TWO DECADES OF A WINTER BACKCOUNTRY PERMIT – IS THIS THE 'RIGHT' TOOL TO ENCOURAGE AWARENESS, EDUCATION AND RESPONSIBILITY?

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ABSTRACT: In Arizona, the Kachina Peaks rise to an elevation of over 3,800 meters providing a stark contrast to a relatively flat and arid landscape below. Slope angles and storm tracks provide great opportunity for avalanche activity. The Arizona Snowbowl Resort (ASR) carves a slice of pizza out of this terrain, providing lift served access to the Kachina Peaks and offering access to visitors, largely from a desert population center who are often unprepared and poorly informed of hazards. This terrain remains far outside of any Avalanche Center supported backcountry area. The terrain, accessibility, and user assemblage provide a recipe for disaster; this tragedy came together for a young man who was killed by a large slab avalanche in 1995, who was recorded as the first and only avalanche fatality in Arizona. After this tragic event, local land managers, search and rescue leaders, and ski area management convened together and struggled with ways to increase awareness of these hazards and reduce future accidents. The solution soon became a new winter backcountry permit system and by 1998 winter recreationalists were required to obtain a free, season long permit from the Forest Service to leave ASR. The purpose of the permit system is to engage a face-to-face interaction to promote education and awareness of hazards and responsibility necessary for backcountry travel, not to restrict access to public land. Nearly two decades later, the winter backcountry permit remains an anomaly across public land in the west. This paper and poster provides the rational, history, and operation of the permit system and endeavors to explore if the permit system is still an effective tool for education in this unique latitude.

KEYWORDS: Permit System, Education, Public Safety.

1. INTRODUCTION

1.1 The Mountain

The Kachina Peaks sits at the southern edge of the Colorado Plateau and can be seen from hundreds of miles away in most directions. Designated in 1984 the Kachina Peaks Wilderness encompasses 19,717 acres from ponderosa pine at elevations of 8,000 to the highest peak in the state, Humphreys Peak (3852 m) and the only alpine tundra found in Arizona. The wilderness offers recreationalists opportunities to explore multiple life zones year round whether hiking, climbing, or skiing.

Like a missing piece of a pie, the Arizona Snowbowl Resort (ASR) is a 777 acre ski area cut out of the wilderness. Claiming to be one of the west's oldest ski area, skiing began in 1937 at ASR. Operated under a special use permit from the Coconino National Forest, ASR has an 'open boundary' policy, providing legal access out of the ski area and into the wilderness. The main chairlift, Agassiz Lift, brings skiers to an easy access point to leave ASR and enter the wilderness and subsequent uncontrolled avalanche terrain.

1.2 The Population

A majority of visitors participating in Winter Sports Activities on the Coconino National Forest represent zip codes from the Phoenix metropolitan area. The cities of Phoenix and adjacent communities continue to be one of the fastest growing places in the United States. As populations continue to rise, people look for places to recreate. The Kachina Peaks provide an interesting alternative to the desert landscape adjacent to Phoenix, a cool summer reprieve, or a chance to experience the winter season.

Many of these visitors have no or little avalanche education and have little acknowledgement of the risks involved with skiing or snowboarding outside of the controlled ski resort. Ignorance and lack of awareness contributes to human factors of the behavior of backcountry users in the Kachina Peaks Wilderness.

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1.3 Avalanche History on the Kachina Peaks

Avalanche activity on the Kachina Peaks has been recognized for some time. Several efforts have been made over the years to study and bring this awareness forward. The San Francisco Mountain Avalanche Project (SFMAP) began in 1987 as a non-profit research organization focused on research as well as education including avalanche clinics for the public. SFMAP did work into the 1980s but eventually was unable to continue for a lack of sustainable funding. The project revealed priceless research, confirming that avalanches occur in Arizona, although likely not as frequently as our neighbors to the north in Utah and Colorado. It is important to note that there has never been any coverage from a USDA Forest Service Avalanche Center in the southwest region.

In January of 1995 two snowboarders, students at Northern Arizona University, left the ski area and entered avalanche terrain southwest of ASR in the wilderness. One snowboarder triggered a slide and was carried into debris and trees, later succumbed to internal injuries from the trauma. The snowboarders were reasonably skilled backcountry users and had some knowledge of avalanche hazards, but failed to recognize conditions from a strong continuous wind event that had built a thick wind slab on this slope.

Knowing the population of users, their awareness, and documentation of natural and skier triggered avalanches in the Kachina Peaks it is surprising to discover that the 1995 incident has been the only know avalanche fatality in Arizona.

2. THE PROBLEM

The problem was clear to the Coconino National Forest, the Sherriff Office Search and Rescue, and ASR. There was a growing population of backcountry skiers and snowboarders leaving the 'safety' of the ski area and entering avalanche terrain. Many of these users had little awareness of avalanches, combined with increasing numbers, accessible avalanche terrain, and no avalanche forecast or center, land managers had a recipe for disaster on their hands.

3. A BACKCOUNTRY PERMIT SYSTEM IS BORN

After much collaboration, the decision was made by the Coconino National Forest to develop a required backcountry entry permit. The purpose of the permit is to promote education and awareness of the hazards and responsibilities necessary for back country travel. The purpose was not to restrict access to the wilderness, the permit would be free and issued once for the entire ski season.

Beginning in the winter season of 1998 recreationalists were required to obtain the Kachina Peaks Winter Backcountry Permit before leaving the ski area and entering the wilderness.

3.1 Requirements of the Permit

The permit requires a backcountry user to read and sign the terms and conditions of the permit. The terms of the permit are as follows:

- Each individual is required to have a valid permit
- Permit holders are required to have this permit and a picture ID on their person while in the Kachina Peaks Wilderness
- Permit holders are required to register each time the wilderness is accessed through the ski area at 4 registration boxes located at wilderness portals including at the top of Agassiz Lift
- Persons accessing the wilderness for a period longer than the ski area's daily operational period are required to leave a copy of the vehicle permit clearly visible on the windshield of their vehicle
- The permit holder is responsible to be knowledgeable of the hazards associated with travel outside the ski area

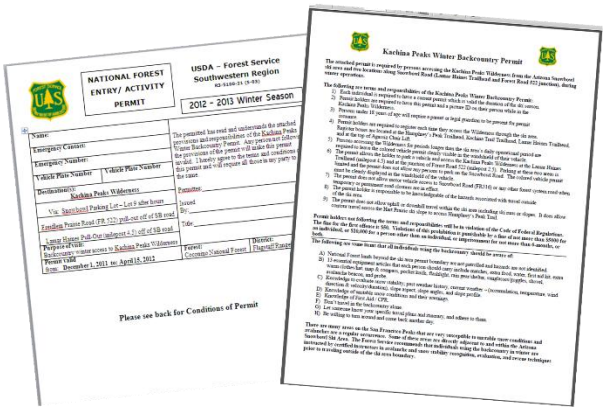

Fig. 1: The Winter Backcountry Permit, front and back, this paper form is filled in and issued to each backcountry user leaving the ski area.

3.2 Obtaining a Permit

Backcountry users must obtain a permit in person. This has been the key requirement of the permit.

Recreationalists must have a human interaction with a Forest Service Representative. Permits can be obtained at two Coconino National Forest offices in the City of Flagstaff during normal business hours Monday through Friday and can be obtained at ASR in the Agassiz Bar before noon Saturday and Sunday. Permits have never been available online or through correspondence and have always required a human interaction.

3.3 Volunteers are Key

By far the majority of permit holders obtain their permit from a volunteer staffing a small table inside the ski area bar on weekends. Financially the National Forest is unable to staff this location with paid staff every weekend. This service to the public is only possible because of the dedicated commitment of volunteers. Unpaid volunteers staff the bar every weekend to issue permits and typically over 500 volunteer hours are donated by groups like Friend of Northern Arizona Forests.

Fig. 2: Pat McGeorge, a Coconino National Forest Volunteer, issues backcountry permits in the Agassiz Bar of Arizona Snowbowl Resort.

3.4 Compliance and Enforcement

The intent of the permit system is to educate. But, recreationalist accessing the wilderness from the ski area in the winter without a permit can be cited by Forest Service law enforcement. Permit holders could also be cited for violating any terms of the permit.

Very few have been issued citations associated with the permit. Compliance is usually gained through education, peer to peer encouragement, and making obtaining the permit as simple as possible.

Typically individuals involved with Search and Rescue (SAR) incidents are cited if they have entered the wilderness without obtaining a permit. In 2014, four citations were issued to a group of individuals who left the ski area and ensued a SAR incident.

4. FROM 1998 TO TODAY

4.1 Permit Trends

During the winter of 1998/99 when permits were first required 207 permits were issued. Generally the number of permits issued has increased. Weather and snowpack always has a huge impact on the number of permits issued each season. In years where snow pack has been marginal or non-existent few permits are issued, for example in 2001/02 when only 87 inches were recorded only 65 permits were issued. Contrary, when there are consistent large snow events many permits are issued that year, the most recorded permits were issued in 2009/10 when 321 inches fell and 1106 permits were issued (figure 3). But on 'normal' or average years the trend seems to be rising.

4.2 Data Gathering

Gathering other data on backcountry use has been slow. According to the terms and conditions of the permit, permit holders are required to sign in at one of four registration boxes entering the wilderness. The numbers of actual registrations at these boxes are low, as one might suspect. On a cold winter outing, asking users to stop, unglove, and use a possibly frozen pen and pencil may be asking a little too much.

Starting in 2012 the COF installed an infrared counter on the busy 'Southside' access gate adjacent to Agassiz Chairlift. The data collected since this time has been extremely inconsistent. During this first season over 3,000 entries were recorded. In 2014/15 just 1,400 enteries were recorded. There still is a lack of data to make any valuable correlations.

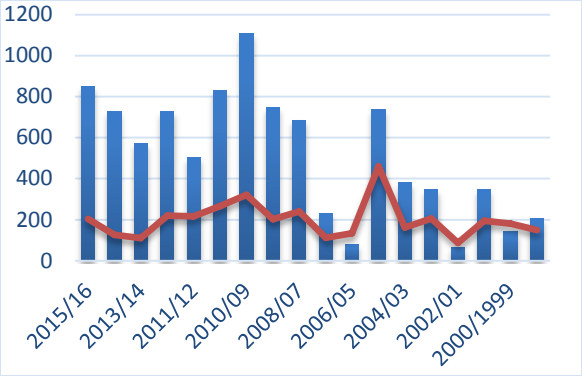

Fig. 3: Permit issued from 1998 to 2016 (blue) vs snowfall (red).

5. THE FUTURE OF THE KACHINA PEAKS WINTER BACKCOUNTRY PERMIT

5.1 A Paper Permit in a Digital Age

In 1998 a personal interaction to make users aware of avalanche danger was probably the best tool available. Today there is a plethora of information available on the internet on avalanche awareness. It is unclear if the information given by a lightly trained Forest Service frontliner or volunteer is more effective than offering online information in a digital format.

The digital age has produced an expectation that things will be available on demand. Users are increasingly frustrated that the permit is not being issued online or instantly. Requiring users to come to an office or sit at a table at the ski area with a volunteer seems to be increasingly more incontinent and burdensome. Every season users request an online option for obtaining the permit.

5.2 An Avalanche Center is Born

In 2005, the Kachina Peaks Avalanche Center (KPAC) was born after a deep and busy backcountry season. This non-profit group is dedicated to education and information sharing in the Kachina Peaks Wilderness. In the last decade the group has evolved from a website 'forum' sharing observations and offering avalanche awareness clinic to a strong organization offering Level 1 course and providing the community with a weekly Snow Pack Summary from trained observers. KPAC continues to develop creative solutions for funding and has no formal association with any government agencies or the ski area.

6. CONCLUSIONS

The Kachina Peaks Winter Backcountry Permit continues to be a positive education tool to increase avalanche awareness. Interest in accessing wilderness areas adjacent and outside of the ski area continues to grow and compliance with the permit seems to be strong.

Other avenues for avalanche awareness exist or could be developed, including online resources and better support and utilization of a growing local avalanche center. Looking into the third decade of use, the Coconino National Forest has a need to investigate and determine if the existing Kachina Peaks Winter Backcountry Permit is still the 'right' tool for education.

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