

ORDER – FISHERIES SENSITIVE WATERSHED
PRINCE GEORGE RESOURCE 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 Deputy Minister of Forests, Lands, and Natural Resource Operations, being satisfied that:

- a. the area of land comprising each of the watersheds listed in Schedule A has significant downstream fisheries values and significant watershed sensitivity;
- b. 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,
 - iii. prevent cumulative hydrological effects that would have a material adverse effect on fish and fish habitat; and
- c. the watersheds require special management not provided by the Forest Planning and Practices Regulation, or another enactment.

Therefore the Deputy Minister of Forests, Lands, and Natural Resource Operations orders that:

1. the fisheries sensitive watersheds (also referred hereafter as FSWs) shown in the map set out in the attached Schedule A (FSW identifiers: F-7-001, F-7-005) and named in Table 1.0 of this order, are identified;
2. the objectives outlined in Schedule B are established for the FSWs set out 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, rainbow trout (*Oncorhynchus mykiss*) and chinook salmon (*Oncorhynchus tshawytscha*), hereinafter referred to as fish;
4. where there is any discrepancy between the FSW boundary as shown in the attached Schedule A map and the GIS file (tfswa_bc), 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 with the most downstream point of the watershed, will be the area of land identified as the Fisheries Sensitive Watershed, except for Parks and Protected Areas; and
5. for the purposes of conducting primary forest activities on Woodlot Licences (W1724, W1725, and W617) in the Chehischic Creek FSW (F-7-005), Objective 4 does not apply.

Schedule A – List of Fisheries Sensitive Watersheds

Table 1.0 – Fisheries Sensitive Watersheds Established by this Order.

Gazetted Name ¹	Resource District	GIS FSW Identifier ²
Seebach Creek	Prince George	F-7-001
Chehischic Creek	Prince George	F-7-005

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

² The legal GIS mapping associated with this order spatially defines the FSW and sub-units within each FSW 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 Road - a Forest Service Road or other form of permitted *Forest Act* road tenure that has not been deactivated.

ECA - Equivalent Clearcut Area (ECA) is the proportion of the overall forest land-base area within a watershed, or specified sub-units, that has been disturbed (e.g., harvested, cleared, affected by forest pathogens and insects, or burned, etc.), with consideration given to the state of hydrologic recovery within the area disturbed. Recovery, and the magnitude of the ECA impact, is influenced by numerous factors including silvicultural system used, level of forest stand regeneration, and the location of disturbance within the watershed.

Gentle Over Steep - a type of terrain feature comprising both (1) steep or potentially unstable slopes that are (2) located immediately down-slope of gentle terrain where forest development can potentially occur.

Riparian Area– For the purposes of Objective 2 for Seebach Creek FSW and Objective 2 for Chehischic Creek FSW, riparian area refers to the management area measured from the streambank to a distance 15m upslope from the streambank on:

- i. S4 streams that are 0.5m or greater in stream channel width, or
- ii. S6 streams that are 0.5m or greater in stream channel width that flow directly into a fish stream.

Sediment Production: fine sediment that can, or has entered a stream, and is generated by a road right-of-way, road, or roadway stream crossings, and associated features.

Stream Channel Width – stream channel width is the horizontal distance between the streambanks on opposite sides of the stream measured at right angles to the general orientation of the banks.

Streambank – The point on each stream’s bank from which stream channel width (or bank height) is measured is usually indicated by a definite change in vegetation and sediment texture. This border is the “normal” high-water mark of the stream and is sometimes shown by the edges of rooted terrestrial vegetation. Above this border, the soils and terrestrial plants appear undisturbed by recent stream erosion. Below this border, the banks typically show signs of both scouring and sediment deposition.

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

Objectives:

For the **Seebach Creek** FSW (F-7-001) the objectives are:

1. manage fine sediment production at all active road crossings on fish streams, and direct tributaries to fish streams, such that sediment production is kept below a moderate rating;
2. maintain long term large woody debris (LWD) recruitment to the stream channel by retaining at least 90% of the riparian area in a state undisturbed by primary forest activities;
3. maintain fish habitat and fish movement by ensuring that all active roads crossing fish streams will be constructed, replaced, and deactivated such that they preserve or replicate, throughout the length of the stream channel at the crossing:
 - a. the pre-crossing stream channel width, and
 - b. the natural roughness of the stream channel bed;
4. avoid destabilization of gentle over steep landscape features when designing, locating, developing, and accessing cut blocks; and
5. maintain an ECA less than:
 - a. 30% within Unit # 2 and Unit #3, and
 - b. 25% within the entire Seebach Creek FSW.

For the **Chehischic Creek** FSW (F-7-005) the objectives are:

1. manage fine sediment production at all active road crossings on fish streams, and direct tributaries to fish streams, such that sediment production is kept below a moderate rating;
2. maintain long term large woody debris (LWD) recruitment to the stream channel by retaining at least 90% of the riparian area in a state undisturbed by primary forest activities;
3. maintain fish habitat and fish movement throughout the fisheries sensitive watershed by ensuring that all active roads crossing fish streams will be constructed, replaced, and deactivated such that they preserve or replicate, throughout the length of the stream channel at the crossing:
 - a. the pre-crossing stream channel width, and
 - b. the natural roughness of the stream channel bed; and
4. maintain an ECA less than 25% within the entire Chehischic Creek FSW.

Signed this _____ day of _____, 2013

Doug Konkin, Deputy Minister
Ministry of Forest, Lands and Natural Resource Operations

APPENDIX 1:

The following information is provided by the Ministry of Forest, Lands and Natural Resource Operations (FLNRO) as background information supporting the order establishing watersheds identified in Schedule A – Table 1 of the Order FSW F-7-001 and F-7-005. This appendix is not part of the order.

1. Watershed Review

The content of this order was supported by information available in: *Prince George Fisheries Sensitive Watershed Review* – see section 4(a) below.

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 (see Appendix 2 of this order), the forest agreement holder should notify the local FLNRO office in writing of this condition and any subsequent alternative actions used to address the situation.

3. Consideration of Parks and Protected Areas

For the purposes of managing hydrological processes (e.g. calculation of ECA percentage) within the fisheries sensitive watershed area, the entire watershed area including Parks and Protected Areas that fall within that watershed should be considered.

4. Watershed-based fish values monitoring protocol (WFVM):

As part of the provincial government's Forest and Range Evaluation Program (FREP) a WFVM protocol intended to assess the effectiveness of mitigating development related activities on fish and aquatic habitat has been developed. For further information on the WFVM protocol please visit the following FREP webpage:

URL: www.for.gov.bc.ca/hfp/frep/values/watershed.htm

5. References and documents providing additional guidance:

The following documents are provided as guidance to those persons preparing and implementing plans for primary forest activities. This list is not exhaustive and does not preclude professionals from obtaining additional, more detailed, or more current information.

a. Prince George area FSW watershed review:

Beaudry, P. G. 2009. Prince George Fisheries Sensitive Watershed Review. Prepared for: Ministry of Environment – Ecosystem Branch.

URL: <http://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=18542>

Accessed: Sept 25, 2012.

b. Watershed assessment of Seebach Creek and TFL #30:

Beaudry et al.1998. Watershed Assessment and Sediment Source Survey for TFL #30. Prepared by Beaudry and Associates Ltd & Environmental Dynamics Inc. for Northwood Inc.
URL:<http://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=8942> Accessed: Sept 25, 2012.

c. Provincial watershed assessment procedure with ECA calculation methodology:

B.C. Ministry of Forests. 2001. Watershed assessment procedure guidebook. 2nd ed., Version 2.1. Ministry of Forests and Ministry of Environment.
URL:<http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/wap/WAPGdbk-Web.pdf> Accessed: Sept 25, 2012.

d. Forest and Range Evaluation Program (FREP) field based protocol for water quality assessments:

The FREP Water Quality Effectiveness Evaluation (WQEE) protocol provides a standardized, government approved, and repeatable methodology with an order of magnitude estimate of the sediment delivery attributed to stream crossings, roads and road right-of-ways. For the purposes of determining the effectiveness of a FSW water quality objective government will use the WQEE to: (i) define the value associated with a “below a moderate rating”, and may use the WQEE (ii) as its primary method to measure water quality. For the most current version of this document, consult the FREP web site:

Carson, D., D. Maloney, S. Chatwin, M. Carver and P. Beaudry. 2008. Protocol for Evaluating the Potential Impact of Forestry and Range Use on Water Quality (Water Quality Routine Effectiveness Evaluation). Forest and Range Evaluation Program, B.C. Min. For. Range and B.C. Min. Env., Victoria, BC.
URL:http://www.for.gov.bc.ca/hfp/frep/site_files/indicators/Indicators-WaterQuality-Protocol-2008.pdf Accessed: Sept 25, 2012.

e. Stream channel width measurements:

Measuring stream channel width for the purposes of this order should follow an approved, standardized and repeatable methodology. A commonly used example is detailed in the document referenced below. Determination of channel width should not include disturbed areas such as stream channel widths at pre-existing crossings.

Anon. 1998. Fish-stream Identification Guidebook. Ministry of Forests and Ministry of Environment.
URL:<http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/FISH/FishStream.pdf> Accessed: Sept 25, 2012

f. Gentle over steep:

Jordan, P. and J. Orban (editors). 2001. Terrain Stability and Forest Management in the Interior of British Columbia. Workshop proceedings May 23–25, 2001, Nelson, B.C. B.C. Ministry of Forests, Research Branch, Victoria, B.C. Technical Report 003. URL: <http://www.for.gov.bc.ca/hfd/pubs/Docs/Tr/Tr003.htm> Accessed: Sept 25, 2012.

Pike, R.G., T.E. Redding, R.D. Moore, R.D. Winker and K.D. Bladon (editors). 2010. Compendium of forest hydrology and geomorphology in British Columbia. B.C. Min. For. Range, For. Sci. Prog., Victoria, B.C. and FORREX Forum for Research and Extension in Natural Resources, Kamloops, B.C. Land Manag. Handb. 66. URL: <http://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh66.htm> Accessed: Sept 25, 2012.

APPENDIX 2:

The following information is provided by the Ministry of Forest, Lands and Natural Resource Operations as background information supporting the order establishing watersheds identified in Schedule A – Table 1 of the Order FSW F-7-001 and F-7-005. This appendix is not part of the order.

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

Background

Under FRPA, the Ministry of Forest, Lands and Natural Resource Operations (FLNRO) uses the Government Actions 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 and Natural Resource Operation’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 for their FSP reflecting the content of the order and its objective(s).¹

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.

¹ 2009. Effects of orders made under the *Forest and Range Practices Act*, Government Actions regulation on Forest Stewardship Plans. FRPA General Bulletin #17.

http://www.for.gov.bc.ca/hth/timten/FRPA_implementation/Bulletins/119014%20Memo.pdf

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 a FSP to reflect FSW Orders' content

During the phase-in period used to amend a 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 impracticable². 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 regulations³, 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, can 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 an 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.

² 2005. Use of term "practicable" under FRPA and regulations. FRPA General Bulletin #3
http://www.for.gov.bc.ca/hth/timten/FRPA_implementation/Bulletins/FRPA%20No%203%20Defining%20practicable%20under%20FRPA%20June%209%202005.pdf

2007. Use of term "practicable in results and strategies. FRPA General Bulletin #12
http://www.for.gov.bc.ca/hth/timten/FRPA_implementation/Bulletins/FRPA%20No%2012%20Bulletin%20%20Use%20of%20Practicable%20in%20Results%20or%20Strategies%20March%2030.pdf

³ 2005. Interpretive guidance respecting Forest Stewardship Plan questions. FRPA Administrative Bulletin #3.
http://www.for.gov.bc.ca/hth/timten/FRPA_implementation/Bulletins/admin_bull_3.pdf