Final Project Report
Bristlecone Habitat Protection Project
2005-USFS_SMNRA-490-P

PROJECT REVIEW:

What measureable goals did you set for this project and what indicators did you use to measure your performance? To what extent has your project achieved these goals and levels of performance?

The primary goal for the Bristlecone Habitat Protection project was to protect the sensitive habitat near the Bristlecone Trail and Las Vegas Ski and Snowboard Resort, where recreation use is high. This was accomplished by constructing a total of 1100 meters of fence along both sides of the Bristlecone trail and west of the Bristlecone Trailhead near the Ski Area entrance to help manage recreation use and keep visitors on the trail. User created trails were restored and interpretive signage designed and placed along the trail to help visitors learn more about the project and its purpose.

The project went through the National Environmental Policy Act (NEPA) process. Cultural and botanical surveys were completed in 2005 and 2006/7 respectively to provide the needed information for NEPA. Field review of the project area and work to determine fence location was initiated in the fall of 2006. NEPA was completed in May of 2007.

Protecting resources and reducing disturbance by the project itself, were two priority objectives throughout the project. Surveys and field review found that 1100 meters of fence was needed to protect the sensitive habitat by managing recreation use. Much of the fence had to be placed in bedrock, which determined the need for a rock drill to place posts. The rock drill was capable of drilling a three inch diameter hole. In an effort to reduce resource damage by only drilling one hole, metal pipe, less than three inches in diameter, was used for posts and pipe rails were run between posts. Using larger diameter posts of any material type would have required drilling 5-6 holes close together with the rock drill and then using a jackhammer to open up the area large enough to fit the post. This would have increased the trampling around the hole by workers 5-7 times and increased the surface area disturbance by removing more ground for the hole, ultimately removing more rare plants. By using the pipe fence, only one hole was drilled, reducing the amount of trampling in the area by the workers and allowing posts to be set in between sensitive plants. Because of the difficulty of placing the posts in bedrock and the number of sensitive plants close to the project area, it was important to use a fence that would require minimal maintenance in the future. The powder coated pipe fence is estimated to be maintenance free for up to 50 to 80 years.

Fence construction began in June of 2007 and was completed within the month. Restoration of over 800 meters of user created trails was completed through the use of volunteers and the Nevada Conservation Corp. Three Interpretive signs were placed along the trail. The area will be monitored in following years to help determine the effectiveness of the project.

Did the project encounter internal or external challenges? How were they addressed? Was there something Clark County could have done to assist you?

During field review and initial surveys of the project, the Forest Service found sensitive species habitat near the first few hundred feet of the trailhead, with the majority of the population on only one side of the trail (Figure 2). It was also realized that the majority of the fence was going to have to be placed in bedrock. This change in condition prompted a review of the project and the submittal of a contract amendment request to the County.

The original contract requirement of 2195 meters of fence to be constructed was an estimate that was not field tested and was not reasonable or necessary to protect the sensitive habitat. The cost to place 2195 meters of the proposed fence was under-estimated given that much of the area was bedrock and required special equipment and considerably more time to drill the holes for the fence. The contract amendment request to the County was approved by the Board of County Commissioners.

What lessons did you learn from undertaking this project?
When working with partners, communication early and often is critical in assuring success of the project.

What impact do you think the project has had to date?
Part of the project was accomplished by volunteers on National Trails Day 2007. Over 75 volunteers came to help restore trails in the area. These volunteers had an opportunity to learn about the four MSHCP covered species that the fence project was going to protect. This event had a substantial impact on the volunteers that came to learn and help protect their public lands.

The Mt. Charleston blue butterfly host plant, Torrey's milkvetch, is also in the area. The project made the news when Channel 8 came to do an interview with the US Fish and Wildlife Service specifically looking at what was being done to help protect this recently petitioned for listing butterfly.

As the fence was being placed, the visiting public would inquire about the project and was always interested in hearing why the fence was being placed and typically surprised to learn that there were some species on Mt. Charleston that were found nowhere else in the world. This one on one contact with the visiting public had a big impact on their experience that day on the trail, and assisted them in understanding the broader purpose of the project.

The interpretive signs explain the reason for the fence project and graphically depict the rare plants in the area. These signs have received many positive comments from visitors as well as Forest Service staff.

Is there additional research or efforts that would complement or add to your project that could be conducted?

Monitoring the area in the following years is necessary to help determine if the project is benefiting the sensitive habitat and serving to manage recreation in the area.

FORMAL REPORT:

EXECTUTIVE SUMMARY

Featured Project and Type

Bristlecone Habitat Protection for MSHCP Covered Species on the Spring Mountains National Recreation Area, MSHCP Project # (2005-USFS_SMNRA-490-P). The type of project was restoration.

Species Addressed

The four MSHCP covered plants and one butterfly addressed in the project are:

Astragalus oophorus var. *clokeyanus*	Clokey eggvetch
Townsendia jonesii var. *tumulosa*	Charleston grounddaisy
Arenaria kingii ssp. *Rosea*	Rosy King sandwort
Pedicularis semibarbata var. *charlestonensis*	Charleston pinewood lousewort
Icaricia shasta charlestonensis	Mt. Charleston blue butterfly

Summary Project Description

The Bristlecone Habitat Protection Project consisted of constructing fence to protect sensitive habitat near the Bristlecone Trail and Las Vegas Ski and Snowboard Resort where five MSHCP covered species are found as well as impacts from heavy recreation use. The fence will help guide trail users and encourage them to stay on the trail. Restoration of user created trails will help the sensitive habitat recover. Interpretive signs placed as part of the project will help provide visitors with information on the sensitive habitat now protected by the fence.

Project Status/Accomplishments

A total of 1100 meters of fence was constructed along both sides of the Bristlecone trail through the heavily used sensitive habitat area and continues along one side of the trail past the Astragalus oophorus monitoring plot and population. Fence was also placed west of the Bristlecone Trailhead near the Ski Area entrance to help manage recreation use and keep visitors on the trail. A boyscout constructed and placed a sign near the Ski Area gate directing visitors to the Trailhead for parking and discouraging use behind the sign. This sign project earned the scout his eagle badge. Over 800 meters of user created trails were restored and 3 interpretive signs were designed and placed along the trail to help visitors learn more about the project and its purpose. The project was completed in October of 2007.

Partners

US Fish and Wildlife Service
Clark County
Nevada Conservation Corp
Volunteers

Project Contact

Amy Nichols
4701 North Torrey Pines
Las Vegas, NV 89130
702-515-5421 anichols@fs.fed.us

Funding
$83,780 was available for this project. Approximately $13, 500 was spent on the interpretive sign contract and approximately $30,000 was spent on fencing materials and supplies. The remaining funding was used for Forest Service staff and NCC time to complete the cultural and biological surveys, NEPA, construction of the fence, and restoration of the trails.

Completion Date or Status
The project was completed in October 2007

Documents/Information Produced
A NEPA document including information on the sensitive resources in the area was produced.

Quarterly reports and this final report were submitted to the County.

Pin flags mark sensitive plants to avoid during fence construction.

INTRODUCTION

Description of the Project
The Bristlecone Habitat Protection Project consisted of constructing fence to protect sensitive habitat near the Bristlecone Trail and Las Vegas Ski and Snowboard Resort where five MSHCP covered species are found as well as impacts from heavy recreation use. The fence will help guide trail users and encourage them to stay on the trail, reducing impacts to sensitive plants in the area. Restoration of user created trails will help the sensitive habitat recover. Interpretive signs placed as part of the project will help provide visitors with information on the sensitive habitat now protected by the fence.

Background and Need for the Project
Bristlecone habitat contains several sensitive species, primarily plants, which are covered under the MSHCP. The Bristlecone Trail receives concentrated use due to its ease of access and its proximity to the Las Vegas Ski and Snowboard Resort. Concentrated recreation on the Bristlecone Trail has caused formation of user-defined trails and has trampled sensitive plants. This trampling needed to be prevented and the trails restored to benefit MSHCP covered species, some of which are endemic to the bristlecone habitats of the Spring Mountains.

Management Actions Addressed
USFS (38) Encourage partnerships with volunteers to maintain and enhance natural resources in the NRA.

USFS (39) Adhere to goals, objectives, standards and guidelines detailed in the Plan Amendment which promote protective management of the species of concern and other ecological resources.

Fence placed along the road near the Ski Area entrance. Sign directs users to the trailhead.

USFS (40) Identify specific areas of exceptional sensitivity where conservation management will be emphasized over recreation.

USFS (43) Protect habitat of the species of concern from dispersed recreation.

USFS (82) Manage designated and informal use trails that are causing resource damage to reduce damage and restrict use to a single trail.

USFS (91) Address user conflicts on Bristlecone Trail through site-specific planning involving US Fish and Wildlife Service, trail users, and interested groups.

USFS (104) Ensure that restoration projects focus on protection and enhancement of the species of concern and do not inadvertently cause irretrievable damage to the habitats of the species of concern to separate the users from the species.

Goals and Objectives of the Project.

The primary goal for the Bristlecone Habitat Protection project was to protect the sensitive habitat near the Bristlecone Trail and Las Vegas Ski and Snowboard Resort, where recreation use is high. This was accomplished by constructing a total of 1100 meters of fence along both sides of the Bristlecone trail and west of the Bristlecone Trailhead near the Ski Area entrance to help manage recreation use and keep visitors on the trail. User created trails were restored and interpretive signage designed and placed along the trail to help visitors learn more about the project and its purpose. Figure 1 shows the location of the fence and interpretive signs.

Interpretive sign along Bristlecone Trail

One of the Trails Before Restoration Before

Trail After Restoration

METHODS AND MATERIALS

The fence material was purchased from 440 Fence Company and consisted of 2 3/8" 13 gauge high tensile ten foot steel rail, and posts with a simple cable-eye connector which attached to the post with an allen-wrench, and galvanized ½" cable powder coated Forest Service brown.

MSHCP covered species being protected by this project were flagged by a botanist in the field prior to construction so they could be avoided.

A rock drill with a 3" bit was used to place holes in the bedrock for the posts. Posts were placed every 10' and connected using allen-wrench connectors. Volunteers and Nevada Conservation Corps crews restored user created trails using palaskis to decompact the soil and by covering the trail tread with natural materials to help it blend in to the surrounding ground. Interpretive signs were designed to fit on a 24"x36" display panel and placed in the ground on a single posts or on the fence.

An Eagle Scout completed his eagle project by building and placing a 3'x4' wooden sign directing users to the Bristlecone Trailhead.

DISCUSSION OF RESULTS

The fence was placed with minimal impact to sensitive species in the area and blends with the surrounding area. The fence seems to be working well to guide visitors along the trail as intended, but continued monitoring of use and additional signing in the area could help to improve visitor use patterns. The railing is far enough apart that recreationists can pass each other safely while traveling along the trail and the sensitive habitat is bordered by the fenceline.

CONCLUSION

The Bristlecone Habitat Protection project was needed to help guide visitors through the sensitive habitat area and give the trampled area a chance to recover. Monitoring of the site in the years to follow will help determine the effectiveness of the project and understand the relationship between these sensitive species and recreation use.

RECOMMENDATIONS

It is recommended that future monitoring of plant populations be done at the site and be compared to baseline population numbers to determine if species numbers are increasing as expected. Other factors such as wildlife use, wild horse presence or absence, and natural disturbance should be included in the analysis of disturbance and its effect on the species. This monitoring should be completed bi-annually until a scientific conclusion can be drawn from the data.

LITERATURE CITED

Arsenault, D. P. 2002. Flammulated Owl Surveys in the Spring Mountains, Clark County, Nevada. On file at the Spring Mountains NRA.

Glenne, G. and D. Johnson. 2002. Guide to the Species of Concern in the Spring Mountains National Recreation Area Clark and Nye Counties, Nevada.

Hiatt, H and Boone, J editors. 2003. Clark County Species Account Manual. Clark County, NV.

Lund, Bruce. 2006. Master List of all Threatened, Endangered, Proposed, and Sensitive Species for the Spring Mountains National Recreation Area. (Revised 1/31/2005)

Lund, Bruce. 2005. Spring Mountains NRA Sensitive Butterfly Plants Primary survey time periods (Table – revised 1/12/2006)

Lowry, Chris. 2006. Predicted Habitat Model Map for *Tamias Palmeri*. On file at the Spring Mountains NRA.

Nevada Natural Heritage Program (NNHP). 2005. Nevada Natural Heritage Occurrences Arcmap Shapefile. Nevada Natural Heritage Program, Department of Conservation and Natural Resources. Carson City, Nevada.

SWCA 2005. Biological information assessment for 52 Species of Concern within The Spring Mountains National Recreation Area.

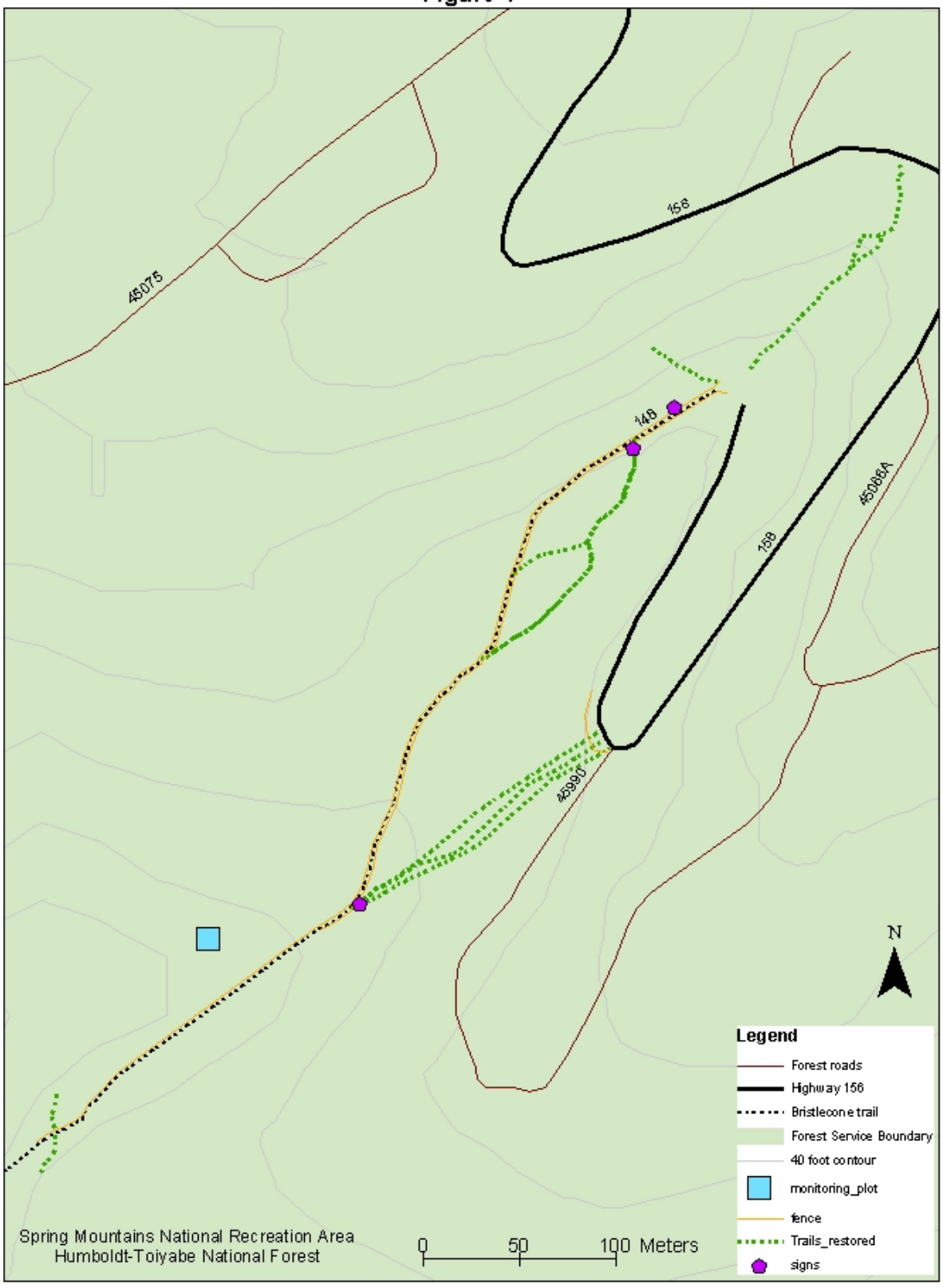
United States Department of Agriculture (USDA) Forest Service, Rangeland Management Staff. 2005. Threatened, Endangered and Sensitive Plants Survey. Washington DC.

WESTEC Services Inc. 1980. Las Vegas District Chipmunk Management Guide. Westec Services, Inc.

Attachments

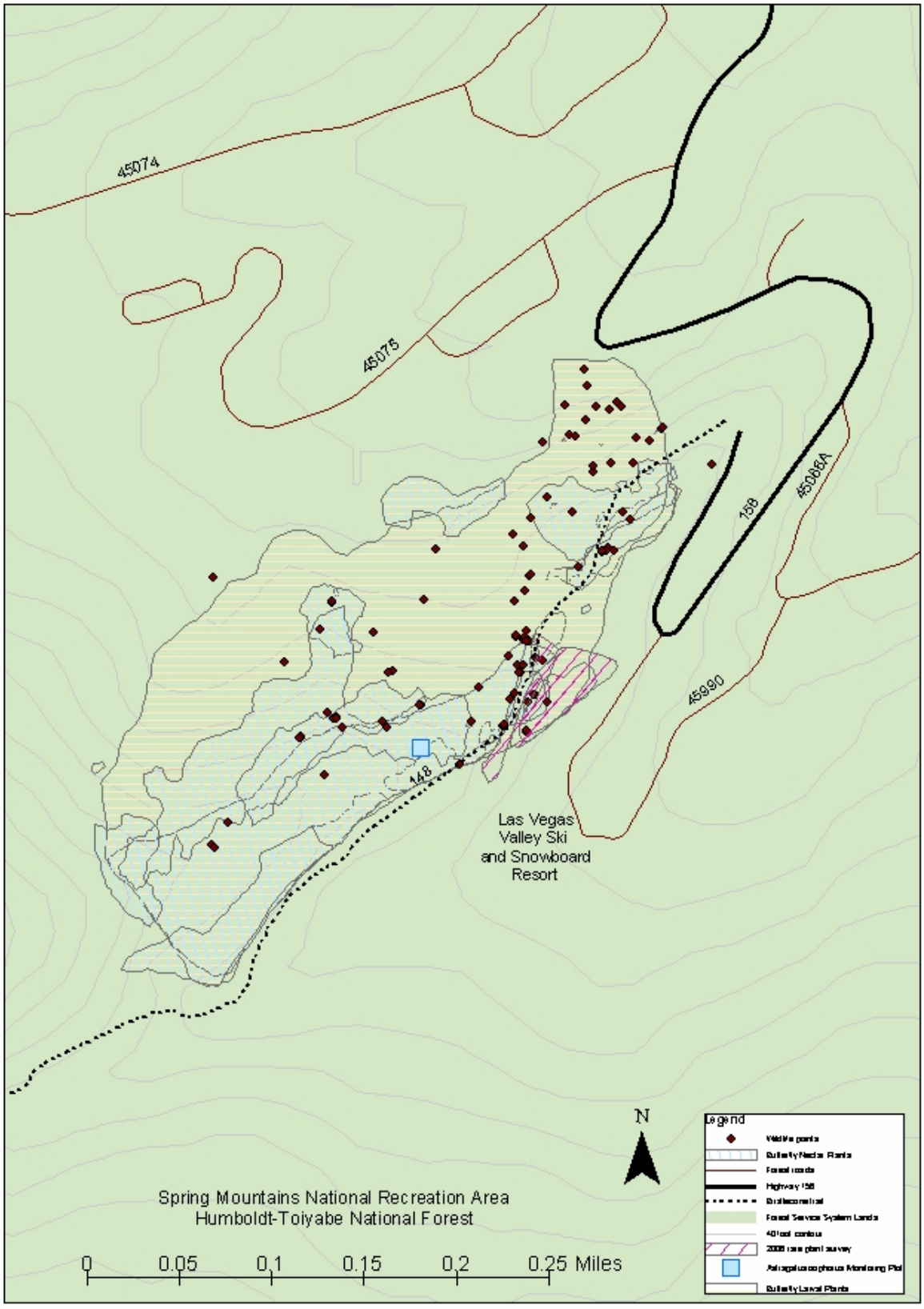
Fenceline and Trail Reclamation

Bristlecone Habitat Protection Project
2005-USFS_SMNRA-490-P
Figure 1

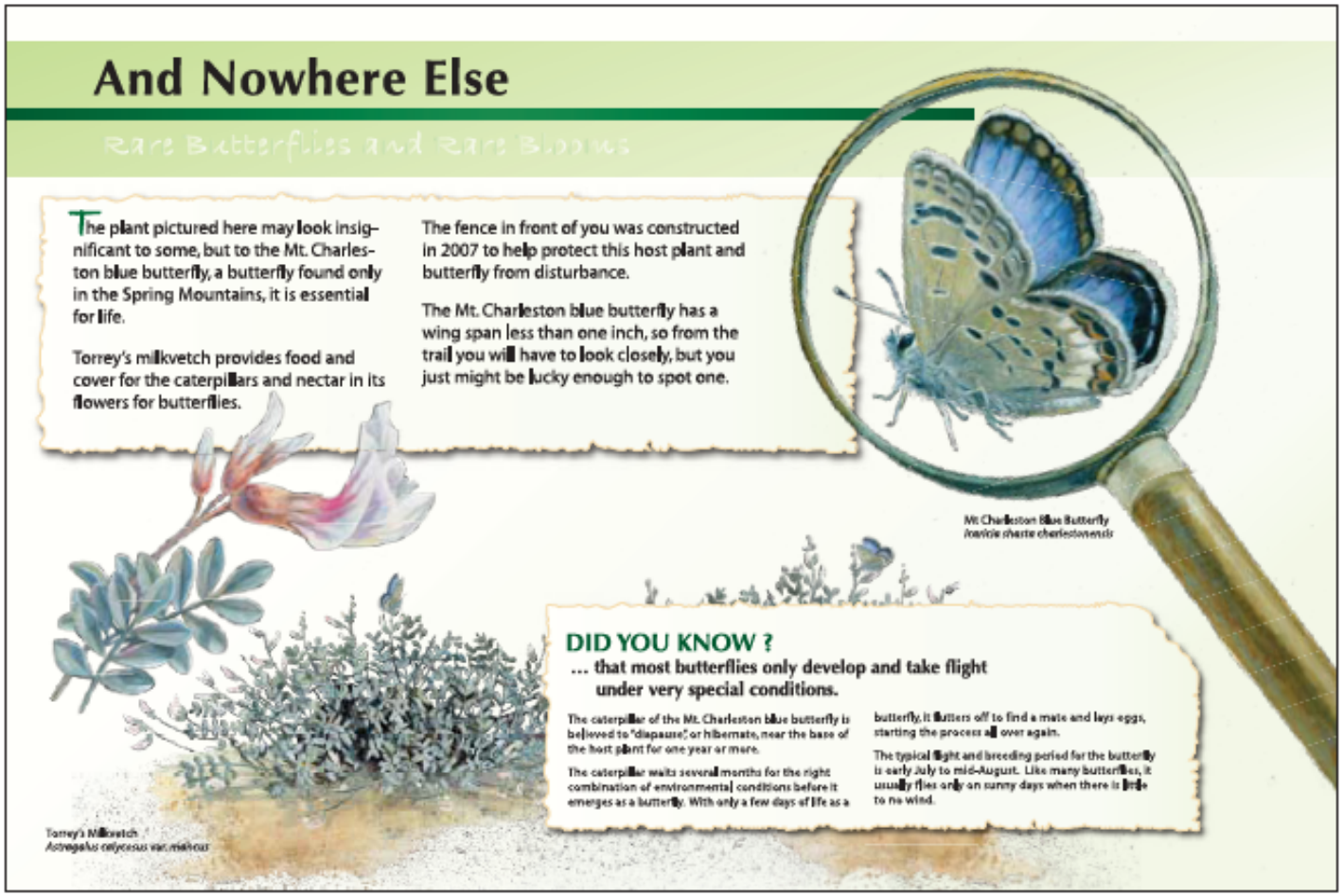


Resource Survey Information

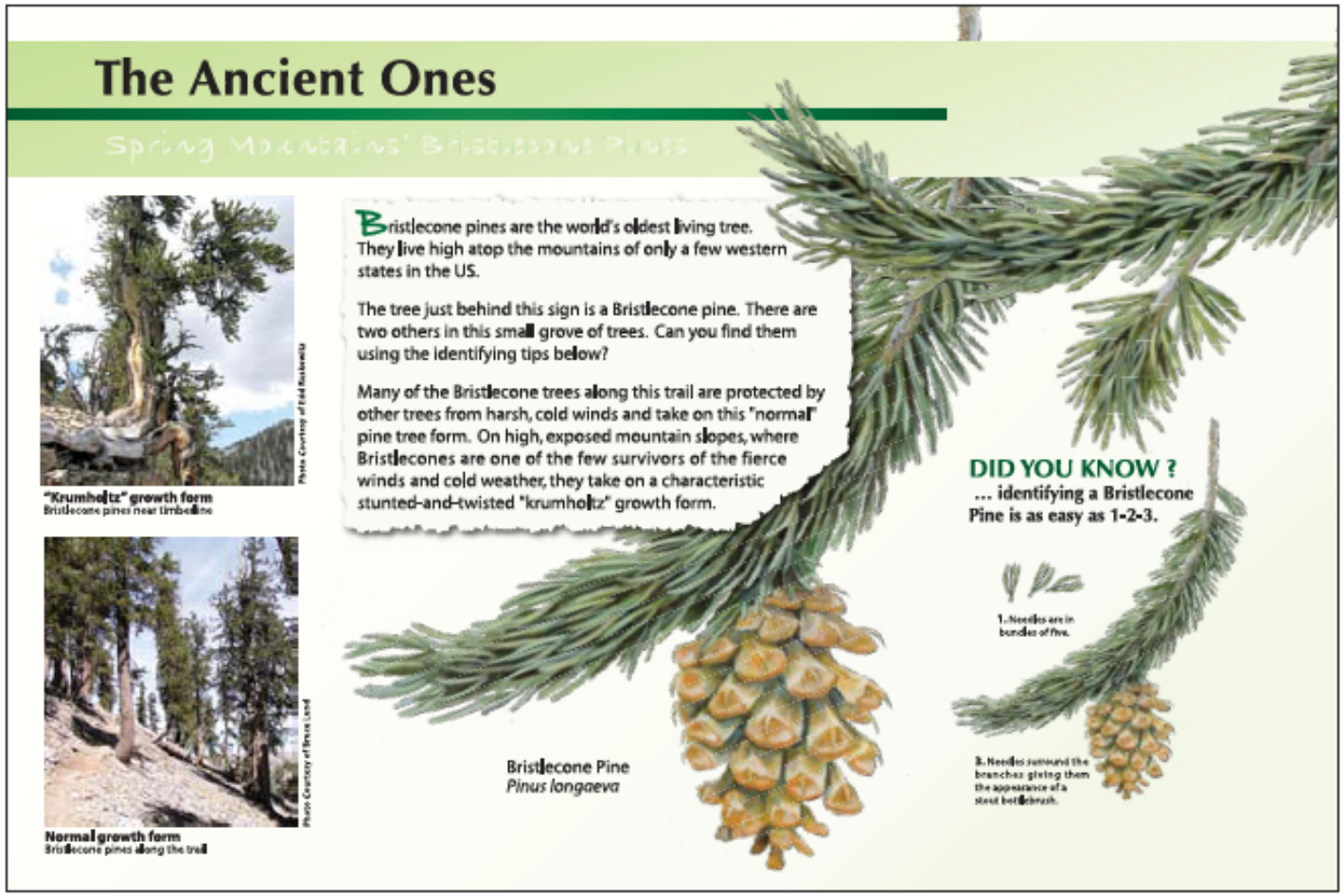
Bristlecone Habitat Protection Project
2005-USFS_SMNRA-490-P
Figure 2



Interpretive Sign #1 – Mt. Charleston Blue Butterfly



Interpretive Sign #2 – Bristlecone Pine



Interpretive Sign # 3 - Restoration