

# So You Want To Start Riding In The Backcountry:

## Part 1 - Eight things to understand as you begin the journey



### Why was this written and who is it for?

Last March ski resorts closed down in an unprecedented fashion due to COVID-19. Many people wishing to maintain their ski habit took to the backcountry, often for the first time. If you are new to skiing in the backcountry this is for you.

The timing of the closure last season was fortuitous; the Spring snowpack is often less hazardous than in Winter. The following is a primer for anyone who is starting their backcountry journey. It is stacked with resources to help make good initial decisions. These are the decisions that keep us out of hospitals and make sure we go home at the end of the day.

First of all, WELCOME. I know starting new activities in the outdoors can seem intimidating and sometimes feels like those who have already made it have closed the door behind them. Thankfully, there is enough room for us all when we are thoughtful and act in a way that benefits each other and our environment. And let's be real here, this is one of the greatest games of all time, what's not to love? Also, the more people who love what we do, the more allies we have to steward and protect the places and activities we love.

In the interest of being real, it is also a hazardous environment. I can not and will not tell anyone that they do or do not have the right to ski the Backcountry; however, we all need to understand a few things before embarking on this odyssey. Be aware it is a long, time-consuming journey to Backcountry wisdom, and navigating the road is hard work.

- People trigger 90% of avalanche accidents and usually it is someone in our own party. Most years around 40 people die in North America alone. Think about that and recognize you have to take responsibility for yourself and your actions.
- It is not only snow conditions that create hazards. Accidents can take many forms in the Backcountry.
- This season, our resources will be stressed more than ever; access, trailheads, popular sites, medical facilities, Search and Rescue teams; we need to do everything we can to protect them.

So perhaps you have skied in a resort before, maybe not. This article will look at things that ski-hills do, but we do not find in the Backcountry. Through this lens, I will highlight **eight differences that inform why we need to be excellent and savvy winter Backcountry practitioners (WHY)**. I will then use this to **define the skillset and understanding we need to develop (HOW)**, and finally, I will list some of the **first steps we can take (WHAT)**.

If we begin by defining the Backcountry as anywhere there is no Operational Avalanche Control or Medical Infrastructure, we establish why there is so much to learn.

## The Eight Backcountry Skillsets and Understandings

	<b>WHY:</b> What Ski Hills Do that doesn't happen in the Backcountry	<b>HOW:</b> The corresponding Skillset and Understanding we need to develop
1	They identify, control, and close avalanche terrain.	Avalanche Terrain & Risk Management
2	If they are aware of an accident, they provide first aid and transport you to more formal medical treatment.	First Aid and Rescue
3	At the start of the season, they prepare slopes - pack them & remove hazards (stumps, rocks, & uncharacteristic steeps, etc).	Map Reading/Navigation & Hazard Identification
4	They provide a place to buy/rent gear, purchase food and drink, go to the restroom.	Preparation
5	There is always a friendly face to answer questions and help you if you do not feel comfortable.	Planning
6	If you leave a mess, they clean it up.	Leave No Trace and Stewardship
7	They negotiate with governmental agencies and landowners to maintain access for you to play.	Advocacy
8	They groom their slopes, providing a consistent surface and snowpack.	Skiing/Snowboarding inconsistent surfaces

Throw in that at the resort; if we have an accident, we will be in the hands of qualified First Responders in minutes and doctors and surgeons, if necessary, in less than a handful of hours. In the Backcountry, unless we are at one of the passes with an open highway, it will be at least half a day before receiving initial help.

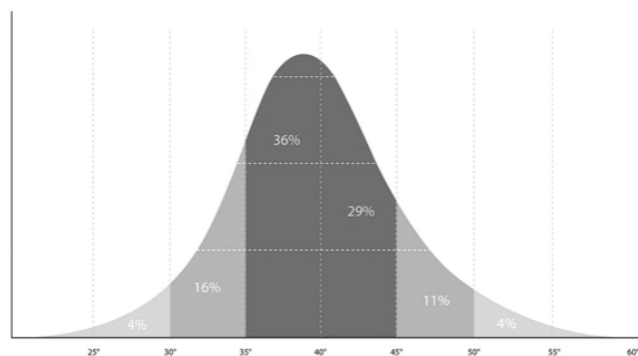
Because of these realities, **we need to develop a skill set to look after ourselves and our team.** Hopefully, after reading this, it will be apparent why a small group (3 to 5 people) will be an asset when venturing out in the Backcountry.



*Know thine enemy.*

## 1. AVALANCHE TERRAIN & RISK MANAGEMENT:

**Knowing if a slope is capable of producing an avalanche is the price of admission.** If we or someone in our party cannot recognize this when off-piste, we really should not be there. Thankfully, a \$25 inclinometer or your smartphone and some reading or a free intro class can help us figure it out. (A little hint 80% of avalanches occur on slopes between 30° and 45°.) *I cannot emphasize the following enough.* **Knowing that we are not on, below, or about to enter a slope capable of sliding is what will keep us alive.**



<http://mountainacademy.salomon.com/en/demo/50/conditions-for-a-slab-avalanche>

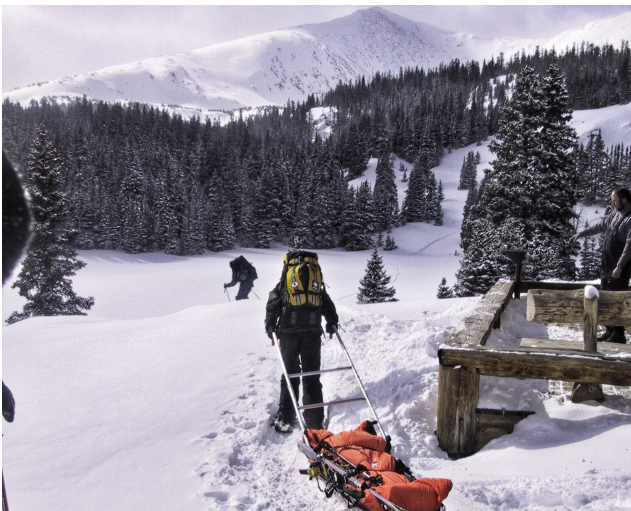
It is vital to invest in ourselves BEFORE buying that fancy AT/split-board setup unless we are riding with someone who knows. After we feel confident on our skis, can skin comfortably and transition quickly, and have taken at least one avalanche awareness class, it is then time to do a Level 1 avalanche course. It will make more sense if you have read the books first. The pursuit of understanding snow is never over; I still feel like I have a lot to learn after 20 seasons of skiing in CO and 15 others winter climbing on various continents. Decisions, whether to ride or not, must be made with a clear understanding of what we do and do not know. **There is no room for hubris (not knowing what you don't know).**

## WHAT:

# Avalanche Terrain & Risk Management

## YOUR FIRST YEAR'S WORK IS TO LEARN HOW TO MINIMIZE AND ELIMINATE EXPOSURE TO AVALANCHE TERRAIN.

- ✓ Watch "Know Before You Go." Click the link and do it right now! [www.kbyg.org](http://www.kbyg.org). Then do the online course.
- ✓ An excellent place to start learning are two books by Bruce Tremper: "Staying Alive in Avalanche Terrain" and "Avalanche Essentials."
- ✓ Also, Jill Fredston & Doug Fesler's "Snow Sense" is short and easily read.
- ✓ Learn to navigate your local Avalanche Information Center's website
- ✓ Buy a beacon, shovel and probe and practice using them - make it second nature
- ✓ Take at least one Avalanche Awareness Class; plenty of organizations run them for free.
- ✓ When you are comfortable moving around the snow, sign up for: Level 1 Avalanche course by AAIRE or AAA
  - [www.avalanche.org/avalanche-courses/](http://www.avalanche.org/avalanche-courses/)
  - [www.aiare.info/course\\_list.php](http://www.aiare.info/course_list.php)
- ✓ Add reading "Secrets of Snow" by Ed LaChappelle for a well-rounded understanding
- ✓ Take a look at Doug Latimer's Avalanche! The Guide's Guide Book



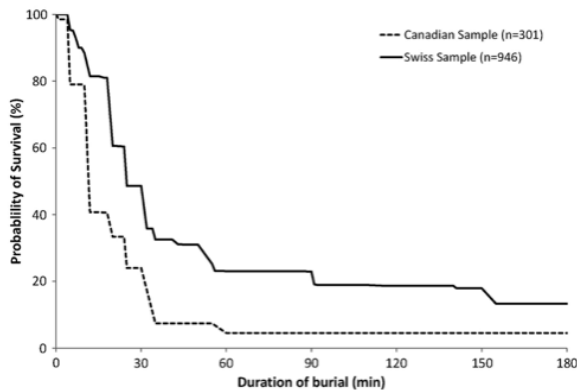
*When you do not know how to deal with a situation, you rely on others' help and kindness. Lake County SAR volunteers leaving their cozy homes to transport someone out of a hut.*

## 2. FIRST AID AND RESCUE:

**When there is no ski patrol, we are the ski patrol.** We need to ask ourselves, do my partners know enough to get me off the hill? Do we have an adequate first aid kit and the knowledge to use it? If the answer is no, it is smart to be way more conservative than we would in a resort. It may even be sufficient reason to not go out, however much we want to. I certainly gauge my partners when I am choosing lines. Avoiding problems is key; rituals and the right partners go a long way here.

At the very least, considering how long we are willing to be in pain is an astute thought. Even at Loveland Pass, it will take at least 2 hours before anyone is administering pain killers. Although please, contemplate Dr. Alan Oram's words, "Nobody ever died of pain." The pain will suck,

though, so plan for it. The real dangers are hypothermia, blood loss (internal and external), and organ and head trauma. Do you know what to do in the event of one of these conditions? Having a strategy to move your companions to shelter or remove them from the hill is another component to plan for. Also, be aware that if completely buried, a victim without trauma has a greater than 90% survival rate if they are found and dug out within 15 minutes, but only a 30% survival rate if that time stretches to 30 minutes - Swiss data from 1980-2015. Be very clear; we are our rescue team.



Comparison of the Swiss avalanche survival curve (bolded line) and the Canadian survival curve (dashed line) over the same 25-year period, from 1980 to 2015. Note the rapid drop after 10 minutes in the Canadian curve, although the curve maintains the same morphologic survival phases as the Swiss curve.

[https://www.wemjournal.org/article/S1080-6032\(16\)30237-X/fulltext](https://www.wemjournal.org/article/S1080-6032(16)30237-X/fulltext)

Many wilderness first aid courses will teach us things we will not learn in a typical first responder class; improvisation is the order of the day.

**Attending an avalanche companion rescue class is also high on the list of things to do before venturing into the Backcountry.** Again asking, "how will I feel if I do not get to my friend in time or if I have to dig up a body?" will tell us a lot. I do not wish to be a scaremonger; however, there is a real potential to deal with injury and rescue. Knowing what to do and practicing with instructors will help you if you have to deal with an accident.

#### WHAT:

### First Aid and Rescue

- ✓ Buy or put together a first aid kit and shelter. [www.outdoorgearlab.com/topics/camping-and-hiking/best-first-aid-kit](http://www.outdoorgearlab.com/topics/camping-and-hiking/best-first-aid-kit)
- ✓ Take a Wilderness First Aid Course
- ✓ Practice using your Beacon, Shovel & Probe with the people you ride with
- ✓ Practice rescue scenarios
- ✓ Take an Avalanche Companion Rescue Course - your partners will be appreciative. [www.avtraining.org/aiare-avalanche-rescue/](http://www.avtraining.org/aiare-avalanche-rescue/)



### 3. MAP READING/NAVIGATION & HAZARD IDENTIFICATION:

**Learn how to read a topographic map accurately.** They give so many clues about what to expect. As your expertise grows, you will predict what the skiing will be like by merging data from weather sites, avalanche bulletins, and maps. Modern digital maps can give us a good idea of slope-angles to find places that are not likely to produce an avalanche. However, check the slope-angle in the field; topo maps are averaged slope

*Get your map on!*

angles; this sometimes omits to show us small slopes capable of initiating a slide; this has got people into trouble and, unfortunately, killed.

When there is no one to prepare a slope for us, it is worth walking around in the summer to find out what we will be skiing over in the winter. Logs, talus, micro terrain features can all cause serious injury. At the start of a season, ski patrol not only removes elements that will cause harm, but they also pack down slopes, so we have an even and consistent pitch to ride.

Printing up a map and writing and drawing relevant data from our summer walks can help choose winter lines.

While we are at it, planning routes is one of the secret joys of Backcountry riding. Going out and seeing what we believed would happen when we studied the map become a reality in front of our face is truly a delight.

#### WHAT:

### Map Reading/Navigation & Hazard Identification

- ✓ Purchase Topographical Maps, i.e. USGS 1:24,000 to areas you want to visit
- ✓ Download topo map apps and learn how to use web-based versions of CalTopo &/or Gaia
- ✓ Read Navigation in the Mountains by Carlos Forte - OK I am biased, but after generations of "conquer it and map it" navigation is something the Brits do well,
- ✓ Wilderness Navigation by Bob & Mike Burns - is the American equivalent
- ✓ Hike places you intend to ski in the summer and look for hazards and how the map represents what you see on the ground



*Bring everything you may need with you. Shelter anyone?*

## 4. PREPARATION:

The most significant difference between resorts and the Backcountry is **there is no one to pick up the pieces when we haven't prepared properly**. No gloves mean no gloves rather than a trip to the rental store. We have to be completely self-sufficient in all areas. It is a very steep learning curve to cover all our bases unless we are with someone who can look after us. Reading books and finding useful websites will help. There is, though, no help as thorough as a qualified mentor or classes with certified instructors.

There is a lot to know to play this game safely. By starting with learning how to identify avalanche terrain and avoiding it, we give ourselves time to fill in the other parts of the jigsaw. Figuring out our gear and how to use it all takes time. We accelerate our learning by taking specific classes on Backcountry riding. I also encourage practicing doing things in the comfort of our own home. When we add the weather's vagaries to the mix, everything becomes more time-consuming. It may seem silly to play with assembling and disassembling our split board; however, our friends will love us when they are not waiting in a cold wind as we fumble.

Fitness also plays a much larger part in our enjoyment of skiing in the Backcountry as opposed to the resort. Working on training within our Aerobic threshold in the months preceding the season pays huge dividends.

Finally, if you are new to all this, be kind to yourself. However, forgetting things can lead to a large amount of discomfort and worse. As we learn about what we carry and how to use it, it is worth making lists. A packing list goes a long way to making sure we have everything until it is second nature. Spreadsheets really can be our friends.

### WHAT:

## Preparation

- ✓ Seek out a mentor
- ✓ Make and laminate a gear list and use it until you don't need to.
- ✓ Spreadsheets are our friends
- ✓ Read Martin Volken's: Backcountry Skiing: Skills for Ski Touring and Ski Mountaineering, or,
- ✓ Rob Coppolillo's The Ski Guide Manual: Advanced Techniques for the Backcountry
- ✓ Check out Mark Smiley's online course [www.mtnsense.com/p/backcountry-skiing](http://www.mtnsense.com/p/backcountry-skiing)
- ✓ Check out [www.WildSnow.com](http://www.WildSnow.com) - Lou Dawson has been analyzing & documenting backcountry exploits & making them accessible for decades
- ✓ Find classes and useful websites and YouTube channels



*Planning a ski trip. They all came back alive!*

## 5. PLANNING:

I like to think that our community is welcoming, knowledgeable, and kind, but **we cannot count on strangers' help or advice.** Therefore, having an idea of what we want to ride and reading guidebooks or finding online articles to inform and inspire us keeps the stoke alive both before a mission and out of season. Google Earth, Caltopo, and other digital mapping apps are incredible resources. The neat thing about digital maps is that they can be annotated, saved and updated. Having

done the research, printed descriptions, maps, etc., make sure to carry that information on the hill. We can never do too much planning! I annotate maps with the information I will need on the mountain. For instance, I mark distances and bearings for escape routes that avoid hazards. When you do not have to stop and work out this information, it inspires confidence, and it removes a lot of stress if things are "interesting." We can also record where we are likely to find non-avalanche terrain and good skiing based on and weather reports.

Read the avalanche bulletin and weather forecast. What aspects and what part of the mountain (Alpine, Tree Line, Below Tree Line) are indicating increased risk levels? Does the map suggest areas to travel through that will have the least exposure to risk? How much exposure to risk is your team willing to accept? Knowing these details before you go out onto the hill, you are more likely to make better decisions when out and not be sucked into emotionally biased choices. Plans need not be set in stone, but using accurate data helps guide the right decisions. "That powder over there looks so amazing" has come back to haunt too many people. Studying maps of avalanche paths, on the other hand...

If you watch guides, they have a database of potential routes (aka run atlas). They will look at the bulletin, extrapolate the critical information, and cross-reference it with their run atlas. As someone newer to the game, you need to cross-reference the bulletin with the area you are thinking of visiting before going out and decide whether areas are Go, Maybe, or No Go. Use this planning to not be seduced when out in the snow.

### WHAT:

## Planning

- ✓ Subscribe to forecasts like Open Snow and Seth Linden's Weather Report
- ✓ Read the local Avalanche Forecast every morning - look for patterns & understanding
- ✓ While you are there, read some accident reports and observations
- ✓ Purchase Guidebooks and these books will have you dreaming in the dry months.
- ✓ Peruse local Backcountry Websites for ideas.
- ✓ Build a Spreadsheet template to collect all the information you need for any tour.
- ✓ Read this short article on ["the Run Atlas"](#) by Rob Copolillo





## 6. LEAVE NO TRACE AND STEWARDSHIP:

One of my biggest fears this year is that we are going to trash our already stressed playgrounds. **I particularly worry that we may lose access to places I love.** We have to make sure that we look after these unique places; a good starting point is Leave No Trace.

The sooner this sinks in, the better.

### The Leave No Trace Seven Principles

- Plan ahead and prepare.
- Travel and camp on durable surfaces.
- Dispose of waste properly.
- Leave what you find.
- Minimize campfire impacts (be careful with fire).
- Respect wildlife.
- Be considerate of other visitors.

Following these simple guidelines will go a long way to maintaining our environment and access to it. I also encourage everyone to join organizations that actively steward and look after the land as we will learn more about what we can do to play our part. We will also see the amount of time and work invested for us to play. When we know the potential damage we can cause, we can evolve our practices. We become stewards when we not only clean up after and educate ourselves; we also clean up after and inform others.

#### WHAT:

### Leave No Trace & Stewardship

- ✓ Read: [www.lnt.org/wp-content/uploads/2018/10/Leave-No-Trace-Backcountry-Snowsports.pdf](http://www.lnt.org/wp-content/uploads/2018/10/Leave-No-Trace-Backcountry-Snowsports.pdf)
- ✓ Checkout: <https://winterwildlands.org/about-winter-wildlands-alliance/>
- ✓ Do some voluntary trailwork in the off-season



## 7. ADVOCACY:

As already alluded to, riding pristine powder is based on our having access to public lands. The US is lucky because National Parks were created to provide recreation opportunities for the public while also protecting the land. The National Forest and BLM have similar remits while also balancing the needs of rural industries. Our recreation is not a right per-se; it is dependent on us looking after the resources we use. Throw into the mix that lately, we have seen the reduction of both operational finances and the amount of land protected, and we have a recipe for losing access unless we both fight for it and preserve it. Join the increasing number of athletes involved in advocacy; our pastime probably depends on it.

*If you love it, it's worth fighting for.*

While we are at it, let's recognize that welcoming everyone is a double-edged sword. By inviting more people in, we place more stress on our wild places, so we have to be more diligent than ever about being environmentally responsible. The flip side is we have more perspectives, stewards, and advocates available, and we are going to need everyone we can bring on, especially on the current trajectory. The bottom line is we need all the help we can get. So **let's be welcoming to everyone, not just people who look or sound like us.** We have to be realistic and open to what this truly means. There is no room for "fragility" or bigotry when considering this. The benefit is that we will see many interpretations of the beauty of what we do and where we do it. We will also learn indigenous ways of thinking about and looking after wilderness. These have protected our resources for generations.

### WHAT:

## Advocacy

- ✓ Join advocacy groups
- ✓ [www.protectourwinters.org](http://www.protectourwinters.org)
- ✓ [www.outdooralliance.org](http://www.outdooralliance.org)
- ✓ [www.accessfund.org](http://www.accessfund.org)
- ✓ [www.recreateresponsibly.org](http://www.recreateresponsibly.org)
- ✓ Follow some backcountry users who have a different lens through which to see the world:
  - ✓ i.e. @theGreenEvan, @LenNecefer, @sacredstoke (Connor Ryan)



*Skiing crap snow is part of the deal.*

## 8. SKIING/SNOWBOARDING INCONSISTENT SURFACES:

Finally, the reason we came here in the first place. I want to put it out there that skiing in the Backcountry is challenging. It is not for everyone. First of all, we have to grind uphill. When it is time to ride, skiing is often more exacting than it is in the resort. There is no nightly groomer, no consistent sub-surface. If considering learning to ski in the Backcountry; you are not the first, and it is an enriching journey; **I humbly suggest finding**

**mentorship and training from someone who knows what they are doing and is preferably qualified.** These people will answer questions and provide drills and knowledge to build on. They will also accelerate the progressions.

At the very least, go somewhere that you can ski Backcountry snow without so much work. This will indicate if you want to invest in this game. There are several Cat-Ski operations, you can always go to a ski hill like Silverton, and if you can spring for it, Heli-Skiing will blow your mind. This year we also see [Bluebird Backcountry's](#) first full season. First of it's kind in Colorado, Bluebird is a Backcountry resort, i.e., they do not have lifts, but they do have a ski patrol, rentals, instruction, and AIARE courses. This makes it a suitable venue for novices as it is semi-controlled, there are people to give advice, and demo gear to try before you buy. It basically takes care of the first seven WHY's, leaving you to focus on the last and learn about the others. You will also find many potential touring partners, and you can take a progression of lessons. All in all, it sounds like an excellent way to get your feet wet or practice before going out on a more exposed tour.

### WHAT:

## Riding Inconsistent Surfaces

- ✓ Find mentors (with a small crew - 3 to 4 people) or a qualified mentor
- ✓ Visit [www.bluebirdbackcountry.com](http://www.bluebirdbackcountry.com)
- ✓ Take backcountry skiing classes - research the instructor's qualifications before signing up
- ✓ Hire a certified guide - [www.amga.com/hire-a-guide](http://www.amga.com/hire-a-guide)
- ✓ Go Cat Skiing or visit a mountain like Silverton on a guided day - backcountry snow without the work.
- ✓ Use local guiding services

***OK, I get it; this skiing in the Backcountry malarkey is challenging and dangerous. I still want to do it. What's next?***

Absorb all the First Steps and put a plan together for completing them. Part 2 will describe the gear used in the backcountry and will advise on necessary and optional items. Watch this space.

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**Along with the first steps for each of the eight topics, there are two other significant considerations:**

**WHAT:**

## Develop Rituals

Rituals keep us safe. They are the things we do every time we ski. We repeat them until we don't think about doing them, we just do them, and alarm bells ring in our head when we don't.

Some of the rituals we need to develop include:

Before going out:

- ✓ Decide what gear we are going to take, make a list, check the contents of our bag against it,
- ✓ Have spares in the car (batteries, drink, food, gloves, hats, etc.)
- ✓ Get the weather and avalanche forecast - cross-reference with a map & run atlas.
- ✓ Discuss with the team and chose venue/route - where do we avoid?!
- ✓ Allow everyone to contribute to the day's plan, solicit everyone's risk tolerance for the day.

At the TH:

- ✓ Recheck bag - shelter, 1st aid, beacon, shovel, probe, spare layers, gloves, food, drink, etc
- ✓ Beacon check at TH - check batteries, make sure ranges are good
- ✓ Are people still feeling the same as they were during the planning
- ✓ Has any new data come to light that will impact route choice

At Transitions:

- ✓ Did we pick up and stow everything we put down? Binding parts, skins, etc.





## WHAT:

### Choose Your Team and Mentors

I will not tell you not to go out alone (I would be a hypocrite), but you do need to understand the consequences not just for yourself but also for your family and friends. The statistics are unequivocal, if you are buried in an avalanche, and you are alone or separated from your group, there is a ridiculously high probability that you will die.

Teams of three to five people balance the ability to take care of situations without being so big as to be unwieldy and cause their own problems.

When looking for a team, you want to establish: Do your partners have a similar risk tolerance? Are they patient? Are they easy to communicate with? Do they communicate? Are they open to learning? Do they review near misses or pretend they didn't happen? If partners are claiming experience, how do they qualify it? "Dude, last year, I set off five avalanches, but I am still here, so I know what I am doing," well, that might be a cue to leave quietly. Qualities I like are humility, vulnerability, and the willingness to say, "I don't know; let's find out together."

Plus, if I am real, I am 235lbs, so I like skiing with folk who are as strong as an ox. Do you think your partner could shift 1 tonne of snow in less than 10 minutes? That is a real need. If you are hurt at the end of the day, will they work until they have nothing left, then sleep the night out with you? It is not so much about how someone is built, way more about whether they feel a sense of responsibility, and are scrappy.

When choosing mentors, I am less about the people who make a lot of noise and tell me everything they have done. I will watch for the efficiency of movement, patience with a novice, and an ability to explain, rather than "man-splain" a situation. I will be far more comfortable with someone who is asking me to share what I am seeing to help extrapolate my learning instead of showing me how much they know.

As someone who has been through the outdoor leadership certification process on several occasions, I see value in people who have them. The journey to earning them is a long one and requires a lot of measured experience, especially in the realm of taking care of situations when the shit hits the fan. Put simply, IFMGA guides are worth the money. Instructors who have many years of experience are also worth checking out. If you do not have the skill-set, employing someone who does provides peace of mind. Ask instructors and outfits to tell you about their qualifications and certifications. Do a bit of research to find out what those qualifications mean and read reviews. Best of all, talk to people who used them.

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**Finally, I know I will be asked the following question:**

***Are there places I can ski in the Backcountry where I can avoid avalanches and other risks?***

So here is my answer. Absolutely. Watch where savvy and experienced parents take their young children, but then consider how light those little bodies are to transport if something were to go wrong. I caution against you asking for people to tell you where to go until you can tell if a slope has the potential to slide. Instead, ask them to take you out and keep on asking them questions about their decision-making process.



If you are experienced, I caution against you telling people where to go. Take the novice there and share your understanding. Most easily accessed "safe" spot I know are flanked by areas that contain hazards. It is easy to follow a skin or ski track into a place we are not prepared for! Help novices rise above the need for a quick fix to an activity for which a long learning curve is far more applicable.

Let's be transparent - there is no "safe" Backcountry skiing. You are either in avalanche terrain or you are not. As said before, you need to know when you are in it and choose whether you want to be there based on accurate data. There are always hazards and risks that need to be managed.

Backcountry skiing is a constant process of taking in data and making decisions based on that data.

Thank you for reading. Let's learn as much as we can, mitigate the risks, welcome everyone, and be stewards and ambassadors for the outdoors and this fantastic activity.

Wishing you many happy days out and even more smart decisions,

Wil Rickards

#### WHAT:

### Thanks!

For the same reason I have suggested finding a mentor and taking classes, this document was evolved through the input and feedback of a number of very qualified people. So thank you, Steve Long, Carlo Forte, Ethan Greene, Markian Feduschak. And an especially big appreciation for Fritz Sperry and Rob Coppolillo who both went above and beyond in helping me shape my thoughts.