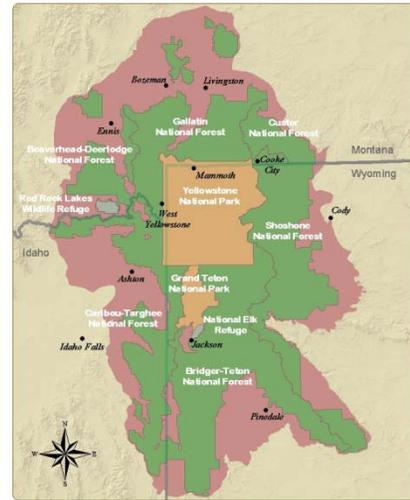


CFLRP Proposal

Greater Yellowstone Area Whitebark Pine Restoration



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1. Proposed Treatment

Introduction: The Greater Yellowstone Area is one the last strongholds for whitebark pine. This keystone species is vital to numerous ecosystem functions, including capturing and storing winter snows, thus increasing the quantity and duration of summer runoff; providing high quality nutrition for wildlife species from red squirrels to grizzly bears; and acting as a pioneer species in the upper sub-alpine zone ameliorating harsh site conditions and enabling other plant species to eventually colonize these sites.

Whitebark pine is facing threats throughout its range, including white pine blister rust, mountain pine beetle, a competition from late seral species such as subalpine fir, and climate change. These factors have resulted in high mortality, lowered reproductive potential, and may eventually bring changes in habitat availability and competitive relationships with other forest tree species.

The Greater Yellowstone Area includes six National Forests, two National Parks, and two National Wildlife Refuges:

- Beaverhead-Deerlodge, Custer, Gallatin, Shoshone, Bridger-Teton and Caribou-Targhee National Forests,
- Yellowstone and Grand Teton National Parks,
- National Elk Refuge and Red Rock Lakes National Wildlife Refuge.

The restoration goal is to maintain whitebark pine in the Greater Yellowstone Area in the face of increasing biological and climate related threats.

Objectives include:

1. Protect existing mature cone-producing whitebark pine from mountain pine beetle and white pine blister rust.
2. Develop blister rust resistant trees.
3. Plant whitebark pine across the landscape.
4. Maintain genetic diversity in the face of climate change and extensive mountain pine beetle mortality.
5. Monitor whitebark pine populations and health.

Landscape Stratification: A Whitebark Pine Strategy is nearing completion to achieve these objectives. The Strategy identifies high priority areas in the Greater Yellowstone Area (GYA) for whitebark pine protection and restoration. Priorities were identified through three steps:

1. A whitebark pine stand condition assessment
2. Ecosystem values
3. Logistical feasibility

Acreage and Ownership: Whitebark pine is found in about 2 million acres of the 13 million acres making up the six National Forests, two National Parks and two National Wildlife Refuges of the Greater Yellowstone Area (GYA). Most of the whitebark pine acreage is found on the six National Forests of the GYA. While there are some pockets of private inholdings, most of the whitebark pine stands are located on contiguous federal land ownership.

NEPA documentation is not required for protection, cone collection, and seed sowing, and planting outside of wilderness. A Decision Memo for establishing a seed orchard is planned and funded for FY 2010. The need for new permanent roads is not expected for these restoration and protection methods. . NEPA will be required as restoration and protection of whitebark pine is implemented in wilderness and moves into thinning of competing vegetation.

Actions already accomplished include:

- Identification of blister rust resistant trees.
- Cone collection from blister rust resistant trees and operational trees.
- Initiation of blister rust resistant testing of seedlings including spore collection.
- Identification of a seed orchard site.
- Six years of whitebark pine monitoring for blister rust infestations and mountain pine beetle mortality.
- Tree planting in burned areas.

Treatments

1. Protection from mountain pine beetle-caused mortality, via Verbenone-anti-aggregation pheromones and Carbaryl -a preventive, registered insecticide spray treatment to reduce attacks on susceptible trees.
2. Continued cone collection, continued scion and spore collection.
3. Sowing seed.
4. Establish and operate a seed orchard on a GYA Forest using blister rust resistant stock.
5. Plant seedlings in high priority restoration sites.
6. Improve fire resistance of high value whitebark pine trees and stands (see Wildfire section).
7. Remove (thinning) competing vegetation.

Schedule of acres treated: The following table displays the ideal treatment schedule over the next ten years on the National Forests. Accomplishing all of this work would require from \$0.9 to \$1.8 million per year. Actual accomplishments would be based on funding received.

Treatment	Treatment	Years
Whitebark Protection		
Verbenone Treatment	400 acres per year	2010-2019
Carbaryl Treatment	2,000 trees per year	2010-2019
Whitebark Restoration		
Cone Collection	100 trees per year	2010-2019
Seed Sowing	200,000 seedlings per year	2010-2019
Seed Orchard Establishment	One time establishment	2011
Seed Orchard Operation	Annual operation	2012-2019
Out-planting	1,000 acres per year	2012-2019
Thinning in years 2017 to 2019	1,000 acres per year	2017 to 2019
Prescribed burning in years 2017 to 2019	3,000 acres per year	2017 to 2019

The National Park Service will continue monitoring whitebark pine across the GYA, and will continue protection, seed collection and possibly out-planting in the two Parks.

Mechanisms: Work will take place through force account, agreements and contracts. Volunteers, including youth groups could be enlisted to accomplish some project work.

Monitoring. The National Park Service has an established inventory and monitoring program for Yellowstone and Grand Teton National Parks. (Greater Yellowstone Inventory and Monitoring Network.) The Greater Yellowstone Inventory and Monitoring Network program has identified whitebark pine as one of its “vital signs” to monitor. The protocol was developed jointly with the Forest Service, USGS, Montana State University and other partners. A total of 176 monitoring transects in 150 stands have been established since 2004, with the locations based on distribution of whitebark pine on the landscape. Transects are located on National Forest and National Park lands, with majority located on the National Forests.

Initial design included reading each transect every four years for occurrence of white pine blister rust. However, as mountain pine beetle mortality began to increase drastically in 2007, overwhelming the effects of white pine blister rust on mature trees, the transects have been read every second year for mountain pine beetle mortality only. While the monitoring may return to a four year program at some future point, there is every indication the program will continue, as it currently is one of the highest priorities for the Greater Yellowstone Inventory and Monitoring Network.

Success will be measured as acres of whitebark pine protected or restored across the GYA landscape.

2. Ecological Context

Whitebark pine is a five-needled pine with a limited range in the mountains of western North America. In the Greater Yellowstone Area (GYA) whitebark pine occurs on the harshest high elevation sites that support trees. Whitebark pine provides important ecosystem services including capturing and storing winter snows, thus increasing the quantity and duration of summer runoff; providing high quality nutrition for wildlife species from red squirrels to grizzly bears; and acting as a pioneer species in the upper sub-alpine zone ameliorating harsh site conditions and enabling other plant species to eventually colonize these sites. Whitebark pine, in mixed or dominant stands, occupies just over 2 million acres of the 13 million acres that comprise the National Forests, Parks and Wildlife Refuges of the Greater Yellowstone Area.

Whitebark pine is an early seral to climax forest and woodland vegetation type. It occurs in stands and patches where it is dominant, as well as sites where it is part of a mixed forest, most frequently with Engelmann spruce or subalpine fir, but also with lodge pole and Douglas fir. Whitebark occurs as full height trees, as well as krummholtz. As one of the higher elevation tree species in the GYA it serves numerous ecosystem functions. The distinct life cycle – individuals do not reproduce until 70-100 years of age, and may live up to 1500 years, mutualism with a unique seed disperser (Clark's nutcracker), and role in establishing high elevation forests or tree islands, result in a species that has significant and complex ecosystem effects and responses.

Throughout its range whitebark pine (*Pinus albicaulis*) is at risk due a variety of biotic and environmental factors including the combined effects of climate change, white pine blister rust, and mountain pine beetle. These factors have resulted in high mortality, lowered reproductive potential, and may eventually bring changes in habitat availability and competitive relationships with other forest tree species.

Current Vegetation and Other Characteristics

Whitebark pine is declining throughout its range. Whitebark pine is highly vulnerable to infection by the non-native fungus, *Chroosporium ribicola*, or white pine blister rust, with less than 10% of the population showing genetic resistance to the fungus, and is highly susceptible to infestation by mountain pine beetle (*Dendroctonus ponderosae*). Both of these agents are currently increasing and are predicted to continue to do so due to the effects of climate change which favor their survival and proliferation. Replacement of whitebark pine by other tree species may also be facilitated by the direct effects of climate change as warmer temperatures, if accompanied by adequate moisture, could enable other tree species to survive in areas previously relegated to the cold-adapted whitebark pine. Whitebark pine colonization of new sites will be limited as high mortality has decreased landscape level seed availability and dispersal.

Whitebark pine losses due to mountain pine beetle activity are extensive. Throughout the GYA current mortality of mature trees is estimated at 30-40%. On some sites greater than 90% of the mature whitebark are dead. White pine blister rust mortality is primarily in the smaller diameter trees and seedlings, though a significant proportion, greater than 20%, of trees surveyed are

infected which will eventually result in additional mortality. In infected mature trees, seed production has been reduced due to branches and upper boles being impacted by blister rust.

Restored Vegetation and Other Characteristics

The intent is to protect and restore whitebark pine throughout its range in the Greater Yellowstone Area. In doing so, the vital ecosystem functions that this tree provides will also be protected and restored.

Whitebark pine is often the first tree species to colonize sites with difficult growing conditions – sites which had not supported trees due to high snow loads, poor soil development, and other environmental factors. Once whitebark becomes established other species follow, growing in the lee of the whitebark where site conditions are somewhat ameliorated by the whitebark's presence. The presence of forest species on these sites provides a suite of ecosystem services. These services include increasing soil development, capturing winter snows, and retaining snow longer, by providing canopy cover and thus shading, than open sites. Impacts to the quantity, timing, and duration of runoff affect natural and human systems over a large area. Water is available to feed streams, riparian communities, and provides water availability longer into the growing season, as well as providing a more consistent flow for end users, such as agricultural and domestic users.

The presence of forest species in an otherwise treeless environment increases carbon storage in the system, and increases the amount of acreage in drainage available for carbon storage. In addition to acting as nurse trees for other woody species, the presence of whitebark on a high-elevation site is associated with higher bio-diversity than on similar sites lacking whitebark pine. This increase in biodiversity is reflected in both higher plant species richness and in increased wildlife use. Where whitebark occurs as the dominant or pioneering species the existence of whitebark is especially important in terms of ecosystem function. In mixed stands where whitebark is a smaller component its role in snow capture and retention, soil development and species diversity may be less crucial as this role can be subsumed by other species.

Grizzly bears are a highly valued wildlife species in the GYA. The role of whitebark pine as providing an important food source for grizzly bears has long been recognized in the GYA. Whitebark pine seeds are an important food resource for grizzly bears especially during years of high cone/seed production. During years without high cone/seed production, conflict between bears and humans tends to be higher.

White pine blister rust resistant trees are under development. The current mountain pine beetle infestation will eventually run its course, and trees will be planted to jump start whitebark pine reestablishment. New roads and trails are not expected to be created as part of this restoration plan. Best management practices will be followed to prevent invasive plant species introductions.

3. Collaboration

History: The Greater Yellowstone Coordinating Committee (GYCC) formed in 1964 to promote collaboration on Greater Yellowstone issues among the managers of six National Forests, two National Parks, and currently two National Wildlife Refuges. The GYCC includes the:

- Forest Supervisors of the Beaverhead-Deerlodge, Custer, Gallatin, Shoshone, Bridger-Teton and Caribou-Targhee National Forests,
- Park Superintendents of Yellowstone and Grand Teton National Parks,
- Refuge Managers of the National Elk Refuge and Red Rock Lakes National Wildlife Refuge.

At the time of formation, the GYCC represented an unprecedented level of coordination across agency boundaries. Nine subcommittees, or topic-oriented groups, currently operate under the GYCC umbrella. The groups meet annually or semi-annually to share information, strategize, and work together on specific resource topics including Aquatic Nuisance Species, Noxious Weeds, Fire Management, and Whitebark Pine, to name just a few. The Subcommittees typically include representatives from each unit within the GYA, as well as State, County, local, non-governmental, and University research participants, as applicable to each subject area. A Whitebark Pine Subcommittee formed in 2000.

Participants: The Whitebark Pine Subcommittee includes representatives from the six National Forests and two National Parks outlined above (the Refuges do not have whitebark pine habitat), the Interagency Grizzly Bear Study team, the US Geologic Service, Forest Service Rocky Mountain and Pacific Research Stations, Forest Service State and Private Forestry and researchers from the University of Montana, Montana State University and the University of Colorado. Representatives of NGOs often attend and contribute to subcommittee meetings and provide some funding.

Function: The Whitebark Pine Subcommittee defined its mission as:

“Working together to help ensure the long-term viability and function of whitebark pine in the Greater Yellowstone Area.”

The members have worked successfully across boundaries for several years, promoting the persistence of whitebark pine over time and space in the GYA, one of the few remaining strongholds for the species. The federal agency units work together rather than individually to maximize the use of limited resources to take actions in key locations that will maintain the presence of whitebark pine on the GYA landscape despite an array of conditions that are not beneficial to the species.

Information on existing whitebark pine forest conditions will guide the determination of what management actions and sites are prioritized for the GYA as a whole, and at a landscape and stand level. This recognizes that actions taken, or not taken, in any area of the GYA have the potential to affect conditions in other units or jurisdictions. Considerations for management activities will be set within the context of the larger GYA region, based first on a condition assessment, second on ecosystem values connected with particular sites, and third on an assessment of logistic feasibility.

The Subcommittee typically meets twice a year and holds additional conference calls as necessary. One meeting per year includes presentations on new research. Members coordinate extensively and frequently on working documents, funding proposals, and field implementation.

Accomplishments: The Whitebark Pine Subcommittee has successfully worked across unit boundaries and differences in agency culture to increase knowledge of the distribution of whitebark pine and its condition in the GYA, and to formulate a strategy for protection and restoration of the pine. The subcommittee has accomplished a number of critical tasks for Whitebark Pine protection and restoration, including:

- A GYA-wide distribution map of whitebark pine.
- An annotated bibliography of whitebark pine literature.
- Coordinated monitoring of white pine blister rust severity and distribution, and of mountain pine beetle mortality across the ecosystem.
- Identification of phenotypically blister rust resistant whitebark trees as part of the Whitebark Pine genetic restoration program on all six Forests and the two Parks.
- Formulation of planting guidelines specific to whitebark pine in the GYA.
- Formulation of a *Ribes* ssp. Identification key.
- Protection of the phenotypically blister rust trees from mountain pine beetle with carbaryl and verbenone.
- Decimation of information and the latest research on whitebark pine
- Cone collection from the phenotypically blister rust trees for nursery planting, and to provide for operational and restoration needs prior to identification and development of rust resistant seed stock.
- Planting collected seeds in the nursery.
- Collection of spore and scion for blister rust screening and orchard establishment.
- Blister rust resistant testing of seedlings begun.
- Planting whitebark pine seedlings in burned areas.
- Identification of a seed orchard site on a GYA Forest.
- A change detection analysis completed by the USFS Remote Sensing Applications Center which identifies change in whitebark pine condition from 2000 to 2007.
- A condition assessment of GYA whitebark pine used to create an ecologically-based ranking for whitebark pine protection or restoration sites.
- A 2009 landscape assessment of GYA whitebark pine, a classification of stand condition based on aerial surveys of over 50% of GYA whitebark pine stands.
- Formulation of a coordinated Whitebark Pine Strategy for the GYA (draft March 2010, completion expected July 2010.)

Going forward, the Whitebark Pine Subcommittee will continue collaboration on whitebark pine protection, restoration, and monitoring.

Monitoring. Whitebark Pine monitoring is a vital component of the National Park Service Inventory and Monitoring program in the GYA. A total of 176 monitoring transects in 150 stands have been established since 2004 on National Forests and National Parks. This monitoring informs the whitebark pine condition assessment and indicates at least 25% of the GYA is infected with white pine blister rust. There is every indication the program will continue. Forest Health Protection surveys at least a portion of the GYA every year through aerial detection for insect infestation.

4. Wildfire

Whitebark pine is a fire adapted species. Exclusion of fire has allowed the encroachment of other species into whitebark pine stands, particularly subalpine fir. The Whitebark Pine Strategy recognizes the benefit of returning ecosystem processes to whitebark pine landscapes. Even though fire can have beneficial effects for whitebark pine stands, the Whitebark Pine Strategy also addresses protection of high value whitebark pine trees from wildland fire, improving fire resistance of whitebark pine stands, to protect trees in light of the current biological threats.

Protect High Value and Cone-Producing Trees from Wildland Fire. High value whitebark pine trees include the rust-resistant cone producing trees described above and isolated pockets of genetically diverse whitebark pine. The Strategy attempts to decrease fire-caused mortality of cone-bearing trees in areas of high mortality and maintain the range of whitebark pine genetic material on the landscape. Actions include:

- Work with fire management officers before fire season begins to identify locations where fire may be beneficial and where it may be detrimental to whitebark management goals.
- Incorporate whitebark pine fire management needs into fire plans when they are being reviewed or revised.
- Prune high value whitebark pine trees to remove white pine blister rust infection (cankers) and to improve fire resistance.
- Protect high value trees from low intensity ground fires or torching by removing fuels which serve as a ladder for fire into the crowns of mature cone producing trees.
- Treat accumulated fuels in or near whitebark trees/stands.
- Create a fuel-break at edge of areas where fire is desired or not desired.
- Remove 1000 hour surface fuels so fire does not reside in stand for long time periods.
- Remove subalpine fir, a tree species known to “throw” firebrands long distances and are ore susceptible to burning.

Wildland Fire as a Whitebark Pine Restoration Tool. The Whitebark Pine Strategy recognizes the benefit of returning ecosystem processes to whitebark pine landscapes. Both prescribed fires and wildfires could benefit whitebark pine. The Strategy proposes to mimic some historical disturbance processes to facilitate whitebark regeneration and cone production. Actions include:

- Create nutcracker openings and seed caching sites
- Use fire in lower elevations to create mosaic landscape to serve as fuel breaks and slow the intensity of fire before it reaches the higher elevations.
- Mixed severity burns are fires of different intensities creating complex patterns of tree mortality and survival provides seed caching sites.
- Low intensity surface fires that will kill primarily subalpine fir in the understory and maybe a few in the overstory, but maintain the overstory mature whitebark pine trees.

- Caution in areas of mountain pine beetle activity. Areas with mountain pine beetle activity should be avoided for any fire treatments so as not to promote additional mountain pine beetle attacks.
- Promote fire as a natural element in whitebark pine forests when fuel loading and stand structure will support low to moderate fire.
- Promote unplanned ignitions during years of moderate fire severity. Examples of moderate fire conditions might include shoulder seasons, a trend of low ERCs or where seasonal severity indicators are acceptable.
- Consider post fire planting of whitebark pine seedlings in sites where seed dispersal is not occurring or where seed bearing whitebark are more than 5 KM away.

5. Utilization

Utilization is not expected to be a strong component of this Whitebark Pine Strategy. In the early years of implementing the Strategy, protection and restoration focus on tree protection through carbaryl or verbenone, and on planting whitebark pine. The Whitebark Pine Strategy includes removing competing trees in areas where whitebark grows with other conifer species. However, because of inaccessibility and poor timber markets, there is no expectation for production of timber associated with restoration projects.

6. Investments

The Whitebark Pine Subcommittee has been very successful in attracting partner funds to date. Together, the partners are currently contributing some \$375,000 per year to Greater Yellowstone whitebark pine work. These successes are displayed here to demonstrate consistent past accomplishment, recognizing that future funds cannot be absolutely determined.

GYA National Forest Contributions: \$131,000 (R4: \$100,000, R1 genetics \$20,000, R2: \$11,000)

Greater Yellowstone Coordinating Committee (Primarily Forest Service funds): About \$30,000 to \$55,000 per year since 2007. The GYCC is funding whitebark pine work through the subcommittee for \$47,000 in 2010 and \$37,000 in 2011.

Forest Health Contributions (USDA): \$50,000 to \$100,000 per year, much for Carbaryl and Verbenone.

Forest Health Protection for Whitebark Pine Restoration (USDA): \$40,000 per year for cone collection, propagation and planting.

Grand Teton and Yellowstone National Park Contributions (USDI): \$20,000 for monitoring.

NPS I&M Contributions (USDI): \$30,000 per year for landscape scale monitoring of whitebark pine.

Grizzly Bear Study Team Contributions (USGS/USDI): \$30,000 per year for landscape scale whitebark pine monitoring.

Whitebark Pine Ecosystem Foundation (private foundation): \$2,000 per year for planting.

Arbor Day Foundation (private foundation): \$5,000 per year for seedlings.

In addition, more National Forest funds may become available for restoration. Additional GYA Forest funds not identified above may become available such as NFN3, NFVW, RTRT trust funds, and NFWF. Higher amount of “match” may be available than identified in 2012 and beyond.

Funding from the CFLRP program would tremendously improve protection and restoration capacity. Costs will vary by year, as different components of the strategy come on line.

Some jobs will be created for the general public, including youth groups and local private, nonprofit, and/or cooperative entities for the implementation of the GYA Strategy. Some of the economic activity will be in hiring contractors for cone collection and protection action such as spraying carbaryl and putting out verbenone, as well as thinning and prescribed burning. Cooperators include federal nurseries for the sowing and growing of whitebark pine seedlings. There will also be an increase in seasonal jobs for the collection of data and monitoring of conditions and effectiveness of treatments. Jobs will continue to be maintained and created throughout implementation of the GYA Strategy. An additional 20 jobs per year are expected to be created as part of implementation of the GYA Strategy.

7. Funding Estimate Table

Fiscal Year 20xx Funding Type	2010 Dollars/Value Planned	2011 Dollars/Value Planned	2012-2019 Dollars/Value Planned
FY 20xx Funding for Implementation	\$680,000	\$660,000	\$670,000
FY 20xx Funding for Monitoring	\$80,000	\$80,000	\$80,000
1. USFS Appropriated Funds Total			
Forest Funds	\$131,000	\$131,000	\$131,000
GYCC	\$47,000	\$37,000	\$42,000
SPFH	\$75,000	\$75,000	\$75,000
SPFH Whitebark Restoration	\$40,000	\$40,000	\$40,000
2. USFS Permanent & Trust Funds	0	0	0
3. Partnership Funds - USDI	\$80,000	\$80,000	\$80,000
Partnership Funds - private	\$7,000	\$7,000	\$7,000
4. Partnership In-Kind Services Value	0	0	0
5. Estimated Forest Product Value	0	0	0
6. Other (specify)	0	0	0
FY 20xx Total (total of 1-6 above for matching CFLRP request)	\$380,000	\$370,000	\$375,000
FY 20xx CFLRP request (must be equal to or less than above total)	\$380,000	\$370,000	\$375,000

Fiscal Year 20xx Funding Type	Dollars Planned	Dollars Planned	Dollars Planned
USDI BLM Funds	0	0	0
USDI (other) Funds NPS, USGS	\$80,000	\$80,000	\$80,000
Other Public Funding	0	0	0
Private Funding	\$7,000	\$7,000	\$7,000

In addition, more National Forest funds may become available for restoration. In the future, additional GYA Forest funds not identified above may become available such as NFN3, NFWV, RTRT trust funds, and NFWF. Higher amount of “match” may be available than identified in 2012 and beyond.

8. Funding Plan

The Regional Foresters and National Forests of the Greater Yellowstone Area typically contribute at least \$120,000 to whitebark pine efforts. The six National Forests have the capacity to use any CFLRP funds allocated in FY 2010 and FY 2011 on ecological restoration treatments the same fiscal year the CFLRP funds are transferred. FY 2010 funds would be spent on carbaryl protection, cone collection and sowing seeds collected in 2009. Funds would purchase supplies and go into contracts and agreements before the end of fiscal year 2010.

Monitoring is led by the National Park Service; with every indication monitoring will continue for the 15 year period. See USDI funding below.

9. USDI Funding

The National Park Service and the US Geological Service are important partners in the effort, and undertake monitoring. This link to Greater Yellowstone Inventory and Monitoring Network will provide more information on the whitebark pine monitoring.

<http://science.nature.nps.gov/im/units/gryn/>

Then click on Whitebark Pine under Vital Signs

10. Other Funding

The Whitebark Pine Ecosystem Foundation and the Arbor Day Foundation are potential partners.

11. Maps

Links are provided to two color map jpegs. Due to file size, the maps are not included in this document. Both maps show the entire range of whitebark pine in the Greater Yellowstone Area and then one map displays high priority protection sites and the second map displays high priority restoration sites. Some sites may be high priority for both restoration and protection.

Map A High Priority Whitebark PROTECTION Sites:

ftp://ftp2.fs.fed.us/incoming/r1/gallatin/GYCC/CFLRP_GYA%20Whitebark%20Pine/Map%20A%20High%20Priority%20Whitebark%20PROTECTION%20Sites_2010.jpg

Map B High Priority Whitebark RESTORATION Sites:

ftp://ftp2.fs.fed.us/incoming/r1/gallatin/GYCC/CFLRP_GYA%20Whitebark%20Pine/Map%20B%20High%20Priority%20Whitebark%20RESTORATION%20Sites_2010.jpg

12. Landscape Strategy

The Whitebark Pine Strategy is substantially complete. A link is provided to a draft, the strategy is expected to be completed by July 2010.

ftp://ftp2.fs.fed.us/incoming/r1/gallatin/GYCC/CFLRP_GYA%20Whitebark%20Pine/