

NEWS BULLETIN

APRIL 2008 NEWSLETTER

INSIDE THIS ISSUE:

A Focus on Mountain Pine	1
Are There Winners and Losers After the Beetle?	1
Mitigating Risk of Predation	2
Timber Salvage from Caribou Winter Range	2
Monitoring Change in Caribou Range	3
Indicator targets for coarse woody debris	3
Using Historic Data to Inform Today's Decisions	3
Recent Publications and Presentation	4
New and Continuing Projects for 2007-08	4

A FOCUS ON MOUNTAIN PINE BEETLE...

What a year it has been! Projects ranged from monitoring the installation of a boat launch at Tsay Keh (BC Hydro) to projecting influences of the mountain pine beetle on multiple wildlife species over 40 million ha in central BC (BC Min. of Forests and Range). Other projects were focused on an assessment of wildlife tree patch quality (Pope & Talbot), estimates of targets for post-harvest coarse woody debris (Canfor), and targets for the distribution of tree species (Canfor). We continued primary lines of research on mitigation of caribou depredation and synthesis of data collected on caribou since 1998 (FIA Forest Science Program). We also began new research on the effect of salvaging beetle-killed pine on future supply of caribou winter range (FIA Forest Science Program), began helping a larger team model the effects of the pine beetle and climate change on watershed hydrologic parameters (BC Min. of Environment), helped government to predict best places for mule deer winter ranges (BC Min. of Environment), and obtained updates on range conditions for caribou (Habitat Conservation Trust Fund). Some of these projects are profiled here so read on!



Much of the work in our past year was focused on implications of the mountain pine beetle epidemic on other wildlife.

POINTS OF INTEREST

Reports produced by Wildlife Infometrics can be obtained in digital format by sending an email to: wild_info@WildlifeInfometrics.com

The total count for caribou obtained this year is available in WII Report 272

The recovery plan for caribou in north-central BC is now published — See Forrex Report Series 22.

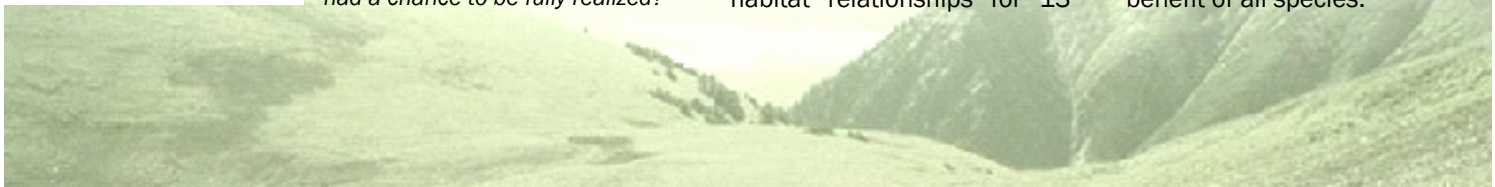
ARE THERE WINNERS AND LOSERS AFTER THE BEETLE?



What will the future distribution of wildlife species look like after the effects of the MPB epidemic have had a chance to be fully realized?

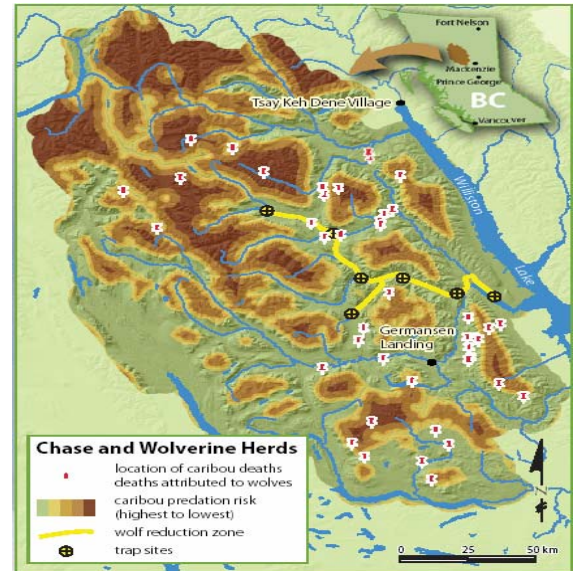
The Nature Conservancy of Canada, BC Min. of Forests and Range, and BC Min. of Environment have collaborated to unravel the complicated relationships among wildlife species, their habitat, and how the mountain pine beetle and climate change will affect all that. WII and Cortex consultants were engaged to help the investigation by developing models of habitat relationships for 13

species and associating those relationships to anticipated changes. Next steps will be to strengthen the relationships among species (for example, some species are prey for others). Then we'll forecast the likely habitat for the foreseeable future, look at the results, and hopefully reveal cautions that Government can anticipate and therefore manage more to the benefit of all species.



MITIGATING RISK OF PREDATION

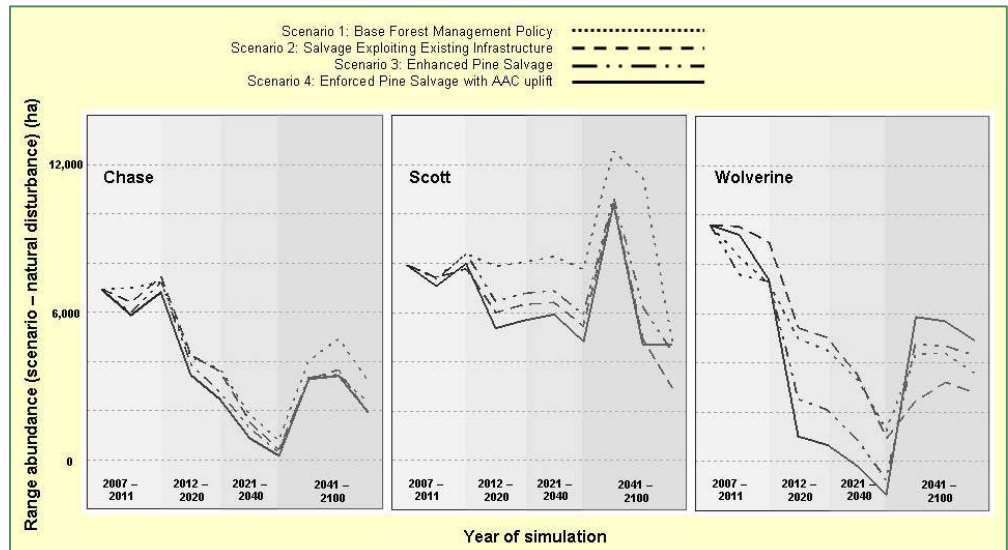
Can managers avoid creating new, special regulatory policy on reduction of wolves for the purpose of caribou recovery in BC? In collaboration with other researchers, we are testing the efficacy of two currently available policies that could support recovery of caribou: (1) directed and focused operation of regulated trap lines and (2) an enhanced hunter-harvest of moose. Because no special management is occurring or planned within the Wolverine caribou herd area, monitoring caribou population changes that occur there can be used as a baseline to assess the effect of trapping (Chase herd area) and the enhanced harvest of moose (Parship herd area). While Peace-Williston Fish and Wildlife Compensation program is monitoring the hunter-harvest, Wildlife Infometrics is monitoring the effects wolf removal. This past year, we tested several models that predict relative safety for caribou from their predators as a way to potentially guide trappers to locations where small scale reduction of wolf numbers may provide the best management payoff. For more on this topic, and the research we are conducting, see WII Report No. 274.



Location of caribou deaths compared to zones of relative safety predicted from a model of predation risk..

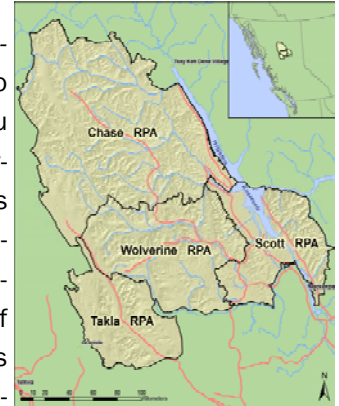
TIMBER SALVAGE FROM CARIBOU WINTER RANGES

The mountain pine beetle has created one of the largest forest insect infestations ever recorded in Canada. While much uncertainty exists about how caribou and caribou habitat will respond to the inevitable changes brought on by the beetle, we know that salvage of beetle killed timber has potential to help or hinder management of range considered important for the overwinter survival of woodland caribou. Regular disturbance to caribou range is important in north-central BC, and can be facilitated by certain kinds of logging. But the regular disturbances that are required are being replaced by broad spread salvage logging put in place to recover timber values before they are lost. We simulated 4 different timber-salvage scenarios in an attempt to understand the potential short- and long-term implications for caribou range – see WII Report 273.



MONITORING CHANGE IN CARIBOU RANGE

In our last newsletter we profiled a tool for assessing range values for woodland caribou – *autoCHASE* (caribou habitat assessment and supply estimator). This past year we put *autoCHASE* to work. Funded by the Habitat Conservation Trust Fund, we assessed habitat for 4 herds of caribou in the year 2000. Then, by updating all environmental information to the current year, we determined how much change in caribou habitat had occurred. A recovery action plan for these herds had recently been completed (see Forrex Special Report Series 22) and it was necessary to develop routine monitoring of caribou habitat values. We found that over the duration it took to complete the recovery plan (roughly from 2000 to 2007), some seasonal ranges had lost in excess of 1% of the land base per year and that in some range types, in particular movement corridors, this was expected to be significant for caribou. The analysis was conducted to encourage regular monitoring of range and to draw attention to the need for conservation efforts. For more detail on this analysis see WII Report 235.



INDICATOR TARGETS FOR COARSE WOODY DEBRIS

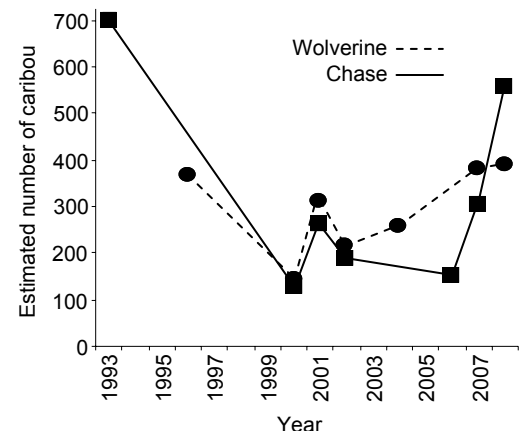
BEC zone/ sub-zone/ variant	Target for CWD (m ³ /ha)
BWBSdk1	60 m ³ /ha
ESSFmv2	106 m ³ /ha
ESSFmv3	106 m ³ /ha
ESSFmv4	106 m ³ /ha
ESSFwk2	140 m ³ /ha
SBSmk1	111 m ³ /ha
SBSmk2	111 m ³ /ha
SBSwk1	115 m ³ /ha
SBSwk2	115 m ³ /ha
SWBmk ³	Not available

Many wildlife depend on coarse woody debris (CWD) for forage, nesting, or shelter. The diverse soil and litter food web functions through the interaction of soil fungi, microbes, and invertebrates that cause nutrient cycling and decomposition. Retention of CWD during logging operations in the Mackenzie Defined Forest Area (DFA) is based on default values from current regulations but the local Public Advisory Group considers these requirements to lack sensitivity to variation in ecosystems. We reviewed the function of CWD, its importance to wildlife, forestry practices designed to maintain CWD, baseline targets set by legislation, and those established in other SFM plans. We also summarized available data from natural forest ecosystems and on the basis of this research, recommended targets to guide forest licensees on the amount of CWD to be retained by ecological management unit. For detail on this analysis see WII Report 263.

USING HISTORIC DATA TO INFORM TODAY'S DECISIONS



The Wolverine and Chase caribou herds in north-central British Columbia have been studied since the late 1980's but much of the collected data remains unpublished. In 2007, with the support of the FIA—Forest Science Program, we undertook a 2-year project to work with much of the historic data and make the information and knowledge that has resulted from the studies become more available through technical publications. For example, there has been a dozen or so surveys conducted to estimate population size but each survey was conducted slightly differently and interpretation and comparison of the results was not easily done. We gathered the data and put each survey on equal footing to come up with estimates of population sizes that are comparable between the two herds and across years. We hope to publish this report within the next few months thereby making the information more widely available. Other topics of analysis have been concerned with survival rates, synchronicity of calving, patterns in movement and seasonal range selection, habitat supply modeling, establishment of protection for winter ranges, and other aspects of conservation management. We will be attempting to keep our web page up-to-date with these publications as they become available.



The estimated number of caribou in the Chase and Wolverine caribou herds.

RECENT PUBLICATIONS AND PRESENTATIONS

- McNay, R.S., D. Heard, R. Sulyma, and R. Ellis. 2008. A recovery action plan for northern caribou herds in north-central British Columbia. FORREX Special Report Series 22.
- McNay, R.S. and L. Giguere. In Prep. Population estimates and distribution of the Wolverine and Chase caribou herds in north-central British Columbia. BC Journal of Ecosystems and Management. xx:xxx-xxx.
- McNay, R.S., R. Ellis, R. Sulyma, and B. Arthur. In Prep. Using forecasts of caribou habitat to inform land management decisions in north-central British Columbia. BC Journal of Ecosystems and Management. xx:xxx-xxx.
- McNay, R.S. In Prep. Spatial characteristics of predation risk for woodland caribou in north-central British Columbia. Peace/Williston Fish and Wildlife Compensation Program Report No. xx.

PUBLICATIONS AND IN-HOUSE REPORTS IN PREPARATION

- ◇ Caribou & wolves: testing the relationship. Brochure No. 027.
- ◇ Abundance and distribution of woodland caribou in the Wolverine and Chase recovery plan areas. Report No. 272.
- ◇ Preliminary assessment of two techniques for estimating the relative abundance and spatial distribution of wolves. Report No. 275.
- ◇ Monitoring the distribution of radio-collared caribou and wolves in north-central British Columbia. Report No. 276.
- ◇ Potential implications of beetle-killed timber salvage on the integrity of caribou winter range. Poster No. 030.
- ◇ Potential implications of beetle-killed timber salvage on the integrity of caribou winter range. Report No. 273.
- ◇ Mitigating risk of predation for woodland caribou in north-central British Columbia. Report No. 274.
- ◇ Potential population responses to linear corridor development in the Chase caribou herd area, north-central British Columbia. Report No. 237.
- ◇ Spatial characteristics of predation risk for woodland caribou in north-central British Columbia. Report No. 233.
- ◇ Refinement and verification of a model to predict high-elevation winter range for woodland caribou in north-central British Columbia. Report No. 265.
- ◇ Reassessing the supply of northern caribou seasonal range types in north-central British Columbia. Report No. 279.
- ◇ Using Bayesian models to identify mule deer ungulate winter ranges in the Fort St. James Forest District. Report No. 271
- ◇ Indicator Targets and Management Recommendations for Retention of Coarse Woody Debris in the Mackenzie Defined Forest Area, North-central British Columbia. Report No. 263.

NEW AND CONTINUING PROJECTS FOR 2008-2009

1. Mitigating risk of predation for woodland caribou
2. Determining hydrologic hazard in BC
3. Mule deer winter range implementation
4. Succession of terrestrial lichen communities



Address: #3-220 Mackenzie Blvd., Box 308
Mackenzie, B.C. V0J 2C0, Canada
Phone: (250) 997-5700
Fax: (250) 997-4943
E-mail: wild_info@WildlifeInfometrics.com
Website: www.wildlifeinfometrics.com



Wildlife Infometrics Inc. was established April 2002 in Mackenzie, British Columbia. With our full time staff ranging from 6 to 10 employees, we focus on the collection, management, and interpretation of data concerning aquatic, avian, and terrestrial wildlife resources values. Our strength is turning collected data into information that can be easily used by industrial resource developers. Our motive is the promotion of conservation conscious development. To that end, we offer project development, data collection, data management, and data and information transfer services to clients from a variety of government and business sectors.

