

HIGH CONSERVATION VALUE FOREST ASSESSMENT



OPEN HOUSE – COCHRANE

SPRAY LAKE SAWMILLS

FEBRUARY 9, 2011

Presentation Objectives



- Examples of HCV (attributes) and HCVF (forests areas) selected and why selected
- Demonstrate selection approach and rigor
- Answer questions.....

BACKGROUND OF 'HCVF CONSULTANT'

John Kansas, *M.Sc., P.Biol.*



- **Wildlife and vegetation ecologist in Alberta since 1978**
- **Worked with SLSM since 1995**
 - McLean Creek Timber Harvest Plan
 - Etherington Creek Timber Harvest Plan
 - Riparian Wildlife Study (3-year)
 - Lost Creek Haul Road Impact Assessment
 - B10 FMU Ecological Overview
 - Terrestrial Ecological assessment for DFMP
- **Other K-Country/East Front Studies**
 - Husky Moose Mountain EA's for Pool delineation/step-out wells/pipelines
 - Shell Moose Mountain EAs for Pool delineation/step out wells/pipelines
 - Shell/Husky long-term winter wildlife monitoring – Cumulative effects
 - Suncor – Whiskey Creek step out well EA
 - Graduate work on Grizzly Bear habitat effectiveness (University of Calgary)
 - Old Growth Research for Weyerhaeuser – Blackstone/Wapiabi/Bighorn Range

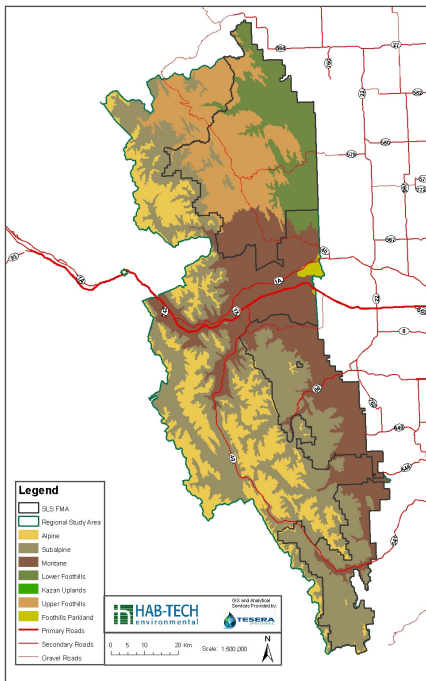
Definition of

HIGH CONSERVATION VALUE FOREST(S)



“.....forests of outstanding and critical importance due to their high environmental, socio-economic, biodiversity or landscape values” (FSC 1999).

“HCVFs comprise the crucial forest areas and values that need to be maintained or enhanced in a landscape” (WWF 2005).

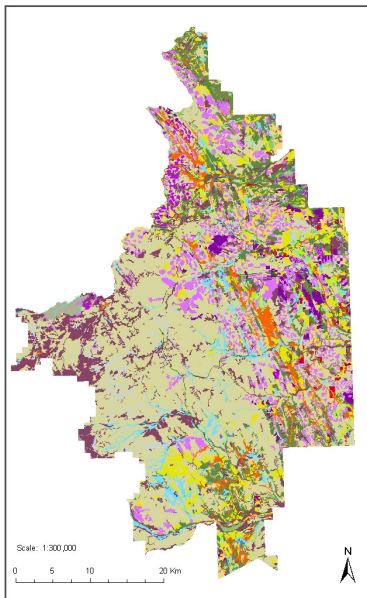


Legend

broadcovergroups

Map_Desc

-  Burns
-  Anthropogenic (non-vegetated)
-  Aspen
-  Aspen Mixedwood
-  Balsam Poplar
-  Black Spruce
-  Bryophytes
-  Cropland/Pasture
-  Cutbank/Sand
-  Flooded Area
-  Furb Meadow
-  Grassland
-  Harvested (graminoid dominated)
-  Harvested (shrub dominated)
-  Harvested (tree dominated)
-  Jackpine
-  Lodgepole Pine
-  Pine Mixedwood
-  Rangeland Clearing
-  Reclaimed Vegetation
-  River/Lake/Pond
-  Rock (barren)
-  Spruce Mixedwood
-  Subalpine Fir
-  Subalpine Larch
-  Tamarack Fen
-  Upland Shrubland
-  Wetland (graminoid)
-  Wetland (shrub)
-  Wetland (tree)
-  White Birch
-  White & Engelmann Spruce



GIS and Analytical Services Provided by:

6 (3) Categories....19 (11) Questions



- HCV Category 1 - Forest areas containing globally, nationally or regionally significant concentrations of biodiversity values (6 QUESTIONS).
- HCV Category 2 - Forest areas containing globally, regionally or nationally significant large landscape level forests (1 QUESTION).
- HCV Category 3 - Forest areas that are in or contain rare, threatened or endangered ecosystems (4 QUESTIONS).

CATEGORY 1 – Forest areas containing globally, nationally or regionally significant concentrations of biodiversity values



Question #1 - Does the forest contain species at risk or potential habitat of species at risk as listed by international, national or territorial/provincial authorities?

Question #2 - Does the forest contain a globally, nationally or regionally significant concentration of endemic species?

Question #3 - Does the forest include critical habitat containing globally, nationally or regionally significant seasonal concentration of species?

Question #4 - Does the forest contain critical habitat for regionally significant species?

Question #5 - Does the forest support concentrations of species at the edge of their natural ranges or outlier populations?

Question #6 - Does the forest lie within, adjacent to, or contain a conservation area?

CATEGORY 1 – QUESTION 1



“Does the forest contain species at risk or potential habitat of species at risk as listed by international, national or territorial/provincial authorities?”

Answer = Yes

- **Species of Global Significance**
 - 5 vertebrates (only Bull Trout selected as HCV) – IUCN Red List
 - 7 plants – none selected because not affected by timber harvest - NatureServe
- **Species of National Significance**
 - 16 vertebrates listed by COSEWIC/SARA (p. 28)
 - West Slope Cutthroat and Grizzly Bear selected as HCV
 - No nationally listed plants in FMA
- **Species of Provincial Significance**
 - 59 species listed
 - Selected 10 species as HCV
 - 21 plants listed as S1 or S2 and selected as HCV (p. 35)



Common name	Genus/Species	Status	Abundance	FMA = Primary Range?	Vulnerable to Forestry?	Habitat/Region Specific?	Population/Range Decline?
Northern Goshawk	<i>Accipiter gentilis</i>	R	U	YES	YES	YES	YES
Black-backed Woodpecker	<i>Picoides arcticus</i>	R	S	YES	YES	YES	YES
Brown Creeper	<i>Certhia americana</i>	R	S	YES	YES	YES	YES
Sandhill Crane	<i>Grus canadensis</i>	S	S	YES	YES	YES	?
Pileated Woodpecker	<i>Dryocopus pileatus</i>	R	U	YES	YES	YES	?
Canada Lynx	<i>Lynx canadensis</i>	R	U	YES	YES	YES	?
Barned Owl	<i>Strix varia</i>	R	U	YES	YES	YES	?
Great Gray Owl	<i>Strix nebulosa</i>	R	U	YES	YES	YES	?
Long-toed Salamander	<i>Ambystoma macrodactylum</i>	R	C	YES	YES	YES	?
Columbia Spotted Frog	<i>Rana luteiventris</i>	R	U	YES	YES	YES	?
Northern Hawk Owl	<i>Surnia ulula</i>	R	S	YES	YES	NO	?
Northern Pygmy-Owl	<i>Glaucidium groma</i>	R	U	YES	YES	NO	?
Green-winged Teal	<i>Anas crecca</i>	S	C	YES	NO	YES	NO
Brewer's Sparrow	<i>Spizella breweri</i>	S	S	YES	NO	YES	NO
Harlequin Duck	<i>Histrionicus histrionicus</i>	S	U	YES	NO	YES	?
Water Vole	<i>Microtus richardsoni</i>	R	U	YES	NO	YES	?
Western Tanager	<i>Piranga ludoviciana</i>	S	U	YES	NO	NO	YES
Wandering Garter Snake	<i>Thamnophis elegans</i>	R	S	YES	NO	NO	?
Black-throated Green Warbler	<i>Dendroica virens</i>	S	S	NO	YES	YES	YES
Cape May Warbler	<i>Dendroica caerulea</i>	S	R	NO	YES	YES	NO
Bay-breasted Warbler	<i>Dendroica castanea</i>	S	R	NO	YES	YES	NO
Broad-winged Hawk	<i>Buteo platypterus</i>	M	S	NO	YES	NO	NO
Fisher	<i>Martes pennanti</i>	R	S	NO	YES	NO	NO
Silver-haired Bat	<i>Lasiurus noctivagus</i>	S	C	NO	YES	NO	?
Hairy Bat	<i>Lasiurus cinereus</i>	S	U	NO	YES	NO	?
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	R	S	NO	NO	YES	YES
Western Grebe	<i>Aschmophorus occidentalis</i>	M	S	NO	NO	YES	YES
Great Blue Heron	<i>Ardea herodias</i>	S	U	NO	NO	YES	YES
Clark's Nutcracker	<i>Nucifraga columbiana</i>	R	U	NO	NO	YES	YES

CATEGORY 1 – QUESTION 4



“Does the forest contain critical habitat for regionally significant species?”

Guidance Questions

- Is the population of regionally-significant species locally at risk?
- Does the forest contain limiting habitat for regionally-significant species?
- Are there any ecological or taxonomic groups of species or sub-species that would together constitute a regionally-significant concentration?

Question 4 – Regional Focal Species



Table 6. Regionally Significant Species and Habitat Associations - Spray Lake FMA

	Forested Habitat			Interspersed Non-Forest Habitat		
	<i>Conifer Dominated</i>	<i>Mixedwood</i>	<i>Deciduous Dominated</i>	<i>Grasslands</i>	<i>Wetlands</i>	<i>Aquatic</i>
<i>Mature/Old Growth</i>	Northern Goshawk Brown Creeper	Barred Owl Fisher	Pileated Woodpecker Ovenbird	Elk Grizzly Bear	Bogs/Fens Sandhill Crane Great Gray Owl	River Bull Trout West Slope Cutthroat Trout
<i>Mid Successional</i>	Marten	Western Tanager	Ovenbird		Marsh Long-toed salamander	Lake
<i>Early Successional</i>	Black-backed Woodpecker Canada Lynx		Moose		Riparian Sedge/Willow Moose Columbia Spotted Frog	Beaver Pond Rusty Blackbird

CATEGORY 2 – QUESTION 7
CATEGORY 3 – QUESTION 10



Category 2 – Question 7

Does the forest constitute or form part of a globally, nationally or regionally significant forest landscape that includes populations of most native species and sufficient habitat such that there is a high likelihood of long-term species persistence? Are large landscape level forests (i.e. large un-fragmented forests) rare or absent in the forest or ecoregion?

Category 3 – Question 10

Are large landscape level forests (i.e., large un-fragmented forests) rare or absent in the forest or ecoregion?

CATEGORY 2 – QUESTION 7
CATEGORY 3 – QUESTION 10



Definitive Question

- Are there forest landscapes un-fragmented by permanent infrastructure and of a size to maintain viable populations of most species?

Answer = Yes

CATEGORY 2 – QUESTION 7
Category 3 – Question 10



Approach – WWF-Canada Guidance

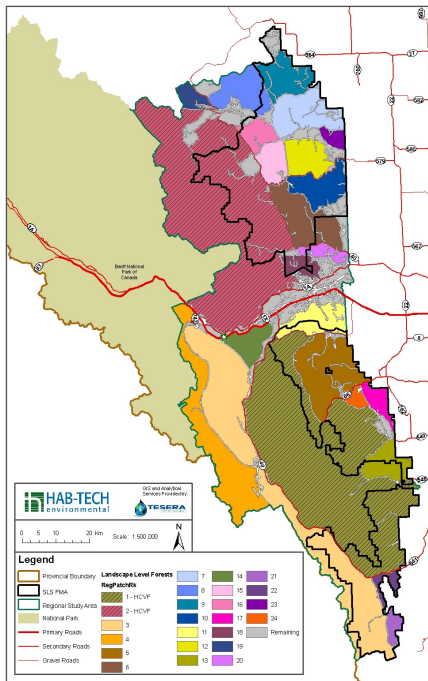
- All permanent features (roads, pipelines, power lines) buffered by 100 meters
- Overlaid onto FMA and larger regional area
- Contiguous patches lacking permanent features mapped and size measured
- Patches classified:
 - ✦ > 500,000 ha = Globally significant
 - ✦ 200,00 to 500,000 = Nationally Significant
 - ✦ 50,000 to 200,000 = Regionally significant
 - ✦ 5,000 to 50,000 = Remnant forest patches

CATEGORY 2 – QUESTION 7

Category 3 – Question 10



- Two regionally significant “large-landscape-level forests selected as HCVFs
 - North FMA = 161,319 ha (44,400 in FMA/116,919 out)
 - ✦ FMA supported by Don Getty Wildland Provincial Park and Ghost River Wilderness Area.
 - South FMA = 178,867 ha (66,369 in FMA/112,498 out)
 - ✦ FMA supported by Elbow Sheep, Don Getty and Bluerock Wildland Provincial Parks



CATEGORY 2 – QUESTION 7

Category 3 – Question 10



- **Remnant Landscape-Level Forest (5,000 to 50,000 ha)**
- **Eight remnants in north and Seven in south**
- **Selection of two remnants as HCVF based on:**
 - High proportion of low elevation Lower Foothills/Montane
 - Human footprint <5%
 - Relatively low (non-permanent) linear feature density
 - Relatively high proportion of mixedwood and deciduous forest.

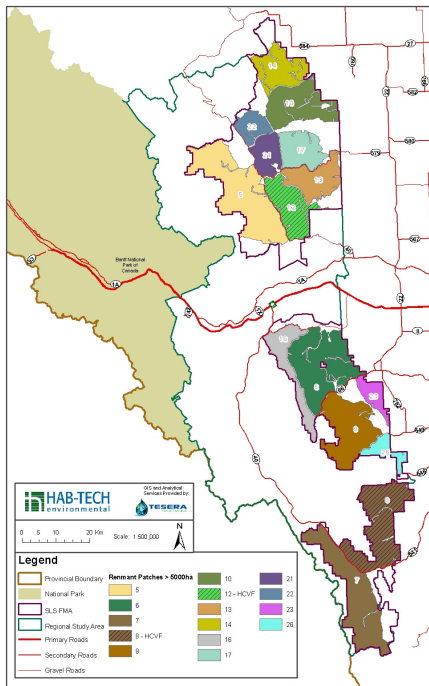
- North = 15,242 ha
- South = 28,245 ha

Remnant Landscape-Level Forest Selection Criteria



Table 7. Ecological and Land Use Characteristics of Remnant Landscape-Level Forests – Spray Lake FMA.

Remnant #	Area (ha)	Portion of FMA	Natural Subregion %					Linear Feature Density (km/km ²)	Footprint (%)	% Cutblock	% Old Growth Forest	% Deciduous		% Wetland
			Alpine	Subalpine	Upper Foothills	Lower Foothills	Montane					Pure	Mixed	
5	38,587	North	0.1	24.0	50.9	0.0	25.1	2.9	3.0	2.3	7.7	1.8	7.5	8.5
6	30,778	South	1.0	52.0	0.0	0.0	46.9	2.0	8.3	6.8	0.9	3.0	2.7	0.9
7	30,069	South	2.8	92.4	0.0	0.0	4.8	3.4	6.4	5.7	1.1	0.8	1.4	2.9
8	28,245	South	0.6	57.9	0.0	0.0	41.5	1.4	1.4	0.4	3.3	9.2	4.1	1.6
9	24,263	South	0.0	66.0	0.0	0.0	34.0	2.1	6.2	5.7	1.1	2.5	1.8	4.9
10	19,495	North	0.0	0.0	10.4	89.4	0.0	4.3	24.4	18.5	7.0	5.0	27.5	6.2
12	15,242	North	0.0	0.0	53.3	12.2	34.5	2.9	3.1	1.9	4.0	7.9	12.5	5.6
13	14,097	North	0.0	0.0	21.7	78.3	0.0	2.9	19.8	16.6	5.7	6.9	11.4	3.3
14	13,993	North	0.0	0.0	34.8	65.2	0.0	3.5	19.3	17.7	25.7	10.1	21.7	3.0
16	13,284	South	2.9	67.9	0.0	0.0	29.2	1.2	4.9	4.6	0.6	0.3	1.5	0.2
17	12,440	North	0.0	0.0	69.9	30.1	0.0	3.5	25.2	20.2	3.9	1.5	8.7	9.8
21	8,837	North	0.0	0.0	99.1	0.9	0.0	3.3	11.8	10.8	4.3	0.1	2.5	5.8
22	6,984	North	0.0	0.0	92.2	7.8	0.0	2.9	14.5	13.7	6.1	0.4	6.6	1.2
23	5,987	South	0.0	0.0	0.0	0.0	100.0	4.1	17.9	15.3	2.1	17.4	6.6	6.1
26	5,632	South	0.0	0.0	0.0	0.0	100.0	2.2	0.8	0.2	6.6	45.9	9.8	3.7



CATEGORY 3 – Forest areas that are in or contain rare, threatened or endangered ecosystems.



Question #8 - Does the forest contain naturally rare ecosystem types?

Question # 9 - Are there ecosystem types within the forest or ecoregion that have significantly declined?

Question #10 - Are large landscape level forests (i.e., large unfragmented forests) rare or absent in the forest or ecoregion?

Question # 11 - Are there nationally /regionally significant diverse or unique forest ecosystems?

CATEGORY 3 – QUESTION 11



Are there nationally/regionally significant diverse or unique forest ecosystems?

Answer = **Yes** at the regional level

Criteria used:

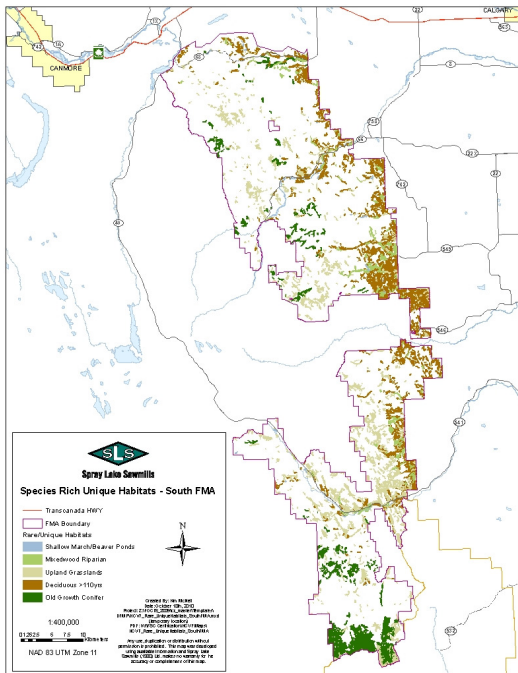
- ✦ Limited land area of habitat
- ✦ Potentially diminishing supply
- ✦ Botanical diversity from 1700 plots in FMA
- ✦ Structural diversity from 1700 plots in FMA
- ✦ Capability of supporting multiple species at risk

CATEGORY 3 – QUESTION 11



Five HCV's – Habitats (p. 65)

- ***Mixedwood forests in riparian settings***
- ***Shallow marshes and beaver pond complexes,***
- ***Deciduous mixedwood and pure deciduous forest cover types >110 years old***
- ***Late seral and old growth conifer***
- ***Upland Grasslands***



Summary of High Conservation Values



- **Landscape Level**
 - 9 Protected Areas
 - 2 Regionally Significant Large Landscape-Level Forests
 - 2 Remnant Large Landscape-Level Forests
- **Habitat/Community Level**
 - 4 Globally ranked rare plant communities
 - Five species rich/unique wildlife habitat types
- **Species level**
 - 20 vertebrate focal species/species at risk
 - 17 rare plant species

END-QUESTIONS?

