

FWCP - COLUMBIA CORE FISHERIES PROGRAM - 5 YEAR PLAN (2014 -2018)

Note: STATUS AS OF SEPTEMBER 2013

NOTE: subject to change and annual scientific review

NOTE: the scope of this document does not include administrative or infrastructure operations

Ref No.	CATEGORY	PRIMARY ACTION PLAN REFERENCE	Primary Action No. & Priority	DESCRIPTION	2013 (Current Year)	2014 (Nov 2013 Grant Application Intake)	2015	2016	2017	2018
ARROW LAKES RELATED PROGRAMS										
A1	NUTRIENT RESTORATION PROGRAM MONITORING - Physical Variables	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Physical variables include: Water temperature, dissolved O2, pH, ORP, specific conductance, turbidity, Secchi depth measurements, Reservoir Flow through/Residence time, Local tributary inflows, Nutrient input (P, N artificial), Nutrient input (P Columbia River), Nutrient input (P, N local streams)	UC	UC	UC	RFP	RFP	RFP
A2	NUTRIENT RESTORATION PROGRAM MONITORING - Water Chemistry Sampling & Analysis	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Water chemistry sampling includes: NH4, NO3+NO2, NO3, NO2, TN, OP,TP,TDP, Si (D), Chla, Cond, Turb, pH, ALK, TIC, TOC; Nutrients (TP, TDP, LL SRP, NO3+NO2, NH3), Chla, Si (D); Conductivity, pH, silica, alkalinity, nutrients (TP, TDP, LL SRP, NO3+NO2, NH3), turb; Total and dissolved metals; chlorophyll a	UC	UC	UC	RFP	RFP	RFP
A3	NUTRIENT RESTORATION PROGRAM MONITORING - Phytoplankton Sampling	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Phytoplankton sampling for taxonomy by abundance and biomass in Arrow Lakes Reservoir.	UC	UC	UC	RFP	RFP	RFP
A4	NUTRIENT RESTORATION PROGRAM MONITORING - Phytoplankton Analysis	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Phytoplankton analysis includes: Phytoplankton taxonomy abundance and biomass by species within 5 algal groups	UC	RFP	RFP	RFP	RFP	RFP
A5	NUTRIENT RESTORATION PROGRAM MONITORING - Zooplankton Sampling	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Zooplankton sampling for abundance and biomass of copepods and cladocerans by species in Arrow Lakes Reservoir.	UC	UC	UC	RFP	RFP	RFP
A6	NUTRIENT RESTORATION PROGRAM MONITORING - Zooplankton Analysis	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Zooplankton analysis includes: Abundance and biomass of Copepods and cladocerans - by species	UC	RFP	RFP	RFP	RFP	RFP
A7	NUTRIENT RESTORATION PROGRAM MONITORING - Mysid Sampling	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Mysid sampling for abundance and biomass of various lifestages of mysids in Arrow Lakes Reservoir.	UC	UC	UC	RFP	RFP	RFP
A8	NUTRIENT RESTORATION PROGRAM MONITORING - Mysid Analysis	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Mysid analysis, within Arrow Lakes Reservoir and downstream of HLK. Analysis includes abundance and biomass of various lifestages	UC	RFP	RFP	RFP	RFP	RFP
A9	NUTRIENT RESTORATION PROGRAM IMPLEMENTATION - Fertilizer Supply (nitrogen and phosphorus)	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	This activity includes the provision of transporting liquid fertilizer for dispensing into both Arrow Lakes Reservoir and Kootenay Lake	UC	UC	UC	UC	UC	RFP
A10	NUTRIENT RESTORATION PROGRAM IMPLEMENTATION - Fertilizer Dispensing (Small Scale)	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	This activity includes the provision of dispensing of fertilizer during the growing season (April to September)	UC	UC	UC	RFP	RFP	RFP
A11	NUTRIENT RESTORATION PROGRAM IMPLEMENTATION - Fertilizer Dispensing (Large Scale)	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	This activity includes the provision of dispensing of fertilizer during the growing season (April to September).	UC	UC	UC	UC	UC	TBD
A12	KOKANEE - pelagic abundance and density monitoring	Large Lakes Plan - Status Indicator #4 - Kokanee	Action #20; Priority #1	Hydro Acoustic surveys are conducted in the fall; data analysis and report writing.	FLNRO	FLNRO	FLNRO	FLNRO	FLNRO	FLNRO
A13	KOKANEE - pelagic abundance and density monitoring	Large Lakes Plan - Status Indicator #4 - Kokanee	Action #20; Priority #1	Trawl surveys are conducted in the fall to confirm length distribution and relative abundance of age classes; surveys occur during similar times as hydroacoustic survey.	UC	UC	UC	RFP	RFP	RFP
A14	KOKANEE - spawner abundance surveys - aerial counts of index streams	Large Lakes Plan - Status Indicator #4 - Kokanee	Action #20; Priority #1	Aerial spawner counts are conducted 3 times per spawning season on the following streams: Jordan, Tonkawatla, Halfway River, St. Leon Creek, Kuskanax Creek, Mosquito Creek, Burton Creek, Snow Creek, Caribou Creek, Eagle Creek	FLNRO	FLNRO	FLNRO	TBD	TBD	TBD
A15	KOKANEE - spawner abundance surveys - ground counts of index streams	Large Lakes Plan - Status Indicator #4 - Kokanee	Action #20; Priority #1	Ground spawner counts are conducted at a minimum of 1X per spawning season on the following streams: Deer, Taite, Octopus, McKay, Cranberry, Drimmie	FLNRO	FLNRO	FLNRO	TBD	TBD	TBD
A16	KOKANEE - Hill Creek Spawning Channel (HCSC) - Operations & Maintenance	Large Lakes Plan - Status Indicator #4 - Kokanee	Actions 20, 21, 22; Priority #1	The operation and maintenance of HCSC including the collection of size/age, sex ratio, fecundity information. This also includes fry production within the channel.	UC	RFP	RFP	RFP	RFP	RFP
A17	KOKANEE - Hill Creek Spawning Channel (HCSC) - Scarification	Large Lakes Plan - Status Indicator #4 - Kokanee	Actions 20, 21, 22; Priority #1	Annual scarification (gravel cleaning) of the spawning channel during the summer months.	UC	UC	UC	RFP	RFP	RFP
A18	BULL TROUT - Monitoring	Large Lakes Plan - Status Indicator #5 - bull trout	Action #27; Priority #2	Redd counts and spawner monitoring in index spawning streams for Arrow Lakes Reservoir (Taite, Burton, Snow, Caribou, MacDonald, Kuskanax, Halfway, McKenzie, Incomappleux, Illecillewaet)	CA	-	-	RFP	-	-
A19	RAINBOW TROUT - Monitoring	Large Lakes Plan - Status Indicator #3 - Piscivorous rainbow trout	Action #11; Priority #1	HCSC redd counts in the spawning channel, note currently a component of HCSC operations.	UC	RFP	RFP	RFP	RFP	RFP
A20	FISHERIES MONITORING - Creel Surveys - (rainbow, bull trout, kokanee)	Large Lakes Plan - Status Indicator #8 - Socio-economic value (Priority #2)	Action #45; Priority #2	Creel survey estimates of angler effort, catch, harvest, fish size and predator condition (Kn) at 3 access sites.	UC	RFP	RFP	RFP	RFP	RFP
A21	FISHERIES MONITORING - Boat Surveys - (rainbow, bull trout, kokanee)	Large Lakes Plan - Status Indicator #8 - Socio-economic value (Priority #2)	Action #45; Priority #2	Aerial boat counts are done periodically in conjunction with the access site creel survey to expand site data to whole lake estimates.	-	-	-	-	RFP	-

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KOOTENAY LAKE RELATED PROGRAMS										
K1	NUTRIENT RESTORATION PROGRAM MONITORING - Physical Variables	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity (Priority #1)	Action #1; Priority #1	Physical variables include: Water temperature, dissolved O ₂ , pH, ORP, specific conductance, turbidity, Secchi depth measurements, Reservoir Flow through/Residence time, Local tributary inflows, Nutrient input (P, N artificial), Nutrient input (P Duncan and Kootenai/v R.	UC	UC	UC	RFP	RFP	RFP
K2	NUTRIENT RESTORATION PROGRAM MONITORING - Water Chemistry Sampling & Analysis	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity (Priority #1)	Action #1; Priority #1	Water chemistry sampling includes: NH ₄ , NO ₃ +NO ₂ , NO ₃ , NO ₂ , TN, OP,TP,TDP, Si (D), Chla, Cond, Turb, pH, ALK, TIC, TOC; Nutrients (TP, TDP, LL SRP, NO ₃ +NO ₂ , NH ₃), Chla, Si (D); Conductivity, pH, silica, alkalinity, nutrients (TP, TDP, LL SRP, NO ₃ +NO ₂ , NH ₃), turb; Total and dissolved metals; chlorophyll a	UC	UC	UC	RFP	RFP	RFP
K3	NUTRIENT RESTORATION PROGRAM MONITORING - Phytoplankton Sampling	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Phytoplankton sampling for taxonomy by abundance and biomass in Kootenay Lake.	UC	UC	UC	RFP	RFP	RFP
K4	NUTRIENT RESTORATION PROGRAM MONITORING - Phytoplankton Analysis	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Phytoplankton analysis includes: Phytoplankton taxonomy abundance and biomass by species within 5 algal groups	UC	RFP	RFP	RFP	RFP	RFP
K5	NUTRIENT RESTORATION PROGRAM MONITORING - Zooplankton Sampling	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Zooplankton sampling for abundance and biomass of copepods and cladocerans by species in Kootenay Lake.	UC	UC	UC	RFP	RFP	RFP
K6	NUTRIENT RESTORATION PROGRAM MONITORING - Zooplankton Analysis	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Zooplankton analysis includes: Abundance and biomass of Copepods and cladocerans - by species	UC	RFP	RFP	RFP	RFP	RFP
K7	NUTRIENT RESTORATION PROGRAM MONITORING - Mysid Sampling	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Mysid sampling for abundance and biomass of various lifestages of mysids in Kootenay Lake.	UC	UC	UC	RFP	RFP	RFP
K8	NUTRIENT RESTORATION PROGRAM MONITORING - Mysid Analysis	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity	Action #1; Priority #1	Mysid analysis includes abundance and biomass of various lifestages	UC	RFP	RFP	RFP	RFP	RFP
K9	NUTRIENT RESTORATION PROGRAM IMPLEMENTATION - Fertilizer Supply (nitrogen and phosphorus)	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity (Priority #1)	Action #1; Priority #1	This activity includes the provision of liquid fertilizer for dispensing into both Arrow Lakes Reservoir and Kootenay Lake.	UC	UC	UC	UC	UC	RFP
K10	NUTRIENT RESTORATION PROGRAM IMPLEMENTATION - Fertilizer Dispensing (Small Scale)	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity (Priority #1)	Action #1; Priority #1	This activity includes the provision of transporting and dispensing of fertilizer for four weeks in late April and mid-May.	UC	UC	UC	RFP	RFP	RFP
K11	NUTRIENT RESTORATION PROGRAM IMPLEMENTATION - Fertilizer Dispensing (Large Scale)	Large Lakes Plan - Status Indicator #1 - Aquatic Productivity (Priority #1)	Action #1; Priority #1	This activity includes the provision of dispensing of fertilizer during late April to early September.	UC	UC	UC	UC	UC	TBD
K12	KOKANEE - pelagic abundance and density monitoring (Hydro Acoustic)	Large Lakes Plan - Status Indicator #4 - Kokanee (Priority #1)	Action #20; Priority #1	Hydro Acoustic surveys are conducted in the fall; data analysis and report writing.	FLNRO	FLNRO	FLNRO	FLNRO	FLNRO	FLNRO
K13	KOKANEE - pelagic abundance and density monitoring (Trawl Surveys)	Large Lakes Plan - Status Indicator #4 - Kokanee (Priority #1)	Action #20; Priority #1	Trawl surveys are conducted in the fall to confirm length distribution and relative abundance of age classes; surveys occur during similar times as hydroacoustic survey.	UC	UC	UC	RFP	RFP	RFP
K14	KOKANEE - spawner abundance surveys - aerial counts - Lardeau River	Large Lakes Plan - Status Indicator #4 - Kokanee (Priority #1)	Action #20; Priority #1	An aerial spawner count is conducted on the Lardeau River annually.	UC	UC	UC	TBD	TBD	TBD
K15	KOKANEE - Meadow Creek Spawning Channel (MCSC) - Operations & Maintenance	Large Lakes Plan - Status Indicator #4 - Kokanee	Actions 20, 21, 22; Priority #1	The operation and maintenance of MCSC including the collection of size/age, sex ratio, fecundity information. This also includes fry production within the channel.	FLNRO	FLNRO	FLNRO	FLNRO	FLNRO	FLNRO
K16	KOKANEE - Meadow Creek Spawning Channel (MCSC) - Scarification	Large Lakes Plan - Status Indicator #4 - Kokanee	Actions 20, 21, 22; Priority #1	Annual scarification (gravel cleaning) of the spawning channel during the summer months.	UC	RFP	RFP	RFP	RFP	RFP
K17	BULL TROUT - Monitoring	Large Lakes Plan - Status Indicator #5 - Bull Trout (Priority #2)	Action #27; Priority #2	Redd counts and spawner monitoring in index spawning streams for Kootenay Lake (index stream group to be determined by 2016)	CA	-	-	RFP	-	-
K18	TROPHIC INTERACTIONS for both Kootenay Lake and Arrow Lakes Reservoir	Large Lakes Plan - Status Indicator #8 - Socio Economic Value (Priority #1)	Action #42; Priority #1	Data analyses and modelling to address key knowledge gaps relating to food web interactions and factors affecting the efficiency of nutrient transfer to kokanee and piscivorous fish.	UC	TBD	TBD	TBD	TBD	TBD

Legend:	UC = Under Contract (Note: contract terms re: annual renewals are defined but variable across contracts)
	RFP = Request For Proposal i.e. BC BID, limited bid, etc. based on standard Provincial procurement practices
	TBD = To Be Determined i.e. based on annual technical review of outcomes
	"-" = Not Planned
	CA = Contribution Agreement with FWCP
	FLNRO = Ministry of Forests, Lands and Natural Resource Operations