

2019

ANNUAL OPERATING PLAN

for

FISH PRODUCTION PROGRAMS

in the

CLEARWATER RIVER BASIN

by

U.S Fish and Wildlife Service

Idaho Department of Fish and Game

Nez Perce Tribe

March 1, 2019

Table of Contents

0. Preamble.....	3
1. Summer Steelhead	4
1.1. Timeline and Flowchart for Steelhead Production	5
1.2. Releases in 2019 (Smolt BY 2018).....	7
1.3. Trap Operations and Production Planning for 2019 (Smolt BY 2019)	10
1.4. Marking and Rearing Plan for 2019 (Smolt BY 2109).....	14
2. Spring/Summer Chinook.....	16
2.1. Timeline and Flowchart for Spring/Summer Chinook Production.....	18
2.2. Releases in 2019 (Smolt BY 2017, Parr/Pre-Smolt BY 2018).....	20
2.3. Trap Operations and Production Planning for 2019 (Smolt and Parr/Pre-Smolt BY 2019)	24
2.4. Early Rearing and Marking Plan for 2019 (Smolts BY 2018, Parr/Pre-Smolt BY2018)	32
3. Coho Salmon	38
3.1. Timeline and Flowchart for Coho Production.....	39
3.2. Releases in 2019 (Smolt BY 2017).....	41
3.3. Trap Operations and Production Planning for 2019 (Smolt BY 2019)	43
3.4. Early Rearing and Marking Plan for 2019 (Smolts BY 2018)	44
4. Fall Chinook.....	46
4.1. Timeline and Flowchart for Fall Chinook Production.....	47
4.2. Releases in 2019 (Sub-Yearling BY 2018, Yearling BY 2017)	49
4.3. Trap Operations and Production Planning for 2019 (Sub-Yearling and Yearling BY 2019).....	52
4.4. Early Rearing and Marking Plan for 2019 (Sub-Yearling BY 2018, Yearling BY 2018)	54
5. Lamprey	55
5.2. Trap Operations for 2019.....	56
6. Appendices.....	57

0. Preamble

The Annual Operating Plan (AOP) meeting and AOP/SOP documents are planning, coordination and logistics tools that identify the expected implementation of a number of hatchery operation and research/monitoring activities for the coming year in a transparent, open manner.

It is the responsibility of all AOP parties to participate in AOP meetings, provide follow up information and assistance as requested or needed, and work in good faith to complete the AOP document within the timeframe agreed upon at the AOP coordination meeting. A finalized electronic version of the AOP will be available to all cooperating agencies and serve as the working version of the document.

If a disputed or incomplete item is identified at the AOP meeting and persists to the end of the agreed completion timeframe for finalizing the AOP documents, the AOP will be finalized without the disputed or incomplete section. However, parties to the dispute will add a placeholder in the document, so they can work toward resolution.

After the AOP is finalized, and based on unforeseen or unanticipated circumstances (e.g., lower than expected returns, loss of production, infrastructure issues as examples), changes or deviations from the AOP may be warranted. In those cases, there is an expectation that the lead agency that has identified the issue will communicate with the appropriate AOP parties, through the weekly coordination calls or by email, so they can work collaboratively to address it and/or work towards resolution. Implemented changes should be documented in writing by the lead agency and communicated, to ensure transparency and as documentation of the change. These changes should also be captured in various year-end reports.

1. Summer Steelhead

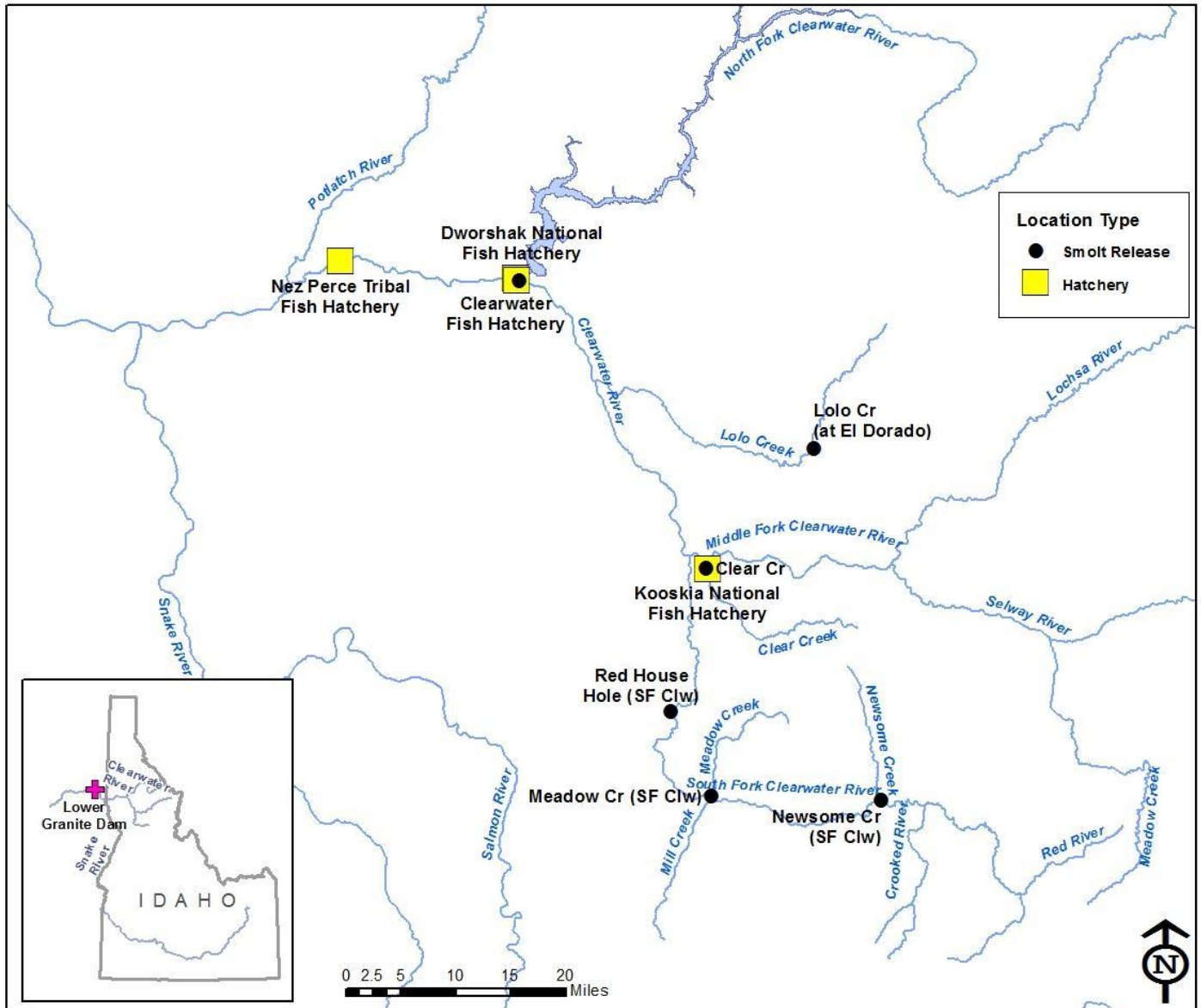


Figure 1.1. Steelhead trapping, hatchery facilities and smolt release locations. Table below gives smolt release goals by release site.

Table 1.1. BY 2018 Steelhead Release Goals for 2019.

Rearing Facility	Program	Brood Collection Site	Release Site	BY2018 Smolt Release Goals	Size (FPP)
DNFH	NF Clearwater	DNFH (Trad. & Air Spawned)	DNFH	1,200,000	6.0
			Clear Creek	300,000	6.0
			Lolo Creek	200,000	6.0
	SF Clearwater	SFCIwR Angler (DNFH)	Red House Hole-SF Clw	400,000	6.0
Total				2,100,000	
CFH/DNFH	CFH	SFCIwR Angler (DNFH/KNFH)	Meadow Creek-SF Clw	501,000	4.5
			Red House Hole-SF Clw	219,000	4.5
			Newsome Creek-SF Clw	123,000	4.5
Total				843,000	
Grand Total				2,943,000	

1.1. Timeline and Flowchart for Steelhead Production

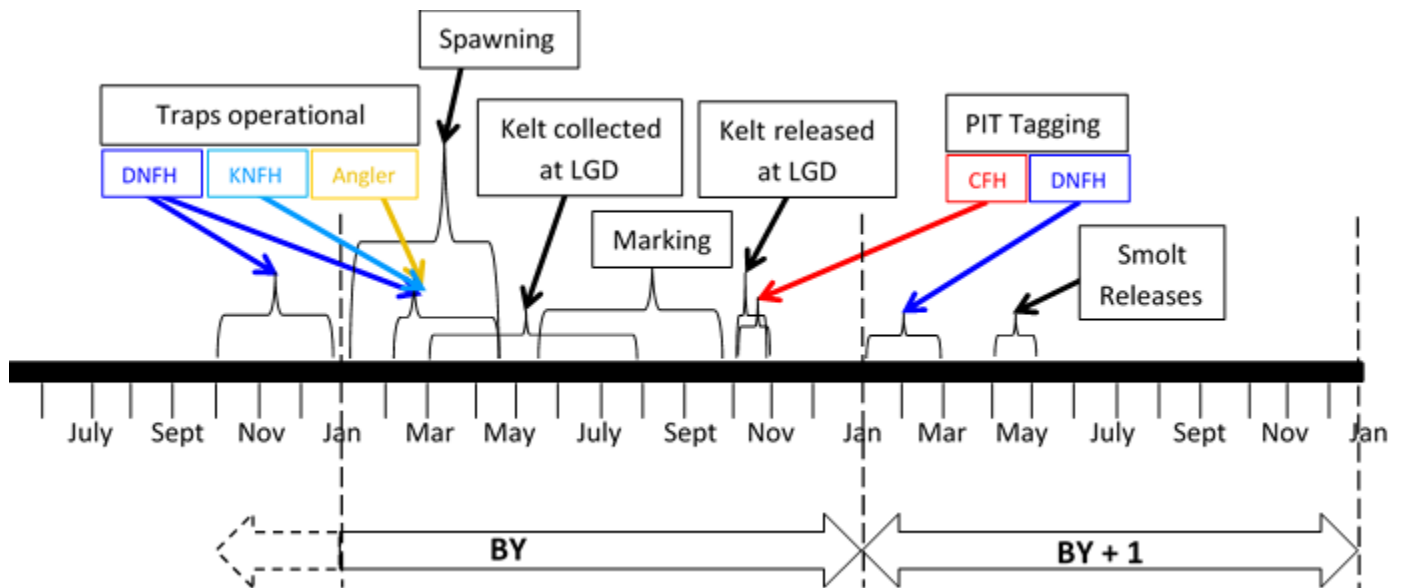


Figure 1.2. Timeline for Steelhead Production. Date ranges with black labels are shown to include all facilities’ operations. Color-coded labels identify activities that have variability in timing for the different facilities.

STEELHEAD

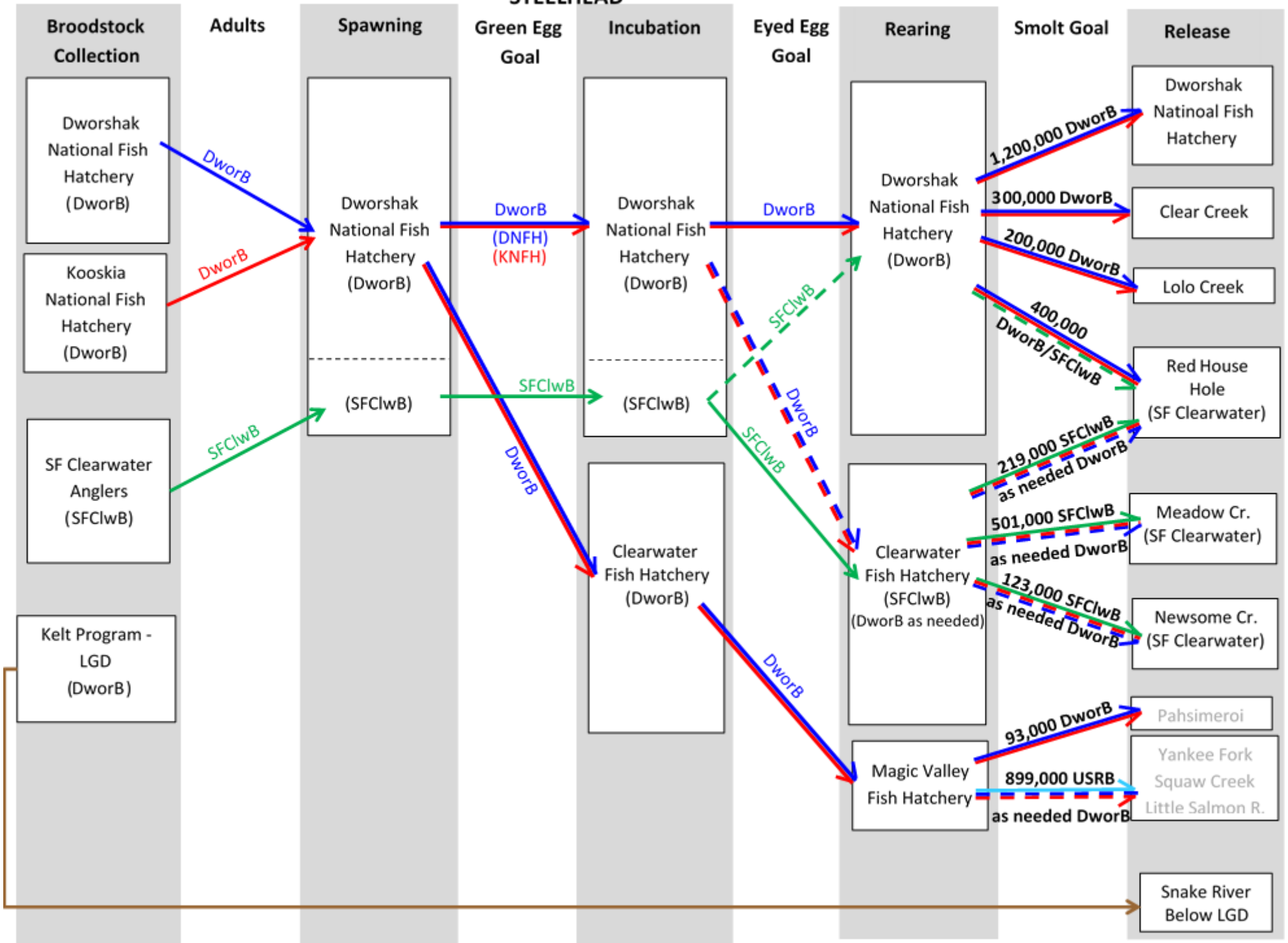


Figure 1.3. Fish and egg movements for Steelhead. Numbers represent 2019 releases.

1.2. Releases in 2019 (Smolt BY 2018)

1.2.1. Releases in 2019 (Smolt BY 2018) – Totals

Table 1.2a. Steelhead Rearing Metrics for BY 2018 fish for release in 2019

Rearing Facility	Program	Brood Collection Site	Release Site	Release Goals		Inventory To Date		Excess Fry/ Fingerlings Released		Projected Smolt Releases		
				Number	Size (FPP)	Date	Number	Number	Release Site	Dates	Number	Size (FPP)
DNFH	NF Clearwater	DNFH (Trad. & Air Spawned)	DNFH	1,200,000	6.0	12/31/2018	1,338,720	0	NA	4/8-4/11/2019	1,334,746	6.0
			Clear Creek	300,000	6.0	12/31/2018	421,976	0	NA	4/1-4/11/2019	420,723	6.0
			Lolo Creek	200,000	6.0	12/31/2018	247,263	0	NA	4/1-4/11/2019	246,529	6.0
	SF Clearwater	SFClwR Angler (DNFH)	Red House Hole-SF Clw	400,000	6.0	12/31/2018	392,045	0	NA	4/1-4/11/2019	390,881	6.0
Total				2,100,000			2,400,004	0			2,392,879	
CFH	CFH	SFClwR Angler (DNFH/KNFH)	Meadow Creek-SF Clw	501,000	4.5	11/30/2018	473,417	165,280	NF&SF Clearwater	4/3-4/9/2019	473,238	4.5
			Red House Hole-SF Clw	219,000	4.5	11/30/2018	189,915	0	NA	4/3/2019	189,907	4.5
			Newsome Creek-SF Clw	123,000	4.5	11/30/2018	123,956	0	NA	4/10-4/12/2019	123,951	4.5
Totals				843,000			787,288	165,280			787,096	
Grand Total				2,943,000			3,187,292	165,280			3,179,975	

Table 1.2b. BY 2018 Steelhead Inventory to Date by Mark Type for release in 2019.

Rearing Facility	Program	Brood Collection Site	Release Site	Inventory to Date						PIT Tags				
				Date	Total	Adipose Fin Clip		No Clip		Total # Tags ¹	Funding Source ²			
						No CWT	CWT	CWT	No CWT		CSS	LSRCP	ACOE	USFWS
DNFH ⁴	NF Clearwater	DNFH (Trad. & Air Spawned)	DNFH ³	12/31/2018	1,338,720	1,218,180	120,540	0	0	18,000	1,500	0	16,500	0
			Clear Creek	12/31/2018	421,976	401,926	20,050	0	0	5,500	2,000	0	3,500	0
			Lolo Creek	12/31/2018	247,263	0	0	0	247,263	3,800	3,800	0	0	0
	SF Clearwater	SFClwR Angler (DNFH)	Red House Hole-SF Clw	12/31/2018	392,045	351,812	40,233	0	0	5,600	5,600	0	0	0
Total					2,400,004	1,971,918	180,823	0	247,263	32,900	12,900	0	20,000	0
CFH	CFH	SFClwR Angler (DNFH/KNFH)	Meadow Creek-SF Clw	11/30/2018	473,417	270,857	0	202,560	0	10,800	3,200	7,600	0	0
			Red House Hole-SF Clw	11/30/2018	189,915	189,915	0	0	0	4,708	1,400	3,300	0	0
			Newsome Creek-SF Clw	11/30/2018	123,956	0	0	123,956	0	2,596	800	1,800	0	0
Totals					787,288	460,772	0	326,516	0	18,104	5,400	12,700	0	0
Grand Total					3,187,292	2,432,690	180,823	326,516	247,263	51,004	18,300	12,700	20,000	0

¹ Represents actual number tagged if tags have already been applied at the time of this report

² Represents number of tags paid for by each agency. Sum total may not equal "Total # Tags" for locations where tagging has already occurred

³ 1500 PIT tags funding comes from Smolt Monitoring Program

⁴ Due to federal government shutdown, no PIT tags have been inserted to date. PIT tags will be inserted by the end of February either by USFWS or NPT.

1.2.2. Releases in 2019 (Smolt BY 2018) - Narrative

Here are examples of things managers talk about for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

- **Smolt/Egg Release Targets-** e.g. Were you below goal? Was you size at release different than SOP target? Did you depart from the mark plan?
- **Fish/Egg Health-** any epizootic history, anti-biotic treatments, was production culled at any point
- **Transportation/Releases-** e.g. timing, trucking issues, site access etc.

		Plan for 2019		Changes/Conditions that Occurred 2018-Early 2019		
Release Location	Release Target Smolt BY18	Transport/Release Smolt BY18	Fish Feeding BY18	Fish/Egg Health BY18	Marking BY18	
<i>Dworshak National Fish Hatchery (SOP Section 1.2)</i>						
Dworshak National Fish Hatchery (DworB)	NC	Dworshak Trucking and direct release will occur approximately one week early this year. This is to provide a one week complete hatchery dewater to facilitate repair of the 36” collection channel valve and other electrical maintenance. An alternate release site for the Lolo release group may have to be used if snow prevents early access to the usual site. Propose Five Mile boat ramp on Clearwater River (near mouth of Lolo Creek) as alternate release site.	Take 10 will be hand fed exclusively to improve growth	NC	NC	
Clear Creek (DworB)	NC		NC	NC		
Red House, SF Clearwater (SFClw/DworB)	NC		NC	NC		
Lolo Creek (DworB)	NC		NC	NC		NC
<i>Clearwater Fish Hatchery (SOP Section 1.3)</i>						
Meadow Creek SF Clearwater (SFClwB/DworB)	Projected to be 6% short of target due to early/final rearing mortality	NC	NC	Higher than average loss in early rearing and sporadic outbreaks of BCWD in final rearing	NC	
Red House Hole SF Clearwater (SFClwB/DworB)	Projected to be 13% short of target due to early/final rearing mortality	NC	NC	Higher than average loss in early rearing and sporadic outbreaks of BCWD in final rearing	NC	

	Plan for 2019		Changes/Conditions that Occurred 2018-Early 2019		
Release Location	Release Target Smolt BY18	Transport/Release Smolt BY18	Fish Feeding BY18	Fish/Egg Health BY18	Marking BY18
Newsome Creek SF Clearwater (SFClwB/DworB)	NC	NC	NC	Higher than average loss in early rearing and sporadic outbreaks of BCWD in final rearing	NC

1.3. Trap Operations and Production Planning for 2019 (Smolt BY 2019)

BY 2019 Steelhead smolt production goals for release in 2020

Rearing Facility	Program	Brood Collection Site	Release Site	Smolt Release Goals
DNFH	NF Clearwater	DNFH (Trad. Spawned) ¹	MS Clearwater at DNFH	1,200,000
			Clear Creek	300,000
			Lolo Creek	200,000
	SF Clearwater	SFClwR Angler (DNFH)	Red House Hole - SF Clw	400,000
Total				2,100,000
CFH/DNFH	CFH	SFClwR Angler (DNFH)	Meadow Creek-SF Clw	501,000
			Red House Hole-SF Clw	219,000
			Newsome Creek-SF Clw	123,000
Total				843,000
Grand Total				2,943,000

¹ Additional brood are collected for the Upper Salmon River program (to be incubated at CFH, reared at MVFH, and released at Pahsimeroi). Tables 1.3a and 1.3b show details of brood acquisition, which include fish to be spawned for this program. See the Salmon and Snake River AOP for details on rearing of these progeny.

1.3.1. Trap Operations and Production Planning for 2019 (Smolt BY 2019) – TOTALS

Table 1.3a. 2019 Adult cumulative brood stock acquisition schedules for hatchery steelhead programs in the Clearwater River ¹

Season	Date	Dworshak Trap ²	SF Clw Localized
Fall	Oct	150	NA
	Nov	150	
	Dec	100	
Spring	5-Feb	106	549
	19-Feb	106	
	26-Feb	106	
	5-Mar	0	
	12-Mar	106	
	19-Mar	0	
	26-Mar	30	
	2-Apr	42	
	9-Apr	108	
TOTAL		1,004	549
LGR Return	2018-19 Projected	6,515	4,568
	Previous		
	5-yr Avg	6,344	6,467

¹ Approximate acquisition schedule based on average historic acquisition timing and number of adults needed to meet broodstock needs based on the broodstock calculator.

² Dworshak Trap numbers include MVFH reared fish which at this time is still to be determined.

Table 1.3b. BY 2019 - Steelhead Spawning/Egg Take Plan.

Take		Eggs / Female by Spawn Type	Hatchery Program / Brood Source / Females Spawmed By Method / Green Eggs Taken										
			DNFH - All Releases					CFH - South Fork Clearwater		MVH- Upper Salmon R.		Grand Totals	
No.	Dates	Kill Sp	DWORK		SFCWR		DNFH Green Eggs Projections Combined	SFCWR		DWORK		Females Kill Sp	Green Eggs Projections
			Females Kill Sp	Green Eggs Projections	Females Kill Sp	Green Eggs Projections		Females Kill Sp	Green Eggs Projections	Females Kill Sp	Green Eggs Projections		
1 E	15-Jan	6,796	55	373,780			373,780		0			55	373,780
2 E	22-Jan	6,796	55	373,780			373,780		0			55	373,780
3	5-Feb	6,796	53	360,188			360,188		0			53	360,188
4	19-Feb	6,796	53	360,188			360,188		0			53	360,188
5	26-Feb	6,796	53	360,188			360,188	42	285,432			95	645,620
6	5-Mar	6,796		0			0	43	292,228			43	292,228
7	12-Mar	6,796	53	360,188			360,188	43	292,228			96	652,416
8	19-Mar	6,796		0	54	366,984	366,984	43	292,228			97	659,212
9	26-Mar	6,796	15	101,940	39	265,044	366,984		0			54	366,984
10	2-Apr	6,796		0		0	0		0	TBD ¹	TBD ¹	TBD ¹	TBD ¹
11	9-Apr	6,796	54	366,984			366,984		0	21	142,716	75	509,700
Cumulative			391	2,657,236	93	632,028	3,289,264	171	1,162,116	21	142,716	676	4,594,096

¹ Number of females spawned will be dependent on the number of fish needed to backfill the Upper Salmon B programs

1.3.2. Trap Operations and Production Planning for 2019 (Smolt BY 2019) – NARRATIVE

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

Plan for 2019 (BY 2019)					
Rearing Location	Adult Fish Health	Trap Ops	Production target changes	Spawning protocol changes	Disposition of adults
<i>Dworshak/Kooskia National Fish Hatchery Ladder/Trap (Fall 2018-Spring 2019)(SOP Section 1.2)</i>					
Dworshak National Fish Hatchery (DworB)	Fall brood injections of GNRH this year included 35 males injected with OVANEXT to determine the effectiveness of this product.	NC	The Lolo group will now originate from both takes 9 and 10 to allow representation of genetics from all takes to be released at DNFH.	Dworshak will no longer be utilizing air spawning. Male re-use when needed will be with size xl >850 mm and large >820mm adults.	In addition carcasses may be distributed for nutrient enhancement with locations determined by co-managers.
Clearwater Fish Hatchery (DworB)					
Magic Valley Fish Hatchery (DworB)	NC	The Dworshak ladder may be opened longer dependant on projected shortfall	NC	We will not be able to hold adult fish on station after 4/9/19 due to required maintenance. 4/2 scheduled as backup date for spawning to backfill USAL-B program	NC
<i>Reconditioned Kelts (SOP Section 1.2)</i>					
Dworshak National Fish Hatchery (DworB)	Discontinued	Discontinued	Discontinued	Discontinued	Discontinued
<i>SF Clearwater Anglers (SOP Section 1.3)</i>					
Dworshak National Fish Hatchery (SFClWB)	NC	NC	NC	Dworshak will no longer be utilizing air spawning.	NC

	Plan for 2019 (BY 2019)				
Rearing Location	Adult Fish Health	Trap Ops	Production target changes	Spawning protocol changes	Disposition of adults
Clearwater Fish Hatchery (SFClWB)	NC	NC	NC	NC	NC

1.4. Marking and Rearing Plan for 2019 (Smolt BY 2109)

BY 2019 Steelhead smolt production goals for release in 2020.

Rearing Facility	Program	Brood Collection Site	Release Site	Smolt Release Goals
DNFH	NF Clearwater	DNFH	MS Clearwater at DNFH	1,200,000
			Clear Creek	300,000
			Lolo Creek	200,000
	SF Clearwater	SFCIwR Angler (DNFH)	Red House Hole - SF Clw	400,000
Total				2,100,000
CFH/DNFH	CFH	SFCIwR Angler (DNFH)	Meadow Creek-SF Clw	501,000
			Red House Hole-SF Clw	219,000
			Newsome Creek-SF Clw	123,000
Total				843,000
Grand Total				2,943,000

1.4.1. Marking and Rearing Plan for 2019 (Smolt BY 2019) – TOTALS

Table 1.4a. Steelhead Projected marking for BY 2019 Production for release in 2020.

Rearing Facility	Program	Brood Collection Site	Release Site	Smolt Release Goals	Projected Marking				Total # Tags	PIT Tags				
					Adipose Fin Clip		No Clip			Funding Source				
					No CWT	CWT	CWT	No CWT		CSS	LSRCP	IPC	ACOE	USFWS
DNFH	NF Clearwater	DNFH	MS Clearwater at DNFH ¹	1,200,000	1,080,000	120,000	0	0	18,000	1,500	0	0	16,500	0
			Clear Creek	300,000	280,000	20,000	0	0	5,500	2,000	0	0	3,500	0
			Lolo Creek	200,000	0	0	0	200,000	3,800	3,800	0	0	0	0
	SF Clearwater	SFCIwR Angler (DNFH)	Red House Hole - SF Clw	400,000	360,000	40,000	0	0	5,600	5,600	0	0	0	0
Total				2,100,000	1,720,000	180,000	0	200,000	32,900	12,900	0	0	20,000	0
CFH/DNFH	CFH	SFCIwR Angler (DNFH)	Meadow Creek-SF Clw	501,000	291,000	0	210,000	0	10,800	3,200	7,600	0	0	0
			Red House Hole-SF Clw	219,000	219,000	0	0	0	4,700	1,400	1,300	0	0	0
			Newsome Creek-SF Clw	123,000	0	0	123,000	0	2,600	800	1,800	0	0	0
Totals				843,000	510,000	0	333,000	0	18,100	5,400	10,700	0	0	0
Grand Totals				2,943,000	2,230,000	180,000	333,000	200,000	51,000	18,300	10,700	0	20,000	0

¹ 1500 PIT tags are SMP funding

1.4.2. Marking and Rearing Plan for 2019 (Smolt BY 2019) – NARRATIVE

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

- **Fish Health** - anticipated changes to normal fish health sampling or treatments
- **Fish feeding** - changes of diets of feed manufacturer, growth regimes etc.
- **Rearing conditions** - incubation, water temp, flow, rearing density changes
- **Marking** - e.g. changes to schedules, fish handling or movement, raceway loading for PBT, %PBT etc.

Release Location	Plan for 2019 (BY 2019)			
	Juvenile Fish Health	Fish Feeding	Rearing Conditions	Marking
<i>Dworshak National Fish Hatchery (SOP Section 1.2)</i>				
Dworshak NFH (DworB)	NC	NC	NC	NC
Clear Creek (DworB)	NC	NC	NC	NC
Red House, SF Clearwater (SFClw/DworB)	NC	NC	NC	NC
Lolo Creek (DworB)	Potential rearing extension in the nursery to utilize warmer rearing temperatures to help meet release goal target size at release.	Potential increase of hand feeding including higher quality product to help meet release goal target size at release.	Potential plumbing change will allow for heated water to be introduced into sys 1 increasing growth rates.	NC
<i>Clearwater Fish Hatchery (SOP Section 1.3)</i>				
Meadow Creek SF Clearwater (SFClwB/DworB)	NC	A study is planned to compare feed conversions, lengths, weights and mortality of Steelhead reared using Bio Oregon and EWOS to determine cost effectiveness and performance of feed. Approximately half of fish on station will be fed Bio Oregon (9 Vats, 478k fish) and half fed EWOS (10 Vats, 542k each) for the entire feed cycle.	NC	NC
Red House Hole SF Clearwater (SFClwB/DworB)	NC		NC	NC
Newsome Creek SF Clearwater (SFClwB/DworB)	NC		NC	NC

2. Spring/Summer Chinook

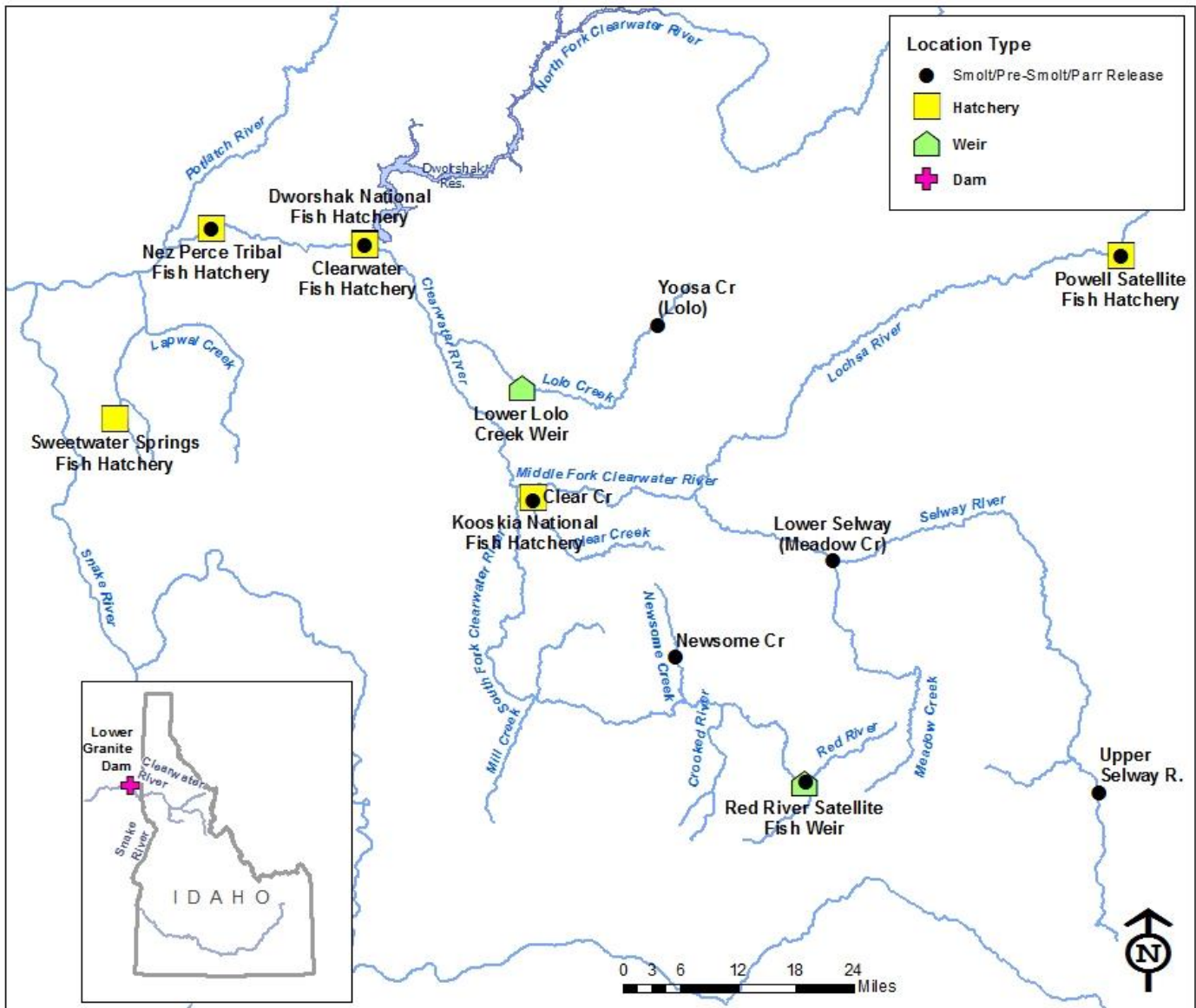


Figure 2.1. Locations of Spring/Summer Chinook Salmon hatchery facilities and smolt/parr/pre-smolt releases. Table below gives smolt and parr/pre-smolt release goals by release site.

Table 2.1. Spring/Summer Chinook Goals for Release in 2019

BY2017 SMOLTS

Action in 2019	Brood/Release Year	Hatchery Program	Rearing Facility	Brood Collection Site	Release Site	Smolt Release Goal	
Release	BY2017 RY2019	Spring					
		DNFH - LSRCP	DNFH	DNFH		NF Clearwater (DNFH)	1,650,000
		Total					1,650,000
		KNFH-NPT	KNFH	KNFH		Kooskia NFH	650,000
		Total					650,000
		NPTH	NPTH	DNFH		NPTH	200,000
						Lolo Creek	180,000
		Total					380,000
		CFH-LSRCP	CFH	KNFH/DNFH	SFClw	Red River	1,280,000
						NF Clearwater-CFH (Baffle)	389,000
						NF Clearwater-CFH (Regular)	320,000
						Selway River-Lower	400,000
						Clear Creek	720,000
		Total					3,109,000
		Spring Grand Total					5,789,000
		Summer					
CFH-LSRCP	CFH	Pow/SFSR		Powell Pond	640,000		
Summer Grand Total					640,000		

BY2018 PARR and PRE-SMOLTS SMOLTS

Action in 2019	Brood/Release Year	Hatchery Program	Rearing Facility	Brood Collection Site	Life Stage	Release Site	Smolt Release Goal	
Marking and Release	BY2018 RY2019	Spring						
		DNFH	DNFH	DNFH	Parr	Selway River-Upper	300,000	
		Total						300,000
		NPTH	NPTH	NPTH		Pre-Smolt	Newsome Cr (SF Clw)	75,000
						Pre-Smolt	Lolo Cr (SF Clw)	150,000
						Parr	Meadow Cr (Selway)	400,000
		Total						625,000
Spring Grand Total						925,000		

2.1. Timeline and Flowchart for Spring/Summer Chinook Production

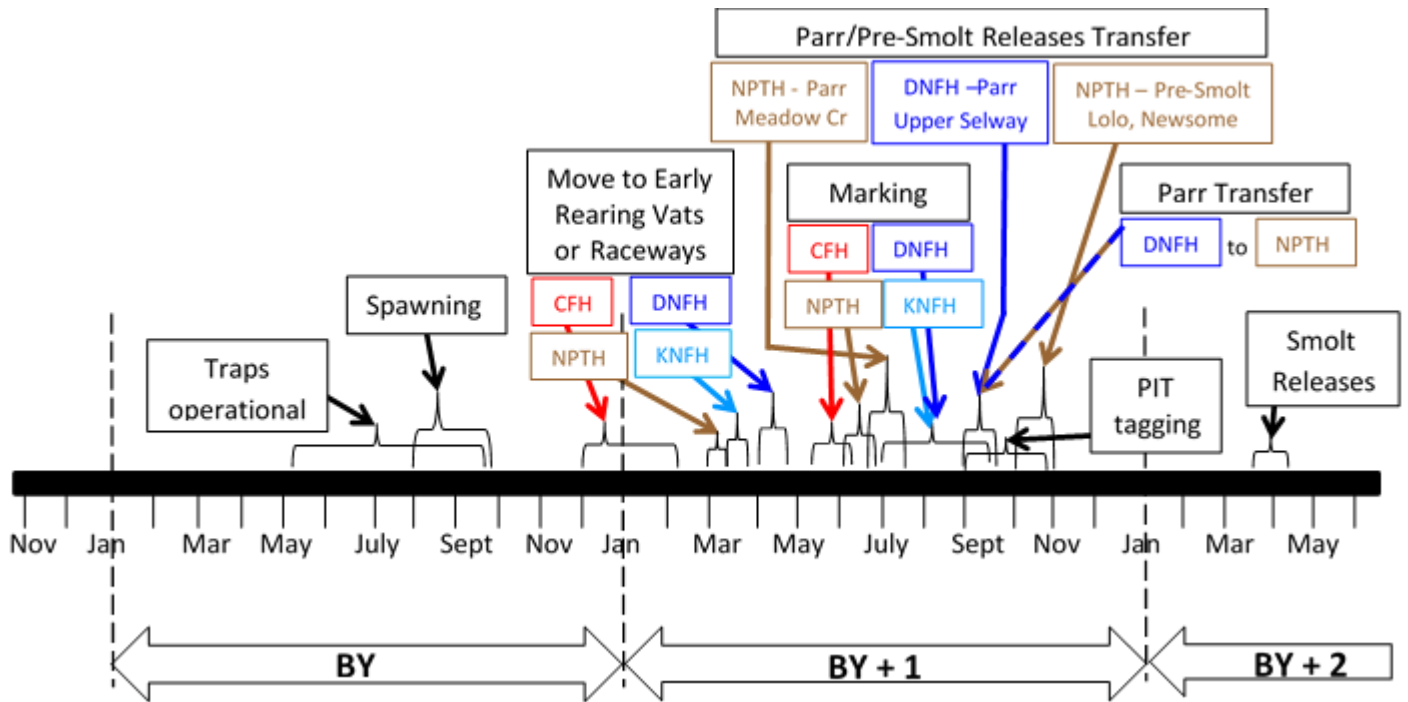


Figure 2.2. Timeline for Spring/Summer Chinook Production. Date ranges with black labels are shown to include all facilities' operations. Color-coded labels identify activities that have variability in timing for the different facilities.

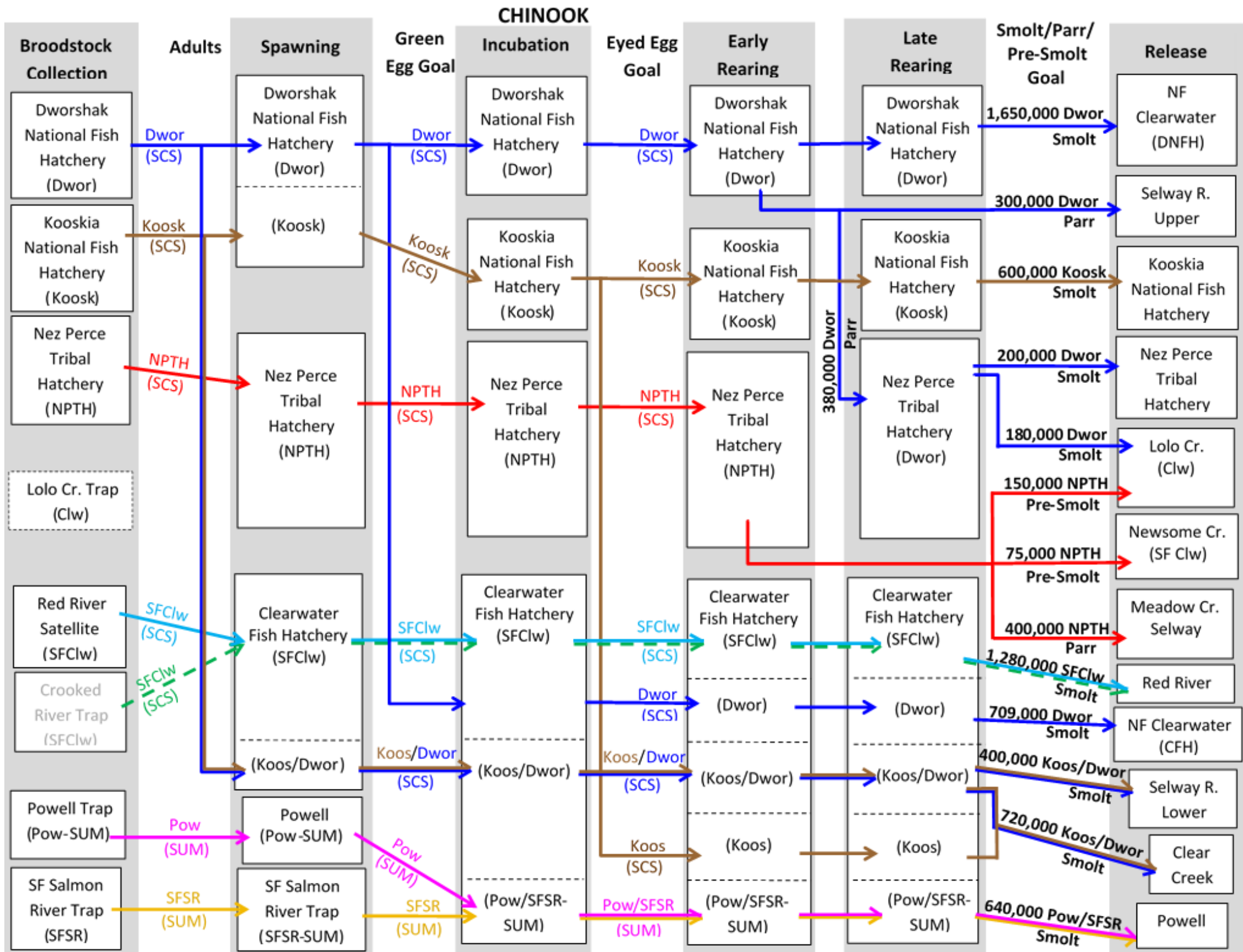


Figure 2.3. Chinook movements for Clearwater. Numbers represent 2019 releases.

2.2. Releases in 2019 (Smolt BY 2017, Parr/Pre-Smolt BY 2018)

2.2.1. Releases in 2019 (Smolt BY 2017, Parr/Pre-Smolt BY 2018) – Totals

Table 2.2a. BY2017 SMOLTS - Sp/Su Chinook Salmon inventories by life stage, smolt release goals and projected releases in 2019.

Hatchery Program	Run	Rearing Facility	Brood Collection Site	Release Site	Release Goals		Inventory To Date		Projected Smolt Release		
					Number	Size (FPP)	Date	Number	Dates	Number	Size (FPP)
Spring											
DNFH - LSRCP	SpCS	DNFH	DNFH	NF Clearwater (DNFH)	1,650,000	20.0	12/31/2018	1,724,382	3/27-3/28	1,718,256	20.0
Total					1,650,000			1,724,382		1,718,256	
KNFH-NPT	SpCS	KNFH	KNFH	Kooskia NFH	650,000	20.0	10/1/2018	657,639	3/27/2019	655,000	19.0
Total					650,000			657,639		655,000	
NPTH	SpCS	NPTH	DNFH	NPTH	200,000	20.0	12/31/2018	197,800	4/1/2019	197,000	20.0
				Lolo Creek	180,000	20.0	12/31/2018	202,395	4/15/2019	201,395	20.0
Total					380,000			400,195		398,395	
CFH-LSRCP	SpCS	CFH	SFClw	Red River	1,280,000	16.0	11/30/2018	1,181,465	3/25-3/29/2019	1,181,406	16.0
			KNFH/DNFH	NF Clearwater-CFH (Baffle)	389,000	16.0	11/30/2018	389,586	3/28/2019	389,567	16.0
				NF Clearwater-CFH (Regular)	320,000	16.0	11/30/2018	313,307	3/27/2019	313,291	16.0
				Selway River-Lower	400,000	16.0	11/30/2018	402,627	3/21-3/22/2019	402,607	16.0
				Clear Creek	720,000	16.0	11/30/2018	691,278	3/18 dir, 4/2-4/3/2019 acc.	691,243	16.0
Total					3,109,000			2,978,263		2,978,114	
Spring Grand Total					5,789,000			5,760,479		5,749,765	
Summer											
CFH-LSRCP	SuCS	CFH	Pow/SFSR	Powell Pond	640,000	16.0	11/30/2018	624,865	3/11-3/14/2019	624,834	16.0
Summer Grand Total					640,000			624,865		624,834	
Spring/Summer Grand Total					6,429,000			6,385,344		6,374,599	

Table 2.2b. BY2017 SMOLTS - Sp/Su Chinook Salmon Inventory to Date by Mark Type for release in 2019.

Hatchery Program	Run	Rearing Facility	Brood Collection Site	Release Site	Inventory to Date						PIT Tags				
					Date	Total	Adipose Fin Clip		No Clip		Total # Tags	Funding Source			
							CWT	No CWT	CWT	No CWT		CSS	LSRCP	USFWS	BPA
Spring															
DNFH - LSRCP	SpCS	DNFH	DNFH	NF Clearwater (DNFH)	12/31/2018	1,724,382	127,541	1,596,841	0	0	42,000	42,000	0	0	0
Total						1,724,382	127,541	1,596,841	0	0	42,000	42,000	0	0	0
KNFH-NPT	SpCS	KNFH	KNFH	Kooskia NFH	1/2/2019	657,252	109,746	492,546	0	54,960	8,000	0	0	8,000	0
Total						657,252	109,746	492,546	0	54,960	8,000	0	0	8,000	0
NPTHC	SpCS	NPTH	DNFH	NPTH	12/31/2018	197,800	67,753	474	121,175	8,398	600	0	0	0	600
				Lolo Creek	12/31/2018	202,395	61,689	140,507	61	138	1,000	0	0	0	1,000
Total						400,195	129,442	140,981	121,236	8,536	1,600	0	0	0	1,600
CFH-LSRCP	SpCS	CFH	SFClw	Red River	11/30/2018	1,181,465	120,060	1,061,405	0	0	17,077	5,077	12,000	0	0
			KNFH/DNFH	NF Clearwater-CFH (Baffle)	11/30/2018	389,586	389,586	0	0	0	8,488	0	8,488	0	0
				NF Clearwater-CFH (Regular)	11/30/2018	313,307	0	313,307	0	0	8,596	0	8,596	0	0
				Selway River-Lower	11/30/2018	402,627	120,416	146,513	135,698	0	17,040	5,040	12,000	0	0
				Clear Creek	11/30/2018	691,278	122,199	569,079	0	0	9,746	3,446	6,300	0	0
Total						2,978,263	752,261	2,090,304	135,698	0	60,947	13,563	47,384	0	0
Spring Grand Total						5,760,092	1,118,990	4,320,672	256,934	63,496	112,547	55,563	47,384	8,000	1,600
Summer															
CFH-LSRCP	SuCS	CFH	Pow/SFSR	Powell Pond	11/30/2018	624,865	122,590	193,418	119,960	188,897	25,416	13,416	12,000	0	0
Summer Grand Total						624,865	122,590	193,418	119,960	188,897	25,416	13,416	12,000	0	0
Spring and Summer Grand Total						6,384,957	1,241,580	4,514,090	376,894	252,393	137,963	68,979	59,384	8,000	1,600

Table 2.2c. BY2018 PARR and PRE-SMOLT - Sp/Su Chinook Salmon inventories by life stage, release goals and projected releases in 2019.

Hatchery Program	Rearing Facility	Brood Collection Site	Life Stage	Release Site	Inventory To Date		Release Goals		Projected Releases		
					Date	Number	Number	Size (FPP)	Dates	Number	Size (FPP)
Spring											
DNFH	DNFH	DNFH	Parr	Selway River-Upper	1/7/19	331,918	300,000		9/15/2019	300,000	100.0
Total						331,918	300,000			300,000	
NPTHC	NPTH	NPTHC	Pre-Smolt	Newsome Cr (SF Clw)	1/3/19	653,067	75,000	30.0	10/15/2019	78,000	30.0
			Pre-Smolt	Lolo Cr (SF Clw)			150,000	30.0	10/15/2019	153,000	30.0
			Parr	Meadow Cr (Selway)			400,000	117.0	7/1/2019	400,000	117.0
Total						653,067	625,000			631,000	
Grand Total						984,985	925,000			931,000	

2.2.2. Releases in 2019 (Smolt BY 2017, Parr/Pre-Smolt BY 2018) – Total

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

- **Smolt/Egg Release Targets-** e.g. were you below goal, was your size at release different than SOP target etc.
- **Fish/Egg Health-** any epizootic history, anti-biotic treatments, was production culled at any point
- **Transportation/Releases-** e.g. timing, trucking issues, site access etc.

Release Location	Plan for 2019		Changes/Conditions that Occurred 2018-Early 2019		
	Release Target Smolt BY17 Parr/Pre-Smolt BY18	Transport/Release Smolt BY17 Parr/Pre-Smolt BY18	Fish Feeding Smolt BY17 Parr/Pre-Smolt BY18	Fish/Egg Health Smolt BY17 Parr/Pre-Smolt BY18	Marking Smolt BY17 Parr/Pre-Smolt BY18
<i>Dworshak National Fish Hatchery (SOP Section 2.2)</i>					
NF Clearwater-DNFH (Dwor)	NC	NC	NC	NC	Marking took place 9/5 - 9/19. This will be our new permanent date range.
Selway River Upper (Dwor-Parr)	Due to NF brood shortfall, this group will contain 100% Little White eggs.	NC	NC	NC	NC
<i>Kooskia National Fish Hatchery (SOP Sections 2.3)</i>					
Kooskia National Fish Hatchery (Koosk)					Marking at the hatchery will be done in June by the NPT tagging crew from the vats to the burrows ponds
<i>Nez Perce Tribal Hatchery (SOP Section 2.4)</i>					
Nez Perce Tribal Hatchery (Dwor Smolt transferred to NPTH from DNFH)	This group will contain 100% North Fork eggs as normal.	NC	NC	NC	NC

Release Location	Plan for 2019		Changes/Conditions that Occurred 2018-Early 2019		
	Release Target Smolt BY17 Parr/Pre-Smolt BY18	Transport/Release Smolt BY17 Parr/Pre-Smolt BY18	Fish Feeding Smolt BY17 Parr/Pre-Smolt BY18	Fish/Egg Health Smolt BY17 Parr/Pre-Smolt BY18	Marking Smolt BY17 Parr/Pre-Smolt BY18
Lolo Creek (Dwor-Smolt transferred to NPTH from DNFH)	Due to NF brood shortfall, this group will contain 100% Little White eggs.	NC	NC	NC	NC
Lolo Creek (NPTH-Pre-Smolt)	NC	NC	NC	NC	NC
Newsome Creek (NPTH-Pre-Smolt)	NC	NC	NC	NC	NC
Meadow Creek Selway (NPTH-Parr)	NC	NC	NC	NC	NC
<i>Clearwater Fish Hatchery (SOP Sections 2.5)</i>					
Red River (SFClw)	NC	NC	NC	NC	NC
NF Clearwater-CFH (Baffle) (Dwor/Koos)	NC	NC	NC	NC	NC
NF Clearwater-CFH (Regular) (Dwor/Koos)	NC	NC	NC	NC	NC
Selway River-Lower (Dwor/Koos)	NC	NC	NC	NC	NC
Clear Creek (Dwor/Koos)	NC	NC	NC	NC	NC
Powell (Pow/SFSR-Summer)	NC	NC	NC	NC	NC

2.3. Trap Operations and Production Planning for 2019 (Smolt and Parr/Pre-Smolt BY 2019)

BY2019 SMOLTS - Spring/Summer Chinook Goals for Release in 2021

Action in 2019	Brood/Release Year	Hatchery Program	Brood Collection Site	Rearing Facility	Release Site	Smolt Release Goal (US v OR)	Smolt Release Goal (Including Additional Production)		
Trapping	BY2019 RY2021	Spring							
		DNFH - LSRCP	DNFH	DNFH	DNFH	NF Clearwater (DNFH)	1,050,000	1,650,000	
		Total						1,050,000	1,650,000
		KNFH-NPT	KNFH	KNFH	KNFH	Kooskia NFH	650,000	650,000	
		Total						650,000	650,000
		NPTHC	DNFH	DNFH	DNFH	Trans. to NPTH-NPTH	200,000	200,000	
						Trans. to NPTH-Lolo Creek	0	180,000	
		Total						200,000	380,000
		CFH-LSRCP	SFCIw	DNFH	CFH	Red River	1,100,000	1,280,000	
						NF Clearwater-CFH (Baffle)	0	389,000	
						NF Clearwater-CFH (Regular)	0	320,000	
						Selway River-Lower	400,000	400,000	
						Clear Creek	635,000	720,000	
		Total						2,135,000	3,109,000
		Spring Grand Total						4,035,000	5,789,000
		Summer							
CFH-LSRCP	Pow/SFSR	CFH	CFH	Powell Pond (SUM) ¹	640,000	640,000			
Summer Grand Total						640,000	640,000		

¹ Powell is not a US v OR program; however we will target 640,000 summer Chinook smolts even if the spring Chinook production target is set at the base US v OR level.

BY2019 PARR and PRE-SMOLT - Spring/Summer Chinook Goals for Release in 2020

Action in 2019	Brood/Release Year	Hatchery Program	Life Stage	Brood Collection Site	Rearing Facility	Release Site	Smolt Release Goal	
Trapping	BY2019 RY2020	Spring						
		DNFH	Parr	DNFH	DNFH	Selway River-Upper	300,000	
		Total						300,000
		NPTHC	Pre-Smolt	NPTHC	NPTHC	NPTHC	Newsome Cr (SF Clw)	75,000
			Pre-Smolt	NPTHC	NPTHC		Lolo Cr (Clw)	150,000
			Parr	NPTHC	NPTHC		Meadow Cr (Selway)	400,000
		Total						625,000
Spring Grand Total						925,000		

2.3.1. Trap Operations and Production Planning for 2019 (Smolt and Parr/Pre-Smolt BY 2019) – TOTALS

FULL PRODUCTION

Table 2.3a. 2019 Adult brood stock acquisition schedules for hatchery Sp/Su Chinook Salmon in Clearwater River drainage for FULL PRODUCTION.

Date	Spring				Summer
	Dworshak Trap	Kooskia Trap	NPTH Trap	Red River Trap	Powell ²
3-May					
10-May					
17-May			5		
24-May		14	10		
31-May		40	15		
7-Jun		446	70	8	
14-Jun		659	109	67	
21-Jun		741	184	142	22
28-Jun		768	239	285	57
5-Jul	184	933	288	461	144
12-Jul	530	1,014	363	570	183
19-Jul	990	1,056	398	612	201
26-Jul	1,451	1,091	442	620	205
2-Aug	1,888		467	637	205
9-Aug	2,303		467	645	209
16-Aug			497	670	218
23-Aug			497	754	222
30-Aug			497	838	275
6-Sep				838	384
13-Sep					436
20-Sep					
27-Sep					
Total	2,303	1,091	497	838	436
2019 LGR Forecast ¹	3996	2332	170	1704	606

Proportion of brood acquisition over season					
Date	Spring				Summer
	Dworshak Trap	Kooskia Trap	NPTH Trap	Red River Trap	Powell ²
3-May	0.000	0.000	0.000	0.000	0.00
10-May	0.000	0.000	0.000	0.000	0.00
17-May	0.000	0.000	0.010	0.000	0.00
24-May	0.000	0.013	0.020	0.000	0.00
31-May	0.000	0.037	0.030	0.000	0.00
7-Jun	0.000	0.409	0.140	0.010	0.00
14-Jun	0.000	0.604	0.220	0.080	0.00
21-Jun	0.000	0.679	0.370	0.170	0.05
28-Jun	0.000	0.704	0.480	0.340	0.13
5-Jul	0.080	0.855	0.580	0.550	0.33
12-Jul	0.230	0.929	0.730	0.680	0.42
19-Jul	0.430	0.968	0.800	0.730	0.46
26-Jul	0.630	1.000	0.890	0.740	0.47
2-Aug	0.820	1.000	0.940	0.760	0.47
9-Aug	1.000	1.000	0.940	0.770	0.48
16-Aug	1.000	1.000	1.000	0.800	0.50
23-Aug	1.000	1.000	1.000	0.900	0.51
30-Aug	1.000	1.000	1.000	1.000	0.63
6-Sep	1.000	1.000	1.000	1.000	0.88
13-Sep	1.000	1.000	1.000	1.000	1.00
20-Sep	1.000	1.000	1.000	1.000	1.00
27-Sep	1.000	1.000	1.000	1.000	1.00

¹ 2- and 3-ocean returns only

² Based on Crooked River timing.

FULL PRODUCTION

Table 2.3b. BY 2019 SMOLT - Sp/Su Chinook Spawning and Trapping Plan for FULL PRODUCTION

Hatchery Program	Brood Collection Site	Rearing Facility	Release Site	Green Egg Goal	Green Egg Fecundity	Female Spawn Goal	Male Spawn Goal	Holding Mortality	Total Trapping Goal	Estimated Trapping Dates	Projected Returns to LGD
Spring											
DNFH - LSRCP	DNFH	DNFH	NF Clearwater (DNFH)	2,175,905	3,973	548	467	8.7%	1,112	6/15-8/31	2,331
Total				2,175,905		548	467		1,112	6/15-8/31	2,331
KNFH-NPT	KNFH	KNFH	Kooskia NFH	993,040	3,661	272	272	12.1%	619	6/15-8/31	366
Total				993,040		272	272		619		366
NPTHC	DNFH	DNFH	Trans. to NPTH-NPTH	263,746	3,973	67	57	8.7%	136		170
			Trans. to NPTH-Lolo Creek	237,371	3,973	60	51	8.7%	122		17
Total				501,118		127	108		258		187
CFH-LSRCP	SFClw	CFH	Red River	1,541,782	3,875	398	398	5.0%	838	6/7-9/6	1,704
	DNFH		NF Clearwater-CFH (Baffle)	468,557	3,875	121	121	5.0%	255	7/5-8/9	1,664
	DNFH		NF Clearwater-CFH (Regular)	385,446	3,875	100	100	5.0%	211	7/5-8/9	
	DNFH		Selway River-Lower	481,807	3,875	125	125	5.0%	264	7/5-8/9	1,851
	KNFH/DNFH		Clear Creek	867,253	3,875	224	224	5.0%	472	5/24-7/26	1,966
Total				3,744,845		968	968		2,040		7,185
Spring Smolt Grand Total				7,414,907		1,915	1,815		4,029		10,069
Summer											
CFH-LSRCP	Pow/SFSR	CFH	Powell Pond (SUM)	823,452	3,980	207	207	5.0%	436	6/21-9/13	606
Summer Smolt Grand Total				823,452		207	207		436		606

FULL PRODUCTION

Table 2.3c. BY 2019 PARR and PRE-SMOLT - Sp/Su Chinook Spawning and Trapping Plan for FULL PRODUCTION

Hatchery Program	Life Stage	Brood Collection Site	Rearing Facility	Release Site	Green Egg Goal	Green Egg Fecundity	Female Spawn Goal	Male Spawn Goal	Holding Mortality	Total Trapping Goal	Estimated Trapping Dates	Projected Returns to LGD
Spring												
DNFH	Parr	DNFH	DNFH	Selway River-Upper	395,619	3,973	100	85	8.7%	203	NA	-
Total					395,619		100	85		203		0
NPTHC	Pre-Smolt	NPTHC	NPTHC	Newsome Cr (SF Clw)	111,297	4,053	28	28	7.0%	61		12
	Pre-Smolt	NPTHC		Lolo Cr (Clw)	222,594	4,053	55	55	7.0%	119		-
	Parr	NPTHC		Meadow Cr (Selway)	593,583	4,053	147	147	7.0%	317	NA	-
Total					927,474		230	230		497		12
Spring Parr/Pre-smolt Grand Total					1,323,093		330	315		700		12

FULL PRODUCTION

Table 2.3d. BY2019 Sp/Su Chinook Spawning and Trapping Plan Summarized by Trapping Facility for FULL PRODUCTION

Brood Collection Site	Female Spawn Goal	Male Spawn Goal	Total Trapping Goal	Projected Returns to LGD
Spring				
DNFH	1,121	1,006	2,303	3,995
KNFH	496	496	1,091	2,332
SFCIw	398	398	838	1,704
NPTHC	230	230	497	170
Summer				
Pow/SFSR	207	207	436	606

BASE US v OR PRODUCTION

Table 2.3e. 2019 Adult brood stock acquisition schedules for hatchery Sp/Su Chinook Salmon in Clearwater River drainage for BASE US v OR PRODUCTION

Date	Spring				Summer Powell ²
	Dworshak Trap	Kooskia Trap	NPTH Trap	Red River Trap	
3-May					
10-May					
17-May			5		
24-May		13	10		
31-May		38	15		
7-Jun		423	70	7	
14-Jun		626	109	58	
21-Jun		703	184	122	22
28-Jun		730	239	245	57
5-Jul	107	886	288	396	144
12-Jul	306	963	363	490	183
19-Jul	573	1,003	398	526	201
26-Jul	839	1,036	442	533	205
2-Aug	1,092		467	547	205
9-Aug	1,332		467	554	209
16-Aug			497	576	218
23-Aug			497	648	222
30-Aug			497	720	275
6-Sep				720	384
13-Sep					436
20-Sep					
27-Sep					
Total	1,332	1,036	497	720	436
2019 LGR Forecast ¹					

Date	Proportion of brood acquisition over season Spring				Summer Powell ²
	Dworshak Trap	Kooskia Trap	NPTH Trap	Red River Trap	
3-May	0.000	0.000	0.000	0.000	0.00
10-May	0.000	0.000	0.000	0.000	0.00
17-May	0.000	0.000	0.010	0.000	0.00
24-May	0.000	0.013	0.020	0.000	0.00
31-May	0.000	0.037	0.030	0.000	0.00
7-Jun	0.000	0.409	0.140	0.010	0.00
14-Jun	0.000	0.604	0.220	0.080	0.00
21-Jun	0.000	0.679	0.370	0.170	0.05
28-Jun	0.000	0.704	0.480	0.340	0.13
5-Jul	0.080	0.855	0.580	0.550	0.33
12-Jul	0.230	0.929	0.730	0.680	0.42
19-Jul	0.430	0.968	0.800	0.730	0.46
26-Jul	0.630	1.000	0.890	0.740	0.47
2-Aug	0.820	1.000	0.940	0.760	0.47
9-Aug	1.000	1.000	0.940	0.770	0.48
16-Aug	1.000	1.000	1.000	0.800	0.50
23-Aug	1.000	1.000	1.000	0.900	0.51
30-Aug	1.000	1.000	1.000	1.000	0.63
6-Sep	1.000	1.000	1.000	1.000	0.88
13-Sep	1.000	1.000	1.000	1.000	1.00
20-Sep	1.000	1.000	1.000	1.000	1.00
27-Sep	1.000	1.000	1.000	1.000	1.00

¹ 2- and 3-ocean returns only

² Based on Crooked River timing.

BASE US v OR PRODUCTION

Table 2.3f. BY 2019 SMOLT - Sp/Su Chinook Spawning and Trapping Plan for BASE US v OR PRODUCTION

Hatchery Program	Brood Collection Site	Rearing Facility	Release Site	Green Egg Goal	Green Egg Fecundity	Female Spawn Goal	Male Spawn Goal	Holding Mortality	Total Trapping Goal	Estimated Trapping Dates	Projected Returns to LGD
Spring											
DNFH - LSRCP	DNFH	DNFH	NF Clearwater (DNFH)	1,413,514	3,973	356	303	8.7%	723	6/15-8/31	2,331
Total				1,413,514		356	303		723		2,331
KNFH-NPT	KNFH	KNFH	Kooskia NFH	993,376	3,661	272	272	12.1%	619	5/13-8/31	366
Total				993,376		272	272		619		366
NPTH C	DNFH	DNFH	Trans. to NPTH-NPTH	269,241	3,973	68	58	8.7%	138		170
			Trans. to NPTH-Lolo Creek	0	3,973	0	0	8.7%	0		17
Total				269,241		68	58		138		187
CFH-LSRCP	SFCIw	CFH	Red River	1,324,969	3,875	342	342	5.0%	720	6/7-9/6	1,704
	DNFH		NF Clearwater-CFH (Baffle)	0	3,875	0	0	5.0%	0	7/5-8/9	1,664
	DNFH		NF Clearwater-CFH (Regular)	0	3,875	0	0	5.0%	0	7/5-8/9	
	DNFH		Selway River-Lower	481,807	3,875	125	125	5.0%	264	7/5-8/9	1,851
KNFH/DNFH	Clear Creek	764,869	3,875	198	198	5.0%	417	5/24-7/26	1,966		
Total				2,571,645		665	665		1,401		7,185
Spring Grand Total				5,247,776		1,361	1298		2,881		10,069
Summer											
CFH-LSRCP	Pow/SFSR	CFH	Powell Pond	823,452	3,980	207	207	5.0%	436	6/21-9/13	606
Summer Grand Total				823,452		207	207		436		606

BASE US v OR PRODUCTION

Table 2.3g. BY 2019 PARR and PRE-SMOLT - Sp/Su Chinook Spawning and Trapping Plan for BASE US v OR PRODUCTION

Hatchery Program	Life Stage	Brood Collection Site	Rearing Facility	Release Site	Green Egg Goal	Green Egg Fecundity	Female Spawn Goal	Male Spawn Goal	Holding Mortality	Total Trapping Goal	Estimated Trapping Dates	Projected Returns to LGD
Spring												
DNFH	Parr	DNFH	DNFH	Selway River-Upper	403,861	3,973	102	87	8.7%	207	NA	-
Total					403,861		102	87		207		0
NPTH C	Pre-Smolt	NPTH C	NPTH C	Newsome Cr (SF Clw)	111,297	4,053	28	28	7.0%	61		12
	Pre-Smolt	NPTH C		Lolo Cr (Clw)	222,594	4,053	55	55	7.0%	119		-
	Parr	NPTH C		Meadow Cr (Selway)	593,583	4,053	147	147	7.0%	317	NA	-
Total					927,474		230	230		497		12
Spring Grand Total					1,331,335		332	317		704		12

BASE US v OR PRODUCTION

Table 2.3h. BY 2019 Sp/Su Chinook Spawning and Trapping Plan Summarized by Trapping Facility for BASE US v OR PRODUCTION

Brood Collection Site	Female Spawn Goal	Male Spawn Goal	Total Trapping Goal	Projected Returns to LGD
<i>Spring</i>				
DNFH	651	573	1,332	3,995
KNFH	470	470	1,036	2,332
SFCIw	342	342	720	1,704
NPTHC	230	230	497	170
<i>Summer</i>				
Pow/SFSR	207	207	436	606

2.3.2. Trap Operations and Production Planning for 2019 (Smolts and Parr/Pre-Smolt BY2019) – NARRATIVE

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

Juvenile Release Location	Plan for 2019 (BY 2019)				
	Adult Fish Health	Trap Ops	Production target changes	Spawning protocol changes	Disposition of adults
<i>Dworshak National Fish Hatchery Ladder/Trap (SOP Section 2.2)</i>					
NF Clearwater-DNFH (Dwor)	NC	NC	NC	NC	NC
Selway River Upper (Dwor-Parr)	NC	NC	NC	NC	NC
Nez Perce Tribal Hatchery (Dwor-Smolt)	NC	NC	NC	NC	NC
Lolo (Dwor-Smolt)	NC	NC	NC	NC	NC
NF Clearwater-CFH (Baffle) (Dwor)	NC	NC	NC	NC	NC
NF Clearwater-CFH (Regular) (Dwor)	NC	NC	NC	NC	NC
Selway River Lower (Dwor)	NC	NC	NC	NC	NC
Clear Creek (Dwor)	NC	NC	NC	NC	NC
<i>Kooskia National Fish Hatchery Trap (SOP Sections 2.3)</i>					
Kooskia National Fish Hatchery (Koos)					

Juvenile Release Location	Plan for 2019 (BY 2019)				
	Adult Fish Health	Trap Ops	Production target changes	Spawning protocol changes	Disposition of adults
Clear Creek (Koos)					
<i>Nez Perce Tribal Hatchery Trap (SOP Section 2.4)</i>					
Lolo Creek (NPTH-Pre-Smolt)	NC	Trap location TBD Trap will be used for purpose of broodstock collection.	NC	NC	NC
Meadow Creek Selway (NPTH-Parr)	NC	NC	NC	NC	NC
<i>Red River and Crooked River Traps (SOP Section 2.5)</i>					
Red River (SFClw)	NC	NC	NC	NC	NC
<i>Powell Trap (SOP Section 2.5)</i>					
Powell (Pow-Summer)	NC	NC	NC	NC	NC

2.4. Early Rearing and Marking Plan for 2019 (Smolts BY 2018, Parr/Pre-Smolt BY2018)

BY2018 SMOLTS - Spring/Summer Chinook Goals for Release in 2020

Action in 2019	Brood/Release Year	Hatchery Program	Brood Collection Site	Rearing Facility	Release Site	Smolt Release Goal	
Early Rearing and Marking	BY2018 RY2020	Spring					
		DNFH - LSRCP	DNFH/LWS ¹	DNFH	NF Clearwater (DNFH)		1,650,000
		Total					1,650,000
		KNFH-NPT	KNFH	KNFH	Kooskia NFH		650,000
		Total					650,000
		NPTHC	DNFH	NPTH	Trans. to NPTH from DNFH-NPTH		200,000
			LWS ¹		Trans. to NPTH from DNFH-Lolo Creek		180,000
		Total					380,000
		CFH-LSRCP	SFCIw/LWS ¹	CFH	Red River		1,280,000
					NF Clearwater-CFH (Baffle)		389,000
					NF Clearwater-CFH (Regular)		320,000
					Selway River-Lower		400,000
					Clear Creek		720,000
		Total					3,109,000
		Spring Grand Total					5,789,000
Summer							
CFH-LSRCP	Pow/SFSR	CFH	Powell Pond (SUM)		640,000		
Summer Grand Total					640,000		

¹ LWS represents the Little White Salmon brood collection site

BY2018 PARR and PRE-SMOLT - Spring Chinook Goals for Release in 2019

Action in 2019	Brood/Release Year	Hatchery Program	Life Stage	Brood Collection Site	Rearing Facility	Release Site	Smolt Release Goal	
Early Rearing, Marking and Release	BY2018 RY2019	Spring						
		DNFH	Parr	LWS ¹	DNFH	Selway River-Upper	300,000	
		Total					300,000	
		NPTHC	Pre-Smolt	NPTH/LWS ¹	NPTH	Newsome Cr (SF Clw)		75,000
			Pre-Smolt			Lolo Cr (SF Clw)		150,000
		NPTHC	Parr			Meadow Cr (Selway)	400,000	
		Total					625,000	
Spring Grand Total					925,000			

¹ LWS represents the Little White Salmon brood collection site

2.4.1. Early Rearing and Marking Plan for 2019 (Smolts BY 2018, Parr/Pre-Smolt BY2018) – TOTALS

Table 2.4a. BY 2018 Sp/Su Chinook Salmon - Early Rearing Inventory for smolt releases in 2020 (including anticipated set out)

Hatchery Program	Run	Brood Collection Site	Rearing Facility	Release Site	Release Goals for 2020	Size (FPP)	Inventory to Date		
							Date	Goal ²	Actual
Spring									
DNFH	SpCS	DNFH/LWS ¹	DNFH	NF Clearwater (DNFH)	1,650,000	20.0	1/7/19	1,864,881	1,769,954
Totals					1,650,000			1,864,881	1,769,954
KNFH	SpCS	KNFH	KNFH	Kooskia NFH	650,000	20.0		666,667	
Totals					650,000			666,667	0
NPTH	SpCS	DNFH	NPTH	Trans. to NPTH from DNFH-NPTH	200,000	20.0	1/7/19	226,046	230,707
		LWS ¹		Trans. to NPTH from DNFH-Lolo Creek	180,000	20.0	1/7/19	203,442	207,114
Totals					380,000			429,488	437,821
CFH	SpCS	SFCIw/LWS ¹	CFH	Red River	1,280,000	16.0	11/30/2018	1,145,833	1,148,248
		DNFH		NF Clearwater-CFH (Baffle)	389,000	16.0	11/30/2018	405,208	408,777
		DNFH/SFCIw ¹		NF Clearwater-CFH (Regular)	320,000	16.0	11/30/2018	217,462	213,327
		LWS ¹		Selway River-Lower	400,000	16.0	11/30/2018	416,667	416,735
		KNFH/LWS ¹		Clear Creek	720,000	16.0	11/30/2018	661,458	659,541
Totals					3,109,000			2,846,628	2,846,628
Spring Grand Total					5,789,000			5,807,664	5,054,403
Summer									
CFH	SuCS	Pow/SFSR	CFH	Powell Pond (SUM)	640,000	16.0	11/30/2018	823,037	823,037
Totals					640,000			823,037	823,037
Summer Grand Total					640,000			823,037	823,037

¹ LWS represents the Little White Salmon brood collection site

² Estimated fish needed in vats to reach eventual smolt release goals, based on brood calculator exclusive of the buffer.

Table 2.4b. BY 2018 SMOLTS - Sp/Su Chinook Projected Marking of BY 2018 juveniles to be released in 2020.

Hatchery Program	Run	Brood Collection Site	Rearing Facility	Release Site	Release Goals for 2020	Likely Marking Date(s)	Inventory to Date		Projected Marking				Projected PIT Tags				
							Date	Number	Adipose Fin Clip		No Clip		Total # Tags	Funding Source			
									No CWT	CWT	CWT	No CWT		CSS	LSRCP	USFWS	BPA
Spring																	
DNFH	SpCS	DNFH/LWS ¹	DNFH	NF Clearwater (DNFH)	1,650,000		1/7/2019	1,769,954		120,000			42,000	42,000	0	0	0
Totals					1,650,000			1,769,954	0	120,000	0	0	42,000	42,000	0	0	0
KFH	SpCS	KNFH	KNFH	Kooskia NFH	650,000	Early June	1/0/1900	0		100,000			8,000	0	0	8,000	0
Totals					650,000			0	0	100,000	0	0	8,000	0	0	8,000	0
NPTH	SpCS	DNFH	NPTH	Trans. to NPTH from DNFH-NPTH	200,000	Late Aug	1/7/2019	230,707	0	66,667	133,333	0	600	0	0	0	600
		LWS ¹		Trans. to NPTH from DNFH-Lolo Creek	180,000	Early Sept	1/7/2019	207,114	140,000	60,000	0	0	1,000	0	0	0	1,000
Totals					380,000			437,821	140,000	126,667	133,333	0	1,600	0	0	0	1,600
CFH	SpCS	SFCIw/LWS ¹	CFH	Red River	1,280,000	4/26-5/4	11/30/2018	1,148,248	1,028,248	120,000	0	0	17,100	5,100	12,000	0	0
		DNFH		NF Clearwater-CFH (Baffle)	389,000	5/14-6/8	11/30/2018	408,777	19,777	389,000	0	0	8,500	0	8,500	0	0
		DNFH/SFCIw ¹		NF Clearwater-CFH (Regular)	320,000	5/14-6/8	11/30/2018	213,327	213,327	0	0	8,600	0	8,600	0	0	
		LWS ¹		Selway River-Lower	400,000	5/14-6/8	11/30/2018	416,735	203,735	80,000	133,000	0	17,100	5,100	12,000	0	0
		KNFH/LWS ¹		Clear Creek	720,000	5/14-6/8	11/30/2018	659,541	539,541	120,000	0	0	9,800	3,500	6,300	0	0
Totals					3,109,000			2,846,628	2,004,628	709,000	133,000	0	61,100	13,700	47,400	0	0
Spring Grand Total					5,789,000			5,054,403	2,144,628	1,055,667	266,333	0	112,700	55,700	47,400	8,000	1,600
Summer																	
CFH	SuCS	Pow/SFSR	CFH	Powell Pond (SUM)	640,000	5/14-6/8	11/30/2018	823,037	291,519	120,000	120,000	291,519	25,500	13,500	12,000	0	0
Totals					640,000			823,037	291,519	120,000	120,000	291,519	25,500	13,500	12,000	0	0
Summer Grand Totals					640,000			823,037	291,519	120,000	120,000	291,519	25,500	13,500	12,000	0	0
Spring/Summer Grand Total					6,429,000			5,877,440	2,436,147	1,175,667	386,333	291,519	138,200	69,200	59,400	8,000	1,600

¹ LWS represents the Little White Salmon brood collection site

Table 2.4c. BY2018 PARR and PRE-SMOLT - Sp Chinook Salmon Inventory to Date by Projected Mark Type for release in 2019.

Hatchery Program	Run/ Life Stage	Brood Collection Site	Rearing Facility	Release Site	Inventory to Date		Projected Marking & Tagging				PIT Tags					
					Date	Total	Adipose Fin Clip		No Clip		Total # Tags	Funding Source				
							No CWT	CWT	CWT	No CWT		CSS	LSRCP	USFWS	BPA	
DHFH	Parr	LWS ¹	DNFH	Selway River-Upper	1/7/2019	331,918					0					
Total						331,918	0	0	0	0	0	0	0	0	0	0
NPTH	Pre-Smolt	NPTH/LWS ¹	NPTH	Newsome Cr (SF Clw)	1/3/2019	653,067	0	0	85,955	0	3,000	0	0	0	3,000	
	Pre-Smolt			Lolo Cr (SF Clw)			0	0	160,600	0	6,000	0	0	6,000		
	Parr			Meadow Cr (Selway)			0	0	0	406,512	5,000	0	0	5,000		
Total						653,067	0	0	246,555	406,512	14,000	0	0	14,000		
Spring Grand Total						984,985	0	0	246,555	406,512	14,000	0	0	14,000		

¹ LWS represents the Little White Salmon brood collection site

2.4.2. Early Rearing and Marking Plan for 2019 (Smolts BY 2018, Parr/Pre-Smolt BY2018) – NARRATIVE

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

- **Fish Health** - fish health issues, action taken and how was the treatment implemented, anticipated changes to normal fish health sampling or treatments
- **Fish feeding** - changes of diets of feed manufacturer, growth regimes etc.
- **Rearing conditions** - incubation, water temp, flow, rearing density changes
- **Marking** - e.g. schedule changes, planned changes to fish handling or movement, marking schedule, raceway loading for PBT etc.
- **Current Inventory** - . If projected marking lines up with the current inventory, then no comment is needed at this bullet (enter NC). If current inventory is significantly above or below the projected numbers, then explain why.

Plan for 2019 (Smolts BY 2018, Parr/Pre-Smolt BY2018)					
Release Location	Juvenile Fish Health	Fish Feeding	Rearing Conditions	Marking	Meets Release Target
<i>Dworshak National Fish Hatchery (SOP Section 2.2)</i>					
NF Clearwater-DNFH (Dwor)	Due to NF brood shortfall, this group will contain approximately 108K Little White eggs and 50K Kooskia eggs. Target release for BY 19 is expected to be 50K below full production direct release goal of 1.65M. US v OR direct release goal of 1.05M will be exclusively NF rack return progeny.	NC	LHO units were installed on B bank raceways. All DNFH SCS rearing units now have LHO units. Experimenting with raceway baffles for improved cleaning and reduced labor continues.	NC	Due to spring chinook brood shortage full direct release goal of 1.65M was decreased approximately 50K. USvOR goal of 1.05M will be met exclusively with North Fork rack return progeny.
Selway River Upper (Dwor-Parr)	Due to NF brood shortfall, this group will contain 100% Little White eggs.	NC	Same comment.	NC	NC
Nez Perce Tribal Hatchery (Dwor)	NC	NC	Same comment.	NC	NC
Lolo Creek (Dwor)	Due to NF brood shortfall, this group will contain 100% Little White eggs.	NC	Same comment.	NC	NC

Plan for 2019 (Smolts BY 2018, Parr/Pre-Smolt BY2018)					
Release Location	Juvenile Fish Health	Fish Feeding	Rearing Conditions	Marking	Meets Release Target
<i>Kooskia National Fish Hatchery (SOP Sections 2.3)</i>					
Kooskia National Fish Hatchery (Koos)				Marking of the BY 2018 fish will be done as they are moved from the vats to the Burrow ponds in early June by the NPT tagging team	
<i>Nez Perce Tribal Hatchery (SOP Section 2.4)</i>					
Lolo Creek (NPTH-Pre-Smolt)	Due to Clearwater brood shortfall, this group will contain 25% Little White eggs.	NC	NC	NC	NC
Newsome Creek (NPTH-Pre-Smolt)	NC	NC	NC	NC	NC
Meadow Creek Selway (NPTH-Parr)	Due to Clearwater brood shortfall, this group will contain 75% Little White eggs.	NC	NC	NC	NC
<i>Clearwater Fish Hatchery (SOP Sections 2.5)</i>					
Red River (SFClw/Koos/Dwor)	NC	NC	NC	NC	Due to BY2018 brood shortage, a smolt release of 1.1mil was allocated which is a reduction of 14% of the planned release
NF Clearwater - Baffle (Dwor)	NC	NC	NC	NC	NC

Plan for 2019 (Smolts BY 2018, Parr/Pre-Smolt BY2018)					
Release Location	Juvenile Fish Health	Fish Feeding	Rearing Conditions	Marking	Meets Release Target
NF Clearwater – Regular (Dwor)	NC	NC	NC	NC	Due to BY2018 brood shortage, a smolt release of 205K was allocated which is a reduction of 36% of the planned release
Selway River-Lower (Dwor)	NC	NC	NC	NC	NC
Clear Creek (Koos/Dwor)	NC	NC	NC	NC	Due to BY2018 brood shortage, a smolt release of 635K was allocated which is a reduction of 12% of the planned release
Powell (Pow/SFSR-Summer)	NC	A study is planned to compare feed conversions, lengths, weights and mortality of Chinook fed Bio Oregon and EWOS feed to determine cost effectiveness and performance of each feed. Approximately half will be fed Bio Oregon (4 Vats, 248k fish) and half fed EWOS (4 Vats, 248k each) for the entire feed cycle.	NC	NC	Due to BY2018 spring Chinook brood shortage, a smolt release of 790K was allocated which is a increase of 23% of the planned release

3. Coho Salmon

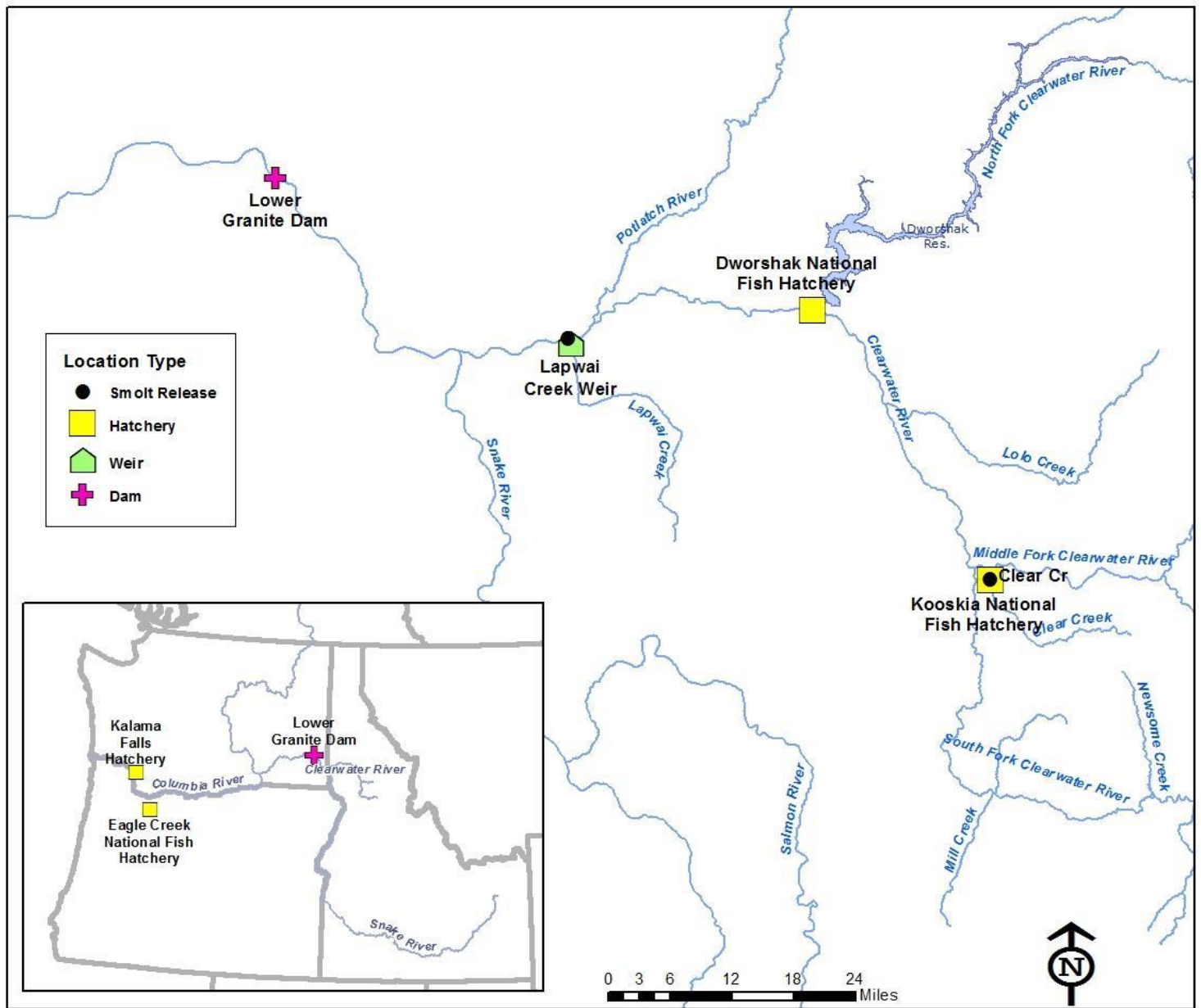


Figure 3.1. Coho trapping, hatchery facilities and smolt release locations.

Table 3.1. BY2017 SMOLTS - Coho Release Goals for 2019

Hatchery Program	Species	Brood Collection Site	Rearing Facility	Release Site	2019 Smolt Release Goal
NPT	Coho	LAP, DNFH, KNFH, LGR	DNFH	Clear Creek	400,000
Total					400,000
KAL	Coho	Kalama	DNFH	Clear Creek	100,000
Total					100,000
NPT	Coho	LAP, DNFH, KNFH, LGR	ECNFH	Lapwai Creek	275,000
	Coho			Clear Creek	275,000
Total					550,000
Grand Total					1,050,000

3.1. Timeline and Flowchart for Coho Production

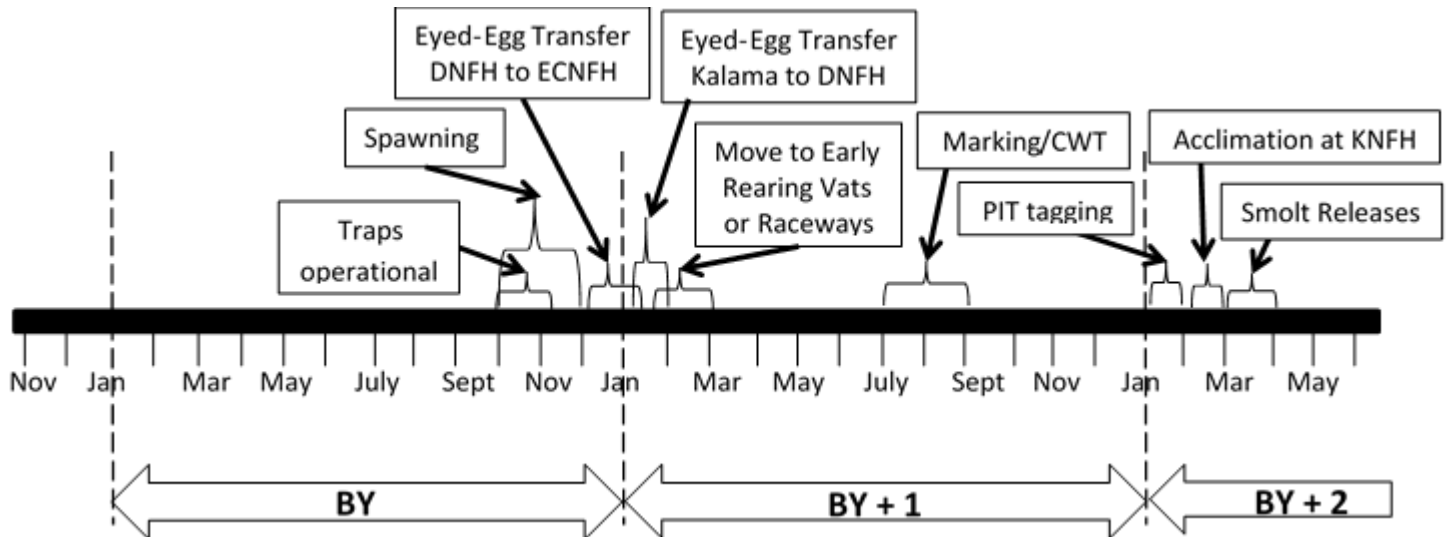


Figure 3.2. Timeline for Coho Production. Date ranges with black labels are shown to include all facilities' operations.

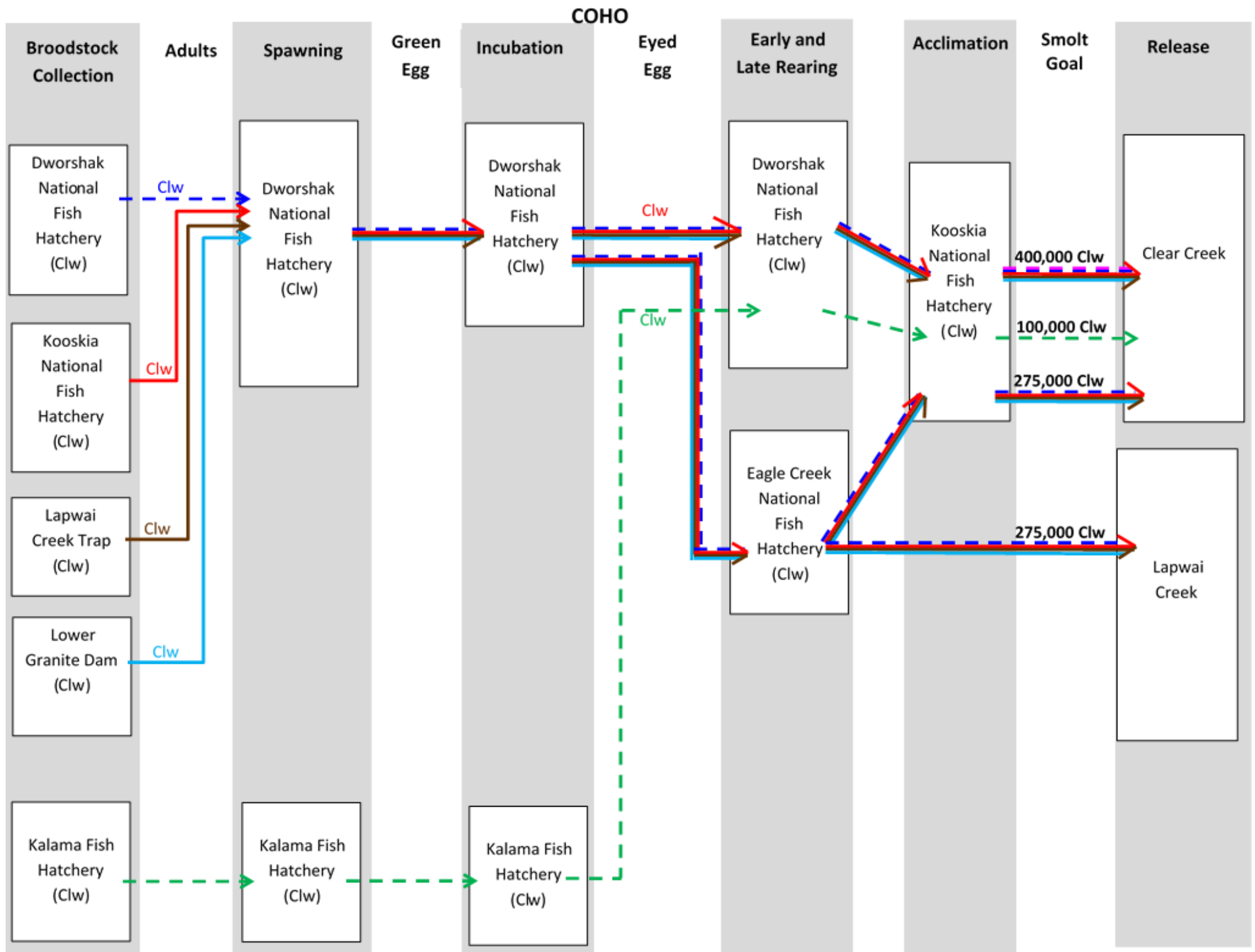


Figure 3.3. Coho movements in Clearwater. Numbers represent BY2019 releases.

3.2. Releases in 2019 (Smolt BY 2017)

3.2.1. Releases in 2019 (Smolt BY 2017) – Totals

Table 3.2a. BY2017 SMOLTS - Coho Salmon inventories by life stage, smolt release goals, and projected releases in 2019.

Rearing Facility	Species	Brood Collection Site	Rearing Facility	Release Site	Inventory To Date		Release Goals		Projected Smolt Release		
					Date	Number	Number	(FPP)	Dates	Number	(FPP)
NPT	Coho	LAP, DNFH, KNFH, LGR	DNFH	Clear Creek	1/11/2019	522,051	400,000	20.0	4/1/19	521,451	20.0
Total						522,051	400,000			521,451	
KAL	Coho	Kalama	DNFH	Clear Creek	1/11/2019	114,000	100,000	20.0	4/1/19	113,400	20.0
						114,000	100,000			113,400	
ECNFH	Coho	LAP, DNFH, KNFH, LGR	ECNFH	Lapwai Creek	1/9/2019	285,513	275,000	20.0	4/1/19	284,913	20.0
	Coho			Clear Creek	1/9/2019	341,574	275,000	20.0	4/1/19	340,974	20.0
Total						627,087	550,000			625,887	
Grand Total						1,263,138	1,050,000			1,260,738	

Table 3.2b. BY2017 SMOLTS - Coho Salmon Inventory to Date by Mark Type for release in 2019.

Rearing Facility	Species	Brood Collection Site	Rearing Facility	Release Site	Inventory to Date						PIT Tags				
					Date	Total	Adipose Fin Clip		No Clip		Total # Tags	Funding Source			
							No CWT	CWT	CWT	CWT		Mitchell Act	PCSRF	IPC	BPA
NPT	Coho	LAP, DNFH, KNFH, LGR	DNFH	Clear Creek	1/11/2019	522,051	0	0	103,705	418,346	5,000	5,000			
Total						522,051	0	0	103,705	418,346	5,000	5,000	0	0	0
KAL	Coho	Kalama	DNFH	Clear Creek	1/11/2019	114,000	0	0	100,582	13,418	0				
						114,000	0	0	100,582	13,418	0	0	0	0	0
ECNFH	Coho	LAP, DNFH, KNFH, LGR	ECNFH	Lapwai Creek	1/9/2019	285,513	0	0	114,482	171,031	5,000	5,000			
	Coho			Clear Creek	1/9/2019	341,574	0	0	113,790	227,784	5,000	5,000			
Total						627,087	0	0	228,272	398,815	10,000	10,000	0	0	0
Grand Total						1,263,138	0	0	432,559	830,579	15,000	15,000	0	0	0

3.2.2. Releases in 2019 (Smolt BY 2017) – Total

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

- **Smolt/Egg Release Targets-** e.g. were you below goal, was your size at release different than SOP target etc.
- **Fish/Egg Health-** any epizootic history, anti-biotic treatments, was production culled at any point
- **Transportation/Releases-** e.g. timing, trucking issues, site access etc.

	Plan for 2019		Changes/Conditions that Occurred 2018-Early 2019		
Location	Release Target Smolt BY17	Transport/Release Smolt BY17	Fish Feeding Smolt BY17	Fish/Egg Health Smolt BY17	Marking Smolt BY17
<i>Dworshak National Fish Hatchery (SOP Section 3.2)</i>					
Clear Creek - DNFH (Clw)					
<i>Cascade Fish Hatchery (SOP Section 3.2)</i>					
Lapwai Creek (Clw)					
<i>Eagle Creek National Fish Hatchery (SOP Section 3.3)</i>					
Lapwai Creek (Clw)					
Clear Creek (Clw)					

3.3. Trap Operations and Production Planning for 2019 (Smolt BY 2019)

3.3.1. Trap Operations and Production Planning for 2019 (Smolt BY 2019) – TOTALS

Table 3.3a. BY 2019 SMOLTS - Coho Smolt Production Goals for Release in 2021.

Hatchery Program	Species	Brood Collection Site	Rearing Facility	Release Site	2021 Smolt Release Goal
NPT	Coho	LAP, DNFH, KNFH, LGR	DNFH	Clear Creek	400,000
Total					400,000
KAL	Coho	Kalama	DNFH	Clear Creek	100,000
					100,000
NPT	Coho	LAP, DNFH, KNFH, LGR	ECNFH	Lapwai Creek	275,000
	Coho			Clear Creek	275,000
Total					550,000
Grand Total					1,050,000

3.3.2. Trap Operations and Production Planning for 2019 (Smolts BY 2019) – NARRATIVE

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

	Plan for 2019 (BY 2019)				
Location	Adult Fish Health	Trap Ops	Production target changes	Spawning protocol changes	Disposition of adults
<i>Primary Trapping Facilities (SOP Section 3.2) ¹</i>					
Kooskia National Fish Hatchery Trap (Clw)					
Lapwai Creek Trap (Clw)					
<i>Secondary Trapping Facilities (SOP Section 3.2) ¹</i>					
Dworshak National Fish Hatchery Trap (Clw)					
Lower Granite Dam (Clw)					

¹ If broodstock collection at primary and secondary traps is short of goals, green eggs from Eagle Creek National Fish hatchery and/or Kalama Fish Hatchery may be used.

3.4. Early Rearing and Marking Plan for 2019 (Smolts BY 2018)

BY2018 SMOLTS - Coho Release Goals for 2020

Hatchery Program	Species	Brood Collection Site	Rearing Facility	Release Site	2020 Smolt Release Goal
NPT	Coho	LAP, DNFH, KNFH, LGR	DNFH	Clear Creek	400,000
Total					400,000
KAL	Coho	Kalama	DNFH	Clear Creek	100,000
					100,000
NPT	Coho	LAP, DNFH, KNFH, LGR	ECNFH	Lapwai Creek	275,000
	Coho			Clear Creek	275,000
Total					550,000
Grand Total					1,050,000

3.4.1. Early Rearing and Marking Plan for 2019 (Smolts BY 2018) – TOTALS

Table 3.4a. BY 2018 Coho - Early Rearing Inventory (including anticipated set out)

Rearing Hatchery	Species	Stock	Inventory to Date		
			Date	Goal ¹	Actual
DNFH	Coho	Clw	1/10	400,000	636,512
DNFH	Coho	Kal	1/10	100,000	150,000
ECNFH	Coho	Clw	1/10	550,000	619,500

¹ Estimated fish needed in vats to reach eventual smolt release goals, based on brood calculator

Table 3.4b. BY 2018 SMOLTS - Coho Projected Marking of BY 2018 fish in 2019

Hatchery Program	Species	Brood Collection Site	Rearing Facility	Release Site	Likely Marking Date(s)	Release Goals for 2020	Inventory to Date		Projected Marking				PIT Tags ¹				
							Date	Number	Adipose Fin Clip		No Clip		Total # Tags	Funding Source			
									No CWT	CWT	CWT	No CWT		Mitchell Act	LSRCP	IPC	BPA
NPT	Coho	LAP, DNFH, KNFH, LGR	DNFH	Clear Creek		400,000	1/10/2019	636,512	0	0	100,000	300,000	5,000	5,000	0	0	0
Total						400,000		636,512	0	0	100,000	300,000	5,000	5,000	0	0	0
KAL	Coho	Kalama	DNFH	Clear Creek		100,000	1/10/2019	150,000			100,000	0	0				
Total						100,000		150,000	0	0	100,000	0	0	0	0	0	0
NPT	Coho	LAP, DNFH, KNFH, LGR	ECNFH	Lapwai Creek		275,000	1/10/2019	309,750	0	0	100,000	175,000	5,000	5,000	0	0	0
	Coho			Clear Creek		275,000	1/10/2019	309,750	0	0	100,000	175,000	5,000	5,000	0	0	0
Total						550,000		619,500	0	0	200,000	350,000	10,000	10,000	0	0	0
Grand Total						1,050,000		1,406,012	0	0	400,000	650,000	15,000	15,000	0	0	0

¹ PIT Tagging occurs in spring 2020

3.4.2. Early Rearing and Marking Plan for 2019 (Smolts BY 2018) – NARRATIVE

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

- **Fish Health** - observed fish health issues, what action was taken and how was the treatment implemented, anticipated changes to normal fish health sampling or treatments
- **Fish feeding** - changes of diets of feed manufacturer, growth regimes etc.
- **Rearing conditions** - incubation, water temp, flow, rearing density changes
- **Marking** - e.g. schedule changes, planned changes to fish handling or movement, marking schedule, raceway loading for PBT etc.
- **Current Inventory** - . If projected marking lines up with the current inventory, then no comment is needed at this bullet (enter NC). If current inventory is significantly above or below the projected numbers, then explain why.

Release Location	Plan for 2019 (Smolts BY 2018)				
	Juvenile Fish Health	Fish Feeding	Rearing Conditions	Marking	Meets Release Target
<i>Dworshak National Fish Hatchery (SOP Section 3.2)</i>					
Clear Creek - DNFH (Clw/Kal)					
<i>Eagle Creek National Fish Hatchery (SOP Sections 3.3)</i>					
Clear Creek (Clw)					
Lapwai Creek (Clw)					

4. Fall Chinook

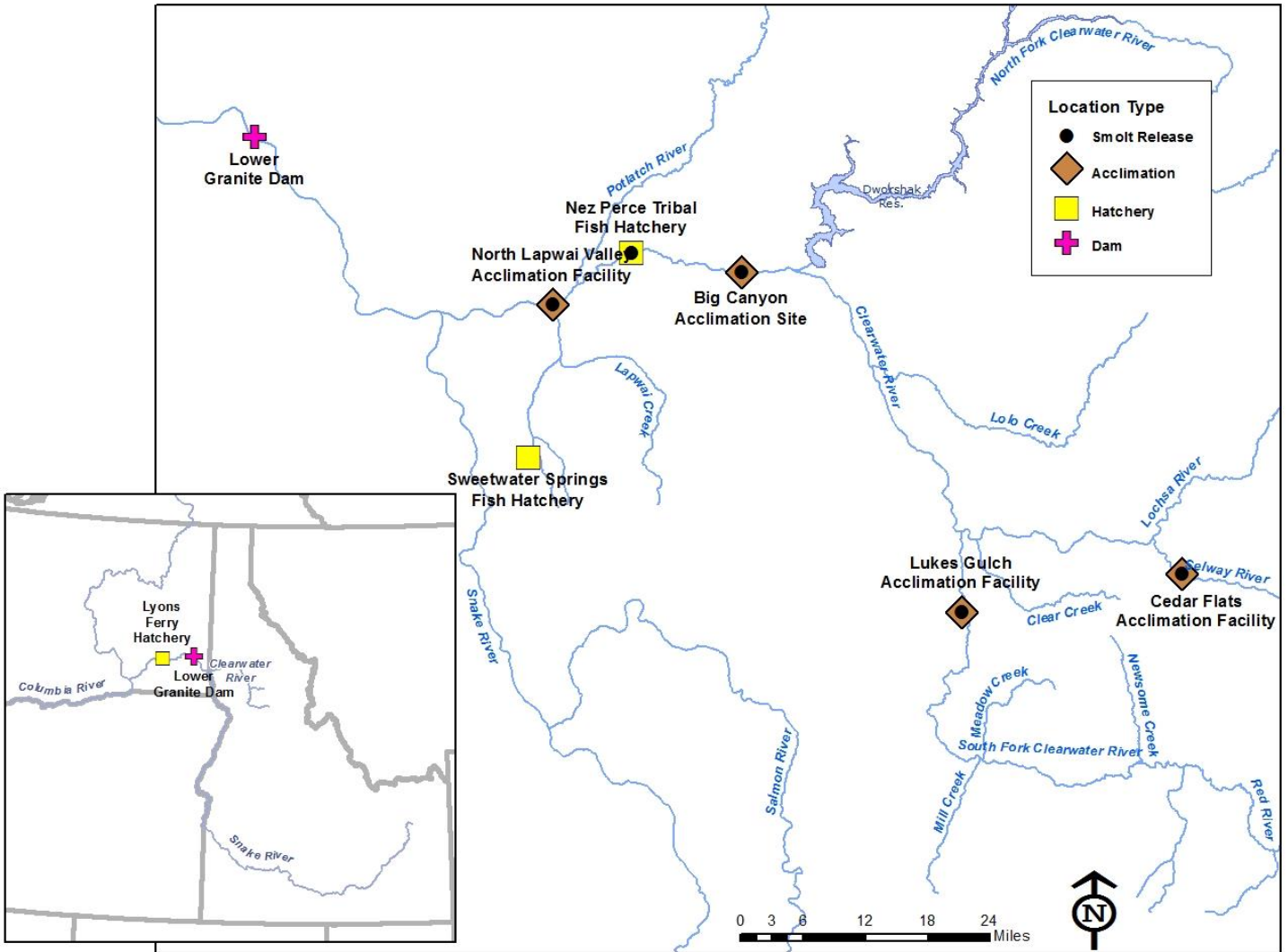


Figure 4.1. Fall Chinook Salmon hatchery and acclimation facilities, and sub-yearling and yearling release locations.

Table 4.1. Fall Chinook Goals for Release in 2019

BY2018 SUB-YEARLINGS

Hatchery Program	Brood Collection Site	Rearing Facility	Release Site	Sub-Yearling Release Goal
NPT	SnakeR	Lyons Ferry	Big Canyon Creek ¹	450,000
				200,000
Total				650,000
NPT	SnakeR	NPTH	NPTH	500,000
	SnakeR		N Lapwai Valley	200,000
	SnakeR		Lukes Gulch	350,000
	SnakeR		Cedar Flats	350,000
Total				1,400,000
Grand Total				2,050,000

BY2017 YEARLINGS

Hatchery Program	Brood Collection Site	Rearing Facility	Release Site	Yearling Release Goal
NPT	SnakeR	Lyons Ferry	Big Canyon Creek	150,000
Total				150,000
Grand Total				150,000

¹ Two separate release goals at Big Canyon Creek (different release dates)

4.1. Timeline and Flowchart for Fall Chinook Production

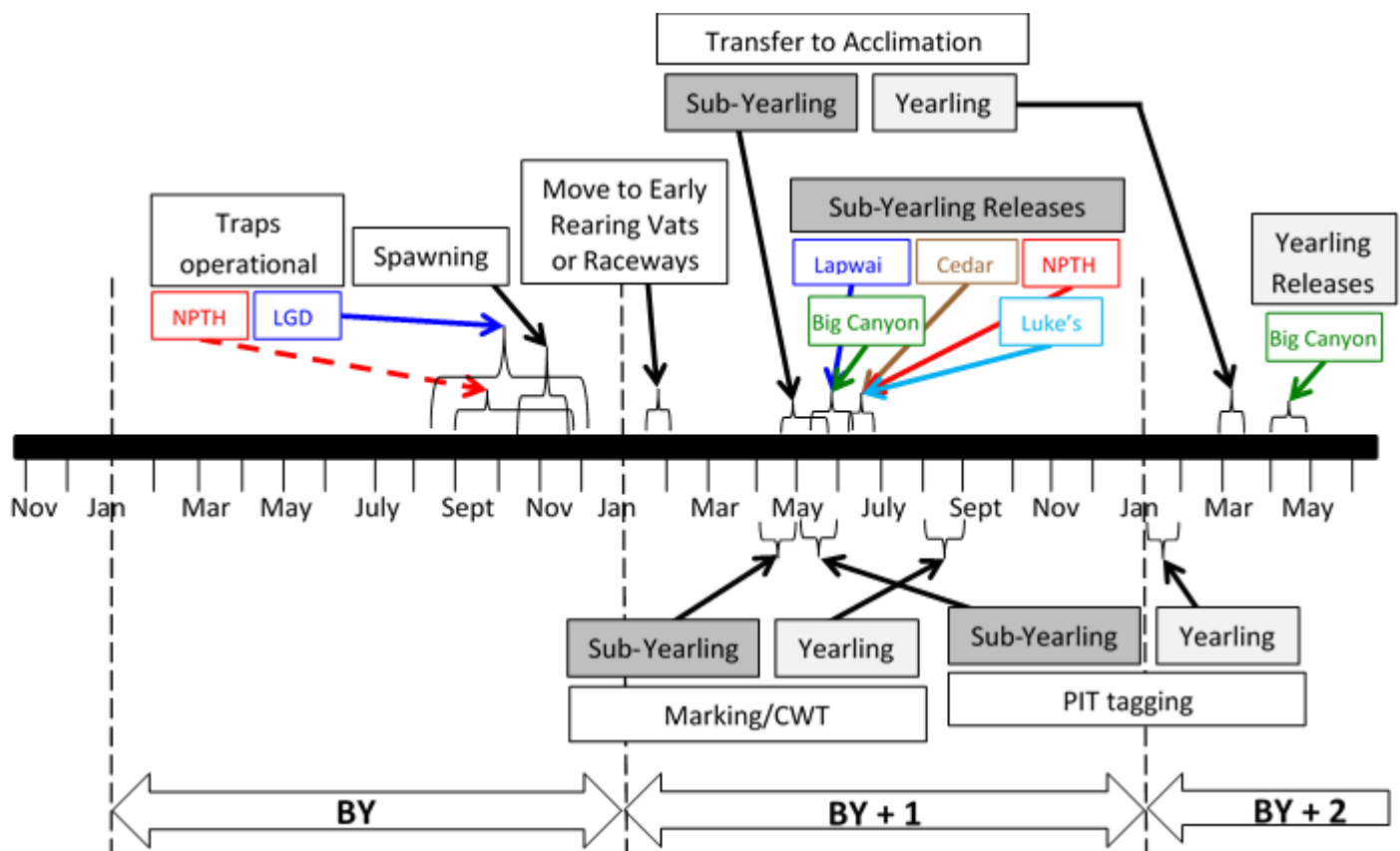


Figure 4.2. Timeline for Fall Chinook Production. Date ranges with black labels are shown to include all facilities' operations. Color-coded labels identify activities that have variability in timing for the different facilities.

FALL CHINOOK

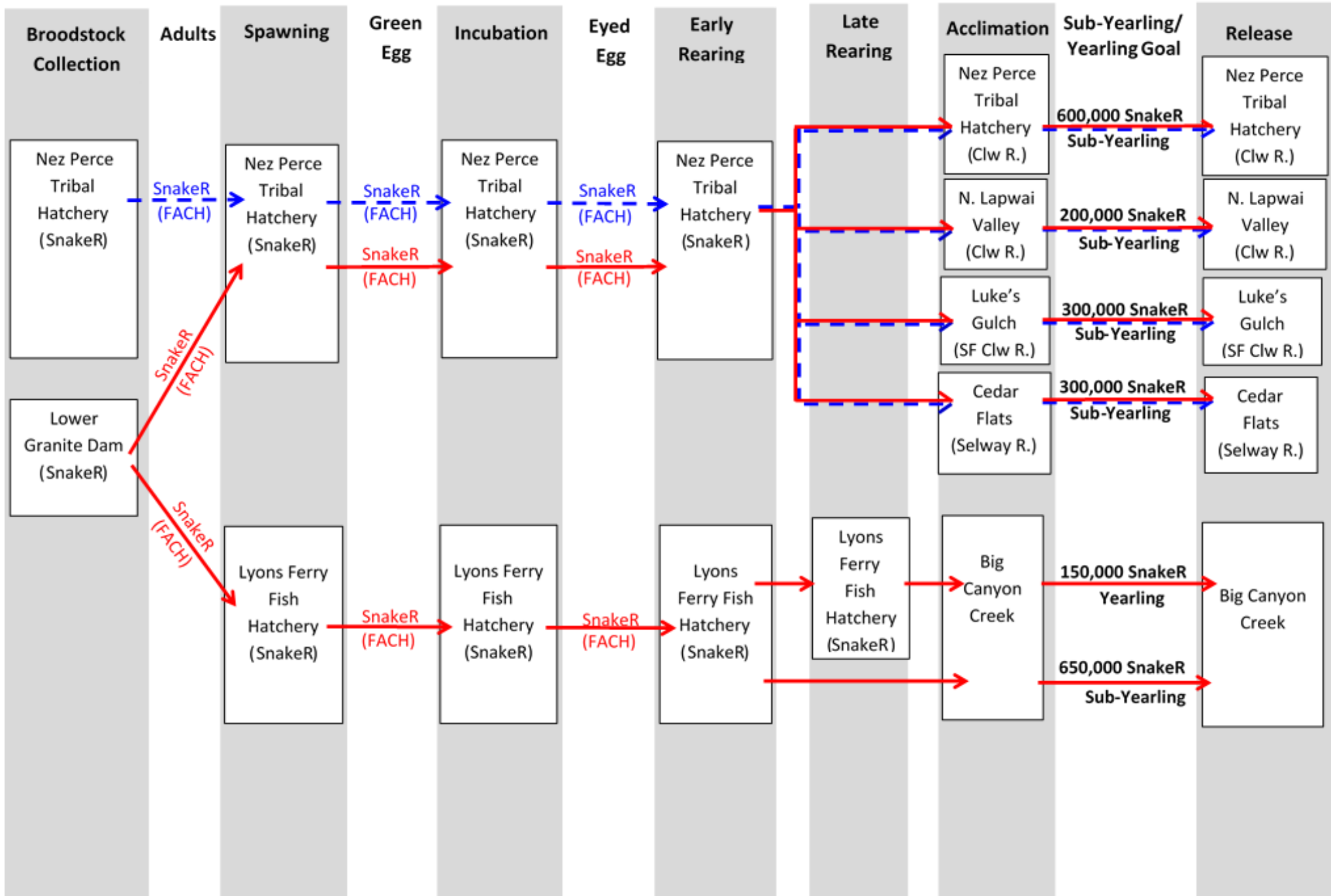


Figure 4.3. Fall Chinook movements in Clearwater. Numbers represent 2019 releases.

4.2. Releases in 2019 (Sub-Yearling BY 2018, Yearling BY 2017)

4.2.1. Releases in 2019 (Sub-Yearling BY 2018, Yearling BY 2017) – Totals

Table 4.2a. BY2017 YEARLINGS - Fall Chinook Salmon inventories by life stage, smolts release goals and projected releases in 2019.

Hatchery Prtogram	Species	Brood Collection Site	Rearing Facility	Release Site	Inventory To Date		Release Goals		Projected Parr and Pre-Smolt Release		
					Date	Number	Number	(FPP)	Dates	Number	(FPP)
NPT	FACH	SnakeR	Lyons Ferry	Big Canyon Creek	1/7/2019	152,102	150,000	10	4/2/2019	151,000	10.0
Total						152,102	150,000			151,000	
Grand Total						152,102	150,000			151,000	

Table 4.2b. BY2017 YEARLINGS - Fall Chinook Salmon Inventory to Date by Mark Type for release in 2019.

Rearing Facility	Species	Brood Collection Site	Rearing Facility	Release Site	Date	Total	Inventory to Date				Total # Tags	PIT Tags			
							Adipose Fin Clip		No Clip			Funding Source			
							No CWT	CWT	CWT	No CWT		CSS	LSRCP	IPC	BPA
NPT	FACH	SnakeR	Lyons Ferry	Big Canyon Creek	1/7/2019	152,102	1,801	66,766	82,742	793	1,500	0	0	0	1,500
Total						152,102	1,801	66,766	82,742	793	1,500	0	0	0	1,500
Grand Total						152,102	1,801	66,766	82,742	793	1,500	0	0	0	1,500

Table 4.2c. BY2018 SUB-YEARLINGS - Fall Chinook Salmon inventories by life stage, smolts release goals and projected releases in 2019.

Hatchery Prtogram	Species	Brood Collection Site	Rearing Facility	Release Site	Inventory To Date		Release Goals		Projected Sub-Yearling Release		
					Date	Number	Number	(FPP)	Dates	Number	(FPP)
NPT	FACH	SnakeR	Lyons Ferry	Big Canyon Creek ¹	1/2/2019	454,000	450,000	50.0	5/16/2019	450,000	50.0
					1/2/2019	203,000	200,000	50.0	6/5/2019	200,000	50.0
Total						657,000	650,000			650,000	
NPT	FACH	SnakeR	NPTH	NPTH	1/2/2019	509,965	500,000	50.0	6/13/2019	500,000	50.0
	FACH	SnakeR		N Lapwai Valley	1/2/2019	200,000	200,000	50.0	6/14/2019	200,000	50.0
	FACH	SnakeR		Lukes Gulch	1/2/2019	300,000	350,000	50.0	6/11/2019	300,000	50.0
	FACH	SnakeR		Cedar Flats	1/2/2019	300,000	350,000	50.0	6/12/2019	300,000	50.0
Total						1,309,965	1,400,000			1,300,000	
Grand Total						1,966,965	2,050,000			1,950,000	

¹ Two separate release goals at Big Canyon Creek (different release dates)

Table 4.2d. BY2018 SUB-YEARLINGS - Fall Chinook Salmon Inventory to Date by Mark Type for release in 2019.

Hatchery Program	Species	Brood Collection Site	Rearing Facility	Release Site	Inventory to Date						PIT Tags				
					Date	Total	Adipose Fin Clip		No Clip		Total # Tags	Funding Source			
							No CWT	CWT	CWT	No CWT		CSS	LSRCP	IPC	BPA
NPT	FACH	SnakeR	Lyons Ferry	Big Canyon Creek ¹	1/2/2019	454,000	0	200,000	0	254,000	11,000	11,000	0	0	0
					1/2/2019	203,000	0	203,000	0	0	4,000	0	0	0	4,000
Total						657,000	0	403,000	0	254,000	15,000	11,000	0	0	4,000
NPT	FACH	SnakeR	NPTH	NPTH	1/2/2019	509,965	0	100,000	0	409,965	4,500	0	0	0	4,500
	FACH	SnakeR		N Lapwai Valley	1/2/2019	200,000	0	100,000	0	100,000	4,500	0	0	0	4,500
	FACH	SnakeR		Lukes Gulch	1/2/2019	300,000	0	100,000	0	200,000	4,500	0	0	0	4,500
	FACH	SnakeR		Cedar Flats	1/2/2019	300,000	0	100,000	0	200,000	4,500	0	0	0	4,500
Total						1,309,965	0	400,000	0	909,965	18,000	0	0	0	18,000
Grand Total						1,966,965	0	803,000	0	1,163,965	33,000	11,000	0	0	22,000

¹Projected marking numbers because marking/tagging occurs in April/May

4.2.2. Releases in 2019 (Sub-Yearling BY 2018, Yearling BY 2017) - Narrative

Here are examples of things managers talk about for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

- **Smolt Release Targets-** e.g. Were you below goal? Was you size at release different than SOP target? Did you depart from the mark plan?
- **Fish Health-** any epizootic history, anti-biotic treatments, was production culled at any point
- **Transportation/Releases-** e.g. timing, trucking issues, site access etc.

Release Location	Plan for 2019		Changes/Conditions that Occurred 2018-Early 2019		
	Release Target Yrlng BY17, Sub-Yrlng BY18	Transport/Release Yrlng BY17, Sub-Yrlng BY18	Fish Feeding Yrlng BY17, Sub-Yrlng BY18	Fish/Egg Health Yrlng BY17, Sub-Yrlng BY18	Marking Yrlng BY17, Sub-Yrlng BY18
<i>Nez Perce Tribal Hatchery (SOP Section 4.2)</i>					
Nez Perce Tribal Hatchery (Clw R.)	NC	NC	NC	Suggested location for release of 70K unmarked juveniles with ELISA OD values 0.250-0.500	marking goal renegotiated in 2018, new marking schedule reflected in tables and SOP

Release Location	Plan for 2019		Changes/Conditions that Occurred 2018-Early 2019		
	Release Target Yrlng BY17, Sub-Yrlng BY18	Transport/Release Yrlng BY17, Sub-Yrlng BY18	Fish Feeding Yrlng BY17, Sub-Yrlng BY18	Fish/Egg Health Yrlng BY17, Sub-Yrlng BY18	Marking Yrlng BY17, Sub-Yrlng BY18
N. Lapwai Valley (Clw R.)	Release goals renegotiated in 2018, new release goals reflected in tables and SOP	Release goals renegotiated in 2018, new release and transport schedule reflected in tables and SOP	NC		marking goal renegotiated in 2018, new marking schedule reflected in tables and SOP
Luke's Gulch (SF Clw R.)	Release goals renegotiated in 2018, new release goals reflected in tables and SOP	Release goals renegotiated in 2018, new release and transport schedule reflected in tables and SOP	NC	NC	marking goal renegotiated in 2018, new marking schedule reflected in tables and SOP
Cedar Flats (Selway R.)	Release goals renegotiated in 2018, new release goals reflected in tables and SOP	Release goals renegotiated in 2018, new release and transport schedule reflected in tables and SOP	NC	NC	marking goal renegotiated in 2018, new marking schedule reflected in tables and SOP
<i>Lyons Ferry Fish Hatchery (SOP Section 4.3)</i>					
Big Canyon Creek Sub-Yearling	Release goals renegotiated in 2018, new release goals reflected in tables and SOP	Release goals renegotiated in 2018, new release and transport schedule reflected in tables and SOP	NC	NC	marking goal renegotiated in 2018, new marking schedule reflected in tables and SOP
Big Canyon Creek Yearling	NC	NC	NC	NC	Due to emergency situation at Lyons Ferry, Big Canyon fish had to be mixed (after marking) into a single pond with 2 other release groups. CWT codes and PBT groups are mixed and evaluations back to release sites will not be possible.

4.3. Trap Operations and Production Planning for 2019 (Sub-Yearling and Yearling BY 2019)

4.3.1. Trap Operations and Production Planning for 2019 (Sub-Yearling and Yearling BY 2019) – TOTALS

Table 4.3a. BY 2019 SUB-YEARLINGS - Fall Chinook Production Goals for Release in 2020

Hatchery Program	Species	Brood Collection Site	Rearing Facility	Release Site	2020 Sub-Yearling Release Goal
NPT	FACH	SnakeR	Lyons Ferry	Big Canyon Creek ¹	450,000
					200,000
Total					650,000
	FACH	Snake R.	NPTH	NPTH	500,000
	FACH	Snake R.		N Lapwai Valley	200,000
	FACH	Snake R.		Lukes Gulch	350,000
	FACH	Snake R.		Cedar Flats	350,000
Total					1,400,000
Grand Total					2,050,000

¹ Two separate release goals at Big Canyon Creek (different release dates)

4.3.2. Trap Operations and Production Planning for 2019 (Sub-Yearling and Yearling BY 2019) – NARRATIVE

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

Plan for 2019 (BY 2019)					
Rearing Location	Adult Fish Health	Trap Ops	Production target changes	Spawning protocol changes	Disposition of adults
<i>Lower Granite Dam Ladder/Trap (SOP Sections 4.2 and 4.3)</i>					
Nez Perce Tribal Hatchery (SnakeR)	NC	NC	NC	NC	NC
Lyons Ferry Fish Hatchery – Sub-Yearling (SnakeR)	NC	NC	NC	NC	NC

	Plan for 2019 (BY 2019)				
Rearing Location	Adult Fish Health	Trap Ops	Production target changes	Spawning protocol changes	Disposition of adults
Lyons Ferry Fish Hatchery – Yearling (SnakeR)	NC	NC	NC	NC	NC
<i>Nez Perce Tribal Hatchery Trap (SOP Section 4.2)</i>					
Nez Perce Tribal Hatchery (SnakeR)	NC	NC	NC	NC	NC

4.4. Early Rearing and Marking Plan for 2019 (Sub-Yearling BY 2018, Yearling BY 2018)

4.4.1. Early Rearing and Marking Plan for 2019 (Sub-Yearling BY 2018, Yearling BY 2018) – NARRATIVE

Here are examples of things managers were instructed to discuss for each release group, if there are departures from the norm (i.e., SOP). If no departure from the norm, enter NC for “No Change”.

- **Fish Health** - fish health issues, action taken and how was the treatment implemented, anticipated changes to normal fish health sampling or treatments
- **Fish feeding** - changes of diets of feed manufacturer, growth regimes etc.
- **Rearing conditions** - incubation, water temp, flow, rearing density changes
- **Marking** - e.g. schedule changes, planned changes to fish handling or movement, marking schedule, raceway loading for PBT etc.
- **Current Inventory** - . If projected marking lines up with the current inventory, then no comment is needed at this bullet (enter NC). If current inventory is significantly above or below the projected numbers, then explain why.

	Plan for 2019 (Sub-Yearling BY 2018 and Yearling BY 2018)				
Release Location	Juvenile Fish Health	Fish Feeding	Rearing Conditions	Marking	Meets Release Target
<i>Nez Perce Tribal Hatchery (SOP Section 4.2)</i>					
Nez Perce Tribal Hatchery (Clw R.)	NC	NC	NC	NC	NC
N. Lapwai Valley (Clw R.)	NC	NC	NC	NC	NC
Luke’s Gulch (SF Clw R.)	NC	NC	NC	NC	NC
Cedar Flats (Selway R.)	NC	NC	NC	NC	NC
<i>Lyons Ferry Fish Hatchery (SOP Sections 4.3)</i>					
Big Canyon Creek Sub-Yearling	NC	NC	NC	NC	NC
Big Canyon Creek Yearling	Yearling production is discontinued from BY 2018 on	Yearling production is discontinued from BY 2018 on	Yearling production is discontinued from BY 2018 on	Yearling production is discontinued from BY 2018 on	Yearling production is discontinued from BY 2018 on

5. Lamprey

5.1. Releases in 2019 - Narrative

. Largest quantity of adults collected from three Columbia River dams (1,166) allows volitional movement study of overwintered adults to tributaries to spawn and movements of new summer migrants to overwintering locations as well as larger quantities of release groups into target release streams.

- **Release Targets-** Release group numbers will be well above average. Marking will be a small group of winter fish (30) and summer fish (10) radio-tagged by USFWS
- **Fish Health-** low summer mortality associated with dam passage and transport; no mortality from overwintering in tanks at NPTH
- **Transportation/Releases-** Typically wait for snow removal to gain access to some sites (SF Salmon, Secesh, Johnson Creek, Lolo Creek, Newsome Creek)

Release Location	Plan for 2019		Changes/Conditions that Occurred 2018-Early 2019		
	Release Target	Transport/Release	Fish Feeding	Fish Health	Marking
<i>Nez Perce Tribal Hatchery (SOP Section 5.1)</i>					
Lolo Creek	100	NPT / May 2019	Overwinter; no feeding	summer 29; winter 0	None
Orofino Creek	100	NPT / April 2019	Overwinter; no feeding	summer 29; winter 0	None
Newsome Creek	100	NPT / May 2019	Overwinter; no feeding	summer 29; winter 0	None
Red River	100	NPT / May 2019	Overwinter; no feeding	summer 29; winter 0	None
Big Canyon Creek	26	NPT / May 2019	Overwinter; no feeding	summer 29; winter 0	None
SF Salmon River	100	NPT / May 2019	Overwinter; no feeding	summer 29; winter 0	None
Johnson Creek	100	NPT / May 2019	Overwinter; no feeding	summer 29; winter 0	None
Asotin Creek	100	NPT / April 2019	Overwinter; no feeding	summer 29; winter 0	None
Wallowa River	100	NPT / April 2019	Overwinter; no feeding	summer 29; winter 0	None
Minam River	100	NPT / April 2019	Overwinter; no feeding	summer 29; winter 0	None
Secesh River	100	NPT / May 2019	Overwinter; no feeding	summer 29; winter 0	None
Joseph Creek	100	NPT / April 2019	Overwinter; no feeding	summer 29; winter 0	None
Mainstem Clearwater River	30 early release Feb;NPTH 10 summer fish; Lochsa	USFWS volitional movement study of trib spawn, owinter	Overwinter; no feeding	summer 29; winter 0	2018 PIT 212 early release Lenore R.A.; 2019 Radio tag

5.2. Trap Operations for 2019

5.2.1. Trap Operations for 2019 - Narrative

This year’s total CRITFC summer translocation trapping allocation of 3,911 lamprey per tribe similar to last year’s number.

	Plan for 2019				
Trapping Location	Adult Fish Health	Trap Ops	Trapping target changes	Holding protocol changes	Disposition of adults
<i>Primary Trapping Facilities (SOP Sections 5.1)</i>					
Bonneville Dam			2,083		
John Day Dam			798		
The Dalles Dam			1,030		

6. Appendices

6.1. Clearwater Brood Calculators

6.1.1. FULL PRODUCTION Brood Calculator

PROGRAM INPUTS				HISTORICAL HATCHERY PERFORMANCE METRICS (5-YR AVG)									FORM CALCULATED VALUES											
SPECIES	HATCHERY	PROGRAM	Life Stage	PREFERRED TRAPPING SITE	FORMAL RELEASE GOAL (F)	COMANAGER APPROVED CUSHION % (1)	% FEMALES IN BROODSTOCK (H)	% MORTALITY DURING HOLDING (I)	GREEN EGG FECUNDITY (J)	% REMAINING AFTER DISEASE CULLING (2)	% SURVIVAL GREEN TO EYED EGG (L)	% SURVIVAL EYED EGG TO RELEASE (M)	RELEASE GOAL WITH CUSHION (N)	EYED EGGS (O)	GREEN EGGS (P)	GREEN EGGS BEFORE DISEASE CULL (Q)	FEMALES SPAWNED (R)	MALES SPAWNED (S)	TOTAL ADULTS SPAWNED (T)	TRAPPED ADULTS NEEDED (U)	ADULTS TRAPPED TO MEET 1:1 RATIO (V)	SMOLTS PER TRAPPED ADULTS NEEDED (W)	NOTE #	
STLHD	DNFH	MS Clearwater at DNFH		DNFH	1,200,000	2%	50.0%	3.9%	6,796	85.0%	90.2%	85.3%	1,224,000	1,434,936	1,590,838	1,871,574	276	276	552	575	575	2,129		
		Red House Hole - SF Clw		SFClw Angler	400,000	3%	50.0%	3.9%	6,796	85.0%	90.2%	85.3%	412,000	483,001	535,478	629,974	93	93	186	194	194	2,124		
		Clear Creek		DNFH	300,000	2%	50.0%	3.9%	6,796	85.0%	90.2%	85.3%	306,000	358,734	397,709	467,893	69	69	138	144	144	2,125		
		Lolo Creek		DNFH	200,000	2%	50.0%	3.9%	6,796	85.0%	90.2%	85.3%	204,000	239,156	265,140	311,929	46	46	92	96	96	2,125		
	MVH	Salmon River		DNFH	93,000	5%	50.0%	3.5%	6,681	100.0%	84.0%	85.0%	97,650	114,882	136,765	136,765	21	21	42	44	44	2,219		
CFH	Clearwater		SFCLW	843,000	3%	50.0%	3.5%	6,900	100.0%	87.7%	84.0%	868,290	1,033,679	1,178,653	1,178,653	171	171	342	355	355	2,446			
SP/SU CHIN	DNFH	NF Clearwater (DNFH)		DNFH	1,650,000	2%	54.0%	8.7%	3,973	90.2%	95.0%	90.3%	1,683,673	1,864,533	1,962,667	2,175,905	548	467	1,015	1,112	1,305	1,514	(3)	
		Selway River-Upper	Parr	DNFH	300,000	2%	54.0%	8.7%	3,973	90.2%	95.0%	90.3%	306,122	339,006	356,848	395,619	100	85	185	203	239	1,508		
		Trans. to NPTH-NPTH		DNFH	200,000	2%	54.0%	8.7%	3,973	90.2%	95.0%	90.3%	204,082	226,004	237,899	263,746	67	57	124	136	160	1,501		
		Trans. to NPTH-Lolo Creek		DNFH	180,000	2%	54.0%	8.7%	3,973	90.2%	95.0%	90.3%	183,673	203,404	214,109	237,371	60	51	111	122	143	1,506	(4)	
	KNFH	Kooskia NFH		KNFH	650,000	10%	50.0%	12.1%	3,661	88.2%	93.1%	88.6%	722,222	815,149	875,563	993,040	272	272	544	619	619	1,167		
	CFH	Red River		SFClw	1,280,000	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	1,280,000	1,333,333	1,418,440	1,541,782	398	398	796	838	838	1,527		
		Selway River-Lower		DNFH	400,000	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	400,000	416,667	443,262	481,807	125	125	250	264	264	1,515		
		Clear Creek		KNFH/DNFH	720,000	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	720,000	750,000	797,872	867,253	224	224	448	472	472	1,525		
		NF Clearwater-CFH (Baffle)		DNFH	389,000	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	389,000	405,208	431,073	468,557	121	121	242	255	255	1,525	(5)	
		NF Clearwater-CFH (Regular)		DNFH	320,000	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	320,000	333,333	354,610	385,446	100	100	200	211	211	1,517	(6)	
		Powell Pond (SUM)		Pow/SFSR	640,000	0%	50.0%	5.0%	3,980	92.0%	88.0%	96.0%	640,000	666,667	757,576	823,452	207	207	414	436	436	1,468	(7)	
	NPTHC	Lolo Cr (Clw)	Pre-Smolt	NPTHC	150,000	1%	50.0%	7.0%	4,053	88.0%	85.0%	91.0%	151,515	166,500	195,883	222,594	55	55	110	119	119	1,273		
		Newsome Cr (SF Clw)	Pre-Smolt	NPTHC	75,000	1%	50.0%	7.0%	4,053	88.0%	85.0%	91.0%	75,758	83,250	97,941	111,297	28	28	56	61	61	1,242		
Meadow Cr (Selway)		Parr	NPTHC	400,000	1%	50.0%	7.0%	4,053	88.0%	85.0%	91.0%	404,040	444,000	522,353	593,583	147	147	294	317	317	1,275			
FACH	NPTHC	Snake River		LGD/NPTH	1,400,000	1%	50.0%	25.0%	3,955	94.0%	89.0%	96.0%	1,414,000	1,472,917	1,654,963	1,760,598	446	446	892	1,190	1,190	1,188		
COHO	DNFH	Clearwater			500,000	10%	51.0%	16.0%	2,505	94.3%	88.1%	83.6%	550,000	658,210	747,371	792,546	317	305	622	740	771	743		
	ECFH	Clearwater			550,000	10%	51.0%	16.0%	2,505	94.3%	88.1%	83.6%	605,000	724,031	822,108	871,801	349	335	684	815	848	742		
													CELL FORMULAS	F*(1+G)	N/(M)	O/(L)	P/(K)	ROUNDUP (Q/J),0	R/(H)-R	R+S	ROUNDUP (T/(U-1),0)	ROUNDUP(R/(V-1-H)/(1-I),0)	N/U	

(1) In the 2013 AOP process, the co-managers approved a 10% cushion to meet release targets

(2) Culling of eggs for BKD, IHN, etc.

(3) Includes the New Production started in BY2015. Added production by increasing densities to 65k in all B-Bank rcwys.

(4) New production started in BY2015, Lolo release group.

(5) NEW PRODUCTION in 2015. First timing rearing smolt in the adult holding ponds

(6) NEW PRODUCTION in 2015. Increasing rearing densities across raceways and spreading the new smolts across release groups

(7) Powell is not a US v OR program; however we will target 640,000 summer Chinook smolts even if the spring Chinook production target is set at the base US v OR level.

6.1.2. US v OR Brood Calculator

PROGRAM INPUTS							HISTORICAL HATCHERY PERFORMANCE METRICS (5-YR AVG)						FORM CALCULATED VALUES											
SPECIES	HATCHERY	PROGRAM	Life Stage	PREFERRED TRAPPING SITE	FORMAL RELEASE GOAL	COMANAGER APPROVED CUSHION % (1)	% FEMALES IN BROODSTOCK	% MORTALITY DURING HOLDING	GREEN EGG FECUNDITY	% REMAINING AFTER DISEASE CULLING (2)	% SURVIVAL GREEN TO EYED EGG	% SURVIVAL EYED EGG TO RELEASE	RELEASE GOAL WITH CUSHION	EYED EGGS	GREEN EGGS	GREEN EGGS BEFORE DISEASE CULL	FEMALES SPAWNED	MALES SPAWNED	TOTAL ADULTS SPAWNED	TRAPPED ADULTS NEEDED	ADULTS TRAPPED TO MEET 1:1 RATIO	SMOLTS PER TRAPPED ADULTS NEEDED	NOTE #	
					(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)	(U)	(V)	(W)		
STLHD	DNFH	MS Clearwater at DNFH		DNFH	1,200,000	3.0%	67.0%	3.9%	6,870	82.9%	89.3%	83.9%	1,236,000	1,473,182	1,649,700	1,989,988	290	143	433	451	915	2,741		
		Red House Hole - SF Clw		SFClw Angler	400,000	4.0%	67.0%	3.9%	6,870	82.9%	89.3%	83.9%	416,000	495,828	555,239	669,770	98	48	146	153	310	2,719		
		Clear Creek		DNFH	300,000	4.0%	67.0%	3.9%	6,870	82.9%	89.3%	83.9%	312,000	371,871	416,429	502,327	74	36	110	115	234	2,713		
		Lolo Creek		DNFH	200,000	10.0%	67.0%	3.9%	6,870	82.9%	89.3%	83.9%	220,000	262,217	293,636	354,205	52	26	78	81	164	2,716		
	MVH	Salmon River		DNFH	93,000	5%	67.0%	3.5%	6,681	100.0%	84.0%	85.0%	97,650	114,882	136,765	136,765	21	10	31	33	66	2,959		
CFH	Clearwater		SFCLW	843,000	3%	67.0%	3.5%	6,900	100.0%	87.7%	84.0%	868,290	1,033,679	1,178,653	1,178,653	171	84	255	265	537	3,277			
SP/SU CHIN	DNFH	NF Clearwater (DNFH)		DNFH	1,050,000	4%	54.0%	8.7%	3,973	90.2%	95.0%	90.3%	1,093,750	1,211,240	1,274,990	1,413,514	356	303	659	723	848	1,513	(3)	
		Selway River-Upper	Parr	DNFH	300,000	4%	54.0%	8.7%	3,973	90.2%	95.0%	90.3%	312,500	346,069	364,283	403,861	102	87	189	207	243	1,510		
		Trans. to NPTH-NPTH		DNFH	200,000	4%	54.0%	8.7%	3,973	90.2%	95.0%	90.3%	208,333	230,712	242,855	269,241	68	58	126	138	162	1,510		
		Trans. to NPTH-Lolo Creek		DNFH	0	4%	54.0%	8.7%	3,973	90.2%	95.0%	90.3%	0	0	0	0	0	0	0	0	0	#DIV/0!	(4)	
	KNFH	Kooskia NFH		KNFH	650,000	10%	50.0%	12.1%	3,661	88.2%	93.1%	88.6%	722,222	815,425	875,860	993,376	272	272	544	619	619	1,167		
	CFH	Red River		SFClw	1,100,000	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	1,100,000	1,145,833	1,218,972	1,324,969	342	342	684	720	720	1,528		
		Selway River-Lower		DNFH	400,000	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	400,000	416,667	443,262	481,807	125	125	250	264	264	1,515		
		Clear Creek		KNFH/DNFH	635,000	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	635,000	661,458	703,679	764,869	198	198	396	417	417	1,523		
		NF Clearwater-CFH (Baffle)		DNFH	0	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	0	0	0	0	0	0	0	0	0	#DIV/0!	(5)	
		NF Clearwater-CFH (Regular)		DNFH	0	0%	50.0%	5.0%	3,875	92.0%	94.0%	96.0%	0	0	0	0	0	0	0	0	0	0	#DIV/0!	(6)
		Powell Pond (SUM)		Pow/SFSR	640,000	0%	50.0%	5.0%	3,980	92.0%	88.0%	96.0%	640,000	666,667	757,576	823,452	207	207	414	436	436	1,468	(7)	
	NPTH	Lolo Cr (Clw)	Pre-Smolt	NPTH	150,000	1%	50.0%	7.0%	4,053	88.0%	85.0%	91.0%	151,515	166,500	195,883	222,594	55	55	110	119	119	1,273		
		Newsome Cr (SF Clw)	Pre-Smolt	NPTH	75,000	1%	50.0%	7.0%	4,053	88.0%	85.0%	91.0%	75,758	83,250	97,941	111,297	28	28	56	61	61	1,242		
Meadow Cr (Selway)		Parr	NPTH	400,000	1%	50.0%	7.0%	4,053	88.0%	85.0%	91.0%	404,040	444,000	522,353	593,583	147	147	294	317	317	1,275			
FACH	NPTH	Snake River		LGD/NPTH	1,400,000	1%	50.0%	25.0%	3,973	94.0%	89.0%	96.0%	1,414,000	1,472,917	1,654,963	1,760,598	444	444	888	1,184	1,184	1,194		
COHO	DNFH	Clearwater			500,000	10%	49.7%	16.0%	2,505	94.3%	82.3%	90.0%	550,000	611,111	742,541	787,424	315	319	634	756	745	728		
	ECFH	Clearwater			550,000	10%	49.7%	16.0%	2,505	94.3%	82.3%	83.1%	605,000	727,951	884,509	937,973	375	380	755	899	887	673		
													CELL FORMULAS	F*(1+G)	N/(M)	O/(L)	P/(K)	ROUNDUP (Q/J,0)	R/(H)-R	R+S	ROUNDUP (T/(1-I),0)	ROUNDUP(R/(1-H)/(1-I),0)	N/U	

(1) In the 2013 AOP process, the co-managers approved a 10% cushion to meet release targets

(2) Culling of eggs for BKD, IHN, etc.

(3) Includes the New Production started in BY2015. Added production by increasing densities to 65k in all B-Bank rcwys.

(4) New production started in BY2015, Lolo release group.

(5) NEW PRODUCTION in 2015. First timing rearing smolt in the adult holding ponds

(6) NEW PRODUCTION in 2015. Increasing rearing densities across raceways and spreading the new smolts across release groups

(7) Powell is not a US v OR program; however we will target 640,000 summer Chinook smolts even if the spring Chinook production target is set at the base US v OR level.

6.2. Sites, release numbers for adult Spring Chinook Salmon, when all Clearwater Basin Production Programs are above broodstock, harvest and C&S needs.*

Release Location	Hatchery Source	Guideline Range	Proposed Max
<i>Selway Basin</i>			
McGruder	RR, NPTH, Clear, DNFH, KNFH	800 - 1,000	6,000
O'Hara Creek	RR, NPTH, Clear, DNFH	200	
Lower Selway	RR, NPTH, Clear, DNFH, KNFH	0 - 2,000	3,400
<i>SF Clearwater R.</i>			
Mill Creek	RR, NPTH, Clear, DNFH	150	
Meadow Creek	RR, NPTH, Clear, DNFH	150 - 300	
SF Clearwater R.	RR, NPTH, Clear, DNFH	0 - 500	
<i>Lochsa River</i>			
Main Lochsa, Badger Cr., Boulder Cr.	RR, NPTH, Clear, DNFH	500	
TOTAL		1,800 - 4,650	10,000

*Release Locations are not prioritized. If guideline range is likely to be exceeded, co-managers will discuss disposition of excess fish.

*There are weekly conference calls scheduled for Tuesdays, to keep all parties updated, informed, and coordinated on in-season run development, harvest estimates, broodstock collection, outplanting plans, etc.

6.3. Proposed hatchery identifying marks for adult spring Chinook salmon outplanting in the Clearwater River.

Hatchery / Location	Mark	Purpose
Dworshak	left opercle v-notch	outplant
Kooskia	1) 1 right opercle v-notches	outplant / fishery recycle
	2) if recycle returnees - additional opercle v-notch	outplant / fishery recycle
Clear Creek above weir	right opercle v-notch	natural spawners
Lochsa (Powell satellite)	left opercle punch	fishery recycle / outplant
Red River/Crooked River	1) right opercle punch	fishery recycle
	2) 2 right opercle punches	outplant (early)
Rapid River	dorsal punch	Clearwater (Selway) outplants
Lolo Cr. weir	right opercle punch	Broodstock collection for NPTH
NPTH	left opercle punch	outplant / fishery recycled to Lenore Boat Launch