

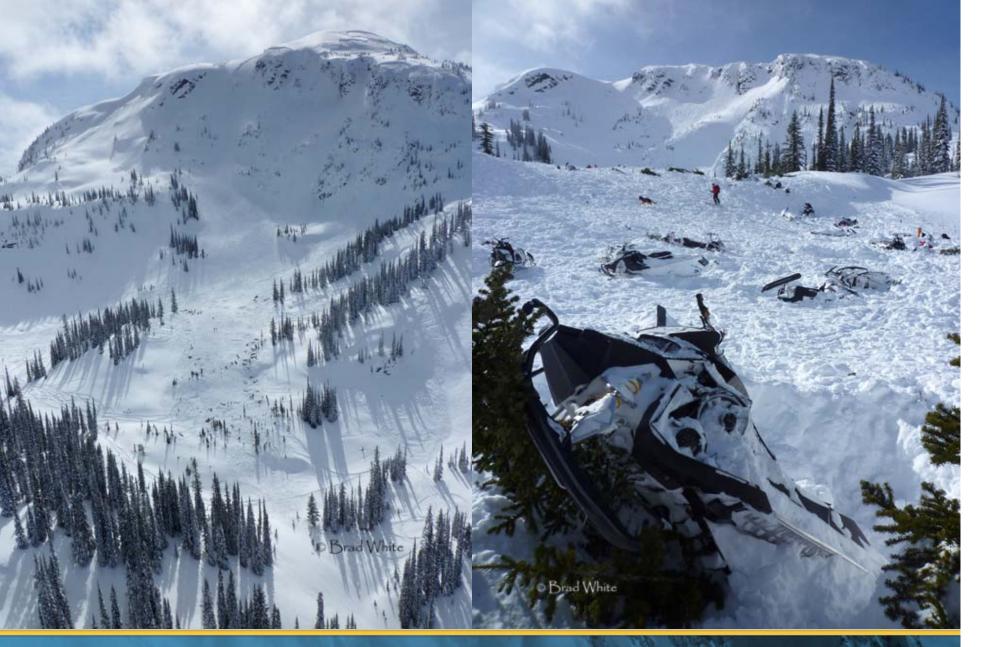
Boulder Mountain Avalanche 1 Year Later

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Executive Director

IKAR-CISA 2011 Åre, Sweden - October 19, 2011







March 13,2010



Accident Overview

- Group of ~ 200 snowmobilers
- Size 3 avalanche, hit group of ~100
- >30 injured, 1 seriously (quadriplegic)
- 2 fatalities
- > 50 professional rescuers
- 12 helicopters involved (small and medium)
- 3 day rescue and recovery effort
- Largest recreational avalanche accident in Canadian history
- Total cost of SAR >CAN\$1million
 - Significant media interest, political involvement



Fallout...

- Criminal investigation
 - Criminal negligence causing death against organizers
 - Child endangerment against parents with children at event
 - All charges dropped
- Coroner Investigation
 - Ignoring avalanche conditions & special warning
 - Role of government (land manger)
 - Role of snowmobile club
 - Drug use evidence in deceased (cocaine and oxycodone)

Snowmobile Fatalities in 2008-09

- 19 snowmobile avalanche fatalities
- Triggered Coroner to convene unique "Death Review Panel" in fall of 2009.
- Report containing 15 recommendations focused on prevention

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Conditions for significant public pressure

- Coroner Death Review Panel Report on Snowmobiling (2009)
- Boulder Mountain Accident (2010)
- Few snowmobiling stakeholders engaged in avalanche safety
 - Local, provincial and national snowmobile clubs
 - Snowmobile Manufacturers
 - Snowmobile Retail Shops
- Key snowmobile stakeholders actively minimizing avalanche issue

Change was mandatory – the future of snowmobiling threatened.



So what?

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Successes – Awareness & Education

- Awareness and Education (DRP #3 and #4)
 - Avalanche Safety Brochure to all registered snowmobiles in western provinces
 - Direct marketing to over 50,000 snowmobilers via brochure to start October 2011
 - Use the avalanche forecasts
 - Take a course from an approved provider
 - Get the equipment (shovel/beacon/probe) and an Airbag.

Avalanche Skills Training information available at:



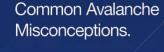
If an avalanche accident happens...

IT'S UP TO YOU.



YOU DON'T **HAVE TIME** TO GO FOR HELP.

Every person in your party needs to have the right rescue equipment and know how to use it. Learn more about avalanche self-rescue. Take a course or check out at



"My Friends will dig me out.

Maybe. But they've got to be alive and able to find you.

"I'm following tracks, so it must be ok."

First tracks may not rigger a slide, and the conditions may have changed since those tracks were made. Besides, you might be following a complete idiot.

"But, I've got a beacon on me."

A beacon is not a force field - it doesn't protect you from avalanches. Beacons improve your chances of survival, but only about a third of completely buried people are found alive. They do make body recovery easier though.

"I've ridden this slope for years."

Don't kid yourself. Slope stability changes day to day, hour to hour.

EXPERIENCE MORE. BE SAFE.



Become Avalanche Trained.



TAKE THE **AVALANCHE SKILLS TRAINING LEVEL 1**

If you ride in the back country, you need to be trained.



AdventureSmart



of Alberta











Every person in your group needs to have a beacon, probe and shovel and everyone needs to take the time to practice searching.

Consider buying an avalanche balloon pack. If you're caught in an avalanche, triggering the airbags to inflate will help you stay on top of the snow. An international study shows this system is the most effective single device for surviving an avalanche.

photo: Jeremy Hanke



www.avalanche.ca

A mountain of respect. Know the risks.

Prepare before. Because after, is too late.





www.movembeneheoca

- (#5) Develop materials to better educate what basic avalanche training is (and is not)
 - New lesson plans for instructors and brochure
- (#6) Create a dedicated Companion Rescue Course
 - 1 day rescue course (organization, transceivers, shoveling)
 - >200 instructors already approved
 - Targeted towards snowmobilers and skiers
- Some snowmobile clubs making avalanche training mandatory

Success – Forecasts and Warnings

- · (#7) Expand <u>distribution</u> of avalanche bulletin
 - Website (specific website for snowmobilers)
 - · RSS feeds
 - Email broadcasting
 - Media 'push' campaigns
 - · iPhone Application increases bulletin use by over 20%
 - Skiers use iPhone
 - Snowmobilers use Android need Android apps

Successes - Highway Signage (#11)

- 22 signs on key highways used to access snowmobiling areas
- Up to 50 more planned
- Public presence of the importance of

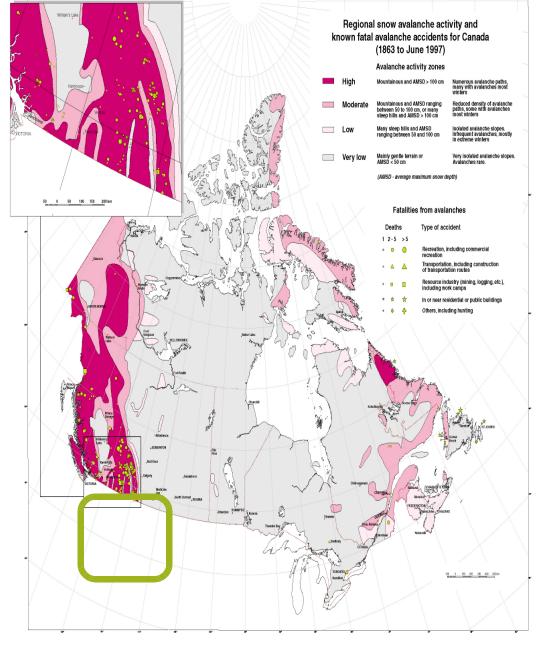




www.vanlameheoca

Successes – Avalanche Terrain Ratings

- \$\frac{\#13}{\\$\perpectate{13}}\\ \text{Special project to rate avalanche terrain at all 79 managed snowmobile areas (88 trail systems) in the Province of BC
 - Largest known avalanche terrain rating project ever undertaken for recreational reasons
 - Uses Parks Canada's Avalanche Terrain Exposure Scale (ATES)
- Trail head signs, maps and brochures produced for every area.
- Completion of project March 2014







The four levels of avalanche activity shown on this map are based on terrain steepness from a shaded relief map and regional values of average maximum snow depth. As a consequence of the map scale and the qualitative method used to delineate the avalanche activity areas, this map is not suitable for site-specific assessments of snow avalanche activity or hazard since it does not take into account isolated steep areas, isolated areas of heavy snowfall or strong winds, extreme winters, unusual storms, or slush flows on less steep terrain. For example, the method used to delineate the regional snow avalanche activity underestimates the activity on areas of the Newfoundland coast where wind-blown snow creates local avalanche activity. Nevertheless, 92% of the reported snow avalanche accidents in Canada fall within the areas of high or moderate avalanche activity.

Note: some of the 216 accident locations depicted on the map are obscured by overlapping closely-spaced

Sources

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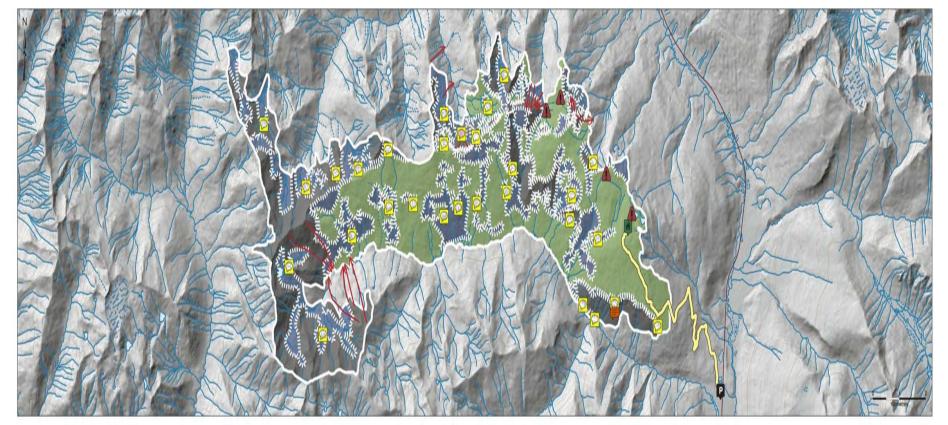
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Seological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8

Geological Survey of Canada (Calgary), 3309-33rd Street N.W., Calgary, Alberta T2L 2A7

OPEN FILE 3592

1998







Caution

Parking

-> Avalanche Path

Road

Class 1 - Simple

Class 2 - Challenging

Class 3 - Complex

Boundaries between classes are imprecise.



YOU ARE HEADING INTO

NCHE

TERRAIN

1. What type of terrain are you heading into?



CABIN CRUX PARKING → AVALANCHE PATH ROAD/TRAIL TERRAIN RATED

CHALLENGING Exposure to low angle or primarily forested terrain.

Some forest openings may involve the runout zones

of infrequent avalanches. Many options to reduce

or eliminate exposure. No glacier travel.

Exposure to well defined avalanche paths, starting zones or terrain traps; options exist to reduce or eliminate exposure with careful route finding. Glacier travel is straightforward but crevasse hazard may exist.

COMPLEX

Exposure to multiple overlapping avalanche paths or large expanses of steep, open terrain; multiple avalanche starting zones or terrain traps below; minimal options to reduce exposure. Complicated glacier travel with extensive crevasse bands or icefalls.

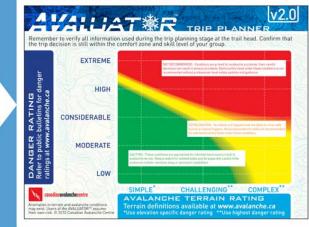
2. What is the Avalanche Danger Rating today?

Where can I access today's forecast? 1-800-667-1105,

Danger Level		Travel Advice
5 Extreme	W S	Avoid all avalanche terrain.
4 High	1000	Very dangerous avalanche conditions. Travel in avalanche terrain not recommended.
3 Considerable	³	Dangerous avalanche conditions. Careful snowpack evaluation, cautious rout-finding and conservative decision-making essential.
2 Moderate	*	Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.
1 Low	*	Generally safe avalanche conditions. Watch for unstable snow on isolated terrain features.

3. What does the Avaluator recommend?

Combine the danger and terrain ratings on the Avaluator chart to manage risk.



- . Have you told a responsible person your trip plans?
- · Is everyone in your group properly dressed and equipped with a transceiver, probe and shovel?
- . Do you have any backcountry knowledge or avalanche awareness training?
- . For more information go to: www.avalanche.ca



canadianavalanchecentre www.avalanche.ca

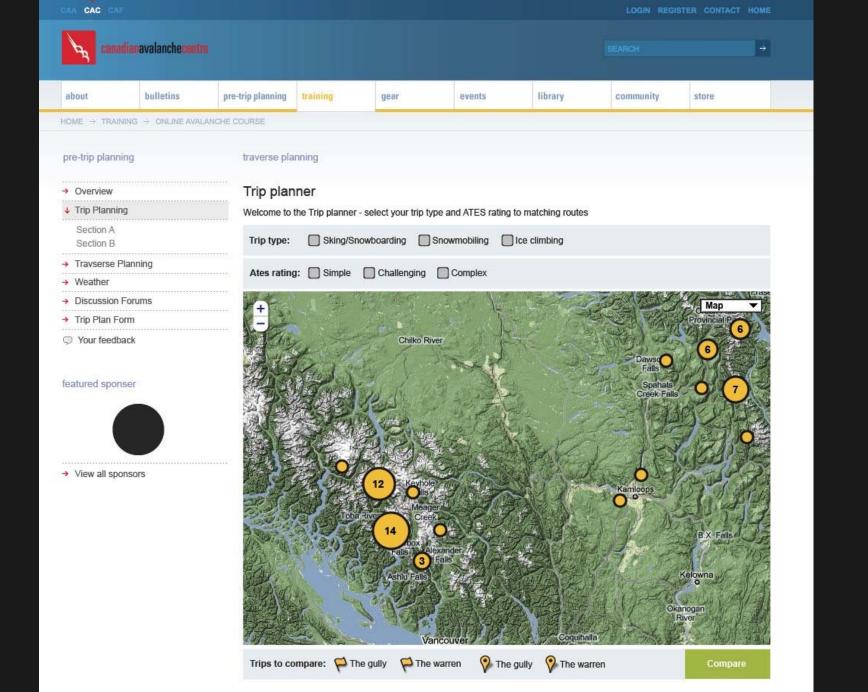


Recreation Sites and Trails BC

We would like to acknowledge the financial support of the Government of British Columbia Ministry of Tourism, Sports and the Arts.

Warning: Mountain travel is dangerous -hazards exist. Spotting hazards and assessing their risk is your responsibility. Decision guides like the Avaluator cannot eliminate these hazards, but will help you understand and manage then. The Avaluator is no substitute for training, experience, and choosing skilled and responsible travel patters. Use the Avaluator and the Information on this sign at your own risk. Travel the back country at your own risk. Travel the back country at your own risk. Terrain Assessment Maps Warning:
This map is illustrative only and should not be used to determine precise routes or location of features. The there is a should not be used to determine precise routes or location of features. The train ratings shown are an approximation and may assist with trip planning. Use the information provided on this map at your own risk.

on this map at your own risk.





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pre-trip planning

about

Overview

◆ Trip Planning Section A Section B

→ Travserse Planning

Weather

Discussion Forums

Trip Plan Form

Your feedback

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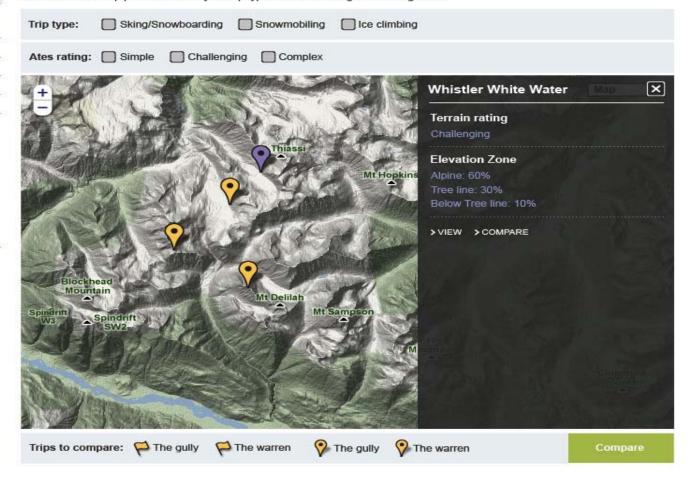
traverse planning

training

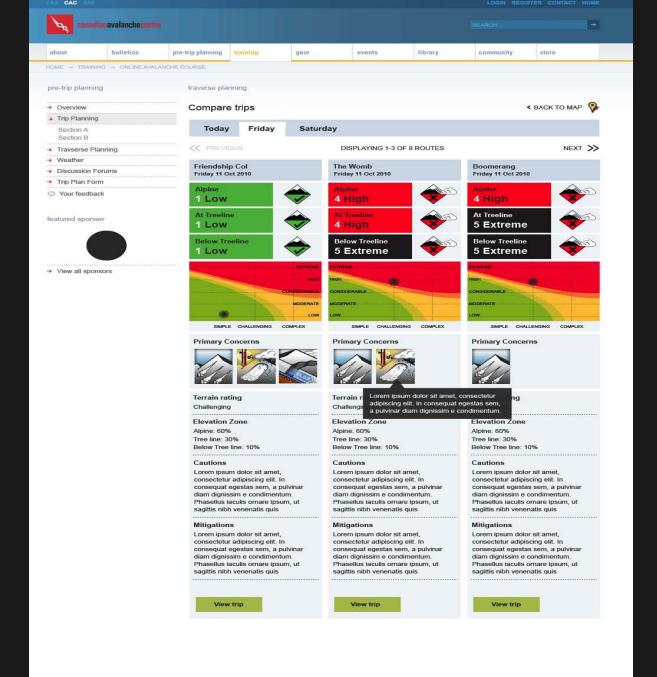
pre-trip planning

Trip planner

Welcome to the Trip planner - select your trip type and ATES rating to matching routes

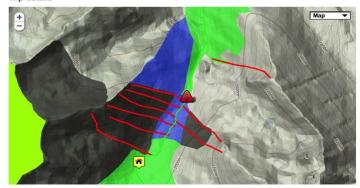


library





Trip details



Primary concerns



Terrain rating

Elevation Zone

Alpine: 60% Tree line: 30% Below Tree line: 10%

Cautions

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Mitigations

Lorem ipsum dolor sit amet, consectetur adipiscing elit. In consequat egestas sem, a pulvinar diam dignissim e condimentum. Phaseilus taculis omare ipsum, ut sagittis nibh venenalis quis

Other routes

This route is inside the Revelstoke snowmobile club's area

See all routes within this club's area

Other resources include

Canadian Mountain Encyclopedia *
Atlas of Canada topographic maps *
Google Earth *
NASA Worldwind *

Rescue & public safety

Canadian Mountain Encyclopedia *
Atlas of Canada topographic maps *
Google Earth *
NASA Worldwind *

Successes - Snowmobile Committee

- CAC formed a committee involving key snowmobile stakeholders
 - All provincial snowmobile club organizations
 - Key snowmobile avalanche educators
 - Commercial snowmobile operators (rentals)
- Currently the most active and productive committee of the CAC.

Expansion of Forecast Regions (#8)

- 44% of fatalities occurring in regions without a public bulletin
- Coroner calls for expansion of forecast regions, all regions in BC should have a forecast
- Problem no data
- CAN\$1m to CAN\$1.5m/year in additional funding needed
 - Starting implementation this winter
 - Big expansion planned for 2011-12 winter if \$\$ raised
 - Paid observer network combined with volunteer observers
 - iPhone and Android App (pictures, conditions with GPS locations)



Other initiatives

- Media work
 - 30 second 'Public Service Announcements' on Radio
 - CAC promoting snowmobiling in media as a safe and enjoyable way to explore BC backcountry***.
- Research: CAN\$1 million/3 year special project funded by Canadian Government
 - Social sciences study who are snowmobilers and how do they think?
 - Promote professional avalanche standards through training
 - TV Show & Educational Online Video Series

Changes by Manufacturers

- Partnering with CAC though sponsorship and co-marketing
- Marketing
 messaging's moving
 to 'responsibility'
 messaging
- Promoting awareness seminars





2011-12 Canadian Avalanche Centre Events Check out an avalanche awareness event near you. Visit avalanche.ca for up-to-date info.

Backcountry Avalanche Workshops - Northern Circuit

November 13: Prince George, BC - PGSC Clubhouse (ski and sled)

November 15: Smithers, BC - The Old Church (ski)

November 16: Smithers, BC - The Old Church (sled)

November 19: Chetwynd, BC - TBD (sled)

November 21: Grand Prairie, AB - Stojan's (sled)

November 23: Jasper, AB - Jasper Activity Centre (ski)

Backcountry Avalanche Workshops - Southern Circuit

November 25: Kamloops, BC - Thompson Rivers University (ski and sled)

November 28: Kelowna, BC - Union Cycle (ski)

November 30: Nelson, BC - LV Rogers Secondary (ski)

December 1: Rossland, BC - RSS Auditorium (ski and sled combined)

December 4: Fernie, BC - Fernie Alpine Resort (ski)

December 5: Lethbridge, AB - TBD (sled)

December 7: Calgary, AB - Albert Park (sled)

December 8: Canmore, AB - TBD (ski)

Backcountry Avalanche Workshops - MEC Circuit

October 21: Edmonton, AB

November 17: Vancouver, BC

November 19: Victoria, BC

December 6: Calgary, AB

December 7: North Vancouver, BC

Staying Alive Series

TBD: Revelstoke, BC - Revelstoke Mountain Resort (check www.avalanche.ca)

TBD: Lake Louise, AB - TBD (check www.avalanche.ca)

November 17: Jasper, AB - D'ed Dog Pub

December 8: Golden, BC - Senior's Centre

Other Events

November 12: North Vancouver, BC - MEC Snowfest

November 20: Calgary, AB - MEC Snowfest

November 26: Vancouver, BC - MEC Snowfest

Avalanche Awareness Days

January 21-22: Across Canada. Visit avalanche.ca for details.

Passionate about youth avalanche awareness?

Contact Youth Education Coordinator Bridget Daughney for more information on youth avalanche education, starting a youth avalanche awareness program, borrowing avalanche gear to use with your students, or to share your ideas: bdaughney@avalanche.ca.

Check out http://www.avalanche.ca/cac/community/educators for more information.

2011-12 Snowmobile Avalanche Awarenss Events Visit avalanche.ca for up-to-date info.

Sled Shows

October 21-23: Edmonton, AB – Northlands Expo Centre November 4-6: Saskatoon, SK – Prairieland Exhibition Centre November 12: Vernon, BC – Vernon Recreation Complex

Patterns to Prevention Avalanche Awareness Workshops

October 24: Edmonton, AB

November 7: Saskatoon, SK

November 8: Edmonton, AB

November 9: Red Deer, AB

November 10: Calgary, AB

November 14: Grassland, AB

November 17: Fort McMurray, AB

December 7: Lloydminister, SK

February 3: Grand Prairie, AB

Contact Lori Zacaruk for more information: info@zacstracs.com

Yamaha Avalanche Awareness Seminars

October 24: Salmon Arm, BC

October 25: Kamloops, BC

October 26: Kelowna, BC

October 27: Vernon, BC

November 15: Calgary, BC

November 16: Cranbrook, BC

November 17: Fruitvale, BC

Contact Amber Wood for more information: amberwood@trigger-point.ca

BRP Avalanche Awareness Seminars

October 14: Kamloops, BC - RTR Performance

October 17: Lethbridge, AB - Mr. R's

October 18: Brooks, AB - A&E RV Sales & Service

October 19: Calgary, AB - Bow Cycle South

October 20: Cochrane, AB - Bow Ridge Sports

October 24: Edson, AB - Riderz

October 25: St. Albert, AB - Riverside Honda and Ski-Doo Sales

October 26: Edmonton, AB - Martin Motorsports

October 27: St. Paul, AB - Power Merchants Ltd.

November 8: Crescent Valley, BC - Playmor Power Products Ltd.

November 9: Kelowna, BC - Banner Recreational

November 10: Vernon, BC - Banner Recreational

November 11: Tulameen, BC - Reichert Sales & Service

November 12: Tulameen, BC - Reichert Sales & Service

November 15: Squamish, BC - No Limits Motorsports

November 16: Langley, BC - Ski and Trail Powersports Ltd.

November 17: Chilliwack, BC - Greater Vancouver Powersports

November 18: Surrey, BC - Greater Vancouver Powersports

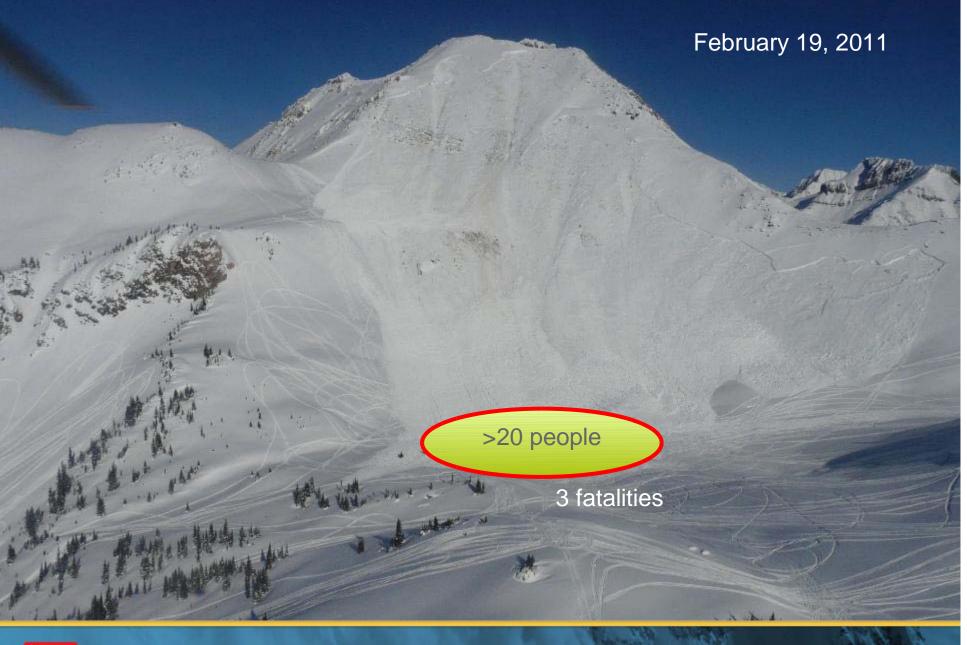
November 22: 100 Mile House, BC - Performance All Terrain and Rentals

November 23: Prince George, BC - Forest Power Sports

Contact Carole Savage for more information: snowmobile@avalanche.ca

Summary...

- Snowmobilers are taking responsibility and working hard
 - only 10% of snowmobilers belong to organized groups
- CAC is coordinating all efforts for snowmobiling prevention projects
- Significant increase in funding;
 - Government funding increases (>2x) + projects
 - Trail Pass Funding \$1/trail pass sold to CAC





Thanks for your attention.

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IKAR-CISA 2011 Åre, Sweden – October 21, 2011

