

**ORDER – FISHERIES SENSITIVE WATERSHED**  
**THOMPSON RIVERS FOREST DISTRICT**

This order is given under the authority of sections 14(1) and 14(2) of the *Government Actions Regulation* (B.C. Reg. 582/2004).

The Regional Executive Director of Forests, Lands, Natural Resource Operations and Rural Development is satisfied that:

1. the area of land comprising each of the watersheds listed in Schedule A has significant downstream fisheries values and significant watershed sensitivity; and
2. the area of land comprising each of the watersheds listed in Schedule A requires special management to:
  - i. conserve the natural hydrological conditions, natural stream bed dynamics and stream channel integrity,
  - ii. conserve the quality, quantity and timing of water flow consistent with the needs of fisheries values, and
  - iii. prevent cumulative hydrological effects that would have a material adverse effect on fish and fish habitat, and
3. the watersheds require special management not provided by the Forest Planning and Practices Regulation, or another enactment,

Therefore the Regional Executive Director of Forests, Lands, Natural Resource Operations and Rural Development orders that:

1. the fisheries sensitive watersheds named in Schedule A, Table 1 of this order and shown in the attached map, are identified;
2. consistent with the due diligence exercised by the holder of a license under a *Forest Act*, and with the licensees' responsibility to prepare an approved Forest Stewardship Plan that achieves the desired conditions set out in GAR 14(1)(a) & (b), the objectives outlined in Schedule B are established for the FSW described in the attached Schedule A;
3. the special management of the watersheds established by this order is required to protect the habitat of fishes, including, but not limited to, sockeye and kokanee salmon (*Oncorhynchus nerka*), chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), steelhead trout (*Oncorhynchus mykiss*), bull trout (*Salvelinus confluentus*), rainbow trout (*Oncorhynchus mykiss*), and, hereinafter referred to as fish; and
4. where there is any discrepancy between the FSW boundary as shown in the attached Schedule A map and the FSW spatial layer stored in the Geographic Warehouse (<https://catalogue.data.gov.bc.ca/dataset/fisheries-sensitive-watersheds-proposed>), the center point of the boundaries as detailed in the GIS file will take precedence; where there still may be a discrepancy, the land area encompassed by the height-of-land that defines the topographic boundaries of the watershed set out in Schedule A, including the area of the fan formed at the watersheds confluence; will be the area of land identified as the Fisheries Sensitive Watershed.

## **Schedule A – List of Fisheries Sensitive Watersheds**

**Table 1 – Fisheries Sensitive Watersheds Established by this Order.**

<b>Gazetted Name<sup>1</sup></b>	<b>Watershed, Basins or Residual</b>	<b>GIS FSW Identifier<sup>2</sup></b>	<b>Unit Number</b>
<b>Sinmax Creek</b>		F-3-009	1
	Johnson Creek Basin (below the lake)	F-3-009	2
	Homstake Creek Basin	F-3-009	3
	Upper Sinmax Creek Basin	F-3-009	4
	Johnson Creek Basin(above the lake)	F-3-009	5
	Alex Creek Basin	F-3-009	6
<b>Barriere River</b>		F-3-010	1
	Harper Creek Basin	F-3-010	2
	Saskum Creek Basin	F-3-010	3
	Fennel Creek Basin	F-3-010	4
	Vermellin Creek Basin	F-3-010	5
	Birk Creek Basin	F-3-010	6
	Sprague Creek Basin	F-3-010	7
	Leonie Creek Watershed	F-3-010	8
	Bear Creek Basin	F-3-010	9
	East Barriere Watershed	F-3-010	10
	Haggard Creek Watershed	F-3-010	11
	Dixon Creek Watershed	F-3-010	12
	Bottrel Creek Basin	F-3-010	13
<b>Louis Creek</b>		F-3-011	1
	Fadear Creek Basin	F-3-011	2
	Cicero Creek Sub-Basin	F-3-011	3
	Cahilty Creek Basin	F-3-011	4
	McGillivray Creek Basin	F-3-011	5
	Upper Louis Creek Residual	F-3-011	6
<b>Lemieux Creek</b>		F-3-012	1
	Upper Lemieux Creek Basin	F-3-012	2
	Nehalliston Creek Basin	F-3-012	3
	Eakin Creek Basin	F-3-012	4
	Demers Creek Basin	F-3-012	5
<b>Deadman River</b>		F-3-013	1
	Lower Criss Creek Watershed	F-3-013	2
	Mow Creek Basin	F-3-013	3
	Heller Creek Basin	F-3-013	4
	Upper Criss Creek Basin	F-3-013	5
	Sparks Creek Basin	F-3-013	6
	Upper Deadman River Watershed	F-3-013	7
	Joe Ross Creek Basin	F-3-013	8
	Sherwood Creek Watershed	F-3-013	9

	Hamilton Creek Basin	F-3-013	10
	Clemes Creek Watershed	F-3-013	11
	Barricade Creek Watershed	F-3-013	12
	Tobacco Creek Watershed	F-3-013	13
	Gorge Creek Watershed	F-3-013	14
Upper Adams River		F-3-014	1
	Dudgeon Creek Watershed	F-3-014	2
	Gollen Creek Watershed	F-3-014	3
	Burton Creek Watershed	F-3-014	4
	Goat Creek Watershed	F-3-014	5
	Camp Six Watershed	F-3-014	6
	Upper Adams River Watershed	F-3-014	7
	Oliver Creek Watershed	F-3-014	8
	Sunset Creek Watershed	F-3-014	9
	Gold Creek Basin	F-3-014	10
	Mammoth Creek Basin	F-3-014	11
	Harbour Creek Watershed	F-3-014	12
	800 Adams Creek Watershed	F-3-014	13
	867 Adams Creek Watershed	F-3-014	14
	858 Adams Creek Watershed	F-3-014	15
	Beaver Creek Watershed	F-3-014	16
	Storm Creek Watershed	F-3-014	17

<sup>1</sup> The gazetted name of a creek or river at the lowest (downstream) point in the named fisheries sensitive watershed.

<sup>2</sup> The legal GIS mapping associated with this order spatially defines the FSW and sub-units within each FSW and is essential to the management direction provided by this Order.

## **Schedule B – Objectives for the Fisheries Sensitive Watersheds set out in Schedule A**

### ***Definitions:***

Words and expressions not defined in this order have the meaning given to them in the *Forest and Range Practices Act* (FRPA) and the regulations made under it, unless context indicates otherwise.

**Active Fluvial Unit (AFU)** –that portion of a floodplain over which water can be expected to flow during a runoff event of magnitude 1 in 100 years and that portion of an alluvial fan on which there is evidence of hydrogeomorphic processes, active within at least one full rotation.

**Annual Flow** –the total amount of water passing a given point in one year.

**Equivalent Clearcut Area (ECA)** - refers to the area of forest that has been disturbed (e.g. harvested, affected by insects, cleared or burned, with consideration given to the silvicultural system, regeneration, and location of forest stand within a watershed). ECA is an indicator used to measure the relative loss and recovery of hydrologic function of a forest canopy.

**Establish** – for the purposes of Objective 1(c). ‘establish’ means that forest licensees operating within a designated watershed or basin work cooperatively with qualified professionals to complete an analysis to determine a sustainable rate of cut based on best available information.

**Harmful** – refers to lethal, sub-lethal, or behavioural effects on fish due to concentration and duration of exposure to suspended sediments, and/or levels of stream sedimentation that reduce the productivity of spawning or rearing habitats, and/or restrict fish passage.

**Protect-** for the purposes of Objective a. ‘protect’ refers to additional measures required to ensure a retained area of mature timber and/or other natural vegetation on an active fluvial unit remains intact from subsequent disturbances that may result from primary forest and other land-use activities (i.e. windthrow).

**Retain** – for the purpose of Objective a. “retain” refers to mature timber and/or other vegetation purposefully excluded from timber harvest during primary forest and other land-use activities.

**Riparian Function** – In the context of watershed management, riparian function is defined as: 1) the ability for stream banks to remain stable during peak flood events with the provision of bank stability, particularly where alluvial materials are involved, 2) the ability to filter runoff, 3) the ability to store and safely release water, 4) the recruitment of large woody debris to the stream, and 5) the provision of shade to aquatic systems.

**Seasonal Flows** –the annual variation in streamflow including peak and low flows.

**Sediment Delivery** - refers to the deposition of sediment from a sediment source into a fish stream or direct tributary to a fish stream

**Snowline** - the lower extent of elevation in a watershed at which snow is still present on the ground at the commencement of the peak flow period. The area of the watershed above that elevation is the source area that contributes snowmelt to spring peak flows. Has also been referred to as the 'snow sensitive zone', and typically modelled as an H60-line, where 60% of the watershed area falls above that point.

**Sustainable Rate-of-Cut** – refers to a non-declining average annual rate of merchantable forest cover removal or alteration by primary forest activities and/or other land-use activities within the forest land base of the FSW. The sustainable rate of cut for the watershed and its basins must consider disturbances resulting from primary forest activities, natural events (wildfire, insects, pathogens etc...), and other land use activities, including disturbances on private land.

**Un-natural Sediment Source** – refers to a sediment generation site or area that is directly related to forest management or other land-use activity. It includes active roads, trails, landings, cutblocks, other clearings, and adjacent terrain features that can be affected by forest cover removal and/or water management associated with forest and other land-use activity.

**Very Low Likelihood** –a qualitative estimate of probability that a specified outcome is 'Very Unlikely' or less (<10 chances out of 100).

## **Schedule B – Objectives for the Fisheries Sensitive Watersheds set out in Schedule A**

### ***Objectives:***

1. For the Fisheries Sensitive Watersheds identified by this Order, the objectives are:
  - a. Maintain channel stability and riparian function by retaining and protecting all mature timber and/or other natural vegetation on all active fluvial units on:
    - i. fish streams; and
    - ii. streams that are a direct tributary to fish streams.
  - b. Minimize adverse sediment related effects to fish and fish streams by maintaining a very low likelihood of harmful sediment delivery from unnatural sediment sources to:
    - i. fish streams, and
    - ii. streams that are direct tributaries to fish streams,
  - c. To protect the quantity and timing of annual and seasonal flows establish and maintain a sustainable rate of cut for the fisheries sensitive watershed and/or specified basins, that does not exceed 25% Equivalent Clearcut Area (ECA) above the snowline; with forest harvesting distributed by aspect, sub-basin, and elevation where possible.

For the purposes of conducting primary forest activities in Fisheries Sensitive Watersheds identified by this Order, the following Table 2 outlines where Objective 1c is to be applied. (see Table 2 below):

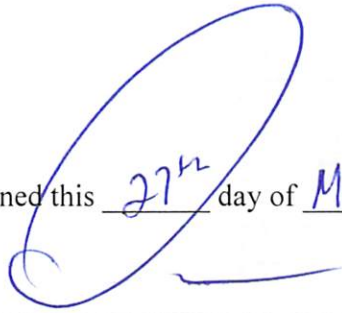
**Table 2. Maximum Equivalent Clearcut areas (ECA) for the Kamloops TSA Watersheds, Basins and sub-basins.**

<b>Gazetted Name</b>	<b>Watershed, Basins or residual</b>	<b>GIS FSW Identifier</b>	<b>Unit Number</b>	<b>Maximum ECA</b>
Sinmax Creek		F-3-009	1	NA
	Johnson Creek Basin (below the lake)	F-3-009	2	25
	Homstake Creek Basin	F-3-009	3	25
	Upper Sinmax Creek Basin	F-3-009	4	NA
	Johnson Creek Basin(above the lake)	F-3-009	5	NA
	Alex Creek Basin	F-3-009	6	NA
Barriere River		F-3-010	1	NA
	Harper Creek Basin	F-3-010	2	25
	Saskum Creek Basin	F-3-010	3	25
	Fennel Creek Basin	F-3-010	4	25
	Vermellin Creek Basin	F-3-010	5	25
	Birk Creek Basin	F-3-010	6	25
	Sprague Creek Basin	F-3-010	7	25
	Leonie Creek Watershed	F-3-010	8	25

	Bear Creek Basin	F-3-010	9	NA
	East Barriere Watershed	F-3-010	10	NA
	Haggard Creek Watershed	F-3-010	11	NA
	Dixon Creek Watershed	F-3-010	12	NA
	Bottrel Creek Basin	F-3-010	13	NA
Louis Creek		F-3-011	1	NA
	Fadear Creek Basin	F-3-011	2	25
	Cicero Creek Sub-Basin	F-3-011	3	25
	Cahilty Creek Basin	F-3-011	4	25
	McGillivray Creek Basin	F-3-011	5	25
	Upper Louis Creek Residual	F-3-011	6	25
Lemieux Creek		F-3-012	1	NA
	Upper Lemieux Creek Basin	F-3-012	2	NA
	Nehalliston Creek Basin	F-3-012	3	NA
	Eakin Creek Basin	F-3-012	4	NA
	Demers Creek Basin	F-3-012	5	NA
Deadman River		F-3-013	1	NA
	Lower Criss Creek Watershed	F-3-013	2	25
	Mow Creek Basin	F-3-013	3	25
	Heller Creek Basin	F-3-013	4	25
	Upper Criss Creek Basin	F-3-013	5	25
	Sparks Creek Basin	F-3-013	6	NA
	Upper Deadman River Watershed	F-3-013	7	NA
	Joe Ross Creek Basin	F-3-013	8	NA
	Sherwood Creek Watershed	F-3-013	9	NA
	Hamilton Creek Basin	F-3-013	10	NA
	Clemes Creek Watershed	F-3-013	11	NA
	Barricade Creek Watershed	F-3-013	12	NA
	Tobacco Creek Watershed	F-3-013	13	NA
	Gorge Creek Watershed	F-3-013	14	NA
Upper Adams River		F-3-014	1	NA
	Dudgeon Creek Watershed	F-3-014	2	NA
	Gollen Creek Watershed	F-3-014	3	25
	Burton Creek Watershed	F-3-014	4	25
	Goat Creek Watershed	F-3-014	5	25
	Camp Six Watershed	F-3-014	6	25
	Upper Adams River Watershed	F-3-014	7	NA
	Oliver Creek Watershed	F-3-014	8	NA
	Sunset Creek Watershed	F-3-014	9	NA
	Gold Creek Basin	F-3-014	10	NA
	Mammoth Creek Basin	F-3-014	11	NA
	Harbour Creek Watershed	F-3-014	12	NA
	800 Adams Creek Watershed	F-3-014	13	NA
	867 Adams Creek Watershed	F-3-014	14	NA
	858 Adams Creek Watershed	F-3-014	15	NA

	Beaver Creek Watershed	F-3-014	16	NA
	Storm Creek Watershed	F-3-014	17	NA

Signed this 27<sup>th</sup> day of March, 2018

 , A/Regional Executive Director, Ray Crampton

Ministry of Forest, Lands, Natural Resource Operations and Rural Development



## **APPENDIX 1:**

The following information is provided by the Ministry of Forest, Lands, Natural Resource Operations and Rural Development as background information supporting the order establishing watersheds identified in Table 1 of the Order. This appendix is not part of the order.

### **1. Watershed Review:**

The content of this order was supported by information available in: *Kamloops TSA Watershed Risk Analysis, May 24, 2012, Forsite Consultants Ltd. in collaboration with M.J. Milne & Associates Ltd.* found here;  
[ftp://ftp.geobc.gov.bc.ca/publish/Regional/Kamloops/Proposed\\_FSW](ftp://ftp.geobc.gov.bc.ca/publish/Regional/Kamloops/Proposed_FSW)

### **2. Compliance with the Order:**

Provisions provided for in the FRPA and associated regulations outline requirements for adherence to the order. In unique situations, where meeting the intent of an objective is impracticable, the forest agreement holder should notify the local Ministry of Forest, Lands, Natural Resource Operations and Rural Development office in writing of this condition and any subsequent alternative actions used to address the situation. See appendix 2

### **3. Intended outcomes from establishing objectives:**

These objectives for Fisheries Sensitive Watersheds focus on minimizing impacts to fish from primary forest activities in three key areas; 1) Riparian Function, 2) Sediment Production and Delivery, and 3) Stream Flow (Hydrology). They are written to avoid ambiguity, redundancy and promote management strategies that result in:

- the desired use of qualified professionals to improve management practices and results on the ground, and
- collaboration with other tenure holders in the watershed to ensure consistency with the objectives.

These objectives, and specifically 1c have been directed specifically to protect the watersheds, or portions thereof, that have direct tributary to significant fish values in the Kamloops TSA.

### **4. Cumulative Effects & Promoting Co-operative Planning under FRPA**

Cooperative Planning -- FRPA General Bulletin #18 (2008)

<https://www.for.gov.bc.ca/ftp/hth/external/!publish/Web/frpa-admin/frpa-implementation/bulletins/frpa-general-no-18-promoting-cooperative-planning-under-frpa-jun-6-2008.pdf>

## APPENDIX 2:

The following information is provided by the Ministry of Forest, Lands, Natural Resource Operations and Rural Development as background information supporting the order establishing watersheds identified in Schedule A – Table 1 of the Order.

### **Preparing for, or modifying, a requirement stipulated in a Fisheries Sensitive Watershed (FSW) Order under GAR**

#### **Background**

Under FRPA, the Ministry of Forest, Lands, Natural Resource Operations and Rural Development (FLNRO) uses the Government Action Regulation (GAR) to conserve fish, wildlife, and habitat in one of two ways: (1) using “practice” requirements, or (2) using “planning” requirements. Both of these approaches involve the establishment of a legal Order, authorized under GAR, with the Minister of Forest, Lands, Natural Resource Operation and Rural Development’s approval.

When establishing conservation measures under GAR, FLNRO generally uses species-specific practice requirements called “general wildlife measures” (GWM). Examples of these are seen in most Ungulate Winter Range (UWR) and Wildlife Habitat Area (WHA) Orders. Once an order containing GWMs is signed by the DM, the order: (a) comes into effect (immediately, once the required GAR notifications are made); (b) does not require an amendment to a Forest Stewardship Plan (FSP) as it is a practice requirement under the Forest Planning and Practices Regulation (FPPR), and (c) applies to anyone holding an agreement under the *Forest Act* (e.g. permit to cut timber or build roads) for the purposes of primary forest activities on crown land.

In the case of an FSW, FLNRO establishes conservation measures using planning requirements, called “objectives”. While all GAR orders containing either objectives or GWMs look similar, those containing objectives use somewhat different rules in their implementation. In the case of objectives, they apply only to *Forest Act* agreement holders who require an approved Forest Stewardship Plan (FSP) to operate. Also, once an order with objectives is legally established, there is a two year amendment (phase-in) period within which the agreement holder is required to update and receive approval of their FSP reflecting the content of the order and its objective(s).<sup>1</sup>

The establishment of an order containing objectives requires the *Forest Act* agreement holder amend their FSP by adding appropriate “results” and/or “strategies” consistent with both: the area of land described; and, each objective contained in the FSW Order. The amended FSP is then submitted for review and approval to the FLNRO District Manager responsible for the area. While considering the content of the FSP, the District Manager is encouraged to work closely with the FLNRO staff member responsible for coordinating FSW evaluation and Order preparation to help ensure that the FSP content is consistent with the intent of the Order.

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<sup>1</sup> 2009. Effects of orders made under the *Forest and Range Practices Act*, Government Actions Regulations on Forest Stewardship Plans. FRPA General Bulletin #17. <http://www.for.gov.bc.ca/hth/frpa-admin/frpa-implementation/bulletins.htm>

## **Application**

On occasion a licensee may encounter a condition or circumstance where a planned activity is not explicitly consistent with an objective in an Order. Some examples are provided here to illustrate how these situations may be dealt with while meeting both regulatory requirements and the intent of an FSW Order.

### **Known information, total chance planning, & FSW Order preparation**

If a forest licensee is aware of a condition or circumstance through their normal development or total chance planning processes *prior* to the approval of an Order that will make some aspect of the Order impracticable to implement, the condition or circumstance should be brought to FLNRO's attention. Discussion at this stage of the Orders' development will ensure that the condition or circumstance is dealt with appropriately while the Order is in preparation, or during the required GAR review and comment period, prior to DM approval and legalization.

### **Amending an FSP to reflect FSW Orders' content**

During the phase-in period used to amend an FSP and reflect the new Order, a licensee may encounter an unforeseen condition or circumstance where it is anticipated that meeting the explicit intent of an objective may be impracticable<sup>2</sup>. In these circumstances the licensee should ensure the content of an FSP (i.e. result or strategy) is crafted accordingly, following requirements for FSP preparation and approval consistent with FRPA and its regulations<sup>3</sup>, while maintaining the overall intent of the FSW order (for example, but not limited to, FPPR s.12(7) and s.25.1).

### **New Information**

FSW Orders are established based on the best available science and a thorough consultative process with affected licensees and partners. If, subsequent to the Orders' establishment, new information showing that a particular metric, or management criterion, should be modified (e.g. adjusting a stipulated benchmark described in the Order) consistent with the tests provided in GAR, the Order can be amended to reflect the new information. In these cases, the licensee would simply be required to modify their FSP based on the amended FSW Order, and then submit the FSP amendment for approval to the FLNRO District Manager responsible for the area.

In examples such as those provided above, licensees are encouraged to work closely with the FLNRO staff member responsible for coordinating FSW evaluation and Order preparation to help ensure: (1) the appropriate content of the initial FSW Order, and (2) an efficient FSP amendment review process.

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<sup>2</sup> 2005. Use of term "practicable" under FRPA and regulations. FRPA General Bulletin #3 <http://www.for.gov.bc.ca/hth/frpa-admin/frpa-implementation/bulletins.htm>

2007. Use of term "practicable" in results or strategies. FRPA General Bulletin #12 <http://www.for.gov.bc.ca/hth/frpa-admin/frpa-implementation/bulletins.htm>

<sup>3</sup> 2005. Interpretative guidance respecting Forest Stewardship Plan questions. FRPA Administrative Bulletin #3. <http://www.for.gov.bc.ca/hth/frpa-admin/frpa-implementation/bulletins.htm>