Project Name: Weiser-Little Salmon Headwaters CFLRP   **State: Idaho**

Background

This Ecological Indicator Progress Report identifies the four Ecological Outcome Measures to be included in the five- year national summary report to Congress. Each Ecological Outcome Measure identifies desired conditions/outcomes to be achieved at the project-level and landscape-level over the planning horizon, objectives and methodology of measurement, monitoring types and indicators of changed conditions, spatial and temporal scales being considered, associated data sources and costs, and responsible individuals implementing this plan. The Progress Report includes the project-level and landscape-level evaluation and scoring; and the portion that will be included in the five-year national summary report to Congress.

Payette Forest Coalition Goals

The Payette Forest Coalition (PFC) shares ideas and priorities with the Payette NF regarding two categories of restoration: Vegetation Treatments and Road and Recreation Infrastructure. Public investment in these restoration treatments will restructure the WLSH landscape and move the forest from the current condition towards a desired condition. The PFC expects that the public investment to restore ecological function at a landscape scale will also help sustain the economies of local communities.

Ecological Outcome Measure 1: Fire Regime Restoration

*Desired Conditions Target for **Fire Regime Restoration**: ____ change (relative to the desired condition) occurs across ___% of the landscape area by ___ date.*

Fire Regime Condition:

Purpose: To reduce the risk of uncharacteristic wildfire, including through the use of fire for ecological restoration and maintenance and reestablishing natural fire regimes, where appropriate.

PFC Goal: Improve forest resiliency to wildfire by restoring Potential Vegetation Groups (PVG) toward their respective historical range of structure. Return fire to the landscape as an ecosystem process. Improve the ability to manage wildfire and protect surrounding communities.

Type: Fire Regime Restoration

Desired Condition/Outcome	Objectives & Methodology	Monitoring Type & Indicators	Spatial & Temporal Scales	Data Source & Cost Estimate	Responsible Official & Key Contacts
Statement: Move fire regimes toward historic conditions Metric: Departure from historic Fire Regime Condition	Key Objectives: Monitor changes in the current fire regime in order to determine change in potential fire effects. Methodology: Modified Stand Exam	Type: Effectiveness Indicators: Surface fuel loading, canopy base height, fire return interval, species composition, stand structure, and canopy closure	Spatial: 50-100 permanent plots per year in pre-identified stands that have been identified for immediate treatment (thinning and/or burning) Temporal: Pre and post treatment conditions, less than 6 months post treatment	Data Source: Field Plots Forest GIS Layers Cost: $22,000 annually	Responsible Official: Forest Supervisor and District Rangers Technical & Local Contact: Forest Fire Management Specialist Workforce: Fire Mgt Spec 10 days / yr Fuels Techs 60 days / yr GIS Specialist 6 days / yr

***For more information, see APPENDIX A

Ecological Outcome Measure 2: Fish and Wildlife Habitat Condition

Desired Conditions Target for Fish Habitat Condition: ____ change (relative to the desired condition) occurs across ___% of the landscape area by ___ date.

Fish Habitat Condition:

Purpose: Monitor fish and fish habitat conditions over the life of the project.

PFC Goal: Improve habitat for terrestrial and aquatic species, as appropriate by need.

Type: Fish Habitat Ecological Indicator					
Desired Condition/Outcome	**Objectives & Methodology**	**Monitoring Type & Indicators**	**Spatial & Temporal Scales**	**Data Source & Cost Estimate**	**Responsible Official & Key Contacts**
Statement: Maintain fish habitat in all project area subwatersheds, improve fish habitat in project area ACS Priority/WCS Focus Watersheds Metric: See Indicators	Key Objectives: Monitor progress towards maintaining & improving stream habitat conditions. Methodology: PIBO Protocols. (2012) Habitat Index (Al-Chokhachy et al. 2010) Stream Temperature Monitoring	Type: Implementation/Effectiveness Indicators: Habitat Index (Pool Frequency, Pool Depth, LWD Frequency, Bank Angle, D50, % Fines; PIBO) Stream temperature (seven day average max. temperature)	Spatial: All project area subwatersheds & five supwatersheds as controls. Temporal: PIBO – Every 5 years Temperature – Annually	Data Source: Forest Databases Cost: $40,000 annually	Responsible Official: Forest Supervisor and District Rangers Technical Contact: Forest Fisheries Biologist Local Contact: Forest Fisheries Biologist, New Meadows, and West Zone Fisheries Biologists
Statement: Reconnect Isolated Habitats Metric: See Indicators	Key Objectives: Barrier Removal/Replacements	Indicators: # Barriers eliminated	Spatial/Temporal: Barriers - Annually		Workforce Forest Fisheries Crew
Statement: Maintain bull trout local	Key Objectives:	Type:	Spatial:	Data Source:	

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populations in project area subwatersheds. Metric: See Indicators	Track suitable and occupied habitats for bull trout (management indicator species) within CFLRP area. Methodology: A Watershed –Scale Monitoring Protocol for Bull Trout (RMRS-GTR-224) Modified PIBO & Stream Temperature Monitoring Environmental DNA for Bull Trout Occupancy (Wilcox et al. 2013)	Effectiveness Indicators: Suitable/Unsuitable Patches Occupied/Unoccupied Patches	All project area subwatersheds. Temporal: PIBO – Every 5th year	Forest Databases Cost: $30,000 annually	

***For more information, see APPENDIX B**

Desired Conditions Target for Wildlife Habitat Condition: ____ change (relative to the desired condition) occurs across ___% of the landscape area by ___ date.

Wildlife Habitat Condition:

Purpose: Improve habitat for terrestrial species of special concern; this includes the threatened northern Idaho ground squirrel and species dependent on dry coniferous forests (e.g., white-headed woodpecker), while maintaining sufficient habitat for other sensitive and listed species and desired big game species (e.g. elk).

PFC Goal: Improve habitat for terrestrial and aquatic species, as appropriate by need.

Type: Wildlife Habitat Implementation and Effectiveness – Improve habitat for NIDGS and WHWO					
Desired Condition/Outcome	**Objectives & Methodology**	**Monitoring Type & Indicators**	**Spatial & Temporal Scales**	**Data Source & Cost Estimate**	**Responsible Official & Key Contacts**
Statement/Metric: Expand and enhance habitat for Family 1 Wildlife Species as indicated by response of WHWO	Objective: Evaluate effectiveness of restoration treatments at restoring Family 1 habitat as evidenced by response of WHWO populations. Methodology: Follows WHWO monitoring strategy developed for the R6/R4 by RMRS (see Saab et al. 2010).	Type: Implementation Indicators: Acres treated using wildlife Rx Type: Effectiveness Indicators: Population response at pre-established transects (occupancy, nesting, and success)	Spatial/Temporal Scale: Implementation: % of acres treated in PVG 2, 5, some 6, as evaluated across the CFLRP landscape over time period of projects. Spatial/Temporal Scale: Effectiveness: Population response at 30 transects randomly stratified across the CFLRP landscape up to 3 years post-project.	Data Source: Forest Databases Cost: $90,000 agreement with RMRS $5,000 oversight by PNF wildlife biologists	Responsible Official: Forest Supervisor and District Rangers Technical Contact: Forest Wildlife Biologist Local Contact: District Wildlife Biologists
Statement/Metric: Expand and enhance habitat for NIDGS	Objective: Evaluate implementation and effectiveness of restoration treatments at restoring habitat for NIDGS as evidenced by	See attached study plan	Spatial/Temporal Scale: Implementation: % of acres of NIDGS Priority 1 Habitat treated across the CFLRP landscape over	Data Source: Forest Databases Cost: $90,000 agreement with USGS	

				time period of projects.	$5,000 oversight by PNF wildlife biologists	
				Spatial/Temporal Scale: Effectiveness: Population response at 18 NIDGS sites across the CFLRP landscape up to 3 years post-project.		
response by monitored populations. Methodology: Follows NIDGS monitoring strategy developed by USGS/Univ. of Idaho (see Conway et al. 2012)						

Type: Maintain habitat for mixed-conifer habitat associated MIS/focal species (PIWO) and sensitive species of conservation concern (GGOW, NOGO, FLOW)

Desired Condition/Outcome	Objectives & Methodology	Monitoring Type & Indicators	Spatial & Temporal Scales	Data Source & Cost Estimate	Responsible Official & Key Contacts
Statement/Metric: Nest sites and habitat for NOGO are maintained as evidenced by location and protection of nest sites and conservation of PFAs (see Reynolds et al. 1992)	Objective/Methodology: Pre-project survey for nest sites, establish nest areas & PFAs in project area; verify use post-project	Type: Effectiveness Indicators: Field surveys for nest and nest occupancy per established NOGO survey methods	Spatial/Temporal Scale: Project-wide, 2-3 years pre and 2-3 years post project) activities	Data Source: Forest Databases Cost: Surveys $200/day, cost depends on size of project area – est. cost CFLRP = $7,000	Responsible Official: Forest Supervisor and District Rangers Technical Contact: Forest Wildlife Biologist Local Contact: District Wildlife Biologists
Statement/Metric: Habitat for PIWO (and associated species) is maintained as evidenced by established protocol for MIS/focal monitoring.	Objective/Methodology: 20 established transects across CFLRP area monitored annually	Type: Effectiveness Indicators: Field surveys for detection of PIWO and other woodpeckers	Spatial/Temporal Scale: Yearly	Data Source: Forest Databases Cost: Field surveys April-June, crew of 4, est. cost CFLRP = $35,000	
Statement/Metric: Nest sites and habitat for GGOW are maintained as evidenced by location and	Objective/Methodology: Pre-project survey for nest sites, establish nest	Type: Effectiveness	Spatial/Temporal Scale: Project-wide, 2-3 years pre and 2-3 years post	Data Source: Forest Databases	

protection of nesting areas adjacent to meadows.	areas; verify use post-project	Indicators: Field surveys for nest and nest occupancy per established methods	project activities	Cost: Surveys $200/day, cost depends on size of project area – est. cost CFLRP = $5,000
Statement/Metric: Nest sites and habitat for FLOW are maintained as evidenced by protection of nesting areas.	Objective/Methodology: Pre-project survey for nest sites, establish nest areas; verify use post-project	Type: Effectiveness Indicators: Field surveys for nest and nest occupancy per established methods	Spatial/Temporal Scale: Project-wide, 2-3 years pre and 2-3 years post project activities	Data Source: Forest Databases Cost: Surveys $200/day, cost depends on size of project area – est. cost CFLRP = $5,000
Statement/Metric: Protection of NIDGS populations	Objective/Methodology: Pre-project survey for colonies, establish protected areas; verify use post-project	Type: Effectiveness Indicators: Field surveys including use of DNA analysis to determine presence of NIDGS	Spatial/Temporal Scale: Project-wide, 2-3 years pre and 2-3 years post project activities	Data Source: Forest Databases Cost: Surveys $200/day, cost depends on size of project area – est. cost CFLRP = $8,000
Statement/Metric: Elk summer foraging habitat improved	Objective/Methodology: Pre and post vegetation response	Type: Indicators: Coordinate with range and noxious weed monitoring	Spatial/Temporal Scale: Project-wide, 2-3 years pre and 2-3 years post project activities	
Statement/Metric: Elk security during hunting seasons increased or maintained?	Objective/Methodology: Effectiveness of authorized and unauthorized road closures	Type: Indicators: Coordinate with Watershed monitoring	Spatial/Temporal Scale: Project-wide, pre and post project activities	Data Source: Forest Databases Cost: Surveys $200/day, estimate $4,000

Ecological Outcome Measure 3: Watershed Condition

Desired Conditions Target for Watershed Condition: _____ change (relative to the desired condition) occurs across ___% of the landscape area by ___ date.

Watershed Condition:

Purpose: To maintain and restore the productivity and resilience of watersheds and their associated aquatic systems on NFS lands.

PFC Goal: Improve water quality and watershed health

Type: Landscape Level, Implementation Monitoring of Planned Soil and Water Restoration Projects

Desired Condition/Outcome	Objectives & Methodology	Monitoring Type & Indicators	Spatial & Temporal Scales	Data Source & Cost Estimate	Responsible Official & Key Contacts
The desired condition is for all watersheds (6th field) to be "Functionally Properly". Statement: Maintain all watersheds currently classified as, "Functioning Properly". Improve the WCF and ACS East Fork Weiser River and Boulder Creek priority watersheds from an "Impaired" condition class to "Functioning at Risk" condition class. Move all other watersheds towards the desired conditions by improving the watershed condition indices where planned activities occur. Metric: Watershed Condition Class (WCC)	Objectives: To evaluate the implementation of watershed restoration projects across the CFLRP landscape. Methodology: • Comparison of planned projects to projects completed. • Districts report annually on selected WCF indicators for each 6th level watershed within the CFLRP.	Type: Implementation *Did we do what we said we were going to do?* Track project accomplishments of selected Watershed Condition Framework-WCF indicators. Indicators: • Total road miles and road density. • Miles and road density within RCAs. • Miles and percent of system roads decommissioned. • Miles and percent of system roads decommissioned within RCAs.	Spatial: Landscape for each 6th level watersheds. Temporal: • Baseline 2012. • District's annual update of select WCF indicators.	Data Source: Forest Watershed Condition Framework (WCF) program. Districts will annually update the NRIS-WIT database. Districts will prepare Annual Accomplishments Reports. Cost: $20,000 annually	Responsible Officials: Forest Supervisor and District Rangers Technical Contact: Forest Hydrologist Local Contact: Council, New Meadows, and McCall RD's Hydrologists or Soil Scientist. Workforce: District/Zone Hydrologists or Soil Scientist,

rating. Select WCF indicators.		• Miles and percent of unauthorized roads decommissioned. • Miles and percent of unauthorized roads decommissioned within RCAs. • Total fish barriers and percent of fish barriers removed.			and Hydro Techs.

Type: Project-Site Level, Effectiveness Monitoring of Watershed Restoration and Road Maintenance Activities, Using GRAIP					
Desired Condition/Outcome	**Objectives & Methodology**	**Monitoring Type & Indicators**	**Spatial & Temporal Scales**	**Data Source & Cost Estimate**	**Responsible Official & Key Contacts**
Statement: Road maintenance activities: 1) Road Decommissioning, 2) Level-1 Long-term Closures, and 3) Level 2/3 Road Maintenance activities have restored and/or improved soil productivity, water quality, and hydrologic regime. Metric: • GRAIP Indicators. • Comparison of different practices and activities.	Objectives: To evaluate the effectiveness of various road maintenance activities in meeting watershed management objectives. Methodology: The Geomorphic Road Analysis and Inventory Package (GRAIP, Prasad et al. 2007) will be used to inventory and model risk each selected road segments. The District Hydrologist, Engineering, and RMRS will select specific road segments to be monitored.	Type: Effectiveness Did the practice or activity do what we wanted it to do? Effectiveness monitoring will be done a sample basis of roads maintenance activities including: 1) Road Decommissioning, 2) Level-1 Long-term Closures, and 3) Level 2/3 Road Maintenance. GRAIP Indicators: GRAIP impacts and risk to the several key watershed	GRAIP Spatial: Project selected road segments as determined by District hydrologist and USFS-RMRS researchers. Temporal: Each site includes a final validation evaluation at both treatment and control sites following a substantial storm event (min. 5-year recurrence).	GRAIP Data Source: Rocky Mountain Research Station contract and reports. Cost: TBD $70,000 annually	Responsible Officials: Forest Supervisor and District Rangers Technical Contact: Forest Engineer for RMRS Contract and Road Maintenance. Local Contact: Council, New Meadows, and McCall RD's Hydrologists or Soil Scientist;

		processes.			Engineering and RMRS.
		Specifically, reducing or eliminating:			
		Risk to increased peak flow from road-stream connectivity.			Workforce: Forest Engineer, District/Zone Hydrologists or Soil Scientist, RMRS Researchers.
		• Fine sediment production and delivery. • Risk of shallow landslides. • Risk of gully initiation. • Risk and consequence of stream crossing failures. • Improvement of road drainage system.			

Type: Project Level, National Best Management Practices (BMP) Monitoring.

Desired Condition/Outcome	Objectives & Methodology	Monitoring Type & Indicators	Spatial & Temporal Scales	Data Source & Cost Estimate	Responsible Official & Key Contacts
Statement: Water quality meets or exceeds State standards for aquatic biodiversity and designated beneficial uses.	Objective: Avoid, minimize, or mitigate adverse effects to water quality and riparian resources. Determine if BMPs and project design features were implemented and effective in protecting the water quality and riparian resources. Methodology: National BMP Protocols.	Type: Implementation and Effectiveness monitoring identified in NEPA documents Indicators: National BMPs • Vegetation A - Ground Based Harvest. • Vegetation C - Mechanical Site	Spatial: Project Temporal: Annual implementation and effectiveness monitoring.	Data Source: Annual monitoring plans and monitoring results. Cost: TBD $38,000 annualy Actual cost to be determined in	Responsible Officials: Forest Supervisor and District Rangers Technical Contact: Forest Hydrologist Local Contact:

		Treatments. • Roads A - During Construction of Road and Stream-crossings. • Roads B – • After Construction of Road and Stream-crossings. • Roads C - Road and Crossing Maintenance. • Roads D - Road Storage. • Roads E - During Road Decommissioning. • Roads F - After Road Decommissioning. • Fire A - Use of Prescribed Fire • Fire B - Wildland Fire Suppression. • Range A - Rangeland Management. • Recreation B - Dispersed Recreation. • Recreation E - Motorized Vehicle Use Area.		Districts Program of Work (POW) will depend on specific plans and reports to be completed year.	Council, New Meadows, and McCall RD's Hydrologists or Soil Scientist. Workforce: District/Zone Hydrologists or Soil Scientist, Hydro Techs. Relevant IDT members. Interested PFC members.

Type: Project level, Soil Productivity Monitoring

Desired Condition/Outcome	Objectives & Methodology	Monitoring Type & Indicators	Spatial & Temporal Scales	Data Source & Cost Estimate	Responsible Official & Key Contacts
Statement: Soil protective cover, soil organic matter, and course woody material are at levels that maintain or restore soil productivity.	Objectives: Quantify how vegetation management and prescribed fires impact soils. Methodology: Soil Disturbance Monitoring Protocol (USDA Forest Service, 2009)	Indicators: Soil Disturbance • Percent detrimental Disturbance. • Total Soil Resource Commitments Course Woody Debris • Measurement of woody materials (3-15 inch and > 15 inch) using 50- 100 foot planar intercept transects.	Spatial: Project Temporal: For each CFLRP vegetation management, timber sale, fuels reduction, and prescribed burn project.	Data Source: Annual project monitoring plans and monitoring results. Cost: TBD $25,000 annually	Responsible Officials: Forest Supervisor and District Rangers Technical Contact: Forest Soil Scientist Primary Contact: Council, New Meadows, and McCall RD's Hydrologists or Soil Scientist. Workforce: District/Zone Hydrologists or Soil Scientist, and Hydro Techs.

Ecological Outcome Measure 4: Invasive Species

Desired Conditions Target for Landscape Scale Invasive Species Severity: _____(%) of the CFLR landscape area was restored by reducing invasive species severity (preventing, controlling, or eradicating targeted invasive species) to meet desired conditions by ____date.

Invasive Species Condition:

Purpose: To prevent the establishment of new noxious weed infestations and document the effectiveness of mitigations implemented for a particular project.

Type: Condition Class Rating

Desired Condition/Outcome	Objectives & Methodology	Monitoring Type & Indicators	Spatial & Temporal Scales	Data Source & Cost	Responsible Official & Key Contacts
Statement: Prevent the establishment of new noxious weed infestations, contain and/or eradicate existing noxious weed populations Metric: Population measurements before and after the project	Objectives: Monitor implementation of project design features for preventing the introduction of noxious weed species. Methodology: Establish existing conditions and determine the likelihood of noxious weeds spreading through the project area by completing a "Risk Assessment" prior to project initiation. Inspect, GPS, & map the project area documenting existing weed populations. Base line information will be gathered on 20 randomly selected high risk sites. Thereafter, these sites will be inspected for up to 5 years after project, dependent upon	Type: Effectiveness Risk Assessment Permanent nested frequency plots. Weed population Map Indicators: Increase or decrease in noxious weed species and populations	Spatial: Project Area Activity Areas Temporal: Pre-Activity Annual inspections for five years following project completion	Data Source: Contract or Program Cost: $30,000 annually	Responsible Officials: Forest Supervisor and District Rangers Technical Contact: Forest Range Management Specialist Primary Contact: District Range Management Specialists

	plant species. All road equipment associated with project activities will be cleaned prior to entry onto treatment areas. All stabilization, gravel and borrow materials will be free of noxious weed seed.	Certification of seed and stabilization materials			

***For more information, see APPENDIX C**

Scoring for National Reporting

Project-scale Scoring

Each management action funded through CFLR will have its own project-level objectives that are designed to contribute to achieving Desired Conditions at larger scales. Project-scale scoring should reflect how well the results of an individual management activity met the objectives for that activity. As such project-scale scoring is conducted following completed management activities by the multi -party monitoring group at each Landscape.

- Good = 75% or more of implemented treatments result in measurable progress towards individual project-level Desired Conditions.
- Fair = 26% - 74% of implemented treatments result in measurable progress towards individual project-level Desired Conditions.
- Poor = 25% or less of implemented treatments result in in measurable progress towards individual project-level Desired Conditions.

Current Project-scale Evaluation (Based on and aggregation of the Collaborative's project level monitoring)

Ecological Indicators	Datasets and/or databases of records used	Project Level Good, Fair, Poor and (%) treatments resulting in measurable progress as defined above	Are you achieving your CFLRP objectives? (Y/N)	If NO, briefly explain…
Fire Regime Restoration				
Wildlife and Fish Habitat Condition				
Watershed Condition				
Invasive Species				

Landscape-scale Scoring

Few (if any) CFLR-funded Landscapes propose to achieve landscape scale objectives through the mechanical treatment of every acre within their landscape boundary. Rather, the use of strategically placed restoration treatments should facilitate meeting these broader objectives. Scoring at this level reflects the degree to which individual Landscapes are resulting in Desired Conditions at broader spatial extent.

- Good = Expected progress is being made towards Desired Conditions across_____% of the CFLR landscape area.
- Fair = Expected progress is being made towards Desired Conditions across_____% of the CFLR landscape area
- Poor = Expected progress is being made towards Desired Conditions across_____% of the CFLR landscape area

"Expected progress" will be defined using 3, 5, 7 and 10-year benchmarks for each DC based on a percentage of the 10-year outcome specified in each Landscape's proposal. To meet national reporting requirements on the Act, the 5, 10 and an additional 15-year reporting outcome are needed.

Current Landscape-scale Evaluation (Based on the Collaborative's landscape scale monitoring)

Ecological Indicators	Datasets and/or databases of records used	Project Level Good, Fair, Poor and (%) landscape across which progress is being made towards desired conditions	Are you achieving your CFLRP objectives? (Y/N)	If NO, briefly explain…
Fire Regime Restoration				
Wildlife and Fish Habitat Condition				
Watershed Condition				
Invasive Species				

APPENDIX A: Fire Regime Condition

➢ **Objectives & Methodology:** Assess the effects of treatments in relation to project objectives and the desired veg and fuel conditions as it pertains to fire regime restoration goals within the CFLP.   Using Stand Exam protocol determines changes in fire regime conditions due to treatments within a uniform stand. The effects of this treatment (thinning and/or burning) would be extrapolated to like treatments within like stands. For example, it would be assumed that intensive analysis of changes in fire regime conditions within a stand of ponderosa pine and Douglas-fir (modelled as PVG 2) would exhibit relatively similar results from a free thinning prescription in another like stand. This type of analysis would occur each consecutive year but the treatments or veg an fuel conditions would change (e.g., burning within a 30-year old pine plantation within PVG6).

➢ **Example of Yearly Effects Analysis Areas**

  ○ Year 1: Effects of free thinning in PP/DF stands in PVG 2

  ○ Year 2: Effects of burning (no thin) in PP/DF stands in PVG2

  ○ Year 3: Effects of free thinning and burning in PP/DF stands in PVG2

  ○ Year 4 Effects of commercial thinning and burning in PP/DF stands in PVG2

  ○ Year 5: Effects of commercial thinning in PP/DF/WL/GF stands in PVG6

  ○ Year 6: Effects of burning in PP/DF/WL/DF stands in PVG6

  ○ Year 7: Effects of commercial thinning and burning in PP/DF/WL/GF stands in PVG6

  ○ Year 8: Effects of thinning in PP/DF plantations in PVG6

  ○ Year 9: Effects of burning in PP/DF plantations in PVG6

  ○ Year 10: Effects of thinning and burning in PP/DF stands in PVG6

➢ **Monitoring Indicators:** Surface fuel loading, canopy base height, fire return interval, species composition, stand structure, and canopy closure

  ○ Surface Fuel Loading

    ▪ Litter
    ▪ 0-3" CWD

  ○ Canopy Base Height

    ▪ PP, DF, and WL

      • 4-10"DBH: 5-15'
      • 10-20"DBH: 10-50'
      • +20"DBH: 20-60

    ▪ GF

- 4-10"DBH: 5-10'
- 10-20"DBH: 10-30'
- +20"DBH: 10-40
- FRID of 1

- **Spatial Scale:**
    - Treatment-scale at an individual unit/stand
        - Approximately 30 to 100-acre unit, extrapolated to other like treatments with like stands across the entire CFLRP area.
    - Landscape-scale assessment
        - 5th Field HUCs

- **Temporal Scale:**
    - Annually, pre and post treatment (within 3 months)

- **Data Source:**
    - Field Plot Data
    - Fire History Layer
    - Prescribed Fire History Layers
    - Forest PVG Layer
    - Contract Map Layers

APPENDIX B: Fish Habitat Condition

➢ **Desired Outcome/Condition:**

Improve fish habitat (PIBO Habitat Index) at the subwatershed scale for project area ACS Priority/WCS Focus Watersheds. Maintain fish habitat (PIBO Habitat Index) at the subwatershed scale for all other subwatersheds.

Maintain stream temperatures at the subwatershed scale for all subwatersheds.

➢ **Objectives & Methodology:** This monitoring will be used to partially address the Fish and Wildlife Habitat Condition ecological outcome and to monitor effectiveness of treatments.

➢ **Monitoring Indicators:** PACFISH/INFISH Biological Opinion (PIBO) Monitoring Protocols (2012) and Habitat Index ((Al-Chokhachy et al. 2010). Payette N.F. Stream Temperature Protocols.

➢ **Spatial Scale:** A monitoring site (PIBO and Temperature) will be established at the bottom of each subwatershed (6th HU) within project areas. For ACS Priority watersheds (6th HUs) and WCF Focus Watersheds, a second monitoring site will be established midway up the subwatershed. Controls will be used by identifying up to five subwatersheds within or outside the CFLRP area that have had similar land management activities in the past. All sites will be permanently located as to facilitate the return every 3rd year.

➢ **Temporal Scale:**

PIBO – every 3rd year

MCCM (5 sites)	LCBC (6 sites)	MFWR (5 sites)	#4 (6 sites)	Control (5 sites)
2012	2014	2015	?	2012
2017	2019	2020	?	2017
2022	2024	2025	?	2022
2027	2029	2030	?	2027

Stream Temperature – annually

➢ **Data Source:** PIBO - Forest Database, Temperature – AQS Database

Bull Trout

➢ **Desired Condition Statements**

Maintain bull trout occupied and suitable patches within the project area.

➢ **Objectives & Methodology:** Track suitable/unsuitable and occupied/unoccupied bull trout habitats within
CFLRP Area

➢ **Monitoring Indicators:** Watershed-Scale Monitoring Protocol for Bull Trout (RMRS-GTR-224, 2009), a Payette N.F. modified PIBO Protocol, stream temperature monitoring, and environmental DNA (eDNA).

Watershed-Scale Monitoring Protocol for Bull Trout – identifies potential habitats (patches)

Payette N.F. modified PIBO Protocol – determines suitable or unsuitable

Stream Temperature Monitoring – determines suitable or unsuitable

eDNA – determines occupied or unoccupied patches

➢ **Spatial Scale:** Identified patches within each project area.

➢ **Temporal Scale:** Every 5th year

MCCM (3 patches)	LCBC (10 patches)	MFWR (11 patches)	#4 (?)
2012	2014	2015	?
2017	2019	2020	?
2022	2024	2025	?

➢ **Data Source:** Forest Database

➢ **Cost:** 20 days for 3-person field crew/year; 25 days GS-09 Biologist; 20 days GS-11 Biologist; 10 days GS-12 Biologist, genetics lab. $30,000 per year.

APPENDIX C: Invasive Species Condition

- **Objectives & Methodology:**
  - Before and after data and accompanying maps will display the effectiveness of preventative measures.
  - Monitor effectiveness of strategies designed to contain or eradicate targeted noxious weed species.
  - Permanent line transect, nested [rooted] frequency plots
  - Certification of seed and stabilization materials
  - Inspection of gravel and borrow materials.
- **Spatial Scale:** Permanent plots will be established in activity areas including timber harvest, gravel pits, project access routes, and road construction, improvement, and/or obliteration sites
- **Temporal Scale:**
  - Baseline information prior to project implementation
  - Follow-up monitoring for 5 years following project completion
- **Cost:**
  - **Monitoring:** Dependent on size of project area and number of activity areas within the project and other factors associated with access, terrain, etc. Personnel costs would be two people (GS-5/GS-7 weed specialists), GSP units, ruggedized laptops, PDA, GIS skills (GS-7-GS-9) inspecting/monitoring 10-30 acres/day.
  - **Treatment:** Dependent on size of project area and number of activity areas within the project and other factors associated with access, terrain, etc. Personnel costs would be two people (GS-4/GS-5 weed crew), equipment (ATV, UTV, backpack sprayers), biological controls (dependent on species) herbicide and surfactant treating 10-30 acres/day.