

2017-18 Annual Report

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Carving turns below the Spillimacheen Glacier. **Image:** Will Harding



Cover Image: South Rockies field team member Martina Halik riding in the Crowsnest Pass, AB.
Image: Jen Coulter

Vision

To eliminate avalanche fatalities and injuries in Canada.

Mission

To minimize public risk in avalanche terrain by providing leadership, development, communication, coordination and delivery of public avalanche safety education, warnings, products and services.

Values

- We are committed to awareness, training and safety for the general public and for all who travel in avalanche terrain.
- We are an inclusive and diverse organization that provides services to all winter recreation activity participants.
- We strive to ensure that all programs, services and materials are based on accurate research and evidence.
- We engage in strategic relationships and alliances to further the reach of our programs and messages.
- We investigate to understand all factors that contribute to human incidents in avalanche terrain and support that investigation by encouraging research.
- We inspire people to safely enjoy recreation and travel in the winter backcountry environment.
- We value our staff and community's collective strength, energy and leadership.
- We create a fun, healthy, professional and sustainable workplace, and provide our staff with opportunities to grow and thrive.
- We anticipate and respond to challenges and changes with creativity, collaboration, courage and bold enthusiasm.

A Message from the President



As we kick-off the start of the 2018/19 season I know there are always two things I can absolutely count on. I know we will be busier than ever. Our information, products and services are in demand by a rapidly growing and ever more diverse group of users. This is a good thing; we always rise to the challenge and continue to make incremental improvements every year.

The other thing is that we will continue to face serious financial constraints. As I write this, we are almost four months into our fiscal year and still waiting for \$725,000. Nearly 40% of our annual budget is promised but not delivered. If we waited to receive all our outstanding funds before we started operations, our first bulletins would not happen until January.

We know that would be an unacceptable option even if it would be fiscally prudent. Quite frankly, we take a risk by starting before the snow begins to fly and do our best to make the financial side of the business work.

It's not all bad news. We've accomplished much over the past five years and have actually improved and stabilized our financial situation. But we remain just one grant or major sponsor loss away from having to curtail some aspect of our operations.

The fact is, we are considered an essential service but we are not funded as one. Most people I speak to are surprised to know we are a not-for-profit organization that has to raise most of the dollars we need on a yearly basis. Very few of our financial contributions from government and sponsors are multi-year, and even fewer are part of signed agreements.

By contrast, in the majority of the world's alpine nations, public avalanche safety is federally, and securely, funded. Switzerland, France, Austria—each have annual budgets several times that of Canada's, even though their combined forecast areas would easily fit into our north and south Columbia regions.

Last year we embarked on a journey to become a truly national public avalanche safety organization. One with the capacity and appropriate, guaranteed funding to deliver programs and services to all Canadians, across all regions where avalanches occur.

We call it our National Strategy and for us it represents the long-term goal of realizing the aims of our mandate, established in 2004 when Avalanche Canada was born. We have reached out to senior levels of government, both federally and provincially, and the dialogue is productive and ongoing. We are certain of our direction and optimistic about the future.

Regardless, we will continue to do what we do best: deliver world-class service as cost-efficiently and effectively as we can. I hope you all have a fun and safe winter. Please keep track of us on FaceBook, Twitter, Instagram and of course at avalanche.ca.

A handwritten signature in black ink, appearing to read 'Kevin Seel'.

Kevin Seel,
President



A Message from the Executive Director



It's the end of the 2017 – 2018 season and another summer gone up in smoke...literally. This fall marks the start of my sixth year as ED of AvCan; clearly time flies when it's as busy as it has been. This past year was no exception with numerous accomplishments and projects on the go. There are too many to describe here but a few are worth highlighting.

In February, we received notice that our application to become a charitable organization had been approved. We didn't become a charity for the sole purpose of issuing tax receipts (although we will certainly do that). This new status makes it easier to access funding available only to charities, including funding from the Avalanche Canada Foundation.

This summer we purchased the building we have been leasing for the past three years. Ownership will provide some much-needed certainty and security. And thanks to a grant from the Search and Rescue New Initiatives Fund, we embarked on an ambitious three-year project to design and build new forecasting software. Avalanche Information Distribution, or AVID, will replace our current system built by Parks Canada, which is already seven years old—an eon for technology.

We are developing a new textbook for the AST 1 course and we hope to have our first print by the end of November. We have also developed a new tool for estimating avalanche danger. The "Dangerator" is designed to work in concert with the Avaluator and will become part of the AST 1 curriculum in regions that don't get a daily avalanche forecast.

Some things do remain constant: the continued growth of winter backcountry recreation and the increased need for our products and services. Last winter our website saw over 4.5 million page views by 291,000 users who spent a little over 3.3 million minutes on the site. We also saw almost 11,000 students take an AST course—all record numbers.

As usual, funding remains our major headache. The funding we receive hasn't kept up with growth, which results in unequal access to important products and services. For example, some regions do not benefit from a forecast, while others have had to fend for themselves by starting their own volunteer-run organizations.

The percentage of our funding that is secured via multi-year agreements has been going down while the unpredictability and delays in payment are getting worse. We are definitely at a tipping point; we will need to start curtailing our services if we cannot secure additional funding. But we are not sitting idle. We've spent the last two years working on a strategy to establish long-term, stable funding from governments. We have made progress and are hopeful this will come to fruition.

Finally, none of the above would be possible without people; many thanks to the dedicated employees and volunteer board who make AvCan such a great organization.

A handwritten signature in black ink, appearing to read 'G. Valade'. The signature is stylized and fluid.

Gilles Valade,
Executive Director

Image: Troy Grant

The Language of Avalanche Safety

Communicating effectively about avalanche risk is a multi-faceted process. We spend a significant amount of time and resources refining our messages for different user groups, simply because they all require it. There is no ‘one size fits all’ approach to this problem. Different users need—and deserve—information that reflects their reality.

Avalanches are a complex, natural phenomenon involving an infinite amount of variables. Our forecasters do an excellent job of analyzing current conditions, incorporating weather factors and forecasting the regional danger. Armed with a good understanding of the avalanche problem, we continually innovate and develop tools and techniques to communicate this knowledge in the most effective way possible.

We approach this communication challenge holistically. We take great effort to ensure there is consistency in messages to our users, whether they have little awareness of the avalanche problem or have complete mastery of winter backcountry travel. While different tactics are used for different groups, our overall communication strategy is standardized and consistent.

This level of effectiveness reflects the value of having a truly national public avalanche safety organizations. We look forward to the day when we can provide all Canadians, no matter where they recreate, with the same level of service.



Forecasting Program supervisor James Floyer handling one of the few hundred media requests we receive every season. **Image:** Mary Clayton



New Building

A stable home for the national public avalanche safety organization has been a goal since the inception of Avalanche Canada in 2004. For the first ten years we shared office space with the Canadian Avalanche Association, which owns a building. But as our operations grew, we ran out of space at that address and had to move our forecasters to a separate location.

Three years ago we entered into a three-year lease for this building. This summer we were able to make the down payment required to purchase it. Many thanks to the long-standing support of the Avalanche Canada Foundation and Emergency Management BC, both of which helped us make this payment. Thanks also to the Revelstoke Credit Union, which is carrying our mortgage.

We are very happy to have the stability of owning our office space, especially given Revelstoke's very tight rental market. Drop by and visit!

Social Media

Social media continues to play an essential part of communications between Avalanche Canada and the public. It allows us to share important forecasting information as well as introducing products and promoting sponsors or events. The use of social networks gives our organization a unique voice through the ambassadors program and blog posts from forecasters and this helps to get the core message to the public in an effective way.

All platforms saw an increase in followers across 2017-18, despite a general decrease in the number of active accounts across all networks. The best performing Facebook post of the season, a visual warning of conditions in the Lizard Range, had an organic reach of 69,002 people and was shared 242 times. This is an increase in organic reach of 23,000 impressions over the best performing post of last year.

Instagram continues to be an area of strong growth with the best performing post getting 14,202 organic impressions and 1012 post likes. Avalanche Canada's Instagram account is still gaining traction, increasing in reach and driving traffic to the website.



The South Rockies social media accounts have continued to build on their engaged follower base to continue to spread awareness of conditions and Avalanche Canada products. Slide shows and videos highlighting current conditions performed especially well, along with impressive photos of field observations.





@avalanchecanada
 2018: 11,089 followers
 2017: 6,595 followers
Increase of 4,494 followers

@avcansouthrockies
 2018: 1,344 followers
 @behind_thelines
 2018: 388 followers



avalanchecanada
 2018: 20,298 followers
 2017: 19,529 followers
Increase of 722 followers

avcansouthrockies
 2018: 2,575 followers

AC.Behindthelines
 2018: 1,347 followers
 2017: 1,274 followers
Increase of 73 followers



@avalancheca
 2018: 7,032 followers
 2017: 6,763 followers
Increase of 269 followers
Plus 379 followers on regional Twitter accounts



AvalancheCanada
 2018: total views 64,153,
 complete views 27,772
 2017: total views 45,775,
 complete views 11,988



Avalanche Canada
 2018: 108 subscribers

South Rockies Field Team
 2018: 40 subscribers

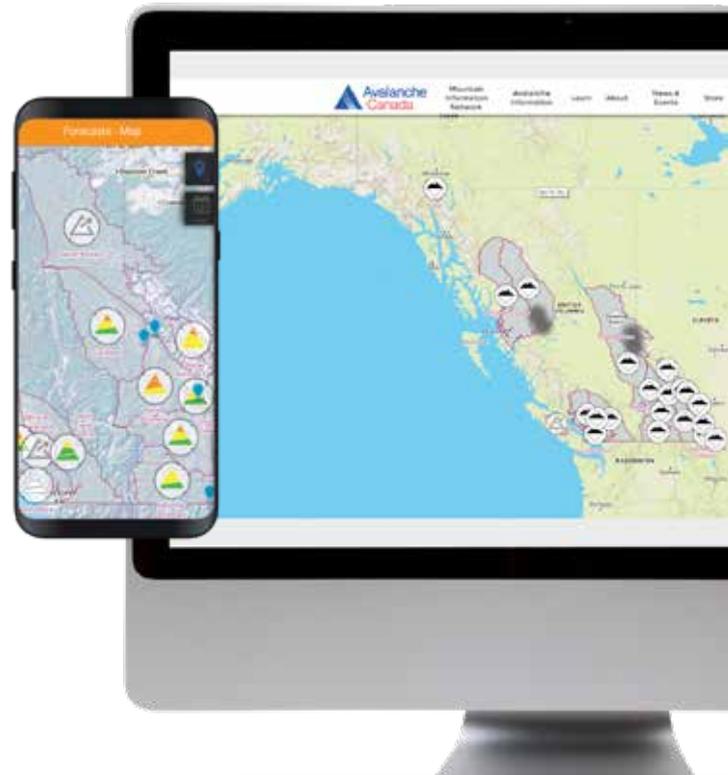
Avalanche.ca

Website:

- Unique visitors: 339,384
- Page views: 4,640,821
 → increase from 2,557,003 last year
 → **81% increase**
- Unique page views: 3,213,256
 → increase from 2,557,003 last year
 → **26% increase**
- Sessions: 1,067,723

App:

- Number of app sessions: 128,176.

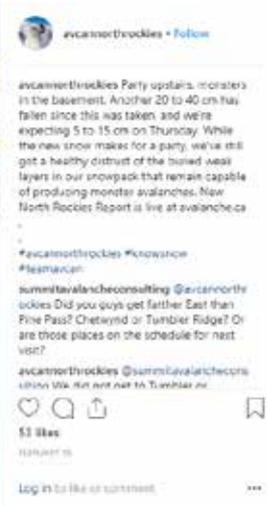


Social Media Initiatives

@avcannorthrockies

Following the success of the South Rockies social media accounts in increasing engagement, this season we launched the North Rockies Instagram account, focusing on local snow and avalanche conditions. Our forecasters made three field trips to the region over February and March, gathering information and posting to this account. The data was used for the weekly North Rockies conditions report, posted every Thursday.

The North Rockies is a region of prime concern for us. It's very well-used by recreationists and has a long history of fatal accidents. Providing users there with a daily avalanche forecast requires far more resources than we have. An Instagram account is a small step towards improving services for a region that desperately needs more.



#winterbreakbesafe

Throughout the season, @behind_thelines spreads the word about avalanche safety to the younger generation with the chance to win avalanche safety equipment. The #btlcontest and #winterbreakbesafe hashtags were used to host a gear giveaway and promote safer backcountry travel.



@behind_thelines

The youth ambassador program has been featured on the @behind_thelines Instagram account, promoting avalanche safety training and knowledge by younger people, for younger people. Posts reposted from youth ambassadors about conditions were liked by a large audience.



Youth avalanche ambassador Anthony Rizzuto in action. **Image:** Andrew Nolan

Social Schedule

#ThankYouThursday

The celebration of sponsors continued into this season and allowed us to thank sponsors and contributors to the Mountain Information Network (MIN).

MIN To Win Contest

We continued to share the best MIN submission posts throughout this season, with prizes going to the winners. Two winners were chosen each week—one for forecasters' favourite and a random draw. The winning posts were shared across our networks, helping to promote the use of the MIN and promote sponsors.

Stakeholder News

Four times a year, we send out an e-newsletter to over 2000 people with updates on our activities and previews on our projects. Stakeholder News goes out to members, partners, sponsors and donors to both Avalanche Canada and the Avalanche Canada Foundation. This newsletter has proven to be an invaluable method of communicating with our wide array of stakeholders in public avalanche safety.



Stakeholder News



Avalanche Ambassadors

This was the third season of our Avalanche Ambassador program. We employ ambassadors to help us reach deep into our public audience through their social media channels. Our Avalanche Ambassadors are viewed as leaders in their field of winter recreation and enjoy a high profile among backcountry users. This positive influence effectively promotes the culture of avalanche safety to our target audiences. All of our ambassadors have a solid background in public avalanche programs providing them with the foundation to echo our messaging alongside their own brand of playfulness and passion.



Chris Rubens

@chrisrubens

Chris is an internationally recognized professional big mountain, backcountry skier. He has produced and starred in numerous ski movies, many of which have strong messages on the environment and sustainability. He is genuine in his passion about avalanche safety and works hard to inspire others.



Nadine Overwater

@nadineoverwater

Nadine is a professional mountain sledder. She has completed several professional avalanche training courses with the Canadian Avalanche Association and is widely regarded as a leader in her field. She owns La Niña Sled Camp, which offers mountain snowmobiling riding clinics for women to build skills and confidence.



Wayne Flann

@whistlerwango

Wayne is an enthusiastic skier, Whistler SAR member, and a passionate blogger who has been conveying mountain safety messages on his blog for the past five years. He is also involved in mountain safety for the film industry, working for many companies producing your favorite ski/snowboard flicks.

Youth Ambassadors



Aleks Klassen

@aleksklassen

Aleks grew up in a family of avalanche professionals and has an inherent appreciation for the culture of avalanche safety. He is a former alpine ski racer who has turned in his skinny GS skis for the fat backcountry boards. Equipped with his AST 2, Aleks enjoys shredding all the backcountry pow his backyard mountains have to offer.



Anthony Rizzuto

@anthony_rizzuto

Anthony has been exploring the backcountry since he was 11 years old and took his first AST course at the age of 12. Since then, Anthony is working hard to establish the essential skills necessary to safely explore new terrain, take his skiing to the next level and share his passion for backcountry safety with others.



Andreas Massitti

@andreasmassitti

Andreas is a backcountry skiing athlete who trained with the Rocky Mountain Freeriders where he honed his big mountain skills and took his first AST course. He aims to further his avalanche safety knowledge and backcountry experience and dedicates much of his time to learning about being in the mountains safely.

Avalanche Associates

In addition to our ambassador program, we also collaborate with some avy-savvy individuals who help us spread the word about avalanche safety. We call this dynamic group our AvCan Associates; look for their informative and engaging posts shared on our social media streams this winter!

Abby Cooper

@abbydells

Dave Crerar

@davecrerar

Kate Ediger

@shrediger

Holly Walker

@hollyskiwalker

Conferences

Avalanche Canada participates in numerous conferences throughout Canada and abroad. These meetings provide a valuable opportunity for us to collaborate with our peers and stakeholders, share our work and garner support for public avalanche safety initiatives.

Public Safety and Accident Prevention Conference

October 19 – 20, 2017 Reykjavik, Iceland

Iceland's SAR program holds this annual national conference. This year Warning Service Manager Karl Klassen was invited to speak on Avalanche Canada's holistic approach to training, youth education and outreach.

CMH Staff Training

November 27, 2017 Sun Peaks, BC

Warning Service Manager Karl Klassen was invited to present at this training session, where he spoke about how professionals can incorporate the public avalanche forecast into their daily routine. He also presented on managing low probability – high risk avalanche conditions.

SARscene 2016 National Search and Rescue Conference

November 20 – 21, 2017 Winnipeg MB

SARscene is the largest annual gathering of the search and rescue community in Canada. Executive Director Gilles Valade attended the meetings to continue our collaborative work with the search and rescue organizations whose areas include Canada's mountainous regions

Outdoor Retailer and Ski Show

January 23 – 28, 2018 Denver, CO

This year, the OR show was combined with the Snow Show and was moved to Denver CO. Executive Director, Gilles Valade, and Sponsorship and Marketing Coordinator, Jennifer George, attended the event to network with our existing sponsors and attract support from new sponsors.

HeliCat Canada AGM & Spring Meeting

April 30, 2018 Penticton BC

HeliCat Canada is the member organization for Canada's helicopter and snowcat skiing industry. Avalanche Canada is an affiliate member and our management staff regularly attend this meeting to network with other members and understand the trends in the recreational tourism industry.

Canadian Avalanche Association Spring Conference

April 30 – May 4, 2018 Penticton, BC

Avalanche Canada forecasters, managers and coordinators attend this annual meeting of Canada's avalanche industry professionals. This conference provides the venue for strategic meetings and presentations pertinent for our public avalanche safety programs.

International Snowmobile Congress

June 13 – 16, 2018 Halifax NS

This event is dedicated to the development of strategies with respect to the environment, conservation, access and education among key snowmobile leaders. Gilles Valade and Snowmobile Outreach Coordinator Brent Strand attended the conference, which offers invaluable opportunities to share ideas with snowmobiling organizations and manufacturers from Canada and around the globe.



Quebec's Chic-Choc Mountains attract an increasing number of backcountry skiers and snowshoers. **Image:** Julie LeBlanc

Avalanche Québec

Avalanche Québec is based in the Chic-Choc Mountains of Québec's Gaspé Peninsula and produces a bilingual avalanche forecast for that region every two days throughout the winter. As a non-profit organization, its mission is to improve avalanche safety in Québec through public education, avalanche bulletins and supporting research. We have a long-standing relationship with Avalanche Québec and we have collaborated on many initiatives over the years.

Our two executive directors have been working together a lot over this past year. Together we are developing a federal strategy for funding public avalanche safety across Canada. The proposal for this approach was developed with Avalanche Québec and together, we are hoping for substantial changes to the funding structure for these essential services, from coast to coast to coast.

Avalanche Québec was established in 1999 and has had a significant impact in improving backcountry safety in that province. Each winter, thousands of backcountry travelers use their programs to plan their trips in the Chic-Chocs and Avalanche Québec has been identified as an important component of the growing tourism market in that region.



AVALANCHE QUÉBEC

Project Partnerships

Toyota

The 2017-18 season was the second year into our partnership with Toyota BC, which includes two 2017 Toyota Tundras on two-year leases. Our Tundras move our public-facing staff and their equipment throughout western Canada. These trucks are an integral part of our operations—for our field teams, forecasters, youth educator, snowmobile outreach coordinator, and management travel. The Tundras are Avalanche Canada's mobile billboards, instantly recognizable and easy to spot, even at crowded trailheads.

Our work requires our public-facing staff to drive in all conditions in some very remote locations; having reliable vehicles is essential to the timely delivery of our public safety programs.



Avalanche Terrain Mapping for Newfoundland & Labrador

In conjunction with Parks Canada, AvCan began working on a project to rate terrain in and around Gros Morne National Park using the Avalanche Terrain Exposure Scale (ATES). Winter tourism and snowmobiling is on the rise in this region and establishing ATES-rated maps is an essential ingredient in helping winter recreationists make good decisions.

We have done some preliminary, computer-based mapping, which can be done from our office in the west. The next step will be field validation, which will require on-site work.

Colorado Comparison

In February, Senior Avalanche Forecast James Floyer travelled to the head office of the Colorado Avalanche Information Center (CAIC) in Boulder, Colorado, for a first-hand look at their operation to determine if there are any procedures that could benefit Avalanche Canada. We have a long-standing relationship with many American avalanche offices and although they don't share our nationally centralized and standardized approach there is always much to learn from each other.

While there are some fundamental differences in mandate, the CAIC's program is similar to ours in that they forecast for 10 separate regions. Unlike us, they have five regional offices in addition to their head office and field work is an integral part of the forecasters' workday.

The scale of our operation is unique in the world; solutions to our challenges need to be relevant to the Canadian model. But it's always instructive to see how other operations work and we value the partnerships that allow the free-flow of ideas.



ACMG's Mountain Conditions Reports

Thanks to our partnerships with Association of Canadian Mountain Guides (ACMG) and Arc'teryx, our users can now access the ACMG's Mountain Conditions Reports (MCR) on our interactive home page map. These are observations submitted by professional guides, tagged with an icon similar to the Mountain Information Network reports. Through this partnership we are ensuring the best safety information is provided to our users.

Working guides use the MCR to share text and photos from their trips—valuable information for their peers and for recreationists. The MCR is used year-round by the ACMG. AvCan will display the reports on skiing and avalanche conditions but other types of reports (e.g. climbing conditions, trail conditions, wildlife alerts) are easily accessed by clicking a link at the bottom of each MCR. The MCR website also has an interactive map that links to all of our public avalanche forecasts.





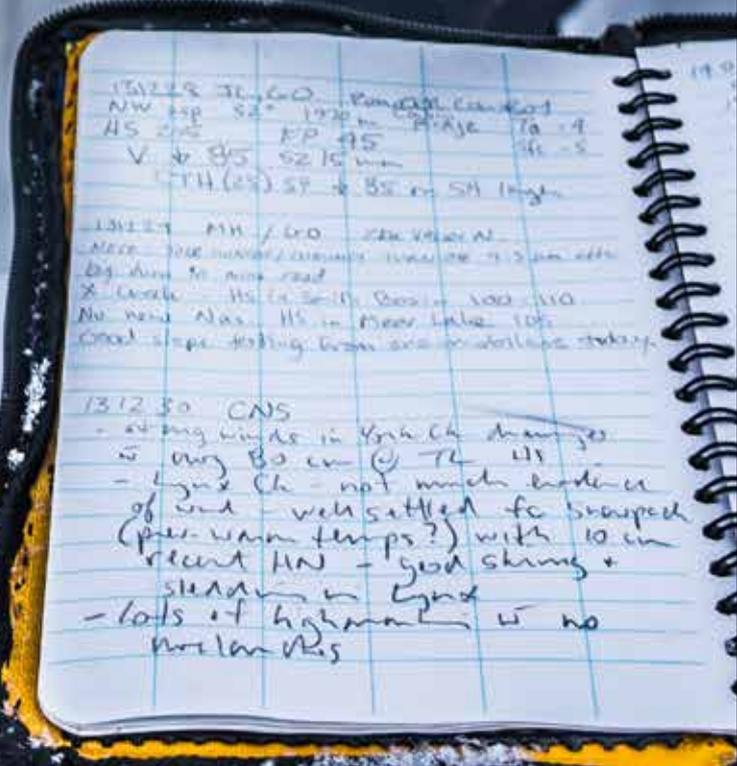
Thanks to Teck's sponsorship, our South Rockies field team is able to provide valuable data for the regional forecast **Image:** Haven Eye Photography

Service Award

We were very pleased to present our 2017 Service Award to Nic Milligan and Teck. The presentation took place on March 8, at the Avalanche Canada Foundation's annual fundraiser in Calgary.

Teck has been a very important and long-time sponsor of our South Rockies field team. Nic is the Manager of Social Responsibility for Teck and it is through his commitment and vision that we are able to support a full-time field team in the South Rockies region throughout the winter.

The field team's importance to Avalanche Canada's programs and services for this region cannot be overstated. Truly, this is a model for other regions and we regularly point to Teck's leadership as an example of outstanding corporate responsibility.



Good visit to
visited @ Ministry
- no No on mt. Home/Proton
- Ridge / Home Ridge
- good field day w AST 450
- the North 13 and 4W low de
on bank @ 1630 Ministry
stay area

Fundraising

As a non-profit, non-government organization, we work hard to acquire grants, seek stakeholder support, work with sponsors and basically make every cent count. We couldn't do this alone and we appreciate all the help we get. Many, many thanks to all the individuals and groups who put time, energy and resource towards making their backcountry community safer.

Thunderstruck

Team Thunderstruck and the Revelstoke Snowmobile Club host an annual fundraiser event in Revelstoke, BC. The event serves as the snowmobile season kick off, with a premiere of latest film in the Thunderstruck series, dinner and an amazing auction with a huge variety of snowmobile gear and accessories. We are grateful for this tremendous support and celebrate their dedication and commitment to public avalanche safety. Since 2010, this annual fundraiser has raised almost \$70,000 for Avalanche Canada public programs. Proceeds from the event also go to the local food bank and Revelstoke SAR.



Randy Swenson of Team Thunderstruck and Kathy Burke from the Revelstoke Snowmobile Club present their generous donation to Avalanche Canada's Brent Strand. **Image:** Tina Witt



Happy winners at the Canuck Splitfest.

Image: Gina Hargreaves



Canuck Splitfest

The 8th Annual Canuck Splitfest, presented by Trapper Snowboards, was held in Revelstoke, BC on Jan 14. It was a fantastic event that raised \$12,600 for Avalanche Canada's public avalanche safety programs. Over 400 people from all over North America attended the Saturday night social and raffle. There were fascinating presentations from Joe Lammers of Avalanche Canada, Justin Sweeny of Arc'teryx, and professional skiers Greg Hill and Mike Wigley. Raffle prizes included five splitboards from five manufacturers, a day of heli-skiing, jackets, bindings, boots, backpacks and avalanche gear.

Presenting Sponsor

Trapper Snowboards

Gold Sponsors:

Eagle Pass Heliskiing, Libtech, Olive, Prior, K2, Venture Snowboards, & Arc'teryx

Silver Sponsors

Burton, Dakine, Intuition, KIND, Nibz, Phantom Snowboards, Spark R&D, CAPOW, Splitboard HQ, Rab, Revelstoke Mountaineer, Sandman Hotels, & Kootenay Mountain Culture

Bronze Sponsors

Apine Club of Canada, Free Spirit Sports, G3, The North Face, Marmot, Never Summer, Pallas Snowboards, Sandbox, Society Snow & Skate, StokeFM, Tantrum Ride Company, CFR, Tourism Revelstoke, Revelstoke Mountain Resort, Chimera, Mackenzie Peak Law, Tara Sutherland with Royal LePage, The Village Idiot, Mt Begbie Brewing Co, Whitetooth Brewing Co, Whitewater Ski Resort, & Splitboard.com

Grassroots Support

Rockies Shred Fest



Formerly branded as Winterstoke, this annual pre-season gathering at Wild Bill's in Banff showcases local ski and snowboard films for an enthusiastic, sold out crowd. A big thanks to Crowfoot Media for donating 10% of the ticket sales to Avalanche Canada.

Freshtival



Freshtival is Canada's premiere ski film festival, taking place over two days in Calgary, hosted by Canadian Powder Guiding (CAPOW) and Fresh Skis. The event featured a "flannel discussion" with CAPOW's Marty Schaffer, Ski Guide Kevin Hjertaas, and a crew of ski and snowboard athletes who discussed the challenges of navigating avalanche terrain. There were also pre-season prep clinics for all skill levels. We would like to thank CAPOW for collecting donations at the door on the behalf of Avalanche Canada.



Fernie Snowmobile Association

Our South Rockies field team is doing great work and is having a significant impact on the backcountry users of the communities in that area. The Fernie Snowmobile Association donated \$3000 to show their appreciation for this program and the many services provided by our South Rockies team. Thank you!

Smartwool Banff

The first Canadian Smartwool retail store opened in Banff this past spring. During its grand opening event, this locally owned and operated store donated \$1500 to Avalanche Canada with proceeds from a silent auction. AvCan board member Kevin Williams attended the evening event and expressed our gratitude for this generous gesture.

Revelstoke Mountain Resort



Our amazing local ski resort is collecting donations for AvCan through their season pass purchase program. Season pass buyers are provided an option to make a \$10 donation to AvCan when they buy their pass. RMR is the first ski resort to collection donations for our public avalanche safety programs and we are very grateful for their support

Avalanche Information Distribution

We are well into a three-year project to develop new software for our avalanche forecasting program, which we are calling AVID. This project is financed by a grant from the National Search and Rescue Secretariat's Search and Rescue Initiatives Fund. The primary objectives of AVID are to:

- Replace the aging AvalX forecasting software currently in use.
- Develop a new data management system to improve forecasters' ability to obtain, filter and visualize the vast amount of data used to produce warning service products.
- Research current avalanche risk communications and implement improvements to our products and delivery systems to best meet user needs.

By early summer 2017 our team was assembled and at work. By mid-winter, forecasting software user-experience design was complete, a data management conceptual strategy in place, and preliminary work on the "back-end" data base had begun. At the same time, a risk communications research project was underway at Simon Fraser University's Avalanche Research Program under the supervision of Dr. Pascal Haegeli with Dr. Robin Gregory, a leading risk communications researcher and consultant, as an advisor.

By spring 2018 many components of the forecasting software were finished; work on the supporting database and associated application program interface (API) was ongoing. A work plan for the second year of the project sets out the following goals for spring 2019:

- Forecasting software ready for implementation fall 2019-20.
- Data management user interface designs and preliminary database/API completed.
- Risk communications project completed.

Summer 2019 will be spent implementing the forecasting software, reviewing and analyzing results of the risk communications research project, and creating a beta version of the data management system.

Winter 2019-20 will see completion of the data management system and recommendations for changes to warning service product design, content and delivery.





InfoEx

Since 2004, when Avalanche Canada was established, our forecasters rely on the professional information exchange known as InfoEx as our primary source of data.

InfoEx is a subscription service for professional avalanche operations in Canada that allows a daily online exchange of snow, weather and avalanche observations. As a subscriber, Avalanche Canada accesses this reliable stream of high-quality data, which then informs our understanding of the ever-changing snowpack across the vast and remote mountainous regions of western Canada.

InfoEx has been administered by the Canadian Avalanche Association every winter since 1991. The InfoEx system, and its subscribers who provide their data on a daily basis, play an integral role in Canada's public avalanche safety.



Avalanche Canada's forecasting program covers close to 250,000 sq km. and tracking the snowpack and weather across this much area requires a wide range of data from many different sources. One of the aims of our new software is to improve the forecasters' ability to aggregate and assimilate these data streams. **Image:** Avalanche Canada



“The Fernie Snowmobile Association would like to acknowledge the outstanding contribution of the Avalanche Canada South Rockies Field Team to our local snowmobile community. The public outreach, education, and provision of field observations to the Revelstoke forecasting office have become an integral asset to keep our riders safe and informed in the Elk Valley. Despite a challenging regional snowpack and dramatic increase in backcountry snowmobile users this winter, we are pleased to note that we had an 'incident-free' season with all sledders returning home safe at the end of each day. We attribute this accomplishment to accurate regional bulletins, engaging social media posts, and a general increase in avalanche awareness in our region generated, in part, by the efforts of the South Rockies Field Team. Looking forward to working with the crew again next January where we hope to break our Avalanche Awareness Days attendance record again (300 participants this January!).”



South Rockies field team member Lisa Larsen connects with local users. Notice the snow bikes, a relatively new addition to the motorized backcountry scene.

Image: Jen Coulter

South Rockies Field Team

The South Rockies team continues to grow awareness of avalanche safety in their region. Through outreach events, a friendly and approachable presence in the field, and their strong social media voice, they have become a trusted resource for the backcountry community in the South Rockies area.

The team took part in two Avalanche Awareness Days events; one with Fernie Alpine Resort and another with the Fernie Snowmobile Association, which was attended by a record-breaking 300 people. Field team leader Jennifer Coulter gave a very well-received keynote address at the Avalanche Canada Foundation's annual fundraising event in Calgary. Jennifer and Megan Kelly also worked with the youth program and delivered pre-winter avalanche education in schools throughout the Elk Valley.

Outreach in the field has remained a key tool for the team to reach members of the community. The importance of their social media presence is evident to the team, who are noticing more people mentioning their recent posts or videos, and wanting to discuss conditions or forecasts. The new truck branding helps the team to promote their work and encourages these one-on-one interactions. Jennifer Coulter gave a presentation on the team's experiences and successes in influencing behaviour through social media at the International Snow Science Workshop, the biennial conference of avalanche and snow safety research in October of this year.



Yukon

Avalanche Canada works closely with the non-profit Yukon Avalanche Association (YAA) to provide regular avalanche safety information for the White Pass and Wheaton Valley regions. The funding for this program has been very uneven since it was first established in 2011. In the first three years, a federal grant allowed us to provide a forecast three times a week. When that grant ended in 2014, there was no longer funding to support a full-time field team, the vital prerequisite for a regular forecast in this data-sparse region.

Finding ways to maintain a public avalanche safety program for the Yukon has been challenging. This past season was the second winter of providing a Hot Zone Report (HZR) for this region. The HZR is a general summary of local conditions and provides risk management advice. It is not equivalent to a forecast and was developed for regions that don't have enough data to support a forecast.

The Yukon HZR was issued twice a week. A small field program, employing three field technicians on a part-time basis, provided some of the data required for this product. The team was in the field one day a week throughout the winter. Partnerships with Parks Canada and Yukon Highways allowed the team to work with avalanche professionals from these agencies, when operational objectives aligned.

Submissions to the Mountain Information Network (MIN) are critical to the data stream for the HZR. A key component of the Yukon program is public training, aimed at promoting the use of the MIN. This training also helps to improve the quality of the data submitted.

Through this program, Yukon backcountry users are provided with useful, timely information to support their decision making. In addition, public avalanche safety knowledge and skills are developed. We look forward to building this program in the future.





Mountain Information Network

The mountain information network (MIN) is becoming an increasingly essential tool for backcountry recreationalists and professionals alike. The information sharing platform allows for users to share observations in the field about conditions, in real time, and provides an important resource for decision making.

MIN submissions are also an integral part of our forecasters' workflow, supplying information to fill in data gaps, especially in data-sparse regions. With the map-based posts, the forecasters can immediately put the observations into context within our forecast regions. As many of our regions are massive, one of our challenges is interpreting variability across the terrain. User-submitted observations help our forecasters better understand how the conditions vary across a region, adding valuable information to their analysis.

MIN for 2017 – 2018

1839 submissions

741 users

1663 quick reports

235 avalanche reports

260 snowpack reports

222 weather reports

47 incident reports

Almost 2000 photos

Backcountry users in the Yukon have many options. This high and wild country is popular with skiers and snowmobilers.

Image: Mark Grist

Research

Keeping current with the latest research is essential to our goal of reducing avalanche accidents. Since 2015, we have been supporting Dr. Pascal Haegeli's position as Research Chair in Avalanche Risk Management at Simon Fraser University (SFU). We work closely with Pascal and his students on a variety of projects, particularly those topics that carry significant potential for improvements to avalanche safety.

One of those projects is focused on assessing the efficacy of our avalanche forecasts in terms of risk communication. For risk communication to be effective, the information provided must accurately represent conditions. Just as importantly, the receiver of the information must understand it as intended. While much effort has gone into improving the production of avalanche forecasts, there have been few studies examining the use and comprehension of that product by recreationists. We're looking forward to seeing the progression of this project.

Internally, senior forecaster James Floyer, headed up research for the development of the Dangerator (see page 28 for more on this product), which is a new tool to estimate avalanche danger for places that do not have a daily forecast. Through a creative and analytical approach, James created an elegant solution to this problem. We've been looking forward to getting this tool in use and we're not the only ones. We wrote about this project over the winter and revealed a prototype, which prompted a number of requests for the tool from other countries. Clearly this is research with relevance.

Avalanche Canada plays an important role in technology transfer, helping to bridge the gap between academic research and real-world application. As we incorporate new research into our daily operations, we can refine and focus, always with the long-term goal of improving public avalanche safety products.



SFU Master's student Henry Finn (on the right) conducts a long-form interview with a participant in the research in assessing how effective the risk communication within our forecasts are. Each interview lasts more than an hour, with participants demonstrating on a model mountain how they would travel in the backcountry based on the information provided in a forecast.

Image: Anne St Claire

Mountain Weather Forecast Updates

Our Mountain Weather Forecast continues to be a highly popular and well-used resource and we are grateful to the work of the Meteorological Services of Canada (MSC) that allow us to make this product even better. Over this past season, MSC's Edmonton office began contributing their data to the forecast, allowing an improved forecast for the Rockies. We also implemented a new menu tab for days 5-7, which provides an extended forecast. Here, MSC meteorologists write a text synopsis that will display every Monday, providing an outlook until the following Sunday.

Other big changes over the past season include going from one long blog into four tabs for improved navigation. A new side bar menu directs users to hourly precipitation, temperature and winds. There's also a new menu for current conditions, which includes animated loops for current radar, satellite and temperatures.

This forecast is generated daily throughout the entire year. While its value to winter backcountry users is obvious, it is also used by summer recreationists as well as forest fire management. Professionals and recreationists alike are fans. As an example of this product's following, one of our most popular Instagram posts this winter was when one of the MSC meteorologist, who was doing a take-over of our account, "unmasked" the real names and faces behind the fun nicknames used by the MSC forecasters. This level of public interest underscores the value and relevance of this important service.

"Awesome product"

"#gamechanger"

"Thank you 🙏"

"Best weather forecast and site ever! I check it daily and you guys are so accurate it's brilliant."

"Thanks so much for the service."



Learn more at
[www.avalanche.ca/
weather/forecast](http://www.avalanche.ca/weather/forecast)

Avalanche Canada Training Programs

Our training program set yet another record-breaking season. In the 2016-17 season, there was an increase of 25% in overall AST student numbers. We didn't think we could match that but this year's numbers increased again for a total of 10,826 students enrolled in one of the four courses offered. We are thrilled that the public is hungry for avalanche education and is seeking it out.

AST 1 courses are the most popular and this year over 9200 students completed the course. AST 2 student numbers also increased. In general, AST 2 numbers are between 10 – 15% of AST 1 student numbers. Ideally, we would like ALL backcountry recreationists to further their training with an AST 2.

Companion Rescue Skills remained constant, while student numbers for Managing Avalanche Terrain courses soared. This is only the second season for the MAT course and we are gratified to see more AST providers adding the option of the MAT course.

Unfortunately, the number of snowmobile AST decreased markedly from the previous year. The previous year we saw an increase in this user group and were hoping that it was the start of a trend. We will continue to work closely with the snowmobiling community to encourage training.

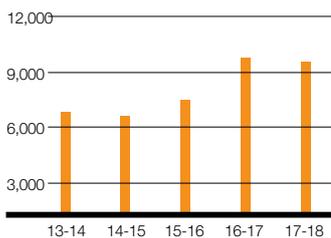
AST 1 TEACHES THE FUNDAMENTALS OF AVALANCHE FORMATION, TRAVELLING IN AVALANCHE TERRAIN AND COMPANION RESCUE.

AST 2 INCREASES AND DEVELOPS KNOWLEDGE OF TERRAIN CHOICES, ROUTE FINDING AND DECISION MAKING IN AVALANCHE TERRAIN.

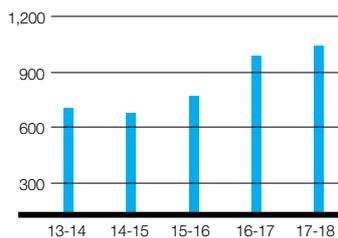
COMPANION RESCUE SKILLS A ONE-DAY COURSE OFFERING AN INTRODUCTION OR REFRESHER ON THE LATEST TECHNIQUES IN AVALANCHE INCIDENT RESPONSE.

MANAGING AVALANCHE TERRAIN A ONE-DAY COURSE FOR AST 1 GRADUATES, AIMED AT DEVELOPING MORE ADVANCED WINTER BACKCOUNTRY TRAVEL SKILLS.

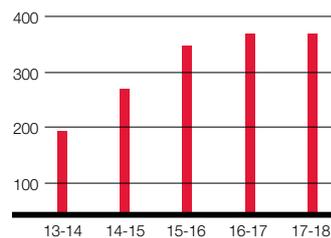
AST 1 Course Participants



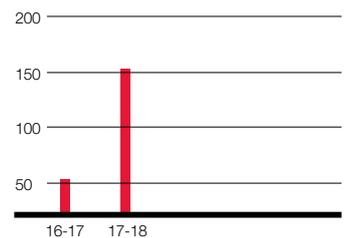
AST 2 Course Participants



CRS Course Participants



MAT Course Participants



Presented by



Teck





Participants engage in a conveyor shovelling exercise during a training course.

Image: Wren McElroy

AST Instructor Online Training

This past season we introduced online training sessions for AST instructors. For many years we have provided training sessions every fall in various locations across western Canada. However the AST instructor pool is spread far and wide, not only across Canada but throughout the world. Online sessions ensures more instructors can access these valuable opportunities. We ran three online sessions that were all well attended. Participants logged in from northern BC, the Yukon, Quebec and other countries. The online platform allowed real-time participation and was well received by all who took part. The online sessions were recorded and are accessible to all AST instructors, whether they attended the session or not.

International AST Providers

AST is a world-renowned program and curriculum. We have seen increasing interest over the years from avalanche professionals in other countries who license to become AST providers. Currently, we have six providers in Japan, three in Chile, two in Australia and one in Norway.

Avaluator Translation

Our curriculum and resources are often sought by other countries wishing to expand their own avalanche safety programs. The Avaluator has been identified as an excellent resource that can be adapted to other regions. We have granted two licenses agreements to translate the Avaluator—Poland in 2017 and the Aran Avalanche Centre in the Pyrenees this past year.

AST Committee

We are grateful to the group of AST instructors listed below who sit on the AST committee and provide us with valuable input on our training program. Their contributions include reviewing curriculum updates, developing guidelines, sharing ideas for instructor training and often facilitating and leading those training sessions. Thank you!

Terry Palechuk (chair)
Craig Hollinger
Ken Lukawy
Mitchell Sulkers

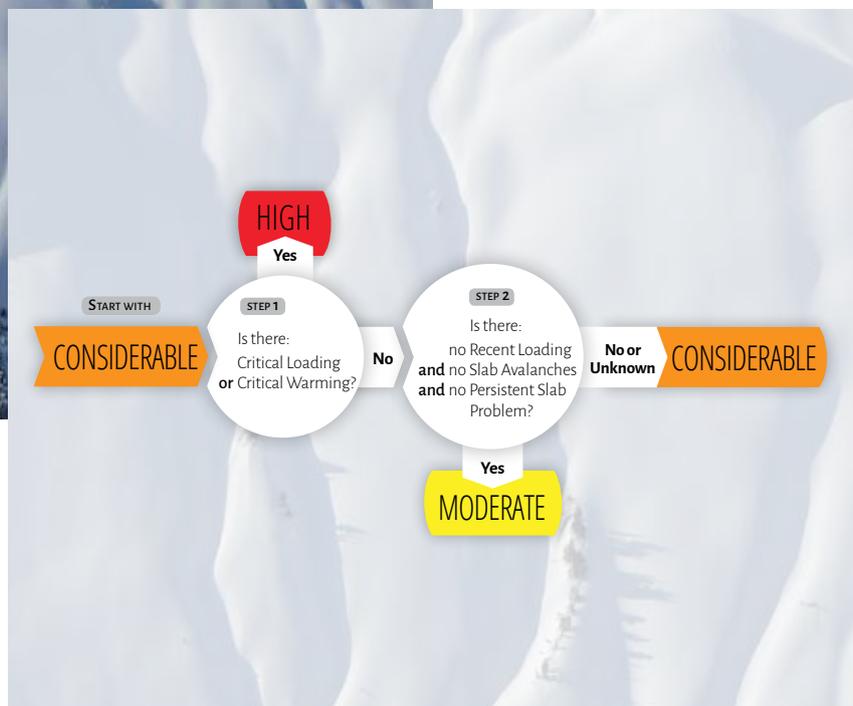
Jesse DeMontigny
Jean-Raphael Lemieux
Curtis Pawliuk

The Dangerator

The Avaluator is the foundation of the AST 1 course. This decision aid helps backcountry users plan their trips according to the current conditions. Using this tool to its potential requires the current avalanche danger rating. In areas without a public avalanche forecast, this can be a challenge.

To help with this problem, one of Avalanche Canada's senior forecasters, James Floyer, developed a tool called the "Dangerator." The Dangerator uses a decision tree to help users estimate their local danger rating. The two-step process guides users through a few simple but essential observations, leading them to an estimated danger rating of either moderate, considerable or high. They can then apply this information to the Avaluator and our Trip Planner, both of which will help them make better decisions in avalanche terrain.

A prototype of the Dangerator was used over the past season for beta testing. We received primarily favourable reports and feedback, which allowed us to further refine the tool over the summer. Until we are able to provide all popular backcountry regions in Canada with a daily avalanche forecast, the Dangerator will play a vital role in public avalanche safety

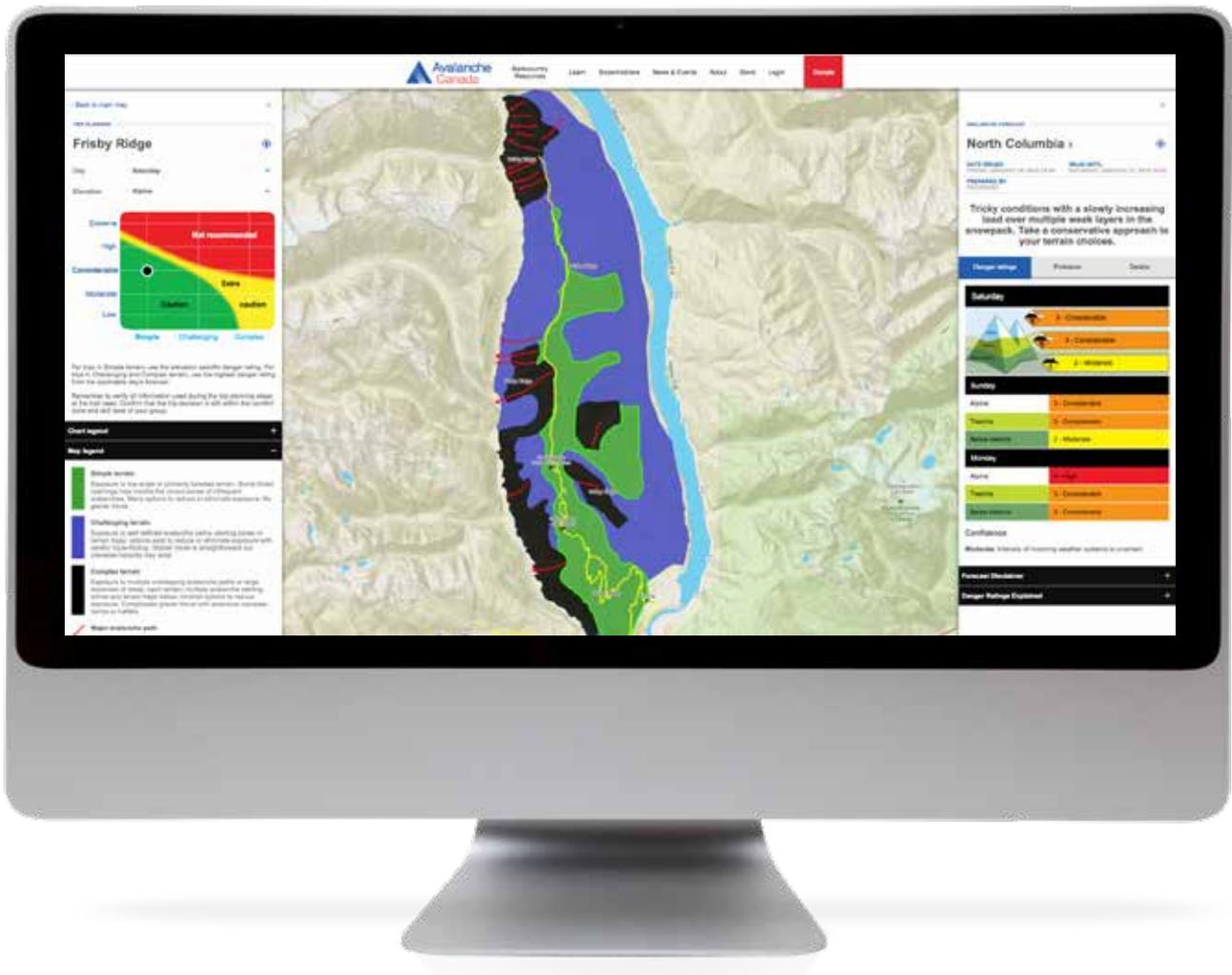


Trip Planner

An online, interactive trip planner has long been in our plans, ever since we first began rating terrain with the Avalanche Terrain Exposure Scale (ATES) over five years ago. While we had the elements of a really helpful program, our limited resources for software development kept the trip planner at a very basic level.

This year, thanks to our full-time IT team, our Trip Planner is fully functional on our website, allowing users to easily combine ATES-rated terrain with the current danger rating. These two factors—the terrain and the danger rating—are the basis of informed decision making in avalanche terrain. By entering the danger rating, users can scroll through the terrain where they are planning to travel and the Trip Planner will show whether their choices are in the green, yellow or red band.

We always encourage anyone venturing into the backcountry to do their trip planning the night before heading out—putting some thought into the destination, the terrain being accessed, and the current forecast for that region. The online Trip Planner makes this important step easy, and fun.



Youth Programs

Thanks to the support from our sponsors and partners, this season Avalanche Canada's youth program celebrated 11 years of delivering snow and avalanche safety lessons to students from kindergarten to grade 12. We visited over 80 different schools across Alberta and BC, presenting to 8216 students, an increase of about 150 students over last season. The curriculum for Grades 4, 7 and 8 has been translated to French and was in full use this season. This important work would not be possible without financial support from the Columbia Basin Trust, Parks Canada, the RBC Foundation, and the Avalanche Canada Foundation's Hugh and Helen Hincks Fund.

Regional Breakdown

Columbia Basin—3677 students

Bow Valley/Calgary—1466 students

Okanagan—412 students

South Coast—308 students

Alberta North—2261 students

Certification

Thanks to the Columbia Basin Trust and with help from local ski resorts, we were able to provide subsidized AST 1 (Avalanche Skills Training) courses for secondary school students. This widely recognized course includes classroom and field time, with an emphasis on rescue skills training. This season we were able to certify 92 secondary school students in Revelstoke, Golden, Kimberley, Cranbrook, Trail and Rossland.

Toolbox Program

The demand for our toolboxes continues to increase. Each of our four toolboxes contains 15-20 sets of essential avalanche safety equipment—transceivers, probes, shovels—along with snow study kits and snow saws. We allow any school or group to borrow this equipment for free and this season, the boxes travelled from September until the end of May to over 41 different schools, providing valuable hands-on avalanche rescue training to hundreds of students. Many thanks to MEC, Mammut and BCA for their help with this program.

Game-Based Learning

This new approach to avalanche safety education was introduced as a pilot project in our local high school last season. This year we brought the game-based software to grades 10 – 12 in Fernie, Canmore and Revelstoke, where students were very enthusiastic about it. The game is based on real-life avalanche scenarios and brings the concept of human factors to life. It fosters creative thinking, decision making and team work while building students' knowledge of avalanche safety and travelling in avalanche terrain. The game uses software created by a company named CREDS, which specializes in interactive scenario-based learning for workplace safety. This coming season we will focus on training more instructors to lead the game so we can take it into more classrooms.

Youth Education Team

Many thanks to our youth education team, who deliver our program to schools and communities in BC and Alberta.

Shannon Werner, Coordinator

Colin Adamson

Alison Cardinal

Jen Coulter

Megan Kelly

Madeleine Martin-Preney

Curtis Pawliuk

Dave Quinn



Youth program coordinator Shannon Werner with a grade 5 class in Edmonton.

Image: Cataline Fric

"The presenter was very knowledgeable and passionate about the topic. Overall great presentation and very worthwhile especially for the area we live in. Thanks for the opportunity."

Brian Baldwin
Student, Fruitvale
Elementary School, BC

"I liked that I got to learn more about snow and the snowpack layers. It was great to learn more about the risks associated with tree wells and avalanches. "

Emma
Student, Fruitvale
Elementary School, BC

"I liked learning hands-on avalanche rescue skills and really experience the outdoors first handry."

Eli
Student, Rosland
Secondary School, BC

"The Avalanche Canada presentation was great! It was informative and interactive and as we have many students and families that enjoy our backyard of the Rocky Mountains I feel the presentation was definitely relevant. Avalanche awareness and general backcountry safety is important and something that can be practiced for life. I think it would be beneficial to have the presentation back again."

Kyle Write
Teacher, Rocky
Mountain House, AB

Outreach

Every fall and throughout the winter, Avalanche Canada sends staff far and wide with outreach messaging and this year was no exception. The main focus of our outreach program is to promote training and the use of our products and services. We also encourage the use of our Mountain Information Network.

Outreach efforts are resource intensive and we do what we can to alleviate the costs. We often collaborate with other agencies and organizations, and we have a small network of professionals throughout western Canada who help deliver outreach programs if we are unable to send a staff member.

This season we held two Backcountry Avalanche Workshop road tours. We visited five communities in the Edmonton region with one roadshow; the other was on the BC coast, where we held five events in Pemberton, Whistler, Squamish and North Vancouver. This workshop also went to Prince George and Smithers.

Our forecasting team gave presentations to two snowmobile clubs in the Sea-to-Sky region. We continue to target the snowmobiling community with our outreach efforts as it's clear that more work needs to be done with this group. Snowmobilers make up the majority of recreational avalanche fatalities and when we analyzed recent data, we found that a significant percentage of victims resided within 150 km of Edmonton. This information is guiding our adult and youth outreach efforts for the foreseeable future.

Our South Rockies field team led an evening program for snowshoers in the Fernie area. There are growing numbers of snowshoers accessing avalanche terrain, often unknowingly. Over the past couple of seasons we have developed a brochure aimed at this group with very basic messaging, which we have had translated into seven languages. We will be increasing our efforts to reach these groups in the future

Case Studies

Every year, our forecasters develop presentations to be used in our outreach program. Case studies are often used as these real-life incidents offer meaningful and effective learning opportunities. Our outreach program for 2017 – 18 used the following presentations.

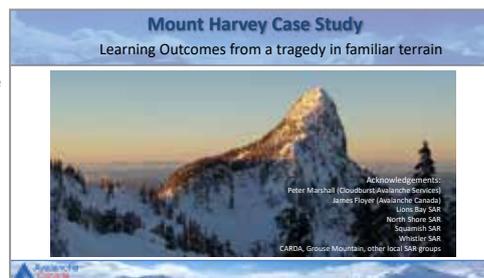
Close Calls

BC's interior ranges had a weak snowpack for much of the 2016-17 season and numerous close calls were reported to our office. Many of these incidents offered valuable learning opportunities. Using information gleaned from interviews with the people involved and analysis of the snowpack and terrain choices, this presentation provided many take-away messages. Along with identifying where the decision process had broken down in each of these incidents, we also encouraged the sharing of stories, to help others learn.

Mount Harvey

This presentation focused on the tragic incident on Mt. Harvey, where five snowshoers were killed in April, 2017. A group of six had trekked up to the summit but were unaware of the hazard from a large cornice. The cornice collapsed with five snowshoers on it, carrying them over a cliff and burying them on the slope below.

There is much to learn from this incident, particularly for the growing backcountry user group of snowshoers. Popular summer trails are often much more dangerous terrain in the winter. The Mt. Harvey presentation focuses on how to recognize and avoid cornices and engages the audience in a discussion about what sort of pre-trip planning is required for any winter backcountry venture.



Avalanche Awareness Days 2018

Kristy and Malia, disguised as transceivers, sell raffle tickets at Apex Resort for Avalanche Awareness Days. **Image:** Paul Hirschfeld

Avalanche Awareness Days is a celebration of our winter heritage and an opportunity to learn more about our winter environment and how to stay safe in our beautiful backcountry. This past season 33 communities held an event for Avalanche Awareness Days, in BC, Alberta, the Yukon and Quebec.

Community grass roots and volunteer enthusiasm and energy stoke all these events. The Banff Centre presented to a packed house; Fernie Alpine Resort, Apex Ski Resort and Castle Mountain ran fundraisers on behalf of Avalanche Canada; and six new organizations got involved this year.

Thanks to everyone who helps keep this annual event alive. Community organizers include ski-patrol teams, SAR groups, BC Provincial Parks, snowmobile clubs and dedicated avalanche educators. We are currently without a title sponsor for this important outreach event and are actively looking for one. If you are interested or know of a possible candidate, please contact our marketing & sponsorship coordinator Jennifer George.



AST Bursary Programs

Many snowmobiling groups have been very supportive of our efforts to promote AST courses to their members and trail users, often finding their own solutions to remove barriers to encourage more snowmobilers to take courses. The Alberta Snowmobile Association (ASA) has been offering a bursary program for up to 100 club members for the past two years. With this program, the ASA will fully reimburse any member who has taken an AST course. There is no specific dollar amount and some members have been reimbursed for taking both their AST 1 and AST 2 courses.

Other smaller clubs such as the Kokanee Country Snowmobile Club in Creston, BC, are offering similar programs in an effort to help mitigate the cost of training. They held two AST 1 classes over the past three seasons and filled both of those courses. As a club they worked hard to obtain funding that allowed them to cover half the cost of the course for any of their members.

We applaud all these efforts to encourage training and hope we can continue to build on this momentum.

“Making AST 1 affordable for our members has made a huge difference in those educated in our valley.”

**Trish Drinkle, President,
Kokanee Country
Snowmobile Club**

Snowmobile Outreach

Avalanche Canada has had a dedicated snowmobile outreach program since 2011; effective engagement with the snowmobiling community is one of our priorities. We make significant efforts to make and maintain connections throughout western Canada, with a specific emphasis on reaching riders in Alberta and Saskatchewan.

This season, Snowmobile Outreach Coordinator Brent Strand attended sled shows in Edmonton, Saskatoon and Vernon. Sled shows are effective venues to connect with riders and provides an opportunity to hand out outreach materials and give presentations that encourage training and the use of the Mountain Information Network.

- Alberta Snowmobile and Powersports Show, Edmonton AB
October 13 – 15, 2017
- Saskatchewan Snowmobile Show, Saskatoon SK November 3 – 5, 2017
- BC Snow Show, Vernon BC November 24 – 25, 2017

SledCom

Our snowmobile committee (SledCom) was established in 2009, with the purpose of better understanding and meeting the avalanche safety needs of the snowmobiling community. Over the years SledCom has been an effective voice for the community, providing Avalanche Canada with valuable feedback, networking and program suggestions. SledCom members are representatives from the greater snowmobile community. Many thanks to the following who are contributing time and energy to this important role.

Brent Strand (chair)

Lisa Block

Gen Byl

Trish Drinkle

Brittney Dickson

Curtis Pawliuk

Ken Zasada

Avalanche Canada works with the following provincial snowmobile organizations.



Alberta Safe Riders

Since 2013, Avalanche Canada has been contributing to Safe Riders, a program delivered to students K – 12 in Alberta that promotes the responsible use of off-highway vehicles. While avalanche safety is only a component of this one-hour presentation, we feel this is a valuable program to support because it reaches many smaller rural communities in Alberta where snowmobile use is very high. Safe Riders is presented by the Alberta Snowmobile Association, in conjunction with the Alberta Government. This season, 8,882 students received this program.



Sled Sponsors

Our field team, forecasters and outreach personnel travel on mountain snowmobiles throughout our regions collecting avalanche observation data for our forecasts, engaging with backcountry snowmobilers in the field, working with stakeholders and installing weather stations. Each season our snowmobile sponsors loan us a new machine for our operational use. Thanks to the following dealerships and manufacturers for supplying the following:

- Alpine Mountain Sport, Salmon Arm, BC
 - o Yamaha Viper
- Mountain Motor Sports, Golden, BC
 - o Polaris Pro RMK 800
- Banner Recreation and Marine, Vernon, BC
 - o BRP Ski Doo Summit 850
- House of Thunder, Camrose, AB
 - o Arctic Cat M8000

Canadian Fatal Avalanches

In 2017 – 18, seven people were killed in avalanches, well below the 10 year average.

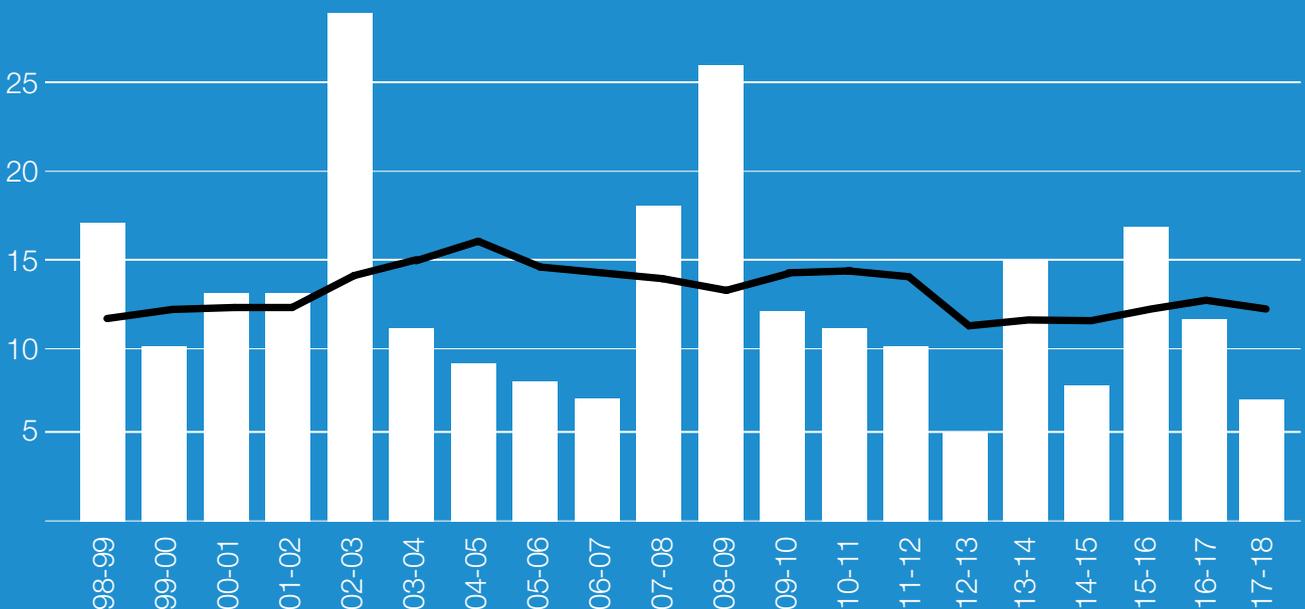
Seven fatalities is below the ten-year moving average of slightly more than 12 avalanche deaths per year; for perspective, this was one of five lowest years over the previous 30. Additionally, all were single fatality events, which is only the fourth time in 30 years without any multiple-casualty accidents. By most measures, winter 2018 was, despite the challenges, a pretty good year.

Historically, British Columbia is the province where most fatal avalanche accidents occur and last winter was no exception. Six of the seven fatalities happened in BC, which is consistent with long-term trends.

Snowmobiling and backcountry skiing account for more than two-thirds of fatalities over the past ten years; snowmobiling alone makes up almost half of all fatalities. Last year was consistent with long-term trends in this regard as well. One professional avalanche worker, a helicopter ski guide was killed during the course of her work.

A major theme linking many of the fatal avalanches was micro-terrain management. A number of the victims, in the course of moving through the terrain, strayed from where they thought they were positioned—safe from avalanches. In some cases, only a few metres separated where they were when the avalanche released, and safe snow that remained in place. In outreach presentations for this coming fall, Avalanche Canada will be presenting *Off the Line*, presenting these events as case studies to help backcountry users better understand terrain, the decision-making challenges of their sport, and how to better manage their avalanche risk.

Annual Avalanche Fatalities in Canada Showing 10 Year Moving Average



Putting it into Perspective

Thoughts on Avalanche Fatality Statistics

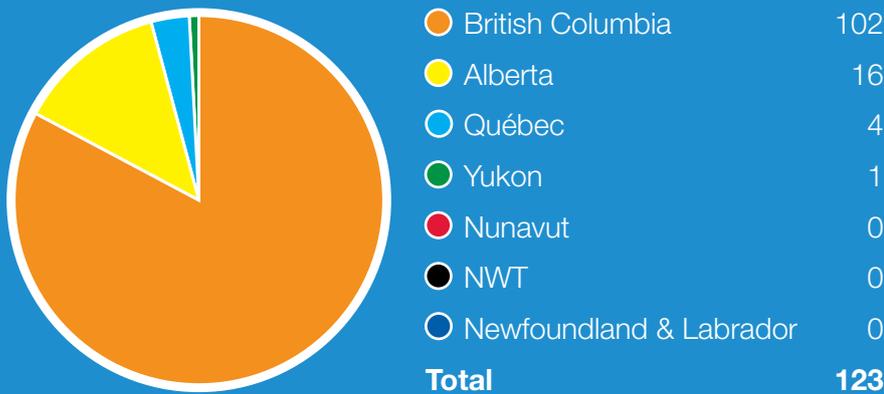
Not everything that counts can be counted

How do we measure the effectiveness of our public avalanche safety programs? While fatality trends may be an obvious metric, those numbers don't tell the whole story because we have no way of knowing the total number of backcountry users. Without that data, we can't know the true accident rate – the number of accidents in comparison with the number of users.

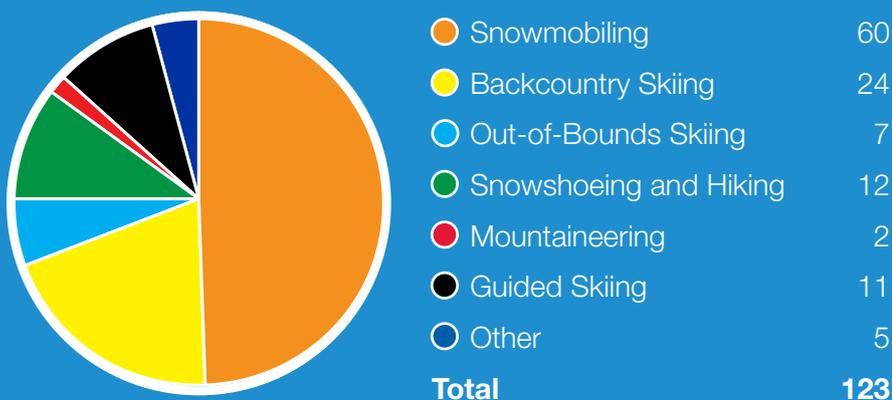
We do know backcountry use is on the rise. The backcountry skiing market, once niche, is now attracting the attention and investment from major ski companies. Mountain snowmobiles are a growth product for manufactures. And there is a noticeable increase in media coverage of backcountry activities, from newspapers to broadcast media to speciality magazines.

Backcountry use is becoming 'normalized' as more people venture into the winter wilderness. In light of this growth in users, the relatively stable trend in avalanche fatalities reflects positively on our efforts. Through awareness and education, we continue to encourage the respectful and responsible use of Canada's magnificent winter mountain terrain.

Avalanche Fatalities 2009 – 2018 By Location



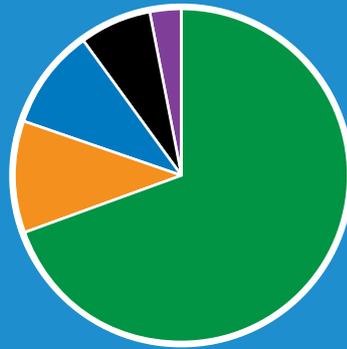
Avalanche Fatalities 2009 – 2018 By Activity



Financial Summary

Total revenues for Avalanche Canada operations were \$1.87 million, which is slightly higher than last year mostly because of the timing of payments by one of our government funders. Expenses for the year were \$1.78 million leaving a surplus just under \$90,000. This surplus was allocated the capital replacement reserve fund and the loss of funding fund.

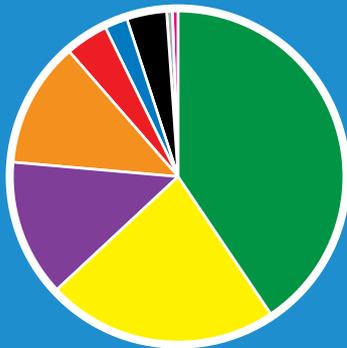
The AvID project, which is separate from AvCan operations and funded by the National Search and Rescue Secretariat, had revenues and expenses of \$664,280.



Allocation of Expenses

Public Avalanche Warning Service	1,240,891
Outreach	191,357
Youth Programs	172,532
Avalanche Skills Training Program	125,255
Projects	51,245
Total	\$1,781,280

Operating Revenue by Source

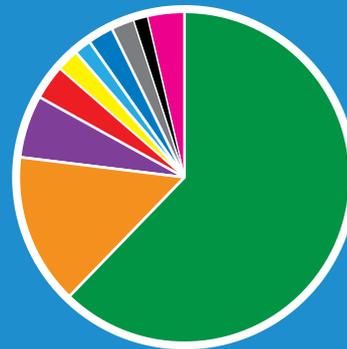


Government (Federal, BC and AB)	761,917
Sponsorships	425,238
BC Gaming Grant	250,000
Retail Sales	227,271
Other*	77,129
Project Revenue	44,843
AST Contributions**	70,097
Membership Dues	3,960
Donations	10,783
Total	\$1,871,238

*Amortization, freight, interest, recovered costs.

**Includes \$22,049 for the AST Intellectual Property Renewal.

Expenses by Category



Payroll	1,109,331
Office, Overhead, Insurance & Misc.	260,628
Travel	107,767
Amortization	61,854
Advertising & Printing	40,774
Transfers	30,000
Training & Professional Fees	41,468
Board & Consulting Expenses	44,248
Research	22,500
Repairs, maintenance, small equipment	62,710
Total	\$1,781,280

AST Handbook

Over the summer we've been developing a new student manual for the AST 1 course. Co-authored by Senior Forecast James Floyer and long-time AST Instructor Keith Robine, we are excited to get this new book into the hands of students this coming winter. Once the content is finalized we will get it translated to French and then start work on a version for snowmobilers. This new book follows the AST 1 curriculum and promises to be engaging and useful, both on and post-course.

Companion Rescue Skills Update

We're looking forward to unveiling some new material in the curriculum of our one-day Companion Rescue Skills course. Keeping abreast of new developments in the field of avalanche safety is imperative for Avalanche Canada's training programs and our courses will always reflect the latest proven technology and techniques. The new developments for rescue skills concern new techniques for more effective probing.

Multicultural Avalanche Awareness

When five members of a Korean hiking club died in an avalanche in 2016, we knew more needed to be done to reach backcountry users in other languages. We had a basic awareness brochure translated to six languages—Korean, Japanese, Punjabi, German and two Chinese dialects—but distribution to the end users has been a challenge. We are continuing to push this concept forward but need a representative in Vancouver and Calgary to work with us on this program and provide presentations to clubs and groups about the importance of avalanche awareness.

AVID Effects

As we continue work on our new forecasting program over the coming winter, there will be some changes that users will notice. While most of the program development is focused on the forecasters' workflow, we anticipate having a new ability to pinpoint areas of concern within a larger forecast region. Forecasters will be able to draw a shape anywhere on the map, which we will use to indicate when conditions differ substantially from the regional conditions. This will be a big step forward in risk communications and we're looking forward to deploying this new function.

Government Stakeholders

Avalanche Canada is grateful for support from the following government ministries and departments:



Province of
British Columbia

Ministry of Public Safety and Solicitor General

Emergency Management BC
BC Coroners Service

Ministry of Municipal Affairs & Housing

Community Gaming Grants

Ministry of Transportation & Infrastructure

Avalanche and Weather Programs

**Ministry of Forest, Lands, Natural Resources
Operations & Rural Development**

Recreation Sites and Trails
GeoBC

Ministry of Environment & Climate Change Strategy

BC Parks
Snow Survey Program

Ministry of Citizens' Services

DataBC

Government
of Canada

Environment and Climate Change Canada

Meteorological Service of Canada
Parks Canada

**Ministry of Public Safety and Emergency
Preparedness**

National Search and Rescue Secretariat

Government of Alberta

Ministry of Environment and Parks

Sponsors

Our sponsors are essential to public avalanche safety in Canada. We rely on sponsor funding for our Public Avalanche Warning Service, public outreach, and many of our education programs.

Program Partners



Premier Sponsors



Funding Partners

Supporters



ARC'TERYX



RBC Foundation



Contributors



“Recreation Sites & Trails BC is responsible for providing safe, quality recreational opportunities for the public and we have been supporters of Avalanche Canada’s work for many years. One of our most significant collaborations was a multi-year project to map all of our managed snowmobile areas with the Avalanche Terrain Exposure Scale and to make that information available to the users. This innovative approach to risk communication is highly effective and we are pleased to be part of its evolution. Avalanche Canada’s contribution to winter backcountry safety is invaluable and we are proud to support their efforts.”

John Hawkings
Director
Recreation Sites & Trails BC

"Backcountry Access and Avalanche Canada have had a special relationship since we introduced our first avalanche transceiver in 1997. During this time period, winter backcountry recreation has exploded and has evolved to include a much broader base of users than ever before, including mountain snowmobilers. Our organizations have worked hand in hand to make sure these groups all get the training, information and gear they need to play safely in avalanche terrain. We're very fortunate to have this mutually supportive relationship with the crew at AvCan."

Bruce Edgerly
Co-founder/Vice President
Backcountry Access, Inc.

"One of Whistler Blackcomb’s missions is to inspire our guests to connect with the mountain environment. With that also comes the need to better educate the user on how to respect and prepare for their backcountry adventures. Avalanche Canada has set the standard when it comes to public education, forecasting, sharing of information and trip planning. We are fortunate to have such a valuable partner here in Western Canada and are honoured to support Avalanche Canada in its goal of reducing avalanche incidents."

Doug MacFarlane
Director of Mountain Operations
Whistler Blackcomb

Avalanche Canada Board of Directors

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Cheryl Goodwin

John Irvine

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Curtis Pawliuk

Jeremy Shier

The members of the board of directors are very engaged and bring a wide set of complementary skills and expertise necessary for the governance of Avalanche Canada. The board meets regularly via conference calls five to six times per year and through face-to-face meetings on another two to three occasions. The board's executive committee generally meets weekly during operating season and every two weeks during slower periods.

Avalanche Canada Staff 2016-17

Executive Director

Gilles Valade

Avalanche Warning Service Manager

Karl Klassen

IT Manager

Will Harding

Communications Director

Mary Clayton

Sponsorship and Marketing

Jennifer George

Education and Outreach Coordinator

Nancy Geismar

Forecasting Program Supervisors

James Floyer

Ilya Storm

Avalanche Forecasters

Mark Bender, Mike Conlan, Colin Garrity, Penny Goddard, Mark Grist, Grant Helgeson, Simon Horton, Joe Lammers, Julie McBride, Josh Smith, Shannon Werner

Web Developer

Karl Guillotte

Youth Education Coordinator

Shannon Werner

Social Media Coordinator

Elyse Young

Snowmobile Outreach Coordinator

Brent Strand

Comptroller

Janis Borden

Bookkeeper

Julie Matteau

South Rockies Field Team

Jen Coulter, Martina Halik, Lisa Larson

Avalanche Canada Foundation Board of Directors

2017-18 Annual Report

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Office Administration

Pattie Roozendaal

Image: Wren McElroy

A Message from the President



The Avalanche Canada Foundation will be twenty this year. In 1998 Chris Stethem took the lead to create a foundation with charitable status to support avalanche safety. The first board of directors included such leaders as Hans Gmoser, Margaret Trudeau and Peter

Schaerer. I was honoured to be asked to be a member of the founding board.

At the outset, job one was to raise money for a daily public safety bulletin. At that time there were only two bulletins per week, available only by calling a toll-free number. We've come a long way, yet the foundation's goals remain unchanged, namely to fundraise in support of Avalanche Canada.

The foundation also administers a number of donor-directed funds, the most important being the ISSW Fund (International Snow Science Workshop). Funds generated from past ISSW workshops are designated to improve avalanche safety. For example, thanks to the ISSW Fund, we continue to be a key funder of the Chair in Avalanche Risk Management at Simon Fraser University held by Dr. Pascal Haegeli.

Your foundation is run by a dedicated volunteer board of directors. We've all been affected by avalanches in some way and are passionate about supporting the work of Avalanche Canada. The foundation needs your help. It relies on support from donors and sponsors who are passionate about safe winter travel in our mountains.

Support Avalanche Canada and avalanche safety in Canada. Consider renewing your donation to the foundation and attending one of our fundraisers. Better yet, get involved and volunteer. We are always looking for new board and committee members. I'd love to hear from you.

Stay safe and enjoy the mountains.



Gordon Ritchie,
President





The inaugural Dam Fondo was a great success. Riders enjoyed a memorable bike ride, topped off by an unforgettable day of heli-hiking. **Images:** Jim Hall



Fundraising

The Avalanche Canada Foundation is very proud of the many fundraising activities we undertake to support Avalanche Canada. Our annual benefit in Calgary has been highly successful for many years but we don't stop there. Our creative and dedicated board is always thinking of new ways to attract attention to the cause of public avalanche safety.

A great example of this creative approach was the inaugural Dam Fondo, held in July. A group of 35 cyclists rode from Revelstoke to Mica —between two dams on the Columbia River. The 145 km ride was fully supported and with sunny skies and pleasant temperatures, the first annual Dam Fondo exceeded expectations.



The group stayed at the beautiful CMH Monashee Lodge for two nights and enjoyed a spectacular day of heli-hiking in the beautiful Monashee Mountains on day 2. Alpine Helicopters provided the transportation to glaciated peaks, craggy bluffs and pristine lakes. Back at the lodge, a relaxing hot tub, refreshments on the deck and a gourmet dinner capped a perfect day. Day 3 was the return ride back to Revelstoke, on the banks of the scenic Columbia.

Thanks to these sponsors for helping make the Dam Fondo a success:

112 Restaurant
Alpine Helicopters
Best Western Revelstoke
Cheers Liquor Store
CMH Heli-Skiing
Ridley's Cycle
Skookum Cycle and Ski

Fundraising

Calgary Fundraiser, March 7, 2018

Once again the Calgary fundraiser was held at the Fairmont Palliser hotel. Over 200 guests heard from guest speaker Jennifer Coulter, leader of Avalanche Canada's South Rockies field team, who gave a great talk on how that busy team complements the work of the forecasters in Revelstoke. Over the past five years, over \$400,000 has been raised at the ACF Calgary Fundraiser thanks to the ongoing support of our many sponsors, donors, participants and volunteers.



Image: Deb Ritchie

Art for Avalanche Canada, Whistler, April 14, 2018

This year's Art for Avalanche Canada fundraiser was held at the spectacular Audain Art Museum in Whistler. Thanks to a sell-out crowd, an outstanding auction and all our sponsors, close to \$50,000 was raised for Avalanche Canada. Ski racer Mike Janyk emceed the evening and Avalanche Canada forecaster Grant Helgeson presented on the Mt. Harvey tragedy. There was something for everyone in the silent and live auctions that focused on backcountry adventure and west coast art. A big thank you goes out to the Whistler community for their generous support as well as our sponsors: David Lewis Real Estate, The Polar Foundation, Mountain Life Media, American Friends of Whistler, Odlum Brown, and ULLR maps.



Image: Joern Rohde

Spin for Snow Safety, Vancouver, November 2, 2017

The second annual Spin for Snow Safety was again held at Method Indoor Cycling in Kitsilano. Thirty-five riders and their supporters raised close to \$14,000 to help secure a permanent home for Avalanche Canada. Thanks to all the riders and everyone who donated and a special thank you to our sponsors: Arc'teryx, G3, MEC, Jamie Armstrong of Method Cycling and Innovation Fitness in Vancouver.



Image: Lital Marom

We are grateful for these smaller yet effective fundraisers put on by individuals and groups committed to helping our cause. These include:

- Thunder Ridge Chalet's Block Party, Fernie
- Trolley Five Brewpub and Banded Peak Brewery, Calgary

Grants and Awards

In addition to \$15,000 of funding to Avalanche Canada's youth programs, the foundation provided \$40,000 in support of the chair in Avalanche Risk Management at Simon Fraser University, \$15,000 towards the publishing of a new book on avalanche risk management by Dr. Bruce Jamieson, and \$10,000 to Avalanche Quebec to fund public bulletins.

Avalanche Canada highlights

- \$10,000 for youth education thanks to the RBC Foundation
- \$5,000 for youth education thanks to the Hugh & Helen Hincks Memorial Fund

ISSW Fund

- One award of \$2,000 as well as \$21,000 in start-up funds to the Fernie ISSW organizing committee

Craig Kelly Memorial Fund

- Three awards totalling \$2,100

Al Hodgson Memorial Fund

- One award of \$1,500

Simon Fraser University

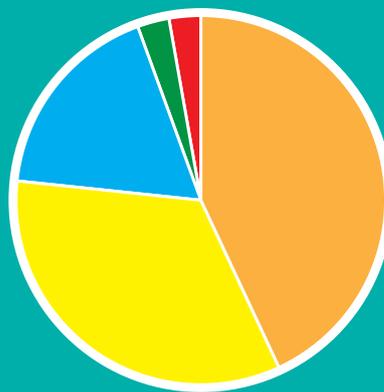
- \$40,000 was granted in support of the Avalanche Research Chair. This is the third year of a seven-year commitment totalling \$240,000

Financial Summary

The financial position of the foundation continues to improve. In 2017-18, total assets held by the foundation rose to about \$979,000 from \$874,000 a year earlier.

The Foundation provided \$100,600 in grants in support of avalanche safety: \$15,000 in support of Avalanche Canada's youth programs, \$10,000 in support of Avalanche Quebec, \$40,000 for research at Simon Fraser University, \$15,000 towards the publishing of a new book by The Canadian Avalanche Association and \$20,600 in scholarships.

Revenues 2017

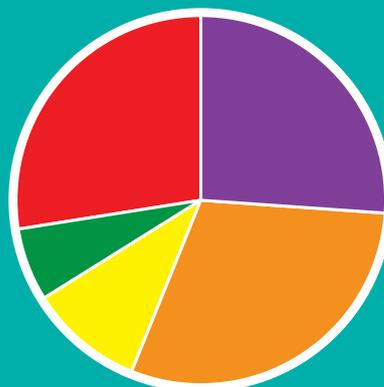


Net Fundraising*	120,784
Deferred Contributions**	94,192
Individual Donations	49,735
Corporate Donations	7,773
Other	7,047
Total	\$279,531

*Fundraising revenue less fundraising expenditures.

**Contributions for University Research and Scholarships.

Expenditures 2017



Grants to Simon Fraser Univ.	40,000
Office & Overhead***	46,081
Grants to Avalanche Canada	15,000
Grants to Avalanche Québec	10,000
Other Grants and Scholarships	41,600
Total	\$127,706

***Includes office, professional fees, travel, insurance and bank charges.

NOTE: All information is from the Foundation's audited year-end financial report as of June 30, 2018.

Supporters

Organizations and individuals who have made three-year funding commitments are recognized as Founders.

Founding Friends

Contributing \$5000 annually for three years.

**Brad & Tanya
Zumwalt**

**The Polar
Foundation**

**Gordon & Debbie
Ritchie**

**Anonymous
Donor**

Damon Ockey

Edward Hincks

Founding Contributors

Contributing over \$250 annually for three years.

**J Bruce Jamieson
Keenan Cannady**

**Ken Little
Kory Fawcett**

Kevin Williams

Supporting Foundations



RBC Foundation



**THE CALGARY
FOUNDATION**

FOR CALGARY FOREVER

Event Sponsors

Calgary Fundraiser



Art for Avalanche Canada

PRESENTING SPONSOR :



◆◆ DOUBLE BLACK DIAMOND:

AUDAIN ART MUSEUM



◆ BLACK DIAMOND:



Dam Fondo





Avalanche Canada
PO Box 560, 1596 Illecillewaet Rd
Revelstoke, BC V0E 2S0
avalanche.ca

T 250.837.2141



Avalanche Canada Foundation
PO Box 8800
Canmore, AB T1W 0C1
avalanche.ca/foundation

T 403.678.1235

High above Alexander Creek near
Sparwood, BC. **Image:** Jen Coulter