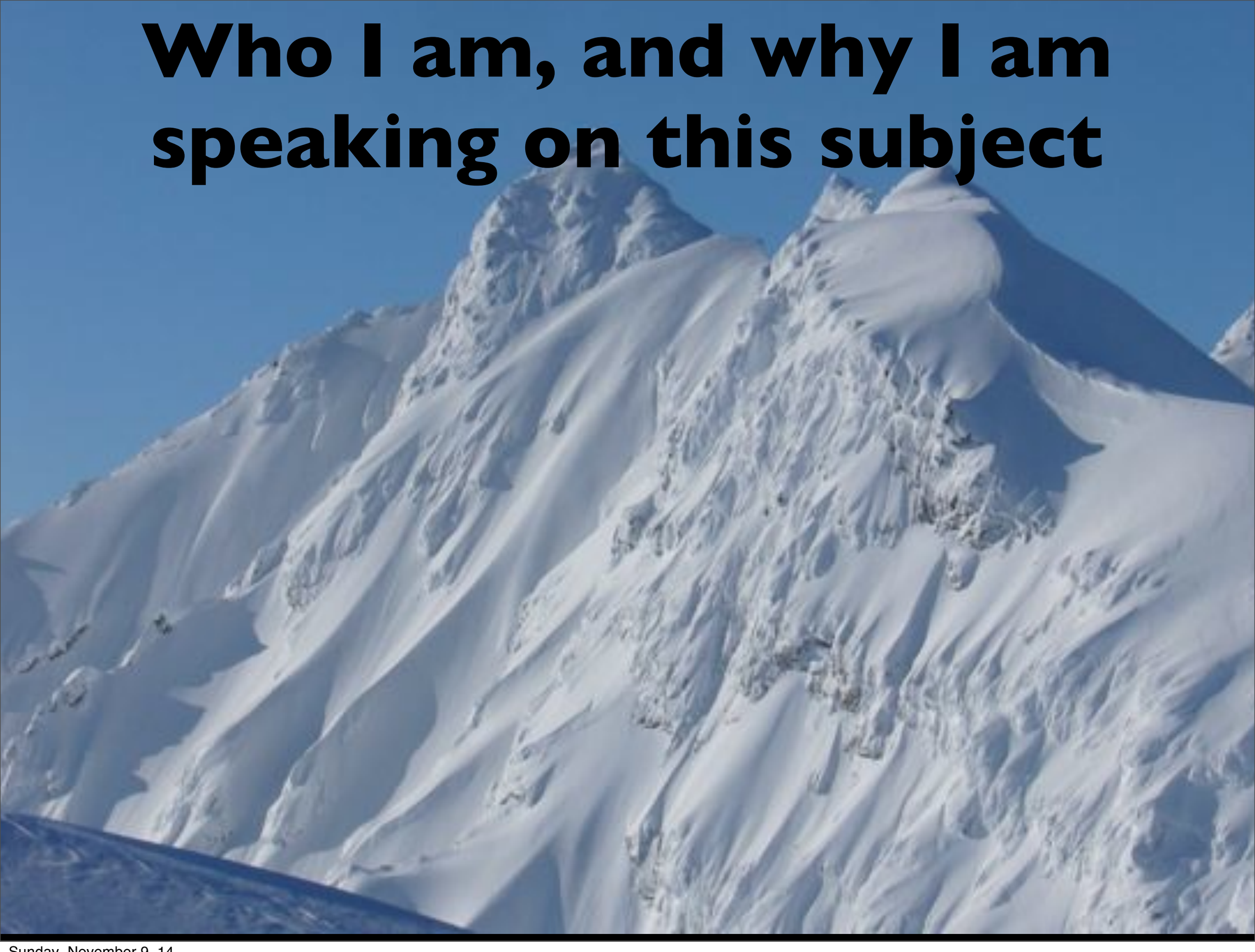
Three Hard Years for the Alaska Heli Skiing Industry

Potential underlying causes

Potential solutions to these observed issues

Who I am, and why I am speaking on this subject



Who I am, and why I am speaking on this subject

AMGA Certified Ski Mountaineering Guide

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AAA Professional Member

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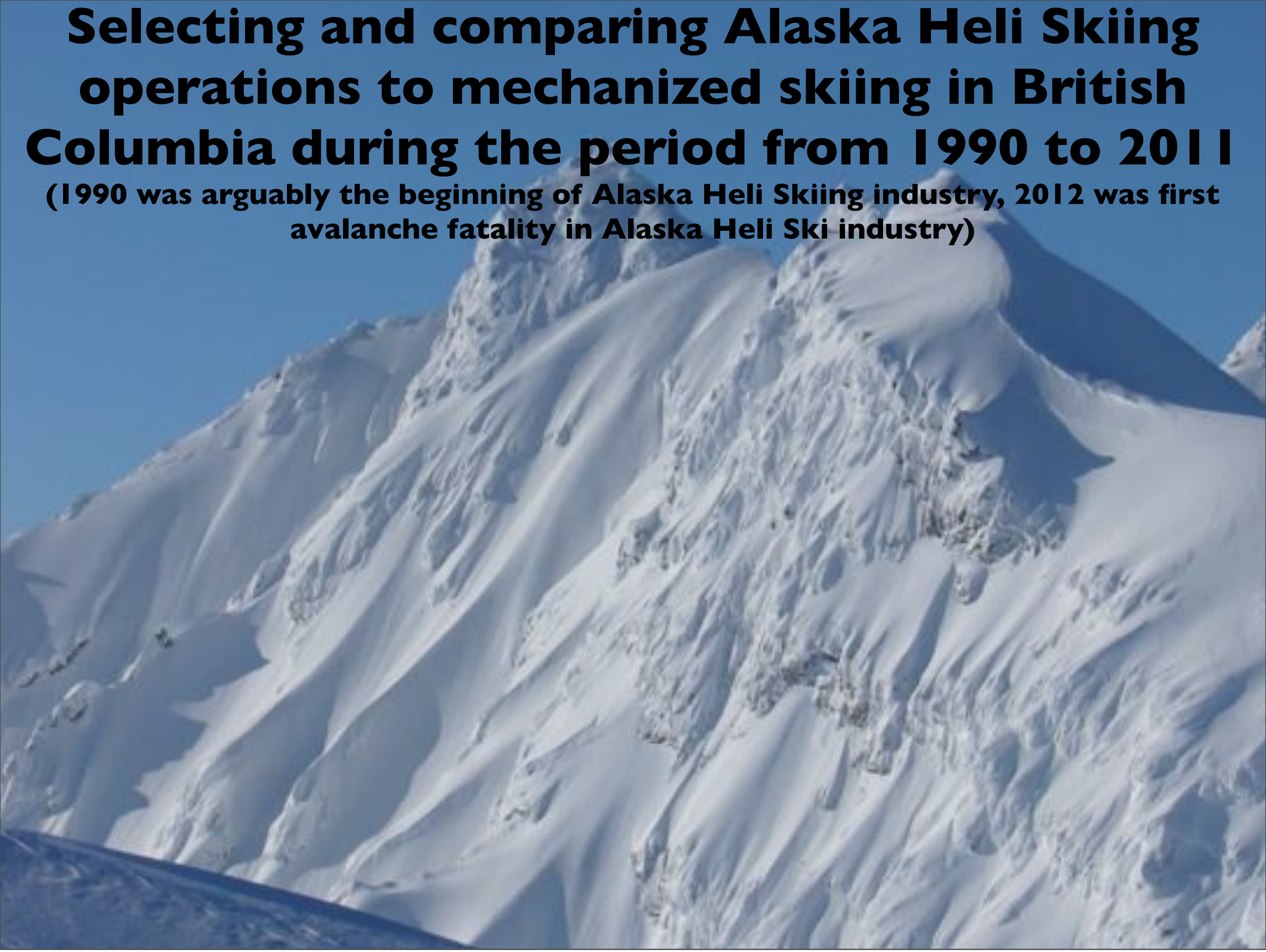
Actively employed in oil and gas industry, specializing in technical access, mountain safety, rescue and evacuation

Selecting and comparing Alaska Heli Skiing operations to mechanized skiing in British Columbia during the period from 1990 to 2011

(1990 was arguably the beginning of Alaska Heli Skiing industry, 2012 was first avalanche fatality in Alaska Heli Ski industry)



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It must be noted that BC operations have considerably higher numbers of user-days and this statistic includes snowcat operations as well. Regardless, <u>it has been proven that Alaska operations can and do operate safely.</u>

AVALANCHE PROFESSIONAL RESPONSIBILITY CODE

THERE ARE ELEMENTS OF RISK THAT REMAIN HIDDEN TO THE BACKCOUNTRY USER THAT ARE ONLY EVIDENT IN HINDSIGHT. TO UNDERSTAND WHERE THINGS 'WENT WRONG' WE FIRST NEED TO UNDERSTAND HOW IT IS THEY 'GO RIGHT'. AVALANCHE PROFESSIONALS CAN IMPROVE AVALANCHE RISK TO BACKCOUNTRY USERS AND PROMOTE MORE EFFECTIVE INTERVENTION STRATEGIES BY UNDERSTANDING THE CONTEXT IN WHICH RECREATIONAL USERS MAKE DECISIONS.

1 *Always acknowledge that 'human error' is the starting point for investigations not the end.*

2 *People around you interpret the world differently (particularly the less experienced). It is your responsibility to understand what made sense to them at the time of their decisions.*

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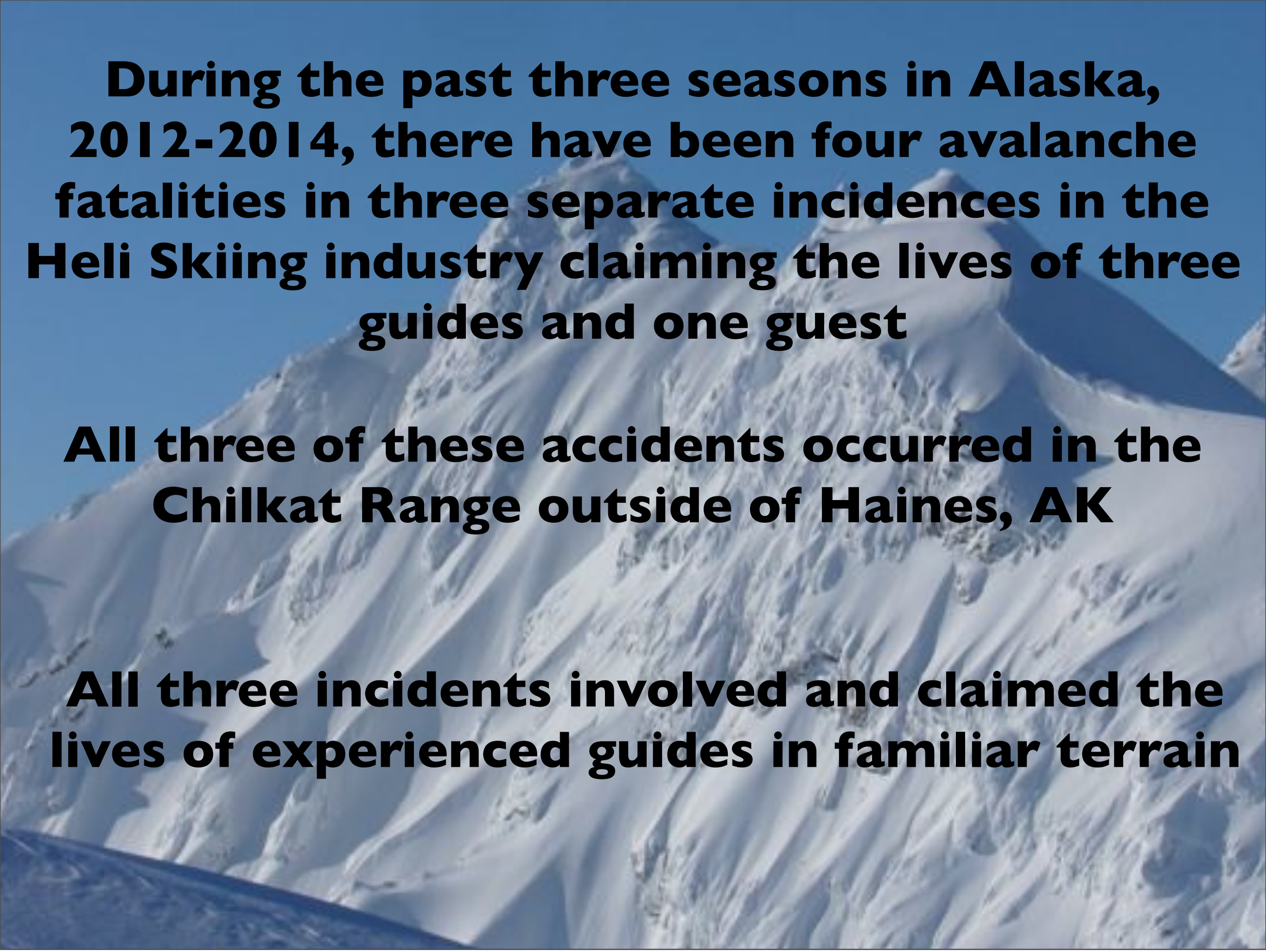
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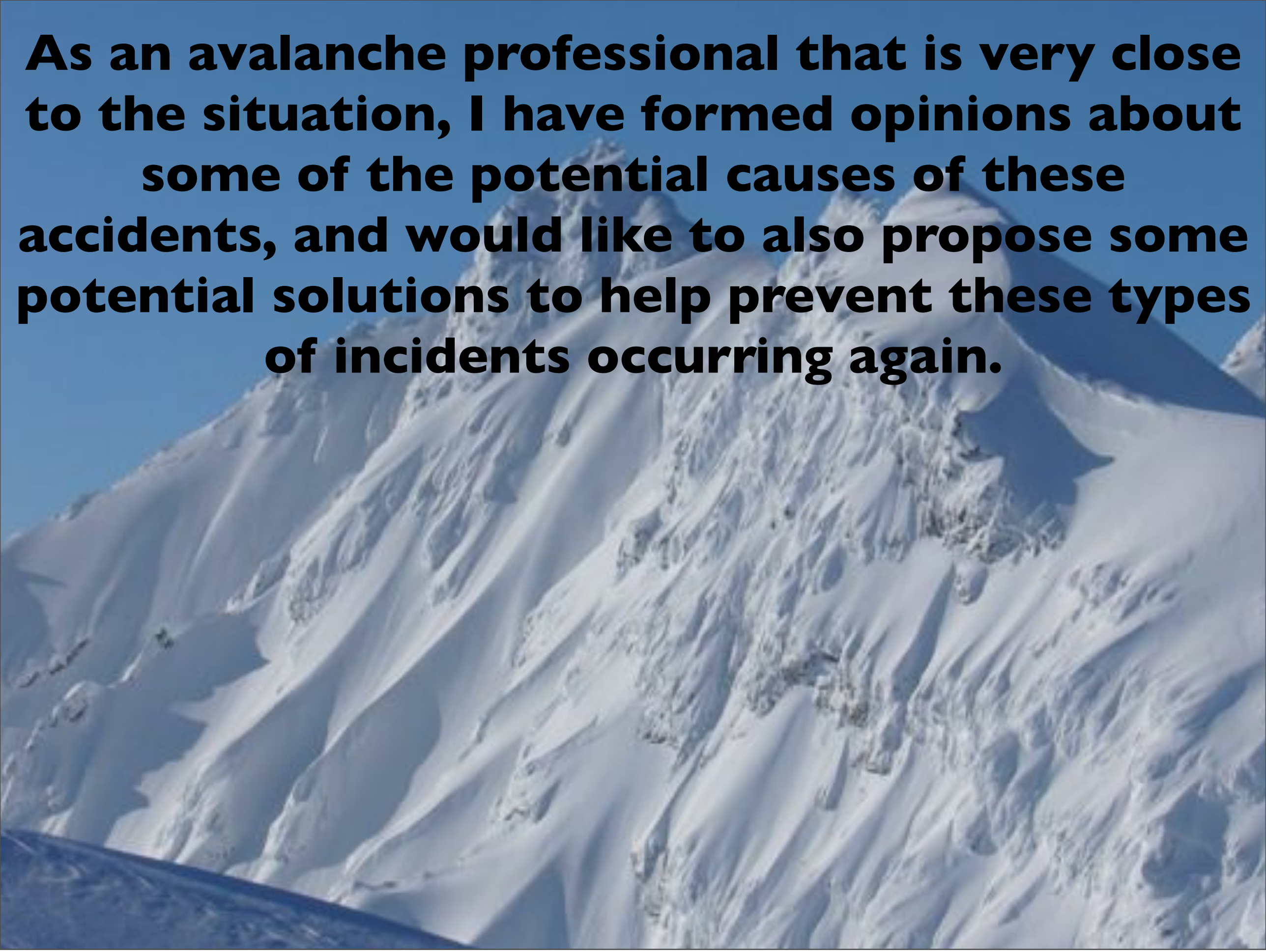
All three of these accidents occurred in the Chilkat Range outside of Haines, AK
All three incidents involved and claimed the lives of experienced guides in familiar terrain

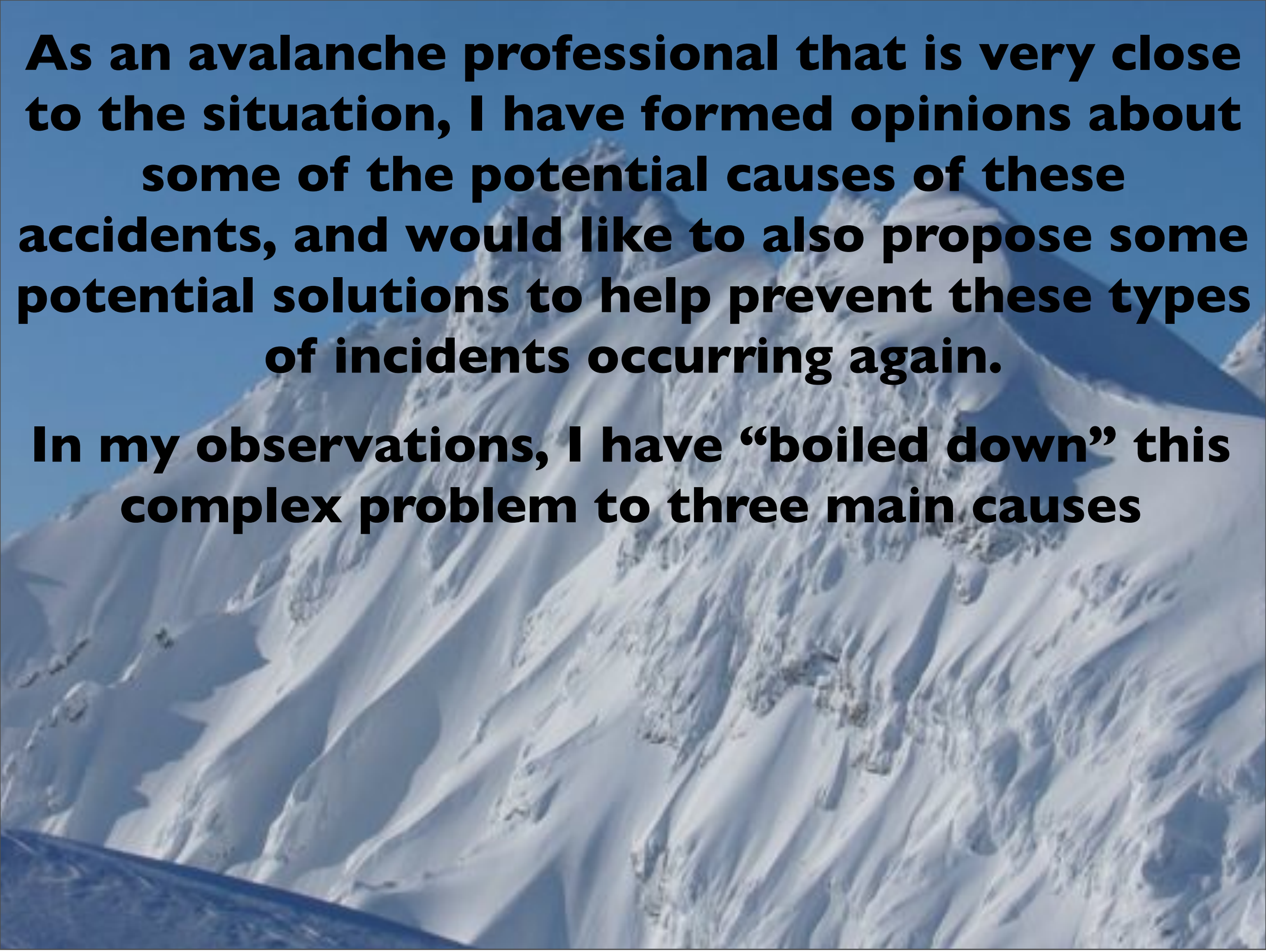
Rob Liberman

Christian Cabanilla

Aaron Karitis



As an avalanche professional that is very close to the situation, I have formed opinions about some of the potential causes of these accidents, and would like to also propose some potential solutions to help prevent these types of incidents occurring again.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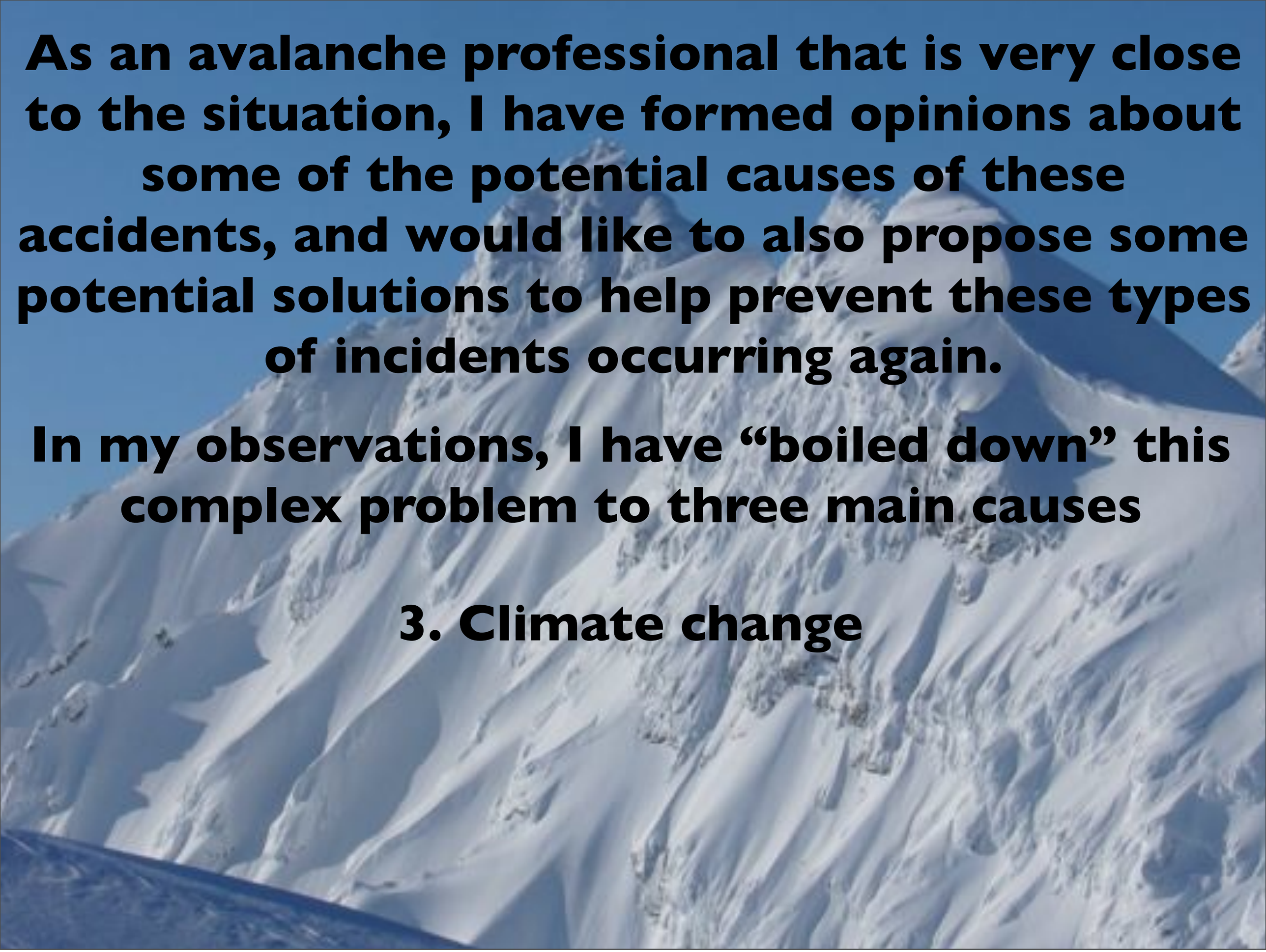
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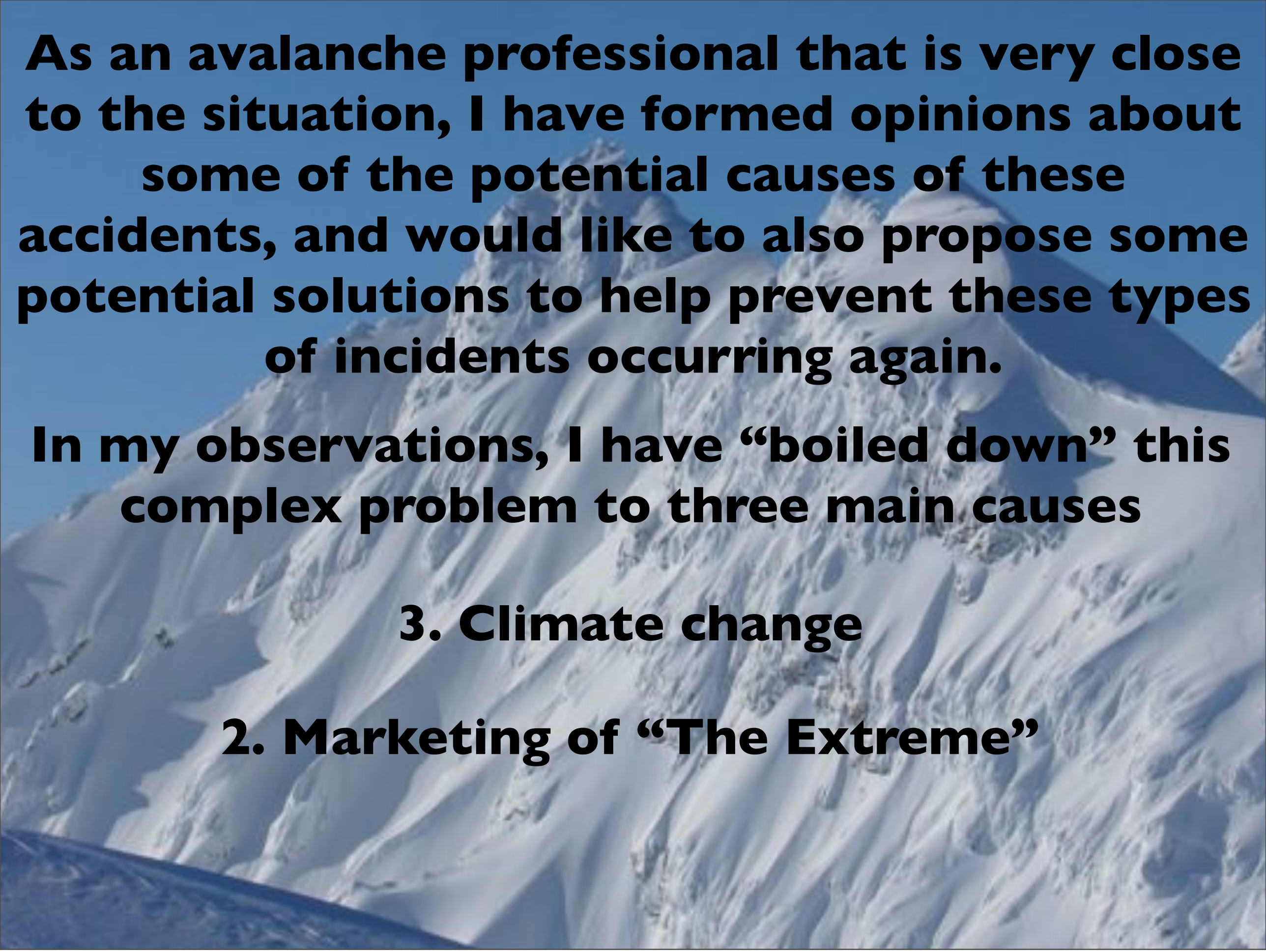
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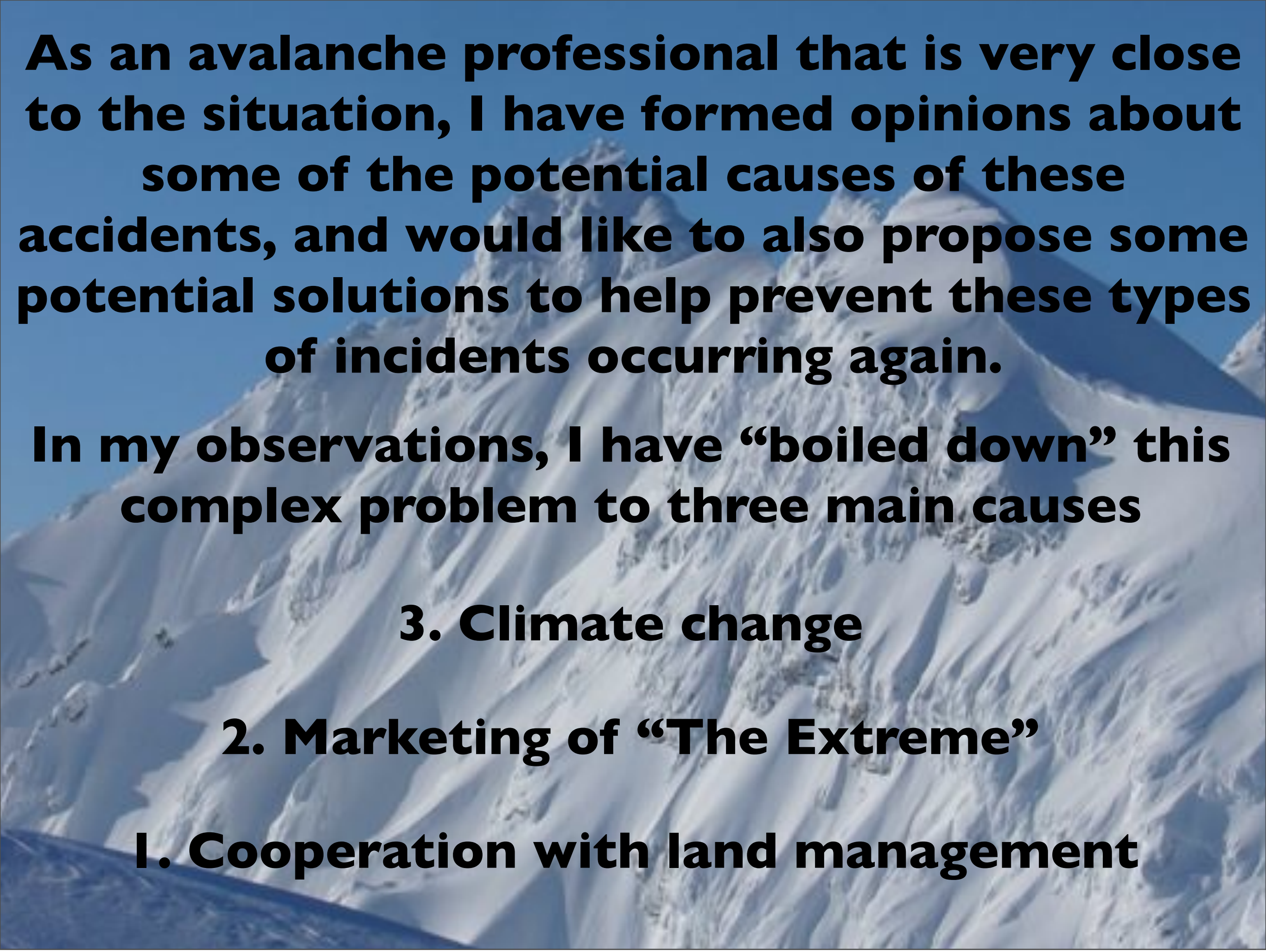
2. Marketing of “The Extreme”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3. Climate change
2. Marketing of “The Extreme”
1. Cooperation with land management

Tertiary concern: Climate Change

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As climate change progresses, we can expect to see more extreme seasonal events at both ends of the spectrum, record warm years, and record deep snowfalls.

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Along with extreme seasonal events on the macro-scale, we can expect to see more pronounced occurrences on the meso and micro-scale as well, in the form of anomalies such as more pronounced and persistent weak layers within our snowpack and differing conditions from the "historical norms"

2012

The Cordova “Snowpocalypse” of 2012

2012

Heavy Snowfall for Valdez

WINTER STORM WARNING FOR HEAVY SNOW

Snow will be heavy at times in Valdez through Friday morning.
Storm total accumulation will range from 20 to 30 inches.

Top 5 Snowfall Measured in December
Valdez, Alaska

	Snow (Inches)	Year
1.	152.2	2011
2.	137.1	1991
3.	124.5	1994
4.	123.3	1989
5.	110.0	1988

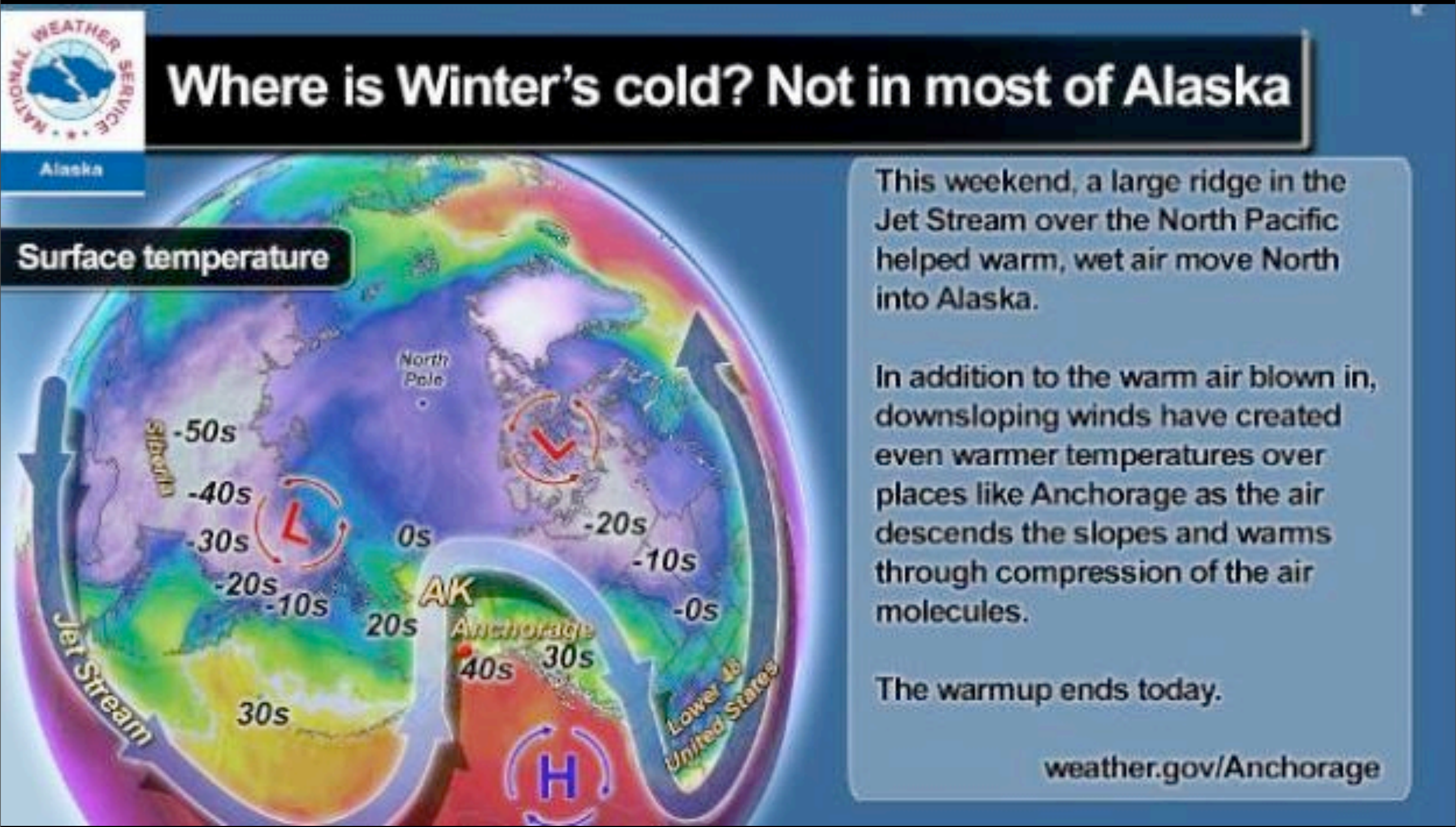
Heavy Snow

Heavy Snow

- The current snow depth (snow on the ground) is 68 inches
- The record snowfall for the season is 560 inches set in 1989-1990
- The 2011-2012 season is on pace with the record season with 246.6 inches measured as of 2 pm January 5, 2012

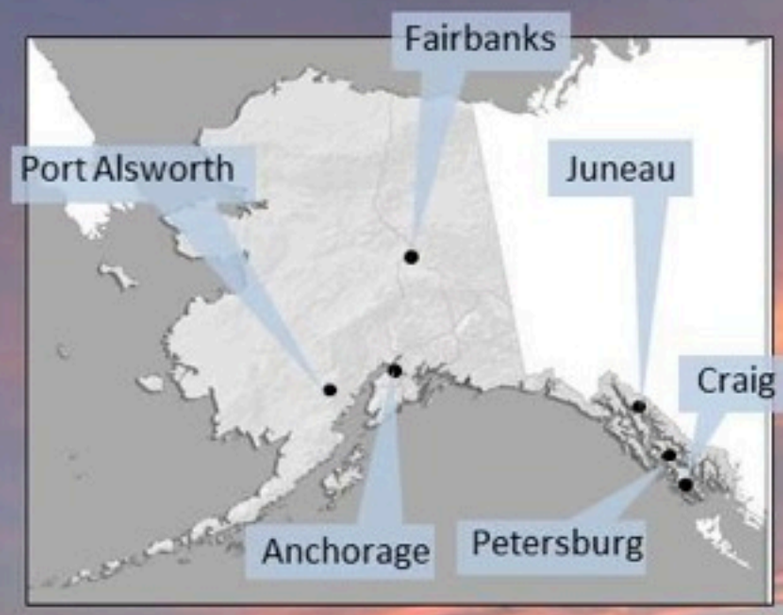
- The Average Snowfall for December is 71.9 inches
- The Average Seasonal Snowfall in Valdez is 321.1 inches

2014



The famed Alaska "Sucker Punch"

Alaska Ties All-Time January Record High



Port Alsworth reached a high temperature of 62°F Monday, tying Petersburg and Craig for the highest temperature ever recorded during the month of January in Alaska

National Park Service Photo
taken near Port Alsworth
by D. Young, courtesy of
Lake Clark National Park & Preserve

NATIONAL WEATHER SERVICE
Alaska

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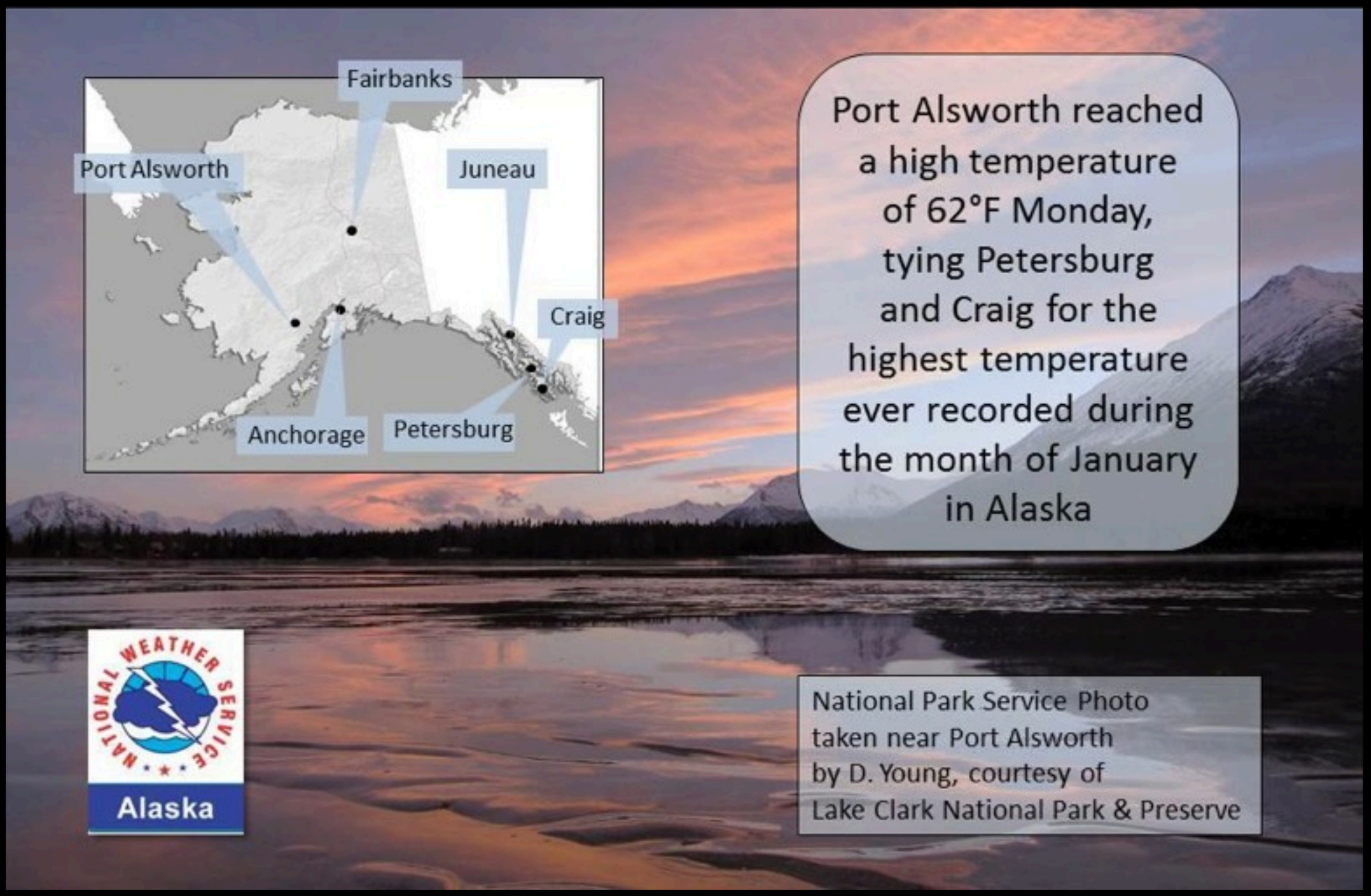

In the Chilkat Range and many other places, this "tropical sucker punch" resulted in a rain crust that was present at the highest elevations and persisted till late April causing considerable PWL concerns.

Sunday, November 9, 14

It is suspected that events that create PWL's such as surface hoar which are often limited by aspect or elevation may become more pronounced and carry across greater elevation spans

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1.5cm Surface Hoar in the Chilkat Range 2014

Some possible Solutions to the problem of Climate Change for the AK Heli ski industry:

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Success breeds complacency. Complacency breeds failure. Only the paranoid survive.

Andy Grove

Forecasters and guides need to avoid steps one & two of the "Risky Procedures" Cycle and "break the chain"

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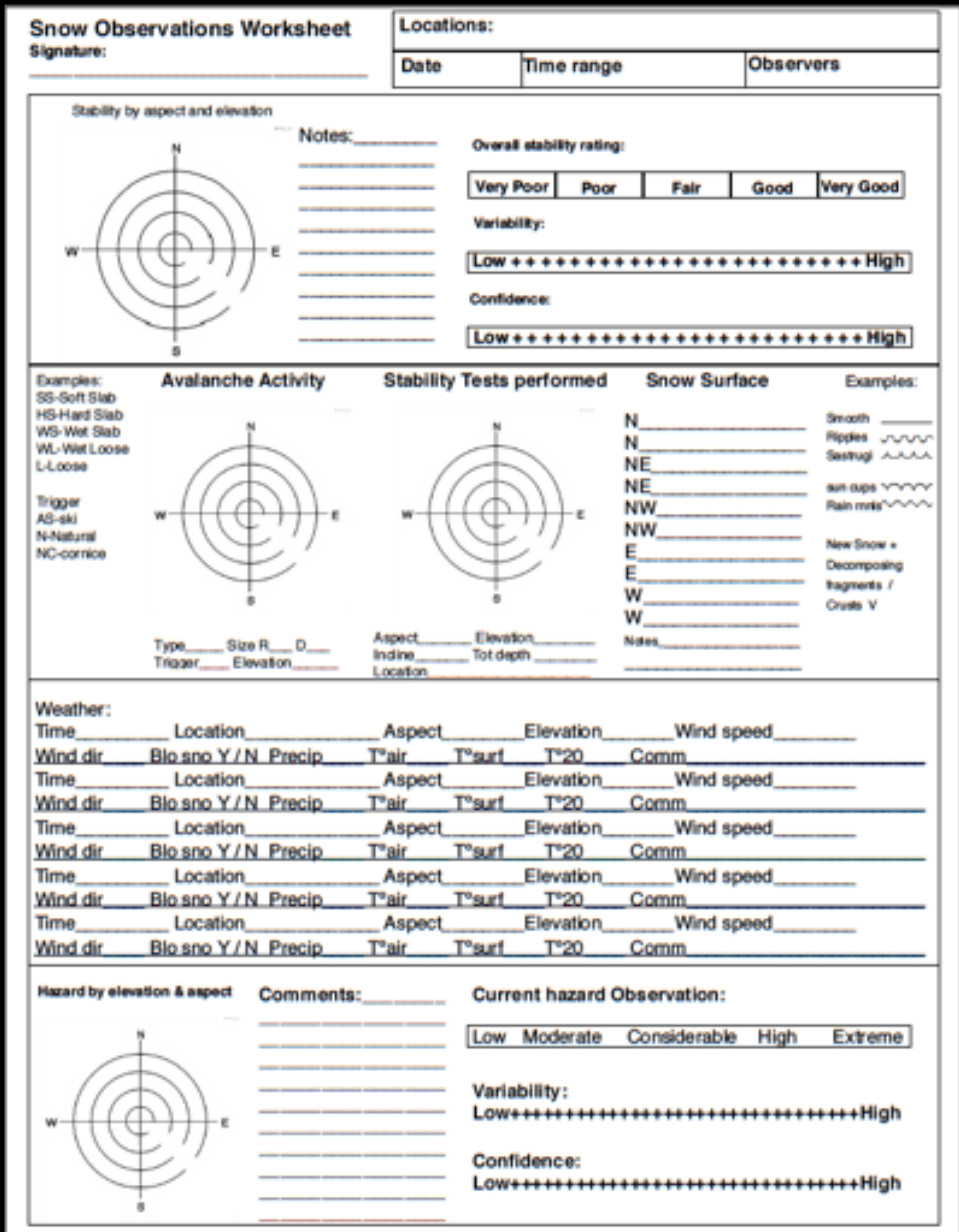
Concise documentation:


Snow Observations Worksheet
Signature:
Locations:
Date | Time range | Observers
Stability by aspect and elevation
Notes:
Overall stability rating:
Very Poor | Poor | Fair | Good | Very Good
Variability:
Low ++++++++++++++++++++++++ High
Confidence:
Low ++++++++++++++++++++++++ High
Examples: SS-Soft Slab, HS-Hard Slab, WS-Wet Slab, WL-Wet Loose, L-Loose
Trigger: AS-ski, N-Natural, NC-cornice
Avalanche Activity
Type____ Size R___ D___
Trigger____ Elevation____
Stability Tests performed
Aspect____ Elevation____
Incline____ Tot depth____
Location____
Snow Surface
N____ N____ NE____ NE____ NW____ NW____ E____ E____ W____ W____
Notes____
Examples: Smooth, Ripples, Sastrugi, sun cups, Rain runnels, New Snow +, Decomposing fragments /, Crusts V
Weather:
Time____ Location____ Aspect____ Elevation____ Wind speed____
Wind dir____ Blo sno Y / N Precip____ T°air____ T°surf____ T°20____ Comm____
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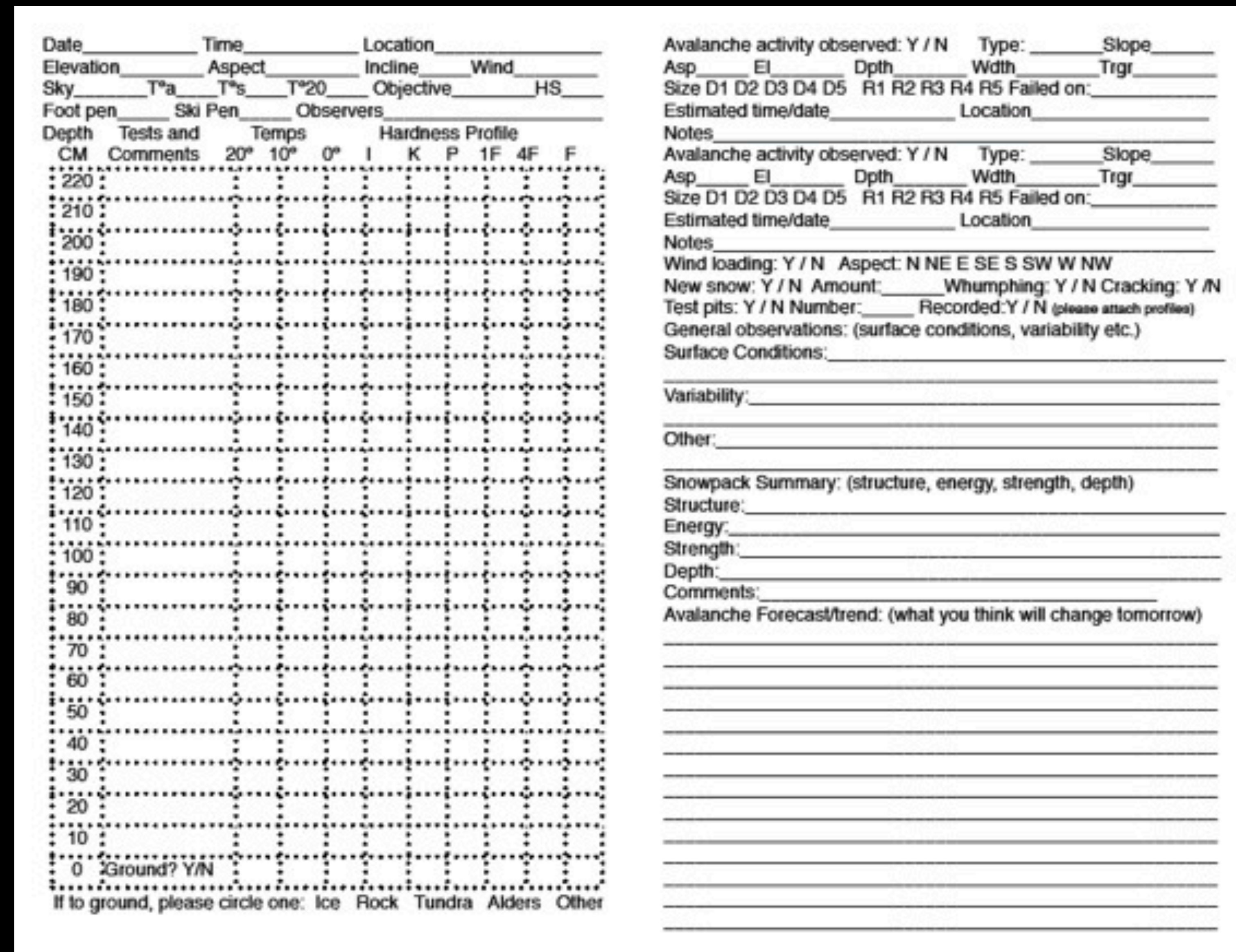
Time____ Location____ Aspect____ Elevation____ Wind speed____
Wind dir____ Blo sno Y / N Precip____ T°air____ T°surf____ T°20____ Comm____
Hazard by elevation & aspect
Comments:
Current hazard Observation:
Low | Moderate | Considerable | High | Extreme
Variability:
Low++++++++++++++++++++++++++++++++High
Confidence:
Low++++++++++++++++++++++++++++++++High


Date____ Time____ Location____
Elevation____ Aspect____ Incline____ Wind____
Sky____ T°a____ T°s____ T°20____ Objective____ HS____
Foot pen____ Ski Pen____ Observers____
Depth CM | Tests and Comments | Temps 20° 10° 0° | Hardness Profile I K P 1F 4F F
220, 210, 200, 190, 180, 170, 160, 150, 140, 130, 120, 110, 100, 90, 80, 70, 60, 50, 40, 30, 20, 10, 0 Ground? Y/N
If to ground, please circle one: Ice Rock Tundra Alders Other
Avalanche activity observed: Y / N Type:____ Slope____
Asp____ El____ Dpth____ Wdth____ Trgr____
Size D1 D2 D3 D4 D5 R1 R2 R3 R4 R5 Failed on:____
Estimated time/date____ Location____
Notes____
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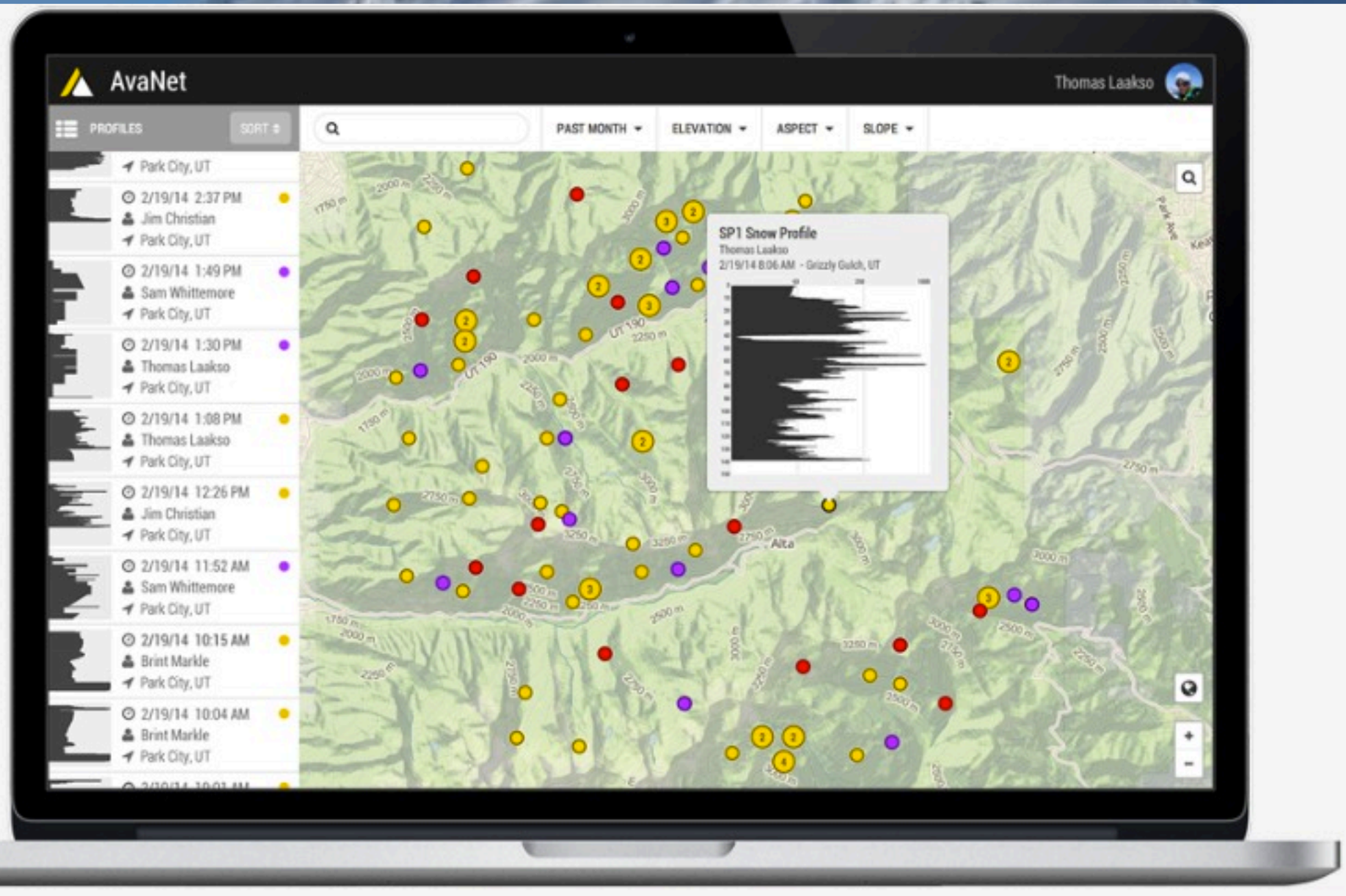
Asp____ El____ Dpth____ Wdth____ Trgr____
Size D1 D2 D3 D4 D5 R1 R2 R3 R4 R5 Failed on:____
Estimated time/date____ Location____
Notes____
Wind loading: Y / N Aspect: N NE E SE S SW W NW
New snow: Y / N Amount:____ Whumphing: Y / N Cracking: Y / N
Test pits: Y / N Number:____ Recorded: Y / N (please attach profiles)
General observations: (surface conditions, variability etc.)
Surface Conditions:____
Variability:____
Other:____
Snowpack Summary: (structure, energy, strength, depth)
Structure:____
Energy:____
Strength:____
Depth:____
Comments:____
Avalanche Forecast/trend: (what you think will change tomorrow)

At Alaska Heliskiing, we have adopted a program where every guide in the field completes a two sided worksheet, this allows for critical review of conditions observed, concise documentation and the ability to share information efficiently.

Increased information sharing between operators and forecasters is an important step towards improving forecasts, enhancing safety and avoiding complacency as climate change progresses



Avoid complacency by seeking opinions of others, concise record keeping, sharing information, being self critical of decisions and self aware of habits

Secondary Problem - Marketing of "The Extreme"

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Every guide and guide service attempts to educate their guests on the topics of mountain safety, situational awareness, conservative attitude and general mountain sense. Unfortunately they only have a brief amount of time to do this.

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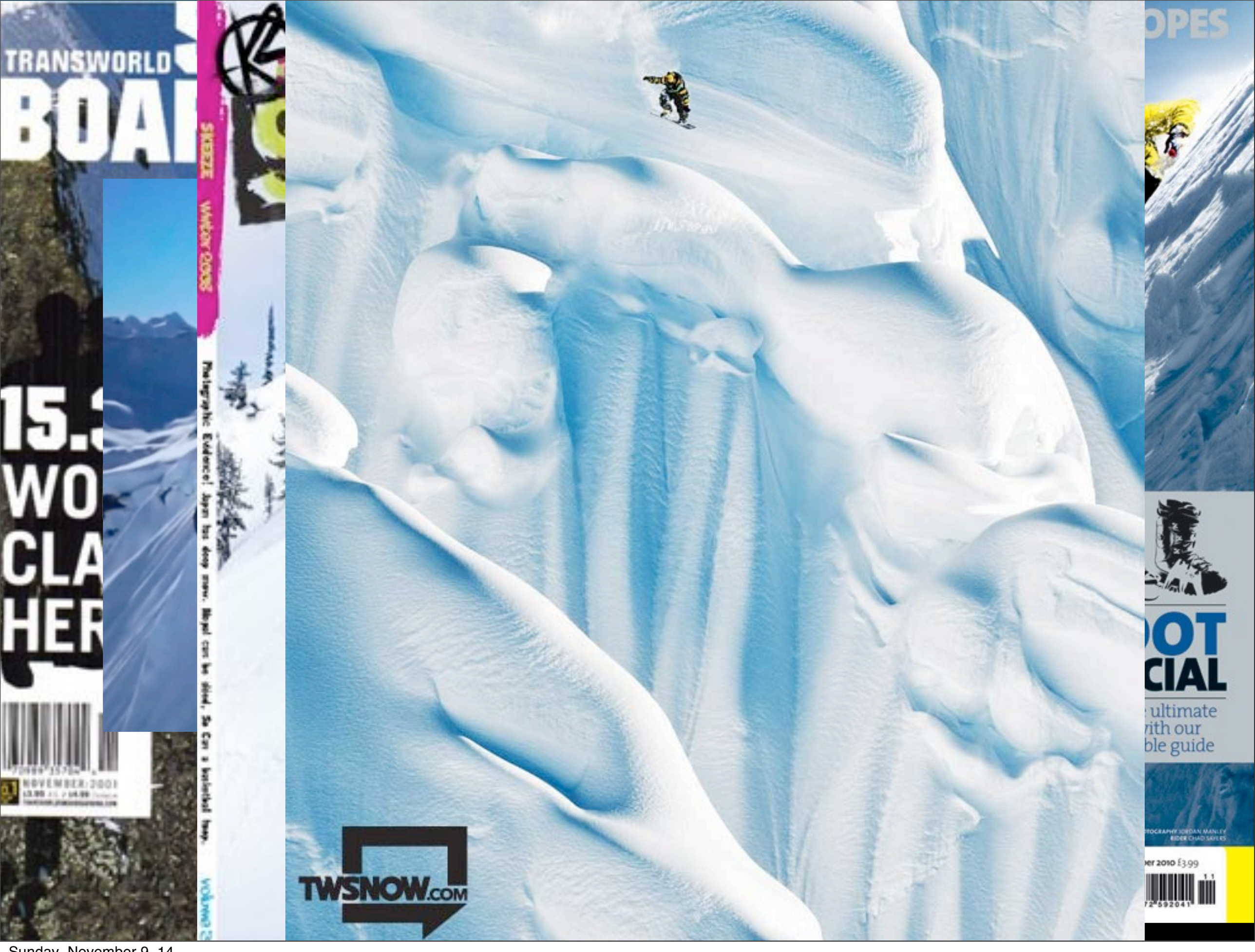
Conversely, guests are bombarded all year long with images and product marketing that counter the message of being conservative and glamorize risk taking behavior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TWSNOW.COM
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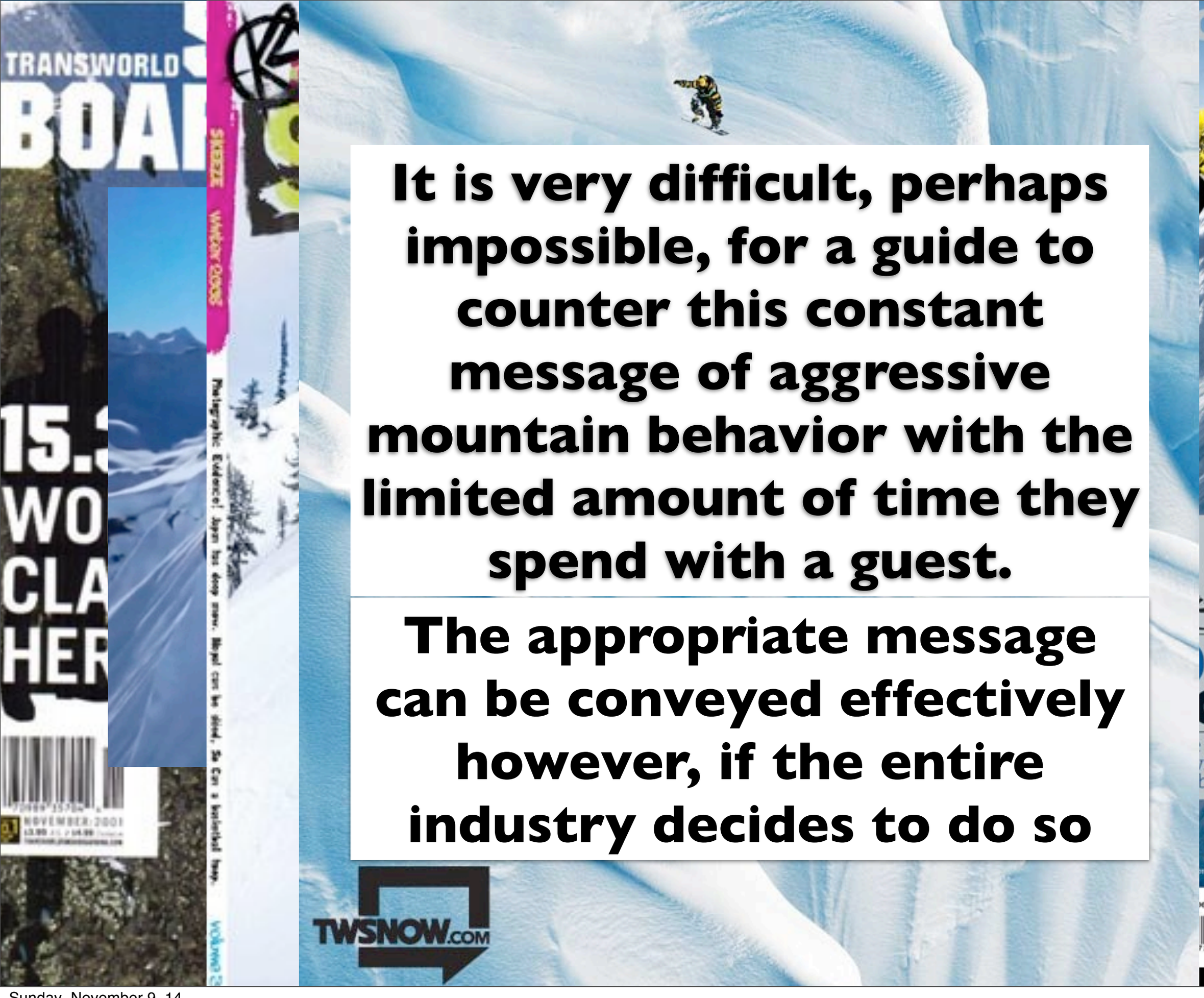
ble guide
TOGRAPHY JORDAN MANLEY
RIDER CHAD SAYLES
er 2010 £3.99

It is very difficult, perhaps impossible, for a guide to counter this constant message of aggressive mountain behavior with the limited amount of time they spend with a guest.

TWSNOW.COM

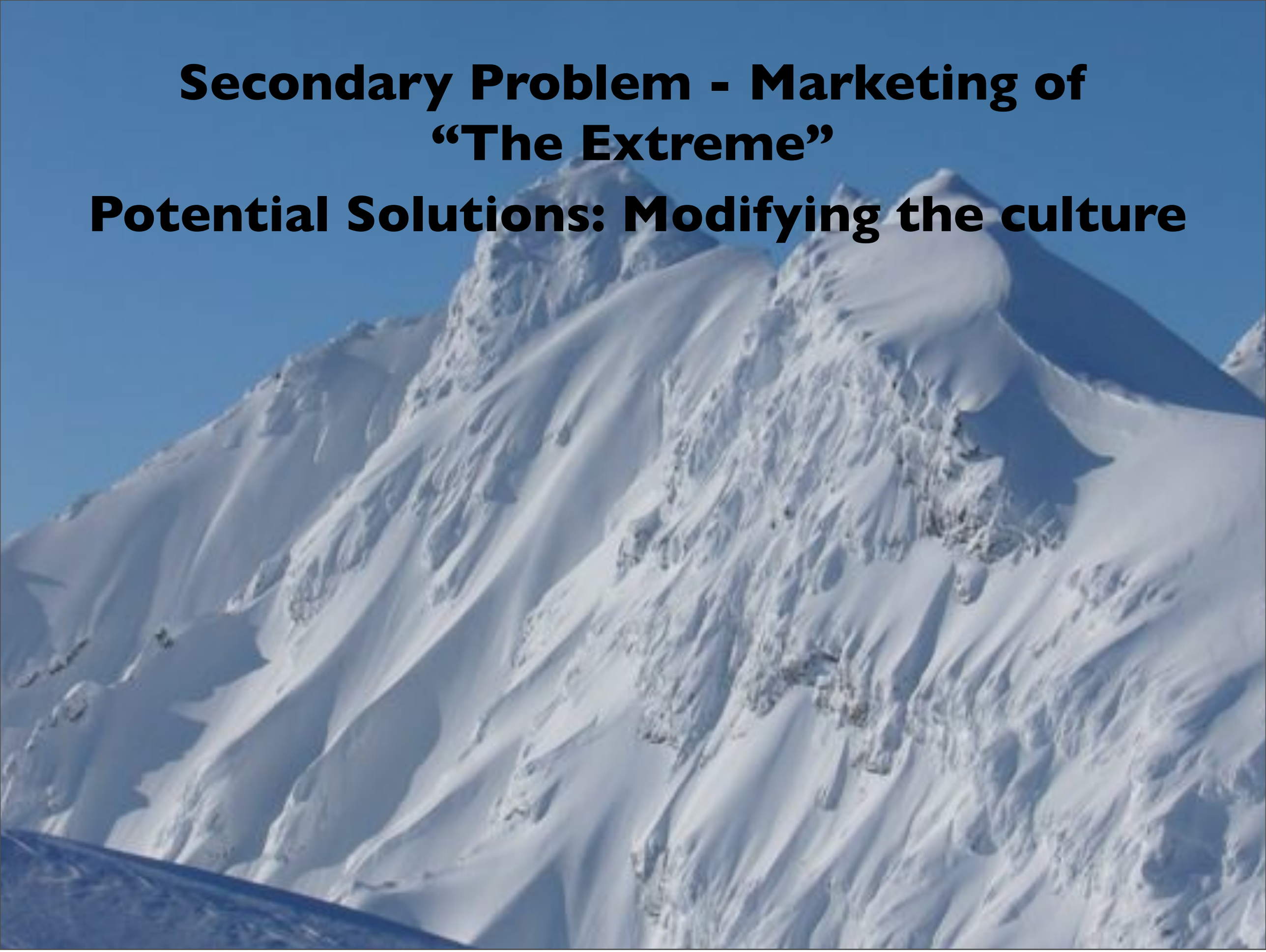


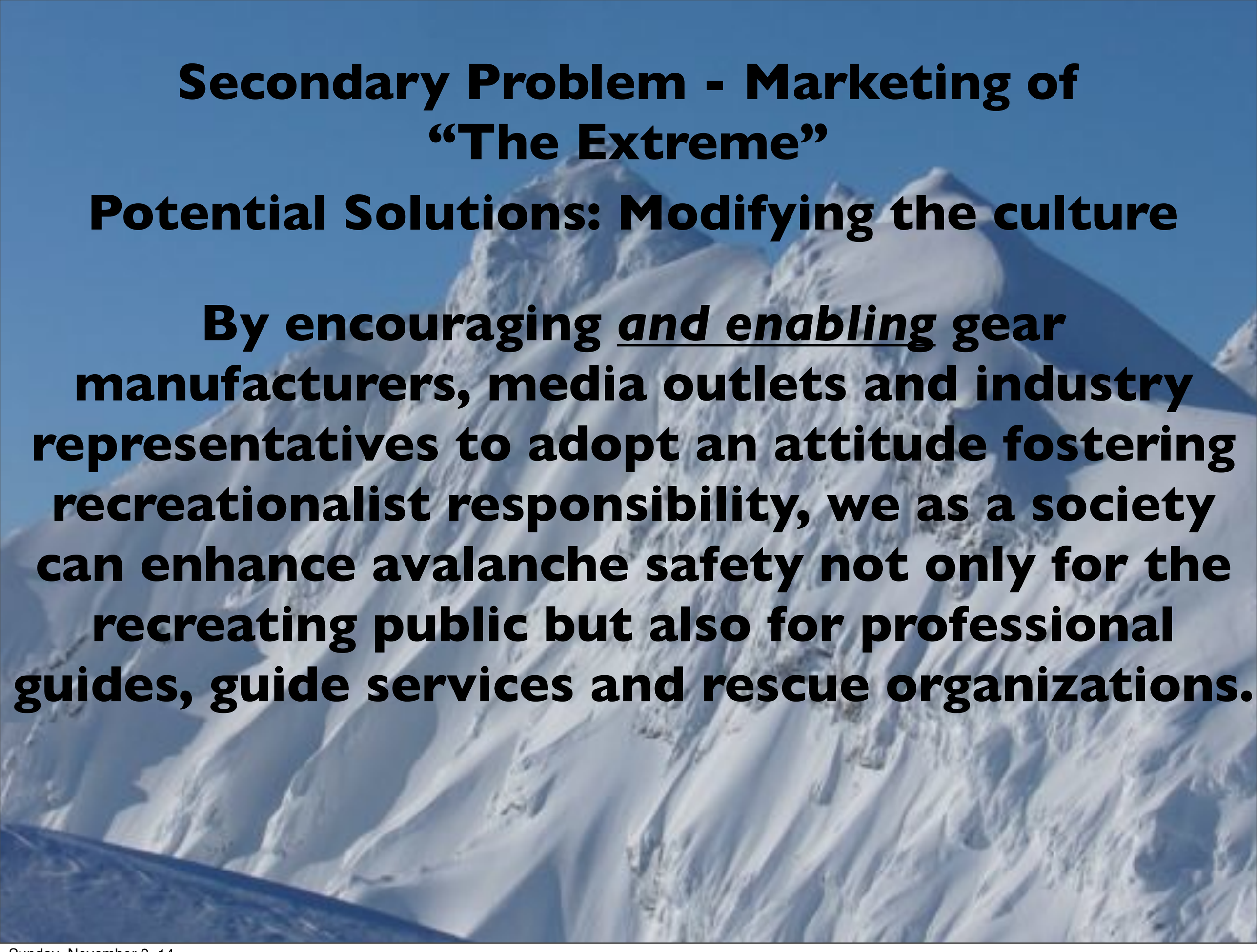
It is very difficult, perhaps impossible, for a guide to counter this constant message of aggressive mountain behavior with the limited amount of time they spend with a guest.

The appropriate message can be conveyed effectively however, if the entire industry decides to do so

Secondary Problem - Marketing of "The Extreme"

Potential Solutions: Modifying the culture





Secondary Problem - Marketing of "The Extreme"

Potential Solutions: Modifying the culture

By encouraging *and enabling* gear manufacturers, media outlets and industry representatives to adopt an attitude fostering recreationalist responsibility, we as a society can enhance avalanche safety not only for the recreating public but also for professional guides, guide services and rescue organizations.

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By encouraging *and enabling* gear manufacturers, media outlets and industry representatives to adopt an attitude fostering recreationalist responsibility, we as a society can enhance avalanche safety not only for the recreating public but also for professional guides, guide services and rescue organizations.

Can we as a society shift our culture so responsibility is as attractive as risk taking?

Leave No Trace Principles of

the framework of Leave No Trace's message:

1.
2. Plan Ahead and Prepare
3. Travel and Camp on Durable Surfaces
4. Dispose of Waste Properly
5. Leave What You Find
6. Minimize Campfire Impacts
7. Respect Wildlife
   Be Considerate of Other Visitors

For more information contact:

Leave No Trace or Osprey Packs

www.lnt.org

www.ospreypacks.com

LEAVE NO TRACE OUTDOOR ETHICS

PROJECT zero

ZERO AVALANCHE FATALITIES

PROJECT zero

ZERO AVALANCHE FATALITIES

MONASHEE POWDER snowcats

liberty

The American Institute for AIARE Avalanche Research and Education

NATIONAL SKI AREAS ASSOCIATION

NSAA

backcountry.com

NEVER SUMMER INDUSTRIES

CO | Colorado Avalanche Information Center

friends of caic

Campaign Overview

PROJECT zero
ZERO AVALANCHE FATALITIES

Phase 1
Coalition Building, Research, & Campaign Strategy

- **Commit** leadership, advisory group, and partners.
- **Secure** funding.
- **Plan** next steps in proportion to funding.
- **Research** target market attitudes related to avalanche safety and decision making.
- **Convene** stakeholder leadership.
- **Build Strategy** for modifying cultural norms around backcountry decisions.
- **Focus test** strategies and messages with target market.

Phase 2
Campaign Design

- **Brand Project Zero** logo, central and supporting messages.
- **Develop** initial content.
  - **PSA's**
  - **Web Portal**
  - **POP collateral, hangtags, stickers**
  - **Social Media**
  - **Signage**
- **Outreach** stakeholders, collaborate on message integration and distribution.
- **Launch** campaign.

Phase 3
Campaign Maintenance

- **Conduct** follow-up research to identify shift in attitudes and behavior.
- **Evaluate & Adjust** campaign as required to maximize successes.
- **Develop** high-value content
  - **Webisodes**
  - **Integrate into Popular Media**
  - **School programs**

Primary Problem - Cooperation with land management

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Questions to be considered:

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Questions to be considered:

Is there a significant difference between the land management in Valdez, AK vs Haines, AK?

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Is it possible that differing land management approaches can contribute to or detract from safe heli skiing operations?

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Questions to be considered:

Is there a significant difference between the land management in Valdez, AK vs Haines, AK?

Is it possible that differing land management approaches can contribute to or detract from safe heli skiing operations?

How can this be improved upon to enhance safety for this industry and address the concerns of all involved?

Sensational headlines grab attention, and sell copies but, there is often more to the story than the media chooses to reveal or understand

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Alaska Dispatch News
34°F Anchorage

Southeast Alaska heli-skiing company used federal land illegally, charges say

Casey Grove | December 31, 2013

RELATED NEWS

One skier killed, another critically injured in Colorado avalanche

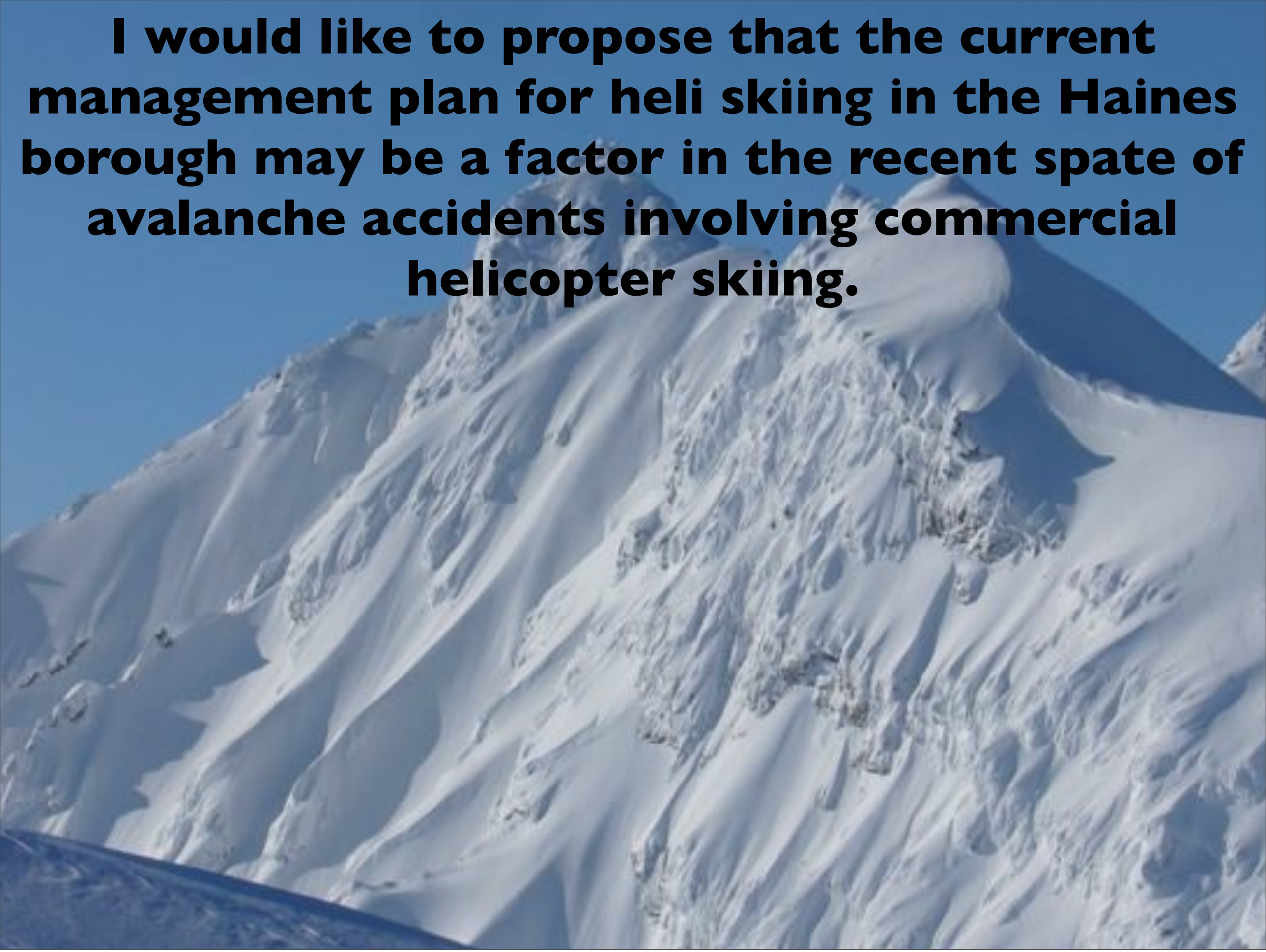
Skier killed in British Columbia avalanche

(Reuters) - A heli-skiing guide in Alaska was killed when he fell while traversing over the snow with two clients on a mountain peak outside Haines, one of the nation's top heli-skiing destinations, authorities said on Monday.

Saudi move

4 Ford calls back more than 202,000 vehicles in five North American recalls

5 Pilot actions examined in U.S. crash of Virgin Galactic spacecraft | VIDEO



I would like to propose that the current management plan for heli skiing in the Haines borough may be a factor in the recent spate of avalanche accidents involving commercial helicopter skiing.

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Helicopter ski guides carry a considerable amount of responsibility and are constantly managing a large number of extremely dynamic and complex safety and logistic concerns

I would like to propose that the current management plan for heli skiing in the Haines borough may be a factor in the recent spate of avalanche accidents involving commercial helicopter skiing.

Helicopter ski guides carry a considerable amount of responsibility and are constantly managing a large number of extremely dynamic and complex safety and logistic concerns

I believe that the current plan greatly reduces the number of safe terrain selection options available, and extremely complicates the guide and pilots decision making processes


Milepost 45
Milepost 35
Milepost 29
Wildlife Closures,
Thompson Pass Region,
November 2013
BLM Managed Lands
176,207 acres
Wildlife Closure Area
30,600 acres
Heliski Area
Highways
Trans-Alaska Pipeline
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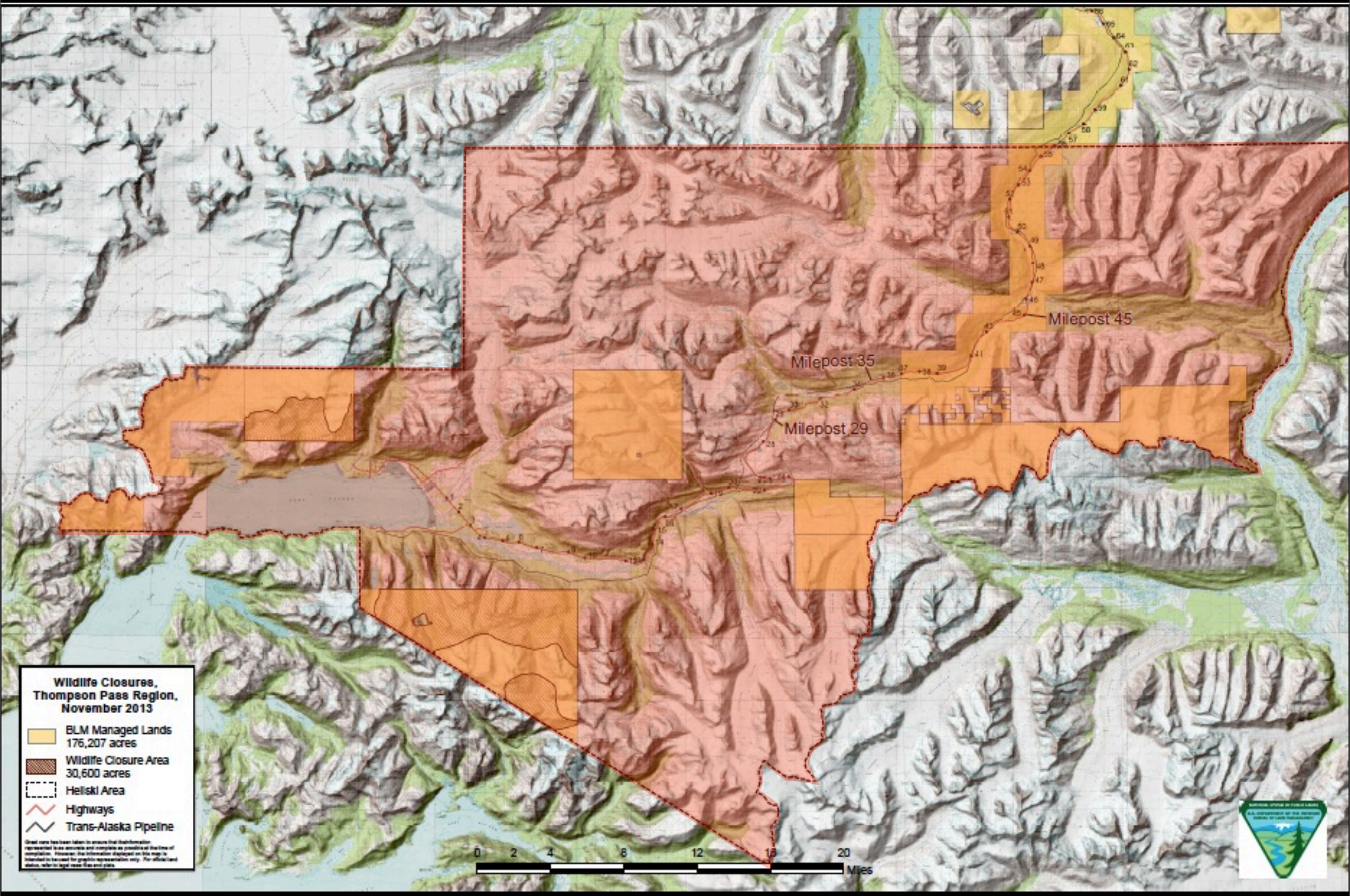
Miles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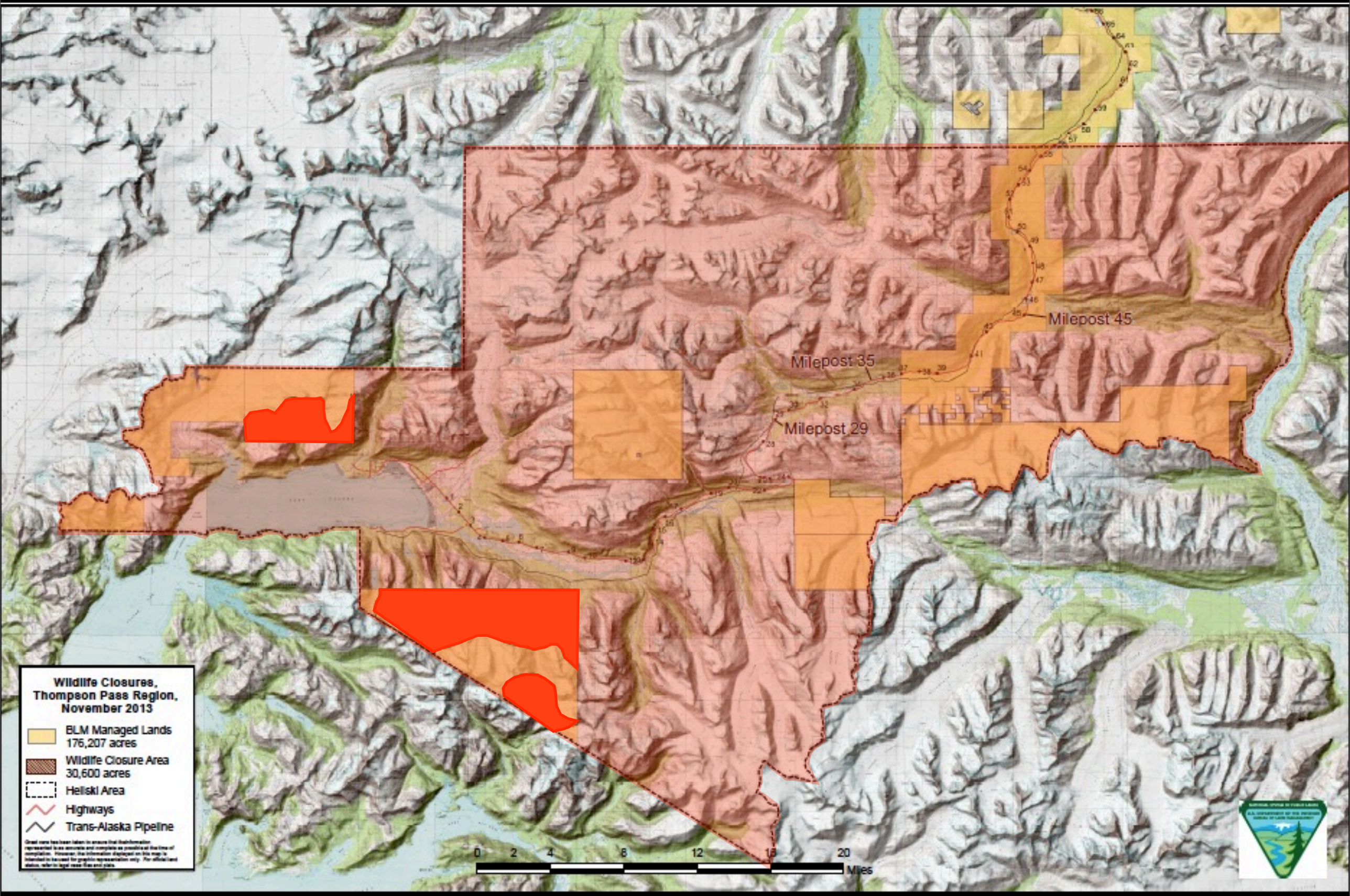
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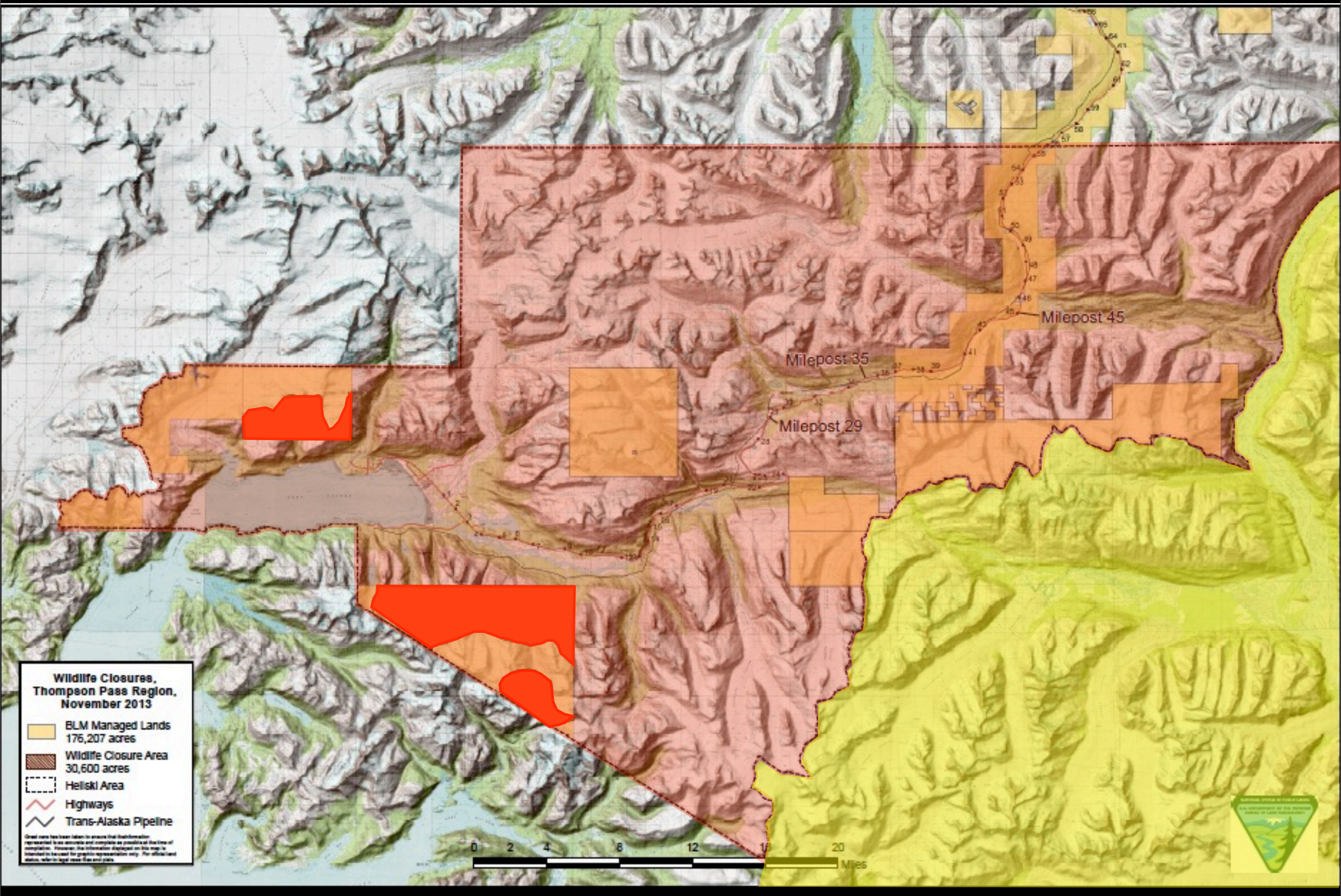
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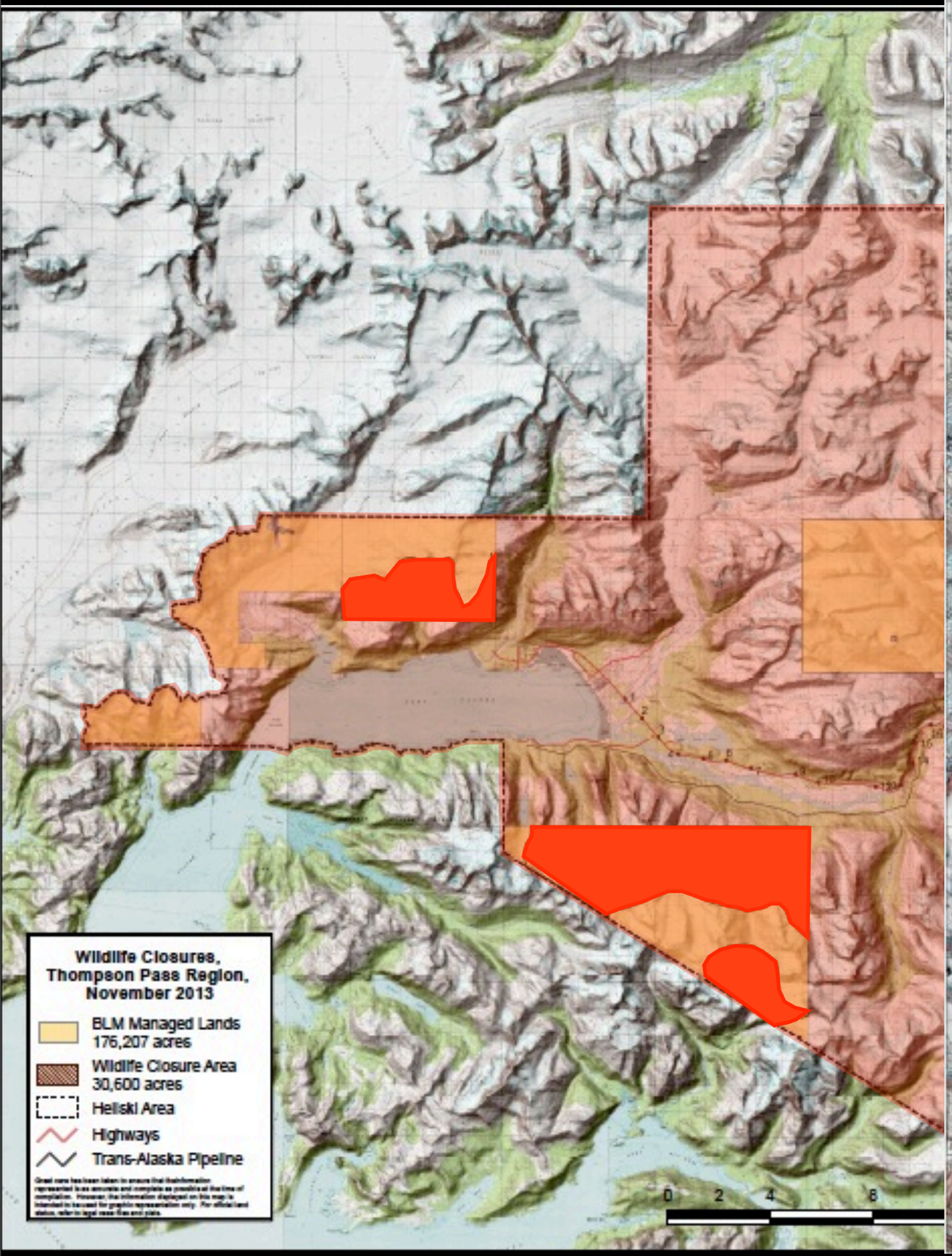
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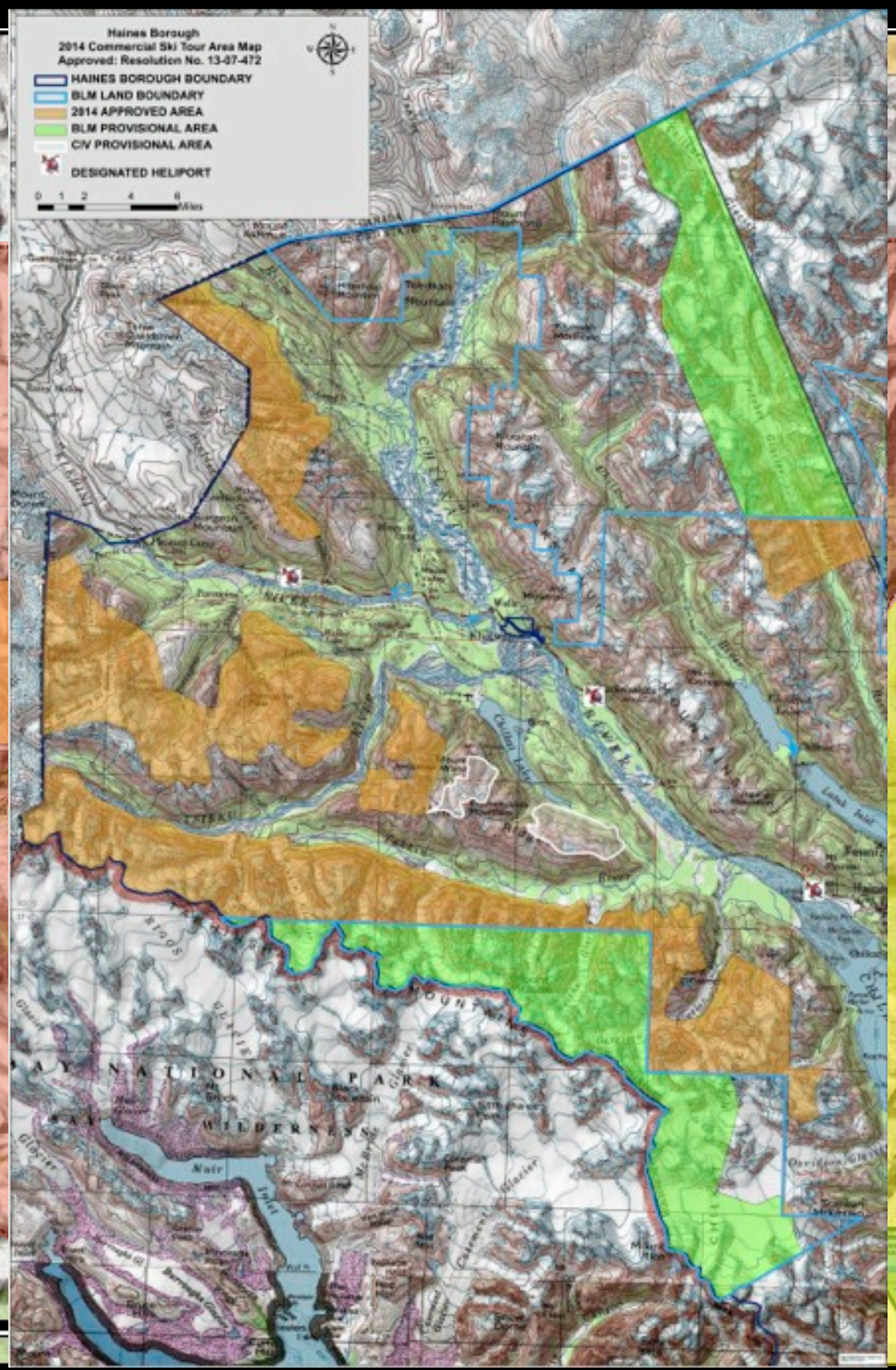
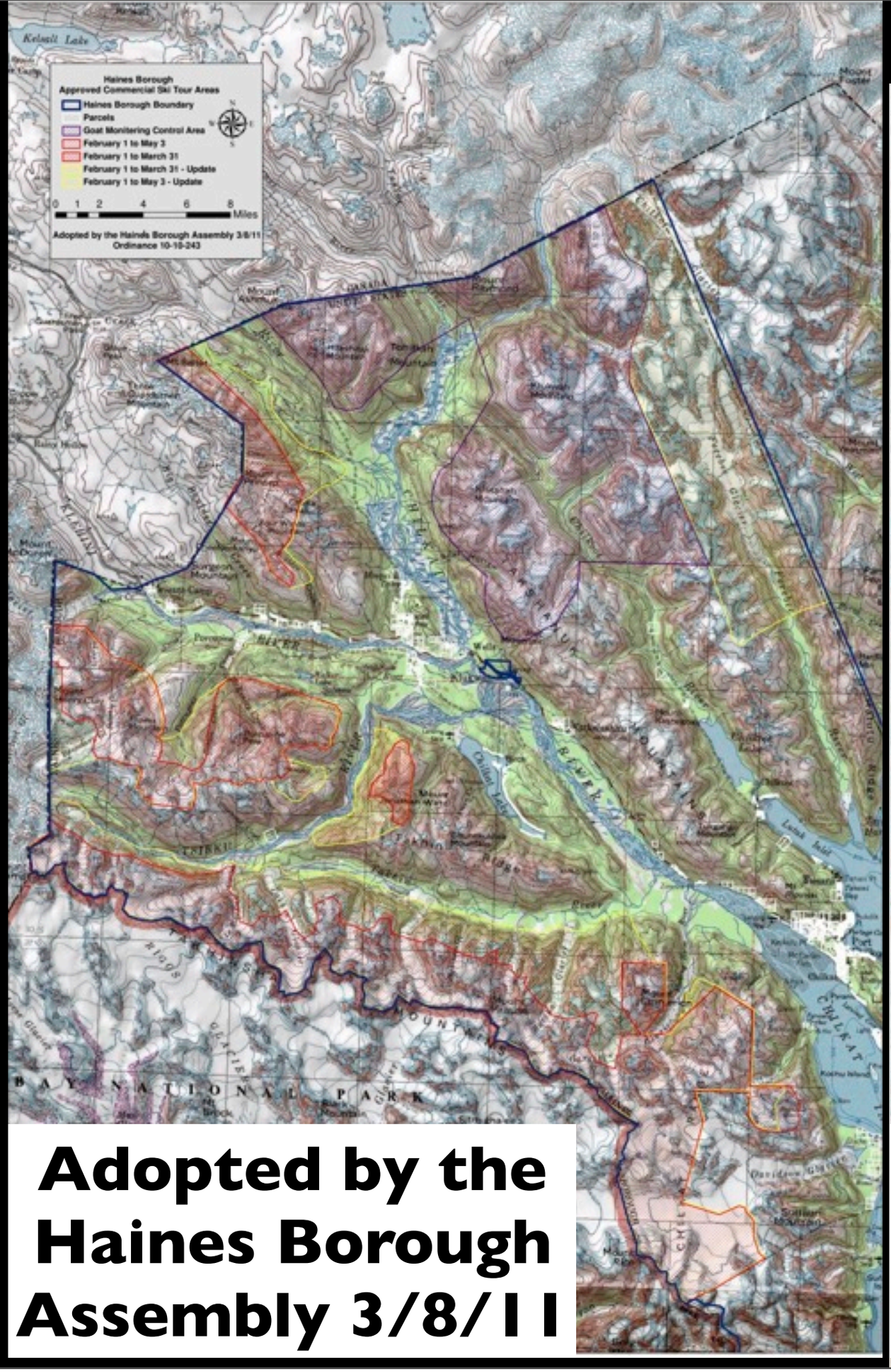
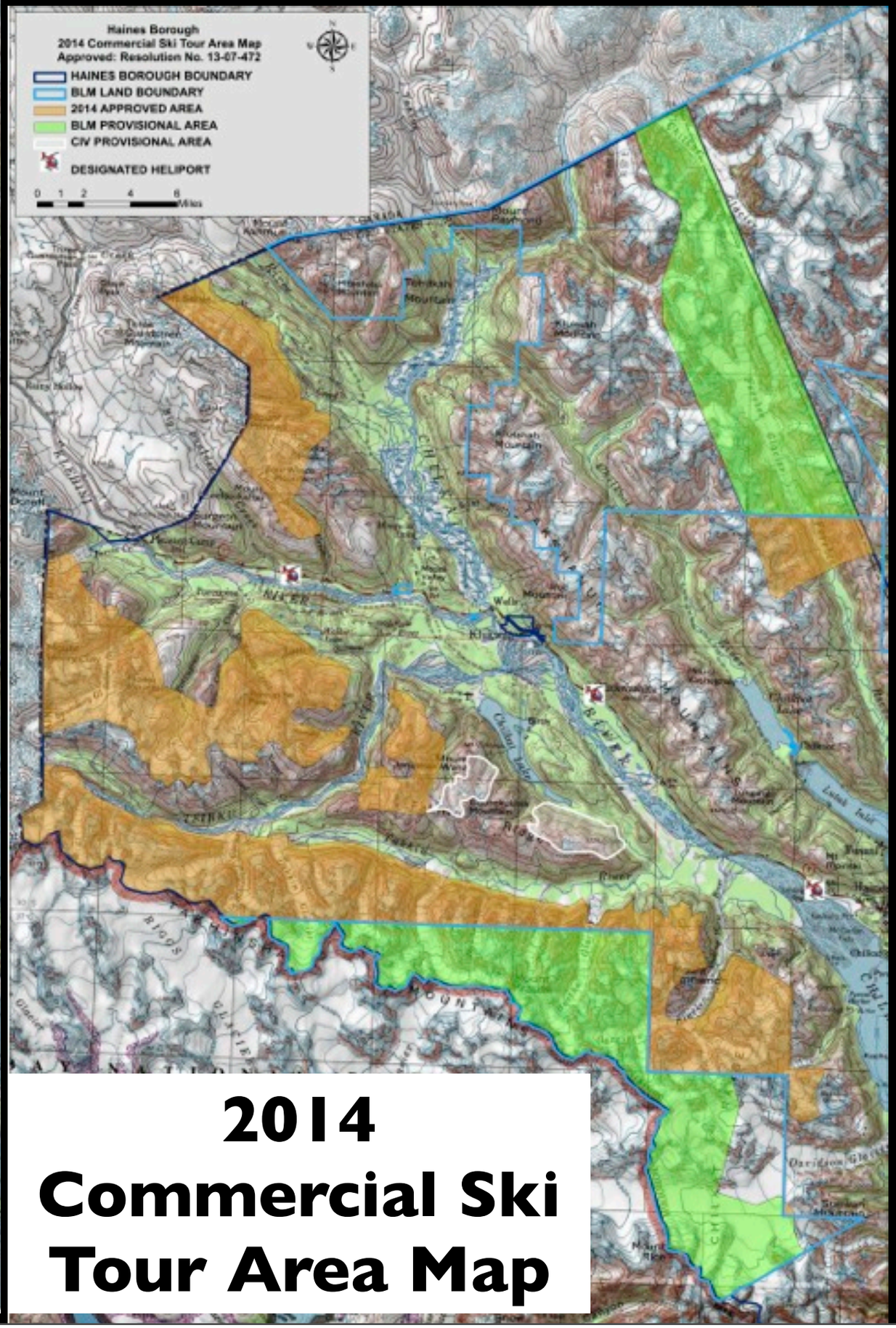
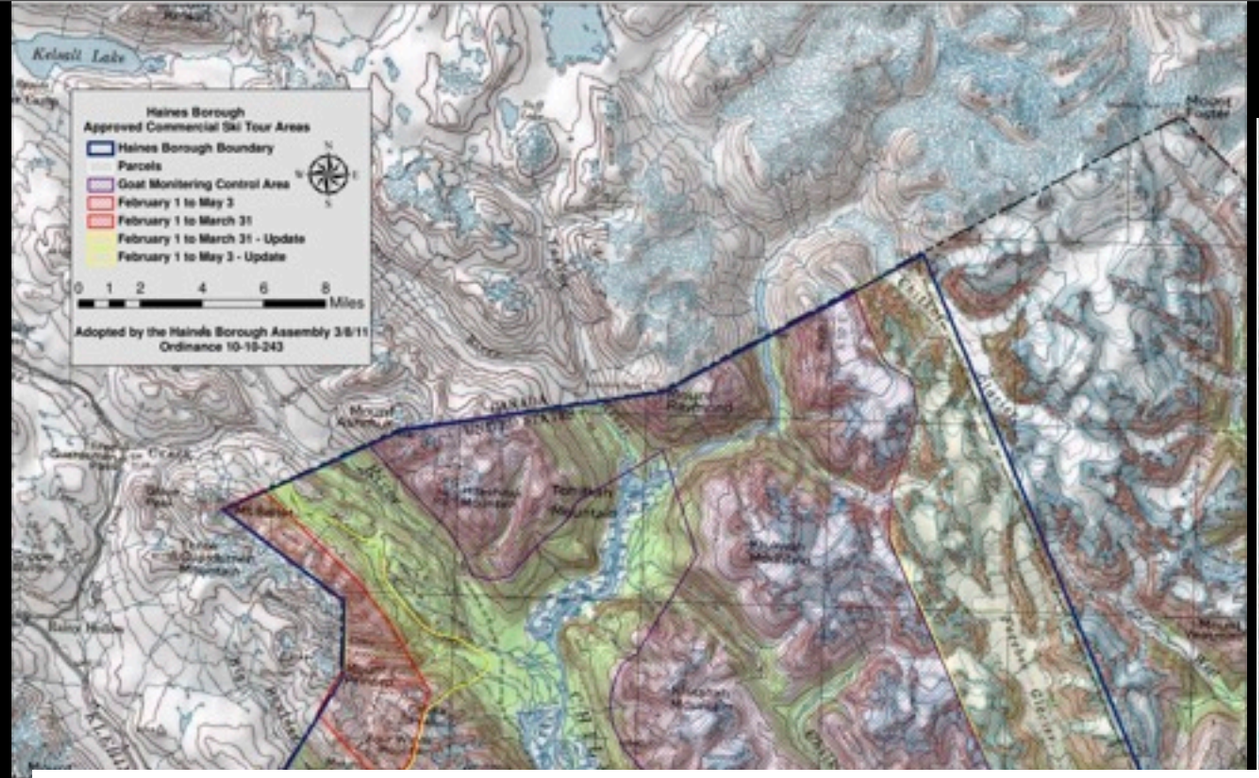

Haines Borough
2014 Commercial Ski Tour Area Map
Approved: Resolution No. 13-07-472
HAINES BOROUGH BOUNDARY
BLM LAND BOUNDARY
2014 APPROVED AREA
BLM PROVISIONAL AREA
C/V PROVISIONAL AREA
DESIGNATED HELIPORT
0 1 2 4 6
Miles
GLACIER BAY NATIONAL PARK
WILDERNESS

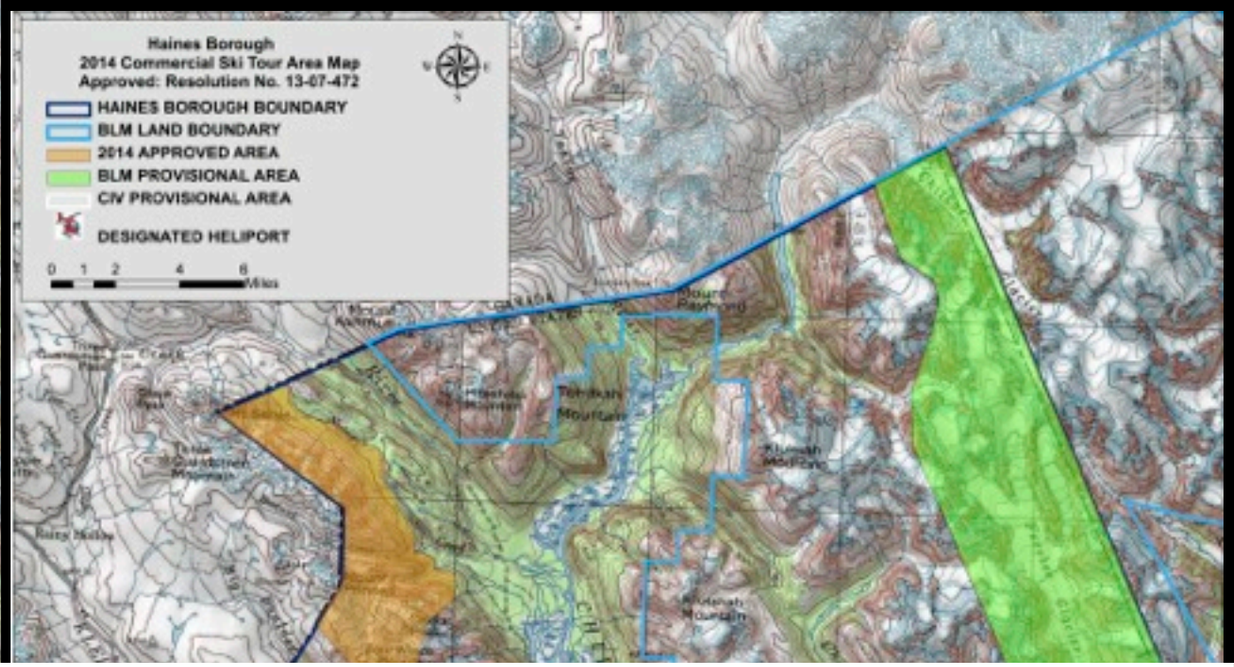


Adopted by the Haines Borough Assembly 3/8/11

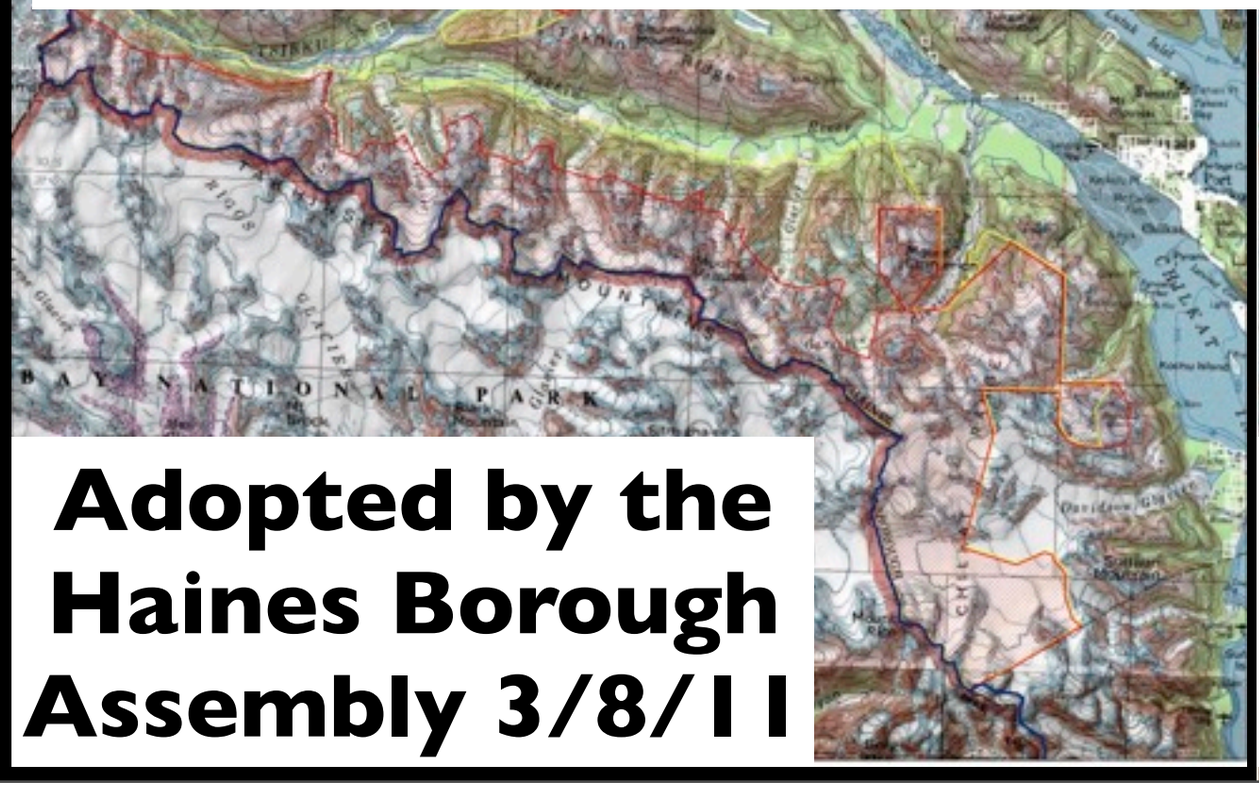


2014 Commercial Ski Tour Area Map





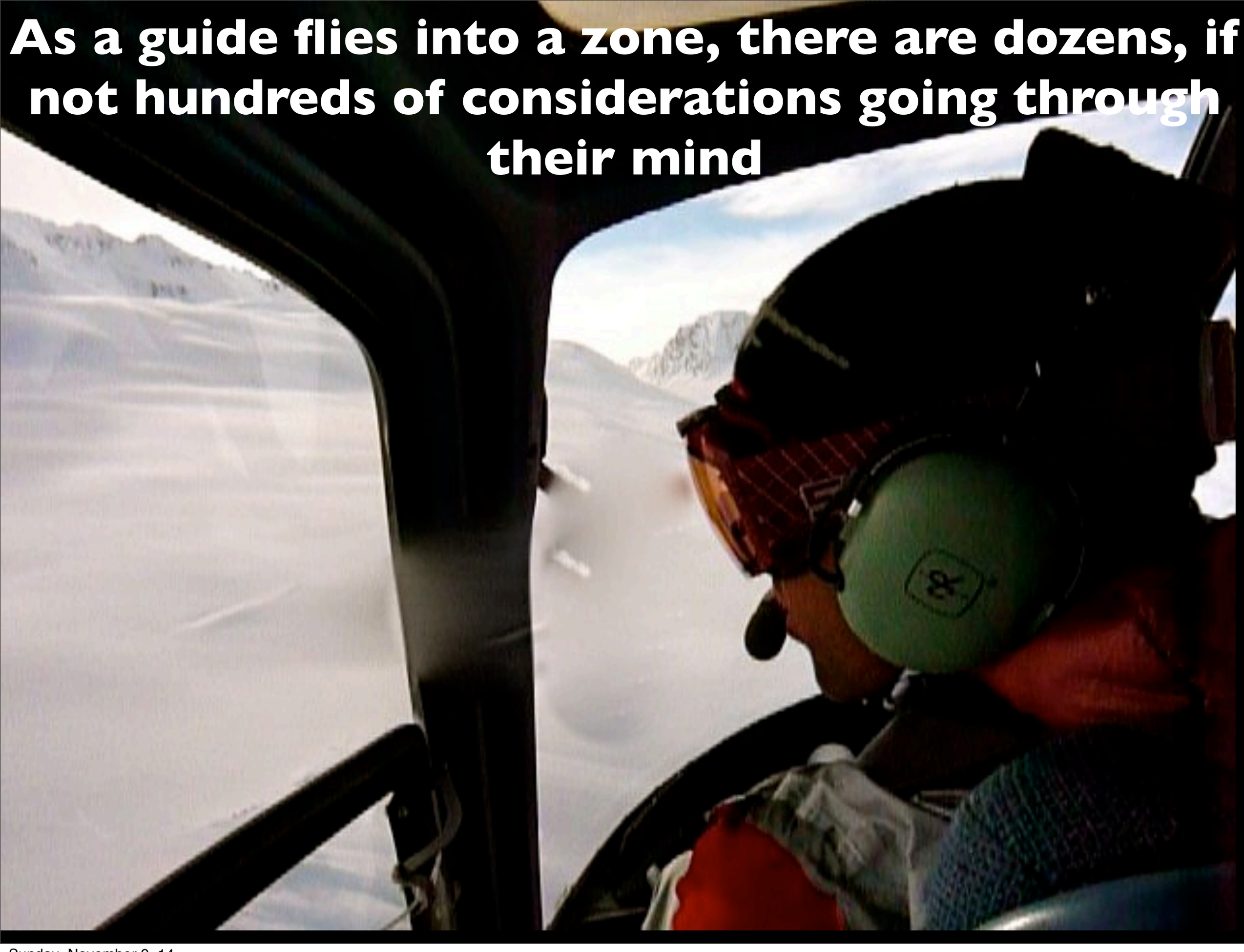
I find it no coincidence that not long after this map was implemented, the first accident occurred to be followed by two more

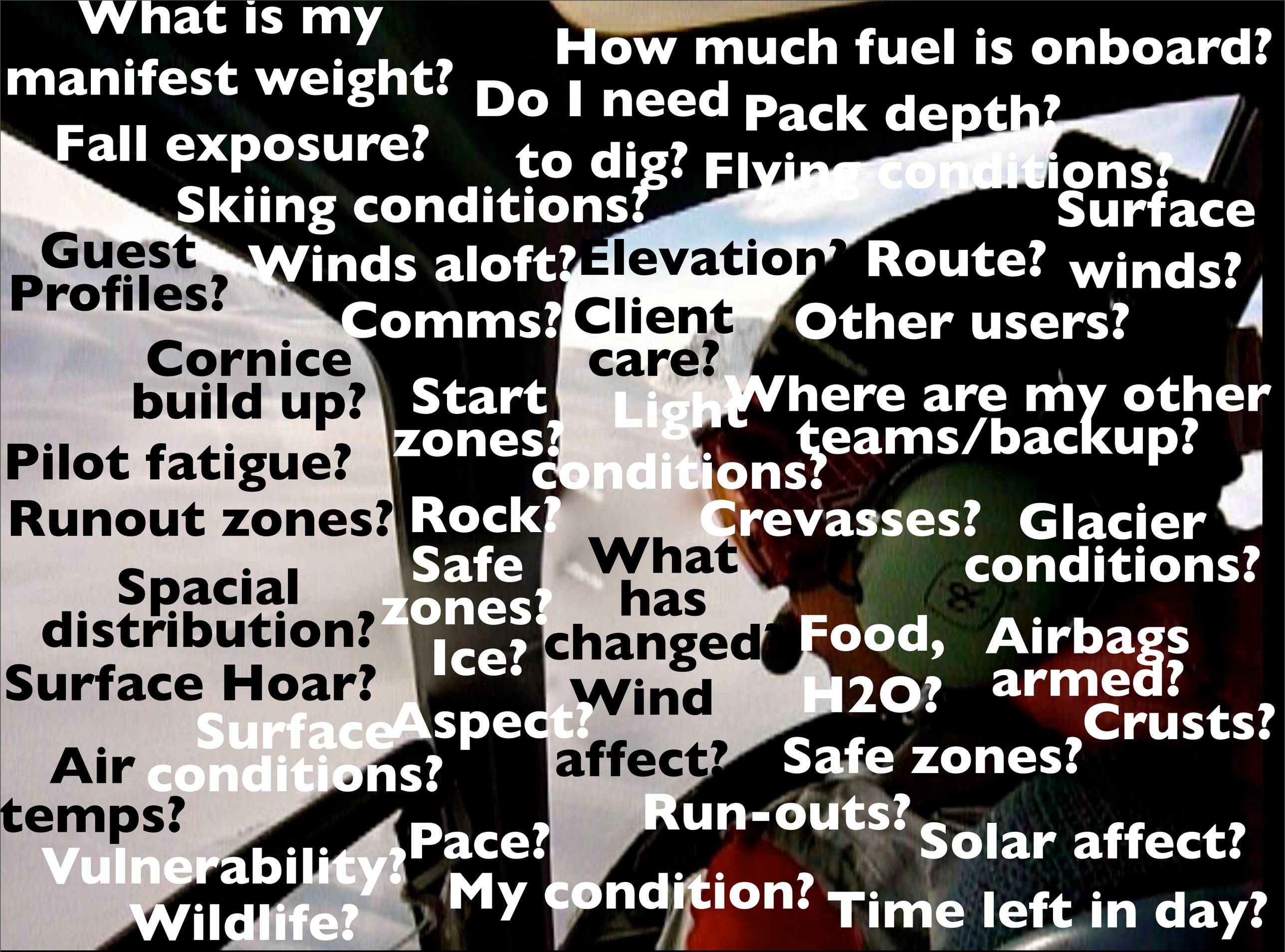


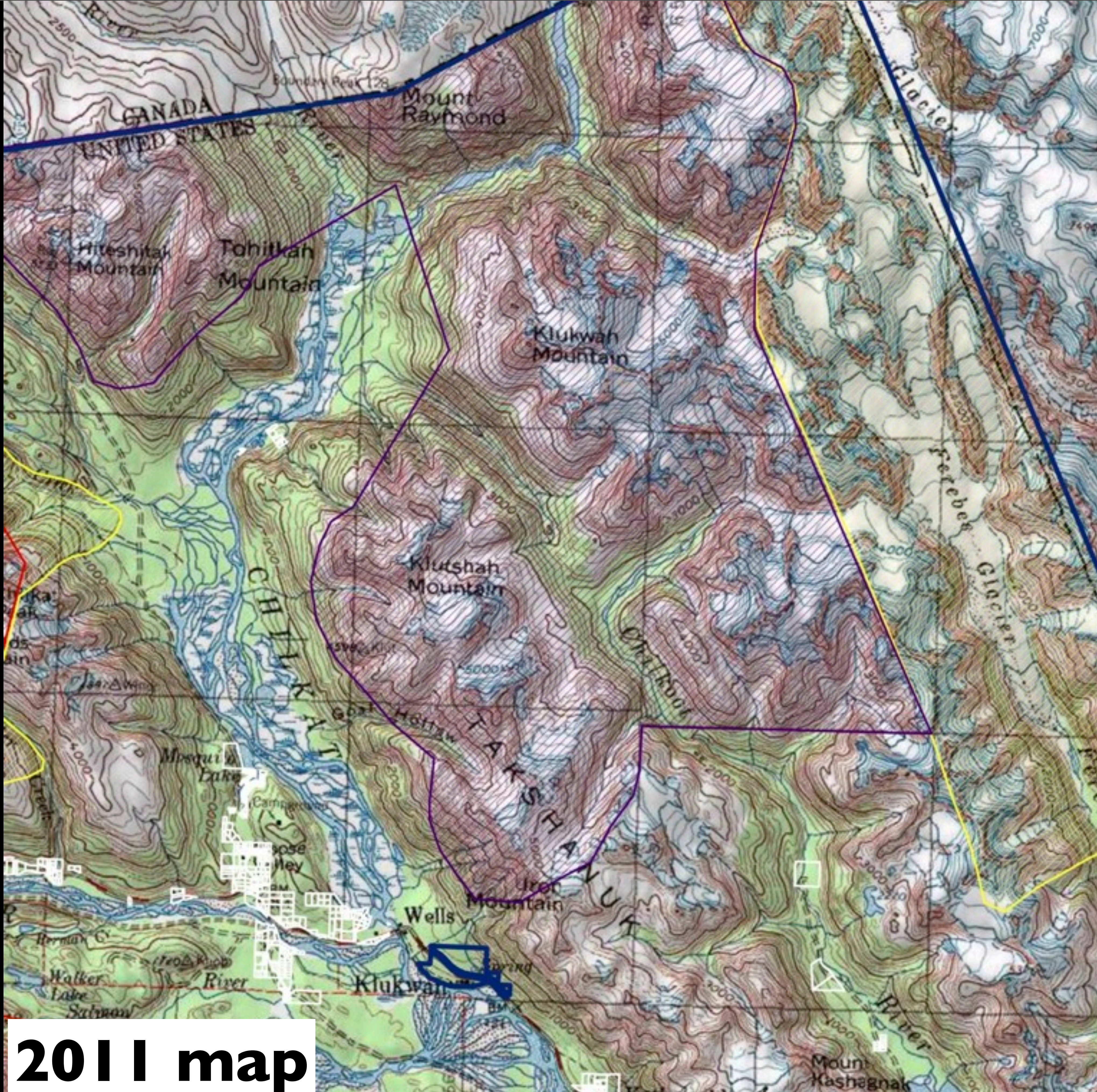
Adopted by the Haines Borough Assembly 3/8/11

2014 Commercial Ski Tour Area Map

As a guide flies into a zone, there are dozens, if not hundreds of considerations going through their mind



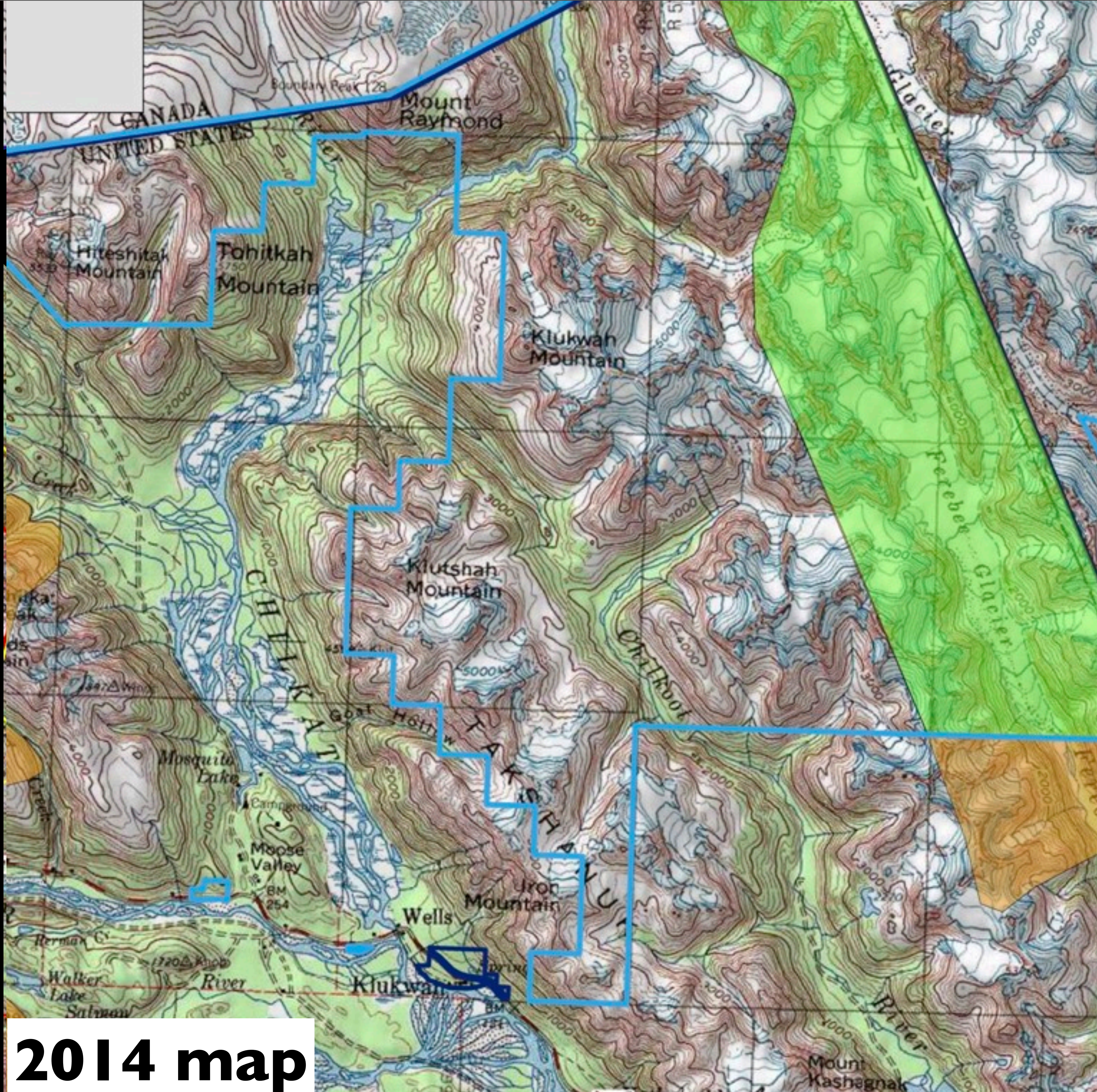

What is my manifest weight?
How much fuel is onboard?
Do I need to dig?
Pack depth?
Fall exposure?
Flying conditions?
Skiing conditions?
Surface winds?
Guest Profiles?
Winds aloft?
Elevation’ Route?
Comms?
Client care?
Other users?
Cornice build up?
Start zones?
Light conditions?
Where are my other teams/backup?
Pilot fatigue?
Runout zones?
Rock?
Crevasses?
Glacier conditions?
Safe zones?
What has changed?
Spacial distribution?
Ice?
Food, H2O?
Airbags armed?
Surface Hoar?
Wind affect?
Crusts?
Surface conditions?
Aspect?
Air temps?
Safe zones?
Run-outs?
Pace?
Solar affect?
Vulnerability?
My condition?
Time left in day?
Wildlife?



CANADA
UNITED STATES
Mount Raymond
Hiteshitak Mountain
Tohitkah Mountain
Klukwah Mountain
Klutshah Mountain
CHILKAT
TAKSHANUK
Iron Mountain
Wells
Klukwan
Glacier
Ferebee Glacier
River
Mount Kashagnak

2011 map


CANADA
Boundary Peak 128
Glacier
CHILKAT
Wells
Klukwan
Walker Lake
River
Mount Kashagnak


CANADA
UNITED STATES
Mount Raymond
Hiteshitak Mountain
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Klukwan Mountain
Klutshah Mountain
CHILKAT
TAKSHANUK
Chilkoot
Ferebee Glacier
Goat Hollow
Mosquito Lake
Campground
Moose Valley
Iron Mountain
Wells
Klukwan
Walker Lake
River
Mount Kashagnak

2014 map

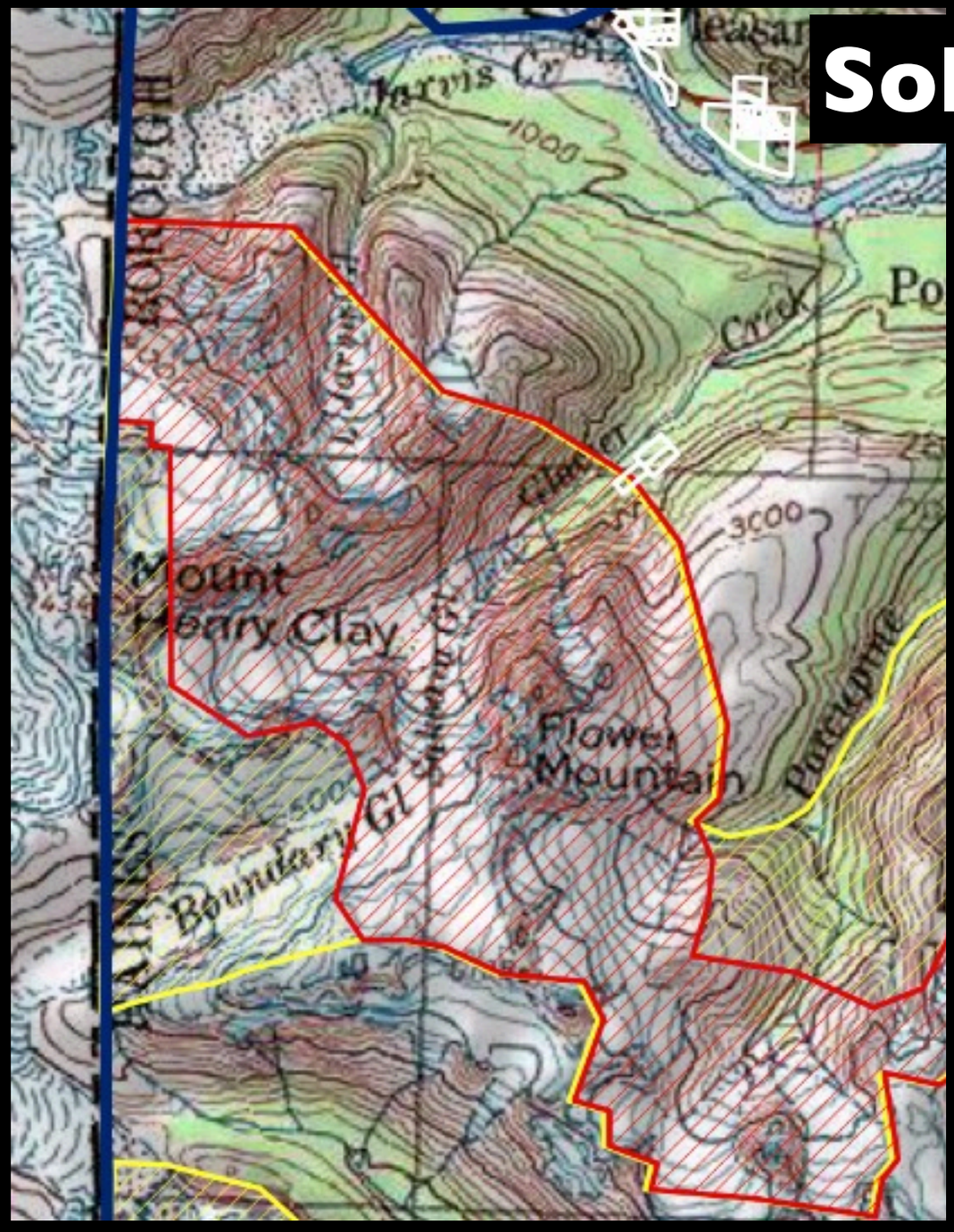

The current operating areas were created with numerous concerns in mind, (social and environmental) but it is possible to address these concerns, make useable zones of operation, and not impede safe heli ski operations.

Solutions:

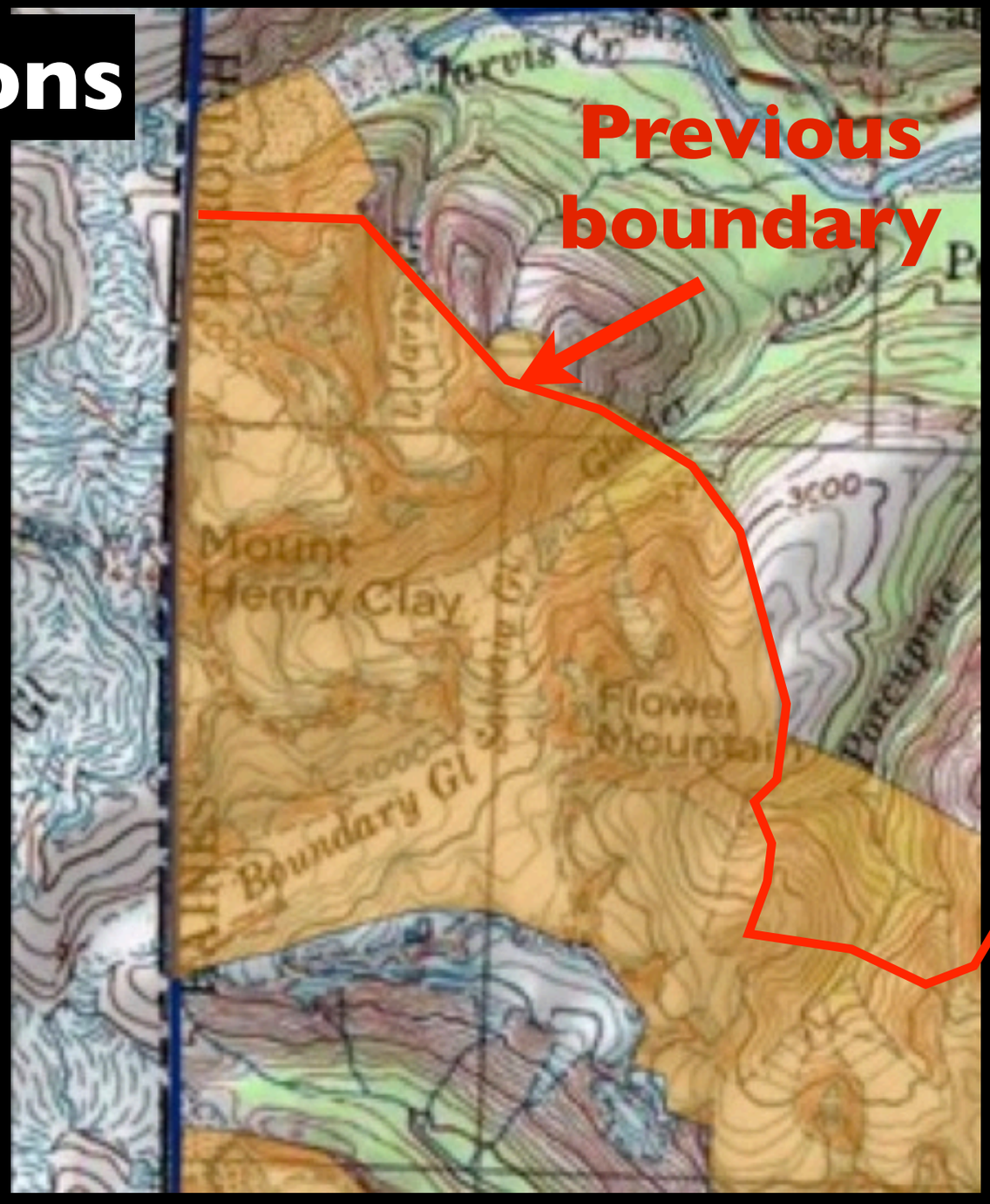
Cooperation

If land managers and commercial user work more closely together, and try to be empathetic of each others concerns, all issues can be addressed without sacrificing safety

Solutions



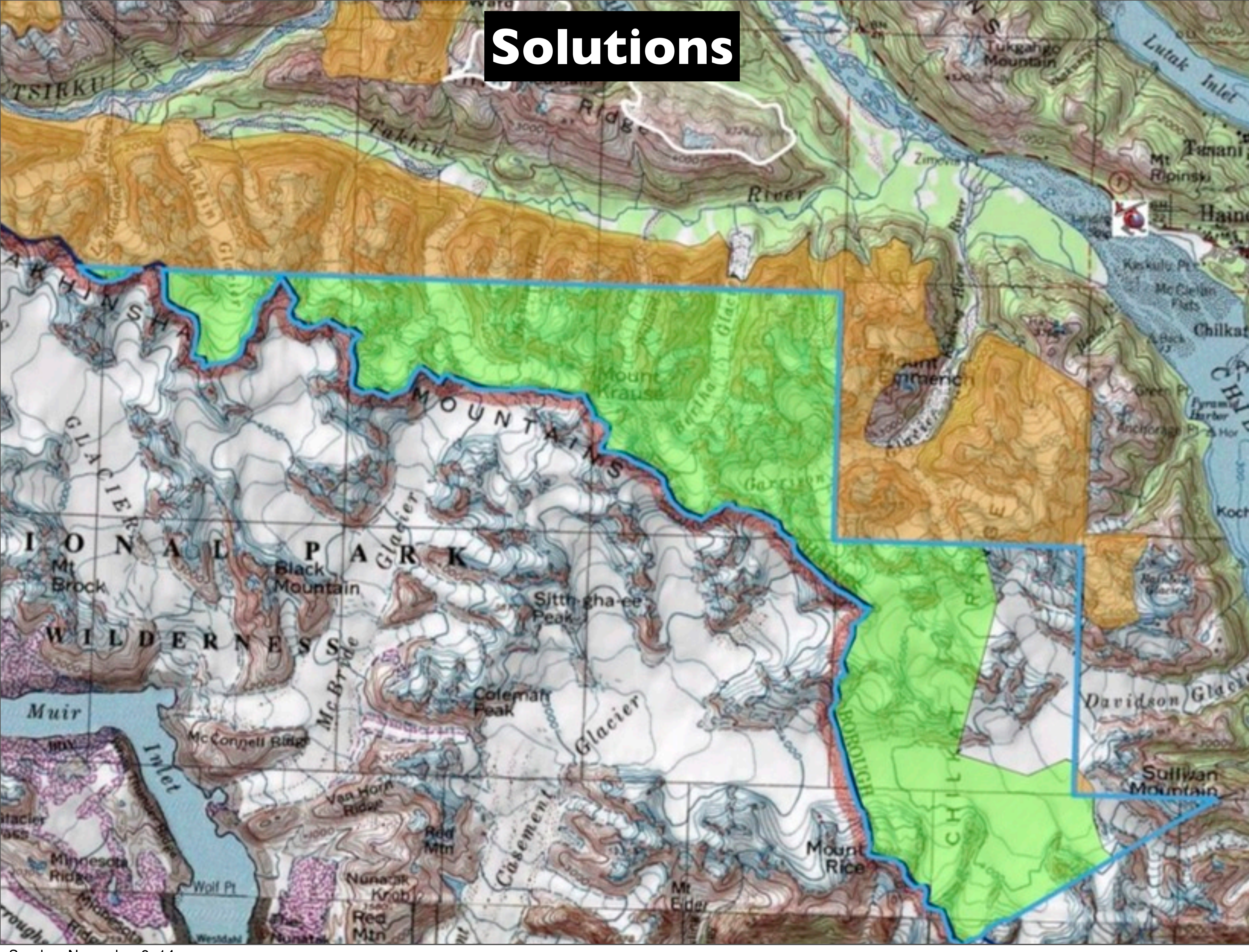
2011 map



2014 map

Some cooperation is happening, these two maps show how cooperation has enhanced usability without negatively impacting other considerations

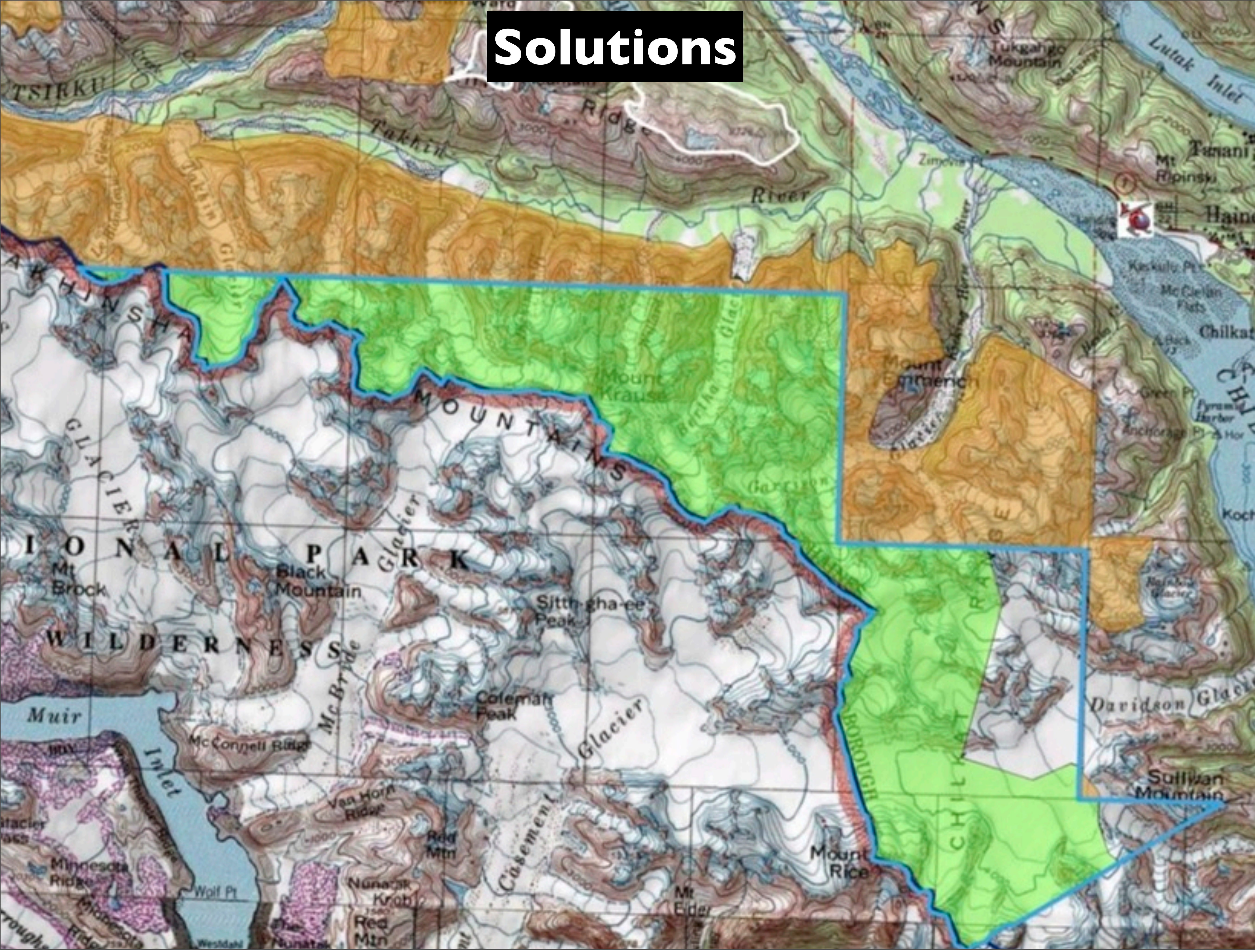
Solutions


Tukgahgo Mountain
Lutak Inlet
TSIRKU
Ridge
Takhin
River
Mt Ripinski
Haines
Chilkat
Mount Emmerich
Mount Krause
Garrison
Kochu
Davidson Glacier
Sullivan Mountain
Mt Brock
Black Mountain
Sitth-gha-ee Peak
WILDERNESS
GLACIER
PARK
MOUNTAINS
Coleman Peak
McBride
Glacier
Muir
Inlet
McConnell Ridge
Van Horn Ridge
Red Mtn
Casement
Mount Rice
Mt Eider
Nunatak Knob
Red Mtn
Minnesota Ridge
Wolf Pt
BOROUGH
CHILKAT
RANGE

Solutions

By making boundaries "softer" and allowing guides and pilots more "room for error" the decision making process could be simplified and the guides mental workload reduced, allowing them to focus more energies on other more important concerns such as overall safety and general mountain concerns, crevasses, fall exposure, flight operations etc..

Solutions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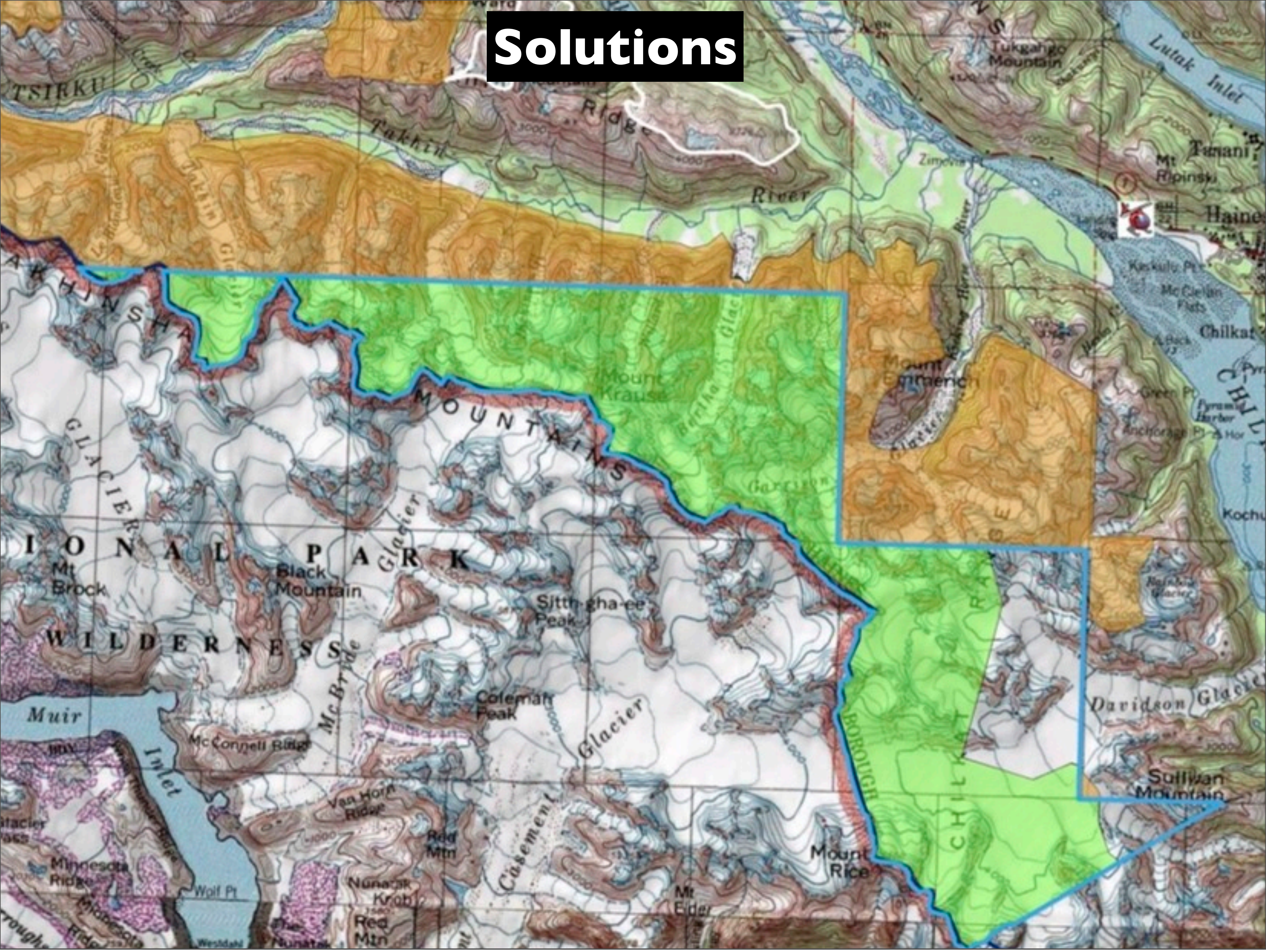
CHILKAT RANGE
Muir
Inlet
McConnell Ridge
Van Horn Ridge
Red Mtn
Casement
Mount Rice
Mt Eider
Nunatak Knob
Red Mtn
Wolf Pt
Minnesota Ridge
The Nunatak

Solutions

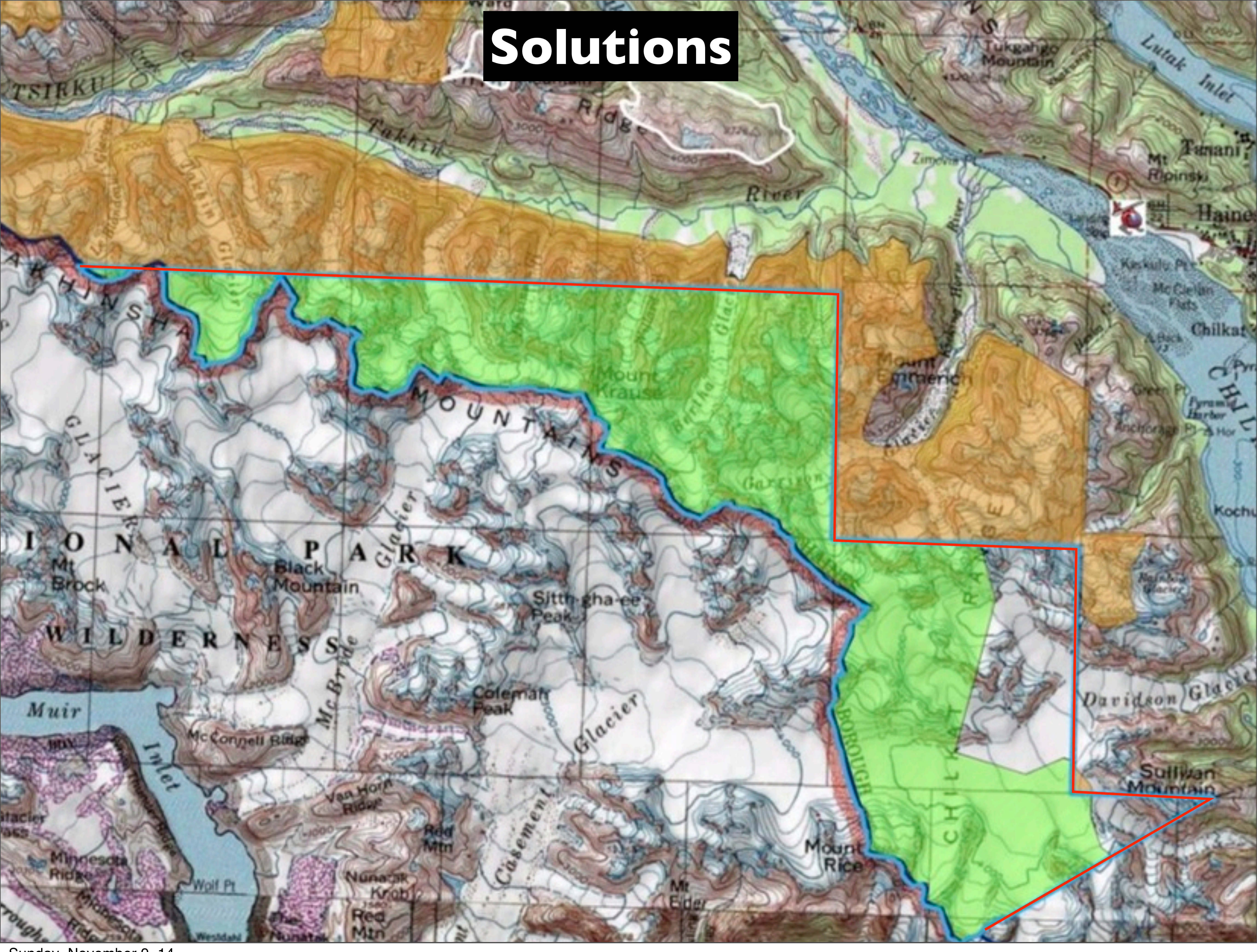
This can be done while still giving due respect to other concerns such as wildlife and local populations

Solutions



Tukgahgo Mountain
Lutak Inlet
Takhin Ridge
Takhin River
Mt Ripinski
Haines
Chilkat
Mount Emmerich
Mount Krause
GLACIER
MOUNTAINS
NATIONAL PARK
WILDERNESS
Mt Brock
Black Mountain
Sitth-gha-ee Peak
Coleman Peak
McBride Glacier
Muir Inlet
McConnell Ridge
Van Horn Ridge
Casement Glacier
Red Mtn
Mount Rice
Mt Eider
Nunatak Knob
Minnesota Ridge
Wolf Pt
Davidson Glacier
Sullivan Mountain
CHILKAT RANGE
BOROUGH
Kochu

Solutions



TSIRKU
Ridge
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Haines
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Mount Krause
Mount Emmerich
MOUNTAINS
GLACIER
IONAL PARK
WILDERNESS
Mt Brock
Black Mountain
Sitth-gha-ee Peak
Coleman Peak
Glacier
Davidson Glacier
Sullivan Mountain
BOROUGH
CHILKAT RANGE
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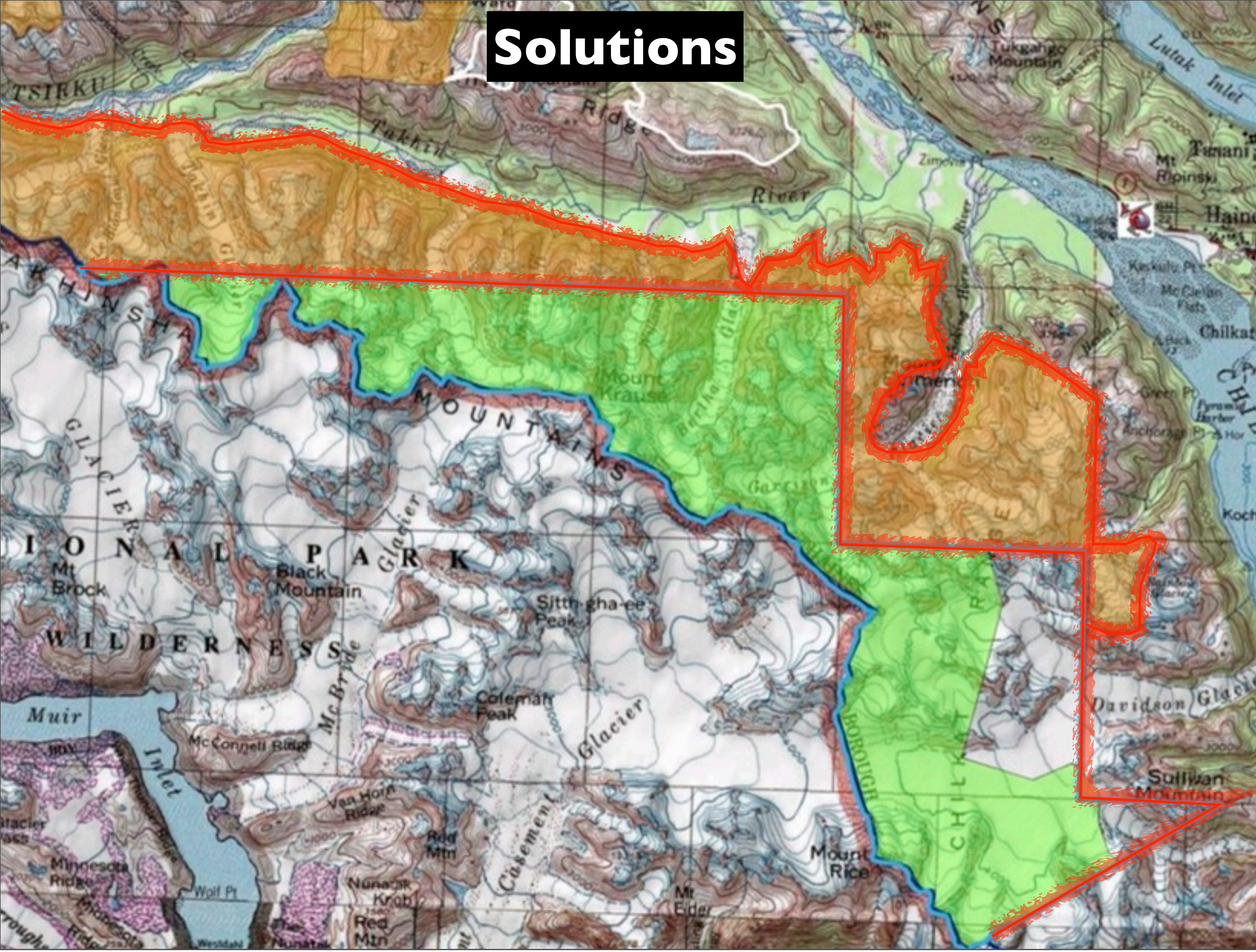
Solutions

Solutions


Ridge
Takhin
River
Tukgahgo Mountain
Lutak Inlet
Mt Ripinski
Haines
Kaskulu Pt
McClellan Flats
Chilkat
Mount Krause
MOUNTAINS
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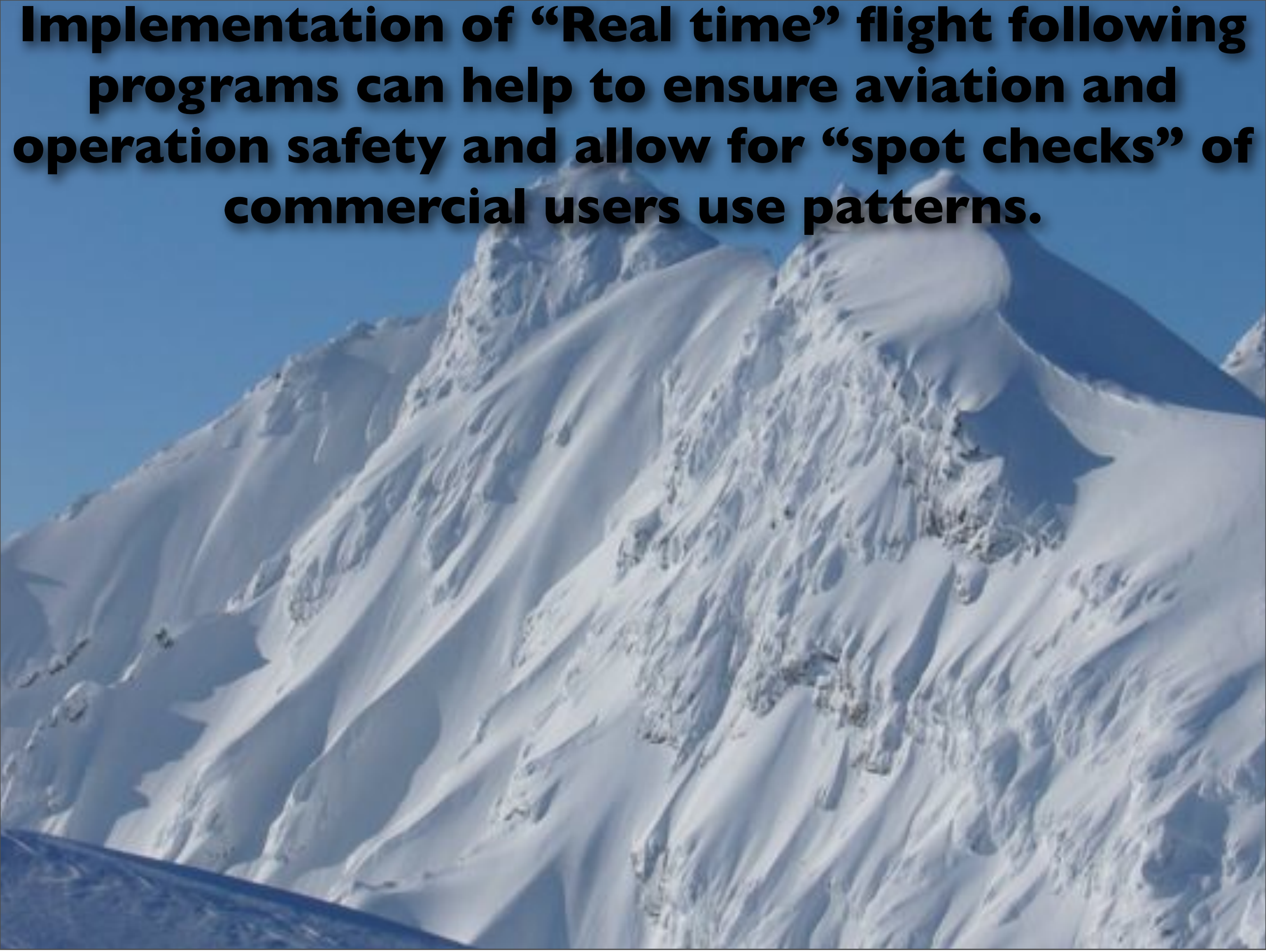
McBride
Glacier
Coleman Peak
Muir
Inlet
McConnell Ridge
Van Horn Ridge
Red Mtn
Casement
Mount Rice
Minnesota Ridge
Wolf Pt
Nunatak Knob
Red Mtn
Mt Eider
BOROUGH
CHILKAT RANGE
Davidson Glacier
Sullivan Mountain
Kochu

Implementation of “Real time” flight following programs can help to ensure aviation and operation safety and allow for “spot checks” of commercial users use patterns.



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Continuation of GPS "spot checks" can continue ensure that operators or working within their legal boundaries

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Continuation of GPS "spot checks" can continue ensure that operators or working within their legal boundaries

With continued and enhanced cooperation between different heli ski operators, land managers and industry leaders all of the issues of climate change, the "marketing of the extreme" and operation boundaries can be addressed, and Alaska heli skiing can continue to provide a safe experience for guests, and a safe workplace for their guides.

Thank you for your time and attention,
I am happy to speak with anyone interested in this subject. I can be reached at:
PWDRJNKY@MAC.COM

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