Chugach National Forest
Avalanche Information Center

2010 - 2011 Annual Report

Chugach National Forest Avalanche Information Center
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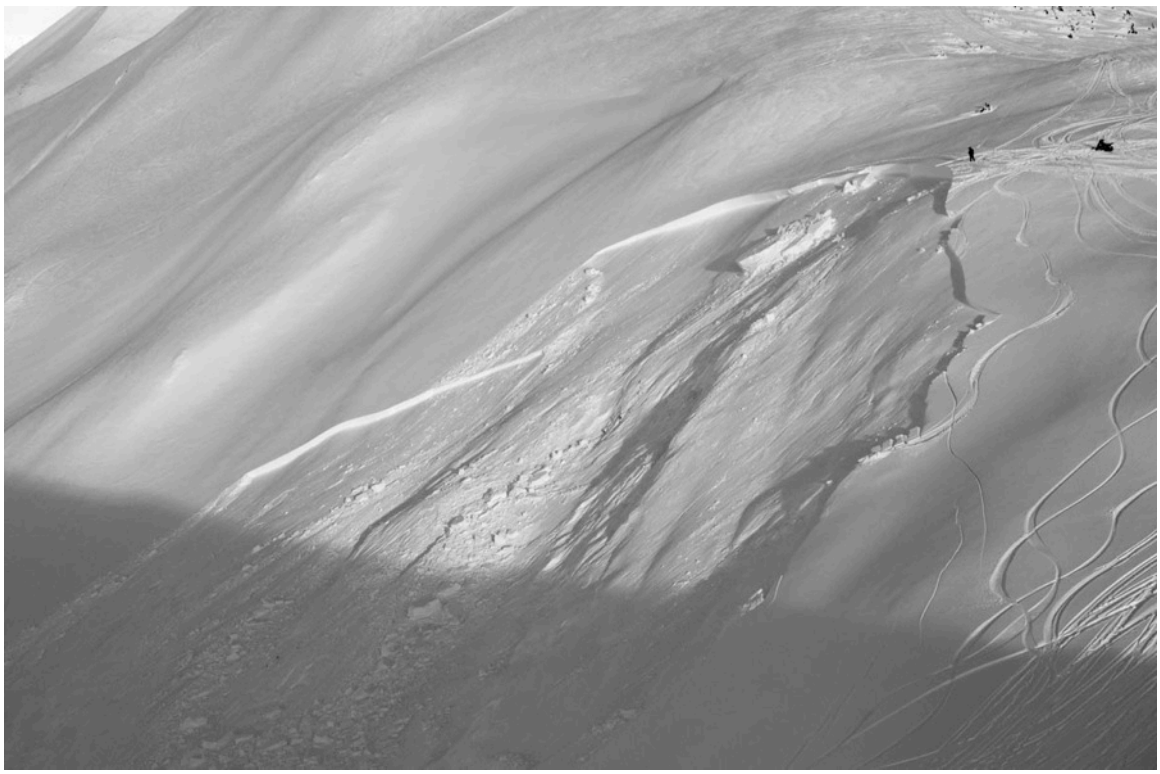


Director Summary

The 2010-2011 winter was a season of big changes for the CNFAIC. All the Girdwood forecasters moved on to new challenges. Carl Skustad took a Forest Service position in Minnesota. Matt Murphy moved over to the Seward Highway avalanche program with the state Department of Transportation, and Lisa Portune moved with her husband to Sand Point Idaho. A new lineup of forecasters moved in to fill some big shoes. Kevin Wright joined the program from the Snow Safety department at nearby Alyeska Resort. Jon Gellings came on full time after his internship with the program in 09-10. Wendy Wagner flew up from Utah in mid January, bringing a fresh scientific perspective. Alex Mclain continued to provide observations and advisories for the Summit region in the Seward District.

The changes brought some unique challenges, and some priorities were refined as we labored to keep safety and quality at a high standard. An intern was not selected this season due to so many leadership changes. As a result the Summit forecast was reduced to Saturdays only, down from a Friday/Saturday schedule the previous year. We hope to expand back to 2+ days per week next season as we all get up to speed with the program.

Despite the huge staffing changes, business as usual continued with Turnagain Pass advisories 7 days per week from November 12 to April 16th.

One of my personal goals this year was to get more participation from the public with avalanche and snow observations. I think we made some significant advances with the continued “Ski with a forecaster day” program, and a new raffle incentive for public observations. Our webmaster is also

working on a system to allow some public observations to be directly viewable by the public. Hopefully this will bring more participation from the users and give us a greater breadth of observations.

We put together a survey to poll our users about CNFAIC services. Results of that survey will show us what backcountry users want from us and will help guide us in the future development of our program. 405 responses were submitted.

In February Wendy, Jon, and myself were all able to take a level 3 avalanche course held in our region by the Alaska Avalanche School and American Avalanche Institute. This course was the first level 3 in Alaska in 10 years and was a rare local opportunity for the forecasters to fine tune their skills and bounce ideas off of respected instructors. Instructors included Don Sharaf, Tucker Chenoweth,Eeva Latuoso, Joe Stock, Drew Hardesty of the Utah Avalanche Center, and Dave Hamre of the Alaska Railroad.

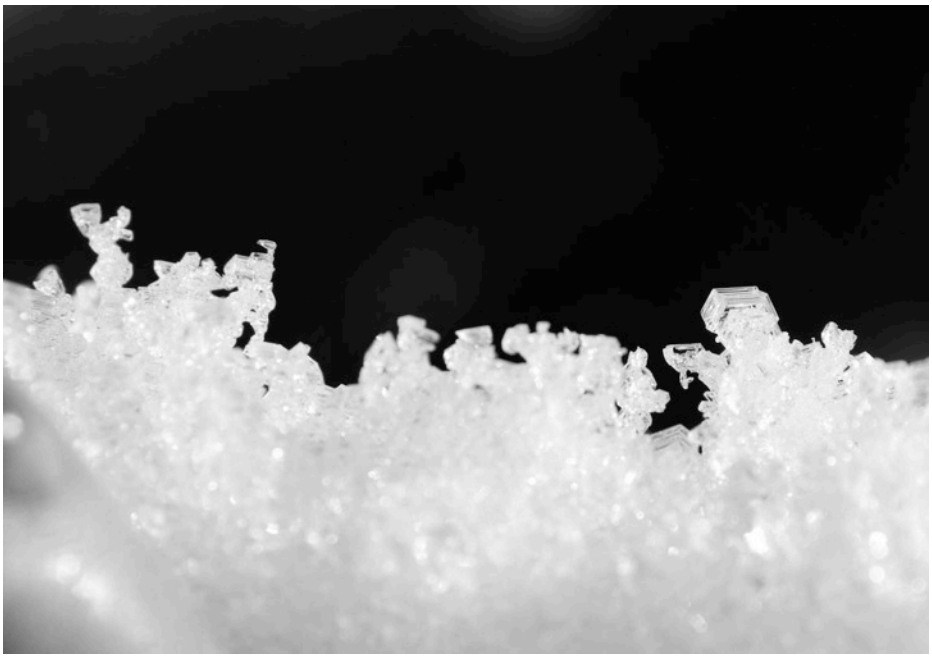
Chugach National Forest hosted the annual Interagency Avalanche Rescue drill at Turnagain Pass. It was a great opportunity for our staff to work directly with other agencies who frequently get called to avalanche rescues throughout Alaska and commonly in our forecast zone. The event included AMRG, State Troopers, Nordic Ski Patrol, MatSAR, ASARD, USFS, Alyeska Ski Patrol, Girdwood Fire Department, and others.

The avalanche season was abnormal due to a thin snow year and snowpack structure that was anything but maritime in character. A freezing rain crust on November 22-23 dominated much of our discussions for the next 2 months. Thin snow cover, an ice crust, and cold temperatures built facets that characteristically stayed for the duration. Human triggered avalanche events were common after storms but consistently remained hair trigger for up to a week after the storm. A significant avalanche rescue happened on January 29th when 4 skiers were swept off their ascent route. One skier was fully buried, but rescued by a companion. Three were seriously injured and 2 dogs with the group were killed. The entire party was rescued by an extensive inter-agency effort culminating in a helicopter hoist by an Air National Guard crew.

So far 3 avalanche fatalities have happened in the southcentral Alaska region. All incidents happened outside our forecast zone and beyond the scope of any current avalanche advisory. Wendy was able to investigate the first incident in Hatcher Pass and submit an official report. The fatality on April 18th in Chugach State Park was relatively close to Girdwood and all the Springtime rules that we explain in the advisory were relevant to this incident. An icefall avalanche on April 28th killed a climber in his tent in Denali National Park. All three were tragic reminders of the unforgiving nature of the mountains and the importance of avalanche education and information.

It was a challenging year by any measure, but feedback about the program remained enthusiastic and positive. We're looking forward to continuing the program and building on the Center that Carl Skustad started. Thanks to Carl, Matt, Lisa, and Jeff Nissman for all the hard work over the years. We hope we can do your program justice.

-Kevin Wright
Lead Forecaster/Director



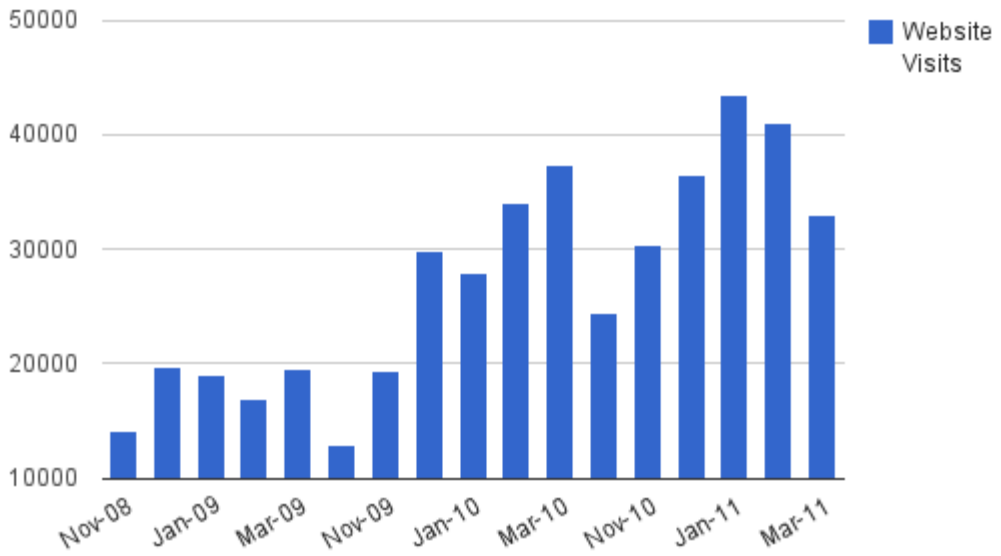
Acknowledgements

We would like to send a HUGE THANK YOU to the Friends of the Chugach National Forest Avalanche Information Center and our major funding partners. You are an amazing group of folks with a passion to help keep people safe in the backcountry. THANK YOU for all your support.

Additionally, we would like to thank:
-All the folks out there who submitted observations, these are invaluable
-Alyeska Ski Patrol
-Alaska DOT
-Alaska Railroad
-Alaska Avalanche School
-Alaska Pacific University
-Chugach Powder Guides
-and many others
for sharing important avalanche information to pass on to the backcountry community.

Advisories

Our advisory schedule kicked off with intermittent advisories in early November. By the 12th we started 7 days per week and continued this through the 16th of April, adding up to 155 advisories for Turnagain Pass. Less detailed information continued on an intermittent basis through the end of April. The Summit advisory was consistent on Saturdays only from mid November to mid April.



Website visitation has steadily increased despite a poor snow season. The 2010/2011 season (November through April) saw 215,415 "visits" to www.cnfaic.org. This represents a nearly 25% increase in usage over the previous year. Many days in mid winter saw more than 1000 visits per day. Usage predictably corresponded to periods of more enjoyable snow conditions and sunnier weather in addition to larger storms.

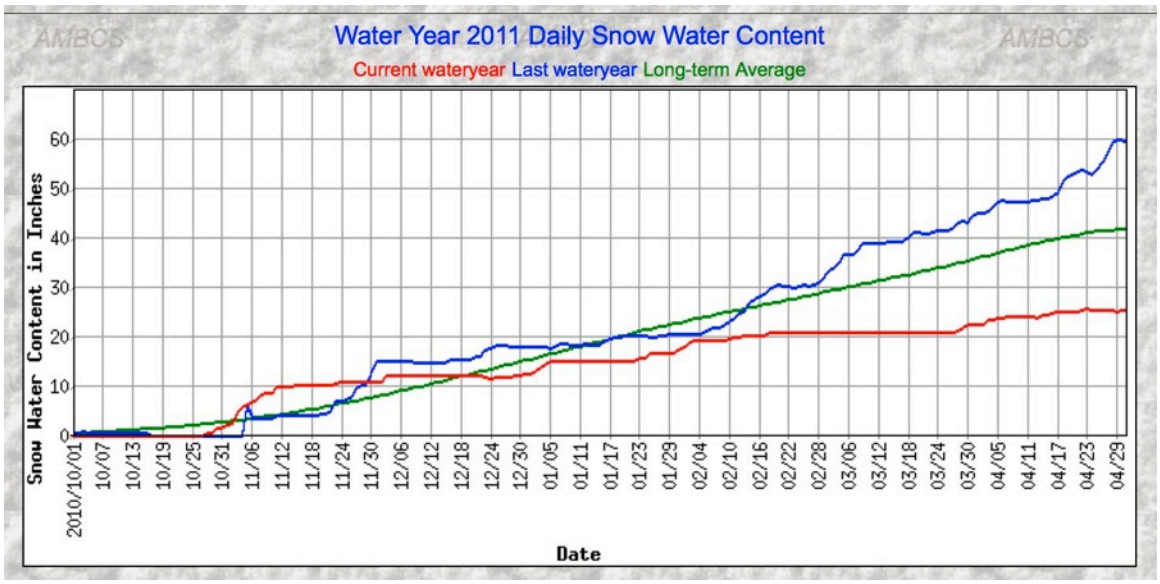
Education

Fireside Chat series: Wednesday evening lectures in Girdwood
Avalanche Awareness
Terrain and Routefinding
Snowpack and Weather

Human Factors and Decision Making
Avalanche Rescue

Avy Savvy Gals Level 1
REI avalanche awareness talk
Winter Trails Day
Anchorage Snowmachine Club meeting
Hiland Tech High School
AAS level 2 course: intro to the avalanche center
NSP level 2 course: intro to the avalanche center
AAS snowmachine course: snowmachine loan

Snowpack and Weather Summary



The 2010/2011 season was a victim of La Nina. The Center Ridge Snotel site recorded only 62% of average Snow Water Content for the season. Shallow snow, persistent weak layers, and touchy avalanche conditions were the standard for this year. Read on for month by month summaries of the snow and avalanche conditions.

November:

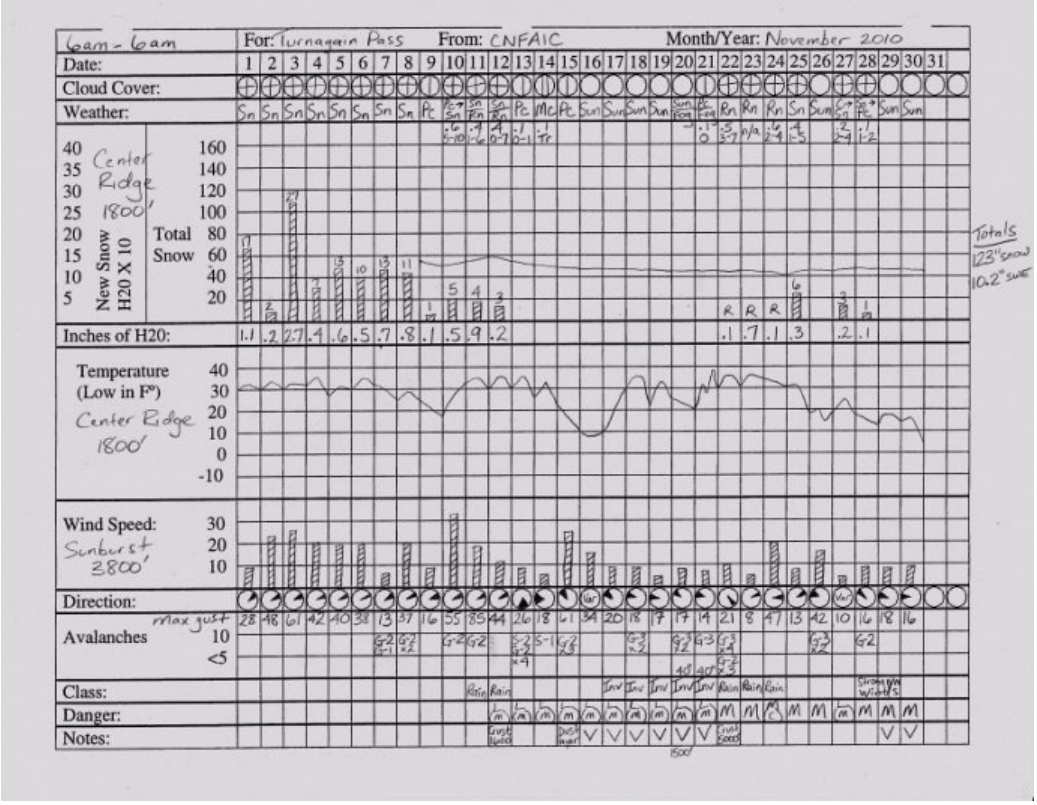
Our season kicked off with a sudden storm cycle at the end of October, continuing into the beginning of November. Two inches of snow on October 28 blossomed to 58 inches total depth at the Center ridge Snotel site in Turnagain Pass in 2 weeks time. The snowpack came in right-

side-up, creating a sturdy foundational base on the ground. One consequence of the quick heavy load early on was a historically significant glide crack/avalanche cycle. Starting around November 9th we entered a period of numerous glide avalanches on all aspects on a daily basis. Upon investigation it was confirmed that the ground remained quite warm and moist and the snowpack was keeping it insulated from the colder air. The glide cycle remained active through November and into December.

In mid month starting on the 15th a period of cold and clear weather started building a layer of surface hoar. All that surface hoar was destroyed in a statewide freezing rain event on the 22nd. This produced a layer of ice from sea level to the ridge tops up to half an inch thick. The event affected our entire forecast area and well beyond. NWS reported above freezing temperatures to 8000 feet over Anchorage and freezing rain north of Fairbanks. 6 inches of snow on the 25th came in relatively warm and bonded to the ice crust at lower elevations. No avalanches were seen in November on the freezing rain crust.

The end of the month brought a couple more days of clear and cold and started the surface hoar cycle again.

Human triggered avalanches in November were few and far between. A skier triggered slide was reported on Superbowl peak. 60-80 feet wide, 2 foot crown face, dropped 800 vertical feet. It was triggered on recent windslab. Nobody was reported caught or injured. Other skier-triggered events include second hand reports near Summit lake of small wind slab avalanches.



December:

After the great start to the winter in November the moisture flow shut off almost completely through the end of the year. December was dominated by clear and cold weather and relatively stable conditions. Many local skiers were able to ski some test-piece lines through the region that are normally reserved for deeper, late season conditions. Some examples include: Wolverine, Kickstep, Goat Couloir, TT43, and Captain's Chair.

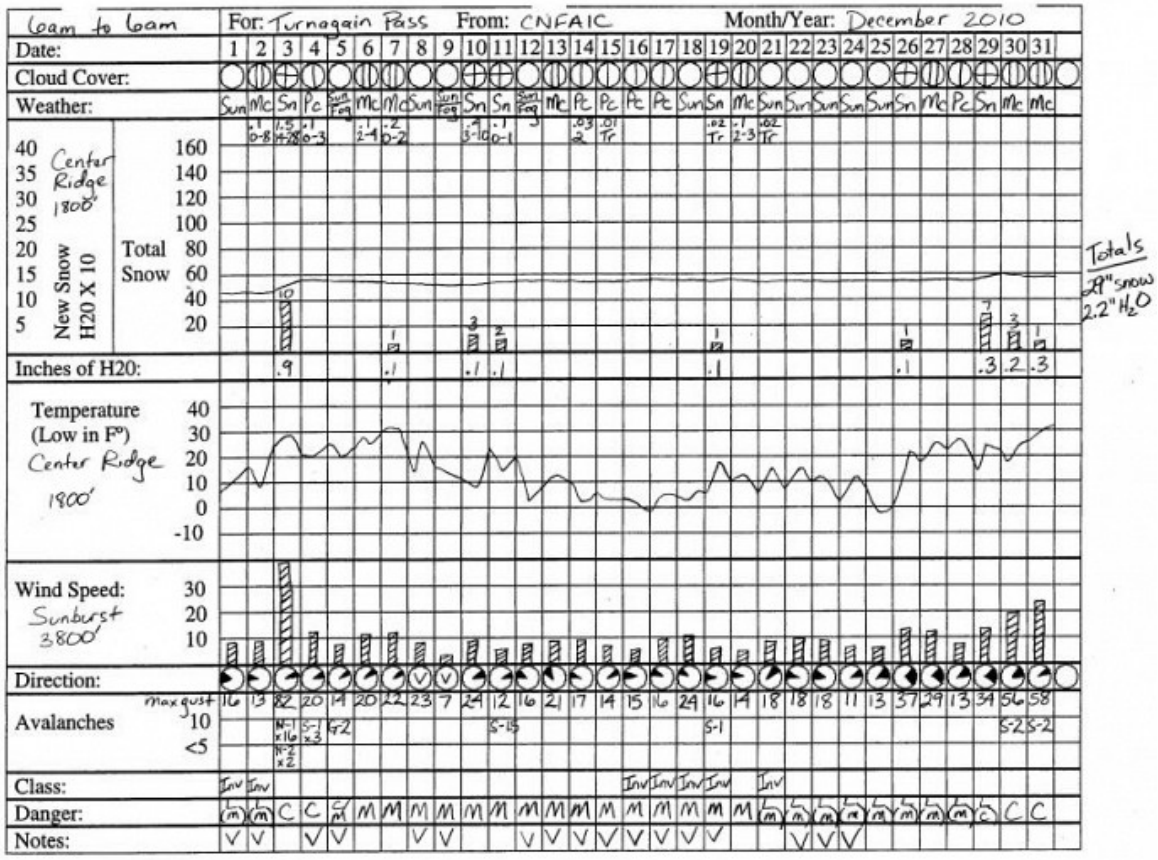
Snowpack temperature gradients were high for a couple weeks in the relatively shallow snow with cold temperatures. Faceting was happening in full force. Surface hoar also matured well during the cold and clear conditions.

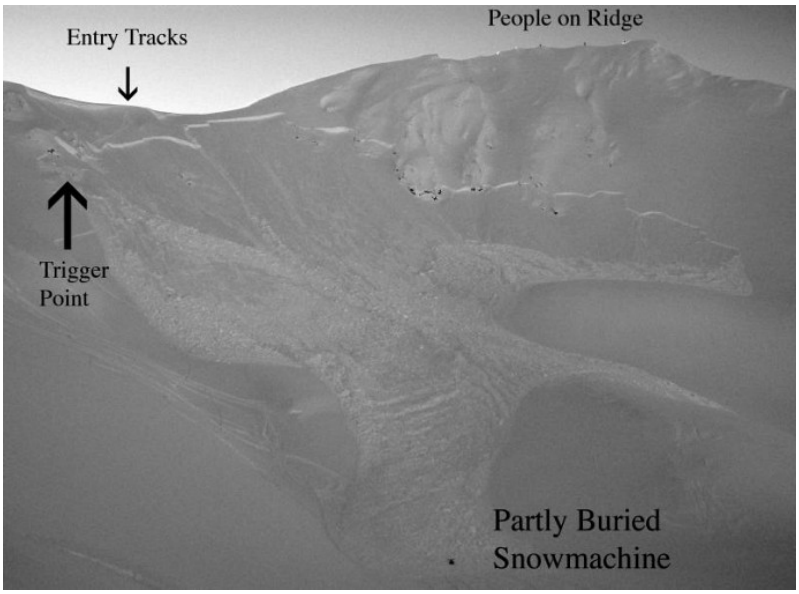
The weak snowpack kept us from dropping the danger rating completely to Low (11 days had Low with pockets of Moderate), but avalanche events were few and far between. Probably the most significant was a snowmachine-triggered avalanche in Snug Harbor area with few known details. Other small avalanche events were isolated new storm snow events.

The biggest storm was on December 3rd when we recorded 10 inches and .9 inches water.

The glide crack cycle in November calmed down significantly as the cold weather persisted, presumably because the ground interface finally had a chance to freeze up. Only a couple more observations of glide cracks or glide avalanches were made in early December.

By the end of December our confidence of future instabilities was high. The layering structure had deteriorated significantly, especially around the November 22 rain crust. Snow pit column tests had generally mixed results. We tracked the failures and decreased strength of those faceting weak layers throughout the month, but didn't find easy or clean failures until the next storm accelerated at the end of the month. Early January finally gave us that load which tipped the balance, overcame the weaknesses and caused widespread avalanching.


6am to 6am
For: Turnagain Pass
From: CNFAIC
Month/Year: December 2010
Date:
Cloud Cover:
Weather:
Center Ridge 1800'
New Snow H20 X 10
Total Snow
Totals
28" snow
2.2" H2O
Inches of H20:
Temperature (Low in F°)
Center Ridge 1800'
Wind Speed:
Sunburst 3800'
Direction:
Avalanches
Class:
Danger:
Notes:

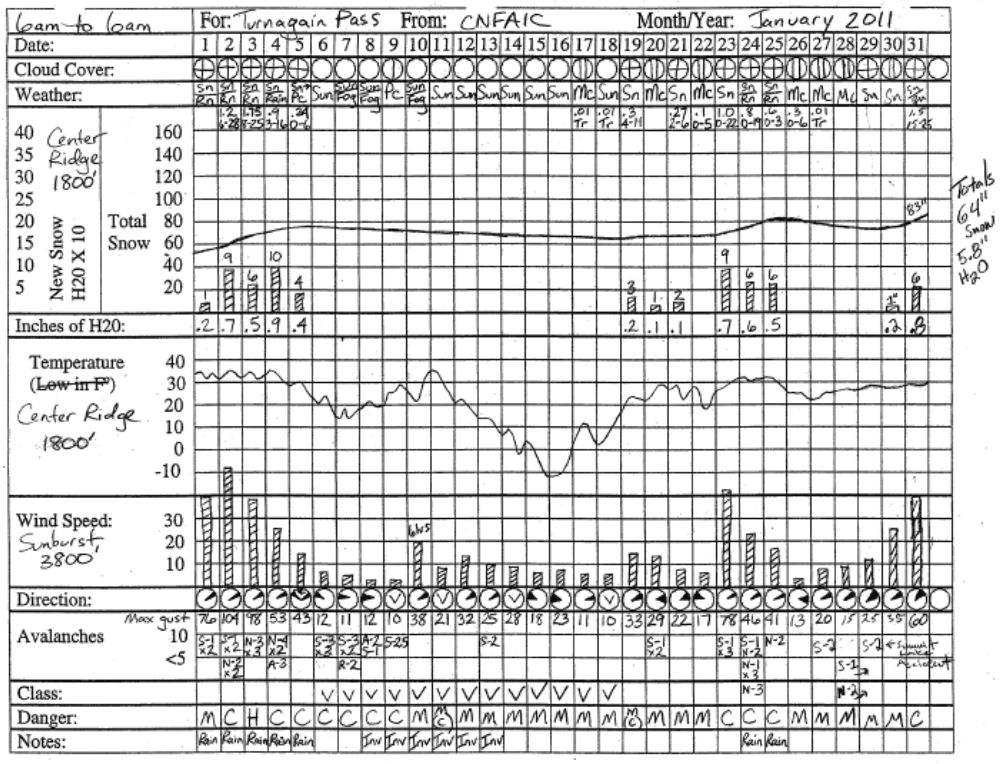

Entry Tracks
People on Ridge
Trigger Point
Partly Buried Snowmachine

January:

January was the second snowiest month of the winter, behind November. Quite a few avalanches happened, running on persistent weak layers of buried surface hoar and facets. The cold and dry weeks of December grew facets in force around the Thanksgiving rain crust and surface hoar on top. When the storm hit around New Years it was pretty obvious that avalanches would be a problem. The first storm coupled with sunny weather produced numerous natural and human triggered avalanches. A full burial of a snowboarder in Palmer Creek happened on the 7th. This avalanche ran on the facets above the Thanksgiving rain crust. As time went on the frequency of the avalanches dropped but it continued to react easily with remotely triggered slides several days after the storm ended.

The second two weeks of the month were clear and produced some giant surface hoar in the valleys. Wide swaths of low angle and low elevation terrain harbored fields of potato chip size hoar feathers. Some individual crystals reached over 5 inches in length. Fortunately this growth was generally confined to the lower angle areas and didn't cause problems when it was buried on the 19th.

The main problem in the second half of January continued to be the facets around the Thanksgiving rain crust. The events were few and far between but caused a handful of dangerous large avalanches. The most significant avalanche was the skier triggered slide on Butch mountain on the 29th. This avalanche was triggered by 4 skiers skinning up a shallow ridge. One in the party was fully buried but rescued by a companion. 3 had serious injuries and 2 dogs were killed. All 4 were rescued in an extensive multi-agency effort. Read the full report in the accidents section of this document.



February:

The end of January and through Feb 3rd brought a decent storm of moderate size and intensity. Turnagain Pass saw limited natural avalanche activity. On Feb3 I drove through the pass, seeing little of interest. On the 4th we went back through Turnagain and saw some wide reaching avalanches which didn't correspond with my observations of the previous day. The region around Lynx creek south to Summit had some large class 3 avalanches with extremely wide propagation. There was no significant loading or weather trigger that could have caused such events. Upon further investigation a 4.6 magnitude earthquake had happened on Feb. 3rd at 8:33pm centered on the Kenai peninsula just West of the Summit region. This earthquake was felt by people in Anchorage and Girdwood. I can't prove that the earthquake triggered the avalanches we found on 2-4, by I believe it to be highly probable.

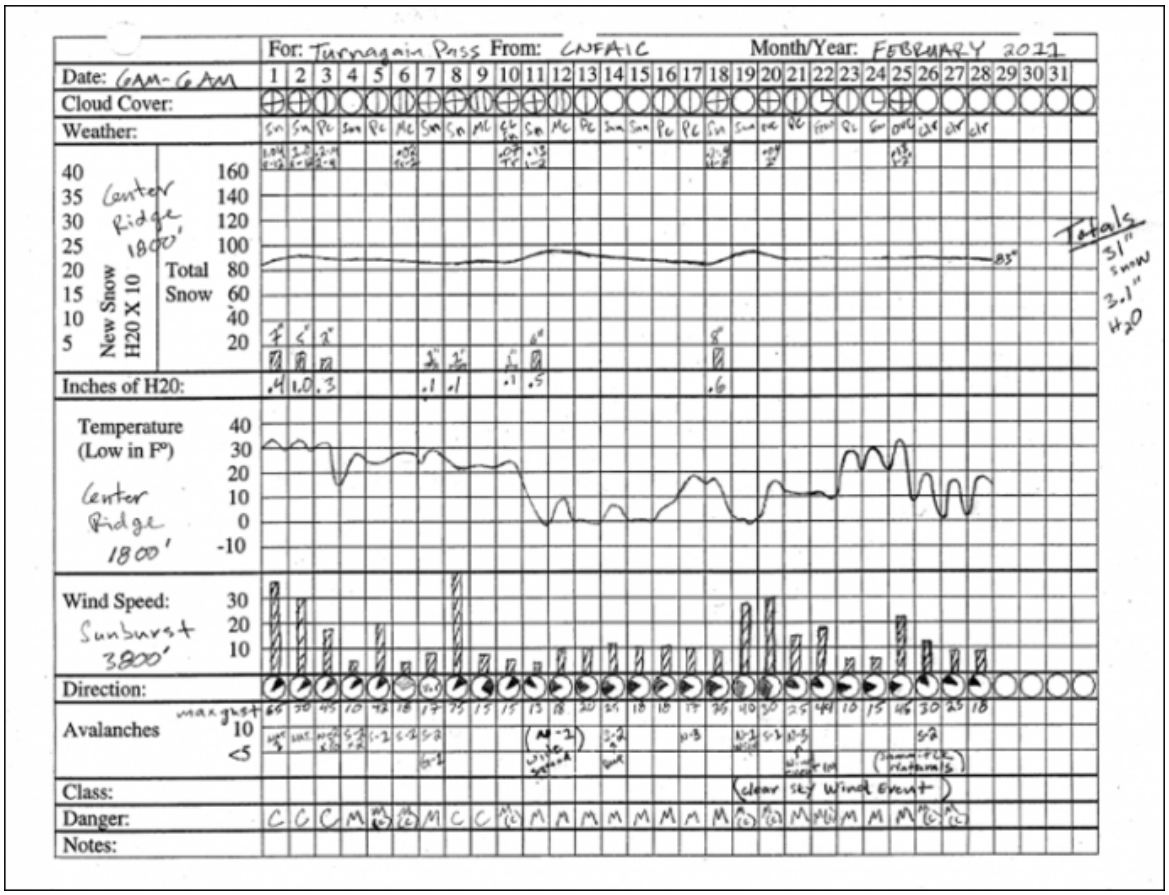
Later on 2-4 a snowmachine remotely triggered an avalanche in Junior's bowl off Seattle ridge. This avalanche was captured between 1:30 and 2:30 on the Seattle ridge webcam.

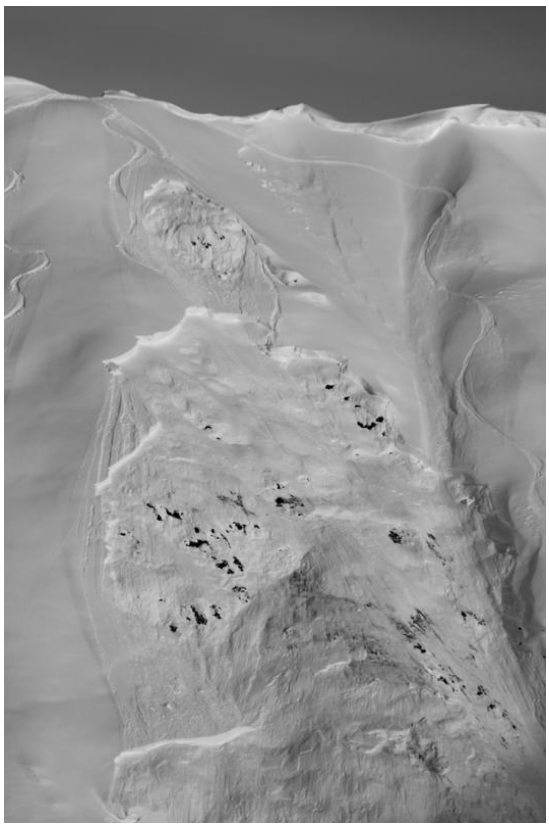
Human triggered avalanches continued to be reported through 2-7, mainly in steeper, rocky terrain. The shallow snowpack continued to be a major contributing factor.

On 2-24 a skier triggered avalanche was reported on Raggedtop mountain. Wendy went to investigate and found that the avalanche may have initiated by a natural releasing wind slab hitting the skier and stepping into the deeper layers lower down in weaker snow.

On 2-18 a Westerly Front dropped 8 inches of light density snow on Turnagain Pass, 12 inches in Summit. The skiing was excellent with loose sluffs falling large distances and stability remaining safe and manageable. The next day a sustained wind started blowing and transformed the snow over the next few days. Many small wind slabs and sluffs were witnessed on 2-19. By the 21st the size of some natural wind slabs had grown considerably. Some natural avalanches were getting to be D3 in size with wide propagation and some very deep pockets. Most of the larger events were breaking on facets above the Thanksgiving rain crust.

The month ended with a high pressure that extended well into March.


For: Turnagain Pass From: CNFAIC Month/Year: FEBRUARY 2022
Date: 6AM-6AM
Cloud Cover:
Weather:
New Snow H20 X 10
Total Snow
Center Ridge 1800'
Inches of H20:
Temperature (Low in F°)
Center Ridge 1800'
Wind Speed:
Sunburst 3800'
Direction:
Avalanches
max gust
Class:
Danger:
Notes:
Totals 51" snow 3.1" H20



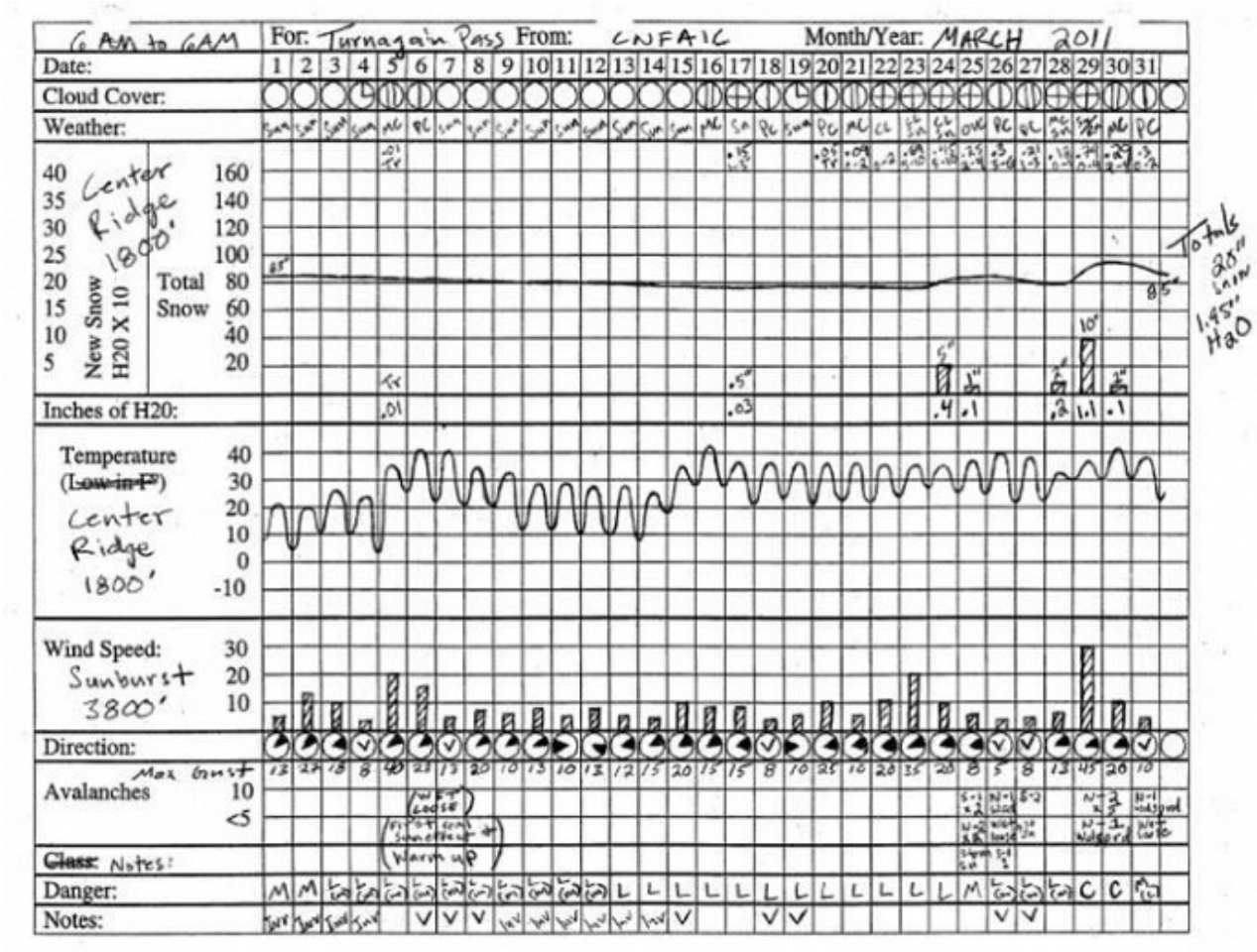
March

March was one of the worst months of skiing in recent memory. The wind storm at the end of February turned the landscape into hard windboard and sastrugi.

The poor structure and lingering reactivity from the facets around the Thanksgiving rain crust kept us worried into March. Eventually we dropped the danger rating back to Low, as even the persistent weaknesses became inactive. 25 days had a Low or Low with pockets of Moderate rating.

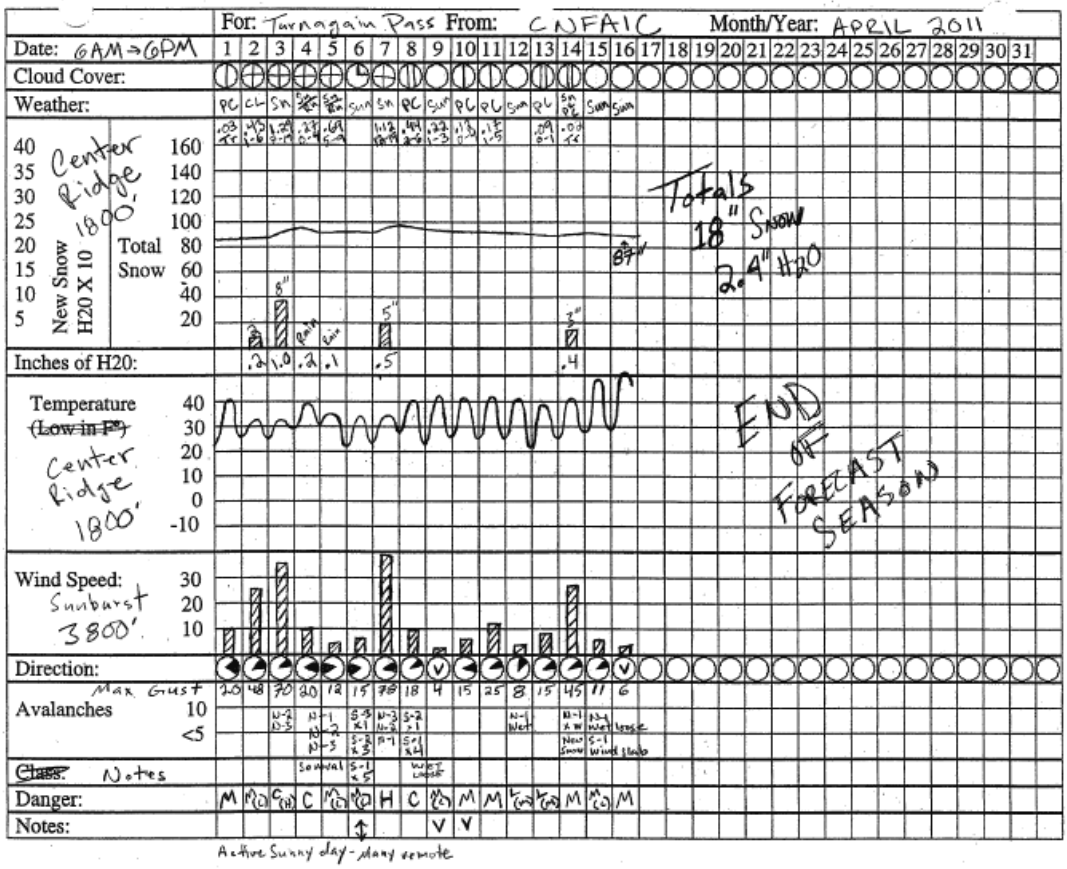
Avalanche activity was few and far between. A couple avalanches were reported after a 5-6 inch storm on the 25th and a skier triggered avalanche happened on Tincan on the 28th. The largest snowfall event was from the 28th-30th when 14 inches fell at Turnagain.

Outside our advisory area in Hatcher Pass there was a fatal avalanche on the 19th. One skier was killed and his partner injured on the South face of Hatch peak. Wendy did an investigation and submitted it to the CAIC database.



April

Our final 2 weeks of advisories brought another round of Buried Surface Hoar. Several human triggered avalanches were reported and many others went unreported. A ski guide had a major avalanche incident in the Grandview region, triggering an avalanche while doing snow assessment work. He deployed an airbag but was fully buried 2-4 feet deep. Other guides performed a quick rescue and no injuries were reported. Towards the end of our advisory season the snowpack was starting to warm up and transition to wet slab instabilities. The fatality on April 18th happened in Chugach State Park, but close to our Girdwood advisory zone. This unusual event was a wet loose avalanche causing the death of a solo sledder late in the afternoon. See the full report below from AMRG.



Accident Reports

Butch Mountain avalanche January 29th 2011

Synopsis

Four skiers triggered an avalanche on Butch mountain that broke above them as they were ascending on skins. All four were caught and carried through trees, one was buried completely, two partially. The avalanche was approximately 300' wide, 1-3' deep, running about 800 vertical feet. It broke on a WNW facing mid-slope convexity where slope angles increased from around 30 degrees (location of skiers) to angles approaching 40 degrees at the crown. This avalanche resulted in serious injuries to 3 of the 4 skiers and killed 2 dogs. All 4 skiers were rescued by an extensive inter-agency effort.

SS-AS-R2-D2-O

Accident Summary

On the morning of Saturday, January 29th, 4 skiers with 2 dogs departed from their vehicles at the Summit Lake Lodge. They skinned up towards the Northwest facing slope of the mountain north of Butcher creek, marked on USGS maps as “Butch”. The skiers said that they had spent many other days skiing in this area and that it was familiar terrain. They had read the avalanche advisory issued for the Summit area that day.

At one steep point partway up the mountain they planned to go right but found hard surface conditions that made travel difficult. They decided to traverse across to get to the side of the wide open slope. No signs of instability were heard or felt on the way up.

The group made a conscious decision to stay spread apart while ascending. At one point they gathered at the flank of the exposed slope to discuss their plans. They planned to take a break for lunch near a cluster of trees above them. Just when the group started to move again they felt a sudden collapse and the snow they were on started to avalanche. The top of the slab that released was well above the highest member of the party.

Skier A took the shortest ride, possibly due to the deployment of an avalanche airbag. He was partially buried and shoved against a tree. When the snow stopped moving he was pinned against the tree in a position that made breathing very difficult. With one free arm he dug himself out and freed himself. He lost his skis and had few obvious injuries, but later found serious internal injuries including a ruptured kidney. After digging himself out he went to the aid of the other skiers. He performed a beacon search with a BCA Tracker 2 and dug out skier B, who was completely buried.

Skier B tried to ski off the slab, but found it difficult to do so with his skins and climbing posts engaged. He fell and continued to be swept downhill, losing both skis in the process. His releasable Dynafit bindings (in locked tour mode) were ripped off his boots, causing damage to the toe interface on his boots. He became submerged a couple of times and impacted trees on the way down, hitting his head and shoulder with significant force. When the snow stopped moving he was buried up to his neck briefly before another wave of snow fully buried him. He was buried upright, in a standing position, facing downhill. The second wave of snow "rolled over and left an air pocket in front of his face."

The burial "felt like only 5 minutes but was probably closer to 20 minutes." He may have blacked out while buried. Skier A came in with a beacon search, quickly uncovering skier B's head about 2 feet below the surface. The rest of the extrication took some time to completely free him and when he was finally out he was shivering uncontrollably from the cold. He put on his insulating clothes and drank some hot tea to fight off hypothermia.

Skier C was not buried. His skis with releasable bindings did not release. One ski broke in half. He had a broken leg, 5 broken ribs, and a partially collapsed lung. The leg injury is probably a direct result of his ski not releasing.

Skier D was partially buried. His telemark skis did not release and his legs were twisted and severely strained. He suffered head contusions, black eyes, and some knee injuries. Both his dogs were buried, presumed dead, and not recovered.

Rescue

One of the skiers was able to get an early call by cell phone to 911. Initial response was coordinated through Alaska State Trooper dispatch. The Troopers took command of the rescue

and called the Alaska Mountain Rescue Group to gather resources. The State Trooper A-star Helo 1 deployed immediately, flying to Girdwood first to pick up an avalanche rescue team of Alyeska Resort Snow Safety employees. Two Lifemed helicopters also responded to the staging area at Summit Lake. Other resources involved were: Moose Pass fire department, U.S. Forest Service, and Anchorage Nordic Ski Patrol. The initial assessment of residual avalanche hazard and landing zones would not allow for a quick helicopter rescue. The Troopers called the Rescue Coordination Center to request a helicopter with hoist capabilities. At the same time a ground rescue team worked up from the bottom on skis to try to get to the site from safer ground below. The Air National Guard arrived with a Pavehawk helicopter and Pararescue personnel. All 4 skiers were hoisted to the helicopter. One subject was dropped at the parking lot and the 3 others were flown direct to Providence hospital in Anchorage.

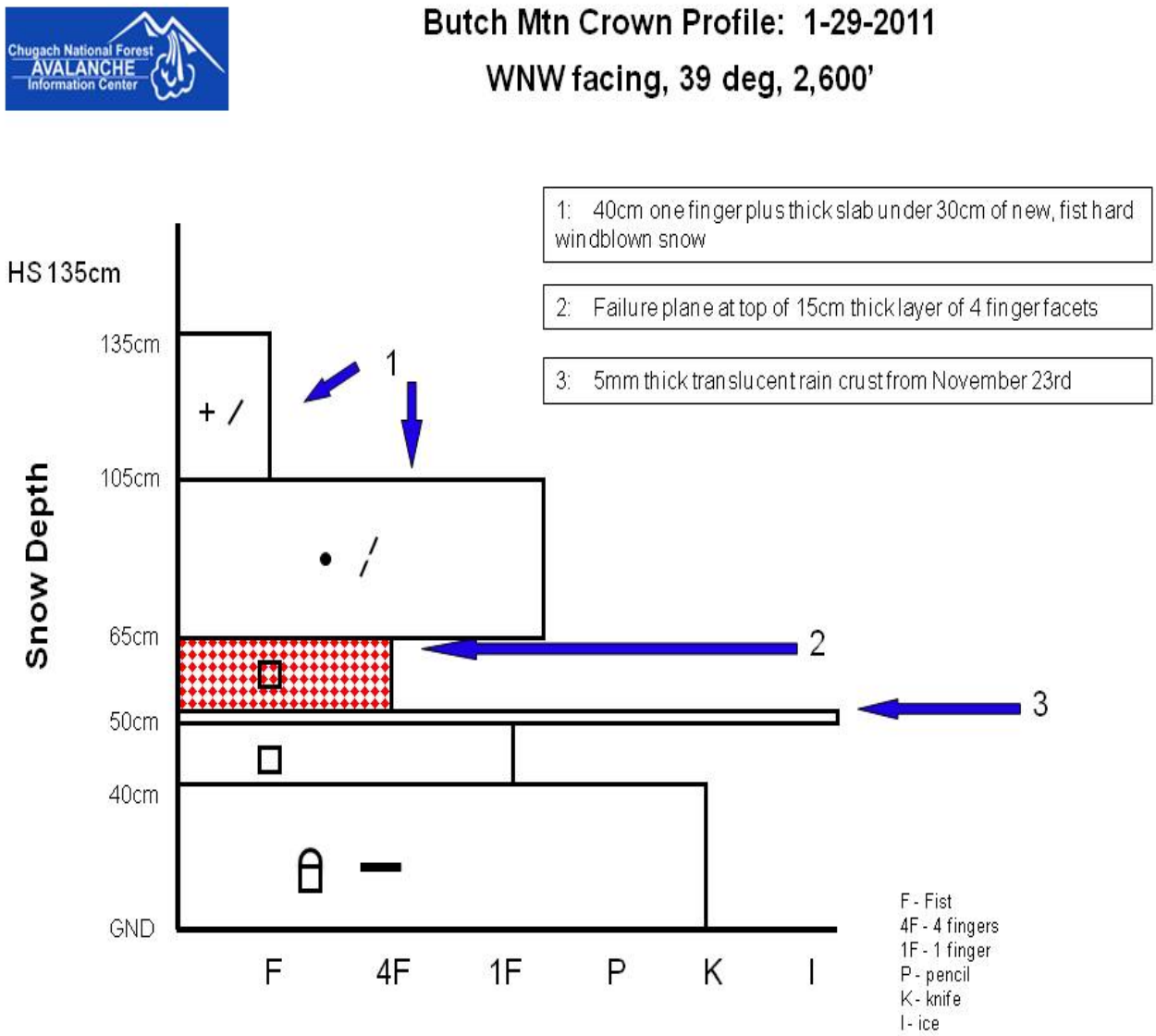
Weather

The Summit Creek SNOTEL site is used for snowfall data and is ~1000' vertical lower and 3 miles SW of the crown. The Fresno Ridge FCNFAIC weather station is used for temperature and wind data and is ~1000' vertical higher and 3 miles NW of the crown.

On November 22-24th 0.3" of rain fell on top of 16" of snow from earlier that month. This precipitation event switched to snow on the 25th and deposited 6" of new snow. December through early January put down 20" of intermittent snow with occasional wind. No snow fell from January 6th till the 18th. Between January 21st and 25th 9" of snow fell with strong northerly winds. There was no new snow between January 26th and the accident on the 29th. In this three day period prior to the avalanche winds were generally light, skies partly to mostly cloudy and temperatures were between 15F to 20F. On the 29th, the day of the accident, skies were overcast with a few snow flurries and winds increased to 12-17mph gusting to 30mph from the NNE. Air temperature near the time of the accident was 25F.

Snowpack

The total depth of the snowpack at the crown was 135 cm deep. 18cm of new, fist hard windblown snow was overlying 40 cm of old, pencil hard small rounding facets. This was all on top of a 15 cm thick layer of 4 finger facets, where the avalanche broke down to. These facets formed above the translucent rain crust from late November, which acted as an excellent bed surface for this and many other avalanches. Stability tests in the area had recently shown a trend of low strength and high energy failures at both layers of facets around the rain crust. Collapses were noted by several observers at similar elevations on days preceding the event. There was one small midslope avalanche reported in a similar area, otherwise there were no other bullseye clues.



Summit Avalanche Advisory 1-29-11

Good morning backcountry travelers, this is Alex McLain with the Chugach National Forest Avalanche Information Center on Saturday January 29th at 7 am. This will serve as a general backcountry avalanche advisory issued for Summit Lake as the core advisory area (this advisory does not apply to highways, railroads, or operating ski areas).

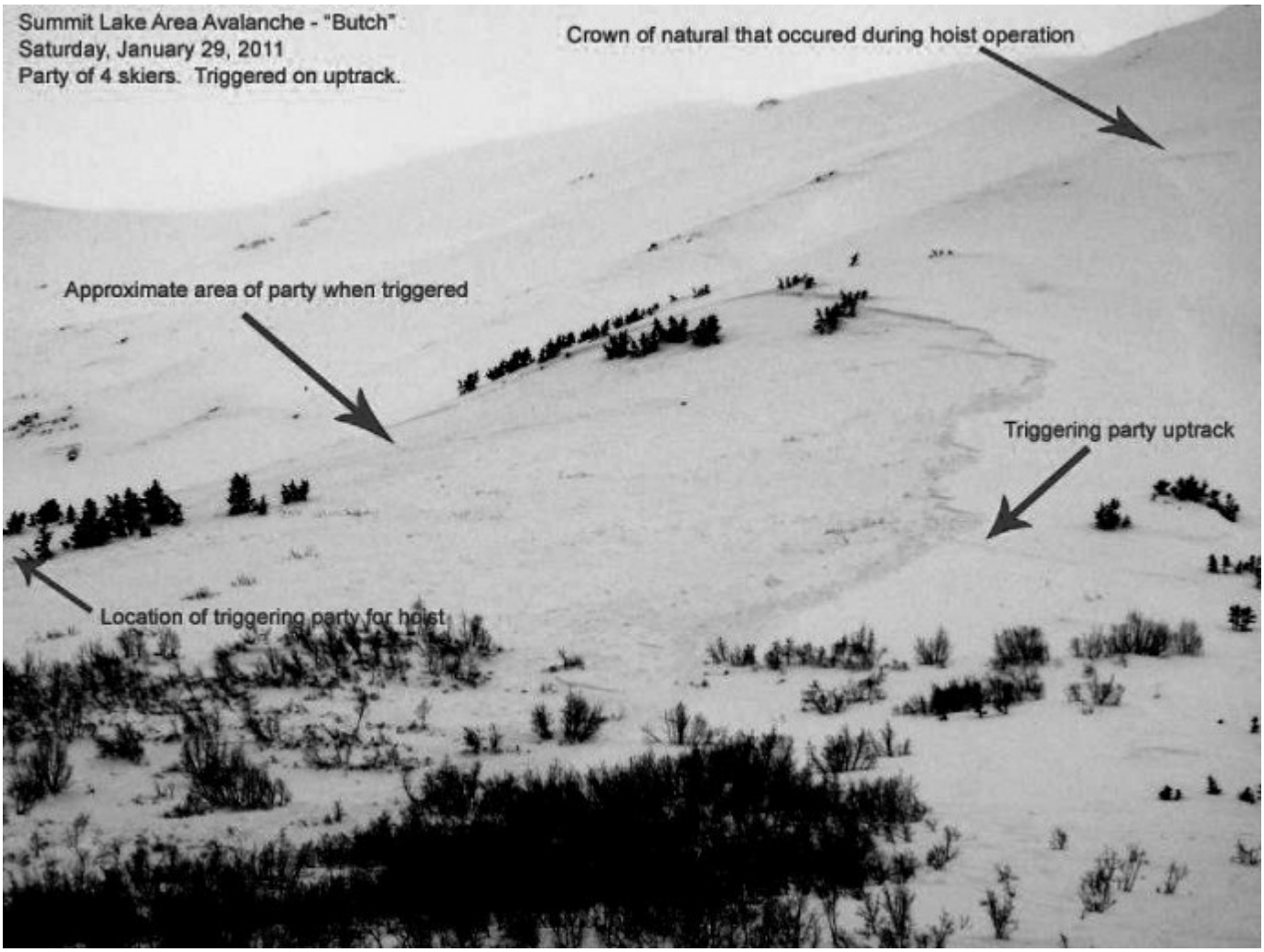
Based on recent observations and data, natural avalanches are unlikely; human triggered avalanches are possible. Heightened avalanche conditions on specific terrain features. Evaluate snow and terrain carefully; identify features of concern.

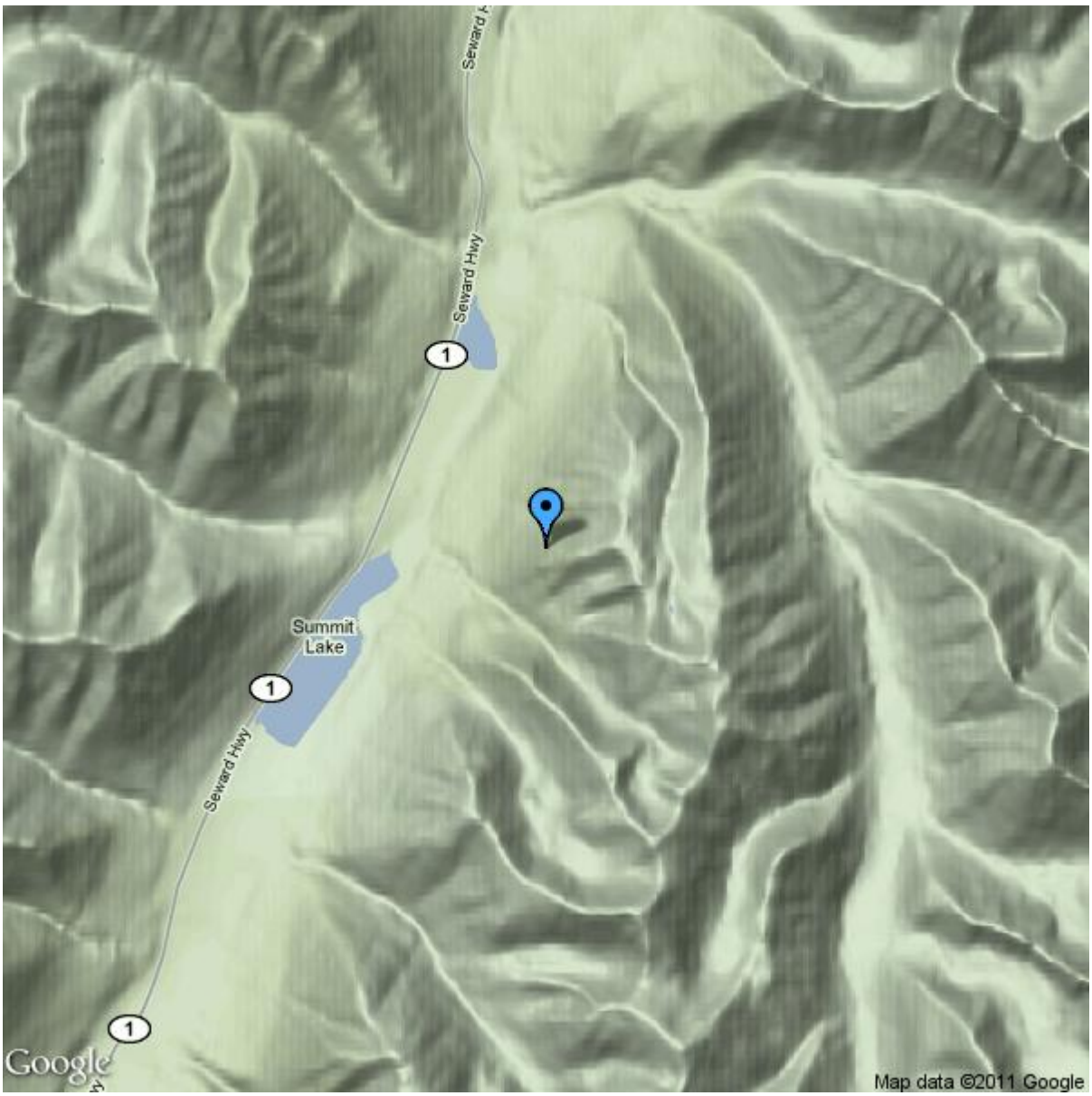
The primary concern today will be new snow on top of layers of ice and facets. Areas of higher snowfall amounts and where windloading has occurred have a higher probability of sliding today. The snowpack is variable out there and the slopes were reactive to skiers and riders in steeper terrain above 35 degrees on Friday. The inconsistency in the snowpack went from staying on top to falling to your waist through the layers in some areas. One small mid slope natural avalanche had happened north of Tenderfoot Ridge (Ski Hill) on steep slopes but this was not widespread.

Some good observations from other skiers in the area demonstrate the inconsistency in the snow pack. One long time experienced skier up at Summit Lake left an observation with me yesterday describing several large whumphs and collapsing of the snowpack on a 35 degree slope. He then left the area immediately and returned safely. He was one mile north of our location where we did not see that kind of collapsing. (Thanks, Pete for that observation. Good decision making!)

Incidents outside of the Summit Area came from a skier at Turnagain pass who was on a 45 degree slope and triggered an avalanche on Friday that was 2 feet deep and 150'wide and ran 1000'. He was not caught in the slide. On Monday 1/24 a snowmachiner at Lost Lake triggered a small slide north east of the lake on the Primrose side. The slide was 2 feet deep and 30' wide and ran approximately 50'. This was on a 80' long 30-40 degree slope. He was partially buried with part of his helmet and his hand sticking out of the snow. His partner dug him out in 15 minutes. His sled was also buried in the slide. Instabilities were noted prior to the slide, but it just goes to show you that even small slides can create a real hazard. Glad to hear everyone is making it out safe but the more we test our luck the higher the likelihood that someone's luck will run out.

Bottom line is there are slopes still proving to be reactive to human triggers. The possibility increases as you get on steeper terrain even if that terrain seems small. Recreationists out there this weekend who don’t take this to heart and press their luck could very easily find trouble. And finally, more snow/rain is forecasted to make its way into the area in the upcoming week, increasing the avalanche danger.


Summit Lake Area Avalanche - "Butch"
Saturday, January 29, 2011
Party of 4 skiers. Triggered on uptrack.
Crown of natural that occured during hoist operation
Approximate area of party when triggered
Triggering party uptrack
Location of triggering party for hoist



Discussion

This avalanche was a perfect example of the type of snow conditions that persisted in the 2010/11 winter. Shallow snow, well developed weak layers above and below an ice crust, and the possibility of triggering avalanches long after storms. The Summit region is always a shallower snowpack than Turnagain Pass, but this year it was especially continental in character. On many occasions it only took small amounts of new snow to cause avalanche reactivity, and the hazard lingered longer than normal.

Report by Jon Gellings, Wendy Wagner, Alex Mclain, and Kevin Wright with help from the Alaska Mountain Rescue Group.

Hatch Peak Avalanche Fatality

Date: 19 March 2011 Place: Hatch Peak (Hatcher Pass area, Talkeetna Mountains) State: Alaska Fatalities: 1 Summary: 2 skiers caught, 1 partially buried and 1fully buried and killed. Avalanche: HS-ASu-R2-D2.5-O

ACCIDENT SUMMARY

Two experienced backcountry skiers approached the "Sunnyside" run, on the ESE face of Hatch Peak near 5:00pm on March 19th, 2011. There were apporximately 6 tracks on the slope from earlier that day. Skier 1 skied down first and staged midway down the slope in order to spot skier 2. After skier 2 made a few turns into the run he felt the slide initiate. By using swimming motions he was able to self-rescue off the moving debris onto the side. Once out of the debris, skier 2 realized he had injured his leg. He did not see skier 1 on, or near, the slide path or on the debris. His lower leg injury did not allow him to begin companion rescue. He initiated a rescue using an emergency locator beacon. Skier 1 was swept down the gully and buried 14 feet deep.

RESCUE SUMMARY

Skiers from another party arrived on the scene first and began assisting the injured skier 2 and then performed an initial rescue effort for buried skier 1. They found the beacon signal at the vicinity of the toe of the debris and started digging a hole to excavate the subject. Due to the depth of the burial and the diminishing daylight they could not extricate the buried person. The initial rescuers were airlifted from the extrication site by a state trooper helicopter at 1951. The injured skier was hoisted out by 212th Rescue Squadron at 2041 and transported to the nearest hospital.

There were spontaneous rescuers at the nearest parking lot wanting to help with the initial rescue effort with snow machines, but state troopers on scene asked people to stand down due to avalanche hazard and diminishing daylight. Members of Alaska Mountain Rescue Group (AMRG), Nordic Ski Patrol and Alaska Search and Rescue Dogs (ASARD) were on standby to assist with the rescue, but were not deployed. One state trooper helicopter with one AMRG volunteer were the only organized rescuers that assisted on Saturday. A park ranger with state troopers made a plan to request resources for a search the next day.

On the following day, March 20th at 7:15am, an organized rescue by the AMRG, Anchorage Nordic Ski Patrol and ASARD staged at a large parking lot, just shy of Hatcher Pass Lodge. A snow safety helicopter over-flight showed some lingering hangfire that would run into the same gully as the initial slide, though with limited volume. With light winds, early-in-the-day temperatures, and 2 avalanche guards (1 up on a ridge, 1 on a lower gully rib), the decision was made to insert rescuers and work the debris. There was already a sizeable hole dug the previous evening by the backcountry skiers in the other party. The smallest beacon reading at the bottom of the hole was reportedly 2-3 meters. ASARD members were able to use dogs at the bottom of the hole to assist in pinpointing the subject. Large, aluminum, grain-scoop style shovels were used to excavate the majority of the debris. Strategic shoveling (conveyor belt

style) was used for excavation and took approximately 60 minutes to excavate the deceased subject, approximately 14 feet under the snow surface.

WEATHER

During the end of February, 18 inches of snow was recorded at the Independence mine SNOTEL site (2.5 miles NE and 1000'feet lower than the crown). Winds gusting over 40mph were observed at the Marmot weather station (2 miles NE at the same elevation) on March 3rd, 8th and 9th. After 16 days with no new snow, on March 17th, two days prior to the avalanche, 9 inches of snow fell with 0.7 inches of SWE. The day before and the day of the avalanche skies were mostly sunny. Temperatures were in the mid to high twenties and lows in the teens on both days with light variable winds. Temperature at 5:00pm, near the time of the avalanche, was 20F with winds light from the southwest.

SNOWPACK

There is limited data for the snowpack evolution in the Hatcher Pass region. However, in general by the middle of March average snowpack depths were 60 – 100cm. High winds during early March produced medium to large class 2 and 3 natural and human triggered avalanches. By March 19th the snowpack was reported to have been variable with 8-12 inches of low density snow over hard old wind slabs which overlaid faceted grains in many locations.

This was a fairly narrow avalanche with respect to the size of the bowl. It ran full path, estimated at 250' wide by 1600'. It was on the lee side of a previously wind loaded rib which funneled down into a narrow gully. The crown was 60 – 120cm deep and was on an ESE facing 36-38° slope at 4500'. A second 100' wide crown was pulled out on the skiers right flank mid-slope. Classified as an HS-ASu- R2-D2.5-O.

No avalanche advisory or danger ratings are produced in this region.

Report was written by Andy Dietrick (Alaska Mountain Rescue Group), Eeva Latosuo (Alaska Search and Rescue Dogs) and Wendy Wagner (Chugach National Forest Avalanche Information Center).

Bird Ridge Avalanche Fatality

Submitted By: Alaska Mountain Rescue Group
Place: BIRD RIDGE, CHUGACH STATE PARK, CHUGACH MTNS
Date: 04-18-2011
Fatalities: 1
Activity: GLISSADING
Summary: 1 person caught and killed
OFFICIAL REPORT FROM ALASKA MOUNTAIN RESCUE GROUP
Bill Romberg, Alaska Mountain Rescue Group

ACCIDENT SUMMARY

There were no eye witnesses to this avalanche accident. However, based upon the observable clues in the area and information from friends, it would appear that the subject

hiked up Bird Ridge from the trailhead on the evening of 4-18-11 and then traversed out onto the slope to descend back to the valley floor by glissading a snow slope. According to friends, the subject often selected hiking routes at this time of year with a glissade descent in mind. The subject carried a small, roll-up plastic sled which was found attached to wrist by a tether. Footprints were clearly visible heading from Bird Ridge onto the slope and then ending at a narrow track which leads to a wet loose avalanche crown. It appears that during the descent of the slope, the subject triggered a wet loose snow avalanche that swept him approximately 50m down slope through a small stand of alders leaving him partially buried on a small ledge about 3m below the alders. The debris continued down slope triggering a secondary loose snow avalanche about 60-70m below the subject that deposited debris another 100m below.

RESCUE SUMMARY

On Tuesday, Apr 19, at approximately 1040, AST Helo-1 was activated to help search for an Anchorage West High School teacher (male, age 41) who was reported overdue for work and was expected to have been out hiking the evening before (4-18-11). With the help of friends and co-workers, the subject's car was located near the Bird Ridge trailhead parking lot at approximately mile 102 of the Seward Hwy. The spotter and pilot on board AST Helo-1 observed an small avalanche on the west side of Bird Ridge at 2300 feet (Coordinates: N60 59.544 W149 28.131 WGS 84). They subsequently spotted a dark object in the path of the avalanche below a small patch of alders that turned out to be a black plastic sled attached to the partially-buried body of the subject. Helo-1 landed on top of Bird Ridge above the avalanche path to off load the AMRG spotter who carefully climbed down the slide path to the location of the subject. Two friends/coworkers out searching for the subject in the area also arrived on scene, helping to uncover the subject's body and assisting with loading the subject into a body bag that was transported off the slope via sling by Helo-1.

The subject was found with his head/torso fully buried, angled slightly head downhill, with his left arm and left leg exposed with the black plastic sled attached by a green nylon tether to his left wrist. The subject did not have an avalanche transceiver on him, nor a backpack with probe, shovel or other equipment.

A crown profile was not conducted on this avalanche for safety reasons. It was approaching the time of day when the slope begins receiving direct sunshine and there was significant potential for additional wet slab and/or loose snow avalanches. All avalanche observations reported below are estimates based upon photos and a postrecovery interview with the rescuer on scene.

Avalanche Characteristics

WL-AOu-R1-D2-I Triggered by subject glissading down the slope. Weak layer: most likely the top of a thick layer of faceted snow beneath snow that fell first week of April. Significant solar warming the previous three days. Time of day: exact time unknown,

but after 5 pm.
Aspect: 270
Elevation: 700m (2,300 ft)
Slope Angle: 40 degrees (est.)
Width: 10 m (max)
Depth: 0.7 m (max)
Coordinates: N60 59.544 W149 28.131 (WGS 84)

Finances and Fundraising - The Friends of the CNFAIC

The Friends of the CNFAIC continues to be instrumental to operations. Fund raising continued to be very successful with a fall slide show and auction, Telepalooza, annual memberships, corporate and private donations. The Avalanche Center could not function in its current capacity without the financial and volunteer support of this dedicated group of people.

Survey Results

FRIENDS OF THE CNFAIC 2011 SURVEY

The goal of this survey was to encourage user input for future goals and direction for the avalanche center, as well as
for the Friends Group. A total of 405 people took the survey. With a current Friends Group size of 207, the survey reached more people than there are Friends, greatly increasing awareness of the Group in our area.

Listed below are a few key findings. Please keep in mind that these numbers only represent the views of the people who completed the survey.

All of the services the Friends Group currently support are useful to some extent.
People want forecasts for more areas, and would like more outreach done.
The Summit Lake forecast is important, and should be expanded in the future.
Turnagain Pass is most frequently recreated in, while Summit Lake, Girdwood, the Front Range, and Hatcher Pass all receive moderate use.

5. The majority (69%) of backcountry travelers do not submit avalanche observations, because most are unsure what information is useful to the forecasters.
6. Future communications from the Friends Group will be electronic, which will save paper in the future.

Qualitative responses on our open ended questions were very valuable, and will help us determine future direction when sought. Here are a few examples of planned changes that are either underway or slated for future implementation.

- Making submitted observations available to the public, pending forecaster approval.
- Expand Summit Lake forecasts to more days per week, extent TBD.
- Advocate starting forecasts in Hatcher Pass and Chugach State Park.
- Organize Alaska Snow and Avalanche Workshop for Fall 2011.
- Provide free avalanche education to middle school students.
- Host a beacon park at Glen Alps / Flattop several times per winter.
- Expand outreach to provide direction for submitting observations, and to encourage avalanche awareness in the Anchorage area.
- Make the General Snow Conditions at the bottom of advisories easier to interpret.

The Forecasters would like to thank everyone in the community for extending such incredible support to the Avalanche Center. This service wouldn't be possible without a strong community desire to make it happen. Have a great summer. We look forward to seeing everyone next winter.

-Kevin Wright
-Jon Gellings
-Wendy Wagner