

The Alex Fraser Research Forest

What's New in Research?

October 2, 2010



Cathy Koot

R.P. Bio, Research Coordinator



Forestry

University of British Columbia

- Situated on ~ 10 000 hectares of Crown land
- Managed since 1987 to provide an optimal environment for research, education and demonstration of integrated resource management.

The Crew:



72 South 7th Ave. Williams Lake



Ken Day



Cathy Koot



Mircea Rau



Don Skea



Dawn Lowe

Knife Creek Block

300 m

53 m E 5766589.90 m N

10 U 585882.38 m E 5811278.13 m N

© 2009 Tele Atlas
Image © 2009 Province of British Columbia
elev. 973 m

2005

Image © 2009 Province of British Columbia
elev. 1120 m

2005

Image © 2009 TerraMetrics

© 2009 Tele Atlas
Image © 2009 Province of British Columbia
elev. 1077 m

2005

©2008

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Forest Management



The Research Forest is a working forest sustained by contracts and harvesting activities and is managed according to a detailed management plan. A tremendous variety of natural and managed conditions exist.

Research Projects



- **311** project files opened since 1987
- most are related to forests and natural resources management

http://www.rpd.forestry.ubc.ca/ Live Search

British Columbia Research Forests

Home

Main Page Research Projects Research Forests

Research Projects Search Page (no login required)

Project No:

Location:

Title:

Project type:

Start From date: To date: (mm/dd/yyyy)

Category:

Status:

Product:

Keywords:

Researcher last name:

Organization:

In each field (except date) you can insert part of the word or part of the phrase

Number of records on page:

The on-line *Research Projects Database* provides a public, searchable portal as well as a secure repository for individual research project details.



What's New in Research at AFRF?

1. Remote Sensing in Natural Resources Management

Updates

[Hyperspectral-LIDAR Workshop \(27 Nov 2008\)](#)

[Technical Working Group Meeting \(Nov 2008\)](#)

[What is incidental take?](#)

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E-news

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PROJECT DESCRIPTION

Habitat degradation and loss are now prime causes of species decline, globally and in Canada. Space for Habitat recognizes the need to **modernize wildlife monitoring and enforcement capabilities** to address pressing federal habitat conservation issues, including the protection of designated habitat areas and the "incidental take" of Migratory Birds by industrial forestry activities.

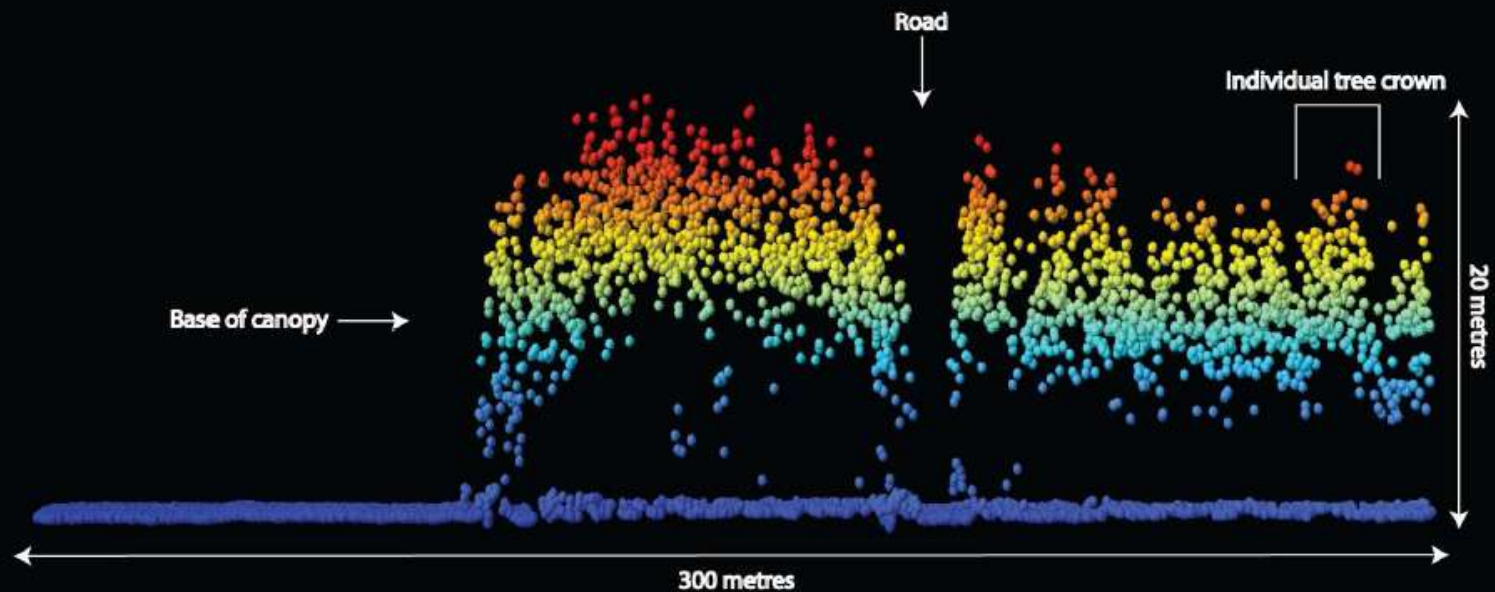
Together, Space for Habitat [project partners](#) aim to develop a system to monitor wildlife habitat in Canada, supported with **Earth Observation technologies**. Earth Observation methodologies and tools for monitoring wildlife habitat have the potential to significantly improve efficiency and effectiveness of enforcement, research, and management activities among a variety of government agencies as well as private industry.



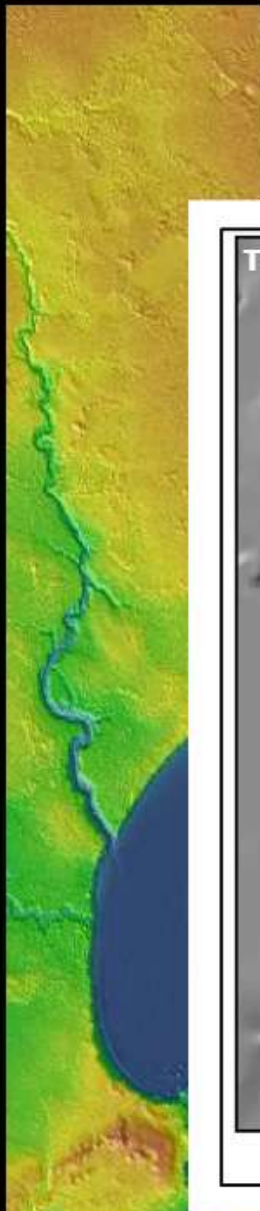
Space For Habitat (Environment Canada and Canadian Space Agency) – tested remote sensing techniques for monitoring protected areas and habitat for wildlife. Funded LiDAR data generation for the Gavin Lake block.

Raw lidar returns

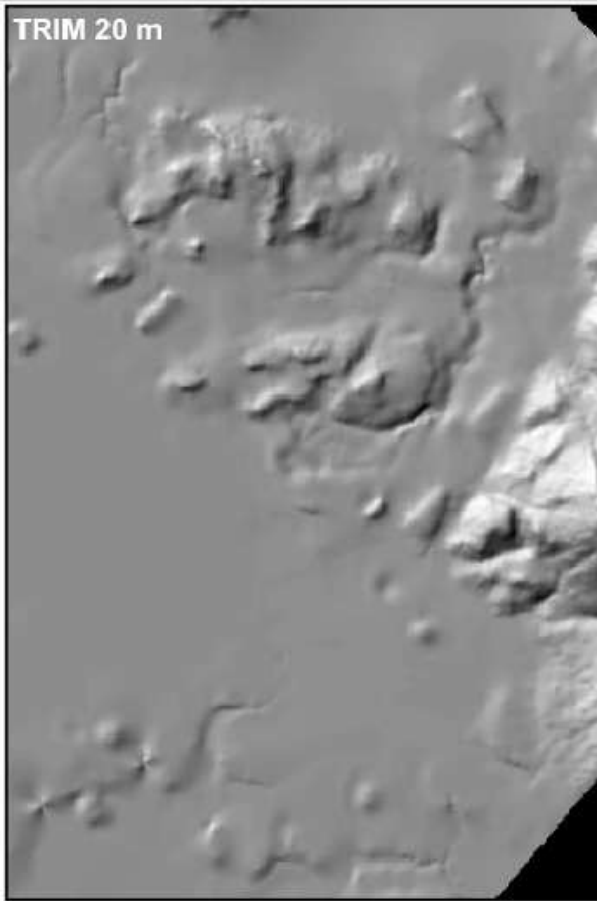
Light detection and ranging (LiDAR) is a remote-sensing technique that uses a laser affixed to a plane that is capable of mapping terrain and vegetation heights to accuracies of $< 1\text{m}$.



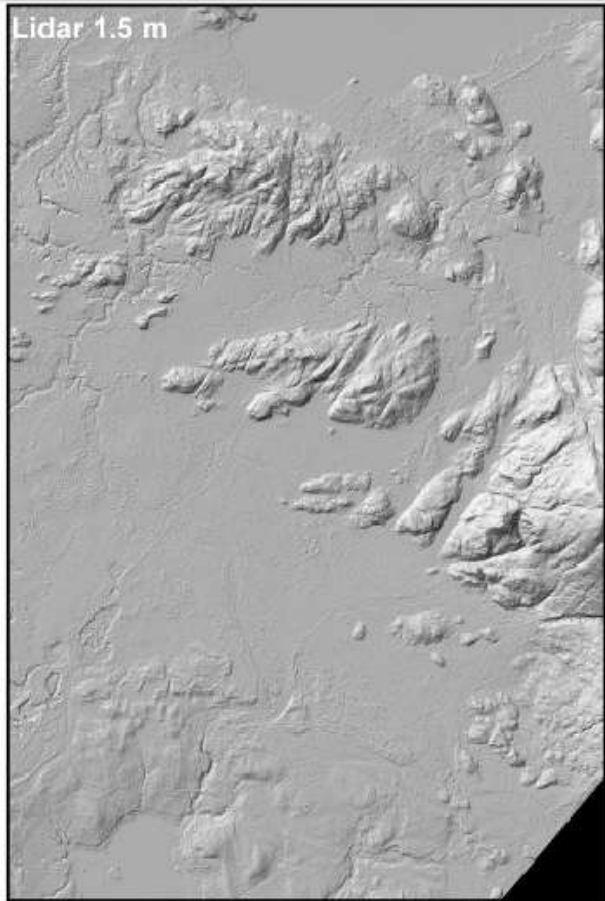
Digital Elevation Model



TRIM 20 m



Lidar 1.5 m



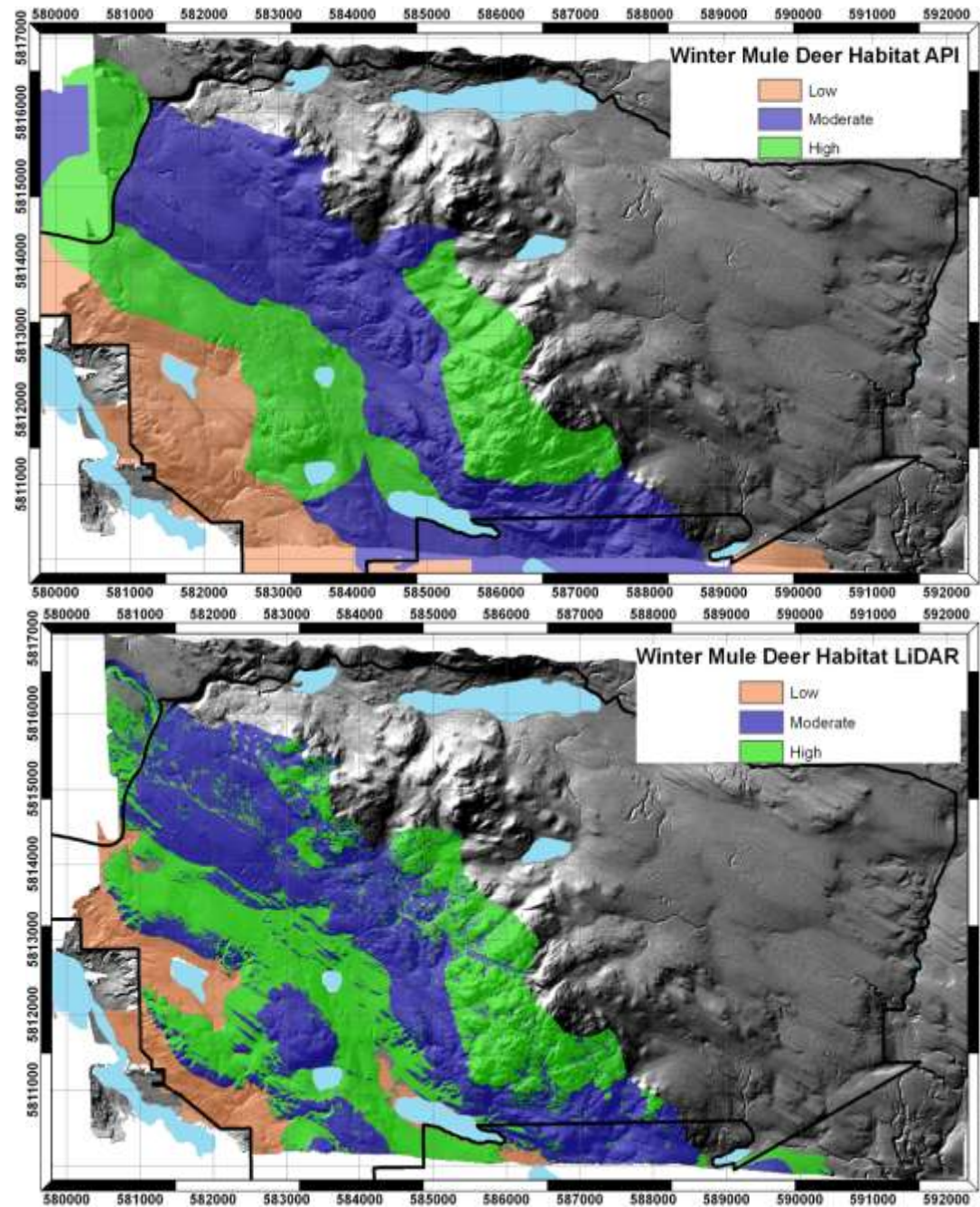
0 0.5 1 2 Kilometres

UBC Integrated Remote Sensing Studio (IRSS)

From a presentation by Dr. Nicholas Coops, UBC Forestry

Data are available for use by other researchers. Spin-off projects so far:

- Identifying Mule Deer Winter Habitat From LiDAR Remote Sensing Technology
- Integrating Synthetic Aperture Radar and LiDAR Remote Sensing Technology to Estimate Aboveground Biomass
- Integration of LiDAR and hyperspectral imagery for improved classification of wetland ecosystems





CUTBLOCK 130
Detailed Ground Shape with contour lines 1m
derived from LIDAR DEM File

Orthophoto “draped” over the Digital Elevation Model





What's New in Research at AFRF?

2. Assisted Tree Species Migration

Assisted Migration Adaptation Trial (MOFR) - large, long-term climate change research study to better understand tree species' climate tolerances.

An AMAT installation (1/48) was planted in the ICHmk3 biogeoclimatic subzone/variant at the Gavin Lake Block of AFRF in spring 2010.



- Cy - Yellow cedar
- Cw - Western redcedar
- Lw - Western larch
- Fdc - coastal Douglas-fir
- Fdi - interior Douglas-fir
- Ss - Sitka spruce
- Sx - interior spruce
- Ep - paper birch
- Es - silver birch
- At - trembling aspen
- Pli - lodgepole pine
- Py - ponderosa pine
- Pw - white pine
- Hw - western hemlock
- Ba - amabilis fir
- Bg - grand fir
- Bl - sub-alpine fir

Growth and health will be monitored and related to the climate of the plantations, to help identify seed sources most likely to be best adapted to current and future climates. The information will be used to revise BC's species and seed source selection guidelines.



Related Project: Roles of soil nutrients and ectomycorrhizal fungal communities in tree establishment along a climatic and latitudinal gradient in interior BC



What's New in Research at AFRF?

3. Wildland/Urban Interface Fuel Reduction Projects

AFRF has done:

- Case studies to assess feasibility and production
- Fuel reduction implementation at several sites around the Cariboo







Related Projects:

- Properties and Densification of Forestry Biomass
- Assessing Difficulties Experienced by Small Forest Product Enterprises
- Fiber Supply Chain Optimization in Williams Lake Region





Do you have a research idea?

Come and see us!

Thanks for your time.