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February 28th, 2022

Elise Dagdick
Environment Officer
Environmental Stewardship Division
Environmental Approvals Branch
1007 Century St.
Winnipeg, MB
R3H 0W4

RE: File No. 3893.10

20-Year Forest Management Plan for FML #3 – Information Request No. 1

Dear Elise:

Please find attached responses to the Technical Advisory Committee (TAC) comments on the Forest Management Licence #3 20-Year Forest Management Plan (FMP). Appropriate revisions have been made to all eight chapters of the FMP.

As requested, we have provided written responses with reasoning for not addressing requested changes.

Sincerely,

originally signed by:

_____
Todd Yakielashek
Area Forest Manager

cc Marianne Porteous, Michael Doig, Matt Conrod – Forestry and Peatlands Branch
Public registries

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Contents

Forestry and Peatlands Comments

TAC Member	FMP Section	Comment
Forestry and Peatlands	8.3.7.2 Analysis of Potential Effects Pages 37 to 39.	Formatting issue: The cumulative effects framework for biodiversity is shown in_____(the sentence continues a few pages later). There is no 8.3.7.2. (only 8.3.7) no fourth order headings. Formatting corrected
	Section 8.4: Visual Quality.	While there is mention of trying to keep roads to contour lines, there is no mention of harvest shapes trying something similar. There is no mention of keeping roads to contour lines, nor does the word 'contour' occur in Chapter 8 Effects Assessment. Contours are likewise not mentioned in the Standard Operating Guideline (SOG) for Forest Roads and Major Structures. The verbatim text of Ch.8 section 8.4.2 Visual Quality Mitigation of Forest Management Activities – subsection 'Forest Roads' - is below: ***"Forest Roads*** Road visual quality is mitigated in several ways, including: • narrow right-of-way (ROW) where only the road surface is stumped and the ditch portion of ROW is not disturbed by stumping. If the ROW is stumped, operations ensure smooth side slopes with 3:1 or less slope; • laying out roads to follow natural boundaries; • Purposefully adding curves in forestry roads to reduce line of sight. In-block roads often have leave clump of live trees adjacent to the road to break up line of sight." Operationally, harvest shapes do follow natural boundaries. These boundaries may or may not be coincident with contour lines.

Manitoba Infrastructure Comments

TAC Member	FMP Section	Comment
Manitoba Infrastructure		The Region asks the applicant, that if tree removal is required adjacent to the highway right-of-way, that a buffer of trees the width of the controlled area be left in place to obstruct the view from the work area, keep wildlife from view and reduce the distraction to the travelling public. These Manitoba Infrastructure comments have been passed on to operations and planning staff for consideration in the next Operating Plan. Harvest buffers are determined during operational planning and the cutblock and road mitigation process, but the comment is noted.

Parks and Protected Spaces Comments

TAC Member	FMP Section	Comment
Parks and Protected Spaces		The plan needs to be updated to use the appropriate language regarding land use categories and not zones. Searched for the word 'Zone' replaced with 'Land Use Category' as appropriate across all Chapter1 through Chapter 8.
		There are numerous table cross references that don't line up. You have provided more information below on an individual Figure or Table basis. There was an auto-numbering issue with MS Word that have been resolved.
		Clearly state that operations are prohibited in the protected land use categories and ecological reserves No operations are proposed in the backcountry and recreation Land Use Category. Nor are there any operations proposed in ecological reserves. These areas were netted out of the 20-year plan landbase file.
		In Chapter 8 there should be reference to how operations plan to mitigate impacts to the protected land use categories and ecological reserves from harvest and Silviculture activities as well as identify any impacts to park users and how they will be mitigated. Users are not limited to the campgrounds. Since there are no operations proposed in the backcountry and recreation Land Use Categories, there are no impacts and no mitigation required.
		P2 Are the FMU boundaries in green? And do those boundaries overlap with FML 3? If possible, please clarify the boundaries. Are the red/orange lines roads? I believe you are referring to the map in Ch. 6 FMP Implementation, section 6.2.3. Utilizing the Strategic Harvest Schedule. The legend has been expanded to include the above-mentioned items.
		P175 3.77? 3.79? And, new paragraph? Cross reference in Ch.3 page 175 corrected.

<table>
<tr><th>TAC Member</th><th>FMP Section</th><th>Comment</th></tr>
<tr><td></td><td></td><td>P175 I believe the area is in the Metis Harvest Zone. Needs to be confirmed and if so referenced.

Recognized_Areas_for_Harvesting_Map.pdf (mmf.mb.ca)

(game harvesting by Game Hunting Areas of Manitoba)

Traditional land use of these Indigenous communities, Treaty 2, and the Metis, are trapping, hunting and fishing, and gathering food, medicines, clothing, tools, and furs.</td></tr>
<tr><td></td><td></td><td>P175 This really needs more information. How can we be sure of any Impacts to Indigenous Rights or cultural values in the Provincial Park?

Traditional Land Use
Ch3 – page 175: This section is about ‘traditional land use’ and is not about Indigenous Rights in the Provincial Park.</td></tr>
<tr><td></td><td></td><td>P178 Table 3.41?

Table 3.41 Crown Land Major Categories.
<table>
<tr><th>Forest Management Unit</th><th>Provincial Forest Area (ha)</th><th>Provincial Parks Area (ha)</th><th>*Protected Areas Area (ha)</th><th>Community Pastures Area (ha)</th><th>*Wildlife Management Areas Area (ha)</th><th>Ag Crown Area (ha)</th></tr>
<tr><td>FMU 10</td><td>0</td><td>2,450</td><td>4,735</td><td>40,017</td><td>18,046</td><td>125,094</td></tr>
<tr><td>FMU 11</td><td>**167,992</td><td>58,101</td><td>512</td><td>8,887</td><td>0</td><td>157,785</td></tr>
</table>
*Both Alonsa and Cayer areas are complex, since they are Wildlife Management Areas first, but contain a protected area within each WMA
**The FMU 11 Provincial Forest number includes 18,792 ha of Crown land designated as Ag Crown Land. Also Birch Island is designated as Provincial Forest, Park and Protected Area (15,916 ha) was therefore removed from the Provincial Forest and left in Provincial Parks.

Crown land classification is complex – even the summary has to have caveats and footnotes.
In Agro-Manitoba, Crown lands have been assigned operational land use codes intended to guide the type(s) of land use and development allowed on a given parcel of undesignated Crown land. For further information on Crown land codes contact the local Provincial Lands Branch office.</td></tr>
</table>

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<tr><th>TAC Member</th><th>FMP Section</th><th>Comment</th></tr>
<tr><td></td><td></td><td>P178 Could not cross reference the park and protected area numbers for FMU 10 or 11. Which parks/protected areas fall in FMU 10 and 11?

The table is a summary, and purposefully does not list individual parks, protected areas, community pastures, Wildlife Management Areas etc.</td></tr>
<tr><td></td><td></td><td>P178
This whole table is confusing.

Table 3.41 Crown Land Major Categories.
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</table>

TAC Member	FMP Section	Comment
		Parts of Duck Mountain Provincial Park are protected area based on the land use category. The table is confusing as it treats provincial parks and protected areas as separate. Could change headers to be: • Provincial Park Area (unprotected LUCs) • Provincial Park Area (protected LUCs) Chapter 3 Current Forest Condition was submitted to the Manitoba government for review in mid-2018. From October 2018 to March 2019 government staff from all departments provided editorial comments on Chapter 3, section 3.3 Land Use. It would be best to review this with the Inventory section of the Forestry Branch. Ecological Reserves are missing. Ecological Reserves are not missing. See section 3.3.9.2 Parks and Special Places It needs to be clearly stated whether provincial parks are being double counted as part of the provincial forest layer. It would be best if you took this up with the Inventory section, since they are the owners and provider of these data.
		P178 Land Use Categories is the accurate and legal term - not "classes" or "zones" (p. 195). Document needs to be consistent with the park management plan and legislation. The word 'Zone' has been replaced with 'Land Use Category' as appropriate across Chapter 1 through Chapter 8.

TAC Member	FMP Section	Comment
		P178 According to the Park Management Plan, RD is 8,750 ha. Ch. 3, section 3.3.3. Crown, Private, and First Nations Lands The areas mentioned in the FMP text (below) are from spatial GIS data, provided by the Province of Manitoba. The area of FMU 13 totals 376,635 ha. 142,096 hectares of FMU 13 is the Duck Mountain Provincial Park (approximately 38%). The Duck Mountain Park is broken into three Land Use Categories, Backcountry (46,836 ha), Recreational Development (8,803 ha) and Resource Management (86,422 ha). It would be best to review with the Inventory section of the Forestry Branch, since they are the owners and provider of these data.
		P178 These objectives should be stated. It leaves the reader questioning. Deleted
		P179 3.81? Cross-reference corrected for Figure #81.
		P185 The figure numbers do not match for the remainder of the document. Cross-references corrected. Two new figures were added into Ch 3.

TAC Member	FMP Section	Comment
		P195 Update using latest information. The park recently changed the LUC in the Line Lake area and LP was part of those discussions. Also remove language on "zones" and use the appropriate LUC. Searched for the word 'Zone' and replaced it with 'Land Use Category' as appropriate across Chapter 1 through Chapter 8. Chapter 3 was written in 2018 and reviewed in 2018 and 2019 (reflects the information at that time.) Ch 3, section 3.3.9.2 simply states: *"Duck Mountain Provincial Park is the largest park in the licence area, with an area of 1,424 km^2. "* Has been replaced with the area in hectares (142,096 hectares), based on spatial GIS information provided by the Province of Manitoba.
		P195 Replace with the appropriate land use categories. These are legal definitions and classifications within the park system and should be used. Searched for the word 'Zone' and replaced it with 'Land Use Category' as appropriate across Chapter 1 through Chapter 8.
		P195 ~~The~~ Kettle Stones Provincial Park [Strikethrough text] The word 'the' has been deleted.
		P196 ~~The~~ Springwater Provincial Park [Strikethrough text] The word 'the' has been deleted.
		P196 ~~The~~ Swan River Provincial Park [Strikethrough text] The word 'the' has been deleted.
		P196 ~~The~~ Cowan Bog Ecological Reserve [Strikethrough text] The word 'the' has been deleted.

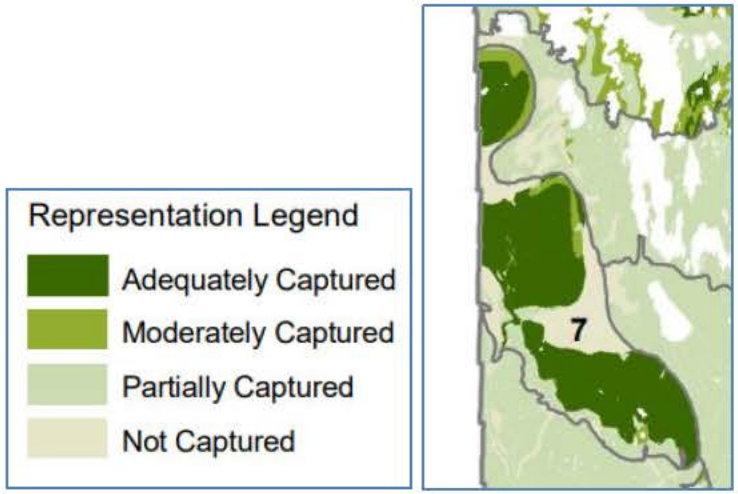
TAC Member	FMP Section	Comment
Protected Areas itiative	Ch 3 Pt 2	Recommend the numbers assigned to figures and those referenced in brackets in text be double-checked throughout document. They do not all match up, for example - Figures 3.19-3.21 Cross-references corrected. Two new figures were added into Ch 3.
	General Comments	Recommend that the LP 20 year Plan: 1. Reference Manitoba's network of protected and conserved areas (previously known as the network of protected areas), and include definitions of the types of sites included in the network - protected areas and other effective area-based conservation measures (OECMs). The Plan references protected areas in multiple chapters, but they are not identified at any point in the Plan or in the appendices. In chapter 3, section 3.1 the first paragraph requires a description of protected areas be included in the plan. Protected areas are referenced in Chapter 3 Current Forest Conditions – section 3.3. Land Use. Section 3.1 ECOLOGICAL-BIOPHYSICAL ENVIRONMENT covers general climate conditions, air and atmosphere, surficial geology, soils, ecological land classification, habitat element strata, wetlands, water, vegetation, wildlife, and insects and diseases on the entire landbase (holistic). Descriptions of Land Use by administrative categories, such as protected areas, are in section 3.3 LAND USE. The Branch recommends adding OECMs to the plan, because they may be identified within the FMLA over the course of the 20-year plan. More information on OECMs is available in the appendices in Canada's One With Nature report, available on the Conservation 2020 website: https://www.conservation2020canada.ca/resources. PAI staff can assist with wording if required. OECMs in Manitoba do not yet have defined boundaries, therefore, cannot be included with the FMP that was submitted Dec. 19th, 2019. If OECM's are defined in the future they would be included in the operational planning

TAC Member	FMP Section	Comment
		process. Official protected area and OECM definitions - FYI: A protected area is a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Indigenous rights are respected in protected areas which generally remain available for hunting, trapping, fishing, and other traditional practices. Protected areas in Manitoba include land, freshwater, or marine areas where logging, mining, hydroelectric development, oil and gas development, exploring for and harvesting peat, and other activities that significantly and adversely affect habitat are legally prohibited. An other effective area-based conservation measure, or OECM is a geographically defined area other than a protected area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values. While protected areas have biodiversity conservation as a primary objective, OECMs result in biodiversity conservation regardless of the reason for its existence.
		2. Clearly state that LP cannot operate in protected areas/OECMs as part of license. As mentioned previously, no operations are proposed in the backcountry and recreation Land Use Category or any other protected area. Nor are there any operations proposed in ecological reserves. These areas were categorized in the 20-year plan landbase file as outside of the eligible forest.
		3. Include a map of protected and conserved areas in the FMLA in the Plan. Please contact Jenny Harms at jenny.harms@gov.mb.ca for the latest protected and conserved areas dataset. I am advised that Jenny Harms is no longer in this role. Please provide a

TAC Member	FMP Section	Comment
		letter-sized digital map (.pdf or .jpg) in a timely fashion, and it will be included in Chapter 3.
	Section 3.1.3.2 Enduring Features Description:	• Much of the information in this section appears to come from an older version of the Conservation and Climate Protected Areas Initiative website. Please reference the website in the list of citations for this chapter. Website cited. • This section describes enduring features, but does not relate them to the protected and conserved areas network as required by the Draft Guidelines. The Branch has recommended wording in the PDF to help clarify. Consider referencing the final location of the protected and conserved areas definitions/requirements in this section as well. Enduring features related to protected and conserved areas: The Protected Areas Initiative routinely conducted a gap analysis to evaluate representation with regards to protected areas planning on a regional basis. The representation map of Manitoba's enduring features gives an indication of where Manitoba's enduring features are adequately, moderately, partially, and not represented. Note that the Duck Mountain Provincial Forest and Duck Mountain Provincial Park receive Parks Branch highest rating 'Adequately Captured', similar to Riding Mountain National Park (Province of Manitoba, 2009). The portion of FML #3 outside the Duck Mountain is ranked as 'Partially Captured', 'Not Captured', and 'Moderately Captured'.

TAC Member	FMP Section	Comment
	Section 3.3.3 Crown and Private Lands	• Table 3.4.1 is confusing as presented. Please note that the Crown lands are not listed by major category, but by legal designation under various provincial Acts. Recommend language be changed to reflect that. This comment is a addressed above on Table 3.4.1 'Crown Land Major Categories'. • Also, consider including the complete area for each designation type (provincial forest, provincial park, community pastures, wildlife management areas) and the undesignated Crown lands which is shown as Ag Crown area in the table. Please see recommended language in the attached chapter document. Comment addressed above in Table 3.4.1 'Crown Land Major Categories' from above.
	1.3.2. "in some cases to address values that are like those held for protected areas."	Please remove the phrase: ". . . in some cases to address values that are like those held for protected areas". This statement is inconsistent with international guidance on protected areas provided by the IUCN, and pan-Canadian guidance on protected areas. If there is a desire to include an additional phrase, could change it as follows: "in some cases to address values that are like those held for **conservation** areas." Removed.
	1.3.3 "It will also forestry related risks from climate variability and extreme events."	It appears a word is missing here. Word added.
	2.3.1. "• cultural features or other protected areas"	Please note: if this is referencing protected areas included in Manitoba's protected and conserved areas network, consider putting it into it's own line. There are specific international standards that must be met for a site to be reported as a protected area. Cultural features may not necessarily meet the standards. Please note this same line is also in FMP Ch6 APP4 Forest Roads and Management Structures SOG (p.6). Because protected areas are not defined anywhere in the plan, the intent of this wording is unclear. Recommend adding definition and clarifying information. Point was deleted. Original text was from the Standard Operating

TAC Member	FMP Section	Comment
		Guidelines for roads.
	3.1.3.2. "• Baldy Mountain – highest elevation in Manitoba"	Please note that Baldy Mountain does not technically stand out as a significant enduring feature within the ecoregion. It looks like it has been selected as significant because of its elevation - which could make it a significant landform. Consider rewriting this as a paragraph noting the first two as significant enduring features, and also noting Baldy Mtn as highest elevation in MB. Deleted Baldy Mountain from enduring features section 3.1.3.2
	3.1.3.2. "The Protected Areas Initiative routinely conducted a gap analysis to evaluate representation with regards to protected areas planning on a regional basis. The representation map of Manitoba's enduring features gives an indication of where Manitoba's enduring features are adequately, moderately, partially, and not represented."	Consider rewording this paragraph for clarify: "The Protected Areas Initiative routinely conducted a gap analysis to evaluate representation *of biodiversity in Manitoba's network of protected and conserved areas, and* with regard to protected areas planning on an *eco*regional basis." Paragraph was deleted.
	3.1.3.2. "Although there is still work to be done before the network of protected areas within Manitoba is complete, the Protected Areas Initiative has made significant progress towards the goal of representing the biodiversity across Manitoba."	It is neither appropriate nor a requirement for the Plan to note what the past priority of government is for protected areas. Delete this paragraph. Paragraph was deleted.

TAC Member	FMP Section	Comment
	3.1.3.2. “Note that the Duck Mountain Provincial Forest and Duck Mountain Provincial Park receive Parks Branch highest rating ‘Adequately Captured’, similar to Riding Mountain National Park. The portion of FML #3 outside the Duck Mountain is ranked as ‘Partially Captured’, ‘Not Captured’, and ‘Moderately Captured’.”	Assessing representation is not about "highest rating", but whether biodiversity is assessed as adequately represented in the network. Also note that the criteria for assessing representation may change in future, based on emerging science. Recommend simplifying this paragraph to something like this: Note that Duck Mountain Provincial Forest and Duck Mountain Provincial Park are adequately represented in the network of protected and conserved areas, while portions of FML #3 outside the Duck Mountain are moderately or partially represented, or not captured in the network. Several intended audiences for the plan include Indigenous communities, stakeholders, and the public. The term and rating of ‘adequate’ does not convey the message about the amount protected area within the Duck Mountain Provincial Forest. 
	3.3.3. “3.3.3. Crown and Private Lands”	Consider changing this heading to reflect wording in the table - "Crown, Private, and First Nation Lands". Heading changed.
	3.3.3	Recommend using same convention for "Crown" lands throughout document. Capitalize 'C'. Crown land was capitalized in every instance in section 3.3.3.

<table>
<tr><th>TAC Member</th><th>FMP Section</th><th>Comment</th></tr>
<tr><td></td><td>3.3.3.
“FMUs 10 and 11 have a combination of Crown and private lands, with FMU 10 being primarily private land (Table 3.39). FMU 13 contains both the Duck Mountain Provincial Forest and Duck Mountain Provincial Park, and is all Crown land.”</td><td>Do you mean Table 3.40? It is cited (see below):

Crown, Private, and First Nations Lands

Forest Management Licence # 3 is a combination of crown and private land. FML #3 is 2,585,822 hectares that is divided into three Forest Management Units (FMU’s), FMU 10, 11 and 13. FMUs 10 and 11 have a combination of Crown and private lands, with FMU 10 being primarily private land (Table 3.40). FMU 13 contains both the Duck Mountain Provincial Forest and Duck Mountain Provincial Park and is all Crown land.

Table 3.40 Crown, Private, and First Nations Land in FMUs 10 and 11.
<table>
<tr><th>Forest Management Unit</th><th>Area Water (ha)</th><th>Private Land Area (ha)</th><th>Crown Land Area (ha)</th><th>First Nations Land Area (ha)</th><th>Total A</th></tr>
<tr><td>FMU 10</td><td>145,569</td><td>937,641</td><td>*300,154</td><td>12,960</td><td>1</td></tr>
<tr><td>FMU 11</td><td>155,952</td><td>246,928</td><td>393,277</td><td>16,860</td><td></td></tr>
</table>
* area estimate due to the area north of Crane River not being included in the Crown land layer file. There is approximately 32,600 hectares not designated.</td></tr>
<tr><td></td><td>3.3.3.</td><td>Table 3.41?

This comment is a repeat of multiple comments on Table 3.4.1 ‘Crown Land Major Categories’ from above.</td></tr>
<tr><td></td><td>Table 3.41</td><td>Please note the areas reported in this table are not for major categories, but for undesignated Crown lands and for Crown lands legally designated under various provincial Acts. Consider renaming table as "Crown Land Designations", or something that recognizes the binding nature of management for these areas. The heading for "Ag Crown Area" column could be changed to "Undesignated Crown Land" or a note could be added explaining what Ag Crown Area is.</td></tr>
</table>

TAC Member	FMP Section	Comment
	Table 3.41 "***Kettle Stones area is classified by the Province as both park and protected area"	This triple-asterisk point is not included in any of the columns in the header row of either of the tables (3.40 or 3.41). Consider deleting as per Parks and Protected Spaces Branch comments. deleted Consider including all protected area hectares in the protected areas column for each FMU. The asterisk could read something like: "Protected areas in the FMLA include ecological reserves, parts or all of some provincial parks and wildlife management areas, and some conservation trust owned lands. This area is also shown in the provincial park and WMA columns o the table." Conversely, the provincial parks and wildlife management area columns could say unprotected parts of provincial parks and wildlife management areas. This would eliminate the need for the Alonsa/Cayer and Kettle Stones notes.
	3.3.3. "In Agro-Manitoba, Crown lands have been assigned operational land use codes intended to guide the type(s) of land use and development allowed on a given parcel of Crown land."	Consider rewording: "In Agro-Manitoba, Crown lands have been assigned operational land use codes intended to guide the type(s) of land use and development allowed on a given parcel of *undesignated* Crown land." Added the word 'undesignated'
	4.6.2. "Recreation opportunities in unharvested areas can be provided by leave areas, buffers, mature and old forest purposefully left unharvested, as well as reserves set aside such as parks and protected areas."	Note: parks and protected areas are not 'reserves' or 'set asides'. Recommend alternative wording such as: ". . . left unharvested, and areas designated for other purposes including provincial parks, protected areas, and other designated Crown lands." 4.6.2.Stakeholders Values Survey Deleted reference to parks.

Wildlife and Fisheries Branch Comments

FMP Section	Comment
General comment	- More details are required for existing bird monitoring programs within the FML that have been conducted by or supported by LP. **Chapter 2 Report of Past Operations** – section 2.8 Research & Monitoring – subsection 2.8.3.1 Forest Bird Monitoring: The Duck Mountain Forest Bird Monitoring Project was initiated in 1997 and ran until 2002. The objective was to gather baseline information on the distribution and habitat associations of neo-tropical, riparian, and resident bird species inhabiting the Duck Mountain Provincial Forest. From 2007 to 2009, the forest bird monitoring project focused on describing the local abundance and habitat requirements of Golden-Winged Warbler (GWWA) and Canada warbler (CAWA). These are migratory bird species designated as threatened under provincial and federal species at risk legislation. From 2012 to present, LP continues to conduct bird surveys specifically to identify the presence of bird species at risk within proposed harvest areas. This information allows LP to support the conservation of priority species through the implementation of various planning strategies and specific Best Management Practices for migratory birds. To further enhance this information, Dr. Rob Rempel generated a summary table that includes the number of point counts per year, and the number of different bird species that were detected by year. A second summary table includes the number of detections for each of the 17 indicator bird species. Both above-mentioned tables will be included in the revised Forest Management Plan.

FMP Section	Comment				
	Year	# point counts (unique locations)	# Point Counts (including repeat visits)	# different bird species	comments
	1997	755	1234	134	baseline
	1998	820	1038	132	baseline
	1999	795	854	116	baseline
	2000	532	835	118	baseline
	2001	314	583	121	Baseline/Riparian
	2002	315	556	126	Baseline/baseline
	2007	210	n/a	95	Avian Monitoring /Canada warbler and Golden-winged warbler focus
	2008	298	n/a	116	Avian Monitoring /Canada warbler and Golden-winged warbler focus
	2009	84	n/a	90	Avian Monitoring /Canada warbler and Golden-winged warbler focus
	2012	53	n/a	75	Species-at-Risk screening in proposed summer cutblocks
	2013	85	n/a	80	Species-at-Risk screening in proposed summer cutblocks
	2014	98	n/a	88	Species-at-Risk screening in proposed summer cutblocks
	2015	46	n/a	80	Species-at-Risk screening in proposed summer cutblocks
	2016	43	n/a	62	Species-at-Risk screening in proposed summer cutblocks
	2017	57	n/a	75	Species-at-Risk screening in proposed summer cutblocks
	2018	62	n/a	72	Species-at-Risk screening in proposed summer cutblocks
	2021	61	n/a	90	Species-at-Risk screening in proposed summer cutblocks

FMP Section	Comment

Bird Indicator Species (American Ornithologist Union Code)	Bird Common Name	# detections (1997 to 2021)
AMRE	American Redstart	6,537
BCCH	Black-Capped Chickadee	564
BHCO	Brown-Headed Cowbird	472
BHVI	Blue-Headed Vireo	744
BOCH	Boreal Chickadee	312
BRCR	Brown Creeper	1,101
COYE	Common Yellowthroat	1,636
CSWA	Chestnut-Sided Warbler	3,322
GCKI	Golden-Crowned Kinglet	249
HETH	Hermit Thrush	699
OVEN	Oven bird	9,173
REVI	Red-Eyed Vireo	5,873
SWTH	Swainson's Thrush	2,132
VEER	Veery	821
WIWR	Winter Wren	665
YBSA	Yellow-Bellied Sapsucker	1,722
YWAR	Yellow Warbler	314

Bird Species-at-Risk	Bird Common Name	# detections (1997 to 2021)
CAWA	Canada warbler	2,548
CONI	Common nighthawk	6
GWWA	Golden-winged warbler	85
OSFL	Olive sided flycatcher	77
RHWO	Red headed woodpecker	3

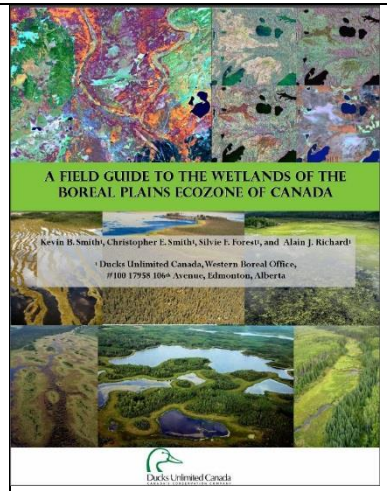
FMP Section	Comment
	The description of bird monitoring programs in **Ch. 7 Monitoring Framework**; 7.2 Existing Monitoring; subsection 7.2.1 Bird Species at Risk Surveys – describes the bird monitoring program for the strategic 20-Year Forest Management Plan.
General comment	- More details are required for the bird indicator species assessments used in the scenario planning and rankings, and carried forward into the five-year reports. The details for the 17 bird indicator species assessments used for the forest management plan are in Ch. 5 Scenario Planning.
General comment	- Additional details are still required in all sections addressing moose winter and summer habitat. Summer habitat assessments should also be included in both the scenario ranking and five-year report sections. Winter moose habitat – is based on aerial survey data from three different winters. A great amount of detail on winter moose habitat is provided in the below documents: **Zabihi-Seissan, S. 2018a.** Development of a Resource Selection Function to Identify Moose Habitat Selection using Forest Management Data in the Duck Mountain Area. Prepared for the Government of Manitoba. March 29, 2018. 15 pp. **Zabihi-Seissan, S. 2018b.** Validation of the Moose Habitat Resource Selection Function using Forest Management Data in the Duck Mountain Area. Prepared for the Government of Manitoba. October 31, 2018. 37 pp. The above modeling documents were utilized in the moose modeling of the Forest Management Plan and are described in detail in Ch. 5 Scenario Planning. The winter moose modeling was instrumental in supporting the 'Moose Emphasis' scenario, which later became the preferred Forest Management scenario. The entire FML #3 harvest was reconfigured to benefit winter moose habitat. Summer moose habitat – is opinion based, while the winter moose habitat analysis is based on data. The summer moose habitat assumptions need

FMP Section	Comment
	to be treated as assumptions and used with caution. We look forward to collaborating on moose summer modeling, based on new data as it becomes available as per the Forest Management Plans Monitoring Chapter.
General comment	- Commitments to data collection and analyses are still required. All monitoring sections should contain triggers for adaptation, and details on what actions may be taken to reverse any negative projections (if/where possible). In the FML #3 Forest Management Plan interdisciplinary team, it was discussed and mutually agreed upon that Ch7 Monitoring Framework, section 7.4 Future Monitoring will be the scope of future data collection and analysis. "…what actions maybe taken…" While the Forest Management Plan provides 20-year strategic guidance, adaptations, changes, and actions would occur operationally, using all the mechanisms that are currently in place, such as: • Operating Plans • work permits Adaptation at the operations level would be based on landscape changes.
General comment	o No details or commitments are made by LP regarding how moose and elk data will be collected, obtained, and provided to the consultant for the proposed RSPF project. Nor are there timelines on when during the life of this plan it will be conducted and incorporated into future assessments and reports. In Chapter 7 Monitoring Framework, a commitment is made in section 7.4.1 Seasonal Moose and Elk Habitat Models to a mutually agreed upon cost-shared joint Moose and Elk project between Manitoba Wildlife and Fisheries Branch and LP. A 12- page project proposal exists as Appendix I to Ch. 7 Monitoring Framework.

FMP Section	Comment
General comment	○ The plan should commit to collecting additional bird species at risk information to develop probability of occupancy models for inclusion in future assessments and reports. The Forest Management Plan does commit to collecting additional bird species at risk information in Chapter 7 Monitoring Framework; 7.2 Existing Monitoring; subsection 7.2.1 Bird Species at Risk Surveys. LP will continue to complete bird surveys on proposed summer cutblocks. This ensures we do not affect bird species at risk during the bird breeding season of May, June, and July of each year. These surveys are the reason we have enough data to generate a habitat model for the bird species at risk Canada warbler (CAWA). Observations of other bird species at risk will also be tallied. When enough observations of a bird species at risk are collected over multiple field seasons, LP will have Dr. Rob Rempel generate a species-specific habitat model.
General comment	Road decommissioning should not only be tracked, but monitored to ensure that decommissioning is successful. If closures are not successful, then methods should be improved moving forward. Road decommissioning is tracked. There is no requirement for monitoring decommissioned roads. Nor are there metrics for 'successful' road decommissioning. The roads are closed and make even All-Terrain Vehicle access very difficult. Note that once roads are decommissioned and final inspection issued, the area where the road was previously becomes the responsibility of the Province of Manitoba.

3.1.10	The Branch previously requested that a summary of Louisiana-Pacific's long-term bird monitoring program and the Ducks Unlimited Pasquia Project be included in the Ecological and Biophysical Section. This data should have been analyzed and summarized for inclusion into the Forest Management Plan to support the original program objectives and guide future operations. Statements like the following indicate the importance of this information to forest management planning: "**3.1.10.6 - We look forward to the completion of the analysis of the survey data to address knowledge gaps related to waterbirds and their habitat in the Duck Mountain, that will enable LP to assess the effectiveness of current forest management strategies related to wetlands and waterbird habitat, and ensure continued availability of wetland habitat into the future**". We recognize that some bird data was use to model habitat for the 17 bird indicator species, however no other analysis or summary of these programs is provided. "…summary of Louisiana-Pacific's long-term bird monitoring program." A summary of the bird monitoring program is provided in the Forest Management Plan. • Ch. 2 Report of Past Operations – section 2.8 Research and Monitoring; 2.8.3.1 Forest Bird Monitoring • Ch. 7 Monitoring framework – section 7.2 Existing Monitoring; 7.2.1. Bird Species at Risk Surveys • Ch. 7 Monitoring framework – section 7.3 Five-Year Report FMP Monitoring; 7.3.3. Bird Species at Risk • Ch. 7 Monitoring framework – section 7.4 Future Monitoring; 7.4.3 Bird Species at Risk Furthermore, the bird data was summarized and was included in the Forest Management Plan. The new analysis of bird species at risk (Canada warbler) was summarized: • Ch. 5 Scenario Planning; section 5.6 Baseline Scenario Outputs; 5.6.4 Baseline Scenario Post-Modeling Outputs; 5.6.4.1 Bird Species at Risk Habitat • Ch. 5 Scenario Planning; section 5.7 Moose Emphasis Scenario Outputs; 5.7.4 Moose Emphasis Scenario Post-Modeling Outputs; 5.7.4.1 Bird Species at Risk Habitat Habitat maps were made of bird species at risk (Canada warbler) and was

	included in the Forest Management Plan in Ch. 5 Scenario Planning – Appendix 2. Habitat indicator bird data was analyzed, summarized, and was included in the Forest Management Plan for 17 bird species. • Ch. 5 Scenario Planning; section 5.6 Baseline Scenario Outputs; 5.6.4 Baseline Scenario Post-Modeling Outputs; 5.6.4.2 Indicator Bird Species • Ch. 5 Scenario Planning; section 5.7 Moose Emphasis Scenario Outputs; 5.7.4 Moose Emphasis Scenario Post-Modeling Outputs; 5.7.4.2 Indicator Bird Species Furthermore, 17 habitat maps were made for the 17 indicator bird species , and were included in the Forest Management Plan in Ch. 5 Scenario Planning – Appendix 3. "[summary] of the Ducks Unlimited Pasquia Project": The Ducks Unlimited Canada Pasquia project included wetlands mapping from satellite imagery. This is the wetlands that were used in the Forest Management Plan's landbase, which all modeling efforts (combined with the upland mapping) are based on. It is in the Forest Management Plan: Ducks Unlimited Canada's wetland surveys were described in Chapter 2 Report of Past Operations, subsection 2.8.1.1. Ducks Unlimited Canada Collaborative Projects.

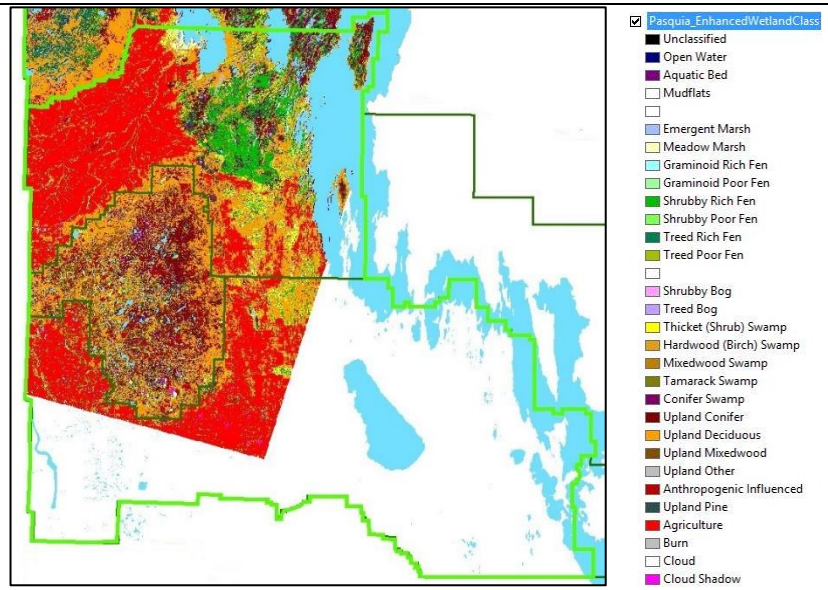


"The field guide to the wetlands of the Boreal Plains Ecozone of Canada provides a remote sensing-based wetland classification system. The Boreal Plains ecozone covers 740,632 square kilometers of the 2.6 million square kilometers of the Western Boreal Forest and extends across portions of British Columbia, Alberta, Saskatchewan and Manitoba.
This wetlands inventory utilizes 30 m resolution LANDSAT satellite imagery to outline an approach that incorporates information at various observation levels (ground, aerial, and satellite) into a comprehensive wetland classification system that can be used for field identification as well as for mapping purposes. The general wetland classes determined in the field guide were applicable at a national scale (bog, fen, marsh, swamp, open/shallow water) but designed to be interchangeable at a regional scale with the more detailed wetland classes (to compensate for regional scale differences in vegetation/climate/wetland type/distribution) with the more detailed wetland classes."

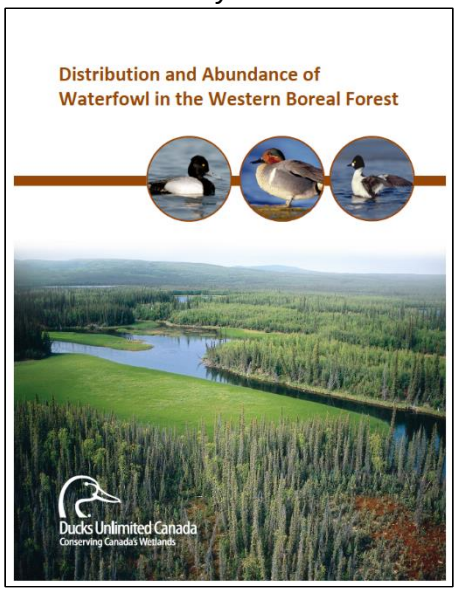
Smith, K., C.E. Smith, S.F. Forest, and A.J. Richard. 2007. A field guide to the wetlands of the boreal plains ecozone of Canada. Ducks Unlimited Canada publication. Western Boreal Office. Edmonton, AB. 98 pp.

- Ch. 3 Current Forest Condition – section 3.1 Ecological-Biophysical Environment; 3.1.7 Wetlands; 3.1.7.2 Wetlands Mapping

"The second wetlands mapping effort in FML #3 is the Ducks Unlimited Canada Enhanced Wetland Classification (Smith et al. 2007). This mapping effort used 30 X 30 m LANDSAT satellite imagery and provided broad coverage across western Canada. A significant amount of ground-truthing guided the satellite classification."



Water bird surveys



Ducks Unlimited Canada did the water bird surveys. Later they published their methods, results and discussion in the 2014 publication:

Armstrong, L., Howerter, D., Mack, G., McBlane, L., Morissette, J., Richard, A., Robin, M., Slattery, S., Smith, K., and S. Witherly. 2014. Distribution and abundance of waterfowl in the western boreal forest. Ducks Unlimited Canada. National Boreal Program & Institute for Wetland and Waterfowl Research. 17915 118 Avenue, Edmonton, AB. 32 pp. plus appendices.

The executive summary from Armstrong et al. 2014 is below:

Executive Summary

The western boreal forest (WBF) currently sustains the greatest number of wetlands and lakes in the world (e.g., Foote and Krogman 2006) and supports 12--- 15 million ducks each spring or approximately 41% of breeding population estimates. Waterfowl distribution maps are useful to assess the relative potential contribution of areas to overall population size, knowledge which can assist with assessing approaches to conservation and land use planning locally and regionally. The waterfowl distribution maps we present herein demonstrate Ducks Unlimited Canada's (DUC) commitment to understanding and mapping waterfowl distributions across the Boreal and Taiga Plain Ecozones of western Canada and represent the culmination of 10 years of DUC and partnership led survey efforts in seven study areas representing 400,000 hectares. This detailed technical report describes DUC survey and modeling protocols for the boreal forest and presents a broad scale interpretation of the resulting waterfowl distribution maps.

We used two principle survey methodologies: basin--- specific surveys, where waterfowl were counted only at basins 1--- 300 ha, and grid--- based surveys, where all water within a 2.5 km by 2.5 km grid were counted. To leverage both data types, we developed basin models, to predict the abundance of indicated breeding pairs at 1--- 300 ha basins, and non--- basin models, to predict pair abundance on all other water body types. Separate modeling processes were used for groups (guilds) of waterfowl with similar nesting habits (ground, overwater and cavity nesting). While using guilds may have reduced model precision for individual species, combining data for ecologically similar species increased statistical power. The resulting statistical models had predictive capability which ranged from 32%--- 81% depending on the nesting guild and model type.

Waterfowl distribution is determined by a complex suite of factors and our statistical models only represent correlations among a limited set of these factors; those that could be remotely sensed or for which broad scale spatial datasets were available. The strongest predictor of abundance of indicated breeding pairs was the density of wetlands. Predictions based on wetland density were further refined by a suite of other factors including potential evapotranspiration, surficial geology, wetland and upland vegetation classes and human disturbance. Most challenging to the interpretation of the models was the lack of consistency in the list and importance of factors influencing the abundance of waterfowl among guilds and between model types (basins 1--- 300 ha vs. other water bodies). This complexity resulted in difficulty extracting simple patterns that could be applied to land use decisions and generalized to all waterfowl.

We chose to define important waterfowl areas based on proportion of the

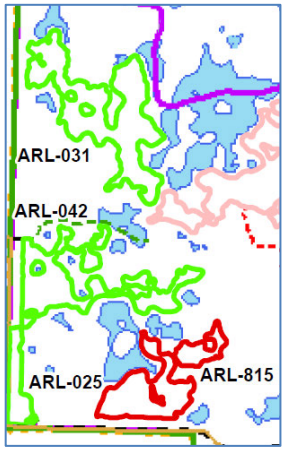
	predicted abundance of waterfowl among spatial units. Thus, the resulting distribution maps were stratified into the areas representing relative abundances of the modelled predicted pairs for each guild, based on all study areas combined. A map for total indicated breeding pairs was also developed and includes an additional class that represents areas on the landscape representing areas of the highest relative abundance of all three guilds together. Using this method, areas of high waterfowl abundances are assumed to be of highest conservation priority. Across study areas, high and medium waterfowl abundance areas, i.e. 50% of predicted pairs, occupied only 15% of the landscape. From a conservation planning perspective, these areas potentially represent an opportunity to impact many birds over a relatively small geographic area. While these high density areas represent the best habitat in the boreal, half of the WBF population resides outside of these areas. Thus, meeting Canadian commitments to North American Waterfowl Management Plan (NAWMP) population goals will require maintaining the ecological capability of the remaining 85% of the landscape to support the other 50% of the population. At a finer spatial scale, distribution of pairs among these density categories was highly variable within study areas. For example, some areas had few high density areas compared to the overall pattern. Regional variation in density still existed in these lower density study areas. However, relatively low densities with more homogenous distributions suggests that the types and spatial application of management actions required for these areas may differ from areas with many high density regions. Development of associated guidelines is beyond the scope of this document, but can be a subject of further collaboration between DUC and partners in each study area. The scale at which these results are applied should be carefully considered. We present broad scale models using variables that are sometimes coarse and measured entirely remotely. This approach was necessary given the size of the WBF and its remote nature consequently, these model outputs would be most beneficial for broadscale applications. Potential applications of this work include: 1) assisting with the selection of protected areas for waterfowl breeding habitat (e.g., protected areas or ecological reserve designation), 2) providing input into strategic land use plans (government and/or industry) and 3) supporting the development of more effective operational guidelines and government regulations pertaining to boreal wetlands and waterfowl.

3.1.10.9 Golden-winged Warbler	We appreciate that descriptions of golden-winged warbler and other focal bird species at risk were added to the document, but this section still fails to recognize that critical habitat has been defined for this species under the federal Species at Risk Act, including critical habitat squares located within FML 3. It should also mention that best management practices have also been published to assist forestry and other industry protect, maintain, and create habitat for this species. This information was previously shared with Louisiana-Pacific. LP completes bird surveys on proposed summer cutblocks to ensure we do not affect Golden-winged warbler and other bird species at risk. This is fully acknowledged in the Forest Management Plan. The Federal Golden-winged warbler recovery strategy lists 'Detailed Biophysical Attributes of Breeding Habitat for the Golden-winged Warbler' in Table E-1. This includes forest whose characteristics include 10% to 100% canopy closure of deciduous or mixedwood. A combination of young aspen and open shrub dominated area is ideal. The existing variable retention harvest system used by both LP and Quota Holders meets these criteria. "[golden-winged warbler] best management practices have also been published…" Yes, we received and reviewed the document, which has a stand-level or operational-level focus: Golden-winged Warbler Working Group. No date. Best Management Practices For Golden-winged Warbler Habitat in the Aspen Parkland Transition Zone of Canada. www.gwwa.org. 2 pp. Of note is: "The key to productive Golden-winged Warbler habitat in this region is maintaining a forested mosaic that includes gaps with shrubs and forbs, whether or not these are fixed in position or shift over time." At the operational level, variable-retention harvest helps create the forested mosaic of gaps (harvested area) next to mature forest. Obviously, the existing use of variable-retention harvesting helps meet the "...key to productive Golden-winged Warbler habitat in this region…". Interestingly, this forest mosaic of gaps is also beneficial to high-quality moose habitat, which consists of young forest or gaps (moose forage) next to mature forest (moose cover).

Also of note is:

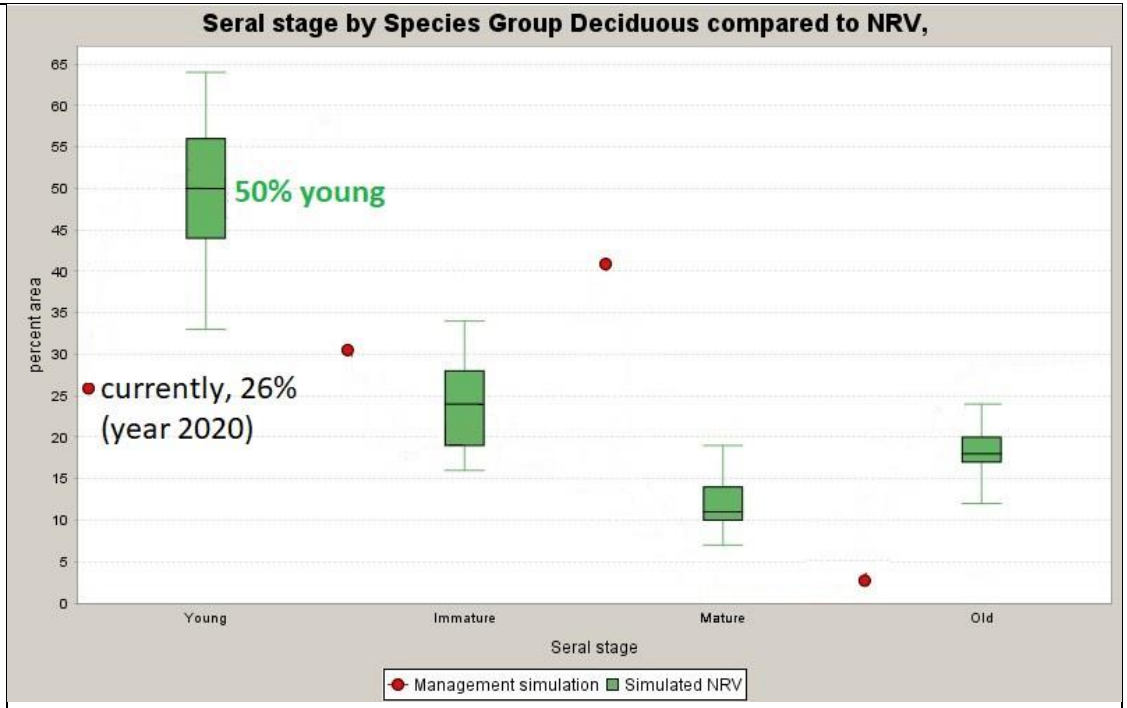
> "Forest edges should be "feathered", i.e., not with sharp transitions but irregular and with shrubs and forbs mixed with trees (Figure 3)."

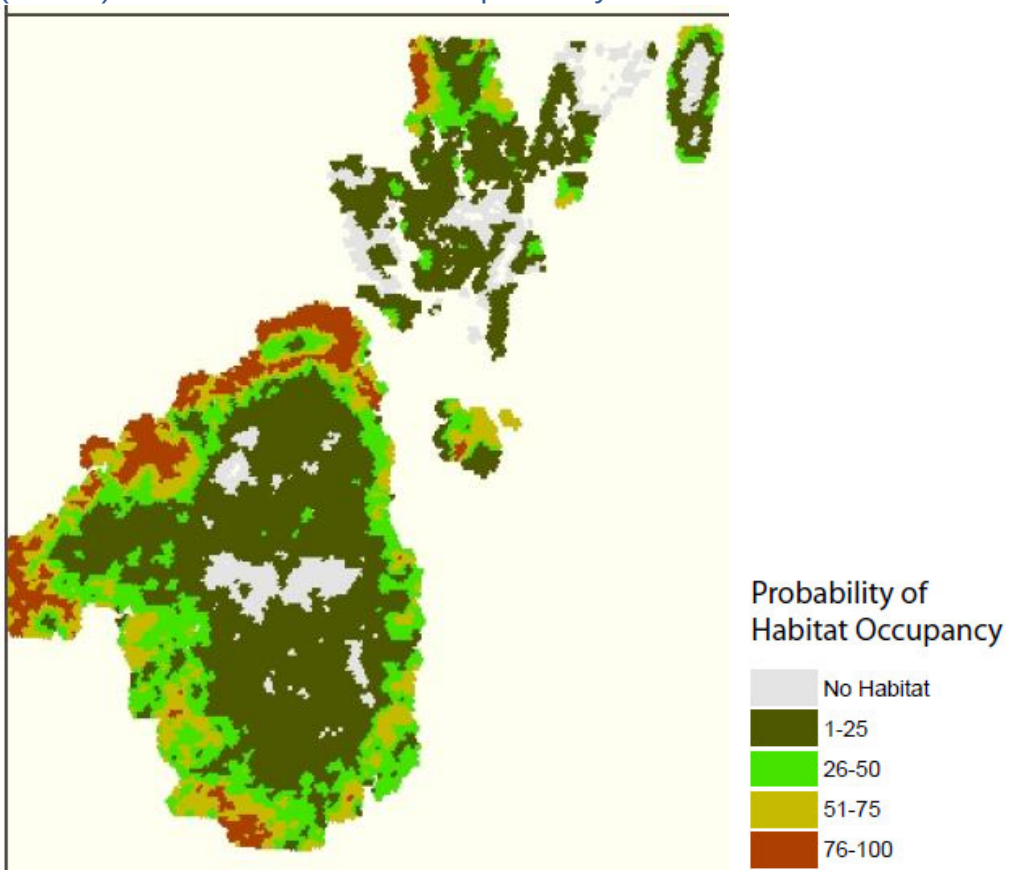
Operationally, proposed variable-retention harvest follows natural boundaries, which are irregular and provide some feathering. Our review of the golden-winged warbler best management practices document suggested that continuing this standard practice would be beneficial to golden-winged warbler habitat. A small sample of planned harvest blocks from the 2020-2022 FML #3 Operating Plan shows the highly irregular boundaries (below).

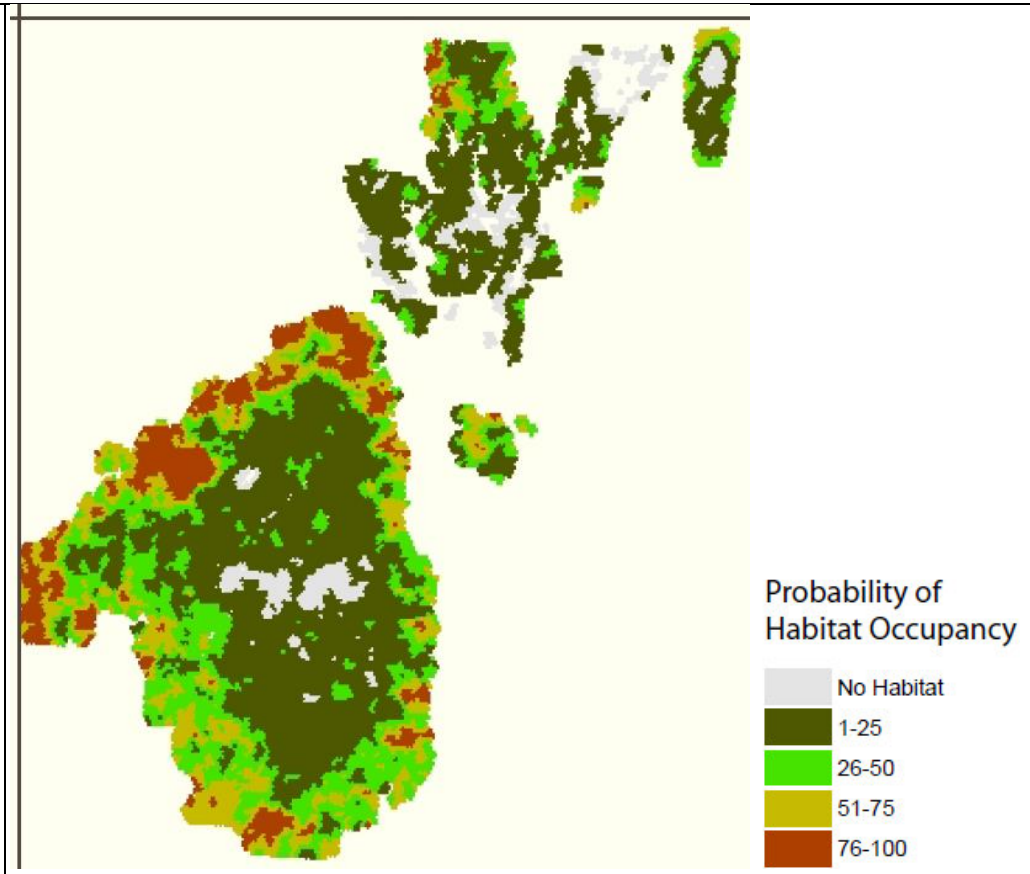


Landscape-level Golden-winged warbler

Natural range of variation (NRV) shows us that in FML #3 we should have 50% of the natural amount of young deciduous seral stage (see graph below), which is important to Golden-winged warbler's critical habitat of nesting and foraging. Unfortunately, we currently have 26% young deciduous seral stage, which is less than half of the natural amount of young deciduous seral stage. The Forest Management Plan is attempting to correct the extreme imbalance of seral stages.

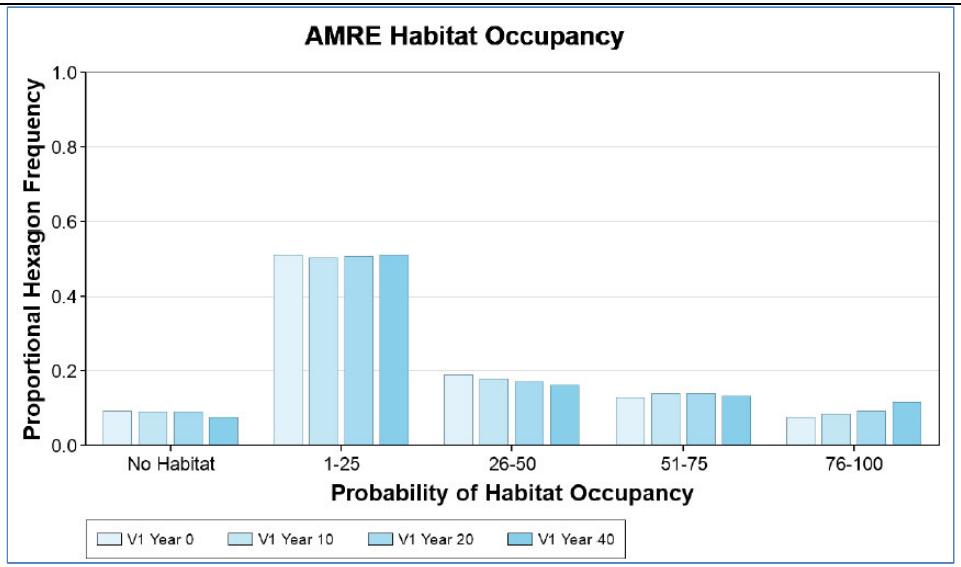
	
5.6.4.2 Indicator Bird Species Table 5.10 & 5.7.4.2 Indicator Bird Species Table 5.13	The Branch previously requested that details be provided on what triggers a "positive", "negative", "slightly positive", etc. classification. The coefficients and p-values or other statistic used to infer significant change should be provided with the classification in these columns. We appreciate that some descriptions of what qualifies as change has been added, and modeling outputs for individual variables has been pasted into the appendices, but this still does not provide a complete summary, and explain what thresholds exist between certain classifications, eg. between neutral, slightly positive, and positive. Details were provided to the FMP Planning Team, which Wildlife and Fisheries Branch was a participant, as to exactly how the 17 indicator bird species habitat estimated change. The process used to see landscape-level general trends were to compare

	the baseline indicator bird habitat map (time zero; year 2020; the beginning of the indicator bird habitat modeling before forest management activities were modeled) with the modeled future indicator bird habitat maps. The landscape-level general trends were either: positive; negative; or neutral. For example, the first of 17 indicator birds in the table is American redstart (AMRE). The baseline habitat map in the year 2020 is:  The habitat map estimated 20 years in the future (the year 2040) is at the end of the 20-year plan, and is:



The American redstart habitat estimates don't change very much after 20 years of forest management activities and were therefore considered 'neutral'.

In addition to the spatial landscape-level comparison, landscape-level proportions of habitat graph were cross-checked as a validation (see graph below):



"The coefficients and p- values or other statistic used to infer significant change should be provided with theclassification in these columns."

Dr. Rob Rempel wrote:
A revised table of % habitat-change has been provided below, including detailed explanation of the quantitative analysis in % change and thresholds defined to infer neutral, slight positive/negative, and positive/negative change. These values are based on single scenario for Baseline, Moose Emphasis, and No Harvest, and not on multiple, randomly generated scenarios. As a consequence, variance among scenarios cannot be estimated, and hence p-value statistics for % change statistics are not possible.

The % habitat change values are based on a habitat model that ecologists call a Resource Selection Probability Function (RSPF). These models are created using a statistical procedure called binary logistic regression, which relates presence or absence of a species to forest conditions observed at the survey point. Models were created using Bayesian logistic regression, which allows prior knowledge to be incorporated into the model. This approach is different than traditional statistical models in that variables

selected for use in the model are based on an information statistic (AIC/BIC) and *posterior* probabilities, not on individual model coefficients and associated p-values. Consequently, individual coefficient p-values are not available, but rather statistics were generated for overall performance of the selected model.

The performance statistic is termed "Area Under the Curve (AUC)", where the curve is the Resource Operating Characteristic curve (ROC), which assesses the model's ability to accurately assign occupancy considering both false positive and false negative errors. AUC values above 70% indicate acceptable model performance, where there is a 70% probability that for each stand the model correctly predicts either presence or absence of the species. All species except Hermit Thrush had estimated model performance about 70%; Hermit Thrush model was 67.8 % (see Table below). To create this statistic a threshold value must be provided, which specifies the probability of occupancy level at which a site would be considered occupied. This threshold value was determined in such a manner as to balance false positive (incorrectly predicting the site will be occupied) with false negative (incorrectly predicting the site will be unoccupied) error.

Species	Tuned Threshold	AUC_ROC (%)
AMRE	0.220	84.8
BCCH	0.367	73.1
BHCO	0.449	78.3
BHVI	0.352	75.0
BOCH	0.354	76.8
BRCR	0.354	76.7
COYE	0.370	71.0
CSWA	0.361	72.4
GCKI	0.416	77.7
HETH	0.335	67.8
OVEN	0.455	82.1
REVI	0.360	78.1

	SWTH	0.237	72.9
	VEER	0.358	81.3
	WIWR	0.274	72.6
	YBSA	0.388	77.5
	YWAR	0.319	76.9

The Tuned Threshold by species is the probability level above which the site is predicted as occupied.

AUC - ROC curve is a performance measurement for the classification problems at various threshold settings. ROC is a probability curve and AUC represents the degree or measure of separability. It tells how much the model is capable of distinguishing between classes. The higher the AUC, the better the model is at predicting 0 classes as 0 and 1 classes as 1. By analogy, the higher the AUC, the better the model is at distinguishing between occupied and unoccupied habitat.

	A column summarizing the area (hectare or % of landscape) lost or gained within each “Probability of Habitat Occupancy” category would also useful, similar to what is provided for moose and marten. Dr. Rob Rempel wrote: The habitat model values do not directly relate to carrying capacity. For example, a 600% increase in Resource Selection Probability Function (RSPF) probability of occupancy for a species does not mean that there will be an expected 600% increase in abundance for the species, and likewise such a decrease does not indicate in a massive decline. Many factors, including how limiting habitat is, will influence change in abundance. The models are most useful in estimating relative differences in habitat quality (e.g., between scenarios or over time). The Branch also pointed out the following discrepancies and requested that further explanation be provided on why negative change should be considered acceptable, which does not appear to have been added to either of these sections or section 5.8. As a consequence of forest disturbance under an NRV, habitat quality will decline for species that prefer younger forest as the forest ages and becomes more homogenous and will decline for species that prefer older forest if the forest is disturbed through forest fire and harvest and creates more edge between young and old forest. In the analysis of songbird habitat in the FML, models for some species show a decline in high quality habitat over time. Some of these species (e.g., BHCO, CSWA, HETH, and VEER) showed a decline under the no-harvest scenarios but showed an increase under the Baseline and Moose Emphasis harvest scenarios. Other species showed declines under the harvest scenarios. The estimates in the ‘no harvest’ modeling runs provide valuable context to interpret both negative and positive change. Many of the modelled species that showed declines in high quality habitat under the forest harvest scenarios are associated with older conifer forest (e.g., Blue-Headed Vireo, Winter Wren, Boreal Chickadee, Golden-crowned Kinglet). The interior of the Duck Mountains is where most of the older conifer is located, and fire suppression over the years has resulted in

	unnaturally high levels of old conifer. These areas are naturally susceptible to fire (as recent fires across western Canada remind us), and the trees are indeed adapted to a fire ecology. LP does not harvest conifer, but independent softwood license holders do. Harvest brings the forest to a more natural age-balance in these conifer areas, and the result is a decrease in area of high-quality habitat for these species. This decrease does not decrease habitat to a level that puts any species at risk, and indeed the overall balance of the forest songbird community is strengthened. **Previous comments:** Some of the bird maps in the appendix, and specifically the Probability of Habitat Occupancy graphs at the base of each page, differ from some of "Estimated Response" listed in the tables. A few examples where the graph and the information summarised in Tables 5.10 & 5.13 (and in the combined 5.18) do not appear to match include: Discrepancies were noted, and the table revised according to quantitative rules noted below: Habitat change was calculated as percent change in the probability of occupancy values derived from the habitat models. High quality habitat included all areas with a probability of occupancy > 50%. For the Baseline and Moose emphasis area scenarios, % change was based on a comparison of year 40 values with the No Harvest scenario. For the No Harvest scenario, % change was based on a comparison of year 40 with year 0 (start date). Percent change values > 60% were considered a positive increase in habitat quality, while values < -60% were considered negative. Values between 25% and 60% were considered slightly positive, and likewise for negative values, slightly negative. Values with a change of < 25% were considered neutral. Revised habitat-change table.

AOU Code	No Harvest estimated response	BASELINE Estimated Response	MOOSE EMPHASIS Estimated Response
*AMRE	Neutral	Neutral	Neutral
BCCH	Slightly Positive	Neutral	Neutral
BHCO	Slightly Negative	Positive	Positive
BHVI	Positive	Negative	Negative
BOCH	Positive	Negative	Negative
BRCR	Positive	Negative	Negative
**COYE	Positive	Slightly Negative	Slightly Negative
CSWA	Negative	Positive	Positive
GCKI	Positive	Negative	Negative
HETH	Slightly Negative	Positive	Positive
OVEN	Slightly Positive	Slightly Positive	Slightly Positive
REVI	Slightly Positive	Neutral	Neutral
SWTH	Positive	Negative	Negative
***VEER	Slightly Negative	Positive	Positive
WIWR	Positive	Negative	Negative
YBSA	Positive	Slightly Negative	Slightly Negative
YWAR	Positive	Negative	Negative

*AMRE is a surrogate for species at risk GWWA Golden-Winged Warbler
**COYE is a surrogate for species at risk OSFL Olive-Sided Flycatcher
***VEER is also a surrogate for species at risk GWWA Golden-Winged Warbler

Note that the tables in the FMP text have been updated to ensure consistency.

Common Yellowthroat (surrogate for Olive-sided Flycatcher)
The tables indicate that the Estimated Response for this species is slightly positive for No Harvest and Moose Emphasis and neutral for Baseline scenarios. The maps, and the accompanying graph summarizing the Probability of Habitat Occupancy indicate that the Moose Emphasis and Baseline scenarios will have similar impacts on this species.

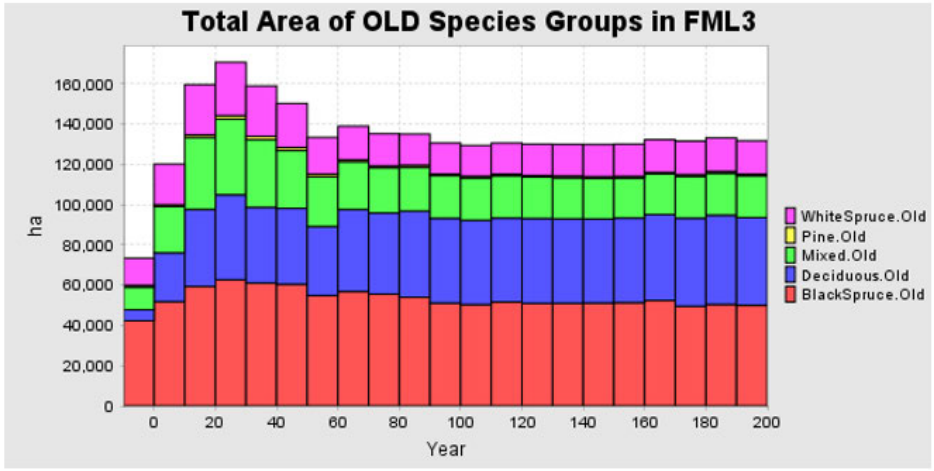
See revised habitat change table. For Common Yellowthroat (COYE) habitat change is now indicated as positive for no harvest, and slightly negative for both harvest scenarios.

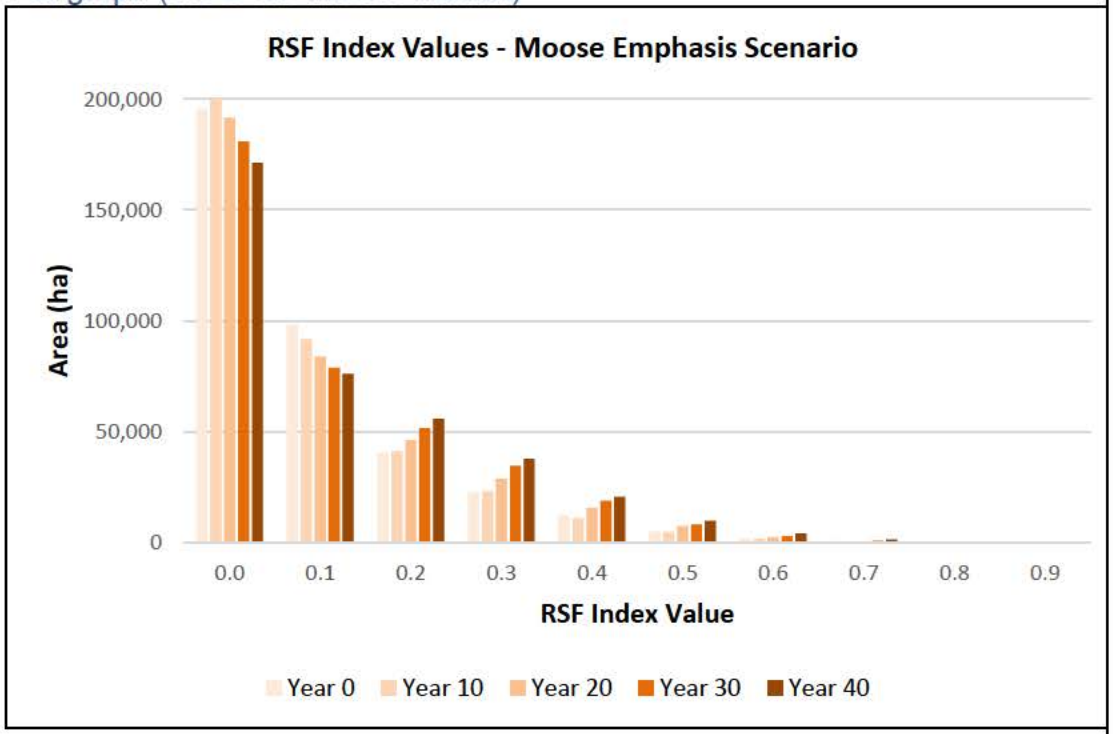
	Black-capped Chickadee The tables indicate that No Harvest and Moose Emphasis scenarios are slightly positive and Baseline is neutral. The Probability of Habitat Occupancy graphs suggest that the Baseline scenario has higher levels of high quality habitat (51-75% and 76-100% occurrence) after 40 years than the other two scenarios. See revised habitat change table. For Black-capped Chickadee (BCCH), and based on the analysis method described above, BCCH did have slightly higher habitat values for Baseline than Moose Emphasis, but % change was < 25%, so was considered neutral for both harvest scenarios. The No Harvest scenario had higher levels after 40 years for this conifer loving species. Blue-headed Vireo There was an observation in the Blue-headed Vireo account summary in the Manitoba Breeding Bird Atlas that this species is seldom detected near roads. Although the overall estimated response for this species is “negative”, the reductionin roads the selected model could be used to temper the negative decline in habitat, if roads were not included in the probability of occupancy assessment (seecomments about explaining negative change below). Roads were not included in the model, so if the effect of roads has a significant influence on Blue-headed vireo (BHVI), then yes indeed the road reduction identified in the plan would temper the negative effects indicated by the Resource Selection Probability Function (RSPF) habitat model. Brown-headed Cowbird Moose Emphasis and Baseline scenarios are very similar at the higher levels of habitat occupancy (>25%), only differing at no habitat and lower probability (<25%), yet Moose Emphasis is neutral, and Baseline is positive. See revised habitat change table. For Brown-Headed Cowbird (BHCO) habitat change is now indicated as positive for both harvest scenarios, and slightly negative for the No Harvest scenario.

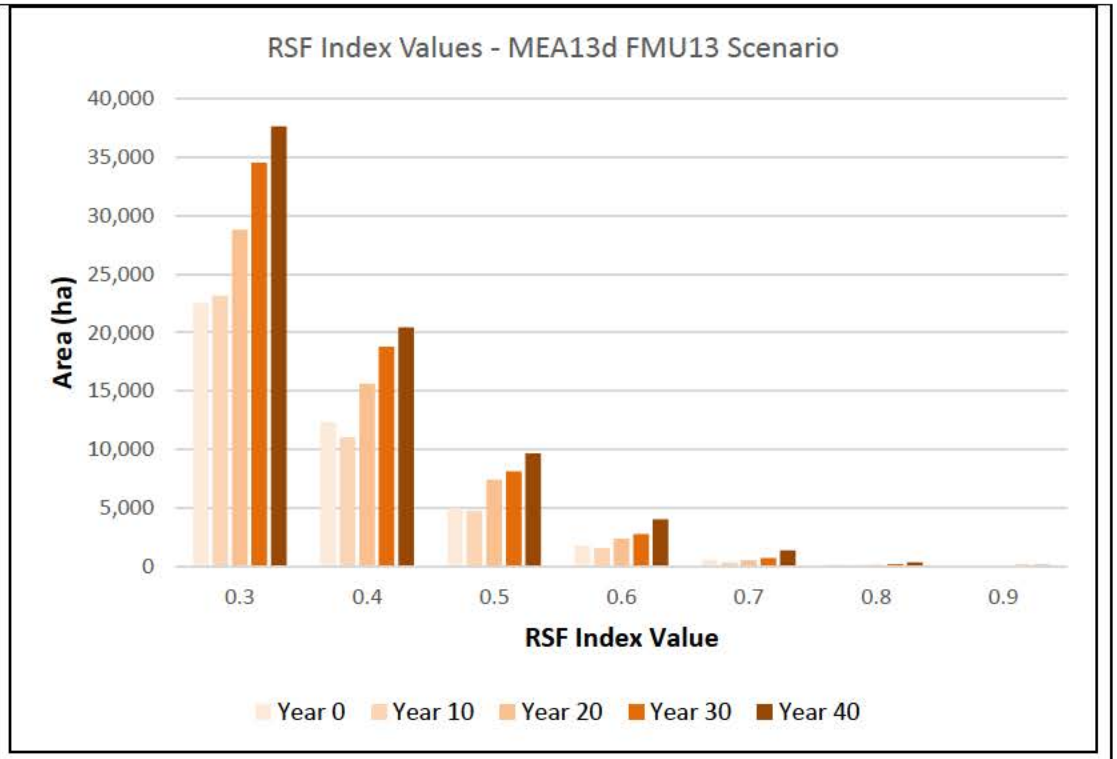
	Red-eyed Vireo The values in the Probability of Occurrence graphs for all the scenarios appear very similar, yet the estimated response in No Harvest and Moose Emphasis scenarios are slightly positive and the Baseline is neutral. See revised habitat change table. For Red-eyed vireo (REVI) habitat change is now indicated as neutral for both harvest scenarios, and slightly positive for the No Harvest scenario. Golden-winged Warbler (surrogate by American Redstart and Veery) All scenarios are neutral or positive for AMRE and VEER, however true positive management to benefit GWWA would be at the operations level rather than the plan level. The habitat model can be considered more of a coarse-filter assessment, where the integrity of the overall frame of the house is assessed. As noted, some species will require more of a fine-filter approach to improve habitat. So yes, operational level options at the stand scale (as might be recommended by the Golden-winged Warbler (GWWA) working group) could be considered in addition to the broader landscape scale, plan level analysis provided by the Resource Selection Probability Function (RSPF) habitat model. There will always be concern with negative change (depending on if significant or not, as questioned above). **This report should contain an assessment of the change, and rational as to why negative change and loss of that habitat niche is acceptable (e.g. correcting to NRV, the particular habitat niche is common, covering large areas in the Ducks compared to other ecosystems).** Both harvest scenarios will have a negative impact on species associated with old growth stands (e.g. Blue-headed Vireo, Winter Wren, Boreal Chickadee, etc). Many of these species are sensitive to forest fragmentation, and in general, long-term Breeding Bird Survey trends for these species appear to be stable or positive. Despite the negative response, it is beneficial to retain some tracts of old growth forest as breeding refugia for these species, so statistics on these habitat components could be provided in the section (e.g. assurance that the FMP is not eliminating all “old” stands from FML).

	Habitat quality was measured by a model Resource Selection Probability Function (RSPF) that estimates preference for different ages, cover-types, and landscape pattern. For any particular species habitat quality changes over time as forest age and cover-type, and landscape pattern changes. In natural systems, this rate of change is determined by the natural disturbance regime, which identifies the rate at which fires occur, and the extent and intensity of fires and other forms of natural disturbance. Of course, there is quite a broad range in extent of disturbance year to year, and even decade to decade, and ecologists term this the Natural Range of Variability or NRV. The forest/wildlife management and conservation objectives are often to maintain forest conditions within the NRV as the 'best-bet' approach to conserving biodiversity and the integrity of the forest songbird community. Within the Duck Mountains this is a challenge as the area is a bit small to emulate a full natural disturbance regime, both intentional burning along the lower boundaries, selective fire suppression, and forest harvest within the Duck Mountains have created conditions that deviate from a completely natural range in variation, and indeed some of the high biodiversity value found within the Duck Mountains is likely a result of this human-modified forest condition that creates a unique condition of multiple age-classes of hardwood (aspen) along the mountain sides, and conifer in the flatter interior. NRV can be used to help guide management to conserve biodiversity (including moose). As a consequence of forest disturbance under an NRV, habitat quality will decline for species that prefer younger forest as the forest ages and becomes more homogenous and will decline for species that prefer older forest if the forest is disturbed through forest fire and harvest and creates more edge between young and old forest. In the analysis of songbird habitat in the FML, models for some species show a decline in high quality habitat over time. Some of these species (e.g., BHCO, CSWA, HETH, and VEER) showed a decline under the no-harvest scenarios but showed an increase under the Baseline and Moose Emphasis harvest scenarios. Other species showed declines under the harvest scenarios. The estimates in the 'no harvest' modeling runs provide valuable context to interpret both negative and positive change. Many of the modelled species that showed declines in high quality habitat under the forest harvest scenarios are associated with older conifer forest

	(e.g., Blue-Headed Vireo, Winter Wren, Boreal Chickadee, Golden-crowned Kinglet). The interior of the Duck Mountains is where most of the older conifer is located, and fire suppression over the years has resulted in unnaturally high levels of old conifer. These areas are naturally susceptible to fire (as recent fires across western Canada remind us), and the trees are indeed adapted to a fire ecology. LP does not harvest conifer, but independent softwood license holders do. Harvest brings the forest to a more natural age-balance in these conifer areas, and the result is a decrease in area of high-quality habitat for these species. This decrease does not decrease habitat to a level that puts any species at risk, and indeed the overall balance of the forest songbird community is strengthened. Note that Ovenbird, which prefers older hardwood (aspen) forests, had improved habitat under both harvest scenarios. The retention of old forest, especially conifer, could be helpful in terms of providing refugia for these species that require older conifer. However, managing the forest under the Natural Range of Variation retains old forest on the landscape at all times. Old forest was tracked in the Patchworks model, 200 modeling estimates are shown in the bar graph below: From Chapter 5 Scenario Planning (page 63) 5.7.1.3 Old Forest Retention on the landscape Retaining a stable amount of old forest across the entire landscape always during the 200-year planning period (Figure 5.38) is an important coarse-filter, landscape-level objective that benefits biodiversity and wildlife habitat for species that require old forest. Old forest is linked to Natural Range of Variability, and therefore uses the NRV species groups.

	 **Figure 5.38 Total area of old seral stage NRV species groups over the 200-year planning period.** For context, the forested area available for harvest in FML #3 is approximately 500,000 ha. The Y-axis of the graph is area of old forest is in hectares. At time zero (year 2020) the baseline is about 72,000 ha of old forest, or 14% old forest. At time 20 (year 2040) it is estimated that there will be 160,000 ha of old forest (32%), even with an assumed full allowable cut harvest of softwood and hardwood every year.
5.6.4.3 Winter Moose Habitat Figure 5.33 & 5.7.4.3 Winter Moose Habitat Figure 5.46	Why were the values of 0.0 – 0.2 added back into the winter moose habitat histogram, which now negates the ability to observe change in the 0.7- 0.9 range?

	The Branch agreed with them not being shown on the original histogram due tosuch high areas values of 0.0 - 0.2 overwhelming the graph. The full graph was included to show the FMP readers the full picture about moose habitat. Both graphs have now been included. Full graph (0.0 to 0.9 moose habitat) 



Partial graph (omits 0.0, 0.1, and 0.2) moose habitat.

We previously requested that text or a table be added to show the area (ha) decrease in low quality habitat values to compliment the apparent conversion or increase in higher quality values that is shown across the board in the histogram. This need is further emphasized if the higher quality values can not be observed ormeasured in the new histograms. A similar table has been added to the monitoringchapter, but should be added to these chapters as well, with area projection of the 40 year period (opposed to only year 20 needed for the 5-year reports).

20-40 years from now is the next 20-year Forest Management Plan – this is projecting too far ahead.

Areas in hectares were already provided in Chapter 7 - Table 7.8 (see below):

Table 0.1 Modeled winter moose habitat units from 2020 (time zero) to 20 years in the future.

	Winter moose habitat quality (0.0 to 1.0)									
Year	**0.0**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**
Year 0	195,501	98,292	40,413	22,525	12,347	4,952	1,781	568	178	79
*Yr 5**	*199,154*	*94,989*	*40,809*	*22,835*	*11,686*	*4,836*	*1,682*	*454*	*135*	*53*
Year 10	202,808	91,686	41,206	23,146	11,025	4,720	1,583	341	92	28
*Yr 15**	*197,253*	*87,819*	*43,656*	*25,972*	*13,330*	*6,064*	*1,981*	*423*	*107*	*32*
Year 20	191,698	83,951	46,106	28,798	15,635	7,409	2,378	504	121	35

**years 5 and 15 are interpolated values between the 10-year modeling periods.*

5.6.6.4 Summer Moose Habitat
5.7.6.4 Summer Moose Habitat

Similar to winter moose habitat, a table showing the hectare change within each category over time would be useful, and should be incorporated in to section 5.8 when making comparisons between the two scenarios

LP will work towards summer moose habitat modeling once summer moose data becomes available. LP will incorporate into future 5-year Forest Management Plan monitoring reports a quantitative summer moose habitat model. As per the signed agreement to jointly (LP and the Manitoba government) do a moose and elk habitat analysis project on quantitative data, once the data becomes available. We expect to be able to use the quantitative models for the future 5 year reports.

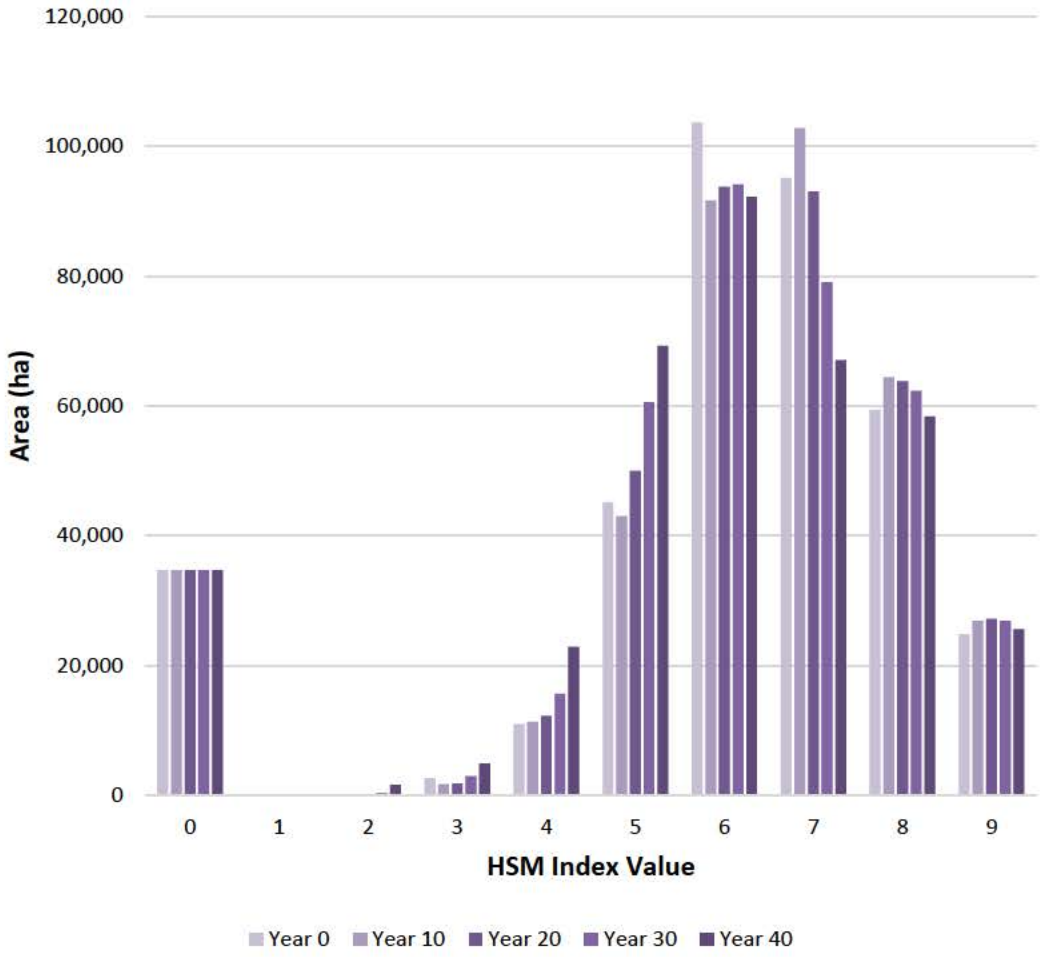
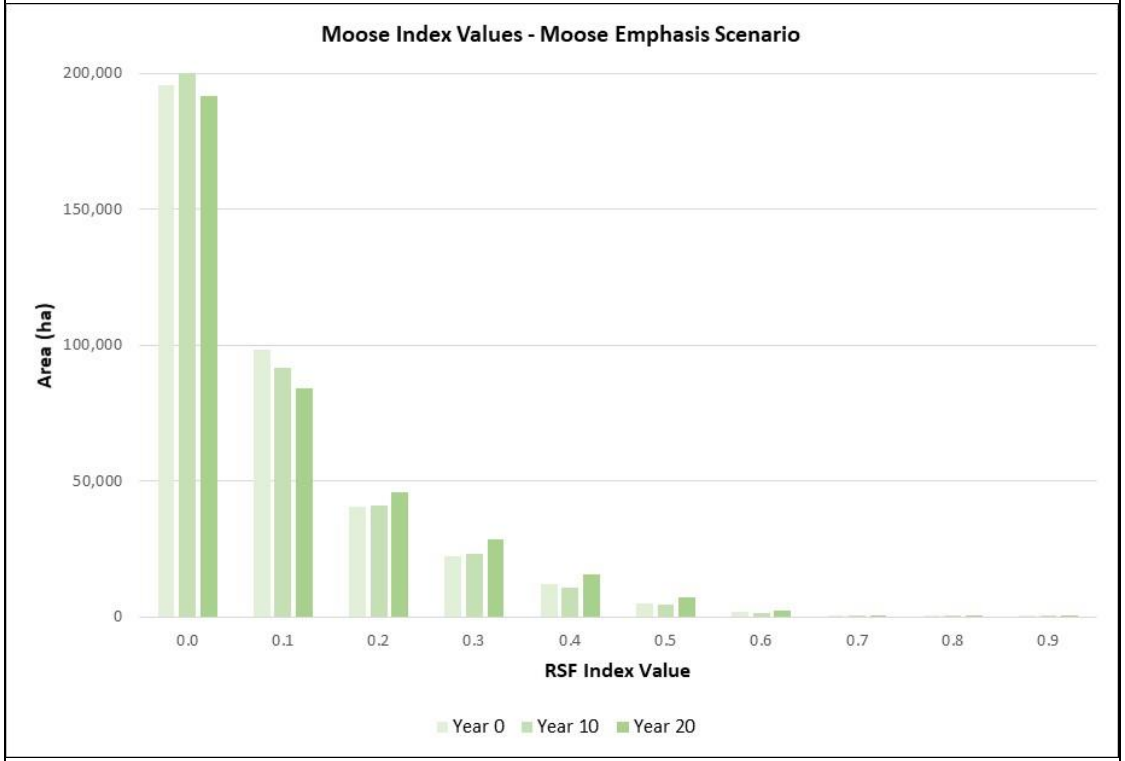


Figure 0.1 Moose Emphasis Scenario summer habitat is stable over time.

The area of summer moose habitat (0 – no habitat; 1 – very low habitat; 9-very high moose habitat) is displayed in the chart.

5.8.3 Objective Comparison by Scenario	As previously mentioned, this section does not include a comparison for summer moose habitat. This should be included. The stakeholders and government staff involved in the Forest Management Plan chose winter moose habitat, which was based on aerial moose surveys. The stakeholders and government staff did not choose summer moose habitat, due to it not being derived from data. Therefore, winter moose habitat was included in the comparison, but summer moose habitat was not included in the comparison. LP will work towards summer moose habitat modeling once summer moose data becomes available.
Chapter 7 [Monitoring Framework]	The Branch still believes that commitments to data collection and analysis are still required prior to final approval of the FMP. We recognize that a detailed moose and elk habitat modelling approach is added in the appendices, however this is only a proposal from a consultant to Louisiana-Pacific and the Province of Manitoba. No details and commitments are made regarding how data will be collected, obtained, and provided to the consultant for analysis, nor are there timelines on when during the life of this plan it will be conducted, and during which 5-year period the model will be compared to harvest and incorporated into future reports. Monitoring commitments were made in Chapter 7 Monitoring Framework. These were reviewed and approved by the Province of Manitoba Forest Management Plan committee members and the Wildlife and Fisheries Branch. The moose and elk data collection, analysis, and timelines are also dependent upon data as it becomes available. We cannot commit to a timeline due to the many variables that affect the collection of wildlife survey data, (i.e. snow depth, weather, etc.). We reiterate that much of what is proposed for monitoring is just re-running habitat projections with updated forest harvest information. This is an important first step, however the plan still needs to acknowledge that these are projections, and the monitoring program should make an attempt to validate them. e.g.) The FMP projects that summer moose habitat will increase based on the HSM, but there is no proposed monitoring that addresses 1) the projected “ideal moose habitat” is

	actually being created, 2) if moose are actually using the ideal habitat, and 3) if they aren't using the ideal habitat, then why not, and does the model need to be adapted? What are the triggers for adaptation, and what actions will be taken to reverse any negative projections (where possible)? LP will work with the Province of Manitoba on this in a cooperative fashion. Monitoring program will make and attempt to validate summer moose habitat, based on moose data as it become available. Future survey data as it becomes available should enhance moose summer habitat information. Additional data will further inform moose summer habitat selection and use.
7.2.7 Road Decommissioning	The Branch originally requested more details on the monitoring process. The effectiveness of road decommissioning should be monitored as part of this plan. We suggest that Louisiana-Pacific assess the continued use of closed roads at the end of September each year for a period of 5 years to judge the effectiveness of road closure and decommissioning methods. If current methods are not working, then they should be adapted. Note that once roads are decommissioned and final inspection issued, the area where the road was previously becomes the responsibility of the Province of Manitoba. Water crossing inspections are part of roads, and happen every spring and fall, up to two years after crossing removal.
7.3 Five-year Report FMP Monitoring	We reiterate that overall, the wildlife components in this section do not explain what data will be analyzed and reported. Will all focal wildlife species habitat be remodeled with the actual 5-year harvest and compared against what is projected now (which as has been noted throughout the process, could be only ~50%)? It should also contain details on how this will be conducted. LP had hoped to work cooperatively with the Province of Manitoba on wildlife data analysis. Details in Ch. 7 Monitoring Framework, section 7.3 Five-Year Report FMP Monitoring.
7.3.3 Bird Species at Risk 7.3.4 Indicator Bird Species	Both bird sections only explain that the models will be updated if additional information becomes available. It is acknowledged that this may happen following continued species at risk surveys, however the is no indication the long-term bird

	monitoring program which collected data for the indicator species models will be continued into the future. Both sections fail to explain how bird habitat assessments and scenario projections will be assessed, validated or re-projected in the 5-year reports. The bird monitoring program is stated to continue. However, it is not known in advance how many bird species at risk observations will be collected. There is no re-projecting. The 5-year FMP report will run models, as per Chapter 7 Monitoring Framework.
7.3.6 Winter Moose	Moose habitat units are referenced in the table and text, which appear to be actually hectares, since the values match the figures used through out the rest of the Plan. This should be consistent throughout the document.  **Figure 0.2. Winter moose habitat modeled estimates over the life of the 20-Year Forest Management Plan.**

The Y-axis is hectares and is used consistently throughout the document.

What does the "total habitat units" in the table represent? The projected hectare change between years within each category is appreciated, but more explanation is required on how it is being summarized, and what specific change will be evaluated in the future.

Table 0.2 Modeled winter moose habitat units from 2020 (time zero) to 20 years in the future.

	Winter moose habitat quality (0.0 to 1.0)									
Year	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
Year 0	195,501	98,292	40,413	22,525	12,347	4,952	1,781	568	178	79
*Yr 5**	*199,154*	*94,989*	*40,809*	*22,835*	*11,686*	*4,836*	*1,682*	*454*	*135*	*53*
Year 10	202,808	91,686	41,206	23,146	11,025	4,720	1,583	341	92	28
*Yr 15**	*197,253*	*87,819*	*43,656*	*25,972*	*13,330*	*6,064*	*1,981*	*423*	*107*	*32*
Year 20	191,698	83,951	46,106	28,798	15,635	7,409	2,378	504	121	35

and 15 are interpolated values between the 10-year modeling periods.

Total habitat units are habitat quality (0.0 to 0.9) multiplied by area (ha). It is the total of moose habitat over the landscape.

This chapter does not include a summer moose habitat section. The 5-year report should compare summer moose habitat projections vs. actual landscape change using the habitat suitability model used in the scenario planning. If the proposed quantitative summer moose habitat model is created, it can be incorporated at a later date.

Chapter 7 Monitoring Framework does not include a section on summer moose habitat on purpose. Winter moose habitat is based on multiple years of aerial survey data, while summer moose habitat is not.
There is not enough data and information on summer moose habitat at this time.

7.3.7 Marten Winter Cover	We restate our comments here to help improve other wildlife sections and monitoring tables. The explanation of recalculation of habitat provided in this section should be mirrored in other species sections. This is exactly what the 5-year report should contain – projected vs. reality, followed by an amended projection. We will run the marten model again during the FMP 5-year reports, not re-projecting. In Chapter 7 Monitoring Framework, we stated we would be recalculating marten winter cover 5, 10, 15, and 20 years after the Forest Management Plan is approved. **7.3.7 Marten Winter Cover** Marten winter cover habitat estimates were based on modeling projections, from the opinion-based HSI model provided by the Province of Manitoba. A baseline of marten winter cover was estimated for the year 2020, which is the beginning of the Forest Management Plan (FMP). Future estimates, based on changes to the forest cover, were also estimated. The 2020 marten habitat projections can be re-estimated post-FMP approval (Table 7.9) by using an updated land base that accounts for disturbances, growth, and succession. This land base would be updated to include actual changes in forest stands. For example, all forest stand ages can be increased by five years. Actual harvested areas age would be reset to zero, or the year the block was harvested.

Table 7.9 Marten Winter Cover Habitat Units across the landscape

Year	Planned scenario *(marten habitat units)*	5-Year Actual	10-Year Actual	15-Year Actual	20-Year Actual
0 *(baseline in 2020)*	50,667				
5*	45,842				
10	41,016				
*15**	*38,659*				

	20 | 36,302 | | | | | **years 5 and 15 are interpolated values between the 10-year modeling periods.*
7.4 Future Monitoring	We restate that this section does not contain any timelines for LP to "**explore and pursue**" any of the future monitoring projects. It leaves us wondering, what happens if LP does not explore or implement any of these ideas? Chapter 7 monitoring Framework, Section 7.4 Future Monitoring - is a commitment to work on these four projects: 1. Seasonal moose and elk habitat models 2. Climate Change Vulnerability and Adaptation 3. Bird Species at Risk habitat 4. Forest Growth Model Implementation As stated in the Forest Management Plan, cooperative work on these projects will begin once the Forest Management Plan is approved and both LP and the Province of Manitoba move forward.
7.4.1	We appreciate the detailed moose and elk habitat modelling approach that has been added to the appendices and agree with the methods proposed by the consultant. However, this section still lacks commitments and timelines regarding how data will be collected, obtained, and provided to the consultant for analysis. It also does not explain how these models will be incorporated into the plan and 5-year reports once they are created. The data collection is dependent upon the Province of Manitoba's future wildlife surveys. Once data is collected, the consultant can analyze the wildlife data. The results will be collaboratively reviewed and utilized.
7.4.3	We previously expressed appreciation for Louisiana-Pacific recognizing potential bias for surveying only summer sites, limiting the ability to collect information on bird use of particular habitat types. Identifying this gap, and assessing if SAR and indicator bird models could be enhanced or adapted with additional data collection will be an important aspect of an adaptive bird monitoring program. The plan should

	commit to collecting this additional data, since it is referenced in section 7.3.3 that "**A habitat model could be built in the future if there are significantly more observations**" for golden-winged warbler and olive-sided flycatcher. The plan should also explain how after models are developed, what actions Louisiana-Pacific could take if a decline in habitat is observed. If sufficient observations of the species at risk birds golden-winged warbler and olive-sided flycatcher are collected during the LP bird summer bird survey work habitat models would be built for these species.
8.3.3.5	We appreciate the all new roads will be decommissioned after use, however the statement "**Nor will there be a significant change in the accessibility of the forest at a landscape level**" cannot be supported if monitoring that determines the success of road decommissioning efforts is not conducted. The Branch has requested that this type of monitoring be included in our above comments. Since all new roads will be decommissioned after use, there will not be an increase in roads. Therefore, there will not be significant change in the accessibility of the forest at a landscape level.
Figure 8.11	**Reactive side of the diagram –** Moose and elk population management is Government of Manitoba's responsibility. Mitigation barriers and controls describing population management actions (e.g. harvest controls) should not be prescribed by Louisiana-Pacific, and should be removed from the diagram. A bow tie diagram is a holistic view of various aspects of risk to a value, which includes: • strategic direction from FMP • Operational procedures (e.g. Standard Operating Guidelines, Ducks Unlimited Canada wetland crossing guide) • Provincial guidelines or policies LP recognizes that moose population management is the responsibility of the province. Due to the holistic nature of bowtie risk assessment, it is valid to include efforts by the Province of Manitoba to improve moose populations, in addition to the efforts of LP to improve moose habitat. LP is not prescribing moose and elk harvest controls but recognizing that the Province of Manitoba plays a role in the big picture and is part of the

	solution.
Figure 8.16	**Bird species at risk – habitat loss (e.g. Canada warbler) – "survey summer cut blocks for bird species at risk" and "If SAR detected avoid harvest during bird breeding season"** Monitoring of species presence and deferral of harvest to winter is only avoiding disturbance to the nesting activities of that species, not addressing habitat loss. The quality and quantity of habitat must be monitored at the landscape level for species at risk, and it should be assured that adequate levels of habitat will remain in thefuture. Avoiding hardwood harvest during the bird breeding season of May, June, and July in areas that have the species at risk Canada warbler is important and will continue. Bird habitat was evaluated for the bird species at risk Canada warbler and 17 indicator bird species. Evaluations were made at the beginning of the Forest Management Plan (year 2020) a baseline and estimates of future bird habitat were made under the forest management scenario 'Moose Emphasis'. As described in Chapter 5 Scenario Planning, section 5.7.4.1'Bird Species at Risk Habitat' the species at risk Canada warbler's habitat is not only maintained but projected to improve over the life of the 20-year Forest Management Plan.
	Reactive side of the diagram – Furbearer population management is Government of Manitoba's responsibility. Mitigation barriers and controls describing population management actions (e.g. harvest controls) should not be prescribed by Louisiana-Pacific, and should be removed from the diagram. A bow tie is diagram of a holistic view of various aspects of risk to a value, which includes: • strategic direction from FMP • Operational procedures (e.g. Standard Operating Guidelines, DUC wetland crossing guide) • Provincial guidelines or policies

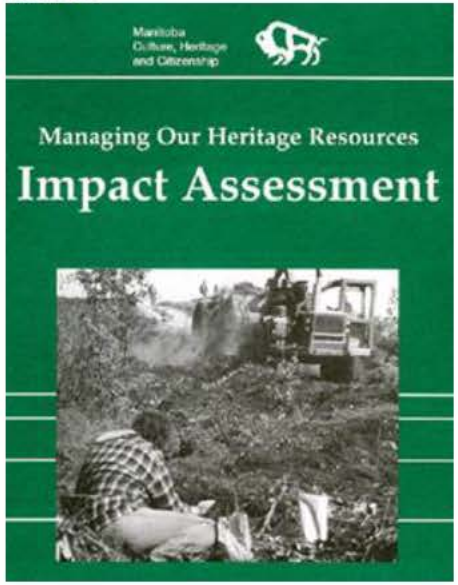
	Due to the holistic nature of bowtie risk assessment, it is valid to include efforts by the Province of Manitoba to improve populations, in addition to the efforts of LP to improve habitat. LP is not prescribing furbearer harvest controls but recognizing that the Province of Manitoba plays a role in the big picture and is part of the solution.
8.6 Vegetation 8.6.1 Species of Cultural Importance	Moose should not be discussed in this section. A description of plant species of cultural importance should be added. Indigenous communities have explicitly stated that moose is a species of cultural importance to them. We have taken this advice and used it in the Forest Management Plan. Moose was moved to the wildlife section 'species of cultural importance'.

Heritage Resources Branch Comments

FMP Section	Comment
Title page	**Recomentation (R) 1.** Include a title page for this document. I will assume you mean 'Recommendation'. Title pages (Vol 1 of 3, 2 of 3, 3 of 3) for the Forest Management Plan exist but were not submitted with the electronic copies of the chapters and maps and appendices. If you print out the FMP in its' entirety it is one binder for the FMP text, and two more binders of maps.
List of regulatory pieces	**R2.** Include a list a provincial legislation and regulation that govern LP's forestry activities. A list of provincial acts and regulations has been added.
Ch. 3 3.2 Socio-economic & Social Environment	**Comment (C) 1.** Explicit references to "Cultural and heritage resources, including sites or objects of archaeological, paleontological, historical or architectural value, as well as burial sites," which are identified in 3.2 of the SD Draft Guidelines (2018), are lacking. Ch. 3 section 3.2 now states: Heritage resources include sites or objects of archaeological, paleontological, historical, or architectural value, as well as burial sites. **C2.** "Heritage resources" are legally defined in *The Heritage Resource Act* (1986) and this terminology should be reflected in this plan as part of general awareness and legislated protection and mitigation efforts Will use the wording "Heritage resources". Added both citation and reference to 'The Heritage Resource Act' into Ch. 3. **C3**. Refer 3.2.10.1 and 3.2.10.3 for recommended language alterations 3.2.10.1 Recreation and Tourism 3.2.10.3 Cultural Values

FMP Section	Comment
	3.2.10.4 Historic Values now states: Heritage resources include sites or objects of archaeological, paleontological, historical or architectural value, as well as burial sites.
Ch. 3 3.2.10.1 Recreation and Tourism	**R3.** Add a "Municipal and Provincially Designated Sites" section to the Recreation and Tourism Section. Section added to Ch. 3 entitled "Municipal and Provincially Designated Sites" There are 35 municipally and provincially designated sites in FML#3 that hold special places in communities and are of a particular place and pride. These
	include historic homesteads, schools, mills, elevators, and churches. Affiliated with one of these churches is an Indian Residential school memorial. Provincially designated sites will be discussed broadly. The sites listed above will be dealt with during the operational planning process.
Ch. 3 3.2.10.3 Historic Values	**R4.** It could be identified in the preamble that FML #3 has a rich heritage containing approximately 20 museums and 270 known cemeteries, 35 municipally and provincially *designated* heritage sites and more than 1100 registered archaeological and paleontological sites. Preamble added. **C5.** Reference to indigenous histories is lacking. LP acknowledges there is significant Indigenous history within FML #3 however summarizing and detailing such is outside the scope of a strategic forest management plan. Paragraph below added: "There are more than 1,100 registered archaeological sites within FML-3, the majority of which related to the continuous Indigenous occupation of the area since the end of the Last Ice Age. This is due in part to the elevation of Duck Mountain over Glacial Lake Agassiz, which made this area attractive to the earliest inhabitants of the region after deglaciation. These sites represent the

FMP Section	Comment
	breadth of human activity, including large settlements, bison kills sites, and resource gathering locations. This region also attracted some of the earliest Fur Traders, traveling to and from Cumberland House to the north to engage in trade with the Indigenous and Metis peoples of the area."
Ch. 3 3.2.10.3 *Historic Buildings, Collections and Heritage Sites paragraph*	**R5.** Change paragraph title from "Historic Buildings, Collections and Heritage Sites" to "Heritage Resources, including Historic Buildings, Collections, and Designated Sites" to reflect legal definitions in *The Heritage Resources Act.* Changed. **R6.** Add an explanatory sentence re: heritage resources, e.g., *Heritage resources include sites or objects of archaeological, paleontological, historical or architectural value, as well as burial sites. Thirty-five municipally and provincially designated historic sites are recorded in the FML #3 catchment area…* Addition made.
Ch. 6 6.2.3.1 Operational Planning Concepts	**R8.** Add to list of bullets, "Avoid significant heritage resources, which can include burial sites" added to Operational Planning SOG **C8.** Including heritage resources in the operational planning concepts list identifies heritage resources as part of the operational planning process in the strategic plan Heritage resources added.
Planning SOG *6.1 Planning considerations*	**R9.** Please change "heritage sites" to "*heritage resources*" in the list of bullet points Planning SOG changed "heritage sites" to "heritage resources"
6.3 Heritage Resource Considerations *[in LP Planning SOG]*	**C9.** Clear guidance re: where in the process heritage resources are assessed and how they are protected and mitigated need to be reflected in this guideline. Heritage resources are assessed and mitigated during the operational planning process. The LP Planning SOG (Standard Operating Guideline) now has an overview of the heritage resources process, but not in detail.

FMP Section	Comment
	Ideally, detailed processes on heritage resources would be in the Manitoba Heritage Guideline – the existing 1995 guideline could be updated via the Forest Practices Committee.  **R10.** In the first paragraph, use the legal definition of heritage resources, i.e., a *heritage resources is legally defined as a heritage site, heritage object, and any work or assembly of works of nature or human endeavor that is of value for its archaeological, paleontological, pre-historic, cultural, natural, scientific or aesthetic features, and may in the form of sites or objects or a combination thereof.* Replaced Planning Standard Operating Guideline wording: "Heritage resources are works of nature or human activity having prehistoric, historic, cultural, natural, scientific, or aesthetic value." With: *"heritage resources are legally defined as a heritage site, heritage object, and any work or assembly of works of nature or human endeavor that is of value for its archaeological, paleontological, pre-historic, cultural, natural, scientific or aesthetic features, and may in the form of sites or objects or a combination thereof."*

FMP Section	Comment
Planning SOG 6.1 Planning considerations	**R9.** Please change "heritage sites" to "*heritage resources*" in the list of bullet points Changed 'sites' to 'resources'
6.3 Heritage Resource Considerations *[in LP Planning SOG]*	**C9.** Clear guidance re: where in the process heritage resources are assessed and how they are protected and mitigated need to be reflected in this guideline. See above comment regarding "Managing our Heritage Resources" guideline
	R10. In the first paragraph, use the legal definition of heritage resources, i.e., a *heritage resources is legally defined as a heritage site, heritage object, and any work or assembly of works of nature or human endeavor that is of value for its archaeological, paleontological, pre-historic, cultural, natural, scientific or aesthetic features, and may in the form of sites or objects or a combination thereof.* Change made. **R11.**Add a second paragraph describing how heritage resources are assessed and managed. *E.g.,* Potential impacts to heritage resources are assessed during the Government review period of Operational Plans. If there is reason to believe that heritage resources or human remains are known, or thought likely to be present, on lands that are to be impacted, then LPC is required to conduct a heritage resource impact assessment (HRIA)and mitigation, if necessary, prior to forestry operations. A qualified archaeological consultant conducts the HRIA of the proposed project location(s), in order to identify and assess any heritage resources that may be negatively impacted by forestry activities. The Archaeological Assessment Services Unit(AASU)of Manitoba Sport, Culture, and Heritage works with LPC's heritage consultant to draw up terms of reference for these assessments. Measures to protect and mitigate impacts from forestry activities will also be developed in consultation with the LPC. LP Planning Standard Operating Guideline **– draft revisions** Section 6.2 Heritage Resource Considerations ****draft, must be reviewed by the FML #3 Stakeholder Advisory Committee. Text may be subject to change.* "Heritage resources are works of nature or human activity having

FMP Section	Comment
	prehistoric, historic, cultural, natural, scientific, or aesthetic value. The potential impacts to heritage resources from forestry operations focus upon the disturbance of sites and their contents. Roads have a greater potential impact to heritage resources than harvest blocks. Pre-Harvest Surveys may identify potential heritage resources. Typically, this would result in a follow-up field visit by a qualified person to do a pre-harvest assessment. Alternatively, a post-harvest assessment could be done. The required mitigation measures for significant sites would be determined in consultation with Historic Resources Branch. Avoidance – if heritage resources are discovered and verified, that area can be excluded from the proposed harvest block. The outside boundary of the proposed cutblock can be changed to exclude the heritage resource. Alternatively, a leave patch inside the proposed cutblock can protect the heritage resource. Heritage Resource Impact Assessment - if it is confirmed that heritage resources or human remains are known or thought likely to be present in a proposed harvest plan, a Heritage Resource Impact Assessment (HRIA) should be conducted or potential mitigative strategies implemented. The Archaeological Assessment Services Unit (AASU) of Manitoba Sport, Culture, and Heritage (SCH) would work with a heritage consultant to draw up terms of reference for these assessments. Again, we suggest that the proper place for detailed processes on heritage resources is the Heritage Guideline – 1995 Heritage guideline could be updated via the Forest Practices Committee. **C10**. These processes are captured in EAL 3893, #28 As per section above, wording of section 28 of Environment Act Licence **2191E** is: *28. The Licencee shall:* *i. Evaluate the potential for the occurrence of heritage resources on areas where forest*

FMP Section	Comment
	management activities will occur, and the potential for forest management activities to impact heritage resources, in consultation with the Historic Resources Branch of Manitoba Culture, Heritage and Citizenship; and *ii. Apply measures to protect heritage resources, as directed by the Historic Resources Branch of Manitoba Culture, Heritage and Citizenship.*
Ch.7 7.2.2.2 Pre-Harvest Surveys	**R12.** Please add "*heritage resources, which includes heritage sites and objects*" to the list of "exceptional features" that are identified in paragraph one. Ch. 7 Monitoring Framework, 7.2.2.2. in the Pre-Harvest Survey section will add Heritage to list of exceptional features. Ch. 7 Monitoring framework – Appendix 2 is the Pre-Harvest Survey manual. Exceptional features do occur in the PHS manual section 3.2 (see below). Heritage is already part of the exceptional features section on page 10 and has a place on the 'bubble' field cards as well. **3.2 EXCEPTIONAL FEATURES**  Record any exceptional features that you come across throughout the block. These include Mineral Licks, Wolf dens, major stick nests, Rare, Threatened, or Endangered (RTE) plants, heritage sites, or any other significant or exceptional features. This information should be recorded on the grid map and inform your supervisor. **C11.** According to the Pre-Harvest Survey attached in Chapter 7, Appendix 2, "heritage sites aka heritage resources" are reported under the "Exceptional Features" option on the "Tiber Cruise Inventories. "This should be reflected in the 20-YearPlan". Ch. 7, 7.2.2.2. in the Pre-Harvest Survey section has added heritage resources to list of exceptional features.

FMP Section	Comment
Ch.7 Appen2 Pre-Harvest Survey Manual	**R13.** Re: 3.2 Exception Features… Pre-Harvest Survey Manual requires additional language and documentation identifying the recognition of heritage resources/objects. To be consistent with other illustrative material in the Pre-Harvest Survey Manual, illustrations/photographs exemplifying different classes of heritage objects (e.g., ground stone tools, projectile points, flakes; Indigenous ceramics; historic artifacts such as tin cans, machinery, glass bottles, ceramics; building foundations, earthworks, rock features, etc.) are advised. Specified flagging for heritage resources buffers should also be identified in the Pre-Harvest Survey Manual. The Pre-Harvest Survey (PHS) manual is reviewed and updated annually between LP and Spruce Products Ltd. An additional opportunity exists with the Manitoba Forest Practices Guidelines Committee. There are future opportunities to improve the PHS manual with regards to heritage resources.
Ch. 8 8.10.4 Mitigation Re: Cultural and heritage resources management plan & Chapter 6 Appendix 2 Planning SOG.	**R14.** The Heritage Resource Considerations in 6.3 of this SOG are insufficient. SOG requires greater clarity for plans identifying heritage resources sites, mitigation and monitoring. Planning SOG (Standard Operating Guideline) has draft modifications with heritage overview. **C12.** No reference is made to management heritage resources should they be accidentally encounter during operations. Our Standard Operating Guideline states that work is to stop immediately and supervisor to be notified. Suggest that the proper place for detailed specifics of heritage resources and operations is the Heritage Resources Guideline – the existing 1995 guideline could be updated via the Forest Practices Committee **C13.** Insufficient reference is made to long management of heritage resources in the FML #3 Due to their site-specific nature, much of heritage resources is operational. For example, a known heritage resource would receive a

FMP Section	Comment
	protection buffer. The size of the buffer would be very site-specific to that spot. The Forest Management Plan is strategic and landscape-level. A heritage resources strategic example would be the coarse-filter, landscape-level risk ranking process (assigning nil, low, medium, or high) across the entire Duck Mountain. Chapter 8 - section 8.5.4 Mitigation cited the proposed historical resources management strategy (reference below) but was not included as an appendix with the Forest Management Plan (FMP). I believe that the proposed historical resources management strategy is not part of the FMP review process. Edits to the previously submitted proposed historical resources management strategy is a separate process outside the FMP review. **Wowchuk, G. 2020.** A Proposed Historical Resources Management Strategy for the Mountain Forest Section 2020-2022 Operating Plan. 88 pp.

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Todd Yakielashek
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August 6, 2021

Dear Todd Yakielashek:

RE: Louisiana-Pacific Canada Ltd. 20-Year Forest Management Plan –Information Request No. 1

The Environmental Approvals Branch and Forestry and Peatlands Branch havereviewed the Technical Advisory Committee comments received related to the Louisiana-Pacific Canada Ltd. 20-Year Forest Management Plan (FMP) for Forest Management Licence Area No. 3.

Revisions to the plan are required to address the comments. Please revise theFMP in accordance with the comments in the attached table. Addtionally, a written response with reasoning for not including any requested changes is required.

The regulatory review of the FMP will continue upon receipt of the revised FMP.If youhave

any questions regarding this matter, please contact me at Elise.Dagdick@gov.mb.ca or Marianne Porteous, A/ Industry Services Forester,Forestry and Peatlands Branch at Marianne.Porteous@gov.mb.ca

Sincerely,

[redacted]

Elise Dagdick Environment Officer

cc Marianne Porteous, Michael Doig, and Matt Conrod – Forestry and Peatlands BranchPublic registries