quantity									uplift, with an additional 1.4%
			South Forks										uplift by 2033. Same actions and
													rationale as CCC3B, but different
													denominator used in calculation
													tablesMAH5.25.16
Snake	Grande	UGS10B		8.1: Water	10.00%	60	60	60	65	60.5	1		// 2016 EP LF: Panel calculated a
River	Ronde River			Quality:									0% uplift by 2018, but calculated
Steelhead	upper		and Tributaries -	Temperature									0.5% uplift by 2033. Same actions
	mainstem		Swackhammer										and rationale as CCC3B, but
			to North and										different denominator used in
			South Forks										calculation tablesMAH5.25.16
Snake	Grande	UGS10B		9.2: Water	20.00%	42.8	42.8	44.4	50	44.4	50	30 cfs baseflow	CC-44 Project indirectly addresses
River	Ronde River		Catherine Creek	1							1		this LF but not considered in
Steelhead				Decreased								this diverted	estimate. Assume 3 cfs permanent
	mainstem		Swackhammer	Water									lease/acquired for estimate. (10%
			to North and	Quantity									imp based on 3 of 30 cfs). // 2016
			South Forks										EP LF: Panel calculated a 1.6%
													uplift in 2018, but could not
													project any uplift out to 2033.
													Same actions and rationale as
													CCC3B, but different denominator
													used in calculation tables
													MAH5.25.16

				2042									
ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate	Updated 2018 Estimate	High 2018 Bookend	Estimate	Bookend	LF Weight and Bookends Comments	Estimates Comments
River Steelhead	Grande Ronde River upper mainstem	UGS11	South Fork Catherine Creek	4.1: Riparian Condition: Riparian Vegetation	10.00%	80	80	80	90	88.1	95		Not enough info about USFS projects to estimate benefits at 2012 EP Workshop. // 2016 EP LF: No actions, no change. Panel noted that they did not add limiting factor 1.1, due to limited habitatMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS11	South Fork Catherine Creek	4.2: Riparian Condition: LWD Recruitment	15.00%	80	80	80	90	84.1	95		2016 EP LF: No actions, no changeMAH5.26.16
Snake River Steelhead	Grande Ronde River	UGS11	South Fork Catherine Creek	6.2: Channel Structure and Form: Instream Structural Complexity	30.00%	92	92	92	90	92	95		2016 EP LF: No actions, no changeMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS11	South Fork Catherine Creek	7.2: Sediment Conditions: Increased Sediment Quantity	25.00%	97.6	97.6	97.6	85	100	95		Not enough info about USFS projects to estimate benefits at 2012 EP Workshop. // 2016 EP LF: No actions, no change.Panel noted that Collins will not happen in 2018 periodMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS11	South Fork Catherine Creek	8.1: Water Quality: Temperature	10.00%	80	80	80	90	80	95		2016 EP LF: No actions, no changeMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS11	South Fork Catherine Creek	9.2: Water Quantity: Decreased Water Quantity	10.00%	85	85	85	90	85	90		2016 EP LF: No actions, no changeMAH5.26.16
River Steelhead	Grande Ronde River upper mainstem	UGS12	North Fork Catherine Creek	1.1: Habitat Quantity: Anthropogenic Barriers	0.00%	12		12		12			PASSAGE IMPROVEMENT PROJECT IDENTIFIED BUT PASSAGE LF has 0% weight so no benefit from project. If barrier exists consider adding weight. // 2016 EP LF: No benefit from adult weir project due to limited habitat value.No upliftMAH5.26.16

				2012 Standardized Limiting			Original 2018	Updated 2018	High 2018	Original	High 2033	LF Weight and	
ESU	Population	Code	Assessment Unit		LF Weight				Bookend		_	Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River	UGS12	Catherine Creek	4.1: Riparian Condition: Riparian Vegetation			80	80			95		2016 EP LF: No actions, no change. -MAH5.26.16
Snake River Steelhead	Grande Ronde River	UGS12	North Fork Catherine Creek	4.2: Riparian Condition: LWD Recruitment	15.00%	80	80	80	90	80	95		2016 EP LF: No actions, no change. -MAH5.26.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS12		6.2: Channel Structure and Form: Instream Structural Complexity	30.00%	80	80	80	90	80	95		2016 EP LF: No actions, no changeMAH5.26.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS12	Catherine Creek	7.2: Sediment Conditions: Increased Sediment Quantity	25.00%	70	70	70	85	70	95		Not enough info about USFS project to estimate benefits at 2012 EP Workshop. // 2016 EP LF: No actions, no change MAH5.26.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS12		8.1: Water Quality: Temperature	10.00%	80	80	80	90	80	95		2016 EP LF: No actions, no change. -MAH5.26.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS12	Catherine Creek	9.2: Water Quantity: Decreased Water Quantity	10.00%	85	85	85	90	85	90		2016 EP LF: No actions, no change. -MAH5.26.16

				2012									
				Standardized Limiting			Original 2018	Updated 2018	High 2018	Original 2033	High 2033	LF Weight and Bookends	
ESU	Population	Code	Assessment Unit	Factor	LF Weight	Bookend	Estimate	Estimate	Bookend	Estimate	Bookend	Comments	Estimates Comments
Snake	Grande	UGS13A	Five Points Creek	1.1: Habitat	5.00%	84.8	84.8	84.8	100	84.8	100		EP LB 2015: Five Points Cr Barrier
	Ronde River		and Tributaries	Quantity:									Removal: 4-ft high concrete dam
Steelhead	upper			Anthropogenic									(UPRR legacy stucture) removal in
	mainstem			Barriers									2015, added LWD, will remove
													ATV trail in future. Barrier was
													partial: SH were jumping it (large
													pool below it), but also helped juv
													US and DS passage. Benefits: SH
													use hab all the way up to RM 12,
													plus 9 miles of tribs = 21-22 miles
													total opened. Streamnet total
													miles: 43.5. Adjusted benefit to
													consider only juvenile passage
													benefits: prorated to 10%
													functional benefit. See EP's table
													for calculations. Total change =
													4.8% uplift. Note this project was
													not considered in the 2012
													Lookfwd Expert Panel. Project also
													installed LWD dowstream. // 2016
													EP LF: No actions, no change
													MAH5.27.16
	Grande		Five Points Creek	•	15.00%	75	75	75	75	77.4	80		EP LB 2015: 1.5 mi Dry Creek
	Ronde River		and Tributaries	Condition:									Fence Enclosure 2015. Not mature
Steelhead				Riparian									enough to show functional change.
	mainstem			Vegetation									No change in percentage. // 2016
													EP LF: Project and rationale are
													identical to UGC1A, but calculation
													table uses a different denominator
													for steelhead. No uplift by 2018,
													but an estimated 2.4% uplift by
													2033MAH5.27.16
Snake	Grande	UGS13A	Five Points Creek	4.2: Riparian	15.00%	75	75	75	75	76.2	80		2016 EP LF: Project and rationale
River	Ronde River			Condition:									are identical to UGC1A, but
Steelhead	upper			LWD									calculation table uses a different
	mainstem			Recruitment									denominator for steelhead. No
													uplift by 2018, but an estimated
													1.2% uplift by 2033MAH5.27.16

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate	Updated 2018 Estimate	High 2018		High 2033	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS13A	Five Points Creek and Tributaries	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	5.00%	50	50	50		50.8			2016 EP LF: Project and rationale are identical to UGC1A, but calculation table uses a different denominator for steelhead. No uplift by 2018, but an estimated 0.8% uplift by 2033MAH5.27.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS13A	Five Points Creek and Tributaries	5.2: Peripheral and Transitional Habitats: Floodplain Condition	5.00%	50	50	50		50.8			2016 EP LF: Project and rationale are identical to UGC1A, but calculation table uses a different denominator for steelhead. No uplift by 2018, but an estimated 0.8% uplift by 2033MAH5.27.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS13A	Five Points Creek and Tributaries	6.1: Channel Structure and Form: Bed and Channel Form	5.00%	70	70	70	75	71.6	85		EP LB 2015: Five Points Cr Barrier Removal did not create pools. No functional change yet, but expected to benefit LF 6.1 in future. // 2016 EP LF: Project and rationale are identical to UGC1A, but calculation table uses a different denominator for steelhead. No uplift by 2018, but an estimated 1.6% uplift by 2033 MAH5.27.16

				2012									
				Standardized			Original	Updated		Original		LF Weight and	
				Limiting			2018	-	High 2018	_		Bookends	
ESU	Population	Code	Assessment Unit	_	LF Weight			1	Bookend		_	Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River	UGS13A	Five Points Creek and Tributaries			70.7	70.7	77.9			85		EP LB 2015: Five Points Cr Barrier Removal included LWD installation below dam. Approx 7 sites, 15 LWD pieces per site along 0.5 mile of stream in 2015 (project called "Five Points LWD Planting Phase 1/2" in Pisces. Next summer: structures to be built US of dam site. 105 pcs total/0.5 mi = 13pcs/100m = 65% (of 20pcs/100m reference). = 0.7% uplift. 2016 EP LF: Project and rationale are identical to UGC1A, but calculation table uses a different denominator for steelhead. Panel calculated a 7.2%
Snake River Steelhead	Grande Ronde River upper mainstem	UGS13A	Five Points Creek and Tributaries	7.2: Sediment Conditions: Increased Sediment Quantity	5.00%	70	70	70	75	71.2	85		uplift by 2018, with no additional uplift by 2033MAH5.27.16 2016 EP LF: Project and rationale are identical to UGC1A, but calculation table uses a different denominator for steelhead. No uplift by 2018, but an estimated 1.2% uplift by 2033MAH5.27.16
Snake River Steelhead	mainstem		Five Points Creek and Tributaries	Quality: Temperature			80				85		EP LB 2015: 1.5 mi Dry Creek Fence Enclosure 2015. Not mature enough to show functional change. No change in percentage. 2016 EP LF: Project and rationale are identical to UGC1A, but calculation table uses a different denominator for steelhead. No uplift by 2018, but an estimated 0.8% uplift by 2033MAH5.27.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS13A	Five Points Creek and Tributaries	9.2: Water Quantity: Decreased Water Quantity	5.00%	80	80	80	80	80	85		2016 EP LF: No actions, no changeMAH5.27.16

Creeks Condition: Riparian Creeks Condition: Riparian Creeks Condition: Riparian Ripa					2012									
Stack	FSII	Ponulation	Code		Standardized Limiting		Low	2018	2018	High 2018	2033	High 2033	Bookends	Estimates Comments
Ronde River		•												
Bridge, trib through tunned Barriers Conley Cr + Wright Conley Cr + Wright Slough Perry + barriers in Conley Cr + Wright Slough Perry + barriers in Conley Cr + Wright Slough Perry + barriers in Conley Cr + Wright Slough Perry + barriers in Conley Cr + Wright Slough Perry + barriers in Conley Cr + Wright Slough Perry + barriers in Conley Cr + Wright Slough Perry + barriers in Conley Cr + Wright Slough Perry + barriers in Conley Cr + Wright Perry + barriers in Conletion: Riparian 10.00% Perry + barriers in Conletion: Riparian 10.00% Perry + barriers in Conletion: Riparian 10.00% Perry + barriers in Condition: Riparian 10.00%				1		2.00%	90	190	190	195	190	l		_
Barriers				Creeks	,							l	l ' '	· · · · · · · · · · · · · · · · · · ·
		• •										l	1 •	ChangeWAND.27.10
Context		manistem			Darriers							l	_	
Sinake Grande UGS138 Conway/Owsley 4.1: Riparian 10.00% 45 45 45 45 45 45 45 4												1	1 '	
Grande Grande Grande Grande Grande Greeks Grande Grande Greeks Grande Grande Grande Greeks Grande Greeks Grande G												l		
	Snake	Grande	UGS13B	Conway/Owsley	4.1: Riparian	10.00%	45	45	45	55	45		J	EP LB 2015: No actions, no
Mainstern Main	River	Ronde River		Creeks	Condition:									change.// 2016 EP LF: No actions,
Grande G	Steelhead	upper			Riparian									no changeMAH5.27.16
River Steelhead upper mainsterm					Vegetation									
Steelhead winstem winstem UGS13B Conway/Owsley 6.1: Channel form: Bed and Channel Form:					·	10.00%	45	45	45	45	45	60		· ·
mainstem Grande River Upper mainstem Sinake River Rode River Upper mainstem Steelhead UGS13B Grande River Upper mainstem UGS13B Grande River Upper Monde River Upper mainstem UGS13B Grande River Upper Monde River Upper mainstem UGS13B Grande River Upper Monde River Uppe				Creeks										
Grande River Steelhead without the programminster with the programminster with the programminster without the programminster without the programminster with the programminster without														no changeMAH5.27.16
River upper mainstem Greeks Structure and Form: Bed and Channel Form Greeks Structure and Form: Bed and Channel Form Greeks Structure and Form: Bed and Channel Form Greeks Grande River mainstem Grande River mainstem Grande River mainstem Grande River Ronde River mainstem Grande River River Ronde River mainstem Grande River upper mainstem Grande River Grande River Grande River mainstem Grande River Ronde River upper mainstem Grande River Ronde River upper mainstem Grande River Ronde River mainstem Grande River have mainstem						10.000/	2.0			-				
Steelhead upper mainstem				1		10.00%	30	30	30	35	30	40		-
mainstem														
Snake River Ronde River upper mainstem UGS13B Conway/Owsley 6.2: Channel Structure and Form: Instream Structural Complexity Creeks Conditions: Increased Sediment Quantity River Ronde River upper mainstem UGS13B Conway/Owsley 8.1: Water Ronde River upper mainstem UGS13B Conway/Owsley 8.2: Water Ronde River upper mainstem UGS13B Conway/Owsley 8.2: Water Ronde River upper River Ronde River Ronde River Ronde River upper River Ronde River														no changeMAH5.27.16
River steelhead upper mainstem Steelhead up		mainstem			Channel Form									
Steelhead upper mainstem Structural Complexity Snake Grande River upper mainstem Snake Grande River Ronde River upper mainstem Snake Grande River Ronde River Ronde River Ronde River upper mainstem Snake Grande UGS13B Conway/Owsley 8.2: Water Quality: Temperature Snake Grande River upper No Snake Grande River upper No Snake River Ronde River upper No Snake Grande River upper No Snake River Ronde	Snake	Grande	UGS13B	Conway/Owsley	6.2: Channel	10.00%	30	30	30	35	30	40		EP LB 2015: No actions, no change.
mainstem Instream Structural Complexity Structural Structural Complexity Structural Structural Structural Complexity Structural Structura	River	Ronde River		Creeks	Structure and									// 2016 EP LF: No actions, no
Structural Complexity Snake River Ronde River upper mainstem Snake River Ronde River upper mainstem Snake Grande River Ronde River upper mainstem Snake Ronde River upper mainstem Snake Ronde River upper mainstem Snake Grande River upper mainstem Snake Ronde River upper mainstem Snake Grande River upper mainstem Snake Grande River upper mainstem Snake Ronde River upper mainstem Snake Grande River upper mainstem Snake Grande River upper mainstem Snake Grande River upper mainstem Snake Ronde River upper mainstem Snake Ronde River upper mainstem Snake Grande River upper mainstem Snake Grande River upper mainstem Snake Grande River upper Mainstem Snake Ronde River upper mainstem Snake Grande River upper Ronde River upper Mainstem Snake Grande River upper Ronde River Ronde River upper Ronde River	Steelhead	upper			Form:									changeMAH5.27.16
Snake River Ronde River upper mainstem Snake Grande River Ronde River upper mainstem Snake Grande Grande River Ronde River upper mainstem Snake Grande River Ronde River Mainstem Snake Grande River Ronde Riv		mainstem			Instream									
Grande River upper mainstem Grande River Ronde River upper mainstem Grande River upper mainstem Grande River upper mainstem Grande River Ronde River upper upper upper upper upper mainstem Grande River Ronde River upper					Structural									
River Steelhead upper mainstem Creeks Conditions: Increased Sediment Quantity Snake River Ronde River upper mainstem UGS13B Conway/Owsley River Ronde River upper mainstem UGS13B Conway/Owsley Ronde River upper mainstem UGS13B Conway/Owsley Ronde River upper mainstem Snake Grande River upper mainstem Snake Grande River Ronde River upper mainstem UGS13B Conway/Owsley Ronde River Ronde River upper mainstem Snake Grande River Ronde River Ronde River Ronde River Ronde River Ronde River UGS13B Conway/Owsley Ronde River Ronde River Upper Ronde River Ronde River Upper Ronde Ronde River Upper Ronde Ronde River Upper Ronde Ro														
Steelhead upper mainstem UGS13B Conway/Owsley 8.1: Water Ronde River mainstem UGS13B Conway/Owsley Steelhead upper mainstem UGS13B Conway/Owsley Ronde River upper mainstem Snake Ronde River upper mainstem Snake Grande Ronde River upper mainstem Snake Grande Ronde River upper moinstem Snake Grande Ronde River upper Ronde River upper moinstem Snake Grande River upper Ronde River Ronde River upper No Steelhead UGS13B Conway/Owsley Steelhead UGS13B Conway/Ows				1		5.00%	30	30	30	32	30	35		
mainstem Sediment Quantity Snake Grande River UGS13B Conway/Owsley 8.1: Water Quality: Steelhead upper mainstem Snake Grande River Ronde River Ronde River Mainstem Snake Grande Ronde River Ronde				Creeks										l' i
Quantity Snake River Ronde River Steelhead Grande River Ronde River Ronde River Ronde River Ronde River Mainstem Snake River Ronde River Ronde River Mainstem Snake River Ronde River Ronde River Mainstem Snake River Ronde River Ro														changeMAH5.27.16
Snake Grande River Ronde River upper mainstem Snake Grande River Ronde River upper River Ronde River upper mainstem Snake Ronde River Ronde River upper Ronde River upper upper upper River Ronde River upper upper Ronde River upper upper upper upper Ronde River upper		mainstem												
River Ronde River upper upper mainstem Snake Grande River Ronde River upper mainstem Snake Grande River Ronde River upper mainstem Snake Grande River Ronde River upper Ronde Ron		0 1			•	22.224	2.0			24				
Steelhead upper mainstem Temperature Temperature No changeMAH5.27.16 To mainstem To mainstem To merature No changeMAH5.27.16 No changeMAH5.27.16 To mainstem No changeMAH5.27.16 No changeMAH5.27.16 To mainstem No changeMAH5.27.16			UGS13B	1		28.00%	30	30	30	31	30	32		· ·
mainstem UGS13B Conway/Owsley 8.2: Water 5.00% 80 80 90 EP LB 2015: No actions, no change.// 2016 EP LF: No actions, no changeMAH5.27.16				Creeks	•									
Snake Grande UGS13B Conway/Owsley 8.2: Water 5.00% 80 80 90 80 90 EP LB 2015: No actions, no change.// 2016 EP LF: No actions, no changeMAH5.27.16					remperature									no changeMAH5.27.16
River Ronde River Creeks Quality: change.// 2016 EP LF: No actions, no changeMAH5.27.16	-		UGS13B	Conway/Owsley	8.2: Water	5.00%	80	80	80	90	80	90		FP LB 2015: No actions, no
Steelhead upper Oxygen no changeMAH5.27.16				1		3.55/5								_
					•									
		mainstem			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									

				2012									
							Outstand	l ladatad		Original		LE Maicht and	
				Standardized			_	Updated		Original	 	LF Weight and	
ECLI	.	0.1.		Limiting	1		2018		High 2018			Bookends	5.1 2
	•	Code	Assessment Unit		LF Weight				Bookend			Comments	Estimates Comments
Snake	Grande	UGS13B	Conway/Owsley		20.00%	30	30	30	31	30	32		EP LB 2015: No actions, no
	Ronde River		Creeks	Quantity:									change.// 2016 EP LF: No actions,
Steelhead	upper			Decreased									no changeMAH5.27.16
	mainstem			Water									
				Quantity									
Snake	Grande	UGS14	Meadow Creek	4.1: Riparian	10.00%	60	60	60	70	63.4	80	more tribs for	Not enough information about
River	Ronde River		and Tributaries	Condition:								steelhead; but	USFS Riparian Thinning & Mtnce
Steelhead	upper		(Except Dark	Riparian								same LF	Project to estimate improvements
	mainstem		Canyon and	Vegetation								requirements as	at 2012 EP workshop. Per EP LB
			McCoy Creeks)									chinook; Not	2015: Two projects in database:
												enough info	Meadow Cr LWD and Planting
												available to make	(7.25 miles treated) and Battle
												site-specific	Campbell Cr. (3 miles treated). SH
												changes between	habitat in Streamnet: 63.7 mi in
												spp	AU. EP confirmed. Note that
													project mapping shows a few
													projects (passage improvements)
													upstream of Streamnet SH
													distribution lines. SH spawn high in
													system. Limited by water quant in
													some of these upper channels in
													some years.No functional %
													change yet, due to short time
													elapsed since planting. // 2016 EP
													LF: Conservation acquisitions
													(cattle will be removed and fencing
													to be done in Meadow and Dark
													Canyon). Acquired 2015. No uplift
													by 2018, but an estimated 0.2%
													uplift projected by 2033, along
													with a 3.2% uplift from lookback
													projects = 63.4%MAH5.31.16
I	1	1	1	1	I	I		1	I	I	I	I	

				2012									
				Standardized Limiting		Low	2018		High 2018		High 2033	LF Weight and Bookends	
	-	Code	Assessment Unit		LF Weight				Bookend			Comments	Estimates Comments
	Grande	UGS14			10.00%	60	60	60	60	61.7	70		EP LB 2015: Same projects as LF
	Ronde River			Condition:									4.1. EP: No functional % change
Steelhead			' '	LWD									yet, due to short time elapsed
	mainstem		· ·	Recruitment									since planting. // 2016 EP LF:
			McCoy Creeks)										Conservation acquisitions (cattle
													will be removed and fencing to be
													done in Meadow and Dark
													Canyon). Acquired 2015. No uplift
													by 2018, but an estimated 0.1%
													uplift projected by 2033, along
													with 1.6% from Lookback projects
													= 61.7% -MAH5.31.16
	Grande	UGS14		6.1: Channel	10.00%	68.3	68.3	68.3	80	68.3	85		EP LB 2015: 2 projects, Meadow Cr
	Ronde River			Structure and									LWD and Planting in Starkey Exp
Steelhead			, ,	Form: Bed and									Forest(7.25 miles treated, >400
	mainstem			Channel Form									pcs, 29 structs, 14: 64 pcs, 82
			McCoy Creeks)										holders, 15:175 pcs = 239 pcs of
													LWD; 560 pcs total for both
													phases; have not yet had major
													flows, but some changes seen) and
													Battle Campbell Cr. 2012 (1.75
													miles of RR grade removed in 2012
													(floodplain benefits of various
													width, less constrained now in
													terms of habitat forming
													processes), wood to mobilize
													embeded seds, 10 CHaMP sites
													showed large sed movements,
													scouring and deposition,
													unembeding of gravels). Meadow:
													added 4.8 pcs/100m (=25% of
													reference). See EP's table of
													project metrics and prorations re:
													functional condition and channel
													changes seen since construction
													(prorated: 25% function of 7.25 mi
													treated). Wood spacing varies.
													Only count portion of project
													within SH use, so reduced length
													to 2.75 miles. Will take time to

ESU	Population	Code		2012 Standardized Limiting		Low	2018		High 2018		High 2033	LF Weight and Bookends Comments	Estimates Comments
Snake	Grande	UGS14		6.2: Channel			 				85		EP LB 2015: Meadow: added 4.8
	Ronde River	00314		Structure and	20.00%	09	03	09	100	09	63		pcs/100m (=25% of reference).
				Form:									
Steelhead			l, ,										Battle: 600-700 pcs of LWD in 6
	mainstem		1 '	Instream									miles (estimated 323 pcs in SH
			McCoy Creeks)	Structural									habitat = 7.3pcs/100m compared
				Complexity									to 20/100m 36.5% function).
													Compare to Little Minam
													27pcs/100m reference condition.
													See EP's table of project metrics
													and prorations re: functional
													condition and channel changes
													seen since construction. Total in
													AU= 4% uplift. Also see LH 6.1
													rationale. // 2016 EP LF: No
													actions, no changeMAH5.31.16

ESU Population Code Assessment Uniting Limiting River Steelhead Seelhead Se	s at 2012 EF
Snake River Steelhead River St	s at 2012 EF
River Steelhead upper mainstem (Except Dark Canyon and McCoy Creeks) (Except Dark Canyon and McCoy Creeks) (Duantity (Duantity) (Duantity) (Except Dark Canyon and McCoy Creeks) (Except Dark Canyon and McCoy Creeks) (Except Dark Canyon and McCoy Creeks) (Duantity)	s at 2012 EF
Steelhead upper (Except Dark Canyon and McCoy Creeks) (Except Dark Canyon and McCoy Creeks) (Except Dark Canyon and McCoy Creeks) (Increased Sediment Quantity) (Quantity) (Quantity)	
mainstem Canyon and McCoy Creeks) Canyon and McCoy Creeks) Sediment Quantity Quantity projects, but included miles of Battle Cr. proj considered floodplain benefits from Meadow mil) project. See EP's ta proration calculations. Saw 8% decrease in potential fines in 2011 to 2014, relates to significant in fry survival. 25% curre status. Battle Cr.: Actic distrib, but they have I re: sediment imputs (cremovals, stabilization pond/dike removals, cattle exclusions. EP: 2 function for Battle project. See EP's ta proration calculations. Saw 8% decrease in potential fines in 2011 to 2014, relates to significant in fry survival. 25% curre status. Battle Cr.: Actic distrib, but they have I re: sediment imputs (cremovals, stabilization pond/dike removals, cattle exclusions. EP: 2 function for Battle project. Per Conservation acquisition.	
McCoy Creeks) Quantity miles of Battle Cr. proj considered floodplain benefits from Meadow mi) projects EPI's tax proration calculations. Saw 8% decrease in potential fines in 2011 to 2014, relates to significant in fry survival. 25% current status. Battle Cr.: Action distrib, but they have for ere: sediment imputs (continued in the sediment of the sediment imputs) (continued in the sediment in the	
considered floodplain benefits from Meadow mil) project. See EP's ta proration calculations. Saw 8% decrease in pofines in 2011 to 2014, relates to significant in fry survival. 25% currer status. Battle Cr.: Actic distrib, but they have I re: sediment imputs (cremovals, stabilization pond/dike removals, actite exclusions. EP: 2 function for Battle project. A.7% uplift. // 2016 EP Conservation acquisition.	
benefits from Meadow mi) project. See EP's ta proration calculations. Saw 8% decrease in po fines in 2011 to 2014, relates to significant in fry survival. 25% curre status. Battle Cr.: Actio distrib, but they have I re: sediment imputs (c removals, stabilization pond/dike removals, cattle exclusions. EP: 2 function for Battle pro 4.7% uplift. // 2016 EP Conservation acquisition	
mi) project. See EP's ta proration calculations. Saw 8% decrease in po fines in 2011 to 2014, relates to significant in fry survival. 25% currer status. Battle Cr.: Action distrib, but they have I re: sediment imputs (cremovals, stabilization pond/dike removals, cattle exclusions. EP: 2 function for Battle pro 4.7% uplift. // 2016 EP Conservation acquisition	
proration calculations. Saw 8% decrease in portion fines in 2011 to 2014, relates to significant in fry survival. 25% currents status. Battle Cr.: Action distrib, but they have I re: sediment imputs (or removals, stabilization pond/dike removals, stabilization pond/dike removals. Cattle exclusions. EP: 2 function for Battle production for Battle prod	-
Saw 8% decrease in potential fines in 2011 to 2014, relates to significant in fry survival. 25% currents status. Battle Cr.: Action distrib, but they have I re: sediment imputs (continued in the continued in th	
fines in 2011 to 2014, relates to significant in fry survival. 25% currer status. Battle Cr.: Action distrib, but they have I re: sediment imputs (conservation for Battle programme). The function for Battle programme described by the pro	
relates to significant in fry survival. 25% currer status. Battle Cr.: Action distrib, but they have It re: sediment imputs (contemporal sediment) removals, stabilization pond/dike removals, cattle exclusions. EP: 2 function for Battle programment of the sediment in the sediment of the sediment in the	
fry survival. 25% currer status. Battle Cr.: Action distrib, but they have I re: sediment imputs (conservation for Battle production). Ep: 2 function for Battle production acquisition.	
status. Battle Cr.: Action distrib, but they have I re: sediment imputs (conservation for Battle production for Battle production for Battle production for Battle production acquisition acquisition acquisition acquisition for Battle production for Battle production for Battle production acquisition acquis	
distrib, but they have I re: sediment imputs (contemporals, stabilization pond/dike removals, cattle exclusions. EP: 2 function for Battle programment of the program	
re: sediment imputs (conservation acquisition) re: sediment imputs (conservation acquisition) re: sediment imputs (conservation acquisition) re: sediment imputs (conservation) removals, stabilization) pond/dike removals,	
removals, stabilization pond/dike removals, ~ cattle exclusions. EP: 2 function for Battle production for Battle production acquisition acquisition for Battle production	
pond/dike removals, ~ cattle exclusions. EP: 2 function for Battle production for Battle production for Battle production acquisition acquisition.	
cattle exclusions. EP: 2 function for Battle production for Battle	
4.7% uplift. // 2016 EP	-
Conservation acquisition	ect. Total =
	∟F:
will be removed and fe	ns (cattle
	ncing to be
done in Meadow and I	ark
Canyon). Acquired 201	. The pane
projected no uplift by 2	018, but a
6.8% uplift by 2033 (66	.8% total)
for look back actions in	addition to
Snake Grande UGS14 Meadow Creek 8.1: Water 25.00% 40 40 40 45 40.1 50 EP LB 2015: No actions	No
River Ronde River and Tributaries Quality: 40 40 40 40 40 40 40 40 40 40 40 40 40	
Steelhead upper (Except Dark Temperature estimated a pro-rated	
mainstem Canyon and 0.1% by 2033, with no	•
McCoy Creeks)	
MAH5.31.16	
Snake Grande UGS14 Meadow Creek 9.2: Water 5.00% 60 60 60 65 60 75 EP LB 2015: No actions	
River Ronde River and Tributaries Quantity: change. 2016 EP LF: N	No
Steelhead upper (Except Dark Decreased no changeMAH5.31.	
mainstem Canyon and Water	actions,
McCoy Creeks) Quantity	actions,

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate		High 2018		High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS15	McCoy Creek, Dark Canyon, and Tributaries	1.1: Habitat Quantity: Anthropogenic Barriers	1.00%	100	100	100	100	100	100	ı	EP LB 2015: Dark Canyon Culvert Replacement Project. Benefitted SH, but above CHK distrib. Was a partial barrier: not an adult barrier, only for juveniles. Seasonal barrier. McCoy culvert issues? EP: None known. SH miles in this AU: 39mi from Streamnet. No other culverts remain in the canyon. EP: Increase by 2% to 100% for this SH AU. // 2016 EP LF: No actions, no changeMAH5.31.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS15	McCoy Creek, Dark Canyon, and Tributaries	4.1: Riparian Condition: Riparian Vegetation	10.00%	60	60	60	70	63.7	80	more tribs for steelhead; but same LF requirements as chinook; Not enough info available to make site-specific changes between spp	EP LB 2015: No actions, no change. // 2016 EP LF: No anticipated uplift by 2018 from 4 actions. Conservation acquisitions (cattle will be removed and fencing to be done in Meadow spans UGS 14 and UGS 15). Acquired in 2015. The panel determined these actions will have an estimated benefit uplift of 3.7% by 2033 MAH5.31.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS15	McCoy Creek, Dark Canyon, and Tributaries	4.2: Riparian Condition: LWD Recruitment	10.00%	60	60	60	60	61.8	70		EP LB 2015: No actions, no change. // 2016 EP LF: No anticipated uplift by 2018 from 4 actions. Conservation acquisitions (cattle will be removed and fencing to be done in Meadow spans UGS 14 and UGS 15). Acquired in 2015. The panel determined these actions will have an estimated benefit uplift of 1.8% by 2033 MAH5.31.16

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
River Steelhead	Grande Ronde River upper mainstem	UGS15	McCoy Creek, Dark Canyon, and Tributaries	6.1: Channel Structure and Form: Bed and Channel Form		65	65	65.6	80	66	85		EP LB 2015: No actions, no change. // 2016 EP LF: 4 actions. Conservation acquisitions (cattle will be removed and fencing to be done in Meadow spans UGS 14 and UGS 15). Acquired in 2015. The panel determined these actions will have an estimated uplift of 0.6% by 2018, and an additional 0.4% by 2033 MAH5.31.16
River Steelhead	Grande Ronde River upper mainstem	UGS15	McCoy Creek, Dark Canyon, and Tributaries	6.2: Channel Structure and Form: Instream Structural Complexity	20.00%	65	65	67.7	80	67.7	85		EP LB 2015: No actions, no change. // 2016 EP LF: 2 projects,12 pieces per 100 meters proposed on McCoy Creek. Properly Functioning Condition would be ~27 pieces per 100 m, so prorated accordingly in calculations table, resulting in 2.7% uplift for both 2018 and 2033 MAH5.31.16
River Steelhead	mainstem	UGS15	McCoy Creek, Dark Canyon, and Tributaries	7.2: Sediment Conditions: Increased Sediment Quantity			60	60	70	61.8	80		EP LB 2015: Antler Spring enclosure fence (not on Actions list): above SH distrib, but will benefit downstream sediment and WQ LFs in the future. No functional uplift yet, though. // 2016 EP LF: Same projects as for riparian limiting factors. Fence will benefit quickly, but not immediate. Therefore, no functional change expected in 2018. Reach is highly embedded. Revised to include riparian exclusion. Panel determined 1.8% uplift in 2033MAH5.31.16
River Steelhead	Grande Ronde River upper mainstem	UGS15	McCoy Creek, Dark Canyon, and Tributaries	8.1: Water Quality: Temperature	24.00%	40	40	40	45	41	50		EP LB 2015: No actions, no change. // 2016 EP LF: No flow in summer at McCoy Creek currently. Revised to include riparian exclusion. Panel determined 1% uplift by 2033 MAH5.31.16

ESU Snake	Population Grande	Code UGS15	Assessment Unit	2012 Standardized Limiting Factor 9.2: Water	LF Weight	Low	2018		High 2018 Bookend		High 2033 Bookend		Estimates Comments EP LB 2015: No actions, no change.
River Steelhead	Ronde River	00313	Dark Canyon,	Quantity: Decreased Water Quantity	3.00%	60	60	60	05	60	/5		// 2016 EP LF: No actions, no changeMAH5.31.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS16	Bear, and Beaver	1.1: Habitat Quantity:		85.1	85.1	90.3	100	90.3	100	chinook- more use by steelhead	EP LB 2015: EP determined that Rock Cr Phase 1 and 2 barrier removal for projects is not yet completed, which were originally listed under LF 1.1. EP noted USFS South Fork Spring Creek culvert project during EP within SH distrib zone; GRModelWS paid for design (12.5 mi of habitat above, but was partially passable before - 6" dropsmall juvenile partial barrier= 5% funct). Added to Spring Creek to database, and removed Rock Creek Phase 1&2, which will need to be added in 2015-18 assuming the barrier/culvert work is completed. EP: 0.1% improvement total. // 2016 EP LF: Rock Creek Phase 3 (2016): Partial seasonal barrier (undersized culvert) replacement, expected to open 3 miles of habitat, including Graves Creek culvert. Denominator set at 110.7 miles. Panel prorated improvement to 25% for juvenile/seasonal barrier. Also added Highway 244 Whiskey Creek (2018), which is expected to open

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
Snake	Grande	UGS16	Rock, Whiskey,	4.1: Riparian	15.00%	45	45	45	50	47.1	60		EP LB 2015: 2 projects (Rock Cr
River	Ronde River		Spring, Jordan,	Condition:									Phase 1 and Phase 2). Phase
Steelhead	upper		Bear, and Beaver	Riparian									(actually on Graves Cr - correct in
	mainstem		Creeks and	Vegetation									database) 1: 6 mi, Phase 2 (Rock
			Tributaries										Cr): 5 mi. SH Streamnet miles in
													AU: 110.7. Plantings have not had
													many years to mature yet, so no
													measurable uplift yet. 7000 plants
													at first, then additional plantings
													through CRP program ongoing. No
													% function change at this time;
													reevaluate in 2018. // 2016 EP LF:
													Rock Creek Phase 3 (2016), no
													change in 2018 but a prorated
													uplift of 0.1% by 2033 based on
													riparian growth. The original
													lookback estimated a 47% function
													by 2033 based on look back
													projects. With a 0.1% anticipated
													uplift from actions that should
													yield benefits by 2033 the total
													2033 estimated uplift would be
													47.1%MAH5.31.16

				2042									ı
ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS16	Rock, Whiskey, Spring, Jordan, Bear, and Beaver Creeks and Tributaries	4.2: Riparian Condition: LWD Recruitment	10.00%	50	50	50	60	51.1	70	Continents	EP LB 2015: 2 projects (Rock Cr Phase 1 and Phase 2). Phase (actually on Graves Cr - correct in database) 1: 6 mi, Phase 2 (Rock Cr): 5 mi. SH Streamnet miles in AU: 110.7. Plantings have not had many years to mature yet, so no measurable uplift yet. 7000 plants at first, then additional plantings through CRP program ongoing. No % function change at this time; reevaluate in 2018. // 2016 EP LF: Rock Creek Phase 3 (2016), no change in 2018 but a prorated uplift of 0.1% by 2033 based on riparian growth. A prior expert panel estimated a 51% function by 2033 based on look back projects, so with an estimated 0.1% increase the total 2033 estimate is 51.1%MAH5.31.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS16	Spring, Jordan, Bear, and Beaver Creeks and	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	5.00%	50	50	50.7		50.8			2016 EP LF: Add LF5.1. Activation of floodplain and side channels from Rock Creek Phase 3. Panel calculated an uplift of 0.7% by 2018, and an additional 0.1% by 2033MAH5.31.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS16	Spring, Jordan, Bear, and Beaver Creeks and Tributaries	5.2: Peripheral and Transitional Habitats: Floodplain Condition	5.00%	50	50	50.7		50.8			2016 EP LF: Add LF5.1. Activation of floodplain and side channels from Rock Creek Phase 3. Panel calculated an uplift of 0.7% by 2018, and an additional 0.1% by 2033MAH5.31.16

				2012				ı					
				Standardized			Original	Updated		Original		LF Weight and	
				Limiting		Low	2018	2018	High 2018	_	High 2033		
ESU	Population	Code	Assessment Unit	_	LF Weight	_	Estimate		Bookend		_	Comments	Estimates Comments
											70	Comments	
Snake	Grande	UGS16	· "	6.1: Channel	10.00%	52.7	52.7	53.4	60	53.5	70		Per EP LB 2015: 2 projects (Rock Cr
River	Ronde River		' • ·	Structure and									Phase 1 and Phase 2): Phase 1
Steelhead			Bear, and Beaver										installed: 128 wood complexes;
	mainstem			Channel Form									1480 pieces (750 large pcs, rest
			Tributaries										was slash/racking). 25 riffle andn
													wood complexes installed, channel
													aggraded and reconnected to
													floodplain. Also reactivating 1 mile
													of pre-1937 channel (now at 90%
													function). Ph 1 wood with riffles:
													60% function. Ph 1 LWD: 25%
													function. Phase 2 (Rock): 167
													complexes, each with 5 key
													members/root wads = 1650 large
													pieces total (25% current
													functional value). 1.09 to 1.3 pre-
													project sinuosity. Total calc uplift:
													3.7%. This AU is particularly
													variable in terms of SH habitat
													differences btwn creeks. Beaver is
													closer to PFC than Rock Cr.; more
													potential for restoration there?
													Rock Cr. still has much work to be
													done, as do Whiskey and Jordan.
													But also consider process &
													functions of Graves re: DS
													contributions too. And note Graves
													historic potential re: previous and

			T	2012									
				2012			Orininal	l ladatad		Original		LE Maiobe and	
				Standardized Limiting			_	Updated 2018	High 2018	Original		LF Weight and Bookends	
ESU	Population	Code	Assessment Unit	_	LF Weight				Bookend		_		Estimates Comments
Snake	Grande	UGS16			,		48.4	49.3	70			CHANGED HIGH	Per EP LB 2015: Same projects as
River	Ronde River	00310		Structure and	15.00%	70.7	140.4	75.5		75.5		BOOKENDS AT	LF6.1. 58% (Graves: 3 miles only
Steelhead			Bear, and Beaver									2012 WORKSHOP	treated with wood) 76% (Rock: 5
Steemeau	mainstem		Creeks and	Instream								TO REFLECT NEW	miles only treated with wood) post-
	Illamstem			Structural									project LWD loading percentages,
			Tributaries	Complexity								OFFORTONTILS	based on 27 pcs/100m Minnam
				Complexity									reference. Total functional uplift:
													3.4%. // 2016 EP LF: Rock Creek
													Phase 3 RM 0.5-1.5 (2016):
													meandering a straight section,
													which should change channel form
													significantly. 1 mile treated. Wood
													loading will exceed Properly
													Functioning Condition densities.
													Prorated at 100% function for both
													time periods, resulting in 0.9%
													uplift for 2018 and no additional
													uplift by 2033MAH5.31.16
													' '
Snake	Grande	UGS16	Rock, Whiskey,	7.2: Sediment	10.00%	40	40	40.5	55	43.5	70		Per EP LB 2015: LF 6.1 (same
River	Ronde River		Spring, Jordan,	Conditions:									projects). Included conservation
Steelhead	upper		Bear, and Beaver	Increased									easements, exclusion fencing,
	mainstem		Creeks and	Sediment									some on connected, but non-fish-
			Tributaries	Quantity									bearing tribs. Total miles treated:
													11 mi. EP considered time elapsed
													since fenced re: current functional
													value. Literature shows 2-20 year
													response time for fine sediment
													reduction projects. Current uplift:
													0%. // 2016 EP LF: Rock Creek
													Phase 3 estimated to result in 0.5%
													uplift for 2018 and same in 2033.
													The lookback panel calculated a
													43% function by 2033, which the
													0.5% uplift from the LF panel is
													added to equals 43.5% -
								1					MAH5.31.16

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018	High 2018	_	LF Weight and Bookends Comments	Estimates Comments
Snake	Grande	UGS16		8.1: Water		45	45	46	50		Per EP LB 2015: No functional
River	Ronde River		Spring, Jordan,	Quality:							change from exclusion fencing yet,
Steelhead	upper		Bear, and Beaver	Temperature							as per LF 7.2. Also evaluated effect
	mainstem		Creeks and								from 3.5 cfs seasonal Beaver water
			Tributaries								releases from dam. See UGC3
											discussion, but SH range further
											US. Benefit of mostly local, near
											release point (not measureable all
											the way down to MS Grande
											Gronde). Not much instream data
											from DS, but little water temp
											difference seen from background.
											Heatsource model shows still
											within SH optimal rearing
											conditions, regardless of water
											additions. EP: No % change. //
											2016 EP LF: Rock Creek 3: changing
											width to depth ratio. Beaver Creek
											reservoir: temperatures are
											already within preferred range. No
											benefit from dam releases
											expected, so prorated as 0%. No
											change from riparian in 2018, but a
											measurable increase by 2033
											MAH5.31.16

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	LF Weight	Low Bookend	Original 2018 Estimate		High 2018 Bookend		High 2033 Bookend		Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS16	Spring, Jordan, Bear, and Beaver Creeks and	9.2: Water Quantity: Decreased Water Quantity	5.00%	70	70	70	72	70	75		Per EP LB 2015: See UGC3 discussion and UGS16 LH 8.1, but SH range further US. Evaluated effect from 3.5 cfs seasonal Beaver water releases from dam. Given season and life history changes during releases, and durration of flow addition, no measurable functional changes (just enough to move fish around for a few weeks). Would expect more benefit to spreading the same flow addition over a longer period. No change to % function. // 2016 EP LF: No percent change from Beaver creek releases, therefore, 0% upliftMAH5.31.16
Snake River Steelhead	Ronde River	UGS17		1.1: Habitat Quantity: Anthropogenic Barriers	5.00%	95	95	95	100	95	100	CTUIR weir installed Mar 1 not much of a factor for steelhead	2015 EP LB: No actions. No change. // 2016 EP LF: No actions, no changeMAH5.31.16

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
Snake	Grande	UGS17	Upper Grande	4.1: Riparian	10.00%	65.1	65.1	65.1	70	66.7	80		2012 Estimate based only on
River	Ronde River		Ronde River	Condition:									Starkey Mdws project. / Per EP LB
Steelhead	upper		Mainstem,	Riparian									2015: 2 projects: UGR Fence
	mainstem		Meadow Creek	Vegetation									Installation 2012 and Warm
			to Limber Jim										Springs Fence. 17.8 SH miles in
			Creek										Streamnet. See EP's table with
													mileage and functional percentage
													prorations. See UGC5 re pod
													fencing. Note: Warm Springs 2014
													was included as part of Pod
													project. Spring development,
													fencing, 0.5 stream mile (1 mile of
													fence) of cattle exclusion. No
													functional benefit yet, but
													expected in future. No % change
													for steelhead (or chinook). 2015 EP
													LB: No actions. No change. //
													2016 EP LF: No actions, no change.
													However, EP during lookback
													estimated a 1.7% total uplift by
													2033 from lookback actions, which
													results in 66.7% by 2033
													MAH6.1.16

ESU	Population	Code		2012 Standardized Limiting Factor		Low	2018		High 2018		_	LF Weight and Bookends Comments	Estimates Comments
Snake	Grande	UGS17	Upper Grande	4.2: Riparian	10.00%	65	65	65	65	65.8	70		2012 Estimate considers Starkey
	Ronde River		Ronde River	Condition:									Project for 2033 improvement./
Steelhead	upper		Mainstem,	LWD									Per EP LB 2015: 2 projects: UGR
	mainstem		Meadow Creek	Recruitment									Fence Installation 2012 and Warm
			to Limber Jim										Springs Fence. 17.8 SH miles in
			Creek										Streamnet. See EP's table with
													mileage and functional percentage
													prorations. See UGC5 re pod
													fencing. Note: In PISCES: Warm
													Springs 2014 was included as part
													of Pod project. Spring
													development, fencing, 0.5 stream
													mile (1 mile of fence) of cattle
													exclusion. No functional benefit
													yet, but expected in future. No %
													change. // 2016 EP LF: No actions,
													no change. However, EP during
													lookback estimated a 0.8% total
													uplift by 2033 from lookback
													actions, which results in 65.8% by
													2033MAH6.1.16

				2012									
FOLI	Danielakia n	Carda		Standardized Limiting		Low	2018		High 2018		High 2033		Estimatos Communito
	-	Code	Assessment Unit		LF Weight			<u> </u>	Bookend			Comments	Estimates Comments
	Grande	UGS17	1		20.00%	70.3	70.3	81.5	75	81.5	80		Per 2015 EP LB: UGR Pod
	Ronde River			Structure and									project:small diameter slash
Steelhead			,	Form:									racking wood additions only in this
	mainstem			Instream									period. LWD was pre- 2012. See
				Structural									also CHK discussion (UGC5): small
			Creek	Complexity									effect (1% functional change for
													treated area). Add this project in
													database to this LF. See EP's table
													of mileage and functional
													percentages. Adjusted project
													length to fit AU boundaries. Other
													project: Warm Springs Fence:
													Remove project from this LF.
													Different denominator for SH, due to distribution difference: 17.8mi
													from Streamnet. Total uplift =
													0.3%. // 2016 EP LF: USFS Grande
													Ronde River Large Restoration
													Complex: just a wood project. Will
													treat 8 miles with 400-800 pieces total, plus racking material, at
													approximately 1 jam per mile. Will
													add 5 pieces per 100 meters to
													what is there already. Prorated at
													25%, resulting in 11.2% uplift for
													2018 and 2033MAH6.1.16
													2018 and 2033WAND.1.10
	Grande	UGS17	Upper Grande	7.2: Sediment	15.00%	65	65	65	70	69.5	80		Per 2015 EP LB: Pod fencing only,
	Ronde River		Ronde River	Conditions:									not full riparian fencing. Minimal
Steelhead			Mainstem,	Increased									benefit yet from Warm Springs
	mainstem			Sediment									fencing yet either. No change in
				Quantity									%. // 2016 EP LF: Large wood
			Creek										project could change sediment
													routing/retention. Panel rated at
													0% function in 2018 and 10% in
													2033, resulting in 0% in 2018 and
													4.5% uplift in 2033
													MAH6.1.2016

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River	UGS17	Upper Grande	8.1: Water Quality: Temperature			50	50			55	Comments	Per EP LB 2015: See LF 4.1 action, and UGS 5 rationale: Pod fencing only, not full riparian fencing. Note: In PISCES: Warm Springs 2014 was included as part of Pod project. Spring development, fencing, 0.5 stream mile (1 mile of fence) of cattle exclusion. This AU is US of Beaver Cr, so remove that project from this AU sin database. No change in %. // 2016 EP LF: No actions, no changeMAH6.1.16
River Steelhead	Grande Ronde River upper mainstem	UGS17	Ronde River Mainstem, Meadow Creek	9.2: Water Quantity: Decreased Water Quantity	15.00%	70	70	70	75	70.3	75		2012 NOTE TO AA'S: AQUIFER STORAGE PROJECT NOT INCLUDED IN ESTIMATE FOR UGC5 SO NO BENEFITS ESTIMATED FOR CHINOOK. HOWEVER, BENEFITS WERE ESTIMATED FOR STEELHEAD. IS THIS CORRECT? Note: benefits for chinook and steelhead are TBD- jms 7-13-12 // Per 2015 EP LB: No actions, no change. // 2016 EP LF: No actions, no change. However, actions from LB result in a 0.3% estimated uplift by 2033MAH6.1.16
	Grande Ronde River upper mainstem	UGS18	Ronde River	Condition: Riparian	10.00%	50	50	50	55	50	60		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH6.1.16
River Steelhead	Grande Ronde River upper mainstem	UGS18	Ronde River	4.2: Riparian Condition: LWD Recruitment	10.00%	60	60	60	75	60		Per Paul B significant LWD recruitment opportunities.	EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH6.1.16

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low Bookend		Estimate	High 2018 Bookend	Estimate	High 2033 Bookend	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS18	Ronde River Mainstem, Limber Jim Creek to Clear Creek	6.2: Channel Structure and Form: Instream Structural Complexity	20.00%	60	60	60	65	60	70		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH6.1.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS18	Upper Grande Ronde River Mainstem, Limber Jim Creek	7.2: Sediment Conditions: Increased	30.00%	55	55	55	65	55		Fine sediments primarily from road system. No USFS grazing allotments in UGS18. Increase to 2033 High Bookend reflects potential from recently approved USFS Travel Management Plan.	EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH6.1.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS18	Upper Grande Ronde River Mainstem, Limber Jim Creek to Clear Creek	8.1: Water Quality: Temperature	30.00%	75	75	75	80	75	85		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH6.1.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS19	Upper Grande Ronde River Mainstem and Tributaries, Clear Creek to Headwaters	1.1: Habitat Quantity: Anthropogenic Barriers		90	90	96.9		96.9			2016 EP LF: Added LF1.1. Skydd project: 2.5 miles. Prorated at 15% for 2018 and 2033 resulting in 6.9% upliftMAH6.1.16

SEU Population Code Assessment Unit Factor In Weight and Indicated Low Low Continuing Low					2042									
River Ronde River Steelhead of mainstem Problems of the advancers of the a	ESU	Population	Code	Assessment Unit	Limiting	LF Weight		2018	2018	High 2018	2033	_	Bookends	Estimates Comments
Steelhead upper mainstem Tributaries, Clear Creek to Headwaters Riparian Riparian Creek to Headwaters Riparian R	Snake	Grande	UGS19	Upper Grande	4.1: Riparian	25.00%	75	75	75	85	87.5	95		Per EP LB 2015: See UGC7 CHK
mainstern Tributaries, Clear Creek to Headwaters Tributaries, Clear Creek to Headwaters Tributaries, Clear Vegetation Creek to Headwaters Freehead Miner Mainstern Sinake Ronde River Streehead Mainstern Mainstern Streehead Mainstern Streehead Mainstern Streehead Mainstern Streehead Miner Freehead Miner Streehead Miner Streehead Miner Streehead Miner Streehead Miner Mainstern Streehead Miner Tributaries, Clear Tributari	River	Ronde River		Ronde River	Condition:									actions (pods and slash). But
Streamnet: 5.4 mil. No & change vet. / 2016 EP LF. Skyded project: 2.5 miles. No change in 2018, but prorated at 1.5% for 2023 resulting in 6.9% upiffl from LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects, the final 2023 function is 75%-15.6% upiff. Rome LB projects and slash, But change mileage from 3treamnet; 5.4 mil. No % change in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2018, but provided at 7.5% for 2023 resulting in 3.5% upiff. specified in 2023 function in 5.5% upiff. specified in 2023 function i	Steelhead	upper		Mainstem and	Riparian									change mileage to 3 mi. See EP's
Headwaters Hea		mainstem		Tributaries, Clear	Vegetation									table. Denominator mileage from
2.5 miles. No change in 2018, but prorated a 1.5% for 2033 are sulting in 6.9% uplift expected in 2033. Along with another 5.6% uplift from 18 projects, the final 2033 function is 75%+5.6%+6.9% = 87.5%. MAH6.1.16 River Creek to Headwaters Creek to Creek to Creek to Headwaters Creek to Creek to Creek to Creek to Headwaters Creek to Cre				Creek to										Streamnet: 5.4 mi. No % change
Profession Pro				Headwaters										yet. // 2016 EP LF: Skydd project:
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Snake River Steelhead Grande River Grande River Steelhead Grande River G														in 6.9% uplift expected in 2033.
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Steelhead upper mainstem	Snake		UGS19	1		20.00%	75	75	75	85	81.3	95		
mainstem														
Creek to Headwaters Creek to	Steelhead	upper												
Headwaters Headwa		mainstem			Recruitment									_
2.5 miles. No change in 2018, but prorated at 7.5% for 2033 resulting in 3.5% uplift expected in 2033. Along with another 2.8% uplift from LB projects, the final 2033 function is 75%+2.8%+3.5% = 81.3% MAH6.1.16 Snake River Ronde River Upper Mainstem and Tributaries, Clear Creek to Headwaters Snake River Ronde River Ronde River Mainstem and Tributaries, Clear Creek to Headwaters Snake River Ronde River Ronde River Ronde River Ronde River Headwaters Snake River Ronde River Ronde River Ronde River Headwaters Snake River Ronde River Ronde River Ronde River Headwaters Snake River Ronde River Ronde River Ronde River Headwaters Snake River Ronde River Ronde River Ronde River Headwaters Snake River Ronde River Ronde River Ronde River Ronde River Headwaters Snake River Ronde River Ron														_
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Steelhead upper mainstem			00319	1		25.00%	85.0	05.0	85.0	90	85.0	195		· · · · · · · · · · · · · · · · · · ·
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Steelhead upper mainstem			00313	1		20.00/0					33.0			
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2033 from lookback actions				caawatets										1
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				2042	ı	I			1	1			
ESU	Population	Code		2012 Standardized Limiting	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
	Grande	UGS20	Limber Jim Creek				80	88.2	bookenu	88.2	bookenu	Comments	2016 EP LF: Added LF1.1. 2 actions,
	Ronde River	06320		Quantity:	10.00%	80	80	00.2		00.2			Limber Jim Creek 2017 culverts (2)
Steelhead				Anthropogenic									by USFS will open 1.5 and 1.25
													miles on N and S forks. Panel
	mainstem			Barriers									
													prorated improvements in
													calculations table based on the
													fact that they are seasonal partial
													juvenile barriers: 25% proration,
													resulting in 8.2% uplift
													MAH6.1.16
	Grande	UGS20	Limber Jim Creek	·	20.00%	75	75	75	85	78.6	90		EP LB 2015: No actions, no change.
	Ronde River		and Tributaries	Condition:									// 2016 EP LF: Same proration
Steelhead				Riparian									calculations as chinook result in 0%
	mainstem			Vegetation									uplift by 2018, and 3.6% uplift by
													2033 MAH6.1.16
	Grande	UGS20	Limber Jim Creek	· ·	20.00%	75	75	75	80	76.8	85		EP LB 2015: No actions, no change.
_	Ronde River		and Tributaries	Condition:									// 2016 EP LF: Same proration
Steelhead	upper			LWD									calculations as chinook result in 0%
	mainstem			Recruitment									uplift by 2018, and 1.8% uplift by
													2033 MAH6.1.16
Snake	Grande	UGS20	Limber Jim Creek	6.2: Channel	30.00%	75	80	85.7	80	85.7	85		EP LB 2015: No actions, no change.
River	Ronde River		and Tributaries	Structure and									// 2016 EP LF: Same proration
Steelhead	upper			Form:									calculations as chinook result in
	mainstem			Instream									10.7% uplift by 2018, and no
				Structural									additional change by 2033
				Complexity									MAH6.1.16
Snake	Grande	UGS20	Limber Jim Creek	7.2: Sediment	20.00%	75	75	75	85	77.2	90		EP LB 2015: No actions, no change.
River	Ronde River		and Tributaries	Conditions:									// 2016 EP LF: Same proration
Steelhead	upper			Increased									calculations as chinook result in no
	mainstem			Sediment									uplift by 2018, and a 2.2% uplift in
				Quantity									2033 MAH6.1.16
Snake	Grande	UGS20	Limber Jim Creek	9.2: Water	0.00%	70	70	70	75	70	85		EP LB 2015: No actions, no change.
River	Ronde River		and Tributaries	Quantity:									// 2016 EP LF: No action, no
Steelhead	upper			Decreased									changeMAH.6.1.16
	mainstem			Water									
			<u> </u>	Quantity									
Snake	Grande	UGS21	Fly Creek and	1.1: Habitat	5.00%	95	95	95	100	95	100	Complete barrier	EP LB 2015: No actions, no change.
River	Ronde River		Tributaries	Quantity:								on 5160 road	// 2016 EP LF: No actions, no
Steelhead	upper			Anthropogenic									change MAH6.1.16
	mainstem			Barriers									

				10040	I		ı	1		I			
				2012 Standardized Limiting		Low	2018		High 2018		High 2033		
ESU	Population	Code	Assessment Unit	Factor	LF Weight				Bookend			Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River upper mainstem	UGS21	Fly Creek and Tributaries	4.1: Riparian Condition: Riparian Vegetation	20.00%	65	65	65	70	65.7	75		EP LB 2015: No actions, no change. // 2016 EP LF: Fly Creek Smith (called 2015, but 2016 completion) fence project: 1.5 miles. A few trees across stream, and willow pods for elk browse control. All passive, no planting. 25 year easement. No uplift expected in 2018, but 0.7% expected in 2033MAH6.1.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS21	Fly Creek and Tributaries	4.2: Riparian Condition: LWD Recruitment	15.00%	65	65		65	65.4	70		EP LB 2015: No actions, no change. // 2016 EP LF: Fly Creek Smith (called 2015, but 2016 completion) fence project: 1.5 miles. A few trees across stream, and willow pods for elk browse control. All passive, no planting. 25 year easement. No uplift expected in 2018, but 0.4% expected in 2033 MAH6.1.16
Steelhead	mainstem	UGS21	Tributaries	6.2: Channel Structure and Form: Instream Structural Complexity		75	75		80		85		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no change MAH6.1.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS21	Fly Creek and Tributaries	7.2: Sediment Conditions: Increased Sediment Quantity	15.00%	40	40	40	55	40.1	70		EP LB 2015: No actions, no change. // 2016 EP LF: Fly Creek Smith (called 2015, but 2016 completion) fence project: 1.5 miles. A few trees across stream, and willow pods for elk browse control. Some immediate effect from fencing, but not significant. 0% uplift expected for 2018 and 0.1% for 2033MAH.6.1.16

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low Bookend	2018	Updated 2018 Estimate	High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
Snake River Steelhead	Ronde River	UGS21	Fly Creek and Tributaries			45	45	45	46	45.2	50		EP LB 2015: No actions, no change. // 2016 EP LF: Fly Creek Smith (called 2015, but 2016 completion) fence project: 1.5 miles. Using CHaMP temperature model output, 0% change expected in 2018 and 0.2% in 2033 MAH.6.1.16
Snake River Steelhead	Ronde River	UGS22		1.1: Habitat Quantity: Anthropogenic Barriers		80	80	82.3		82.3			2016 EP LF: Added LF1.1. 2 projects on calculations table (Sheep and Chicken Creeks, 2 culverts each). Panel prorated per life history use and partial barriers. Undersized culverts, even though some were retrofitted in the past. West Chicken has 6-12-inch drop. Yields 2.3% uplift in 2018, same by 2033MAH6.1.16

				2012									
				Standardized			Original	Updated		Original		LF Weight and	
				Limiting			2018	_	 High 2018	_		Bookends	
ESU	Population	Code	Assessment Unit	_	LF Weight				Bookend		_	Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River	UGS22	Sheep Creek and Tributaries				50				80		NOTE TO AA'S: CHICKEN CR. NOT CHINOOK HABITAT SO NO ESTIMATE WAS MADE FOR CHINOOK TO COPY TO STEELHEAD-kpfisher, 7/10/12. Per 2015 EP LB: See EP's table with calcs. Added Chicken Cr. Culvert Replacement (USFS). More relevant to LF 1.1, but 1.1 is not an LF for this AU. [Revisit this in the next LookFWD, because there are many culverts in this area that need work]. Was a partial velocity barrier. Note: Wider watershed restoration actions and long-term veg projects will have many benefits that may not show up in EP calculations yet. 0% uplift. // 2016 EP LF [Revised based on new Sheep Creek mileage from USFS, resulting in 0% uplift in 2018 and 3.7% uplift in 2033. The 2033 estimate includes 3.7% plus 1.6% uplift from lookback actionsMAH6.1.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS22		4.2: Riparian Condition: LWD Recruitment	15.00%	60	60	60	75	62.7		Per Paul B significant LWD recruitment opportunities.	PER EP LB 2015: Sheep Creek LWD and Planting Project were added to this LF and AU (3 miles treated in 2014/2015, was "pretty bare to start with"). Plantings are young, so no credit in this time period yet. No functional uplift yet. // 2016 EP LF [Revised based on new Sheep Creek mileage from USFS, resulting in 0% uplift in 2018 and 1.9% uplift in 2033. The 2033 estimate includes 1.9% plus 0.8% uplift from lookback actions MAH6.1.16

	l			2012	1							I	
				Standardized			Original	Updated		Original		LF Weight and	
				Limiting		Low	Original 2018	2018	High 2018	_	High 2033	_	
ESU	Population	Code	Assessment Unit	_	LF Weight				Bookend				Estimates Comments
	Grande	UGS22	Sheep Creek and			52.4	52.4	52.4			80	Comments	2012 Estimate based on Sheep Ck
	Ronde River	00322	Tributaries	Structure and	20.00%	32.4	32.4	32.4	00	32.4	80		project only. Per 2015 EP LB:
Steelhead			Tributaries	Form:									Sheep Creek LWD and Planting
	mainstem			Instream									Project were added to this LF and
	mamstem			Structural									1 -
													AUwood projects: Sheep Cr. (2.5
				Complexity									mi, 27 structures, avg of 7 pieces
													192 pieces from completion report
													= 68 pc per mile=5pc/100m) and
													Chicken Cr. (2 mi, 13 struct, avg. 9
													pc LWD each and 15 small, 117 pcs
													total= 4pc/100m) treated. Note
													that project length does not
													provide treatment intensity.
													Similar to USFS Meadow Cr.
													project, which showed pools
													scoured within 1 year. Sheep and
													Chicken come off of north-facing
													slopes. HabRate target for
													summer parr rearing: 20 pc/100m.
													This reference condition is similar
													to 20.17 pc/100m counted in
													Chinook Domain in Minam (inc.
													Little Minam). See EP's table,
													functional % of each project
													prorated as compared to target
													(25% [5/20] and 20% [4pc/100m =
													20%] of PFC). Using only Little
													Minam (size is more appropriate

				2012 Standardized Limiting			Original 2018	Updated 2018	High 2018	Original 2033	High 2033	LF Weight and Bookends	
ESU	Population	Code	Assessment Unit	_	LF Weight			1	Bookend		_	Comments	Estimates Comments
Snake River Steelhead	Grande Ronde River	UGS22	Sheep Creek and Tributaries				30	30	50		80	Significant private land grazing.	Not enough known about USFS Sheep Cr rd decommissioning project for estimate to be made at 2012 EP workshop. / EP LB 2015: EP: These projects did not benefit this LF within this period. CHaMP surveys showed no reduction in sedimentation here. No USFS road decommisionings in period. No change in %. // 2016 EP LF: Riparian projects benefit, but most sediments are coming from fire areas (Tanner or Tower fires), and heavy grazing on private land. Panel determined 0% change for 2018 and 1.2% uplift in 2033. Revised based on new Sheep Creek mileage from USFS, resulting in 0% uplift in 2018 and 1.9% uplift in 2033. The 2033 estimate includes the 1.9% plus 1.4% uplift from lookback actionsMAH6.1.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS22	Sheep Creek and Tributaries	8.1: Water Quality: Temperature	20.00%	70	70	70	70	71.2	75		Per EP LB 2015: No temperature benefit from Chicken and Sheep projects yet. No % change. // 2016 EP LF: Panel determined no uplift by 2018. Prorated fence and pods to 2033, resulting in 0.2% uplift. Revised based on new Sheep Creek mileage from USFS, resulting in 0% uplift in 2018 and 1.2% uplift in 2033MAH6.1.16
Snake River Steelhead	Grande Ronde River upper mainstem	UGS23	Clear Creek and Tributaries	1.1: Habitat Quantity: Anthropogenic Barriers	0.00%			0		0			Passage improvement projects identified but Passage LF given 0% weight. If barriers exist, consider reweighting this LF at next EP workshop.EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.27.16

ESU	Population	Code		2012 Standardized Limiting Factor	LF Weight	Low	2018		High 2018 Bookend		High 2033	LF Weight and Bookends Comments	Estimates Comments
River Steelhead	Grande Ronde River upper mainstem	UGS23		4.1: Riparian Condition: Riparian Vegetation	30.00%	75	75	75	85	75	95		EP LB 2015: No actions, no change.// 2016 EP LF: No actions, no changeMAH5.27.16
River Steelhead	Grande Ronde River upper mainstem	UGS23	Clear Creek and Tributaries	4.2: Riparian Condition: LWD Recruitment	30.00%	60	60	60	60	60	70		EP LB 2015: No actions, no change.// 2016 EP LF: No actions, no changeMAH5.27.16
River Steelhead	Grande Ronde River upper mainstem	UGS23	Tributaries	6.2: Channel Structure and Form: Instream Structural Complexity	20.00%	70	70	70	75	70	85		EP LB 2015: No actions, no change. // 2016 EP LF: No actions, no changeMAH5.27.16
Steelhead	Grande Ronde River upper mainstem	UGS23		7.2: Sediment Conditions: Increased Sediment Quantity	20.00%	60	60	60	80	60	90		EP LB 2015: No actions, no change.// 2016 EP LF: No actions, no changeMAH5.27.16