

From: [Paige, Kathy ENV:EX](#)
To: [Anderson, Janice FLNR:EX](#)
Cc: [McConkey, Darryn J FLNR:EX](#)
Subject: RE: FREP effectiveness monitoring - NOGO (UWR later)
Date: Wednesday, March 9, 2016 2:17:00 PM

Hi Janice. April sounds good for a UWR discussion.

We haven't done very much more on goshawks. I may have a bit more to provide regarding possible Tier 1 indicators but I have to check with a consultant I have working on them. She was working on a few species and goshawk was on our list but I'm not sure we had enough funds to cover. If I have something more to add I'll send it along.

Good to see you and we'll talk more in April! Kathy

From: Anderson, Janice FLNR:EX
Sent: Tuesday, March 8, 2016 4:14 PM
To: Paige, Kathy ENV:EX
Cc: McConkey, Darryn J FLNR:EX
Subject: FREP effectiveness monitoring - NOGO (UWR later)

Hi Kathy, sorry we didn't get a chance to chat during the provincial meeting last week, but good to see you in passing! We will have to catch up on the UWR monitoring front, but it is unlikely I can wrap my head around much of that topic before 5:22 this Thursday, so perhaps we'll park this for another day in April when I get back if that works at your end?

I'm writing to check on the FREP NOGO WHA effectiveness monitoring protocols – have there been any updates from the December 2010 version that you can share with me at this time? We have looked at indicators in the FREP evaluation vs proposed indicators in the NOGO Cumulative Effects knowledge summary, just to see if there are any synergies. It would be helpful to be looking at the latest product as we cross-walk the two frameworks/approaches.

I'm ccing Darryn to keep him in the loop on this topic and in case there is any information to pass along to our NOGO CE contractor after Thursday.

Thank you!

Janice Anderson, M.Sc., R.P.Bio.

Senior Ecosystems Biologist, Resource Management
West Coast Region
Ministry of Forests, Lands and Natural Resource Operations
2080 Labieux Road
Nanaimo BC V9T 6J9
ph: 250-751-3212
fax: 250-751-3103
Switch Board: 250-751-7220

Email: Janice.Anderson@gov.bc.ca

From: [Paige, Kathy ENV:EX](#)
To: [XT:Spyksma, Randy FLNR:IN](#)
Subject: RE: Climate Change Risk - to Wildlife - Review of Draft Prelim Doc
Date: Tuesday, March 29, 2016 2:52:00 PM
Attachments: [Wildlife_X2Ind_ForDiscussion_20160218-kpcomments.docx](#)

Hi Randy – here you go.

From: Randy Spyksma [mailto:rspyksma@forsite.ca]
Sent: Thursday, February 18, 2016 12:38 PM
To: Paige, Kathy ENV:EX; Morgan, Don ENV:EX
Cc: Hopkins, Kathy L FLNR:EX; Bi, William FLNR:EX; Asante, Patrick FLNR:EX
Subject: Climate Change Risk - to Wildlife - Review of Draft Prelim Doc

Kathy/Don,

I am following up on conversations that our project team (including Laurie Kremsater) may have had with you in the last few months regarding the Climate Change Risk Baseline project being completed for Kathy Hopkins (FLNR - Competitiveness and Innovation). At a strategic level, we are looking to describe and quantify climate change related risks to FNLN values, and in this case wildlife. If you have any questions about the project and process, please do not hesitate to give me a call.

It would be greatly appreciated if you would be able to provide some feedback on the attached draft document (of the two wildlife indicators) in advance of us putting the report together. Comments on the text or additional info that we may have missed.

Appreciated,

Randy



Randy Spyksma, MSc, RPF
Senior Planner

250-832-3366 ext. 218 ph

s.22

rspyksma@forsite.ca

From: [Paige, Kathy ENV:EX](#)
To: [Bradford, Peter FLNR:EX](#)
Cc: [Thompson, Richard P ENV:EX](#); [Hubregtse, Pauline FLNR:EX](#)
Subject: RE: Final FREP Wildlife Habitat Forms (31/03/2016)
Date: Tuesday, April 5, 2016 12:15:00 PM

Thanks for the suggestions Peter. I haven't had a chance to go through it all yet. But I did note that I was hoping the final product would look more like a 'protocol'. I think that Pauline and I can work on this some more and we can discuss Friday. kp

From: Todd Manning [<mailto:etmanning@shaw.ca>]
Sent: Tuesday, April 5, 2016 11:57 AM
To: Bradford, Peter FLNR:EX; Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Hubregtse, Pauline FLNR:EX; 'Dean McGeough'
Cc: Snowdon, Barry B FLNR:EX
Subject: RE: Final FREP Wildlife Habitat Forms (31/03/2016)

Great. I just talked with Dean re the yellow hi-lite below. I will add more detail on this and can probably do so by early next week at latest (or maybe earlier). Then it would be ready for Barry to take a closer look.

Todd

From: Bradford, Peter FLNR:EX [<mailto:Peter.Bradford@gov.bc.ca>]
Sent: Tuesday, April 5, 2016 10:45 AM
To: Todd Manning; Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Hubregtse, Pauline FLNR:EX; 'Dean McGeough'
Cc: Snowdon, Barry B FLNR:EX
Subject: RE: Final FREP Wildlife Habitat Forms (31/03/2016)

Thanks Todd. One other thing to consider re: sampling – Barry Snowdon will take a look and if appropriate provide any feedback re: sampling design. A couple of things we (Barry, Pauline, Nancy and me) briefly talked about this morning was adding a few points to the sampling description such as – sufficient detail on how to locate the start and end points, link with FREP random list, what direction to do L transects on etc. Very excited about this protocol.

Peter

From: Todd Manning [<mailto:etmanning@shaw.ca>]
Sent: Monday, April 4, 2016 4:49 PM
To: Bradford, Peter FLNR:EX; Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Hubregtse, Pauline FLNR:EX; 'Dean McGeough'
Subject: RE: Final FREP Wildlife Habitat Forms (31/03/2016)

Some good points Peter. Easily fixable and will do. I agree re footnotes (number these as is), but use A-Z for the explanatory notes. For some items such as a WT class illustration, I didn't include it in the cards but currently have it in the PP. There are various illustrations that probably should do in PP and the cards (e.g, WT classes, CWD classes, % ground cover index).

Todd

From: Bradford, Peter FLNR:EX [<mailto:Peter.Bradford@gov.bc.ca>]
Sent: Monday, April 4, 2016 4:33 PM
To: Todd Manning; Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Hubregtse, Pauline FLNR:EX; 'Dean McGeough'
Subject: RE: Final FREP Wildlife Habitat Forms (31/03/2016)

Hi Todd. Very nice product. I'm looking at the documents and have found a few things that we might want to consider/discuss for Friday. Some thoughts/observations below. If you guys have discussed all of this and made decisions, good by me. Just things that occurred to me as I read the documents and tried to fill out form A using an imaginary block:

Appendix 1

- Excellent reference
- Key wildlife attributes column title – but in text some things are not attributes
- Add CWD to key wildlife habitat for PCE? (pileated foraging...)
- WLT classes are mentioned but not described (use WTC illustration?)
- Would it be useful to add height of dead trees?
- Under Mustelids, might be useful to title this section as mustelids and other SCUs as you talk about a number including ducks, bats and bears

-

Summary of wildlife habitat elements and use – form B

- I was a little confused as to whether a riparian assessment and wildlife habitat assessment could be use using the same stream reach transect
- For question A, wonder if we'll get push back that these numbers are not area weighted (need more for larger strata)
- Is there value in having a range of outcomes for each of questions A-D? well, moderate, poor, none (somewhat captured later in overall block summary)
- In the belt transect description on page 2-3, thought an illustration for both type i and ii would be good
- Assuming the 10m wide belt is for both type i and ii

-

Form A

- I found all the footnotes and rank scoring notes a little hard to follow at first. Especially since some of the numbering is used twice. It might be easier to use something like letters for footnotes and numbers for rank score guidance...page 5 of 8 -- #7 – the last sentence says “see count and ranks score #7 for further detail” – is that supposed to be #4?

From: Todd Manning [<mailto:etmanning@shaw.ca>]
Sent: Friday, April 1, 2016 10:53 PM
To: Bradford, Peter FLNR:EX; Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Hubregtse, Pauline FLNR:EX; 'Dean McGeough'
Subject: Final FREP Wildlife Habitat Forms (31/03/2016)
Importance: High

Hi all – please find attached the final/revised wildlife habitat field forms. These are all dated 31/03/2016 in the respective footers. I have incorporated all 71 comments/recommended

improvements received from the first round of review. This has resulted in substantial improvements in usability of these forms. You will find attached the following 4 files:

- Background & Methods – includes a description of how to use the field cards (3 steps) and how to apply the belt transect methodology for gathering field data. Peter Ott reviewed this document earlier today and was happy with it.
- Form A – this is an amalgamation of the previous Form A and Form B. Now all of the field data collection is done on a single Form A. Form A is now re-organized into 2 major sections: i) key wildlife habitat elements; and ii) evidence of wildlife use. This streamlines data collection and facilitates subsequent assessment of how effectively the various habitat elements were maintained on site. Counts, totals and rank scores (1-3) are collected. The 4 major animal guilds (groups) are now changed slightly to: i) Primary cavity excavators (woodpeckers and sapsuckers); ii) Mustelids (marten, fisher, weasels); iii) Amphibians (salamanders, frogs, toads); and iv) Cervids (moose, elk, deer). I dropped “Secondary Cavity Users” since most people wanted to emphasize the mustelid group, and by default much of the habitat for secondary cav. users (e.g., small owls) is already covered off by the habitat elements for primary cav. excavators. IT IS VERY IMPORTANT to read the Footnotes and Explanatory Notes which are part of this Form.
- Form B – this used to be called Form C. It is still organized with a set of “Yes/No” questions for each of the 4 guilds. However, I’ve improved the questions and came up with an overall (cumulative) scoring system for the cutblock (based on a max. number of “Yes” scores = 40).
- Appendix 1 – minor improvements including additional reference sources and fixing a few of the web links that were out of date. Appendix 1 can eventually be reformatted into a “reference card or info-flip” document with embedded photos.

I have compiled a “reference photo library” consisting of 83 photos of the various habitat elements and evidence of use indicators. I will have to upload these to an ftp or bring them in on a USB stick. As well, I have a PowerPoint presentation for training purposes which will be uploaded. The PP will undoubtedly evolve/improve as we actually start unrolling initial training in 2016.

Thanks all for your various help and feedback over the past few months!!

Todd

Todd Manning (MAsc, RPBio., RPF, ISA Cert. Arborist)

Strategic Resource Solutions (SRS)

A BC Forest Safety Council - Safe Certified Company

(developing practical solutions to natural resource management issues)

s.22

Victoria, B.C. s.22 CANADA

Office Ph. (250) 478-7822

Cellular Ph. s.22

Email etmanning@shaw.ca

From: [Paige, Kathy ENV:EX](#)
To: [Dr. Tara Martin](#)
Cc: [Sigg, Dominique ENV:EX](#)
Subject: FW: update
Date: Monday, April 18, 2016 10:19:00 AM
Attachments: [opportunity cost calculator April 14.xlsx](#)
[opportunity cost draft april 14.docx](#)

Hi Tara. We received the lost opportunity costing on the habitat protection management strategy. We will discuss on Thursday but I would like to identify any issues/concerns or changes we might like to make before then so that I can start working with Rob to make any needed changes.

Would you mind having a look at it and let me know what you think. I could arrange a separate call for a few of us to discuss or we could do so on our Thursday call. Kari would like to make sure it is what we need before then so that we can send you everything else at the end of the week. Much appreciated, Kathy

From: Dorling, Rob ENV:EX
Sent: Thursday, April 14, 2016 3:18 PM
To: Paige, Kathy ENV:EX
Cc: MacIntyre, Michele A ENV:EX
Subject: RE: update

Hi Kathy,

I am pleased to share with you and the project group what I have been working on over the past couple of weeks. I have completed a preliminary analysis of opportunity costs for the threats-based management in the Kootenay-Boundary region. There are two attachments in this email, first is a write up of the analysis, second is the analysis workbook. Please have a look at both, if you have any questions I can further discuss the findings either later today or Monday.

Regards,
Rob

From: Paige, Kathy ENV:EX
Sent: Thursday, April 14, 2016 9:01 AM
To: Dorling, Rob ENV:EX
Subject: RE: update

Ok, thanks. kp

From: Dorling, Rob ENV:EX
Sent: Wednesday, April 13, 2016 5:05 PM
To: Paige, Kathy ENV:EX
Subject: RE: update

Hi Kathy,

I was really hoping to wrap this up and get it to you today but I received some comments back that I need to address before sending it over. Expect to see it in your inbox tomorrow morning.

Thanks,
Rob

From: Paige, Kathy ENV:EX
Sent: Tuesday, April 12, 2016 12:54 PM
To: Dorling, Rob ENV:EX
Subject: RE: update

Great, thanks!

From: Dorling, Rob ENV:EX
Sent: Tuesday, April 12, 2016 12:13 PM
To: Paige, Kathy ENV:EX
Subject: RE: update

Hi Kathy,

I am working on the write up now, the calculations have had some changes recently and they need to be reflected. The write up has taken longer than expected but I want to make sure that the values identified are not misrepresented. I am expecting to send it off to you tomorrow, hopefully without any more changes.

Thanks,
Rob

From: Paige, Kathy ENV:EX
Sent: Tuesday, April 12, 2016 11:23 AM
To: Dorling, Rob ENV:EX
Subject: update

Hi Rob. Just checking in to see how the lost opportunity costing is going? Cheers, Kathy

From: [Paige, Kathy ENV:EX](#)
To: ["Tara.Martin@csiro.au"](mailto:Tara.Martin@csiro.au)
Subject: RE: update
Date: Tuesday, April 19, 2016 12:12:00 PM

Ok. I think we could spend the majority of the call on Thursday doing that as Dom won't be able to make it. Cheers, Kathy

From: Tara.Martin@csiro.au [<mailto:Tara.Martin@csiro.au>]
Sent: Tuesday, April 19, 2016 11:56 AM
To: Paige, Kathy ENV:EX
Subject: RE: update

Hi Kathy,
I'll give you a shout tomorrow if I can find a s.22 moment, otherwise we can talk it through with Rob.
Warm wishes,
Tara

Dr Tara Martin

Principal Research Scientist
CSIRO Land and Water
Adjunct Professor University of British Columbia
Adjunct Professor University of Queensland
Tara.Martin@csiro.au | Martin Conservation Decisions Lab: <http://taramartin.org>
Tara on [Google Scholar](#) Twitter: @TaraGMartin

From: Paige, Kathy ENV:EX [<mailto:Kathy.Paige@gov.bc.ca>]
Sent: Tuesday, 19 April 2016 11:46 AM
To: Martin, Tara (L&W, Dutton Park) <Tara.Martin@csiro.au>
Subject: RE: update

Sure. Would tomorrow morning work? I am fairly flexible. Rob will walk us through it on Thursday as well. kp

From: Tara.Martin@csiro.au [<mailto:Tara.Martin@csiro.au>]
Sent: Monday, April 18, 2016 4:10 PM
To: Paige, Kathy ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: update

Hi Kathy and Dom,
The spreadsheets looks good but it would be helpful for me to walk through the spreadsheets with you as there are a couple things that I want to clarify. Is there a good time to speak tomorrow or Wednesday? s.22

Warm wishes,
Tara

Dr Tara Martin

Principal Research Scientist

CSIRO Land and Water

Adjunct Professor University of British Columbia

Adjunct Professor University of Queensland

Tara.Martin@csiro.au | Martin Conservation Decisions Lab: <http://taramartin.org>

Tara on [Google Scholar](#) Twitter: @TaraGMartin

From: Paige, Kathy ENV:EX [<mailto:Kathy.Paige@gov.bc.ca>]

Sent: Monday, 18 April 2016 10:20 AM

To: Martin, Tara (L&W, Dutton Park) <Tara.Martin@csiro.au>

Cc: Sigg, Dominique ENV:EX <Dominique.Sigg@gov.bc.ca>

Subject: FW: update

Hi Tara. We received the lost opportunity costing on the habitat protection management strategy. We will discuss on Thursday but I would like to identify any issues/concerns or changes we might like to make before then so that I can start working with Rob to make any needed changes.

Would you mind having a look at it and let me know what you think. I could arrange a separate call for a few of us to discuss or we could do so on our Thursday call. Kari would like to make sure it is what we need before then so that we can send you everything else at the end of the week. Much appreciated, Kathy

From: Dorling, Rob ENV:EX

Sent: Thursday, April 14, 2016 3:18 PM

To: Paige, Kathy ENV:EX

Cc: MacIntyre, Michele A ENV:EX

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Regards,
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To: Dorling, Rob ENV:EX
Subject: RE: update

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Sent: Wednesday, April 13, 2016 5:05 PM
To: Paige, Kathy ENV:EX
Subject: RE: update

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Sent: Tuesday, April 12, 2016 12:54 PM
To: Dorling, Rob ENV:EX
Subject: RE: update

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Sent: Tuesday, April 12, 2016 12:13 PM
To: Paige, Kathy ENV:EX
Subject: RE: update

Hi Kathy,

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Rob

From: Paige, Kathy ENV:EX
Sent: Tuesday, April 12, 2016 11:23 AM
To: Dorling, Rob ENV:EX
Subject: update

Hi Rob. Just checking in to see how the lost opportunity costing is going? Cheers, Kathy

From: [Paige, Kathy ENV:EX](#)
To: [Knapik, Mike B FLNR:EX](#); [Davis, Tim FLNR:EX](#); [Anderson, Lindsay FLNR:EX](#); [Tedesco, Lisa M FLNR:EX](#)
Cc: [Holmes, Peter N FLNR:EX](#); [Krebs, John A FLNR:EX](#); [Hubregtse, Pauline FLNR:EX](#)
Subject: RE: Update to regions and districts re: Provincial FREP strategy
Date: Thursday, April 21, 2016 12:13:00 PM
Attachments: [FREP Stand-level Wildlife Habitat Monitoring-Dec2015.pdf](#)

Hi Mike. Unfortunately the report is unclear...the 'wildlife' samples actually refer to a new protocol we have been working on that augments the stand level biodiversity assessments and possibly riparian assessments (not WHAs or UWRs) and is designed to gather more 'wildlife habitat' data at these sites which are associated with cutblocks. We envision that FREP district staff and any interested ecosystems bios will conduct these assessments. We are in the process of selecting areas for piloting the draft protocol but the areas will likely be Skeena as we have been working closely with them on the draft protocol, the Cariboo as there is an existing FREP training session scheduled there in June and probably only one other location given our current budget.

We are still working on WHA and UWR monitoring but that doesn't show up in those district sampling schedules. They are mentioned early in the document though.

I hope this clarifies what is meant by those 8 district based samples. I've attached a draft of the protocol which we refer to as 'stand level wildlife habitat monitoring' but we are currently updating it and will have a revised version shortly (~May 15).

Cheers, Kathy
250-356-7788

From: Knapik, Mike B FLNR:EX
Sent: Thursday, April 21, 2016 11:21 AM
To: Davis, Tim FLNR:EX; Anderson, Lindsay FLNR:EX; Tedesco, Lisa M FLNR:EX; Paige, Kathy ENV:EX
Cc: Holmes, Peter N FLNR:EX; Krebs, John A FLNR:EX
Subject: FW: Update to regions and districts re: Provincial FREP strategy

Attached is the 3-yr Provincial Strategic FREP monitoring plan (even though district based sampling targets are defined through 2021). Kathy, the sampling spreadsheet does not identify who's piloting the Wildlife (i.e., WHA) monitoring. Do I assume it's the districts in the Kootenays? Tim will be leading this and there may likely be more sites sampled than 8/district. Thoughts?

Mike Knapik, R.P.Bio
Section Head, Habitat Management
Kootenay Boundary Region
Ministry of Forests, Lands and Natural Resource Operations
phone: (250) 354-6354 fax: (250) 354-6332
#401 - 333 Victoria Street, Nelson, B.C. V1L 4K3
[Mailto:Mike.Knapik@gov.bc.ca](mailto:Mike.Knapik@gov.bc.ca)

From: Krebs, John A FLNR:EX

Sent: Wednesday, April 20, 2016 1:45 PM
To: Knapik, Mike B FLNR:EX
Subject: FW: Update to regions and districts re: Provincial FREP strategy

Haven't read this yet but will – should look at this relative to your FREP workplan goal

From: Davis, Jennifer C FLNR:EX
Sent: Wednesday, April 20, 2016 1:44 PM
To: FLNR District Managers; FLNR Regional Executive Directors; Pesklevits, Anthony FLNR:EX; Barr, Larry FLNR:EX; Bilodeau, Normand G FLNR:EX; Addison, Christopher FLNR:EX; Zimmerman, Ted FLNR:EX; Stewart, Rodger W FLNR:EX; Krebs, John A FLNR:EX
Cc: FLNR Provincial Executive Directors; Kriese, Kevin FLNR:EX; Manwaring, Richard G FLNR:EX; Sutherland, Craig FLNR:EX; Nicholls, Diane R FLNR:EX; Ethier, Tom FLNR:EX; Larkin, Brenda FLNR:EX; Di Giorgio, Alexis FLNR:EX; Bradford, Peter FLNR:EX
Subject: Update to regions and districts re: Provincial FREP strategy

Re: Monitoring – Forest and Range Evaluation Program (FREP), Three-Year Strategic Plan.

REDs, DRMs, and District Managers,

On behalf of the large cohort of people who developed this: I am pleased to be able to distribute the FREP 3 Year Strategic Plan. Please distribute as appropriate.

Overview: The monitoring being conducted through the FREP program is a foundational element of the stewardship and sustainability work being done by our Ministry, and in partnership with the Ministry of Environment. Thank you to the many regional and district staff and management that have contributed to the success of this resource monitoring program, for your assistance in defining where there was “room for improvement”, and for your direct involvement in the development of this strategy over the past year. This plan was endorsed by FLNRO Executive on Monday April 18, 2016.

Linkages: There is ongoing work regarding how the FREP data provides a base for the next evolution of multiple resource value assessments, linkage with the cumulative effects framework, and linkages with broader monitoring needs. Many on this e-mail distribution are involved in those conversations, but if you have any specific questions on linkages, please feel free to contact me.

Implementation: In developing individual 2016/17 FREP regional and district sampling plans, please ensure you review this strategy, in particular the following sections:

- “FREP monitoring data collection and reporting principles and targets” on page 4 and
- “Annual District Sampling Targets by Value by Year 2021”, Appendix 3

Based on the above, each district/region should develop a district-specific sampling plan for 2016/17 that reflects the targets stated in the strategy the best degree possible.

If you have any questions, please contact Peter Bradford at Peter.Bradford@gov.bc.ca or (250) 356-2134.

Jennifer Davis

JENNIFER DAVIS | Director
Resource Practices Branch | Resource Stewardship Division

Ministry of Forests, Lands and Natural Resource Operations (FLNRO)
9th Floor, 727 Fisgard Street, Victoria, BC
Tel: 250 387-0088
e-mail: Jennifer.C.Davis@gov.bc.ca

From: [Paige, Kathy ENV:EX](#)
To: [Thompson, Richard P ENV:EX](#)
Subject: FW: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project
Date: Monday, April 25, 2016 10:44:00 AM

FYI

From: Crockett, Ursula ENV:EX
Sent: Monday, April 25, 2016 10:43 AM
To: Paige, Kathy ENV:EX
Subject: FW: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

fyi

From: Lewis, Kaaren ENV:EX
Sent: Monday, April 25, 2016 10:40 AM
To: Crockett, Ursula ENV:EX; Dale, Alec R ENV:EX
Cc: Llewellyn-Thomas, Marnie ENV:EX
Subject: RE: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

Contract is approved.

Alec - as we have discussed, and I know you share some of this concern, one has to question why this is being carried out by ENV – seems like a role the FREP program at FLRNO would lead, unless we see this as more strategic/directive policy? I can see we are getting funds from the FREP program to do the work – but is this aligned with our role. Happy to discuss.
Kaaren

From: Crockett, Ursula ENV:EX
Sent: Monday, April 25, 2016 10:23 AM
To: Lewis, Kaaren ENV:EX
Cc: Llewellyn-Thomas, Marnie ENV:EX; Crockett, Ursula ENV:EX
Subject: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

Hi Kaaren,

Please approve/decline. Attached for approval is contract for stand level wildlife habitat monitoring pilot project. Selected from a prequalified vendor list under RFQGS16JHQ-32.

Thank you.

Ursula Crockett / Administrative Assistant / Ministry of Environment / Phone 250.356.7719

From: [Paige, Kathy ENV:EX](#)
To: [Thompson, Richard P ENV:EX](#)
Subject: RE: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project
Date: Monday, April 25, 2016 3:28:00 PM

Sure if I can that would be good. I still haven't received a contract number yet...just waiting for that before sending out contract. kp

From: Thompson, Richard P ENV:EX
Sent: Monday, April 25, 2016 3:24 PM
To: Paige, Kathy ENV:EX
Subject: FW: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

Well... Lyle like it... see if we can expand the conversation up ☺ If I get the chance to talk to Kaaren and Alec do you want to come?

Richard.

From: Gawalko, Lyle ENV:EX
Sent: Monday, April 25, 2016 3:22 PM
To: Thompson, Richard P ENV:EX
Subject: RE: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

Thanks Richard, good explanation of our role in FREP.

Lyle Gawalko

A/Manager, Ecosystem Conservation
Ministry of Environment, Ecosystems Branch
2975 Jutland, Victoria, BC

Ph: 250 387 0060

Cell: 250 812 6894

Email: Lyle.Gawalko@gov.bc.ca

From: Thompson, Richard P ENV:EX
Sent: Monday, April 25, 2016 2:54 PM
To: Dale, Alec R ENV:EX; Gawalko, Lyle ENV:EX
Cc: Paige, Kathy ENV:EX
Subject: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

Alec.... I thought it would be worthwhile to respond to Kaaren's note in her contract approval to Kathy. I am concerned that the misconception exists that FREP is something FLNRO does and we have no involvement. We have been partners in FREP since the beginning and for ecosystems it remains the link into a more strategic Natural Resource Sector Monitoring Collaborative.

What is our role.

FREP continues to be a partnership between FLNRO and MOE. This partnership is part of the NRS monitoring collaborative. MoE has and continues to have a role in helping to define the monitoring that FREP does.

MoE staff continue to work with FLNRO staff to define the monitoring questions and develop monitoring methods/protocols to address those questions. Our specific role has been limited to a subset of the FRPA values that FREP is trying to address. Specifically we are involved in the Wildlife, Biodiversity, Fish/riparian and range/wildlife (although our capacity to be involved is limited with Cindy Haddow's retirement) values.

The implementation of these monitoring protocols (beyond the development pilot testing stage) is FLNRO stewardship and regional ecosystems staff responsibility.

The work and involvement in monitoring helps support Cumulative Effects and Priority Threats management. Understanding the effectiveness of management activities is key to understanding the extent of threats to BC's species and ecosystems.

By being involved in the development of the monitoring questions and the associated protocols (where we have expertise) we have the opportunity to help inform decision makers about the success or risks of land use activities. The development of monitoring protocols also has a side benefit of telling practitioners how their activities will be evaluated. This helps better define the results we are expecting on the land base.

I would like the opportunity to discuss this with you and to have the conversation with Kaaren if you feel that is appropriate.

Regards

Richard Thompson
Monitoring Unit Head
Ecosystem Conservation Section
Ministry of Environment

e-mail: Richard.Thompson@gov.bc.ca

Phone: 250 356-5467

Cell: 250 213-8114

Fax: 250 356-5104

Leadership in the conservation and sustainability of BC's ecosystems.

<http://www.env.gov.bc.ca/esd/documents/EcosystemsProgramPlan.pdf>

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 10:45 AM
To: Thompson, Richard P ENV:EX
Subject: FW: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

FYI

From: Crockett, Ursula ENV:EX
Sent: Monday, April 25, 2016 10:43 AM
To: Paige, Kathy ENV:EX
Subject: FW: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

fyi

From: Lewis, Kaaren ENV:EX
Sent: Monday, April 25, 2016 10:40 AM
To: Crockett, Ursula ENV:EX; Dale, Alec R ENV:EX
Cc: Llewellyn-Thomas, Marnie ENV:EX
Subject: RE: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

Contract is approved.

Alec - as we have discussed, and I know you share some of this concern, one has to question why this is being carried out by ENV – seems like a role the FREP program at FLRNO would lead, unless we see this as more strategic/directive policy? I can see we are getting funds from the FREP program to do the work – but is this aligned with our role. Happy to discuss.
Kaaren

From: Crockett, Ursula ENV:EX
Sent: Monday, April 25, 2016 10:23 AM
To: Lewis, Kaaren ENV:EX
Cc: Llewellyn-Thomas, Marnie ENV:EX; Crockett, Ursula ENV:EX
Subject: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

Hi Kaaren,

Please approve/decline. Attached for approval is contract for stand level wildlife habitat monitoring pilot project. Selected from a prequalified vendor list under RFQGS16JHQ-32.

Thank you.

Ursula Crockett / Administrative Assistant / Ministry of Environment / Phone 250.356.7719

From: Paige, Kathy ENV:EX
To: Demarchi, Diana ENV:EX; Sigg, Dominique ENV:EX
Subject: RE: threats summary tables
Date: Tuesday, April 26, 2016 10:03:00 AM

I don't think we need a table like table 2, just table 1 and 3 unless we want to create a version of this table as a comparison of how our list represents the full suite?

From: Demarchi, Diana ENV:EX
Sent: Tuesday, April 26, 2016 9:48 AM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables
Great thanks.

I also have a question about table 2, the last row has the Total % for each BGC zone and habitat type. Do either of you remember how you came up with those numbers? It's not a straight total and not an average, so does it relate to the area of those units in the project area, or some other calculation?

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Vascular Plants (n=213)	6	14	46	22	49	33	23	2	24	0	29	53	9	5	4	19	21	5	30	15
Non-vascular Plants (n=53)	8	10	24	8	39	59	8	0	2	0	4	2	0	0	0	0	4	0	4	2
Ecological Communities (n=53)	0	25	38	25	36	13	4	0	4	0	47	11	0	0	0	26	15	0	2	8
Total%:	4	24	44	22	46	30	14	6	14	2	29	36	11	13	3	18	20	5	19	12

Thanks

DIANA

250-751-3220

From: Sigg, Dominique ENV:EX
Sent: Tuesday, April 26, 2016 9:39 AM
To: Paige, Kathy ENV:EX; Demarchi, Diana ENV:EX
Subject: RE: threats summary tables
Hi Kathy & Diana,

Yes I remember this – Chris and Heather made a bunch of changes to the IUCN threats categories which threw things into a bit of confusion. I did re-work most of the inconsistencies but I need to go back and look at my notes to see what is going on. I will take a look today and get back to you

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Cc: Sigg, Dominique ENV:EX
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DIANA

250-751-3220

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Cc: Sigg, Dominique ENV:EX
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Hmmm...tough one...sort of makes sense to lump the hunting, trapping and fishing and harvesting of aquatic resources together. I wonder if firewood cutting could be lumped with forestry and other resource use.

Just where to put gathering of plants.... I'm leaning towards putting with the 'harvesting' group. What do you think?

From: Demarchi, Diana ENV:EX

Sent: Monday, April 25, 2016 11:44 AM

To: Paige, Kathy ENV:EX; Sigg, Dominique ENV:EX

Subject: RE: threats summary tables

If you want to roll them up, here are the choices in that group:

Hunting and trapping	Gathering terrestrial plants	Range tenure use	Resource road building	Firewood cutting	Fishing and harvesting aquatic resources
					The reason I asked was because it wasn't obvious where to lump them
					• Southern Maiden-hair fern is the only record in the gathering terrestrial plants category
					• Lewis' woodpecker, Northern Myotis, White-headed woodpecker, and Williamson's sapsucker are in the firewood cutting category
					Also in the original table, Hunting and Fishing were lumped together and now they are split, do you want them split in the summary table?
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250-751-3220

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To: Paige, Kathy ENV:EX

Subject: RE: threats summary tables

Hi Kathy

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- 1) Add them to the new table?
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- 3) Leave them out?

Thanks

DIANA

250-751-3220

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Sent: Thursday, April 21, 2016 1:41 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Hi Diana. These were the draft summary tables developed quite awhile ago now when we were discussing what assets to include in the pilot. Something like Table 1 and 3 might be good to include in the report for both the full range of species in region and also for our selected species. We could discuss if the 'list of threats' (column headings) are the way we want them to be presented. We could look at other information out of the database that could also be summarized...like the functional guilds... but we may just want to do that for our own purposes but might be interesting to do. Cheers, Kathy

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Biodiversity Asset	Total #	Listed by SARA	Included in IWMS	CF Priority 1 or 2***
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Vascular Plants	213	5	-	126
Non-vascular Plants (incl. lichens)	53	4	-	42
Ecological Communities	53	NA	4	39
Total:	453	46	37	304

*Monarch; **Gillette's Checkerspot;***any goal

Table 2. Summary by BEC and broad habitat types

Asset	No data	PP%	IDP%	MS%	ICH%	ESSF%	IMA%	Agr	A/T	Anthr	Forest	Grassland	Lakes	Streams/Rivers	Springs	Wetlands	Riparian	Subterr	Rock	Unique
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Table 3. Summary of identified threats by broad threat classes

Asset	No data (%)	Residential (% sp.)	Agriculture	Hunting & Angling	Forestry	Range Tenure Use	Resource Roads	Trans. & Service Corridors	Energy Production & Mining	Invasive or Problematic Species	Pollution	Human Intrusions & Disturbance	Natural System Mod.	Natural Events	Climate Change
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Vascular Plants (n=213)	57	30	36	1	9	8	2	13	3	35	4	31	24	3	1
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To: Demarch, Diana ENV:EX
Cc: Paige, Kathy ENV:EX
Subject: threats summary tables

Hi Diana,

Here is the link to the database we went over yesterday: M:\WANSHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\TBM_Assets_WorkingDatabase_DPS_2014-10-01.xlsx

Kathy is going to send you the tables she mocked up before the workshop to give you an idea of what we are looking for.

Thanks,

Dom

From: Paige, Kathy ENV:EX
To: Demarchi, Diana ENV:EX; Sigg, Dominique ENV:EX
Subject: RE: threats summary tables
Date: Tuesday, April 26, 2016 10:07:00 AM

Calculation probably just an error from playing around with formulas in excel. If we include maybe just include the habitat types and not the BEC or vice versa...to shrink the table? I think I prefer the habitat types. kp

From: Demarchi, Diana ENV:EX
Sent: Tuesday, April 26, 2016 9:48 AM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables
Great thanks.

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Kathy is going to send you the tables she mocked up before the workshop to give you an idea of what we are looking for.

Thanks,

Dom

From: [Paige, Kathy ENV:EX](#)
To: [Thompson, Richard P ENV:EX](#)
Subject: RE: Alec's response....
Date: Tuesday, April 26, 2016 1:44:00 PM

Sounds good. Thanks Richard ☺

From: Thompson, Richard P ENV:EX
Sent: Tuesday, April 26, 2016 1:13 PM
To: Paige, Kathy ENV:EX; Jumeau, Zaid ENV:EX
Subject: Alec's response....

Kathy... Alec came and we chatted about monitoring... He had already sent me the note below.....
Alec was in agreement with my note but said we would have to evaluate how all of this fits together as the Division Strategy unfolds.

He said Kaaren is interested in "telling the story" we discussed how CE and Monitoring fits in that ability to tell the story....

I also put in the plug for the need to have a GIS person to help if the goal is to tell the story.

So I think we are still going in the right direction.... We will need to be able to articulate how what we are doing and what we believe needs to be done is key to helping tell the bigger biodiversity story... but I think we can do that.

We should all go for coffee once Zaid gets back and discuss.

Richard.

From: Dale, Alec R ENV:EX
Sent: Tuesday, April 26, 2016 12:18 PM
To: Thompson, Richard P ENV:EX; Gawalko, Lyle ENV:EX
Subject: RE: REQUEST: Contract Approval - stand level wildlife habitat monitoring pilot project

This will come up once we are further along in our strategic planning piece and it gets down to the branch level.

Definitely need to have the discussion, but we will need to wait a bit and see how it all falls out. There have been no decisions or even discussion either way yet so no rush. It was just a general discussion that Kaaren and I had wondering what our role in monitoring would be moving forward.

Thanks

A

From: Thompson, Richard P ENV:EX
Sent: Monday, April 25, 2016 2:54 PM
To: Dale, Alec R ENV:EX; Gawalko, Lyle ENV:EX
Cc: Paige, Kathy ENV:EX
Subject: REQUEST: Contract Approval - stand level wildlife habitat monitoring pilot project

Alec.... I thought it would be worthwhile to respond to Kaaren's note in her contract approval to Kathy. I am concerned that the misconception exists that FREP is something FLNRO does and we have no involvement. We have been partners in FREP since the beginning and for ecosystems it remains the link into a more strategic Natural Resource Sector Monitoring Collaborative.

What is our role.

FREP continues to be a partnership between FLNRO and MOE. This partnership is part of the NRS monitoring collaborative. MoE has and continues to have a role in helping to define the monitoring that FREP does.

MoE staff continue to work with FLNRO staff to define the monitoring questions and develop monitoring methods/protocols to address those questions. Our specific role has been limited to a subset of the FRPA values that FREP is trying to address. Specifically we are involved in the Wildlife, Biodiversity, Fish/riparian and range/wildlife (although our capacity to be involved is limited with Cindy Haddow's retirement) values.

The implementation of these monitoring protocols (beyond the development pilot testing stage) is FLNRO stewardship and regional ecosystems staff responsibility.

The work and involvement in monitoring helps support Cumulative Effects and Priority Threats management. Understanding the effectiveness of management activities is key to understanding the extent of threats to BC's species and ecosystems.

By being involved in the development of the monitoring questions and the associated protocols (where we have expertise) we have the opportunity to help inform decision makers about the success or risks of land use activities. The development of monitoring protocols also has a side benefit of telling practitioners how their activities will be evaluated. This helps better define the results we are expecting on the land base.

I would like the opportunity to discuss this with you and to have the conversation with Kaaren if you feel that is appropriate.

Regards

Richard Thompson
Monitoring Unit Head
Ecosystem Conservation Section
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e-mail: Richard.Thompson@gov.bc.ca
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Leadership in the conservation and sustainability of BC's ecosystems.

<http://www.env.gov.bc.ca/esd/documents/EcosystemsProgramPlan.pdf>

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To: Thompson, Richard P ENV:EX
Subject: FW: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

FYI

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To: Paige, Kathy ENV:EX
Subject: FW: REQUEST: Contract Approval - stand level wildlife habiat monitoring pilot project

fyi

From: Lewis, Kaaren ENV:EX
Sent: Monday, April 25, 2016 10:40 AM
To: Crockett, Ursula ENV:EX; Dale, Alec R ENV:EX
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Thank you.

Ursula Crockett / Administrative Assistant / Ministry of Environment / Phone 250.356.7719

From: [Paige, Kathy ENV:EX](#)
To: [Hubregtse, Pauline FLNR:EX](#)
Subject: CE and protected areas inclusion
Date: Monday, May 2, 2016 9:49:00 AM

Good morning! Hope you had a good weekend. I pulled this from the new draft CE policy....looks like they will include an assessment of protected areas...which makes me wonder how they are considering/classifying...I'm going to ask Zaid – he is back today. kp

Cumulative Effects Consideration

Cumulative effects should be considered in natural resource decision making where decisions may have an impact to a CEF value (Appendix A). Where the decision maker determines that a proposed project or activity is not expected to result in effects to values, further consideration of cumulative effects is not required.

Where a CEF Assessment has not been completed for a selected area or value, the following factors should be considered for the purpose of evaluating the potential for cumulative effects, and possible management responses:

- a) The values that could potentially be affected by the proposed activity;
- b) The importance or significance of the value – locally, regionally, provincially and to First Nations;
- c) Government's management objectives for the value and spatial scale of those objectives;
- d) The current condition of the value and the trend in the condition of the value;
- e) The level of proposed activity in the general area and near term risk to the value based on other known activities;
- f) Conservation or mitigation measures currently in place to manage for the value within the general area (e.g. protected areas);
- g) The impact of the proposed activity on the value, and appropriate mitigation strategies, if warranted;
- h) The residual impact of the proposed activity on the value, after mitigation; and
- i) Whether the residual impact would result in an unacceptable condition of the value, including consideration of the condition in relation to objectives for the value.

The CEF Values that should be reviewed for selection in considering cumulative effects are listed in Appendix A. Additional regionally important values may also be selected. Guidance for considering these factors is provided in the accompanying document *"Cumulative Effects Decision Support - Operational Guidance."*

From: [Paige, Kathy ENV:EX](#)
To: [Hubregtse, Pauline FLNR:EX](#)
Subject: FW: Update: Engagment on Cumulative Effects Policy
Date: Monday, May 2, 2016 10:16:00 AM

CE materials online now. We should look closely at the grizzly bear one. kp

From: Thompson, Richard P ENV:EX
Sent: Monday, May 2, 2016 10:14 AM
To: Jumeau, Zaid ENV:EX; Morgan, Don ENV:EX; Tschaplinski, Peter J ENV:EX; Hamilton, Tony ENV:EX; Reese-Hansen, Lars FLNR:EX; McEwan, Dave ENV:EX
Cc: Paige, Kathy ENV:EX
Subject: FW: Update: Engagment on Cumulative Effects Policy

FYI.... CE material appears to be online.

From: Gawalko, Lyle ENV:EX
Sent: Monday, May 2, 2016 9:34 AM
To: Thompson, Richard P ENV:EX
Subject: FW: Update: Engagment on Cumulative Effects Policy

FYI as noted below, second round of engagement is now online.

Lyle Gawalko

A/Manager, Ecosystem Conservation
Ministry of Environment, Ecosystems Branch
2975 Jutland, Victoria, BC

Ph: 250 387 0060

Cell: 250 812 6894

Email: Lyle.Gawalko@gov.bc.ca

From: Sullivan, Megan ENV:EX
Sent: Monday, May 2, 2016 8:48 AM
To: Gawalko, Lyle ENV:EX
Cc: Dale, Alec R ENV:EX; Paquin, Lisa C ENV:EX
Subject: FW: Update: Engagment on Cumulative Effects Policy

Hi Lyle,

Hope all is well – just wanted to provide you a fyi on the below.

If you click on the “get involved tab it loads the page with the current drafts of the two policy documents, the grizzly bear value summary and the procedures discussion paper.

<http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework/get-involved>

Cheers,
Meg

From: Psyllakis, Jennifer FLNR:EX
Sent: Thursday, April 28, 2016 5:04 PM
To: Rhodes, Katya FLNR:EX; Ayele, Taye FLNR:EX; Cage, Rhonda R FLNR:EX; Cook, Kelly L FLNR:EX; Griffiths, Felice FLNR:EX; Hoffos, Robin FLNR:EX; Jumeau, Zaid ENV:EX; Juthans, Jeff FLNR:EX; Kachanoski, Steve B FLNR:EX; Kolman, Brian FLNR:EX; Malkinson, Leah FLNR:EX; Mynen, Tonianne FLNR:EX; Regnier, Anna N FLNR:EX; Smith, Eric FLNR:EX; Sullivan, Megan ENV:EX; Valdal, Eric FLNR:EX; Williston, Cheryl FLNR:EX; Zinovich, Bill E FLNR:EX; Kachanoski, Steve B FLNR:EX
Subject: FW: Update: Engagment on Cumulative Effects Policy

Hi All,

Just a quick note that engagement material is now available on the CEF internet (public) site. Please feel free to forward the site to support any requests for material.

<http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework>

Thanks to everyone for their roles in getting us one step closer to policy approval ☺

Jen

From: Paige, Kathy ENV:EX
To: Demarchi, Diana ENV:EX
Subject: RE: threats summary tables
Date: Thursday, May 5, 2016 9:08:00 AM

Thanks Diana. Going to try to work on them today. kp

From: Demarchi, Diana ENV:EX
Sent: Tuesday, May 3, 2016 5:31 PM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables
Hi

Could you take a look at these tables when you get a chance?

My methods:

- I took everything in the All_Assets tab and converted all the codes that had a value to "1" so I could do the tallies.
- I made 2 tables for each: one with all the species for the region, and one with just the candidate species. You can choose which one you want to use or both.
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If I screwed it up or you want me to rework the numbers in a different way it shouldn't take me too long

Here is the file: \\Herder\40064\WANS\SHARE\FSD\FSD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Report_Tables_May2016_DD.docx

DIANA
250-751-3220

From: Sigg, Dominique ENV:EX
Sent: Tuesday, April 26, 2016 10:07 AM
To: Demarchi, Diana ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables

I'm not sure about the table below but Kathy should know.

As for the mismatched threats info, here is a summary of the changes/additions that were made to the threats categories by Chris & Heather, and the changes I made back:

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I realised that I foolishly made my changes to the "pilot asset list" categories but not to the categories on the "all assets" worksheet. I guess we need to fix this also so they align. Take a look at the word doc above – if it makes sense to you perhaps you can make the same changes to the "all assets" list. If my logic doesn't make sense then let me know and I can do this!

Dom

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Sent: Tuesday, April 26, 2016 9:48 AM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables
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Table 2. Summary by BEC and broad habitat types

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Invertebrates (n=57)	0	32	40	23	33	26	7	5	4	7	23	21	14	21	2	4	9	0	7	4
Vascular Plants (n=213)	6	14	46	22	49	33	23	2	24	0	29	53	9	5	4	19	21	5	30	15
Non-vascular Plants (n=53)	8	10	24	8	39	59	8	0	2	0	4	2	0	0	0	0	4	0	4	2
Ecological Communities (n=53)	0	25	38	25	36	13	4	0	4	0	47	11	0	0	0	26	15	0	2	8
Total%:	4	24	44	22	46	30	14	6	14	2	29	36	11	13	3	18	20	5	19	12

Thanks

DIANA
250-751-3220

From: Sigg, Dominique ENV:EX
Sent: Tuesday, April 26, 2016 9:39 AM
To: Paige, Kathy ENV:EX; Demarchi, Diana ENV:EX
Subject: RE: threats summary tables

Hi Kathy & Diana,

Yes I remember this – Chris and Heather made a bunch of changes to the IUCN threats categories which threw things into a bit of confusion. I did re-work most of the inconsistencies but I need to go back and look at my notes to see what is going on. I will take a look today and get back to you

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 12:51 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

That might work. It doesn't align all that great with our description of threats in the introduction to the report...where we talk about forest and range use but might be ok. Let's see what Dom prefers...she is back tomorrow. kp

From: Demarchi, Diana ENV:EX
Sent: Monday, April 25, 2016 12:48 PM
To: Paige, Kathy ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Well it just dawned on me that all the other threats were grouped, so maybe just to be consistent these should all be grouped as "Biological extraction" – which is what it is in the database, but "Harvesting" might be more intuitive. And maybe there could be a separate list of all the more detailed threats if people want to know what was included and where.

DIANA
250-751-3220

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 12:36 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Hmmm...tough one...sort of makes sense to lump the hunting, trapping and fishing and harvesting of aquatic resources together. I wonder if firewood cutting could be lumped with forestry and other resource use.

Just where to put gathering of plants.... I'm leaning towards putting with the 'harvesting' group. What do you think?

From: Demarchi, Diana ENV:EX
Sent: Monday, April 25, 2016 11:44 AM
To: Paige, Kathy ENV:EX; Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

If you want to roll them up, here are the choices in that group:

Hunting and trapping	Gathering terrestrial plants	Range tenure	Resource road building	Firewood cutting	Fishing and harvesting aquatic resources
					The reason I asked was because it wasn't obvious where to lump them
					• Southern Maiden-hair fern is the only record in the gathering terrestrial plants category
					• Lewis' woodpecker, Northern Myotis, White-headed woodpecker, and Williamson's sapsucker are in the firewood cutting category
					Also in the original table, Hunting and Fishing were lumped together and now they are split, do you want them split in the summary table?
					Thanks
					DIANA

250-751-3220

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 11:36 AM
To: Demarchi, Diana ENV:EX; Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

If they are populated in the database we could use but they are very specific and wonder if we should roll into another category?

From: Demarchi, Diana ENV:EX
 Sent: Monday, April 25, 2016 11:27 AM
 To: Paige, Kathy ENV:EX
 Subject: RE: threats summary tables
 Hi Kathy

I've been working on Table 3 and we compared it to Dom's latest database there are 2 new threats in Dom's database that aren't in the original table. In the biological extraction group, firewood cutting and gathering terrestrial plants are 2 new threats. Do you want me to:

- 1) Add them to the new table?
- 2) Roll them into another category? (I suggest this one only because they don't look like significant activities to me)
- 3) Leave them out?

Thanks

DIANA
 250-751-3220

From: Paige, Kathy ENV:EX
 Sent: Thursday, April 21, 2016 1:41 PM
 To: Demarchi, Diana ENV:EX
 Cc: Sigg, Dominique ENV:EX
 Subject: RE: threats summary tables

Hi Diana. These were the draft summary tables developed quite awhile ago now when we were discussing what assets to include in the pilot. Something like Table 1 and 3 might be good to include in the report for both the full range of species in region and also for our selected species. We could discuss if the 'list of threats' (column headings) are the way we want them to be presented. We could look at other information out of the database that could also be summarized...like the functional guilds...but we may just want to do that for our own purposes but might be interesting to do. Cheers, Kathy

Table 1. Summary of taxonomic groupings, legal designations and Conservation Framework priorities

Biodiversity Asset	Total #	Listed by SARA	Included in IWMS	CF Priority 1 or 2***
Species				
Vertebrates	77	36	32	63
Invertebrates	57	1*	1**	34
Vascular Plants	213	5	-	126
Non-vascular Plants (incl. lichens)	53	4	-	42
Ecological Communities	53	NA	4	39
Total:	453	46	37	304

*Monarch; **Gillette's Checkerspot;***any goal

Table 2. Summary by BEC and broad habitat types

Asset	No data	PP%	IDF%	MS%	ICH%	ESSF%	IMA%	Agr	A/T	Anthr	Forest	Grassland	Lakes	Streams/Rivers	Springs	Wetlands	Riparian	Subterr	Rock	Unique
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Invertebrates (n=57)	0	32	40	23	33	26	7	5	4	7	23	21	14	21	2	4	9	0	7	4
Vascular Plants (n=213)	6	14	46	22	49	33	23	2	24	0	29	53	9	5	4	19	21	5	30	15
Non-vascular Plants (n=53)	8	10	24	8	39	59	8	0	2	0	4	2	0	0	0	0	4	0	4	2
Ecological Communities (n=53)	0	25	38	25	36	13	4	0	4	0	47	11	0	0	0	26	15	0	2	8
Total%:	4	24	44	22	46	30	14	6	14	2	29	36	11	13	3	18	20	5	19	12

Table 3. Summary of identified threats by broad threat classes

Asset	No data (%)	Residential (% sp.)	Agriculture	Hunting & Angling	Forestry	Range Tenure Use	Resource Roads	Trans. & Service Corridors	Energy Production & Mining	Invasive or Problematic Species	Pollution	Human Intrusions & Disturbance	Natural System Mod.	Natural Events	Climate Change
Vertebrates (n=77)	5	41	52	11	34	27	16	45	26	25	53	51	67	42	12
Invertebrates (n=57)	19	59	46	0	22	28	2	4	15	22	39	17	39	17	4
Vascular Plants (n=213)	57	30	36	1	9	8	2	13	3	35	4	31	24	3	1
Non-vascular Plants (n=53)	92	25	25	0	25	50	0	25	0	25	0	75	25	50	50
Ecological Communities (n=53)	53	48	48	0	16	44	8	16	8	20	16	40	56	16	48
Total % (n=453):	47	41	44	4	20	22	7	22	13	28	27	36	44	20	11

From: Sigg, Dominique ENV:EX
 Sent: Thursday, April 21, 2016 12:51 PM
 To: Demarchi, Diana ENV:EX
 Cc: Paige, Kathy ENV:EX
 Subject: threats summary tables
 Hi Diana,

Here is the link to the database we went over yesterday: M:\W\SHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\TBM_Assets_WorkingDatabase_DPS_2014-10-01.xlsx

Kathy is going to send you the tables she mocked up before the workshop to give you an idea of what we are looking for.

Thanks,

Dom

From: Paige, Kathy ENV:EX
To: Demarchi, Diana ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables
Date: Monday, May 9, 2016 10:11:00 AM

I did but wanted to do more. I think for the report version we will want to simply further and combine the two versions of each table into one so we compare our list to the full suite more readily. Still deciding if they should go in an appendix or in the main body of the report and where to put them exactly. I'll talk to Naomi and get back to you. kp

From: Demarchi, Diana ENV:EX
Sent: Monday, May 9, 2016 10:06 AM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables

Hi

Have any of you had a chance to look at the summary tables for the PTM report? I was just wondering if you need me to make any changes

Here is the file: \\Herder\40064\W\SHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Report_Tables_May2016_DD.docx

Thanks

DIANA
250-751-3220

From: Demarchi, Diana ENV:EX
Sent: Tuesday, May 3, 2016 5:31 PM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Cc: Nichol, Naomi ENV:EX
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250-751-3220

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Vascular Plants (n=213)	6	14	46	22	49	33	23	2	24	0	29	53	9	5	4	19	21	5	30	15
Non-vascular Plants (n=53)	8	10	24	8	39	59	8	0	2	0	4	2	0	0	0	0	4	0	4	2
Ecological Communities (n=53)	0	25	38	25	36	13	4	0	4	0	47	11	0	0	0	26	15	0	2	8
Total%:	4	24	44	22	46	30	14	6	14	2	29	36	11	13	3	18	20	5	19	12

Table 3. Summary of identified threats by broad threat classes

Asset	No data (%)	Residential (% sp.)	Agriculture	Hunting & Angling	Forestry	Range Tenure Use	Resource Roads	Trans. & Service Corridors	Energy Production & Mining	Invasive or Problematic Species	Pollution	Human Intrusions & Disturbance	Natural System Mod.	Natural Events	Climate Change
Vertebrates (n=77)	5	41	52	11	34	27	16	45	26	25	53	51	67	42	12
Invertebrates (n=57)	19	59	46	0	22	28	2	4	15	22	39	17	39	17	4
Vascular Plants (n=213)	57	30	36	1	9	8	2	13	3	35	4	31	24	3	1
Non-vascular Plants (n=53)	92	25	25	0	25	50	0	25	0	25	0	75	25	50	50
Ecological Communities (n=53)	53	48	48	0	16	44	8	16	8	20	16	40	56	16	48
Total % (n=453):	47	41	44	4	20	22	7	22	13	28	27	36	44	20	11

From: Sigg, Dominique ENV:EX
Sent: Thursday, April 21, 2016 12:51 PM
To: Demarchi, Diana ENV:EX
Cc: Paige, Kathy ENV:EX
Subject: threats summary tables

Hi Diana,

Here is the link to the database we went over yesterday: M:\WANS\SHARE\ESD\FSD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\TBM_Assets_WorkingDatabase_OPS_2014-10-01.xlsx

Kathy is going to send you the tables she mocked up before the workshop to give you an idea of what we are looking for.

Thanks,

Dom

From: Paige, Kathy ENV:EX
To: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables
Date: Monday, May 9, 2016 11:04:00 AM

I'm out for a bit if you want to get in. I think we should get rid of Appendix 3 and merge into analysis methods unless they get pretty crazy but lots was already in our methods. Thinking a bit more about intro and threat summary tables...

From: Nichol, Naomi ENV:EX
Sent: Monday, May 9, 2016 10:19 AM
To: Paige, Kathy ENV:EX
Subject: RE: threats summary tables
Yes, that works. Will help to sit down and discuss.
Thanks

From: Paige, Kathy ENV:EX
Sent: Monday, May 9, 2016 10:15 AM
To: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables
I was thinking these would go with the methods on assets but now I am wondering if we could have section under results or discussion to reflect on how our list compares to the full list and therefore how representative it is of the other species in the region....still thinking on it. Will be in later and we could discuss. Do you have time this afternoon to work together for a bit? On the discussion and this? Say around 1:30? kp

From: Nichol, Naomi ENV:EX
Sent: Monday, May 9, 2016 10:12 AM
To: Demarchi, Diana ENV:EX; Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables
Not yet. I'll take a look this morning.
Thanks!

From: Demarchi, Diana ENV:EX
Sent: Monday, May 9, 2016 10:06 AM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables
Hi

Have any of you had a chance to look at the summary tables for the PTM report? I was just wondering if you need me to make any changes
Here is the file: \\Herder\40064\WANS\SHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Report_Tables_May2016_DD.docx
Thanks

DIANA
250-751-3220

From: Demarchi, Diana ENV:EX
Sent: Tuesday, May 3, 2016 5:31 PM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables
Hi

Could you take a look at these tables when you get a chance?

My methods:

- I took everything in the All_Assets tab and converted all the codes that had a value to "1" so I could do the tallies.
- I made 2 tables for each: one with all the species for the region, and one with just the candidate species. You can choose which one you want to use or both.
- For each of the applicable columns I did a sum, and for table 1 that's all I did.
- For table 2 (habitats), there were percentages in the original so I took the sum for each habitat type and then divided by the total # of species. So this is not a percentage of the area covered or anything, e.g. there is 1 out of 4 invertebrate candidate species in riparian habitat = 25%.
- For table 3 (threats), I followed the same methods as table 2, but this got complicated because in the database there were multiple columns for each threat, i.e. there are 3 types of transportation and service corridors so in order to summarize the information I added them all together. The issue with that is when I went to calculate the percentages sometimes the threat values were greater than the number of species, so the percentages are over 100.

If I screwed it up or you want me to rework the numbers in a different way it shouldn't take me too long

Here is the file: \\Herder\40064\WANS\SHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Report_Tables_May2016_DD.docx

DIANA
250-751-3220

From: Sigg, Dominique ENV:EX
Sent: Tuesday, April 26, 2016 10:07 AM
To: Demarchi, Diana ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables
I'm not sure about the table below but Kathy should know.

As for the mismatched threats info, here is a summary of the changes/additions that were made to the threats categories by Chris & Heather, and the changes I made back:

[M:\WANS\SHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Threats categories_ Steeger_and_DPSchanges_2014-10-16.docx](#)

I realised that I foolishly made my changes to the "pilot asset list" categories but not to the categories on the "all assets" worksheet. I guess we need to fix this also so they align. Take a look at the word doc above – if it makes sense to you perhaps you can make the same changes to the "all assets" list. If my logic doesn't make sense then let me know and I can do this!
Dom

From: Demarchi, Diana ENV:EX
Sent: Tuesday, April 26, 2016 9:48 AM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables
Great thanks.

I also have a question about table 2, the last row has the Total % for each BGC zone and habitat type. Do either of you remember how you came up with those numbers? It's not a straight total and not an average, so does it relate to the area of those units in the project area, or some other calculation?

Table 2. Summary by BEC and broad habitat types

Asset	No data	PP%	IDF%	MS%	ICH%	ESS%	IMA%	Agr	A/T	Anthr	Forest	Grassland	Lakes	Streams/Rivers	Springs	Wetlands	Riparian	Subterr	Rock	Unique
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Non-vascular Plants (n=53)	8	10	24	8	39	59	8	0	2	0	4	2	0	0	0	0	4	0	4	2
Ecological Communities (n=53)	0	25	38	25	36	13	4	0	4	0	47	11	0	0	0	26	15	0	2	8
Total%:	4	24	44	22	46	30	14	6	14	2	29	36	11	13	3	18	20	5	19	12

Thanks

DIANA
250-751-3220

From: Sigg, Dominique ENV:EX
Sent: Tuesday, April 26, 2016 9:39 AM
To: Paige, Kathy ENV:EX; Demarchi, Diana ENV:EX
Subject: RE: threats summary tables
Hi Kathy & Diana,

Yes I remember this – Chris and Heather made a bunch of changes to the IUCN threats categories which threw things into a bit of confusion. I did re-work most of the inconsistencies but I need to go back and look at my notes to see what is going on. I will take a look today and get back to you

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 12:51 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

That might work. It doesn't align all that great with our description of threats in the introduction to the report...where we talk about forest and range use but might be ok. Let's see what Dom prefers...she is back tomorrow. kp

From: Demarchi, Diana ENV:EX
Sent: Monday, April 25, 2016 12:48 PM
To: Paige, Kathy ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Well it just dawned on me that all the other threats were grouped, so maybe just to be consistent these should all be grouped as "Biological extraction" – which is what it is in the

database, but "Harvesting" might be more intuitive. And maybe there could be a separate list of all the more detailed threats if people want to know what was included and where.

DIANA

250-751-3220

From: Paige, Kathy ENV:EX

Sent: Monday, April 25, 2016 12:36 PM

To: Demarchi, Diana ENV:EX

Cc: Sigg, Dominique ENV:EX

Subject: RE: threats summary tables

Hmmm...tough one...sort of makes sense to lump the hunting, trapping and fishing and harvesting of aquatic resources together. I wonder if firewood cutting could be lumped with forestry and other resource use.

Just where to put gathering of plants.... I'm leaning towards putting with the 'harvesting' group. What do you think?

From: Demarchi, Diana ENV:EX

Sent: Monday, April 25, 2016 11:44 AM

To: Paige, Kathy ENV:EX; Sigg, Dominique ENV:EX

Subject: RE: threats summary tables

If you want to roll them up, here are the choices in that group:

Hunting and trapping	Gathering terrestrial plants	Forestry	Range tenure use	Resource road building	Firewood cutting	Fishing and harvesting aquatic resources	The reason I asked was because it wasn't obvious where to lump them
							• Southern Maiden-hair fern is the only record in the gathering terrestrial plants category
							• Lewis' woodpecker, Northern Myotis, White-headed woodpecker, and Williamson's sapsucker are in the firewood cutting category
							Also in the original table, Hunting and Fishing were lumped together and now they are split, do you want them split in the summary table?
							Thanks
							DIANA

250-751-3220

From: Paige, Kathy ENV:EX

Sent: Monday, April 25, 2016 11:36 AM

To: Demarchi, Diana ENV:EX; Sigg, Dominique ENV:EX

Subject: RE: threats summary tables

If they are populated in the database we could use but they are very specific and wonder if we should roll into another category?

From: Demarchi, Diana ENV:EX

Sent: Monday, April 25, 2016 11:27 AM

To: Paige, Kathy ENV:EX

Subject: RE: threats summary tables

Hi Kathy

I've been working on Table 3 and we I compared it to Dom's latest database there are 2 new threats in Dom's database that aren't in the original table. In the biological extraction group, firewood cutting and gathering terrestrial plants are 2 new threats. Do you want me to:

- 1) Add them to the new table?
- 2) Roll them into another category? (I suggest this one only because they don't look like significant activities to me)
- 3) Leave them out?

Thanks

DIANA

250-751-3220

From: Paige, Kathy ENV:EX

Sent: Thursday, April 21, 2016 1:41 PM

To: Demarchi, Diana ENV:EX

Cc: Sigg, Dominique ENV:EX

Subject: RE: threats summary tables

Hi Diana. These were the draft summary tables developed quite awhile ago now when we were discussing what assets to include in the pilot. Something like Table 1 and 3 might be good to include in the report for both the full range of species in region and also for our selected species. We could discuss if the 'list of threats' (column headings) are the way we want them to be presented. We could look at other information out of the database that could also be summarized...like the functional guilds... but we may just want to do that for our own purposes but might be interesting to do. Cheers, Kathy

Table 1. Summary of taxonomic groupings, legal designations and Conservation Framework priorities

Biodiversity Asset	Total #	Listed by SARA	Included in IWMS	CF Priority 1 or 2***
Species				
Vertebrates	77	36	32	63
Invertebrates	57	1*	1**	34
Vascular Plants	213	5	-	126
Non-vascular Plants (incl. lichens)	53	4	-	42
Ecological Communities	53	NA	4	39
Total:	453	46	37	304

*Monarch; **Gillette's Checkerspot;***any goshawk

Table 2. Summary by BEC and broad habitat types

Asset	No data	PP%	IDF%	MS%	ICH%	ESSF%	IMA%	Agr	A/T	Anthr	Forest	Grassland	Lakes	Streams/ Rivers	Springs	Wetlands	Riparian	Subterr	Rock	Unique
Vertebrates (n=77)	0	57	65	24	50	15	7	26	10	3	39	45	34	45	4	32	40	16	23	21
Invertebrates (n=57)	0	32	40	23	33	26	7	5	4	7	23	21	14	21	2	4	9	0	7	4
Vascular Plants (n=213)	6	14	46	22	49	33	23	2	24	0	29	53	9	5	4	19	21	5	30	15
Non-vascular Plants (n=53)	8	10	24	8	39	59	8	0	2	0	4	2	0	0	0	0	4	0	4	2
Ecological Communities (n=53)	0	25	38	25	36	13	4	0	4	0	47	11	0	0	0	26	15	0	2	8
Total%:	4	24	44	22	46	30	14	6	14	2	29	36	11	13	3	18	20	5	19	12

Table 3. Summary of identified threats by broad threat classes

Asset	No data (%)	Residential (% sp.)	Agriculture	Hunting & Angling	Forestry	Range Tenure Use	Resource Roads	Trans. & Service Corridors	Energy Production & Mining	Invasive or Problematic Species	Pollution	Human Intrusions & Disturbance	Natural System Mod.	Natural Events	Climate Change
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Invertebrates (n=57)	19	59	46	0	22	28	2	4	15	22	39	17	39	17	4
Vascular Plants (n=213)	57	30	36	1	9	8	2	13	3	35	4	31	24	3	1
Non-vascular Plants (n=53)	92	25	25	0	25	50	0	25	0	25	0	75	25	50	50
Ecological Communities (n=53)	53	48	48	0	16	44	8	16	8	20	16	40	56	16	48
Total % (n=453):	47	41	44	4	20	22	7	22	13	28	27	36	44	20	11

From: Sigg, Dominique ENV:EX

Sent: Thursday, April 21, 2016 12:51 PM

To: Demarchi, Diana ENV:EX

Cc: Paige, Kathy ENV:EX

Subject: threats summary tables

Hi Diana,

Here is the link to the database we went over yesterday: M:\WANS\SHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\TBM_Assets_WorkingDatabase_OPS_2014-10-01.xlsx

Kathy is going to send you the tables she mocked up before the workshop to give you an idea of what we are looking for.

Thanks,
Dom

From: Paige, Kathy ENV:EX
To: Demarchi, Diana ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables
Date: Monday, May 9, 2016 12:13:00 PM

The threats table has a lot of info. We were thinking of merging the two natural events columns (natural system mod and natural events). Also the biological extraction section also has lots so we were thinking of merging the three pop harvest threats (i.e., harvesting and trapping, gathering terrestrial plants and also the aquatic harvesting column); also merge forestry and firewood cutting and lastly if we could merge resource roads and transportation corridors. This last one will be more contentious as it crosses categories and we could discuss further. In the report we don't really refer to "biological extraction" so what do you think of removing that heading? I'll be in tomorrow - we could discuss. Regarding your question re table 3... in those cases where there are subcolumns for a 'threat' could we give it a yes (1) if it has a yes in any of the subcolumns...would that keep it to 100% total?

From: Demarchi, Diana ENV:EX
Sent: Tuesday, May 3, 2016 5:31 PM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables
Hi

Could you take a look at these tables when you get a chance?

My methods:

- I took everything in the All_Assets tab and converted all the codes that had a value to "1" so I could do the tallies.
- I made 2 tables for each: one with all the species for the region, and one with just the candidate species. You can choose which one you want to use or both.
- For each of the applicable columns I did a sum, and for table 1 that's all I did.
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- For table 3 (threats), I followed the same methods as table 2, but this got complicated because in the database there were multiple columns for each threat, i.e. there are 3 types of transportation and service corridors so in order to summarize the information I added them all together. The issue with that is when I went to calculate the percentages sometimes the threat values were greater than the number of species, so the percentages are over 100.

If I screwed it up or you want me to rework the numbers in a different way it shouldn't take me too long

Here is the file: \\Herder\40064\W\ANSHARE\FSD\FSD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Report_Tables_May2016_DD.docx

DIANA
250-751-3220

From: Sigg, Dominique ENV:EX
Sent: Tuesday, April 26, 2016 10:07 AM
To: Demarchi, Diana ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables
I'm not sure about the table below but Kathy should know.

As for the mismatched threats info, here is a summary of the changes/additions that were made to the threats categories by Chris & Heather, and the changes I made back:

[M:\W\ANSHARE\FSD\FSD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Threats categories Steeger and DPS changes 2014-10-16.docx](#)

I realised that I foolishly made my changes to the "pilot asset list" categories but not to the categories on the "all assets" worksheet. I guess we need to fix this also so they align. Take a look at the word doc above - if it makes sense to you perhaps you can make the same changes to the "all assets" list. If my logic doesn't make sense then let me know and I can do this!

Dom

From: Demarchi, Diana ENV:EX
Sent: Tuesday, April 26, 2016 9:48 AM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables
Great thanks.

I also have a question about table 2, the last row has the Total % for each BGC zone and habitat type. Do either of you remember how you came up with those numbers? It's not a straight total and not an average, so does it relate to the area of those units in the project area, or some other calculation?

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Thanks

DIANA
250-751-3220

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To: Paige, Kathy ENV:EX; Demarchi, Diana ENV:EX
Subject: RE: threats summary tables
Hi Kathy & Diana,

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From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 12:51 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

That might work. It doesn't align all that great with our description of threats in the introduction to the report...where we talk about forest and range use but might be ok. Let's see what Dom prefers...she is back tomorrow. kp

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Well it just dawned on me that all the other threats were grouped, so maybe just to be consistent these should all be grouped as "Biological extraction" - which is what it is in the database, but "Harvesting" might be more intuitive. And maybe there could be a separate list of all the more detailed threats if people want to know what was included and where.

DIANA
250-751-3220

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 12:36 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Hmmm...tough one...sort of makes sense to lump the hunting, trapping and fishing and harvesting of aquatic resources together. I wonder if firewood cutting could be lumped with forestry and other resource use.

Just where to put gathering of plants.... I'm leaning towards putting with the 'harvesting' group. What do you think?

From: Demarchi, Diana ENV:EX
Sent: Monday, April 25, 2016 11:44 AM
To: Paige, Kathy ENV:EX; Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

If you want to roll them up, here are the choices in that group:

Hunting and trapping	Gathering of terrestrial plants	Forestry	Range tenure use	Resource road building	Firewood cutting	Fishing and harvesting aquatic resources
						The reason I asked was because it wasn't obvious where to lump them
						• Southern Maiden-hair fern is the only record in the gathering terrestrial plants category
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DIANA

250-751-3220

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 11:36 AM
To: Demarchi, Diana ENV:EX; Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

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Sent: Monday, April 25, 2016 11:27 AM
To: Paige, Kathy ENV:EX
Subject: RE: threats summary tables

Hi Kathy

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- 1) Add them to the new table?
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Thanks

DIANA
250-751-3220

From: Paige, Kathy ENV:EX
Sent: Thursday, April 21, 2016 1:41 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Hi Diana. These were the draft summary tables developed quite awhile ago now when we were discussing what assets to include in the pilot. Something like Table 1 and 3 might be good to include in the report for both the full range of species in region and also for our selected species. We could discuss if the 'list of threats' (column headings) are the way we want them to be presented. We could look at other information out of the database that could also be summarized...like the functional guilds... but we may just want to do that for our own purposes but might be interesting to do. Cheers, Kathy

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*Monarch; **Gillette's Checkerspot;***any goal

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Table 3. Summary of identified threats by broad threat classes

Asset	No data (%)	Residential (% sp.)	Agriculture	Hunting & Angling	Forestry	Range Tenure Use	Resource Roads	Trans. & Service Corridors	Energy Production & Mining	Invasive or Problematic Species	Pollution	Human Intrusions & Disturbance	Natural System Mod.	Natural Events	Climate Change
Vertebrates (n=77)	5	41	52	11	34	27	16	45	26	25	53	51	67	42	12
Invertebrates (n=57)	19	59	46	0	22	28	2	4	15	22	39	17	39	17	4
Vascular Plants (n=213)	57	30	36	1	9	8	2	13	3	35	4	31	24	3	1
Non-vascular Plants (n=53)	92	25	25	0	25	50	0	25	0	25	0	75	25	50	50
Ecological Communities (n=53)	53	48	48	0	16	44	8	16	8	20	16	40	56	16	48
Total % (n=453):	47	41	44	4	20	22	7	22	13	28	27	36	44	20	11

From: Sigg, Dominique ENV:EX
Sent: Thursday, April 21, 2016 12:51 PM
To: Demarchi, Diana ENV:EX
Cc: Paige, Kathy ENV:EX
Subject: threats summary tables

Hi Diana,

Here is the link to the database we went over yesterday: M:\WANSHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\TBM_Assets_WorkingDatabase_DPS_2014-10-01.xlsx

Kathy is going to send you the tables she mocked up before the workshop to give you an idea of what we are looking for.

Thanks,

Dom

From: Paige, Kathy ENV:EX
To: Demarchi, Diana ENV:EX
Subject: RE: threats summary tables
Date: Monday, May 9, 2016 3:00:00 PM

Thanks. I like the idea of being able to use a percentage but can we calculate based on if they have an X or P in any of the subcolumns they get a 1 for that threat? Hard to explain in email...can I give you a call tomorrow? (I have to run out now). kp

From: Demarchi, Diana ENV:EX
Sent: Monday, May 9, 2016 12:50 PM
To: Paige, Kathy ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables

I can make those changes to the threats table, but for this part:

Regarding your question re table 3... in those cases where there are subcolumns for a 'threat' could we give it a yes (1) if it has a yes in any of the subcolumns...would that keep it to 100% total?

➤ Would it be better to just have an indication of present or not present instead of a percentage? Or high (>67%), medium(34-66%), low(<33%), nil (0%)

DIANA
250-751-3220

From: Paige, Kathy ENV:EX
Sent: Monday, May 9, 2016 12:14 PM
To: Demarchi, Diana ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables

The threats table has a lot of info. We were thinking of merging the two natural events columns (natural system mod and natural events). Also the biological extraction section also has lots so were thinking of merging the three pop harvest threats (i.e., harvesting and trapping, gathering terrestrial plants and also the aquatic harvesting column); also merge forestry and firewood cutting and lastly if we could merge resource roads and transportation corridors. This last one will be more contentious as it crosses categories and we could discuss further. In the report we don't really refer to "biological extraction" so what do you think of removing that heading? I'll be in tomorrow – we could discuss.

Regarding your question re table 3... in those cases where there are subcolumns for a 'threat' could we give it a yes (1) if it has a yes in any of the subcolumns...would that keep it to 100% total?

From: Demarchi, Diana ENV:EX
Sent: Tuesday, May 3, 2016 5:31 PM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Cc: Nichol, Naomi ENV:EX
Subject: RE: threats summary tables

Hi

Could you take a look at these tables when you get a chance?

My methods:

- I took everything in the All_Assets tab and converted all the codes that had a value to "1" so I could do the tallies.
- I made 2 tables for each: one with all the species for the region, and one with just the candidate species. You can choose which one you want to use or both.
- For each of the applicable columns I did a sum, and for table 1 that's all I did.
- For table 2 (habitats), there were percentages in the original so I took the sum for each habitat type and then divided by the total # of species. So this is not a percentage of the area covered or anything, e.g. there is 1 out of 4 invertebrate candidate species in riparian habitat = 25%.
- For table 3 (threats), I followed the same methods as table 2, but this got complicated because in the database there were multiple columns for each threat, i.e. there are 3 types of transportation and service corridors so in order to summarize the information I added them all together. The issue with that is when I went to calculate the percentages sometimes the threat values were greater than the number of species, so the percentages are over 100.

If I screwed it up or you want me to rework the numbers in a different way it shouldn't take me too long

Here is the file: \\Herder\40064\WANS\SHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Report_Tables_May2016_DD.docx

DIANA
250-751-3220

From: Sigg, Dominique ENV:EX
Sent: Tuesday, April 26, 2016 10:07 AM
To: Demarchi, Diana ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables

I'm not sure about the table below but Kathy should know.

As for the mismatched threats info, here is a summary of the changes/additions that were made to the threats categories by Chris & Heather, and the changes I made back:
M:\WANS\SHARE\ESD\ESD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\Threats categories_Steeger_and_DPSchanges_2014-10-16.docx

I realised that I foolishly made my changes to the "pilot asset list" categories but not to the categories on the "all assets" worksheet. I guess we need to fix this also so they align. Take a look at the word doc above – if it makes sense to you perhaps you can make the same changes to the "all assets" list. If my logic doesn't make sense then let me know and I can do this!
Dom

From: Demarchi, Diana ENV:EX
Sent: Tuesday, April 26, 2016 9:48 AM
To: Sigg, Dominique ENV:EX; Paige, Kathy ENV:EX
Subject: RE: threats summary tables

Great thanks.

I also have a question about table 2, the last row has the Total % for each BGC zone and habitat type. Do either of you remember how you came up with those numbers? It's not a straight total and not an average, so does it relate to the area of those units in the project area, or some other calculation?

Table 2. Summary by BEC and broad habitat types

Asset	No data	PP%	IDP%	MS%	ICH%	ESSF%	IMA%	Agr	A/T	Anthr	Forest	Grassland	Lakes	Streams/ Rivers	Springs	Wetlands	Riparian	Subterr	Rock	Unique
Vertebrates (n=77)	0	57	65	24	50	15	7	26	10	3	39	45	34	45	4	32	40	16	23	21
Invertebrates (n=57)	0	32	40	23	33	26	7	5	4	7	23	21	14	21	2	4	9	0	7	4
Vascular Plants (n=213)	6	14	46	22	49	33	23	2	24	0	29	53	9	5	4	19	21	5	30	15
Non-vascular Plants (n=53)	8	10	24	8	39	59	8	0	2	0	4	2	0	0	0	0	4	0	4	2
Ecological Communities (n=53)	0	25	38	25	36	13	4	0	4	0	47	11	0	0	0	26	15	0	2	8
Total%:	4	24	44	22	46	30	14	6	14	2	29	36	11	13	3	18	20	5	19	12

Thanks

DIANA
250-751-3220

From: Sigg, Dominique ENV:EX
Sent: Tuesday, April 26, 2016 9:39 AM
To: Paige, Kathy ENV:EX; Demarchi, Diana ENV:EX
Subject: RE: threats summary tables

Hi Kathy & Diana,
Yes I remember this – Chris and Heather made a bunch of changes to the IUCN threats categories which threw things into a bit of confusion. I did re-work most of the inconsistencies but I need to go back and look at my notes to see what is going on. I will take a look today and get back to you

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 12:51 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

That might work. It doesn't align all that great with our description of threats in the introduction to the report...where we talk about forest and range use but might be ok. Let's see what Dom prefers...she is back tomorrow. kp

From: Demarchi, Diana ENV:EX
Sent: Monday, April 25, 2016 12:48 PM
To: Paige, Kathy ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Well it just dawned on me that all the other threats were grouped, so maybe just to be consistent these should all be grouped as "Biological extraction" – which is what it is in the database, but "Harvesting" might be more intuitive. And maybe there could be a separate list of all the more detailed threats if people want to know what was included and where.

DIANA
250-751-3220

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 12:36 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Hmmm...tough one...sort of makes sense to lump the hunting, trapping and fishing and harvesting of aquatic resources together. I wonder if firewood cutting could be lumped with forestry and other resource use.

Just where to put gathering of plants.... I'm leaning towards putting with the 'harvesting' group. What do you think?

From: Demarchi, Diana ENV:EX
Sent: Monday, April 25, 2016 11:44 AM
To: Paige, Kathy ENV:EX; Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

If you want to roll them up, here are the choices in that group:

Hunting and trapping	Gathering terrestrial plants	Forestry	Range tenure use	Resource road building	Firewood cutting	Fishing and harvesting aquatic resources
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The reason I asked was because it wasn't obvious where to lump them

- Southern Maiden-hair fern is the only record in the gathering terrestrial plants category
- Lewis' woodpecker, Northern Myotis, White-headed woodpecker, and Williamson's sapsucker are in the firewood cutting category

Also in the original table, Hunting and Fishing were lumped together and now they are split, do you want them split in the summary table?

Thanks

DIANA
250-751-3220

From: Paige, Kathy ENV:EX
Sent: Monday, April 25, 2016 11:36 AM
To: Demarchi, Diana ENV:EX; Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

If they are populated in the database we could use but they are very specific and wonder if we should roll into another category?

From: Demarchi, Diana ENV:EX
Sent: Monday, April 25, 2016 11:27 AM
To: Paige, Kathy ENV:EX
Subject: RE: threats summary tables

Hi Kathy

I've been working on Table 3 and we I compared it to Dom's latest database there are 2 new threats in Dom's database that aren't in the original table. In the biological extraction group, firewood cutting and gathering terrestrial plants are 2 new threats. Do you want me to:

- 1) Add them to the new table?
- 2) Roll them into another category? (I suggest this one only because they don't look like significant activities to me)
- 3) Leave them out?

Thanks

DIANA
250-751-3220

From: Paige, Kathy ENV:EX
Sent: Thursday, April 21, 2016 1:41 PM
To: Demarchi, Diana ENV:EX
Cc: Sigg, Dominique ENV:EX
Subject: RE: threats summary tables

Hi Diana. These were the draft summary tables developed quite awhile ago now when we were discussing what assets to include in the pilot. Something like Table 1 and 3 might be good to include in the report for both the full range of species in region and also for our selected species. We could discuss if the 'list of threats' (column headings) are the way we want them to be presented. We could look at other information out of the database that could also be summarized...like the functional guilds...but we may just want to do that for our own purposes but might be interesting to do. Cheers, Kathy

Table 1. Summary of taxonomic groupings, legal designations and Conservation Framework priorities

Biodiversity Asset	Total #	Listed by SARA	Included in IWMS	CF Priority 1 or 2***
Species				
Vertebrates	77	36	32	63
Invertebrates	57	1*	1**	34
Vascular Plants	213	5	-	126
Non-vascular Plants (incl. lichens)	53	4	-	42
Ecological Communities	53	NA	4	39
Total:	453	46	37	304

*Monarch; **Gillette's Checkerspot;***any goal

Table 2. Summary by BEC and broad habitat types

Asset	No data	PP%	IDP%	MS%	ICH%	ESSF%	IMA%	Agr	A/T	Anthr	Forest	Grassland	Lakes	Streams/Rivers	Springs	Wetlands	Riparian	Subterr	Rock	Unique
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Invertebrates (n=57)	0	32	40	23	33	26	7	5	4	7	23	21	14	21	2	4	9	0	7	4
Vascular Plants (n=213)	6	14	46	22	49	33	23	2	24	0	29	53	9	5	4	19	21	5	30	15
Non-vascular Plants (n=53)	8	10	24	8	39	59	8	0	2	0	4	2	0	0	0	0	4	0	4	2
Ecological Communities (n=53)	0	25	38	25	36	13	4	0	4	0	47	11	0	0	0	26	15	0	2	8
Total%:	4	24	44	22	46	30	14	6	14	2	29	36	11	13	3	18	20	5	19	12

Table 3. Summary of identified threats by broad threat classes

Asset	No data (%)	Residential (% sp.)	Agriculture	Hunting & Angling	Forestry	Range Tenure Use	Resource Roads	Trans. & Service Corridors	Energy Production & Mining	Invasive or Problematic Species	Pollution	Human Intrusions & Disturbance	Natural System Mod.	Natural Events	Climate Change
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Vascular Plants (n=213)	57	30	36	1	9	8	2	13	3	35	4	31	24	3	1
Non-vascular Plants (n=53)	92	25	25	0	25	50	0	25	0	25	0	75	25	50	50
Ecological Communities (n=53)	53	48	48	0	16	44	8	16	8	20	16	40	56	16	48
Total % (n=453):	47	41	44	4	20	22	7	22	13	28	27	36	44	20	11

From: Sigg, Dominique ENV:EX
Sent: Thursday, April 21, 2016 12:51 PM
To: Demarchi, Diana ENV:EX
Cc: Paige, Kathy ENV:EX
Subject: threats summary tables

Hi Diana,
Here is the link to the database we went over yesterday: M:\WANS\SHARE\FSD\FSD_Shared\PTM Kootenay Region\Kootenay Pilot\Asset Info\TBM_Assets_WorkingDatabase_DPS_2014-10-01.xlsx

Kathy is going to send you the tables she mocked up before the workshop to give you an idea of what we are looking for.
Thanks,
Dom

From: [Paige, Kathy ENV:EX](#)
To: [Hubregtse, Pauline FLNR:EX](#)
Subject: RE: SLWH fieldcards... latest revisions
Date: Monday, May 16, 2016 9:35:00 AM

Awesome...sounds like there was much work on the weekend! I'm open today if you want to discuss. kp

From: Hubregtse, Pauline FLNR:EX
Sent: Sunday, May 15, 2016 11:42 PM
To: Todd Manning; 'Dean McGeough'
Cc: Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Bradford, Peter FLNR:EX; Snowden, Barry B FLNR:EX; Densmore, Nancy FLNR:EX
Subject: Re: SLWH fieldcards... latest revisions

Hi all,

Please see attached for revised data collection forms. Dean and I had several excellent discussions this weekend, and Todd provided helpful written comments.

We should discuss as a team as soon as everyone has had a chance to review. I am looking forward to your feedback.

Thank you!

Pauline

Pauline Hubregtse
Resource Stewardship Evaluation Analyst
Forest and Range Evaluation Program
FLNRO
250.387.6718

From: Todd Manning <etmanning@shaw.ca>
Sent: May-14-16 4:24 PM
To: 'Dean McGeough'; Hubregtse, Pauline FLNR:EX
Cc: Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Bradford, Peter FLNR:EX; Snowden, Barry B FLNR:EX; Densmore, Nancy FLNR:EX
Subject: RE: SLWH fieldcards... latest revisions

Hi all --- this NEW set of forms is looking good. Pauline and Dean -- I have added a FEW words only to improve clarity of interpretation for the user while filling out the forms (see attached v2 in track changes). Now that we have moved toward using these new forms, I will go through the rank scoring criteria again (will still use rank 1-3 with the occasional 4) to catch some of the edits we discussed on our May 6 field day. I will also now work to completing the PowerPoint for training use --- this will primarily be used to help people understand how to visualize and rank score the various habitat elements/indicators and evidence of use.

Todd

From: Dean McGeough [<mailto:deanmcg@shaw.ca>]
Sent: Saturday, May 14, 2016 9:12 AM
To: 'Hubregtse, Pauline FLNR:EX'; etmanning@shaw.ca
Cc: 'Paige, Kathy ENV:EX'; 'Thompson, Richard P ENV:EX'; 'Bradford, Peter FLNR:EX'; 'Snowdon, Barry B FLNR:EX'; 'Densmore, Nancy FLNR:EX'
Subject: RE: SLWH fieldcards... latest revisions

Hi everyone,

Pauline and I had a great chat and came up with some practical alterations for efficiency – this is moving along well and I will have fun with the introducing this process at Haida Gwaii this week. Suffice to say ignore my edits and comments – I had not caught the tweaks being discussed behind the scenes.

Dean

From: Dean McGeough [<mailto:deanmcg@shaw.ca>]
Sent: May-14-16 7:19 AM
To: 'Hubregtse, Pauline FLNR:EX'; 'etmanning@shaw.ca'
Cc: 'Paige, Kathy ENV:EX'; 'Thompson, Richard P ENV:EX'; 'Bradford, Peter FLNR:EX'; 'Snowdon, Barry B FLNR:EX'; 'Densmore, Nancy FLNR:EX'
Subject: RE: SLWH fieldcards... latest revisions

Hi again,

Last night I realized the reason for the multiple 'plots' - we were dividing the belt survey (min 100m) into segments as per riparian. Length divided by 5 to give 5 internals for continuous features and spot observations and data collection at the points (plots) – which would give 6 points along the belt. Delete my previous word doc comments and replace with the attached...

The idea of running a 150m transect for CWD – wonder how to decide random location? Should likely be selected to run out from a designated reserve (if there is one) or pick it to run from a forested block edge. Perhaps, randomly select from 1 of 4 starting positions on a block: divide the block into 4 quadrants by drawing a line the length of the block (longitudinal axis), start with access point to the opening as possible point 1, directly opposite end of the block =point 2, then bisect the block in half with a perpendicular line drawn from the midpoint of the longitudinal axis to the block perimeter to get to points 3 and 4. Now randomly pick one of these 4 points from which to run the transect? Does it matter what bearing to use to run the 150m transect or simply perpendicularly away from this point, or perhaps it needs to run diagonally across the block? Will need some guidance for the multiple configurations of block shapes...

Regards,

Dean

From: Dean McGeough [<mailto:deanmcg@shaw.ca>]
Sent: May-13-16 11:04 PM
To: 'Hubregtse, Pauline FLNR:EX'; 'etmanning@shaw.ca'
Cc: 'Paige, Kathy ENV:EX'; 'Thompson, Richard P ENV:EX'; 'Bradford, Peter FLNR:EX'; 'Snowdon, Barry B FLNR:EX'; 'Densmore, Nancy FLNR:EX'

Subject: RE: SLWH fieldcards... latest revisions

Pauline,

Great work on the cards. Yes, the field session was very useful.

I have added some comments and queries to the document and with your detail below. Yes – got the message to call to chat...

Dean

From: Hubregtse, Pauline FLNR:EX [<mailto:Pauline.Hubregtse@gov.bc.ca>]

Sent: May-13-16 8:19 PM

To: etmanning@shaw.ca; Dean McGeough

Cc: Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Bradford, Peter FLNR:EX; Snowdon, Barry B FLNR:EX; Densmore, Nancy FLNR:EX

Subject: SLWH fieldcards... latest revisions

Hello all!

Thank you everyone for your excellent input in the field last Friday and during our brainstorm meetings this week!!! ☺

Please see attached for a DRAFT set of fieldcards to be used for raw data collection, as well as summarizing data to answer the habitat assessment questions for each guild.

In a nutshell... this is SLBD on steroids! The same methods are used for standing trees and CWD, with the addition of:

- Extra columns to record specific features for standing trees and CWD
- Section to record canopy characteristics of retention patches
- Fixed radius plot to estimate percent cover of herbaceous and non-woody vegetation (3.99 m plot using same plot centre as for standing trees) So a nested plot of 3.99 for veg inside the larger standing tree plot-OK
- Line intercept to estimate percent cover of shrubs (including berry shrubs) and saplings (using same transect as for CWD)
- Belt transect to assess CWD piles (10m wide, 150 m long perpendicular from forested edge into the NAR, start point determined randomly... requires further discussion) so we don't capture the piles in the 3 NAR plots and their transects?
- Sections to record evidence of use and incidental wildlife observations

Note that by including small stem scars/cracks and berry shrubs, there is potential to evaluate for bats and bears as well... very exciting!

Hopefully the cards will make sense without a detailed protocol for now as most of it follows SLBD protocol.

Dean/Todd: I am available this weekend to discuss should you have any questions/concerns. Email or call me on my cell 522

Thank you!!

Pauline

Pauline Hubregtse, P.Ag.

Resource Stewardship Evaluation Analyst

Forest & Range Evaluation Program (FREP)

Resource Practices Branch (FLNRO)

Tel 250.387.6718

From: [Paige, Kathy ENV:EX](#)
To: [Dean McGeough](#)
Cc: [Hubregtse, Pauline FLNR:EX](#); [Bradford, Peter FLNR:EX](#); [Todd Manning](#)
Subject: RE: SLWH fieldcards... latest revisions
Date: Wednesday, May 18, 2016 10:43:00 AM

Great comments. Thanks for capturing so well. Cheers, Kathy

From: Hubregtse, Pauline FLNR:EX
Sent: Wednesday, May 18, 2016 7:48 AM
To: Dean McGeough
Cc: Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Bradford, Peter FLNR:EX; Snowdon, Barry B FLNR:EX; Densmore, Nancy FLNR:EX; Todd Manning
Subject: Re: SLWH fieldcards... latest revisions
Thank you Dean! These comments are excellent! Please let the team on Haida Gwaii know that their feedback is very much appreciated. Looking forward to discussion this Friday afternoon. I will send a meeting invite shortly.
Pauline

From: Dean McGeough <deanmcg@shaw.ca>
Sent: May-17-16 6:59 PM
To: Hubregtse, Pauline FLNR:EX
Cc: Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Bradford, Peter FLNR:EX; Snowdon, Barry B FLNR:EX; Densmore, Nancy FLNR:EX; Todd Manning; deanmcg@shaw.ca
Subject: Re: SLWH fieldcards... latest revisions
Hi,
We have had 2 days of trying out the Wildlife cards and greatly welcomed. The data = Form A, summary = Form B is very logical and greatly appreciated by all so far.
Modular format - so a district can opt out of collecting info for a guild
Goshawk - landscape level for nesting so take out reference to nesting suitable sites and stick to foraging utility features
How to capture differing habitat preference for martin versus fisher? Tree size criteria for denning are different
Here are a few items to clarify or consider adding:
Page 1 (Standing Trees) Form A1
- add Year of Disturbance
- Percent canopy closure... if on an edge plot take the reading from one of 3 plot transect locations - plot centre, 1st CWD transect leg, or end of CWD transect leg to get away from the edge when a team does a HALF PLOT.
- Stand Structure - consider 4 categories of Very Uniform, Uniform, Moderately, Non-Uniform or Single Story, Intermediates (tree canopy, scattered poles, scattered understory), Two layered (tree canopy and understory), Multi-story
- Add heart rot or some general stem pathology indicators (e.g. conks, cat faces with decay)
Page 2 Standing Tree Form A1 Side 2
- combine nest/rest platforms to large brooms, add snapped/broken top (size criteria and taller than 10m), plus comment column
- clarify this table is for the PLOT trees; but what about recording the trees seen from the transect with wildlife features (we tallied for comparison on the plot to seen from the transect with a record of distance off line to the farthest visible feature tree; typically 35m.
Team really thinks/prefers the BELT SURVEY inside the reserve - target 100m and width of 10m as an example; check with Frank Doyle and Berry Wijdeuen for data on belt survey methodology for capturing CN's.
Form A2 Side 1 (CWD)
- Add statement "CWD pile present on transect Yes No"

- Consider capturing "Upturned rootwads >2m height present Yes No" and perhaps "Veteran/legacy logs >2m height present Yes No"

Form A2 side 2 (CWD and Understory)

- Ungulate browsing seems to ask 2 things - severity of browse and % of forage being browsed. Should separate into these two variables
- add observation of prey e.g., squirrel middens (indicates the presence of a source of food for martin and goshawk - similar to recording presence of berry plants)
- we don't ask for MOSS cover, yet it is important for cover and also provides food for grouse (seed pods are browsed)

Herbaceous and Low Shrub cover

- herbs and low shrubs should read <2m tall
- do we need %cover or can we check off a selection of ranges (trace,, sparse, common, abundant) or % ranges (e.g., 0-1%, 1-5%, 5-25%, 25-50%, 50-75%, >75%)?
- capture elevated browse on stumps/root wads (out of reach of ungulates)
- clarify plants to be >10cm to count; suggestions made that 1.5m is a height standard not 2m (?) in veg surveys
- Need another row in section 3 for "Tall shrubs >2m tall"
- Do we need to know average or median or range of heights of the shrub/sapling tallied?
- Limit the listing of species; e.g., dominant 5 shrubs/seedling and/or 2 browse species

Belt Survey CWD piles in NAR Form A3 Side 1

- Define the "forested edge"; an immature edge that has reached green-up is beginning to function as cover
- Pile Size - what is this info needed for? Do we follow Waste/Residue parameters for pile dimensions, or can we define categories of piles using descriptors (e.g., wheel barrow size, volkswagon beetle size, pick-up truck sized, house sized)
- Add quality indicators of "pile built on stumps/upturned rootwads Yes No"
- Why not capturing piles in reserves, especially large upturned rootwads and/or remnant legacy long (>10m) and large logs (>2m height/diam)
- all piles seen so far are class 1 or 2 wood so not sure if "Mix of decay classes" is needed

Stratum Summary Form B Side 1

- Stand structure as per plot card comments
- Standing trees is a compilation of the form A plot, but what about using a belt survey instead of line transect? Not one feature tree was found in any plots, yet LOTS of features were seen within 35m of the CWD transect. For example, a bear den was found but not in the trees tallied for the plot, we had several plots with Cavity Nests visible without too much effort (within 35m of the transect) - one plot today had 3 trees with CN's - one of which had 5 cavities; we should record trees with multiple cavities and/or trees with multiple sized cavities on a single tree
- add the broken topped tree (>70cm Coast, 30cm Interior and 10m height) summary.
- Doing a 150m belt survey for CWD piles in NAR but not using the belt surveying in reserves - a big challenge/question by most everyone
- Canopy cover: suggest we base this on the average of three CWD transect points instead of at Plot Centre.

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To: "Todd Manning" <etmanning@shaw.ca>, "Dean McGeough" <deanmcg@shaw.ca>

Cc: "Kathy ENV Paige:EX" <Kathy.Paige@gov.bc.ca>, "Richard P ENV Thompson:EX" <Richard.Thompson@gov.bc.ca>, "Peter FLNR Bradford:EX" <Peter.Bradford@gov.bc.ca>, "Barry B FLNR Snowdon:EX"

<Barry.Snowdon@gov.bc.ca>, "Nancy FLNR Densmore:EX"
<Nancy.Densmore@gov.bc.ca>

Sent: Sunday, May 15, 2016 11:41:31 PM

Subject: Re: SLWH fieldcards... latest revisions

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Please see attached for revised data collection forms. Dean and I had several excellent discussions this weekend, and Todd provided helpful written comments.

We should discuss as a team as soon as everyone has had a chance to review. I am looking forward to your feedback.

Thank you!

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Pauline Hubregtse
Resource Stewardship Evaluation Analyst
Forest and Range Evaluation Program
FLNRO
250.387.6718

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I have added some comments and queries to the document and with your detail below. Yes – got the message to call to chat...
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Note that by including small stem scars/cracks and berry shrubs, there is potential to evaluate for bats and bears as well... very exciting!

Hopefully the cards will make sense without a detailed protocol for now as most of it

follows SLBD protocol.

Dean/Todd: I am available this weekend to discuss should you have any questions/concerns. Email or call me on my cell ^{s.22}

Thank you!!

Pauline

Pauline Hubregtse, P.Ag.

Resource Stewardship Evaluation Analyst

Forest & Range Evaluation Program (FREP)

Resource Practices Branch (FLNRO)

Tel 250.387.6718

<>

From: [Paige, Kathy ENV:EX](#)
To: [Hubregtse, Pauline FLNR:EX](#)
Subject: FW: SLWH fieldcards... latest revisions
Date: Wednesday, May 18, 2016 10:44:00 AM

These are good comments. Sounds like it's going well. ☺

From: Hubregtse, Pauline FLNR:EX
Sent: Wednesday, May 18, 2016 7:48 AM
To: Dean McGeough
Cc: Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Bradford, Peter FLNR:EX; Snowdon, Barry B FLNR:EX; Densmore, Nancy FLNR:EX; Todd Manning
Subject: Re: SLWH fieldcards... latest revisions
Thank you Dean! These comments are excellent! Please let the team on Haida Gwaii know that their feedback is very much appreciated. Looking forward to discussion this Friday afternoon. I will send a meeting invite shortly.
Pauline

From: Dean McGeough <deanmcg@shaw.ca>
Sent: May-17-16 6:59 PM
To: Hubregtse, Pauline FLNR:EX
Cc: Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Bradford, Peter FLNR:EX; Snowdon, Barry B FLNR:EX; Densmore, Nancy FLNR:EX; Todd Manning; deanmcg@shaw.ca
Subject: Re: SLWH fieldcards... latest revisions
Hi,
We have had 2 days of trying out the Wildlife cards and greatly welcomed. The data = Form A, summary = Form B is very logical and greatly appreciated by all so far.
Modular format - so a district can opt out of collecting info for a guild
Goshawk - landscape level for nesting so take out reference to nesting suitable sites and stick to foraging utility features
How to capture differing habitat preference for martin versus fisher? Tree size criteria for denning are different
Here are a few items to clarify or consider adding:
Page 1 (Standing Trees) Form A1
- add Year of Disturbance
- Percent canopy closure... if on an edge plot take the reading from one of 3 plot transect locations - plot centre, 1st CWD transect leg, or end of CWD transect leg to get away from the edge when a team does a HALF PLOT.
- Stand Structure - consider 4 categories of Very Uniform, Uniform, Moderately, Non-Uniform or Single Story, Intermediates (tree canopy, scattered poles, scattered understory), Two layered (tree canopy and understory), Multi-story
- Add heart rot or some general stem pathology indicators (e.g. conks, cat faces with decay)
Page 2 Standing Tree Form A1 Side 2
- combine nest/rest platforms to large brooms, add snapped/broken top (size criteria and taller than 10m), plus comment column
- clarify this table is for the PLOT trees; but what about recording the trees seen from the transect with wildlife features (we tallied for comparison on the plot to seen from the transect with a record of distance off line to the farthest visible feature tree; typically 35m.
Team really thinks/prefers the BELT SURVEY inside the reserve - target 100m and width of 10m as an example; check with Frank Doyle and Berry Wijdeuen for data on belt survey methodology for capturing CN's.
Form A2 Side 1 (CWD)
- Add statement "CWD pile present on transect Yes No"
- Consider capturing "Uprturned rootwads >2m height present Yes No" and perhaps "Veteran/legacy

logs >2m height present Yes No"

Form A2 side 2 (CWD and Understory)

- Ungulate browsing seems to ask 2 things - severity of browse and % of forage being browsed. Should separate into these two variables

- add observation of prey e.g., squirrel middens (indicates the presence of a source of food for martin and goshawk - similar to recording presence of berry plants)

- we don't ask for MOSS cover, yet it is important for cover and also provides food for grouse (seed pods are browsed)

Herbaceous and Low Shrub cover

- herbs and low shrubs should read <2m tall

- do we need %cover or can we check off a selection of ranges (trace,, sparse, common, abundant) or % ranges (e.g., 0-1%, 1-5%, 5-25%, 25-50%, 50-75%, >75%)?

- capture elevated browse on stumps/root wads (out of reach of ungulates)

- clarify plants to be >10cm to count; suggestions made that 1.5m is a height standard not 2m (?) in veg surveys

- Need another row in section 3 for "Tall shrubs >2m tall"

- Do we need to know average or median or range of heights of the shrub/sapling tallied?

- Limit the listing of species; e.g., dominant 5 shrubs/seedling and/or 2 browse species

Belt Survey CWD piles in NAR Form A3 Side 1

- Define the "forested edge"; an immature edge that has reached green-up is beginning to function as cover

- Pile Size - what is this info needed for? Do we follow Waste/Residue parameters for pile dimensions, or can we define categories of piles using descriptors (e.g., wheel barrow size, volkswagon beetle size, pick-up truck sized, house sized)

- Add quality indicators of "pile built on stumps/upturned rootwads Yes No"

- Why not capturing piles in reserves, especially large upturned rootwads and/or remnant legacy long (>10m) and large logs (>2m height/diam)

- all piles seen so far are class 1 or 2 wood so not sure if "Mix of decay classes" is needed

Stratum Summary Form B Side 1

- Stand structure as per plot card comments

- Standing trees is a compilation of the form A plot, but what about using a belt survey instead of line transect? Not one feature tree was found in any plots, yet LOTS of features were seen within 35m of the CWD transect. For example, a bear den was found but not in the trees tallied for the plot, we had several plots with Cavity Nests visible without too much effort (within 35m of the transect) - one plot today had 3 trees with CN's - one of which had 5 cavities; we should record trees with multiple cavities and/or trees with multiple sized cavities on a single tree

- add the broken topped tree (>70cm Coast, 30cm Interior and 10m height) summary.

- Doing a 150m belt survey for CWD piles in NAR but not using the belt surveying in reserves - a big challenge/question by most everyone

- Canopy cover: suggest we base this on the average of three CWD transect points instead of at Plot Centre.

Form C - need to include recognition of obvious intervention measures taken by a licensee - e.g., topping large trees or piling logs onto root plates of edge trees to reduce risk of windthrow; nest boxes; martin piles at base of large trees/stumps.

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From: [Paige, Kathy ENV:EX](#)
To: [Howard, Jacqueline OGC:IN](#)
Cc: [Hubregtse, Pauline FLNR:EX](#)
Subject: RE: Cumulative Effects Assessment and Wildlife Designated Values
Date: Wednesday, May 18, 2016 2:05:00 PM

Hi Jacqueline. We are working on an approach to monitoring the condition and effectiveness of WHAs and UWR and struggle with some of the same issues – assessment unit and thresholds. I'll try to find a day that works for both of us and my colleague that is working on the project with me. She is away next week so will try to book it for the following week if that works for you. Cheers, Kathy

From: Howard, Jacqueline [mailto:Jacqueline.Howard@bcogc.ca]
Sent: Tuesday, May 17, 2016 11:24 AM
To: Paige, Kathy ENV:EX
Cc: Curnow, Nicole
Subject: Cumulative Effects Assessment and Wildlife Designated Values

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Many thanks,

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bcogc.ca

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F. 250-419-4403
M. 778 679-1544



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From: [Paige, Kathy ENV:EX](#)
To: [Howard, Jacqueline OGC:IN](#)
Subject: RE: Cumulative Effects Assessment and Wildlife Designated Values
Date: Thursday, May 19, 2016 3:04:00 PM

Okay thanks. I think a conference call should be good. Cheers, Kathy

From: Howard, Jacqueline [<mailto:Jacqueline.Howard@bcogc.ca>]
Sent: Thursday, May 19, 2016 9:09 AM
To: Paige, Kathy ENV:EX; Curnow, Nicole; Mackay, Allison L OGC:IN
Cc: Hubregtse, Pauline FLNR:EX
Subject: RE: Cumulative Effects Assessment and Wildlife Designated Values

Hi Kathy,

Please can Nicole Curnow and Allison Mackay join us on the 31st. Allison is based in Fort St John. To keep things simple I will set up a conference line so that we can all join the same meeting. I will forward the information in the next few days. We have video conferencing as well, but would require some technical information like your IP address (I think) to connect with you.

Have a good weekend,

Jacqueline



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From: [Paige, Kathy ENV:EX](#)
To: [Hubregtse, Pauline FLNR:EX](#)
Subject: RE: Updated Rank Score descriptions
Date: Wednesday, May 25, 2016 10:31:00 AM

Sent an email to Peter to confirm whether both can attend first nations testing in July...waiting for reply. kp

From: Hubregtse, Pauline FLNR:EX
Sent: Wednesday, May 25, 2016 10:31 AM
To: Todd Manning
Cc: Paige, Kathy ENV:EX; 'Dean McGeough'
Subject: Re: Updated Rank Score descriptions

Thank you Todd. s.22 but will be back in the office on Monday. I will be in touch next week.

Cheers!
Pauline

From: Todd Manning <etmanning@shaw.ca>
Sent: May-24-16 9:57 PM
To: 'Dean McGeough'
Cc: Hubregtse, Pauline FLNR:EX; Paige, Kathy ENV:EX
Subject: RE: Updated Rank Score descriptions

Good catch Dean, I was still using the older pile size criteria. I re-checked Sullivan (2012) and he recommends 2 m high as the minimum pile height. So I've re-done the CWD pile rankings along with a qualifier (see D, p.1). Revised version dated 24 May is attached here. Otherwise, my explanatory notes at the bottom of this email string still apply.

Todd

From: Dean McGeough [<mailto:deanmcg@shaw.ca>]
Sent: Tuesday, May 24, 2016 5:30 PM
To: Todd Manning
Cc: Pauline FLNR:EX Hubregtse; Kathy ENV:EX Paige
Subject: Re: Updated Rank Score descriptions

Hi Todd, I think I missed something - at JR I thought we decided a habitat pile was to be 2 m in height to count?

Just checking...

Dean

Sent from my iPhone

On May 23, 2016, at 10:39 PM, Todd Manning <etmanning@shaw.ca> wrote:

Hi Pauline – I've updated the rank score (1-3) descriptions for all the relevant habitat elements. Maybe I'm missing something, but the most recent Form A and Form B don't appear to have associated rank scores for all the habitat elements we are collecting data for. I think the forms can be improved by adding Rank Score columns either beside each element OR as a cumulative rank score for the whole transect (e.g., for large diameter logs and CWD, you assign a rank score which is representative of logs/CWD which you observed along the total transect length --- see C on p. 1 of attached doc.).

I've improved the rank score criteria for marten and fisher den cavities (B on p. 1), added a new rank score for berry producing shrubs (G, which parallels the criteria for ungulate browse species F), and refined the habitat elements and rank scoring for goshawk foraging habitat (I removed elements which are specific to goshawk nesting habitat such as nest platform structures).

Dean --- please continue to test out the field forms as is this week – looking forward to more feedback! You don't necessarily need to add the extra rank scores as I've described here, but these should be incorporated into the next iterations.

Todd

Todd Manning (MASC, RPBio., RPF, QEP, ISA Cert. Arborist)

Owner and Principal Ecologist

Strategic Resource Solutions (SRS)

A BC Forest Safety Council - Safe Certified Company

(developing practical solutions to natural resource management issues)

s.22

Victoria, B.C. s.22 CANADA

Office Ph. (250) 478-7822

Cellular Ph. s.22

Email etmanning@shaw.ca

<DETERMINING RANK SCORES.docx>

From: [Paige, Kathy ENV:EX](#)
To: [Howard, Jacqueline OGC:IN](#); [Curnow, Nicole](#); [Mackay, Allison L OGC:IN](#)
Cc: [Hubregtse, Pauline FLNR:EX](#)
Subject: RE: Cumulative Effects Assessment and Wildlife Designated Values
Date: Tuesday, May 31, 2016 9:42:00 AM
Attachments: [Tier I Pilots June 2016.pptx](#)

Hi Jacqueline. I put together some notes for our discussion today. Nothing fancy but thought they might help. Cheers Kathy

From: Howard, Jacqueline [<mailto:Jacqueline.Howard@bcogc.ca>]
Sent: Thursday, May 19, 2016 9:09 AM
To: Paige, Kathy ENV:EX; Curnow, Nicole; Mackay, Allison L OGC:IN
Cc: Hubregtse, Pauline FLNR:EX
Subject: RE: Cumulative Effects Assessment and Wildlife Designated Values

Hi Kathy,

Please can Nicole Curnow and Allison Mackay join us on the 31st. Allison is based in Fort St John. To keep things simple I will set up a conference line so that we can all join the same meeting. I will forward the information in the next few days. We have video conferencing as well, but would require some technical information like your IP address (I think) to connect with you.

Have a good weekend,

Jacqueline



Jacqueline Howard, MSc.
Resource Development Analyst
Jacqueline.Howard@BCOGC.ca

Victoria BC
[Office Address Directory](#)
bcogc.ca

T. 250 419-4496
F. 250-419-4403
M. 778 679-1544



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From: Paige, Kathy ENV:EX [<mailto:Kathy.Paige@gov.bc.ca>]
Sent: Wednesday, May 18, 2016 2:05 PM
To: Howard, Jacqueline
Cc: Hubregtse, Pauline FLNR:EX
Subject: RE: Cumulative Effects Assessment and Wildlife Designated Values

Hi Jacqueline. We are working on an approach to monitoring the condition and effectiveness of WHAs and UWR and struggle with some of the same issues – assessment unit and thresholds. I'll try to find a day that works for both of us and my colleague that is working on the project with me. She is away next week so will try to book it for the following week if that works for you. Cheers, Kathy

From: Howard, Jacqueline [<mailto:Jacqueline.Howard@bcogc.ca>]
Sent: Tuesday, May 17, 2016 11:24 AM
To: Paige, Kathy ENV:EX
Cc: Curnow, Nicole
Subject: Cumulative Effects Assessment and Wildlife Designated Values

Hello Kathy,

I am writing to introduce myself and find out more about the work you are involved with on the Wildlife Value Team. Jennifer Psyllakis suggested that you would be a good person to liaise with. I work with Nicole Curnow and Sean Curry at the BC Oil and Gas Commission, and together we have been working on wildlife analysis for Area-based Analysis. Would you be available to meet with us to exchange ideas and discuss CE strategies for Wildlife Values, Ecological Assessment Units and Thresholds. Would you be able to provide us with some information about the provincial wildlife CE initiative? We would be happy to share our strategy and work together to discuss different approaches.

Many thanks,

Jacqueline



Jacqueline Howard , MSc.
Resource Development Analyst
Jacqueline.Howard@BCOGC.ca

Victoria BC
[Office Address Directory](#)
bcogc.ca

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From: [Paige, Kathy ENV:EX](#)
To: [Hubregtse, Pauline FLNR:EX](#)
Subject: RE: Wildlife Field Testing
Date: Thursday, June 2, 2016 9:23:00 AM

Okay just saw this note ☺ Hope that is a good postponement. Friday would be better for me as we are briefing executive on PTM project but could possibly do Thursday am.

From: Hubregtse, Pauline FLNR:EX
Sent: Thursday, June 2, 2016 7:20 AM
To: Dean McGeough; Bradford, Peter FLNR:EX
Cc: Todd Manning; Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX; Snowdon, Barry B FLNR:EX; Densmore, Nancy FLNR:EX
Subject: Re: Wildlife Field Testing

Good morning everyone,

Thank you for the excellent discussion. I am collating the feedback from all the field testing sessions to identify points that require team discussion.

The fieldtrip to 100 Mile House scheduled for next week has been postponed to September. I will arrange a team meeting for next week, likely Thursday or Friday. Please advise on your availability.

Cheers
Pauline

Pauline Hubregtse
Resource Stewardship Evaluation Analyst
Forest and Range Evaluation Program
FLNRO
250.387.6718

From: Dean McGeough <deanmcg@shaw.ca>
Sent: June-02-16 7:13 AM
To: Bradford, Peter FLNR:EX
Cc: Todd Manning; Hubregtse, Pauline FLNR:EX; Paige, Kathy ENV:EX; Thompson, Richard P ENV:EX
Subject: Re: Wildlife Field Testing

Hi Again,
I imagine that if a belt survey is chosen then making BOTH the CWD pile and reserve belts the same dimension is best; why was 150m chosen for the CWD belt? Perhaps make BOTH belt surveys 10m x 100m (0.1 ha) or use the 20 x 100m (0.2ha). Furthermore, consider the belt survey of CWD in NAR to also include standing Wildlife Trees or 'ecological anchor' trees as per the WTP reserve process. This overcomes the challenges of data variability - when SLB plots in NAR are established they are usually 15m up to 50m radius. The fewer the trees in dispersed retention, the larger the plot - the SLB plot size is guided by the request to capture 6-10 trees per plot. In situations where a FULL COUNT of all standing trees is selected in the SLB assessment (when there may only be 10-30 trees retained in the

whole of NAR) then I propose we need not do the belt transect since all trees have already been captured.

Another comment for the design of the data card - if asking to record number of WT's, large trees, large snags then place the criteria for 'large' on the card; same as for other items being recorded. For example, loose bark - is this of any thickness or only thick bark (and what is thick bark); shrubs - what species or any species or top 5 species; seedlings - all regen or only those usually commonly browsed (Cw, Ba/l, Fd). We need to be sure to delineate that for CRACKS we mean open cracks with visual evidence of internal decay and not simply the presence of drying checks(which can be wide but are not habitat features). And for measurements, in the SLB protocol we ask for calibrated estimates - meaning, at EACH plot, staff must measure 1 of each dimensions to ensure their estimates are reliably accurate; and for the tree/log measured it's dimensions are recorded to 1 decimal point; all estimates are simply to the nearest whole number (no decimal).

Aline provided great feedback following her SLB site visit in steep, gullied terrain. We need to specify how to fit a belt if there is not sufficient distance to fit the belt (e.g., narrow blocks and/or reserves) or how to 'break the belt' to overcome unsafe terrain. In either case, provide the option of turning to off-set the belt; or as for SLB for border line plots (plots too close to an edge) we allow the use of a HALF PLOT - all measurements in only half of the plot are then doubled (so in a belt, that cannot be fit, only sample 1/2 and then double the observations).

This is interesting/fun and each day that I am out with the crews I keep thinking/pondering how to apply the wildlife aspects to the work we are doing- hence these ideas above.

Dean

From: "Dean McGeough" <deanmcg@shaw.ca>
To: "Peter FLNR Bradford:EX" <Peter.Bradford@gov.bc.ca>
Cc: "Todd Manning" <etmanning@shaw.ca>, "Pauline FLNR Hubregtse:EX" <Pauline.Hubregtse@gov.bc.ca>, "Kathy ENV Paige:EX" <Kathy.Paige@gov.bc.ca>, "Richard P ENV Thompson:EX" <Richard.Thompson@gov.bc.ca>
Sent: Wednesday, June 1, 2016 6:08:38 PM
Subject: Re: Wildlife Field Testing

Hi Everyone,

The belt is suggested for capturing the ecological anchors; still doing the SLB style plot for standing trees and CWD/veg transects at the plot centre. Transect width and length is what needs to be determined - we found it relatively easy to try either the 10m wide (5m each side) or 20m wide (10m either side); the 20m seems preferable since it is similar to the riparian area along a stream (people already are used to considering this width). In Smithers, we had little challenge sticking to 10m either side of a central line (which in our site was a stream down the middle of the WTP). If using a 20m x 100m belt (2000m²) then planning to complete one belt for every two hectares of retention gives 10% coverage, or put another way, it gives 20% coverage if we ask for one belt per 1 hectare of retention.

For canopy closure, describing a methodology will be the key - we got pretty consistent estimates within the group by using the riparian shade technique of looking through a circle made by your thumb and forefinger, but looking straight up instead of at 60 degrees. So keeping it in is quite fine.

Dean

From: "Peter FLNR Bradford:EX" <Peter.Bradford@gov.bc.ca>
To: "Todd Manning" <etmanning@shaw.ca>, "Dean McGeough" <deanmcg@shaw.ca>, "Pauline FLNR Hubregtse:EX" <Pauline.Hubregtse@gov.bc.ca>, "Kathy ENV Paige:EX" <Kathy.Paige@gov.bc.ca>, "Richard P ENV Thompson:EX" <Richard.Thompson@gov.bc.ca>

Sent: Wednesday, June 1, 2016 4:38:39 PM
Subject: RE: Wildlife Field Testing

Is the belt be in addition or in place of the plot (e.g., use plot for actual measure trees – stand table...) and the belt for ecological features...)?

From: Todd Manning [<mailto:etmanning@shaw.ca>]
Sent: Wednesday, June 1, 2016 12:46 PM
To: 'Dean McGeough'; Hubregtse, Pauline FLNR:EX; Paige, Kathy ENV:EX; Bradford, Peter FLNR:EX; Thompson, Richard P ENV:EX
Subject: RE: Wildlife Field Testing
Importance: High

Good comments Dean. Have reviewed them. Will discuss with Pauline how best to make changes to the forms. A couple of questions though:

- 1) Even though measurement of canopy closure is not that accurate, it is a very important variable which affects goshawk habitat suitability. So if we want to document habitat elements for NOGO, then we need to keep cc. A solution would be a % range instead of absolute percent. Perhaps 0-40%, 41-80%, >80%
- 2) It appears most people favor the use of the belt transect inside the forested areas (patches, RMAs). Dean, your comment in Form A suggested using a 20m x 100m belt transect. Are you suggesting we go this way instead of the 10m wide belt?

Pauline, I'm out of the office rest of today until tomorrow (Thurs.) afternoon. But we should talk about how to proceed with these Form edits soon. Are you around tomorrow aft. or Friday morning?

Todd

From: Dean McGeough [<mailto:deanmcg@shaw.ca>]
Sent: Friday, May 27, 2016 9:48 PM
To: Todd Manning; Hubregtse, Pauline FLNR:EX; Kathy ENV Paige:EX; Peter FLNR Bradford:EX; Richard P ENV Thompson:EX
Subject: Wildlife Field Testing

Hi Everyone,
I have finished the training sessions in Terrace and Smithers and have attached the latest document with edit suggestions and comments/questions/ideas.

The most significant considerations are:

- Use a belt survey in the Reserves to increase observations (our 1st prism plot had 6 trees and the last one only 3 trees); we did 10m either side of a transect based upon a trajectory from one plot to another plot (captured 34 trees rather than the 3 trees in the prism sweep), or if only 1 plot then to the opposite end of the reserve to achieve a minimum 100m (2000 square m) and tally all feature trees (i.e., with cavities, feeding, platforms, brooms, sloughing bark, broken top, splits) regardless of size and recorded Sp, DBH, Height, Class; plus we recorded all large dead trees >30cm (today we should only have tallied >70cm for ICH; and there were none).
- Possibly consider tallying feature trees along the same 10m belt transect for CWD piles in areas with dispersed retention; we did 25m radius plots in NAR as per original plan; but this idea of a belt transect was raised - the licensee says they believe FREP does not give enough

recognition for dispersed tree/sapling retention.

- Any data element needs a definition and a technique for how to identify/measure the feature. For example, a belt transect in a reserve, the easiest way to install the belt is to hang reference flags along the centre line and 2 people can laser from either side to ensure they are sticking to 10m; if following a stream (as we did today) simply use the stream as a mid-point and observe 10m either side.
- How to estimate %canopy? We can mimic the riparian technique for estimating shade, or perhaps define a vertical dimension to look up through - say 10m or 20m circle, or drop it as Nancy suggested (what is it used for and how consistent will the measures be).
- The data sheet needs TIPS to know the thresholds or criteria being sought.
- The protocol needs to consider/capture arboreal lichen - an important winter food for deer; we tally browse shrubs but trees with lichen should also be captured; provide with some form of estimating its abundance (%cover on the tree) and availability (within browse heights of 2m?? - it is a snow pack food source).
- Provide a table up front to tally wildlife observations while undertaking the transects/belts/plots.
- Capture bark beetle infestations for Insect Control purposes - we had fresh windthrow of Spruce and the trees had abundant insect frass; so we investigated and were relieved it was only ambrosia instead of Spruce beetle. (spruce beetle is a very real concern right now, and staff are asked to report if they discover it so that trap trees can be set up ASAP). This theme, like invasive plants, should be a routine part of all FREP assessments - and is relatively easy to do.
- Browsing - we need to ensure we educate how to delineate WHO is browsing the plants. E.g., Snowshoe hair leaves a clean, angled cut while moose and deer a more tattered/shredded branch tip; and bears more raked leaves/stems or grazed herbs/dug roots.
- Understory vegetation - we need to define the height profile of interest; should we not capture >2m shrubs as well; describe the % cover methodology (for calibrating one's eye I walked them through a process of estimating and then measuring 3.99m sample transects on north, south, east, west and then take the average).
- Define whether our BELT width is slope distance or horizontal distance (we were in a stream draw today and used slope distance as per riparian practices); in the NAR we again defaulted to slope as per CWD transects.
- Browsing - two dimensions are needed: level (a per plant estimate) and extent (a proportion of available browse plants being browsed).
- SLB protocol guidance to stratification, locating plots, definitions and descriptions of techniques all need to be laid out in the Wildlife Protocol in case it is done as a stand alone assessment. Measure one log/tree per plot for calibrating estimates; calibrate ground cover estimates; what if the transect cannot fit; etc, etc.
- CWD piles (See my edits/comments in the document) - needs clarity to gain confidence in how piles are recorded/measured.
- Evidence of use - we tallied the number of observations (e.g., # of squirrel middens) rather than a simple YES/NO presence.
- Consider how this STAND LEVEL assessment will fit into landscape modelling/assessments.
- How can we track livestock/range use impacts/competition?
- Timing of the assessment - to avert criticism of low presence because of timing, constrain assessments to start after leaf out and stop prior to leaf drop.

A good mix of discussion items for consideration.

Dean

From: [Paige, Kathy ENV:EX](#)
To: ["Scott McNay"](#)
Cc: ["Meghan Anderson"](#)
Subject: RE: WHA assessment
Date: Friday, June 3, 2016 12:37:00 PM
Attachments: [DRAFT-Tier1AssessmentPineCaribou 160523 comments.docx](#)
[image004.png](#)

Here some comments on the document...some are just questions for clarification. Let me know if you have any questions.

I think the way you guys broke out legally protected and provisionally protected will be similar to how we will end up standardizing. We have been discussing breaking the legally protected into categories though – like high restriction (WHAs and OGMAs), moderate (UWR) and low so we can get an ideal of how well it is legally protected. I made similar comments I the document. Cheers, Kathy

From: Scott McNay [<mailto:scott.mcnay@wildlifeinfometrics.com>]
Sent: Thursday, June 2, 2016 7:54 AM
To: Paige, Kathy ENV:EX
Subject: RE: WHA assessment

OK. Thanks for both notes Kathy. We'll keep pushing forward and get this into better shape.

From: Paige, Kathy ENV:EX [<mailto:Kathy.Paige@gov.bc.ca>]
Sent: June-01-16 12:36 PM
To: 'Scott McNay'
Subject: RE: WHA assessment

Sorry didn't answer your question in my last email. I'm okay with the changes you suggested. I'm not too concerned about the conceptual diagram. Info on the BBN model would be interesting.

In our other project we had discussed keeping 'pressure-related' variables out of the habitat models so we could show as depletions but there wasn't consensus on this yet. For ex, presence or distance to roads is often used as part of the grizzly bear habitat suitability models. Other than predation risk are any other pressure related variables included in the habitat models?

I was going to ask someone about using the NCLB and see how we did in our other pilot area... will get back to you on this one. kp

From: Scott McNay [<mailto:scott.mcnay@wildlifeinfometrics.com>]
Sent: Monday, May 30, 2016 10:34 AM
To: Paige, Kathy ENV:EX
Subject: WHA assessment

Hi Kathy, hope all is well. I want to finish off the WHA portion of the work for you this week.

We will attempt the following changes to the document:

- VB - Replace Figure 1 (clean it up, label WHAs etc.)
- SM - Replace the conceptual diagram (use something like from the UWR report but flip it upside down; keep it simple)
- SM – add a new figure of the BBN model and text to explain the model
- MA- Keep the AOI as the Pine Group but stratify the individual WHAs in the site level analyses by herd area (the Scott East for example will not have a WHA)
- MA – change provisionally protected to be based on NCLB rather than non-productive.
- MA - Provide 2 assessments: one based on the BBN (capability and suitability) and one based on CORE areas (suitability only as RSFs cannot provide capability) – see comment on table 5
- VB – send MA value node results from the model run
- MA - Change suitability of the BBN to be the value without considering risk of predation and move risk of predation in as a discussion item (i.e., new results from VB)
- VB – provide a new figure of depletions

SM has set aside Friday for final edits.

Any comments or other direction before we dive in on this?

**R. SCOTT MCNAY, RPF, RPBIO(BC), PBIOL(AB), PHD
WILDLIFE INFOMETRICS, INC.**

#3 - 220 Mackenzie Blvd., PO Box 308, Mackenzie, B.C., V0J 2C0

Phone: 250-997-5700 ~ Fax: 250-997-5825 ~ Cell: 250-997-7928

Email: scott.mcnay@wildlifeinfometrics.com

Website: wildlifeinfometrics.com



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From: [Paige, Kathy ENV:EX](#)
To: ["Meghan Anderson"](#)
Subject: RE: WHA assessment
Date: Thursday, June 9, 2016 10:50:00 AM
Attachments: [image004.png](#)

Well I was just thinking for Table 4 – so just total area. Do you have time for a quick call?

From: Meghan Anderson s.22
Sent: Thursday, June 9, 2016 10:39 AM
To: Paige, Kathy ENV:EX
Subject: Re: WHA assessment

Hi Kathy,

Just wondering if I can clarify something, by breaking legally protected into categories do you mean you want the absolute area with low, moderate, and high levels of protection or do you want the area weighted (similar to impact of depletion)?

Thank you,

Meghan

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**MEGHAN ANDERSON, RPBIO (BC), MSC
WILDLIFE INFOMETRICS, INC.**

#3 - 220 Mackenzie Blvd., PO Box 308, Mackenzie, B.C., V0J 2C0

Cell: s.22

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From: [Paige, Kathy ENV:EX](#)
To: ["Meghan Anderson"](#)
Subject: RE: WHA assessment
Date: Friday, June 10, 2016 3:31:00 PM
Attachments: [image004.png](#)

Yup looks like it is outside...don't worry about it. It might come up in review so good to have this map. I'm not really all that familiar with ABA but recently had a meeting with them so it was on my mind. I wouldn't worry about that comment. Cheers, kp

From: Meghan Anderson s.22
Sent: Friday, June 10, 2016 3:23 PM
To: Paige, Kathy ENV:EX
Subject: Re: WHA assessment
Hi Kathy,

I have a question from your comments in the document. You wrote "Perhaps we could give some guidance, even around their thresholds for the ABA which is how they decide what activities get permitted in WHAs and UWR".

Does the ABA apply to the Pine Caribou Range? I found this not so [detailed map](#) which suggests the Pine Caribou Range is just outside the ABA zone but maybe it is or the zone has expanded?

Thanks,

Meghan

On Fri, Jun 10, 2016 at 2:55 PM, Meghan Anderson s.22
Hi Kathy,

wrote:

To follow up on the question of WHAs and UWRs and their application to Oil and Gas activities. You are right that they have *capacity* to apply to oil and gas but in my experience the way each order is written they often don't (or at least that is my interpretation).

The order for the WHAs in the Pine Caribou Group states GWMs "do not apply for the purposes of exploration, development and production activities when these activities have been authorized for the purpose of subsurface resource exploration, development or production by the Mineral Tenure Act, the Coal Act, the Mines Act, the Petroleum and Natural Gas Act, the Pipeline Act or the Geothermal Resource Act;"

As for the UWRs in the Pine Caribou Group the order for UWRs 7-007 and 7-009 contains the same clause as above. The order for UWR 3-003 uses different wording to mostly exempt the oil and gas industry and order UWR 7-001 is management objectives and not GWM that could be enforced.

I hope I am interpreting the orders correctly. Please let me know if you find something different.

Cheers,

Meghan

On Thu, Jun 9, 2016 at 11:01 AM, Meghan Anderson s.22
s.22

wrote:

On Thu, Jun 9, 2016 at 11:01 AM, Paige, Kathy ENV:EX <Kathy.Paige@gov.bc.ca> wrote:
I can call you – what's your number again?

From: Meghan Anderson [mailto:s.22]
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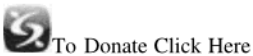
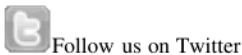
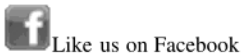
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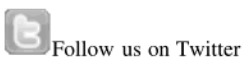
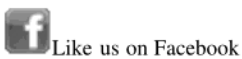
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From: [Paige, Kathy ENV:EX](#)
To: [Hubregtse, Pauline FLNR:EX](#)
Subject: FW: WHA assessment
Date: Friday, June 10, 2016 3:59:00 PM
Attachments: [image004.png](#)

From: Meghan Anderson s.22
Sent: Friday, June 10, 2016 3:23 PM
To: Paige, Kathy ENV:EX
Subject: Re: WHA assessment
Hi Kathy,

I have a question from your comments in the document. You wrote "Perhaps we could give some guidance, even around their thresholds for the ABA which is how they decide what activities get permitted in WHAs and UWR".

Does the ABA apply to the Pine Caribou Range? I found this not so detailed map which suggests the Pine Caribou Range is just outside the ABA zone but maybe it is or the zone has expanded?

Thanks,

Meghan

On Fri, Jun 10, 2016 at 2:55 PM, Meghan Anderson s.22

wrote:

Hi Kathy,

To follow up on the question of WHAs and UWRs and their application to Oil and Gas activities. You are right that they have *capacity* to apply to oil and gas but in my experience the way each order is written they often don't (or at least that is my interpretation).

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I hope I am interpreting the orders correctly. Please let me know if you find something different.

Cheers,

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s.22

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Thank you,

Meghan

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From: Scott McNay [mailto:scott.mcnay@wildlifeinfometrics.com]
Sent: Thursday, June 2, 2016 7:54 AM
To: Paige, Kathy ENV:EX
Subject: RE: WHA assessment

OK. Thanks for both notes Kathy. We'll keep pushing forward and get this into better shape.

From: Paige, Kathy ENV:EX [mailto:Kathy.Paige@gov.bc.ca]
Sent: June-01-16 12:36 PM
To: 'Scott McNay'
Subject: RE: WHA assessment

Sorry didn't answer your question in my last email. I'm okay with the changes you suggested. I'm not too concerned about the conceptual diagram. Info on the BBN model would be interesting.

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I was going to ask someone about using the NCLB and see how we did in our other

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Subject: WHA assessment

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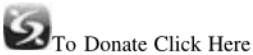
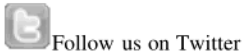
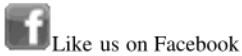
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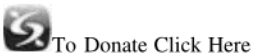
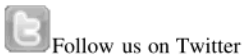
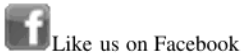
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To: "Meghan Anderson"
Subject: RE: WHA assessment
Date: Friday, June 10, 2016 4:11:00 PM
Attachments: image004.png

I think that is a standard clause in all FRPA orders however, in 2011 all FRPA Orders/established WHAs were pulled under OGAA so that under OGAA there can be no material adverse effect on them...which is really vague and as of yet I think still undefined (I thought that was what the ABA was for). So perhaps at this point it's just words and doesn't amount to much operationally. But we could just make mention of it.

Here is the excerpt from the Env protection and management reg of OGAA:

Wildlife and wildlife habitat

6 The following objectives with respect to wildlife and wildlife habitat are prescribed for the purposes of the definition of "government's environmental objectives" in section 1 (2) of the Act:

(a) that operating areas not be located within any of the following:

(i) a wildlife habitat area, unless an operating area will not have a material adverse effect on the ability of the wildlife habitat within the wildlife habitat area to provide for the survival, within the wildlife habitat area, of the wildlife species for which the wildlife habitat area was established;

(ii) an ungulate winter range, unless an operating area will not have a material adverse effect on the ability of the wildlife habitat within the ungulate winter range to provide for the survival, within the ungulate winter range, of the ungulate species for which the ungulate winter range was established;

(iii) a fisheries sensitive watershed, unless an operating area will not have a material adverse effect on the ability of the fisheries sensitive watershed to protect downstream fisheries and watershed values,

(b) that oil and gas activities on an operating area outside of a wildlife habitat area be carried out at a time and in a manner that does not result in physical disturbance to high priority wildlife or their habitat, including disturbance during sensitive seasons and critical life-cycle stages,

(c) that no portion of an operating area be within a wildlife tree retention area, and

(d) that oil and gas activities not damage or render ineffective a wildlife habitat feature.

OGC then permits any surface activities.

Under the law, they are supposed to be protected but perhaps its not enforced. I will try to find out more. kp

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Sent: Friday, June 10, 2016 2:55 PM
To: Paige, Kathy ENV:EX

Subject: Re: WHA assessment

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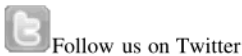
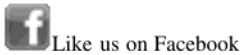
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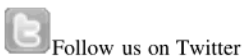
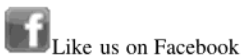
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From: [Paige, Kathy ENV:EX](#)
To: [Hubregtse, Pauline FLNR:EX](#)
Subject: RE: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training
Date: Thursday, June 30, 2016 9:17:00 AM

Tough one. How many more training sessions is Dean doing...sounds like he is in PG next. If he can make it then it might be worth it especially if he and you can ensure we get the data. s.22
s.22 . And Dean is focused on training the method rather than getting pilot data I think. So it would probably be helpful to the both of you if Todd could go. We may use him to do more of this type of training with First Nations, industry etc. There could be a lot of demand in the near future so it is probably helpful...might also help in the development of training materials as well...getting a feel for needed images (maybe take some as well :) if we are short on some images. kp

Working at s.22

-----Original Message-----

From: Hubregtse, Pauline FLNR:EX
Sent: Thursday, June 30, 2016 8:42 AM
To: Paige, Kathy ENV:EX
Subject: Fw: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

We should discuss whether or not Todd should go to Skeena after all. Will you be in the office today?

From: Dean McGeough <deanmcb@shaw.ca>
Sent: June-30-16 6:16 AM
To: Hubregtse, Pauline FLNR:EX
Subject: RE: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

Hi Pauline,
I will do SLB day 1, then Wildlife day 2. If Todd is attending day 2 that is great - it will give him the 'nature of our audience' in developing the protocol and training; but of course not critical. My main need for help is simply keeping track of questions and keeping the groups moving in the field. I typically do a group plot then ask people in groups to replicate the process and then we do cross-audit (each team leaves their field card at plot centre and then goes to another team's plot to audit their results). So you can see why on DAY 2 there is a real need for help with the NEW wildlife cards...DAY 1 is fine solo if this is what happen.

Dean

-----Original Message-----

From: Hubregtse, Pauline FLNR:EX [<mailto:Pauline.Hubregtse@gov.bc.ca>]
Sent: June-29-16 10:56 PM
To: Dean McGeough
Subject: Re: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

Hi Dean,

I hear your concern... i am a bit in the dark about this ESI training/testing so wasn't sure how many people were attending. How many people are coming?

Did you have a plan for the two days? I was assuming that the Monday morning session in the District office boardroom was to present methods for both SLBD and SLWH? And then in the field Monday afternoon and Tuesday all day?

Or were you planning to do SLBD Monday and SLWH on Tuesday?

I will definitely be there for both days. I will help you however I can. Do you have some suggestions for how i can help?

Todd may be able to attend the second day. Or do you need him there for both days? Please let me know and I will call Todd tomorrow and discuss with him.

Sorry for the 20 questions...

Thank you!
Pauline

From: Dean McGeough <deanmcg@shaw.ca>
Sent: June-29-16 10:26 PM
To: Hubregtse, Pauline FLNR:EX
Subject: RE: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

Pauline,
If Todd ends up NOT attending then I will be needing your help since I believe there are LOTS of people attending...
Thanks for the update - lots of work behind the scenes - I am grateful for your efforts (Kathy and Todd's as well).
Dean

-----Original Message-----

From: Hubregtse, Pauline FLNR:EX [<mailto:Pauline.Hubregtse@gov.bc.ca>]
Sent: June-29-16 10:00 PM
To: Dean McGeough
Cc: Paige, Kathy ENV:EX
Subject: RE: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

Hi Dean,

Todd and Kathy may not attend.

I will be there Monday and Tuesday. I will be observing and taking notes. We can discuss how I can best support you with the wildlife testing.

Kathy and I are still working on edits to the data forms but the general approach is still the same as what we discussed on Friday. I will email you the revised forms tomorrow so you have them for the Vernon session.

Please let me know if you have any questions.

Thank you!
Pauline

Pauline Hubregtse
Resource Stewardship Evaluation Analyst
Forest and Range Evaluation Program
FLNRO
250.387.6718

From: Dean McGeough [deanmcg@shaw.ca]
Sent: June-29-16 7:46 PM
To: Hubregtse, Pauline FLNR:EX
Cc: Paige, Kathy ENV:EX
Subject: RE: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

Pauline and Kathy,
Can you please clarify your participation. I see SLB on Monday then Wildlife on Tuesday. So I presume both of you are coming for Tuesday with Todd Manning???

Dean

From: Hubregtse, Pauline FLNR:EX [<mailto:Pauline.Hubregtse@gov.bc.ca>]
Sent: June-29-16 12:57 PM
To: Bresser, Todd A FLNR:EX
Cc: Dean McGeough; Paige, Kathy ENV:EX; Buhr, Glen FLNR:EX
Subject: RE: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

Hi Todd,

Thank you for your note. Can you please clarify the dates? Originally SLBD and wildlife were scheduled for Monday 11 and Tuesday July 12, but it is not clear if the dates have been changed to July 13/14 (or is this a typo?).

Thank you,
Pauline

From: Bresser, Todd A FLNR:EX
Sent: Wednesday, June 29, 2016 11:16 AM
To: Morgan, Don ENV:EX; Reed, Shawn FLNR:EX
Cc: Thompson, Richard P ENV:EX; Buhr, Glen FLNR:EX; Paige, Kathy ENV:EX; Hubregtse, Pauline FLNR:EX; 'Dean McGeough'; 'brian_carson@dccnet.com'; Barber, Frank FLNR:EX; Bradford, Peter FLNR:EX
Subject: RE: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

Good morning everyone,

s.22

, but we have you set up for the training.

On July 11th and 13th, we have the main boardroom at the Skeena Stikine District office (near the Bulkley River on Tatlow road) booked for both mornings starting at 8:30. Dean, will be putting on the SLB training on July 13 followed by Wildlife training on July 14 with Kathy and Pauline. Dean please let Pauline and Kathy know if you need them for the 13th too. We don't really have an agenda other than that.

I gave Don Morgan packages for two cut blocks that are on our random FREP priority list for this year (in all likelihood there will only be time to assess one cut block, but you will have options and yes these areas can be used for water quality training too on July 13-14). One block is at 15 km on the Blunt FSR and the other is at 21 km McDonnell FSR. Don also has overview maps for these areas along with the Site Plan maps and site plans. I also made 17 copies of the SLB field cards and protocols as well as 17 water quality field cards and protocols so you should be good to go.

Glen will be around too this week, but is extremely busy with other stuff. I trust the training will go well similar to last week. Thanks again. See you in a few weeks.

Todd Bresser RPF
Stewardship Forester
Skeena Stikine Natural Resource District Todd.Bresser@gov.bc.ca<<mailto:Todd.Bresser@gov.bc.ca>>
250-847-6398

From: Morgan, Don ENV:EX
Sent: Wednesday, June 29, 2016 9:46 AM
To: Reed, Shawn FLNR:EX; Bresser, Todd A FLNR:EX
Cc: Thompson, Richard P ENV:EX; Buhr, Glen FLNR:EX
Subject: Re: Request: Logistics for Wildlife Habitat and Water Quality Training - sites for field training

Hi Shawn - Todd put together a box of site plans, etc for the wildlife/biodiversity training and yes we will be doing some of the same sites as before. Glen may have some suggestions on the water quality sites for Brian's training. I am also looking into sites for the fish passage with Richard Thompson. By the

way are you paying his travel? I will be out doing recon on sites July 7-8.

Cheers
Don

Don Morgan, MSc, RPBio
Conservation Science
Ministry of Environment
Bag 5000, 3726 Alfred Ave
Smithers, BC, V0J 2N0
Tel: 250-877-3199
Fax: 250-847-7591
email: don.morgan@gov.bc.ca<<mailto:don.morgan@gov.bc.ca>>

From: Shawn Reed <Shawn.Reed@gov.bc.ca<<mailto:Shawn.Reed@gov.bc.ca>>>
Date: Wednesday, June 29, 2016 at 9:40 AM
To: "Bresser, Todd A FLNR:EX"
<Todd.Bresser@gov.bc.ca<<mailto:Todd.Bresser@gov.bc.ca>>>, Don Morgan
<don.morgan@gov.bc.ca<<mailto:don.morgan@gov.bc.ca>>>
Subject: Request: Logistics for Wildlife Habitat and Water Quality Training
- sites for field training

Boys,

Brian is looking for sites for his training. Just wondering if you have some in mind? Also, since Brian is looking should we consider sites for Dean? Can we use what we just used recently in Smithers?

Shawn.

[cid:image001.jpg@01D1D23E.F5A59590]Shawn Reed, Senior Project Manager Major Projects Office,
Skeena Region, Forests, Lands and Natural Resource Operations
Work: 250-847-7872
Mobile: 250-877-2784

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