

# Nutcracker Notes

Whitebark Pine Ecosystem Foundation

## Welcome to Nutcracker Notes

This is the first issue of a new magazine produced by the Whitebark Pine Ecosystem Foundation (WPEF) to further its mission of outreach, education, communication, and restoration of whitebark pine ecosystems. (WPEF is a tax exempt 501-c-3 nonprofit organization registered with the Montana Department of Revenue and the U.S. Internal Revenue Service.) We plan to publish two issues annually, in spring and fall, and since this magazine is mostly produced by volunteer efforts we hope readers will help by making suggestions for improving the contents and design.

Beginning in the next issue we will publish letters from readers (preferably 500 words or less) that comment on articles appearing in the previous issue or that bring up other points of information or concerns about whitebark pine ecosystems. We will also publish announcements of field trips or other activities or reviews of new books or other interesting publications related to these ecosystems. We also welcome articles (preferably 1000 words or less) pertaining to whitebark pine ecosystems. All submissions are subject to

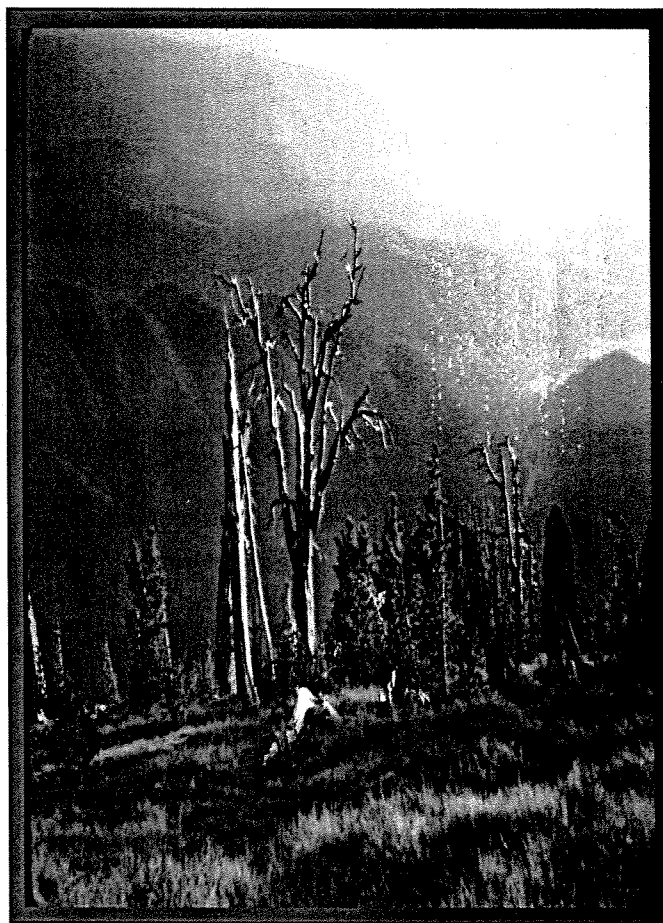
editorial review to enhance readability for an audience that has some general familiarity with forest biology. Editorial suggestions will be returned to authors for approval prior to publication. If possible, e-mail submissions as Microsoft Word documents.

Steve Arno, Editor

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### Issue 1

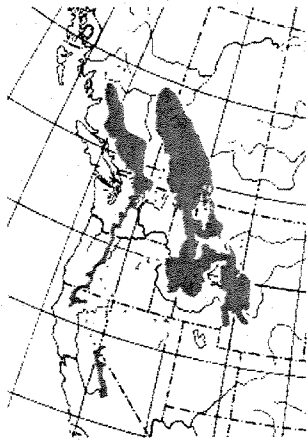
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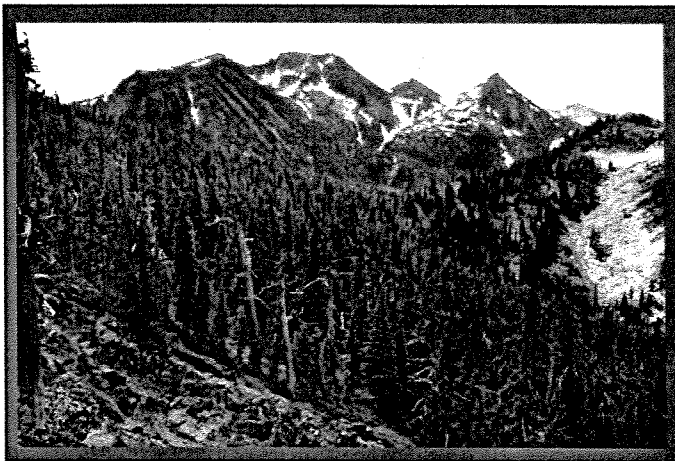
## Whitebark Pine Ecosystem Mission:

Counteract the decline of whitebark pine,  
a keystone species of high-mountain  
ecosystems in western North America.



Whitebark pine occurs at high elevations from California and Wyoming north to British Columbia and Alberta.

Whitebark pine produces large, nutritious seeds important for wildlife and it provides long-lived tree cover in harsh environments.



Massive mortality of whitebark pine is linked to the introduced disease white pine blister rust and competition with firs as a result of suppression of fires.

WPEF's restoration efforts include the use of prescribed fire to create sites for whitebark pine regeneration.



**COVER PHOTO:** Evening glow on whitebark pine snags and young trees, Mission Range, MT (photo by Steve Arno).

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University of Colorado at Denver

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Publications editor: Stephen F. Arno  
Rocky Mountain Research Station (retired), Missoula, MT

## WPEF Brochures and Website

Readers can help us reach others by distributing WPEF's attractive full-color brochures and directing people to our interesting and educational website ([www.whitebarkfound.org](http://www.whitebarkfound.org)). The brochures are suitable for visitor centers in areas that include whitebark pine habitat. They can be ordered for free, individually or in quantities, from Helen Smith ([hsmith04@fs.fed.us](mailto:hsmith04@fs.fed.us)) (phone: 406 329 4707) at the Fire Sciences Lab in Missoula, MT.

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# Message from the Director

Diana F. Tomback

It is with great pleasure that we send you the first issue of *Nutcracker Notes* in its new role as the semianual news-magazine for the Whitebark Pine Ecosystem Foundation (WPEF). As the membership in the WPEF grows, *Nutcracker Notes* will also be evolving, under the capable editorship of Steve Arno. *Nutcracker Notes* will be our primary means to communicate the current activities of the WPEF, including on-going whitebark pine restoration efforts, planned symposia and workshops and other educational projects, and issues of concern related to the health of whitebark pine ecosystems—eventually in a high quality magazine format. Publication of this first issue of *Nutcracker Notes* under the auspices of the WPEF represents a milestone for us all.

Since our first official board meeting in February, 2001, we have had some good press and good news on the whitebark pine front. On March 29, the *Missoulian* ran an article by Sherry Devlin concerning the decline of whitebark pine and the establishment of the WPEF. This October, Michael Jamison reported in the *Missoulian* about whitebark pine restoration efforts in Glacier National Park, with quotes from WPEF's Kate Kendall. Because of widespread losses of whitebark pine from white pine blister rust, the park began gathering seeds in 1998 from the remaining cone-producing trees, which have a good chance of carrying some rust resistance. Seedlings were grown and then planted in the park this past summer. On behalf of the board and membership of the WPEF, I congratulate Glacier National Park for taking this important step towards ensuring the perpetuation of whitebark pine.

I am pleased to welcome our new board member Dr. Carl Fiedler, from the School of Forestry, University of Montana. Carl attended the September board meeting and the whitebark pine field trip. He brings years of field experience with regional forests, good understanding of the problems facing whitebark pine, and liaison with the university, as well as balance to the board as a member of the academic community.

I'd also like to introduce the membership our talented and dedicated webmaster Chuck Crouter. Chuck created the WPEF website ([www.whitebarkfound.org](http://www.whitebarkfound.org)) and has been adding great material since the September board meeting. Eventually, we hope to have more interpretive information and timely posting of news items. Chuck attended the September board meeting and field trip to learn more about WPEF and to get a sense of mission from the members. We all owe Chuck a debt of gratitude for his web work and interest in the foundation.

The very first annual membership meeting of the WPEF (see accompanying article) took place on Friday, September 21, in the form of an all-day field trip to Beaver Ridge, Idaho. The Beaver Ridge study site represents an important partnership between the Powell Ranger District of the Clearwater National Forest and the Fire Sciences Laboratory, Missoula, to test methods of restoring whitebark pine ecosystems. We are grateful to Bob Keane for organizing this great trip (and arranging the great weather!), which was not only enjoyable, but enabled us all to network and become better acquainted. What we learn from the research effort at Beaver Ridge and other experimental restoration study areas will provide the technical expertise for future restoration projects.

Finally, as the WPEF embarks on fund-raising efforts, including proposals to foundations, the board has drafted a set of goals, representing the role and mission of the WPEF. We welcome your comments about any and all of these: (1) Educating the public, scientific community, and resource managers about the importance of whitebark pine ecosystems and the need for restoration activities. (2) Promoting and funding specific research objectives pertaining to the efficacy and cost effectiveness of various restoration techniques. (3) Examining whitebark pine throughout its range and establishing conservation strategies. (4) Funding local or regional restoration activities, with matching funds to land management agencies.

(5) Providing technical assistance for restoration projects.

We all look forward to our first steps in realizing these goals over the next few months.

## Whitebark Pine Seedlings on the 1988 Burns

Ward McCaughey

I am studying the natural regeneration of whitebark pine and associated tree species (lodgepole pine, Engelmann spruce, and subalpine fir) on dry and moist sites within the 1988 greater Yellowstone area fires. I am examining the study sites near Cooke City, Montana, that were salvage logged after the fires. Diana Tomback of the University of Colorado at Denver is using similar methods on unlogged study sites within the burns. We are investigating the rate of establishment of whitebark pine seedlings and of associated species over time, comparing dry and moist sites and logged and unlogged areas within the burns.

Here are some newly collected data for the burned/salvaged logged sites. Since 1991, percent stocking of whitebark pine has increased on dry sites but decreased on moist sites. On dry sites, 44 percent of the plots were stocked with whitebark pine seedlings in 1991, and by 2001 eighty percent were stocked. Conversely, on moist sites 12 percent of the plots were stocked with whitebark pine in both 1991 and 2001.

If we look at combined stocking of all conifer species, dry sites were 64 percent stocked in 1991 and 84 percent stocked in 2001. In contrast, on moist sites 36 percent were stocked with conifer seedlings in 1991 but stocking had declined to 28 percent in 2001. The amount of understory grass and forb competition was significantly greater on the moist sites, which could have led to the lower stocking levels. Lodgepole pine had the greatest absolute increase in stocking throughout the period from 1991 to 2001.

Over the next few years more comprehensive and detailed results of this study will be available.

# Whitebark Pine Planted in Glacier National Park

Tara Williams,  
Glacier National Park

Whitebark pine was once a significant component of 15-20 percent of forested lands in Glacier National Park. These stands have been decimated over the past 90 years due to white pine blister rust, mountain pine beetle epidemics, and successional replacement resulting from fire suppression. Kate Kendall's research has shown that nearly half of all whitebark pine trees in the park are dead, while more than 75% of the remaining trees are diseased and expected to die within the next 10-15 years. A quarter of their cone-bearing crowns are already dead. In 1997 the park initiated a project to collect seed and begin restoration of both whitebark and limber pine.

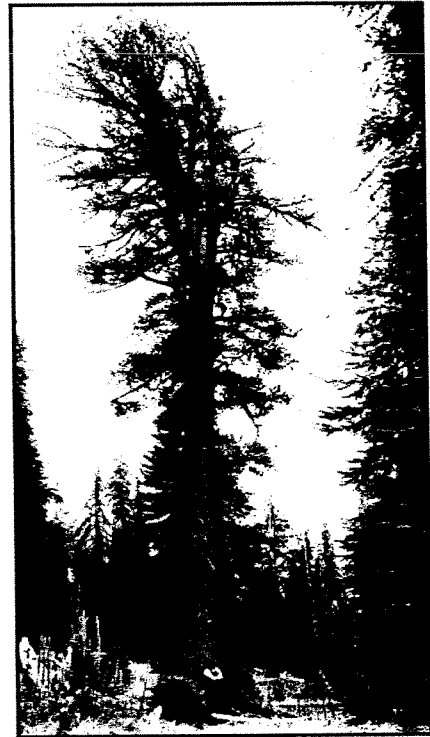
In spring and early summer, trail crews and other field personnel keep watch for cone producing trees. To date, most of our whitebark seed has come from Preston Park, Oldman Lake, and Bighorn Basin. These stands have been hit hard by white pine blister rust, as shown by Kendall's data, yet there are still healthy cone-producing trees within these stands. Based on Ray Hoff's recommendations, we believe there is an increased probability that these trees have some natural resistance to the disease. We have not yet done any rust-resistance testing, but we hope to participate in the rust-resistance studies beginning at the USFS Coeur d'Alene Nursery to the extent we can. In mid to late July, we pack quarter-inch wire mesh cages into the backcountry, climb trees and cage cones. Field technicians are trained in tree-climbing methods and use ropes and harnesses for safety. Occasionally, cages break off or fall off in the wind, but most stay secure. When we return in late September to collect the cones, there is not a seed to be found anywhere outside of a cage. The nutcrackers and squirrels find them all, and will even sneak a few through the cages if they can.

Since limber pine seed may be released from the cones and the birds do not attack these as aggressively, we use lighter window screen mesh on the limber pine and tie it tightly around the branch to contain any seeds that will be released from the cone. Between 1997-2000, we collected more than 22,500 whitebark pine seeds and more than 23,000 limber pine seeds.

The majority of the seed has been sent to the USFS Coeur d'Alene Nursery to be raised as seedlings. A small percentage was kept at the park to be raised in our own nursery along with our cooperators in greenhouses at the Columbia Falls High School and the Blackfeet Community College. We have found that the quality of stock from Coeur d'Alene is much better than what we can produce. We have also kept some seed for experiments with direct seeding in the ground. Germination results have varied by year. Our biggest cone crop was in 1998, and the seed had an average 67% germination success. In contrast, in 1999 the whitebark cones were very late in maturing, most of the seed molded in stratification (cold treatment necessary to trigger germination), and we got virtually no germination. Probably, the seed had never fully matured that year. Seedlings are usually ready for planting a year and a half after germination.

Our first trees were planted in the field in 2000. Soon after a fire on Grinnell Point, 100 trees were flown on site and planted. They were planted in a series of circular plots, at various distances and compass bearings from a central point, and were mapped for future monitoring. Severe drought conditions and fire restrictions precluded further planting in 2000. In July of 2001, more than 1,500 trees were planted on West Flattop Mountain within the 1998 Kootenai Complex burn area. So far we have been able to take advantage of recent natural fires that have burned through existing whitebark pine habitat to provide ideal planting conditions. We selected remaining black islands for planting, placing the trees not far from stumps or snags, so they would have some shading. The trees were watered when planted and mulched with

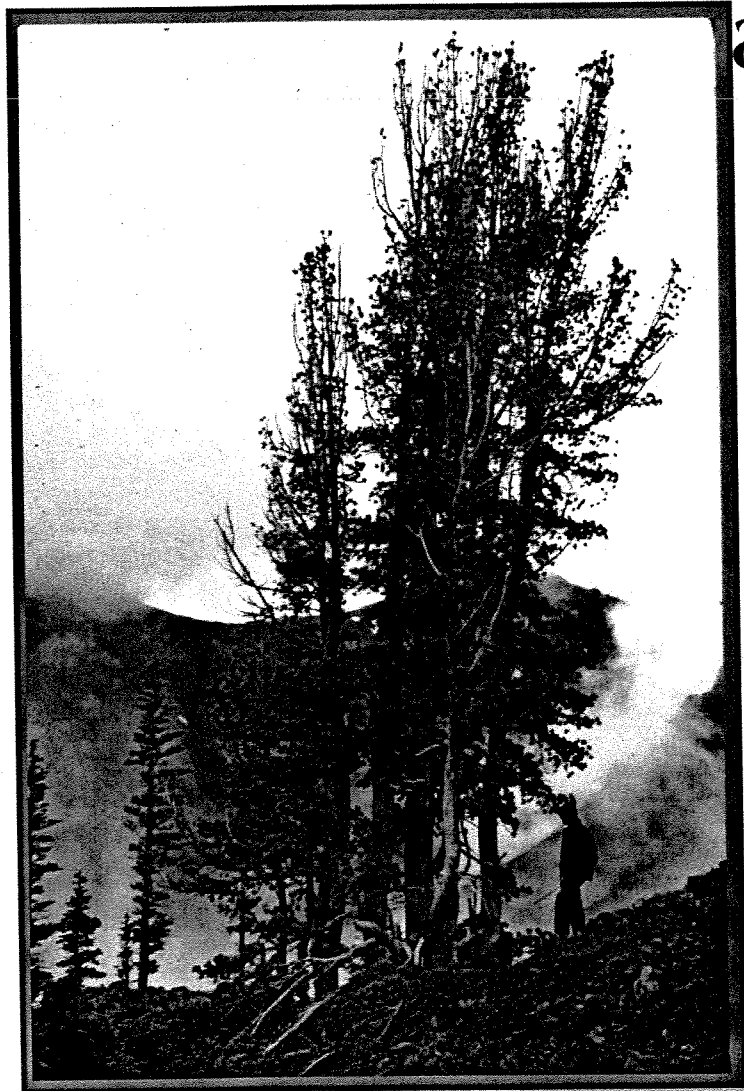
A whitebark pine located near Mt. St. Nicholas in Glacier National Park, photographed circa 1912 by Morton J. Elrod (photo supplied by James R. Habeck).



nearby light-colored duff material. We had a good rain storm shortly after the trees were planted, but the remainder of the summer was extremely dry. In September we surveyed a sampling of the trees and found that about one-third had succumbed to the drought. We are pleased it was not worse. With the help of Montana Conservation Corps volunteers, an additional 1,500 trees were planted in September, a sample of which will also be monitored for survival. Lastly, a small group of 100 trees was planted on Dutch Ridge following the 2001 Moose Fire. We expect the fall plantings to fare better than the spring (July) planting.

We have both whitebark and limber pine stock ready for planting in 2002. It's been exciting to see these seedlings placed in the ground, some under the skeletons of large whitebark pine of the past. We hope this project will result in the establishment of whitebark pine to benefit future generations of humans, Clark's nutcrackers, and grizzly bears.

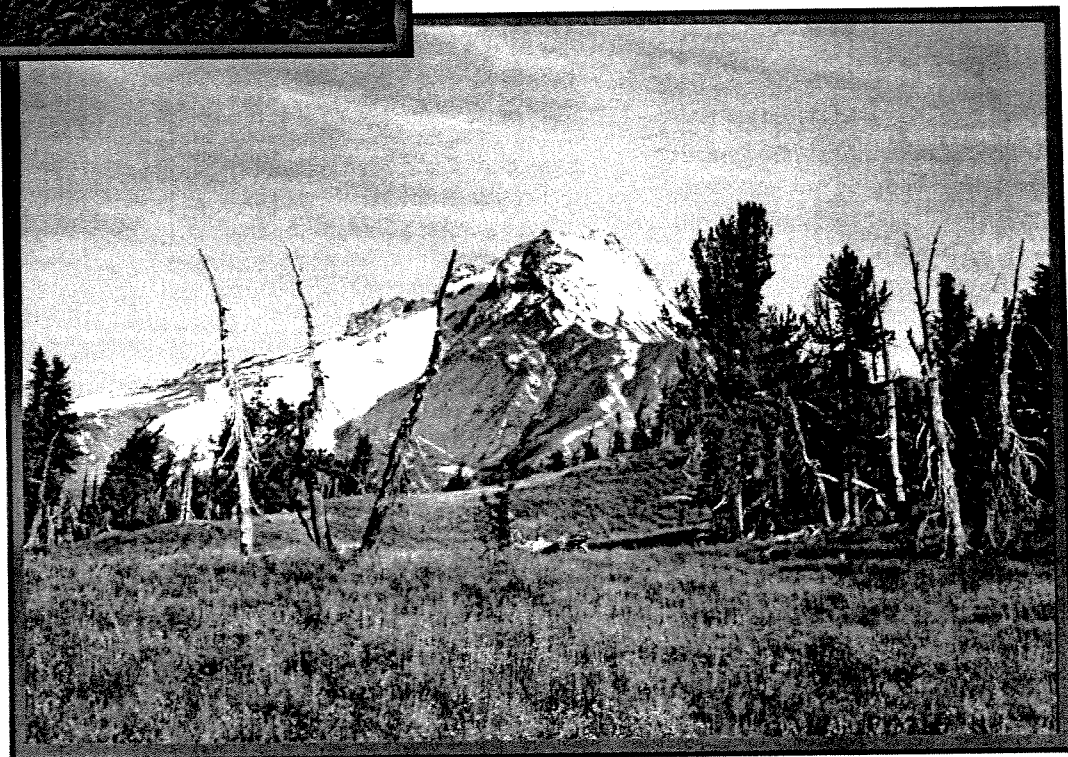
# Whitebark Pine around the West, a photo essay



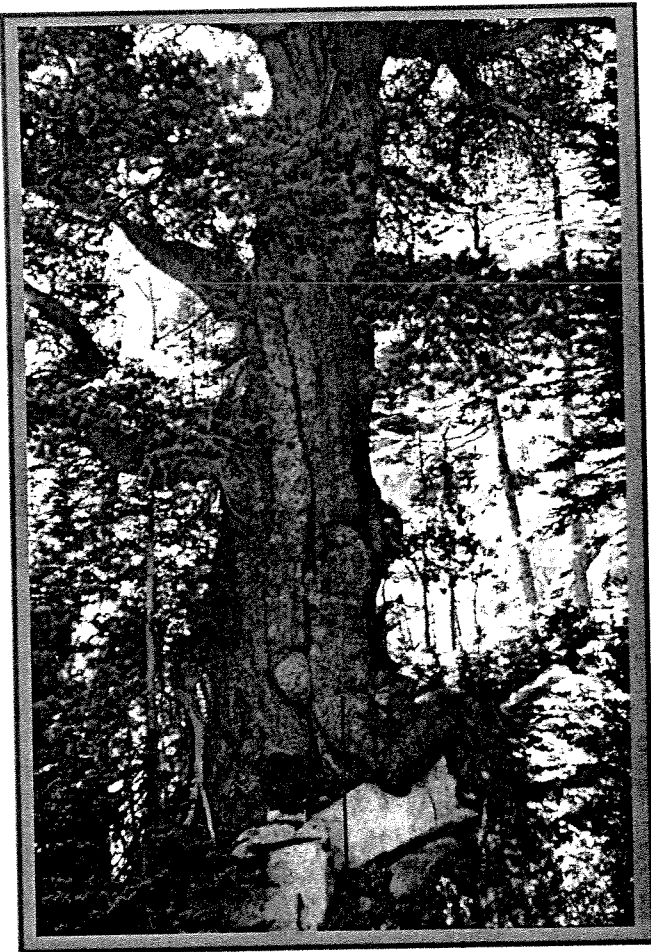
Multi-stemmed whitebark pine in Olympic National Forest, western Washington.

Photos By  
Steve Arno

Living and dead whitebark pine at tree line on Mount Hood in north-western Oregon.



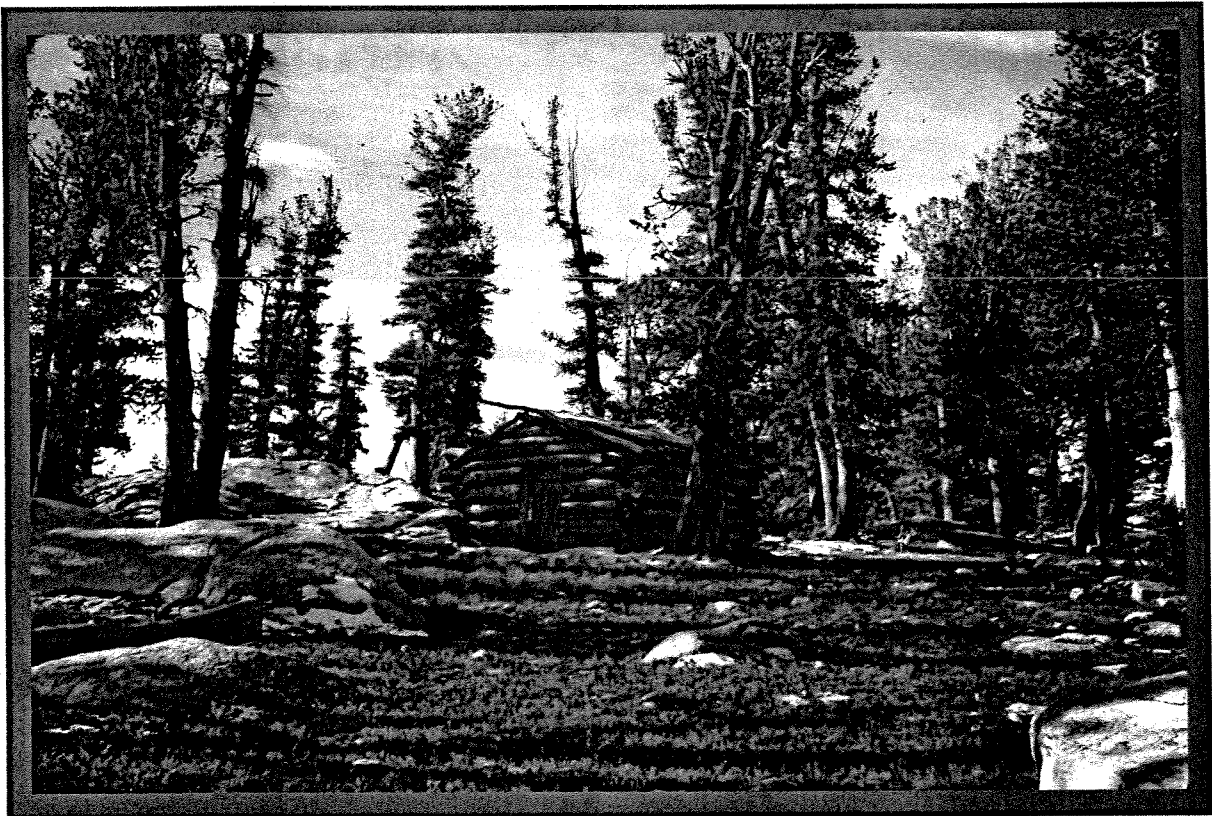




Ancient whitebark pine 76 inches in diameter, Wenatchee National Forest, central Washington.



Orchard-like whitebark pine above Idaho's Salmon River on the Bitterroot National Forest.

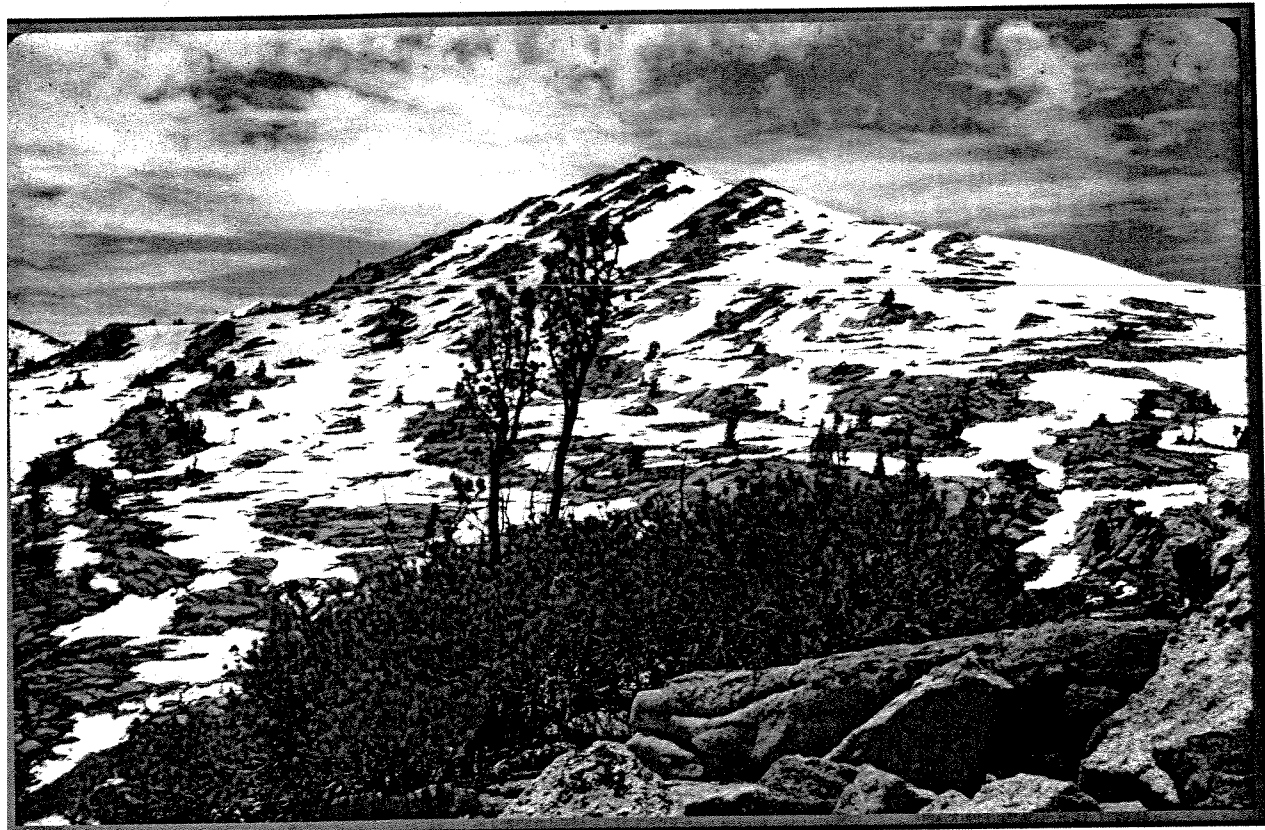


Whitebark pines were used for this century-old cabin, Flint Creek Range, Deerlodge National Forest.



Deep middens of whitebark pine cones cached by squirrels cover the ground in the Shoshone National Forest, northwestern Wyoming.





Whitebark pine krummholz, including “flags” that protrude above the snow-pack - Kings Canyon National Park in the California Sierra Nevada.

Whitebark Pine and green fescue grassland at Aneriod Peak in the Wallowa Mountains of northeastern Oregon.



## Greater Yellowstone Focuses on Whitebark Pine

Melissa Jenkins, Caribou-Targhee  
National Forests

Beginning in the 1970s biologists discovered that whitebark pine is a major food source for bears, squirrels, and some other animals in the greater Yellowstone National Park area (GYA). Then they learned that whitebark pine was declining dramatically in other regions and that this decline might eventually spread to the GYA. Recognizing this looming threat, the Greater Yellowstone Coordinating Committee (GYCC) created a Whitebark Pine Committee, which had its first meeting in June 2001.

The GYCC consists of representatives from three USDA Forest Service regions including six national forests, one National Park Service region including two national parks, and two national wildlife refuges. The GYCC has provided funding for several whitebark pine projects including the planting of seedlings and testing satellite imagery for inventory and health assessment of whitebark pine. Both the Whitebark Pine Committee and the individual national forests and national parks will continue to submit proposals to the GYCC annually for funding of future projects.

The mission of the GYCC Whitebark Pine Committee emphasizes coordination of activities within the GYA and information sharing between the agencies managing land and natural resources there. The following goals were identified at the Committee's first meeting:

- \*Standardize mapping and inventory of whitebark pine sites throughout the GYA;
- \*keep a record of whitebark pine management activities and research;
- \*develop standardized monitoring for whitebark pine throughout the GYA;
- \*develop management guidelines for whitebark pine (these are influenced by grizzly bear habitat needs); and

\*develop a key to differentiate the individual species of *Ribes*—the currant and gooseberry shrubs which are alternate hosts for white pine blister rust.

The Committee is working on planting guidelines for whitebark pine which may also be useful outside the GYA.

The GYCC Whitebark Pine Committee holds meetings twice a year. In addition to working on action items, we hear excellent presentations of recent research findings. Meetings are open to anyone who is interested. If you would like to be placed on the mailing list to receive meeting announcements and notes, contact me at [mmjenkins@fs.fed.us](mailto:mmjenkins@fs.fed.us) or phone (208) 652-5412.

**\*\*Melissa Jenkins is Chair of the  
GYCC Whitebark Pine Committee**

## Wildfire Provides a Lesson for Restoration

Bryan Donner,  
Flathead National Forest

The Werner Peak Whitebark Pine Restoration Project is located atop the Whitefish Range five miles northwest of Big Mountain Ski Resort. The project's goal was to create open burned conditions favorable for whitebark pine regeneration on a site where most of the whitebark pine have succumbed to blister rust and bark beetle epidemics and the cover consists of subalpine fir and dense menziesia shrubs. Ranger district personnel proposed to broadcast burn about 100 acres to reduce vegetative cover and expose bare mineral soil. This small area was selected to test strategies for treating moist high-elevation sites that are abundant on the Flathead National Forest. The subalpine fir and menziesia typically would not burn well during safe prescribed burning conditions unless expensive fuel creation treatment (felling numerous firs) was done a year in advance.

Although the project was approved by the district ranger in December 1999, it remained on hold due to lack of funding. Then, on August 14, 2001, a

thunderstorm passed over the Whitefish Range starting a wildfire that spread quickly. A Type 2 fire suppression team was assigned and made steady progress over the next few days, but heavy fuels, steep slopes, and active fire behavior due to drought made suppression difficult. The fire grew to several hundred acres and burned north and east towards the whitebark pine restoration project.

The district ranger and other district personnel in fire camp kept track of the fire's advance, hoping it would spread through the 100 acre restoration unit, even if outside of prescribed conditions. Field observers reported the fire had jumped the road that defined the restoration unit's boundary and was burning actively uphill towards Werner Peak. Project accomplishment seemed assured.

On the evening of August 18, the operations chief returned from observing the fire and on a large map outlined the fire's periphery, which encompassed the restoration unit. District personnel nodded in appreciation of a job well done in restoring whitebark pine. But then the operations chief pointed to an island of unburned forest in the middle of the wildfire. His finger outlined nearly perfectly the whitebark pine restoration unit.

Even though we hoped the wildfire would burn through our project area, it never did. However, we came to realize that the Werner Peak Wildfire had created 200 to 300 acres of high-elevation burned site with bare mineral soil suitable for whitebark pine regeneration, more than we could have accomplished with the restoration project. In addition, a few cone-producing whitebark pines in the project area were not burned and thus can contribute to reforestation.

We have decided not to treat the project area as previously planned. We believe we have learned the difficulty and cost in broadcast burning moist subalpine fir, menziesia sites in prescribed fire conditions in light of how our project area failed to burn even in a wildfire under hot, dry summer conditions. Reflecting on this experience makes me appreciate the potential for creating whitebark pine habitat by guiding suppression to make beneficial use of some high-elevation wildfires, now termed "fires managed for resource benefits."

# WPEF's First Conclave Ascends Beaver Ridge

Steve Arno

Forty-nine people attended the whitebark Pine Ecosystem Foundation's (WPEF) First Annual Field Day. We climbed up a steep, rugged ridge on the west slope of the Bitterroot Range in a large school bus and wondered if the turnaround on top would accommodate our yellow behemoth! It was just adequate for a skilled driver to negotiate. Our destination was 7200-foot Beaver Ridge on the Clearwater National Forest south ofolo Pass (see photo on back cover).

Bob Keane, ecologist at the Missoula Fire Sciences Lab of the Rocky Mountain Research Station showed us around the ridgetop study area where he and colleagues are examining the effectiveness of different prescribed fire and cutting treatments for regenerating whitebark pine. Whitened old logs with distinctive upswept branches give testimony that whitebark pine used to dominate the ridgetop forest. But the 1930s mountain pine beetle epidemic, blister rust, and an advance of subalpine fir as a result of fire suppression have taken a heavy toll. Still, widely scattered cone-bearing whitebark pines remain, and Keane and his colleagues hope their experimental treatments will allow whitebark to regenerate with the help of seed caching by the Clark's nutcracker.

Liana Tomback of the University of Colorado at Denver explained that one nutcracker can cache from 35,000 to 100,000 seeds in the ground following a good cone crop. She explained how whitebark pine depends entirely upon nutcracker caching to regenerate since its seeds do not fall out of the cones and are otherwise consumed by squirrels and other animals. Retired research forester Steve Arno cited published studies that found whitebark pine dominated much more of the Northern Rocky Mountain landscape in the early twentieth century than it does today (for example, see Hartwell and others 2000, pages 11-16 in Rocky Mountain Research Station, Proceedings-17).

Suppression of most high-elevation fires reduces the opportunity for whitebark pine to regenerate and thus take advantage of blister rust resistance possessed by an estimated three to five percent of the trees. Dave Campbell, District Ranger on the Bitterroot National Forest, said that he and some other members of fire management teams are attempting to allow more natural fires to burn in whitebark pine habitat.

Kate Kendall, biologist with the U.S. Geological Survey, spoke about the importance of whitebark pine seed for black and grizzly bears. Bears prefer the large, nutritious whitebark pine seeds to other food sources. A bumper crop of whitebark cones will keep bears busy raiding squirrel-cached cones during fall and the next spring and summer. Bears dig through snow to uncover these caches and they stay away from human habitations when whitebark cones are available.

Ward McCaughey, research forester at the Rocky Mountain Station's Bozeman Lab, discussed his studies of how whitebark pine regenerates. Some seeds will germinate one year after being planted (cached) by nutcrackers, while others germinate the second year or third year after planting. This allows some of the tiny seedlings to succeed despite drought, summer frost, and other hazards. Keane and Tomback discussed the "nutcracker openings" created by different prescribed fire and cutting treatments. Nutcrackers are able to remember the exact locations of thousands of seed caches, so they can retrieve seeds the following year to feed their nestlings. (They actually make far more caches than they retrieve, which allows seedlings to develop.) Nutcrackers seem to prefer openings that have some stumps, logs, boulders, and other landmarks to aid relocation of caches.

At noon we sat among young whitebark pines beneath the fire lookout on Beaver Ridge enjoying the view of whitebark pine habitat in the lofty Bitterroot Range. We exchanged ideas for carrying out the goals of WPEF in educating people about the values of whitebark pine ecosystems and encouraging research and providing assistance needed to expand

restoration. A big busload of us launched WPEF's first annual Field Day. WPEF's board of directors will meet during the winter (any WPEF members are welcomed to join us) and, along with planning our mission-oriented projects, we will choose a venue for next summer's annual Field Day in whitebark pine country.

## Restoring Whitebark Pine at a Ski Area

Bob Keane

My research project "Restoring Whitebark Pine Ecosystems" is being conducted by the Fire Effects Research Unit of the USDA Forest Service's Rocky Mountain Research Station on five different study areas scattered across the mountains of Idaho and western Montana. Multiple burning, cutting, and planting treatments within each area have produced a complex and sometimes exhausting research effort. So, when John Waverek of the Lolo National Forest asked me to add another study area at the Snow Bowl Ski Resort near Missoula, MT, my first reaction was "no way"! However, after considering the merits of this proposed study area I could not turn it down.

First, its location at a popular ski area will provide an excellent opportunity for educating skiers on the plight of whitebark pine and the possibilities for restoration. We plan to install a kiosk at the base of the ski runs to describe whitebark pine ecology, nutcracker interactions, why whitebark is dying out, and what we are doing to restore this keystone species of the high mountain environments. The area is very accessible, with road and chairlift access, and it is only a short drive up the mountain from the city of Missoula.

Also appealing for restoration, even though the majority of mature whitebark pines are dead or dying from blister rust and bark beetles, many younger trees are undamaged, suggesting there is some rust resistance. Fire scars taken from the study

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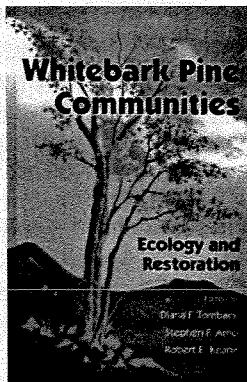


## Meet the Whitebark Pine Webmaster

WPEF's expert webmaster, Charles ("Chuck") Crouter is a volunteer who is dedicated to furthering society's understanding and appreciation of natural ecosystems. With nominal help from a few WPEF board members, Chuck created an interesting and appealing whitebark pine website ([www.whitebarkfound.org](http://www.whitebarkfound.org)) in a very short time. He hopes you will explore it, and contact him with ideas for improvements and additions (e-mail: [chuck@crouter.com](mailto:chuck@crouter.com)).

Chuck has a lifelong connection to both communication technology and whitebark pine habitats. He was born in Butte, Montana, and raised in Billings, at the foot of mountains crowned with whitebark pine. His father was an electronics specialist, and as a very young man Chuck enlisted in the Navy as an electronics technician. He served in the Korean War, and a few years later joined the Federal Aviation Administration where for many years he serviced the light beacons located atop high mountains. He spent a lot of time hiking up into whitebark pine habitats in Montana, Oregon, and northern California to do his job.

Since the light beacons and other early aviation guidance aids were of limited value during cloudy and stormy weather, the FAA continually upgraded these mountaintop sites with more sophisticated electronic devices, which by the 1980's were computerized. After retiring in 1987, Chuck built computers—the first IBM-PC-compatibles. He kept abreast of the fledgling "information highway" which developed into the Internet, partially to keep up with his children who worked in the computer industry. A few years ago he and his wife Carol moved back to Montana, settling in the Bitterroot Valley, again beneath mountains crowned with whitebark pine.



### WPEF's Book Lauded

*Editor's Note:* The following are excerpts from a review of **Whitebark Pine Communities: Ecology and Restoration** (Island Press, Washington, D.C. 440 pages) that appeared in the scientific journal **Diversity and Distributions** (vol. 7, no. 4, July 2001) and was written by David M. Richardson, University of Cape Town, South Africa. Readers can obtain a complementary copy of the book by joining WPEF at the \$75 level or extending their membership for another year with a \$75 contribution.

"In this book, Diana Tomback, Stephen Arno and Robert Keane have assembled an impressive collection of essays on the biology of whitebark pine, its perilous status and the various reasons for its decline, and options for halting the decline and restoring whitebark pine communities.

Especially fascinating in this section is the authoritative account of the adaptations for interactions between whitebark pine and Clark's nutcracker. Recent research has revealed that whitebark pine is almost exclusively dependent on the nutcracker for seed dispersal.

This bird plays a pivotal role in structuring the forest landscape and this has far-reaching implications for restoration efforts.

Tomback and Kendall document actual and potential impacts to biodiversity as whitebark pine declines ('the downward spiral'). Everything indicates a major biodiversity crisis, and yet attempts to instigate restoration are being

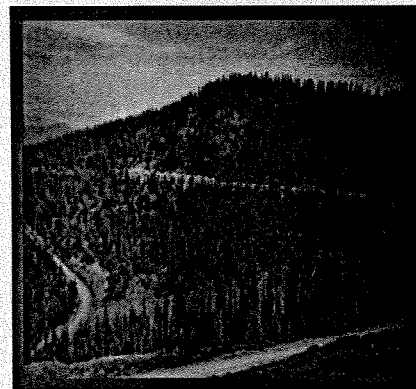
thwarted by conflicts that centre on predictable issues.

This brilliantly assembled volume will stand as a model assessment of all the issues that need to be considered when planning a major restoration program. The complexities and conflicts illustrated for whitebark pine are likely to be echoed in many other ecosystems in the next few decades."

### Continued from page 11. . . . .

area reveal a history of one or two mixed severity fires per century indicating that whitebark pine has benefitted from fires in the past. Four treatments are planned in different small blocks at the Snow Bowl study area. One involves removing all trees except whitebark pine and then using prescribed fire. Another will use mixed severity fire to mimic historical fires. We will enhance the fuelbed by cutting some of the competing subalpine fir and Engelmann spruce trees in places where fuels are sparse. Another treatment is similar, but without the fuel enhancement cuttings. The forth treatment is the creation of a new ski run, already approved at this resort. It will be interesting to compare whitebark pine regeneration on ski runs with regeneration on the other treatments.

We hope this will be the first of several efforts to restore whitebark pine in the vicinity of existing ski areas in the West. As the Snow Bowl study progresses, educational field trips will be offered, and they will be announced on the Whitebark Pine Ecosystem Foundation's website ([www.whitebarkfound.org](http://www.whitebarkfound.org)).



**Snow Bowl study area.  
Photo by Bob Keane.**



## Whitebark Pine and Fire Management: Avoiding

### Danger in the Long Run

ave Campbell, West Fork District  
anger, Bitterroot National Forest

ie challenge of "thinking like a  
ountain" requires us to leave the  
lative comfort of our traditional  
ays and become more inclusive,  
ore interdisciplinary and perhaps  
ss safe. Conservationist Aldo  
eopold wrote, "We all strive for  
fety, prosperity, comfort, long life  
id dullness. The deer strives with  
s supple legs, the cowman with trap  
id poison . . . a measure of success in  
is is all well enough, and perhaps a  
quisite to objective thinking, but too  
uch safety seems to yield only  
nger in the long run."

o many people who use our public  
nds one of our most important jobs  
fire suppression for keeping the  
rest "safe." We have many stories  
at celebrate heroic deeds fighting  
ildfires. This collective memory  
akes it all the more difficult to  
ommunicate to people how the safety  
ey desire yields danger to people  
id natural ecosystems in the long  
in. For example, our success in  
ppressing fires has contributed to a  
ecline in whitebark pine in much of  
ie inland Northwest and Northern  
ocky Mountains.

Wilderness stewardship calls us to  
ake decisions that may not seem  
safe" but will not yield "danger in  
ie long run". Making wilderness fire  
ecisions may be the perfect illustra-  
on of this challenge and a way to  
eek, as Leopold put it "the hidden  
eaning in the howl of the wolf, long  
nown among mountains, but seldom  
erceived among men".

discussed this idea with an outfitter  
whose camp was set up within a mile  
f a lightning fire being allowed to  
urn ("managed for resource benefit"  
r "fire use") in the Selway-Bitterroot  
Wilderness. This looked like an  
ppportunity to tell clients that because  
hey are in the largest wilderness  
omplex in the lower forty-eight states  
hey are not only hunting among  
volves but also witnessing fires that

are shaping the ecosystem as they  
have done for thousands of years.

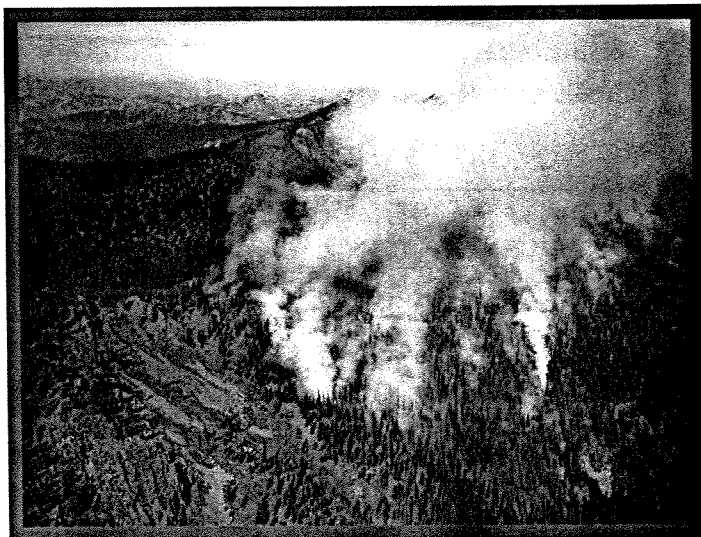
Looking back on thirty years of fire  
use in the Selway-Bitterroot Wilder-  
ness provides a chance to reflect on  
the benefits to the ecosystem and the  
challenge ahead to expand fire's  
return to the landscape beyond  
classified wildernesses. The relation-  
ship of whitebark pine and Clark's  
nutcrackers, black backed woodpeck-  
ers and mountain bluebirds, and the  
renewal of big game winter ranges  
represent successes. This is all well  
and good in Wilderness, but what  
about land adjacent to Wilderness or  
on the border where managers face  
the risk of fire burning into areas  
where fire use is not accepted? One  
approach to the problem is to plan for  
natural fires (fire use) in

areas  
adjacent to  
classified  
wilderness.  
The  
Sheephead  
Fire of  
September  
and October  
2001 is an  
illustration  
of this  
point. The  
fire started  
in the non-  
wilderness,  
upper  
reaches of  
Sheephead  
Creek along

the Montana-Idaho divide on the  
West Fork Ranger District of the  
Bitterroot National Forest (see  
photo). The Sheephead drainage is  
recommended for wilderness in the  
forest plan and was added to fire use  
status only recently. The addition of  
this area allowed the Sheephead Fire  
to be managed as a wildland fire for  
resource benefit burning in high  
elevation whitebark pine. Managers  
that see the benefit of fire use are  
challenged to take the necessary  
planning steps to allow more areas to  
be considered for fire use, leaving  
them the ability to make decisions  
that will help restore fire to the  
landscape with the benefits we can  
articulate as well as the benefits we  
are still discovering.

When faced with several opportunities  
for fire use we may be limited in the  
number of different fires we can  
manage at any one time. When  
lightning strikes leave several oppor-  
tunities for fire use it may be neces-  
sary to choose fires that can be  
managed as fire use until the end of  
the season and those that will be  
suppressed quickly. One criterion for  
choosing a fire for fire use might be  
the number of fire cycles that have  
been missed in the area and what fire  
dependent benefits might result.

Using that logic, fires in whitebark  
pine habitat may come out as higher  
priority for fire use compared to fires  
in low elevation ponderosa pine where  
fire has been a frequent visitor and  
where the opportunity may arise again



**2001 Sheephead Fire which was allowed to burn in whitebark pine habitat.**

the next year.

If we have done our best to add areas  
to fire use and have some knowledge  
of where we have missed fire cycles  
we can make the choice to forego the  
short term safe route and avoid  
"danger in the long run."



To join the Whitebark Pine  
Ecosystem Foundation,  
please mail the coupon be-  
low with a check to:

Whitebark Pine Ecosystem Foundation  
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Participants at WPEF's 2001 Annual Meeting at  
Beaver Ridge, Clearwater National Forest, Idaho  
(photo by John E. Hamilton).

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