

**ORDER – General Wildlife Measures**  
**# 8-373**  
**Grizzly Bear –Arrow Boundary Forest District**

This order is given under the authority of sections 9(1) of the *Government Actions Regulation* (B.C. Reg. 582/2004) (GAR).

1. The Deputy Minister of Environment, being satisfied that
  - i. the general wildlife measures (GWMs) described below are necessary to protect and conserve grizzly bear (*Ursus arctos*); and
  - ii. GAR or another enactment does not otherwise provide for that protection or conservation;orders that
  - a) the GWMs outlined in Schedule 1 are established for grizzly bear;
  - b) GWM 1 outlined in Schedule 1 is applied to the Specified Area in the attached Schedule B, as contained in the spatial layer stored in the Geographic Warehouse (*twha\_bc*), labeled as Schedule B in the “Feature Notes”. The centre point of the line on the attached Schedule B is what establishes the boundary of the Specified Area;
  - c) GWM 2 outlined in Schedule 1 is applied to the area specified in that GWM;
  - d) GWMs 3, 4, 5, 6, 7, 8 9 and 10 outlined in Schedule 1 are applied to the Specified Area in the attached Schedule A, as contained in the spatial layer stored in the Geographic Warehouse (*twha\_bc*), labeled as Schedule A in the “Feature Notes”. The centre point of the line on the attached Schedule A is what establishes the boundary of the Specified Area;
  - e) if there is a discrepancy between the areas shown in the map set out in the attached Schedule A or Schedule B and the spatial layer stored in the Geographic Warehouse (*twha\_bc*), the areas as detailed in the spatial layer will take precedent; and
  - f) the general wildlife measures outlined in Schedule 1 do not apply for the purposes of exploration, development and production activities when these activities have been authorized for the purpose of subsurface resource exploration, development or production by the *Mineral Tenure Act*, the *Coal Act*, the *Mines Act*, the *Petroleum and Natural Gas Act*, the *Pipeline Act* or the *Geothermal Resources Act*.

*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.

**Main Haul Road:** a road that is open and is used to transport an average volume of 35,000 cubic meters annually.

**Non-merchantable vegetation:** vegetation that is not commercially viable due to small piece size, incidence of decay, species, and low stocking density.

**Subalpine parkland meadows:** a mosaic of subalpine tree and meadow communities usually on gently sloping mountain sides.

Schedule 1 – General Wildlife Measures

1. Do not conduct primary forest activities between May 1 and June 20 within those locations specified in Schedule B commencing and extending upslope from the starting locations specified in Table 1, except for road maintenance inspections and activities identified during inspections that must be completed immediately.

**Table 1. Schedule of road locations beyond which the period of inactivity applies for primary forest activities at locations identified in Schedule B**

Road system	Road starting location (above and beyond this point Schedule B areas are inactive during period)
Rendell Ck FSR	Junction of Kettle River FSR and Rendell Creek FSR
Burrell Ck FSR	Nineteen (19) km north east of the junction of Granby River FSR and Burrell Creek FSR
Almond Ck FSR	Start of Almond Creek FSR
Big Sheep Ck FSR	Start of Big Sheep Creek FSR

2. Do not plant trees within a 500 meter Specified Area of polygons identified on Schedule B, between May 1 and June 20.
3. Do not construct roads or trails within 50 m of habitat features described in Table 2, except for:
  - a) required stream crossings; and
  - b) the construction of a maximum of one road or trail crossing in avalanche tracks with no existing road or trail crossings.

**Table 2. Important Grizzly Bear Habitat Features.**

<b>Habitat Features</b>
Avalanche tracks
<i>Hedysarum</i> , glacier lily ( <i>Erythronium</i> ) and spring beauty ( <i>Claytonia</i> ) complexes greater than 0.5 hectare
Subalpine parkland meadows
Riparian site series listed in Table 3, greater than 1.0 ha.

**Table 3. Riparian Site Series that are Important Habitat Features for Grizzly Bears**


<b>BEC Variant</b>	<b>Site Series (BEC 1990)</b>	<b>Site Series (BEC 2005)</b>
ESSFdc1	06, 07	08, 09, 10
ESSFwc1	04, 05	08, 09, 10
ESSFwc4	06, 07, 08	07, 08
ICHdw1	04, 66	N/A
ICHdw2	04, 66	N/A
ICHmk1	07, 08	10, 11, 12, 13, 14
ICHmw2	06, 07, 08, 09	07, 08, 09, 10
IDFdm1	07	08, 09
IDFmw1	06	07, 08, 09
IDFxh4	N/A	06, 07
MSdm1	07, 08	09, 10
PPdh1	06	N/A

4. Maintain, to the extent practicable, a 20 m wide visual screening buffer of non-merchantable vegetation on each side of main haul roads within 50 m of the center line of the haul road.
5. Retain coarse woody debris (CWD) and wildlife trees that are representative (in terms of species, age and size) of pre-harvest conditions across each harvested cutblock in site series identified in Tables 3 and 4.
6. Maintain *Vaccinium* spp. productivity in the BEC subzone and site series identified in Table 4 as necessary to support viable grizzly bear populations.

**Table 4. Important Berry Producing Site Series**

<b>BEC Variant</b>	<b>Site Series (BEC 1990)</b>	<b>Site Series (BEC 2005)</b>
ESSFdc1	01, 04	01, 05, 07
ESSFwc1	02, 03	01, 03, 04, 06, 07
ESSFwc4	01, 02, 03, 04, 05	01, 02, 03, 04, 05
ESSFwcw	N/A	01, 02, 03, 04, 05
ICH mw2	05	05

7. Primary forest activities adjacent to avalanche tracks must retain forest cover that is at least 15 meters in height, for: a width of 100 meters on one side of the avalanche track or, 50 meters on both sides of the avalanche track.
8. Planting of trees in forested riparian site series identified in Table 3 must:
  - a) result in stocking densities at maturity that are consistent with the pre-harvest density of merchantable trees and will maintain plant communities that produce bear forage; and
  - b) not occur in natural openings.
9. Maintain non merchantable vegetation, except where required for stream crossings, to the extent practicable:
  - a) within 50 m of wetlands greater than 0.5 ha, and
  - b) in Riparian Management Areas where the contiguous canopy opening is greater than 40 hectares.
10. Do not use herbicides, sheep, domestic goats or cattle for vegetation management for silviculture purposes, except where herbicides are necessary for the treatment of invasive plant species.



Signed this 20 day of August, 2010  
Doug Konkin, Deputy Minister  
Ministry of Environment

## Appendix 1:

The following information is provided by the Ministry of Environment (MoE) as background information and support to the order establishing GWMs for Specified Area 8-373. This appendix is not part of the order.

1. **Activities to which the order does not apply:** Section 2(2) of the *Government Actions Regulation* states

An order under any of sections 5 to 15 does not apply in respect of

- (a) any of the following entered into before the order takes effect:
  - (i) a cutting permit;
  - (ii) a road permit;
  - (iii) a timber sale licence that does not provide for cutting permits;
  - (iv) a forestry licence to cut issued by a timber sales manager under section 47.6 (3) of the Forest Act;
  - (v) subject to subsection (3), a minor tenure,
- (b) a declared area,
- (c) areas described in section 196 (1) of the Act, and
- (d) areas referred to in section 110 of the Forest Planning and Practices Regulation.

2. Authority to consider an exemption from these GWMs is provided in section 92(1) of the FPPR, section 79(1) of the *Woodlot Licenses Planning and Practices Regulation* and section 36(3) of the *Range Planning and Practices Regulation*. An exemption may be provided if the Minister's delegate is satisfied that the intent of the GWM will be achieved or that compliance with the provision is not practicable, given the circumstances or conditions applicable to a particular area.

An exemption application should be submitted to the Minister's delegate (Regional Manager – MoE, for the Region that the WHA is located) with a rationale describing the nature of the problem and options to integrate WHA conservation with proposed forest and/or range practices. This submission will assist in timely consideration of the matter, and will inform the conditions, if any, of the exemption that may be granted prior to commencement of activities. Upon receipt of a complete exemption application, a determination will normally be made within 14 days of arrival. Incomplete packages will be returned to the proponent for re-submission.

3. **GWM 1:** Road and drainage maintenance inspections should occur in a systematic manner such that they result in minimal vehicle traffic within 200 meters from the spring habitats identified in Schedule B. The regional MoE office should be notified where emergency road maintenance works are to occur for more than one day within the road closure areas. Road use for movement of planting crews and stock will require an exemption under FPPR 92(1), and should include a strategy that outlines the efforts that have been undertaken to minimize road use and impacts to grizzly bears within 200 meters of the spring habitats identified in Schedule B.

4. **GWM 3:** Existing roads and trails within 50 meters of the habitat features described in Table 3 should be a primary consideration for planned rehabilitation to allow these areas to contribute to SCA. Table 2 lists 0.5 ha as the minimum size of *Hedysarum*, glacier lily (*Erythronium*) and spring beauty (*Claytonia*) complexes as important grizzly bear habitat features. Although it is recognized that grizzly bears would benefit from habitat management measures on smaller sites however, sites less than 0.5 ha are difficult to locate in the field by forestry crews. GWM 3 would be best applied to sites of 0.2 ha, or greater, if they are incidentally located during field work.
5. **GWM 4:** The intent of this measure is to provide visual screening buffers along main haul roads. It is recognized that certain timber harvest practices, such as cable yarding or skidding to the road side may result in the destruction of the non merchantable vegetation, however, where possible, reasonable efforts should be made to retain this vegetation. Clearing of this vegetation for safety reasons (eg. to open sight lines for traffic) is exempt from the GWM.
6. **GWM 5:** The intent of this measure is to retain large inputs of coarse woody debris (CWD) over time through the immediate retention of large diameter CWD, and through retention of large diameter wildlife trees. The site series described are likely to be important foraging sites. Each site series within the cutblock should have retention proportionate to its area.
7. **GWM 6:** All site series in Table 4 should be assessed for potential *Vaccinium* productivity. A qualified professional should prepare a plan to maintain or enhance berry productivity on the good berry producing sites within those site series. Methods of maintaining and enhancing berry productivity include, but are not limited to, winter logging, cable harvesting, low ground pressure equipment, minimizing the amount skid trails, low intensity burns, clumpy reforestation, and retaining dispersed overstory.
8. **GWM 8:** Stand densities in forested riparian sites listed in Table 3 that have not been reforested after harvesting tend to have lower stocking densities than recommended in BEC based stocking guidebooks. Productivity of forage plants can be impacted by higher stocking densities and through site disturbance necessary for stocking at these higher rates. The intent on these sites is to maintain, or increase, forage productivity by considering the natural in-growth when prescribing stocking densities, such that the sites do not become overgrown with conifers, and exclude important bear forage species over the long term.
9. **GWM 9:** GWM 9(a) lists 0.5 ha as the minimum size of wetlands around which to manage non-merchantable vegetation; although it is recognized that grizzly bears would benefit from habitat management measures on smaller sites, sites less than 0.5 ha are difficult to locate in the field by forestry crews. GWM 9(a) would be best applied to sites of 0.2 ha, or greater, if they are incidentally located during field work. For GWM 9(b), previously harvested blocks that have met green-up (stocked and 2 meters in height) do

not contribute to the size of the canopy opening. It is recognized that very low levels of incidental cutting of non-merchantable vegetation may occur.

## **Appendix 2: Recommended Management Guidelines**

The information provided in Appendix 2 is not part of the legal Order for 8-373. It is intended to provide information on conservation goals for grizzly bears as discussed in the working group when drafting recommendations for the order.

Road density is considered to pose a risk to grizzly bears, primarily through decreased habitat suitability, but also because of the increased potential for direct and in-direct mortality associated with roads. Government agencies and stakeholders, who were involved in extensive consultations during the development of the intent of the Order, recognized that meeting preferred active road density (ARD), or secure core area (SCA), levels is not practicable due to current road densities and legal requirements that are necessary for road de-activation. As such, a review of existing legal requirements associated with road closures is necessary, and supported, by both government agencies and major forest tenure holders in the area affected by the Order. If practicable alternatives are made available to licensees to allow for implementation of the recommended ARD or SCA, consideration will be given to amending the legal order to include this guidance. As long as meaningful measures are not in place to deal with road access/density issues, grizzly bears will be at significant risk.

Table A-1 provides information related to future considerations for ARD and SCA for landscape sub-units within the Specified Area. In order to provide protection for grizzly bear, the short-term goal, recommended to be implemented by 2013, is to manage for either the 2007 ARD or 2013 SCA maximums described in Table A-1. The long term goal is to manage to the targets for 2027. It is recognized that meeting these goals will require practicable alternatives from the existing legislative tools.

The long-term goal (beginning 2027) for ARDs or SCAs described in Table A-1 are considered to be within acceptable risk tolerances for grizzly bear conservation, and it is understood that forest land managers will be working towards the 2013 levels whenever feasible as current forest operations include de-activation measures. It is expected that de-activation practices will continue to occur.

It is acknowledged that innovative approaches to meet target ARDs or SCAs would be considered to meet conservation goals, and minimum SCA levels in Table A-1 are acceptable alternatives to ARDs (i.e., either ARDs or SCA can be used as the target to achieve management goal). Refer to Hamilton and Gyug (2007; Access, Strategies and Practices) for recommended practices.

To assess ARD, woodlots and settlements (i.e. areas within a municipal boundary) are to be removed from the gross area of the landscape sub-unit (LSU). Active roads density calculation will include Ministry of Transportation roads, Forest Service Roads (FSRs) and forest licensee roads under permit. Non-status roads are not included in ARD calculations.



It is recognized that should a formal Species at Risk Act recovery strategy provide more conservative recommendations for access management, this guidance will be revised to reflect such direction.

**Table A-1: Future considerations for Active Road Density or Secure Core Area Levels for landscape units within the Specified Area**

Landscape Sub-Unit	2013	2007	2027	
	Secure Core Area minimum (%)	Active road density maximum (km/sq. km)	Secure Core Area minimum (%)	Active road density maximum (km/sq. km)
N501 N	20	1.00	30	0.6
N501 S	20	0.43	30	0.6
N502	20	0.54	30	0.6
N508 N	20	1.20	30	0.6
N508 S	20	0.80	30	0.6
N509	30	0.66	30	0.6
N510 N	30	0.98	30	0.6
N510 S	30	0.95	30	0.6
N519 N	30	1.00	30	0.6
N519 S	30	0.89	30	0.6
B03 Gladstone Park	N/A	N/A	N/A	N/A
B03 S	20	0.62	30	0.6
B03 W	20	0.54	30	0.6
B04 E	20	1.38	30	0.6
B04 W	20	1.40	30	0.6
B04 Gladstone Park	N/A	N/A	N/A	N/A
B06 NE	20	1.10	30	0.6
B06 SE	20	0.79	30	0.6
B06 W	20	0.63	30	0.6
B07 TFL-8	20	1.25	30	0.6
B09 E	20	1.08	30	0.6
B09 W	20	1.30	30	0.6
B09 Granby Park	N/A	N/A	N/A	N/A
B10 Mid	30	0.80	30	0.6
B10 N	30	1.51	30	0.6
B10 S	30	1.38	30	0.6
B11 N	30	1.26	30	0.6
B11 S	30	1.04	30	0.6
B11 W	20	1.36	30	0.6
B11 C	20	1.63	30	0.6

**References:**

Gyug, L. and D. Hamilton. (2007) "Kettle Granby Grizzly Bear Population Unit: Preliminary Habitat Analysis 2006". Unpublished report prepared for the Ministry of Environment and Kettle Granby Forestry Wildlife Working Group.

Hamilton, D. and L. Gyug (2007) "Landscape Level Forest Management Strategy for the Boundary Portion of the Arrow Boundary Forest District within the Kettle Boundary Grizzly Bear Population Unit, Version 3. Unpublished report prepared for the Ministry of Environment and Kettle Granby Forestry Wildlife Working Group.