

RECREATION



TECHNOLOGY & DEVELOPMENT: MAKING A DIFFERENCE

FY 2006/2007

ISSUE 5



A Year of Closure!

A Message from the Program Leaders

As we reflect over the accomplishments for the year, the word that instantly comes to mind is "closure." Many of the projects that we have worked on for a year or more are coming to a close.

As you may recall from our last issue of Recreation, we reported that the jury was still out about the effects of all-terrain vehicles (ATVs) on the natural environment. Well, we now have closure and much of what we thought has been confirmed. Riding styles, trail location, and trail design all play a role in how much the natural environment is affected. Curves and tight turns affect the trail tread the most. Surprisingly, we concluded that there is no statistical difference between the effects of a vehicle fitted with standard stock tires that come with the vehicle than a vehicle fitted with a more aggressive after-market tire with 3/4-inch lugs. The study in its entirety can be found on our Web site: <http://fsweb.sdtc.wo.fs.fed.us/>.

We also concluded that mobile interpreter technology works aboard the Alaskan ferry. The technology is triggered by global positioning system (GPS) locations. As the ferry approaches the GPS location, a visual image of what you typically see in this area appears on a screen along with an audio recording that explains the attraction.

We finished the picnic table guide, too. We tested the loading capacity for several picnic tables including

wood, metal, concrete, and a combination of wood and metal and wood and recycled plastic, and listed their performance results in the guide. The guide presents an easy, straight-forward method to calculate the snow load for any area across the country and then select a picnic table that best fits that location.

We finished the wilderness trailhead bulletin board templates. These templates were designed to create a uniform look, yet have enough flexibility and choices to fit any natural setting. The templates feature three possible layout schemes and content, allowing for consistency on a universal scale. The layout schemes are consistent with the "Built Environment Image Guide" principles. The templates are Web-based and can be accessed soon. By late winter 2007, they also will be posted on the Arthur Carhart National Wilderness Training Center Web site at: <http://carhart.wilderness.net/index.cfm?fuse=arthurCarhart>.

We continue to be enthusiastic and optimistic about our future at T&D. The days ahead are just as exciting and challenging as the ones we leave behind. One of next year's most interesting projects is to take inventory of our traditional backcountry skills and determine what skills we currently have, assess what we need in the future, and determine how best to fill the gaps.

Other challenges include the development of a mobile ATV washer that washes an ATV onsite to prevent the spread of noxious weeds and a search for alternative towing vehicles (other than ATVs). This project is in response to the many ATV accidents that Forest Service employees have had in recent years. Some areas have banned the use of ATVs as a towing vehicle altogether.

We also began a 5-year study on the effectiveness of moldering privies to compost human waste. If proven successful, this type of privy could potentially solve some of the problems associated with managing human waste in backcountry areas. The Appalachian Trails association has volunteers to assist us with collecting the data and maintaining 20 of these units deployed along the Appalachian Trail from Georgia to Vermont.

Partnerships are very important to us. Without the assistance of our partners from the Rocky Mountain and Pacific Southwest Research Stations, the ATV industry, national forests, the Federal Highway Administration's Recreation Trails Program, the U.S. Department of the Interior's Bureau of Land Management and National Park Service, and other Federal and State agencies, much of our work would go undone. We will continue to cultivate, nurture, and strengthen these relationships.

Communications with our clients is also important and has prompted us to pay more attention to our Web site and its links. We want to make our information easy to find and use.

We are always available to assist you with problemsolving and applying technology. If you are having difficulty with any of our products, need assistance with applying them, or you have a new idea that you think might be worth exploring, give us a call. Thank you for the project proposals and we look forward to working with you

It's been a good year!

Gary and Dexter

RECREATION

HIGHLIGHTS

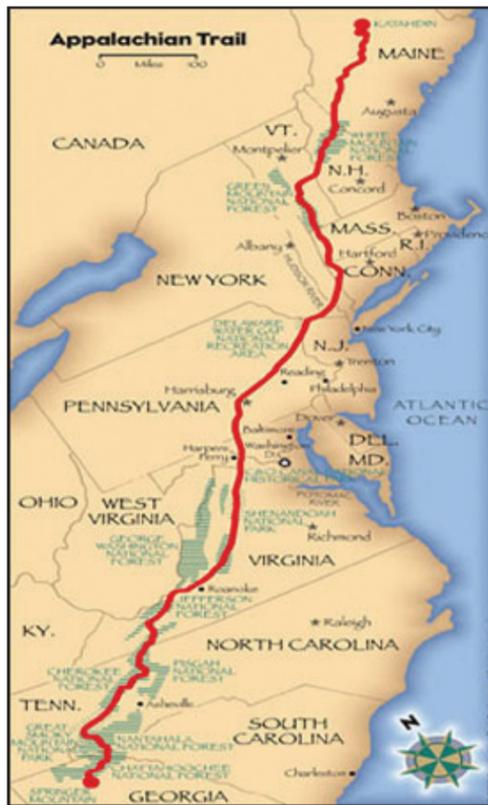


Figure 1—Map of Appalachian Trail.

Moldering Privy Compost Testing Protocols and Compost Quality Evaluation

Proposed by: Satgur Klar, Region 8
Project Leader: Brenda Land, SDTDC

Moldering privies are used along the Appalachian Trail (AT) (figure 1) to treat human waste through a slow natural biological process. They use cool-temperature composting to reduce the organic waste to an inert material – the same process that occurs in leaf litter on the forest floor.

The moldering privy was developed in a continuing research project by the Green Mountain Club (GMC) in conjunction with the Appalachian Trail Conference (ATC), the National Park Service Appalachian Trail Park Office (ATPO), and the Vermont Department of Forests, Parks, and Recreation (VTFPR).

Dick Andrews, a GMC volunteer, brought the moldering privy concept to the Appalachian Trail in 1997. The goal was to replace pit toilets with a system that manages human waste with less maintenance than other composting systems (taken from the ATC Backcountry Sanitation Manual).

The moldering privy is experimental, but shows great promise for disposal of human waste in the backcountry. The effectiveness of moldering privies is unknown. The San Dimas Technology and Development Center (SDTDC) has a project to determine the effectiveness of moldering privies in different climates.

This project will evaluate the ability of moldering privies to function in various climates, with various levels of use. At the end of the project, guidelines will establish when moldering privies are appropriate for human waste treatment.

The project will follow several privies for 5 or 6 years and identify:

- 1.) The number of users.
- 2.) The length of time it takes to fill a privy bin.
- 3.) The size and number of bins.
- 4.) The average ambient temperature of the privy location.
- 5.) The characteristics of the material removed from the privy (NSF Standard 41).



Figure 2—Moldering privy on the Chattahoochee National Forest, GA.

To collect this information, 18 pressure-mat counters and dataloggers (counter-systems) were assembled by Ted Etter, MTDC electrical engineer, and sent to 4 different trail clubs along the Appalachian Trail for the initial data collection. Data will be collected for 5 or 6 years.

A highlight for the summer was working with the dedicated people who work so diligently to maintain the Appalachian Trail.



Figure 3—Gary Monk, Lawson Herron, and Frank Wright of the GATC installing a pressure-mat counter and datalogger at Springer Mountain.

The project leader spent several weeks working with members of the trail clubs to coordinate installation of the counter-systems along the AT. They installed 14 of the first counter-system in 4 areas along the AT from Georgia to Vermont. The first stop was in Dahlonega, Georgia, where Brenda met with Gary Monk and Lawson Herron of the Georgia Appalachian Trail Club (GATC).

Gary and Lawson took Brenda to Springer Mountain where she helped with the first counter-system installation. Frank Wright of the GATC met them at the site (figure 3). Springer Mountain is the southern start of the AT.

RECREATION HIGHLIGHTS

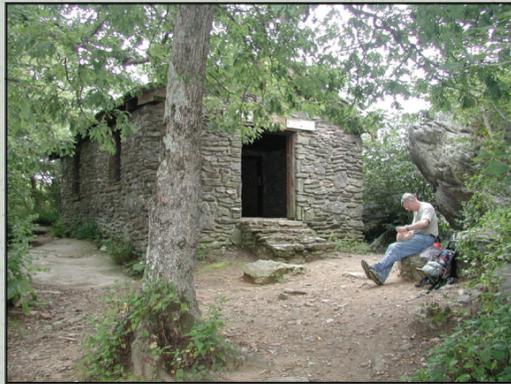


Figure 4—Jim Mowbray (ATC), Richard Kettelle (ATC), George Minnigh (NPS), and Mark “Mindshatter” Tinkham (ATC), installing a pressure-mat counter and datalogger at Icewater Spring shelter privy.

Jim Mowbray and Mark Tinkham installed a counter-system at Cosby Knob on August 26, and Dick Kettelle and Wayne Williams installed a counter-system at the Spence Field privy on August 27.



Figure 5—Bob Sickley and Alan Grubb of the ATC installing a pressure-mat counters and dataloggers at the Annapolis Rock campsite privies.



Figure 6—Pete Antos-Ketcham and Dave Hardy of the Green Mountain Club installing a pressure-mat counter and datalogger at the Duck Brook shelter privy.

Maine to Georgia. Their mission is to ensure that future generations will enjoy the clean air and water, scenic vistas, wildlife, and opportunities for recreation and renewal along the entire Trail corridor. For more information, call (304) 535-6331, or visit their Web site at www.appalachiantrail.org. You will also find volunteer opportunities and general hiking information.

Turkey Bay Off-Highway Vehicle Area Restoration

Proposed by: Brian Beisel, Region 8, Land Between the Lakes, NRA
Project Leader: Bill Ryan, Land Between the Lakes

The 2005 and 2006 centennial projects funded ongoing restoration projects at Land Between the Lakes, (LBL), Turkey Bay Off-Highway Vehicle (OHV) area. These are multiyear projects that are restoring damaged areas within this OHV area in LBL.

The 2005 centennial project funded the restoration of approximately 8 acres of watershed severely impacted by inappropriate OHV use. The primary focus of the restoration project was to eliminate “mudding” areas, reduce sediment deposits within the watershed, and reduce the proliferation of user-created trails. The secondary purpose was to utilize the restored area for a destination spot within the trail system. By providing a nonmotorized picnicking area within the trail system this project changed the type of use without limiting access.

LBL partnered with the State of Kentucky’s Recreational Trails program to complete a multiphase restoration project that included trail designations. The project area focused on about 8 acres that was stripped of vegetation and deeply entrenched due to past “mudding” abuse. The area was rehabilitated by creating two ponds that will provide fishing, picnicking, and wildlife viewing opportunities for users. The area was seeded with native vegetation which included warm season grasses, forbs, and wildflowers.

They also installed counters at Woods Hole, Blood Mountain, and Deep Gap during the 2 days Brenda was there. They checked on a counter the GATC had installed at Hawk Mountain. The GATC will install counters at Stover Creek and Low Gap later.

The next location was the Great Smokey National Park in Tennessee. Jim Mowbray, Richard Kettelle, George Minnigh, Mark Tinkham, and Brenda, started with installation of the counters at the Mount Collins and Icewater Spring privies (figure 4).

The third location was in Maryland. Brenda met Bob Sickley to install counter-systems at the two Annapolis Rock privies. She and Bob met ridge-runner Alan Grubb on the trail up to the site. Alan joined them and helped with the installations (figure 5).

The last stop on the trip was Vermont where Brenda met with Dave Hardy and Pete Antos-Ketcham of the Green Mountain Club to do the installations. They installed a counter-system at Duck Brook (figure 6).

The Appalachian Trail Conservancy is a volunteer-based nonprofit organization dedicated to the conservation of the 2,175-mile Appalachian National Scenic Trail, a 250,000-acre greenway extending from

RECREATION HIGHLIGHTS



The 2006 centennial project funded the restoration of 12 acres of a seventh level watershed severely impacted by OHV use. The primary focus of the restoration project was reducing sediment deposits within the watershed and into the Turkey Bay embayment of Kentucky Lake. The secondary purpose of the centennial restoration project work was to eliminate unnecessary user-created routes and designate long-term sustainable routes.

LBL partnered with the National Forest Foundation and the State of Kentucky's Recreational Trails Program to complete a multiphase restoration project that included trail designations. The project area focused on about 50 deeply entrenched user-created trails that were closed to riding and rehabilitated through bioengineering and salvaged forest products. The centennial project greatly aided in reducing windborne and stormwater runoff to nearby Kentucky Lake. Native warm-season grasses were established on the disturbed areas to assist in controlling noxious and invasive species while providing vegetative cover. The revegetated hillsides improved wildlife habitat and a solid base for future stand health.

These centennial year projects served as a continuation of watershed scale restoration projects within the 2,300-acre trail system. This grant project exemplifies the conversion from an open riding area to a designated trail system by eliminating nonsustainable trails to provide a safer, more user-friendly, and aesthetically pleasing trail experience, while minimizing the resource impacts created from inappropriate OHV use.

Figures 7 and 8—The 2005 centennial project funded the restoration of approximately 8 acres of watershed severely impacted by inappropriate OHV use.



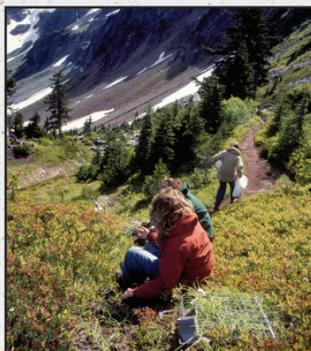
PROJECT SUMMARIES

1 Wilderness and Backcountry Site Restoration Guide

Proposed by: Chris Ryan, Region 1, and David Cole, Arthur Carhart Training Center

Project Leader: Mary Ann Davies, MTDC

Many wilderness managers and rangers currently expend substantial time, energy, and financial resources attempting to restore damaged recreation sites—particularly campsites. Many of these managers and rangers have little technical knowledge about the complex and challenging task of site restoration. Although our knowledge of how to restore sites is woefully inadequate, particularly in certain environments, much is known. The problem is that managers and rangers do not have access to technical information when they need it. The limited written information available is often inadequate in conveying exactly what to do. The Arthur Carhart National Wilderness Training Center has compiled information on restoration techniques; however, the collected information requires further development work if it is to function as a useful tool for wilderness managers. Lisa Therrell, wilderness manager on the Okanogan-Wenatchee National Forest is the principal author for compiling all the reference materials for this comprehensive book.



This 392 page guide, including references and appendixes has been edited, laid out, and will be distributed on CD in 2007. (www.fs.fed.us/t-d/php?p-num=0623%202815)

2 Recreation Posters

Proposed by: Dave Worshek, R9, Superior NF; Paul Libby, Jr., R3, Tonto NF

Project Leader: Ellen Eubanks, SDTDC

The recreation posters have been updated, redesigned, and translated into Spanish to meet nationwide needs. They have been added to the Sign and Poster Guidelines for the Forest Service (December 2005) and can be downloaded for printing. Go to: http://fsweb.wo.fs.fed.us/eng/roads_trails/signs_05/index.htm, Chapter 11.

Posters are sized to fit together on a bulletin board. The majority of the posters are 12 by 14 inches. There are a few different sizes; for example, poster R5-2 was designed to be mounted on a hydrant so visitors can read it while drawing water. Poster R3-4 is designed to be mounted on the edge of a highway and is 44 by 16 inches. The posters also have been renumbered. Now, more posters can be added at a later date without disrupting the numbering sequence.



2 Building Mountain Bike Trails: Sustainable Singletrack DVD

Proposed by: Jim Miller, WO Recreation, and Christopher Douwes, FHWA Recreational Trails Program
Project Leaders: Mary Ann Davies and Lisa Outka-Perkins, Missoula Technology and Development Center (MTDC)

Building Mountain Bike Trails: Sustainable Singletrack is a DVD supplement to the International Mountain Bicycling Association's book, Trail Solutions: IMBA's Guide to Building Sweet Singletrack.

This 40-minute DVD provides an introduction to the basics of building mountain bike trails that can be enjoyed by cyclists, hikers, and horse riders. Topics covered are:



The Most Important Steps
Trail Design Mistakes
Let's Get Dirty!
Armoring
Creating Challenge
Maintaining Trails
Reclaiming Trails

The tech tip that summarizes the contents of the DVD is located at: <http://fsweb.mtdc.wo.fs.fed.us/pubs/htmlpubs/htm06232341/index.htm>.

5 Revise the Trail Construction and Maintenance Notebook

Proposed by: Brian Vachowski, MTDC, on behalf of the State Trail Administrators
Project Leader: Mary Ann Davies, MTDC



The notebook has received only minor updating since it was first released in 1996. Parts of this notebook are becoming outdated and supplemental chapters are needed. Revision needs to be done to this popular trail notebook.

The notebook will be ready for layout and print in FY 2007.

7 Manager Perceptions of Issues and Actions for OHV Management on National Forests in California

Project Leaders: Deborah J. Chavez and Nancy E. Knap, PSW, Riverside, CA

Off-highway vehicle (OHV) issues are complex and required the assistance of the Pacific Southwest Research Station. Of particular interest to the researchers are the perceptions of managers of OHV activity. The managers are most likely to understand the complex nature of OHV issues and to take the actions required for mitigating them. A survey of 45 managers--identified through an internal Forest Service mailing list and national forest Web sites--was conducted. The managers each received questionnaires via e-mail in advance of telephone interviews.

Almost all of the respondents considered control of OHV use a forest management concern. Some felt that OHV use could be managed successfully.

Management issues were divided into those related to natural resources, regulatory/behavioral and-agency, and social conflict. Overall, OHV managers reported an average 7.49 issues observed or reported. For the top 10 most frequently named issues, 6 were natural resources issues (soil erosion/trampling, soil erosion/compaction, litter/trash on roads and trails, litter/trash at trail access points, vegetation damage, and graffiti or other vandalism). Management actions were categorized into those which indirectly impact recreation visitors, those which directly impact recreation visitors, resource hardening, and bridge building/collaboration. Overall, OHV managers reported an average 7.47 actions used. The most frequently named indirect actions were use of posters and signs, bulletin boards, user ethics, maps, and brochures.

This paper, PSW-RP-250, available online at: <http://www.fs.fed.us/psw/programs/recreation/publications>, provides a practical reference for Federal and State land managers. Appendixes provide information about specific actions Forest Service managers in California are taking to manage respective OHV problems and how effective they perceive these actions to be.



4 Modifying Water Hydrant Handles To Make Them Safer

Proposed by: Darryl Harley, Alabama, Bankhead RD
Project Leader: Mary Ann Davies, MTDC

This publication describes modifications to make the handle of the Woodford MK-6 frost-free hydrant safer to use. Although this hydrant is no longer manufactured, it is used extensively at Forest Service recreation sites in the Southern United States. The hydrant's handle closes with enough force to amputate the end of a finger. Metal can be milled away from the handle to leave enough room for a user's finger, thus preventing injuries. To view the publication, go to: <http://fsweb.mtdc.wo.fs.fed.us/pubs/htmlpubs/htm05232348/index.htm>.



6 Self-Loading Hauler/Toter Trail Trailer

Proposed by: Trails Unlimited, Reinvention Lab
Project Leader: Ellen Eubanks, SDTDC

Trails Unlimited, a SDTDC partner, designed and had built an ATV modular trail trailer. The trailer is essentially two trailer frames connected by a pivot and hydraulic cylinder. The bottom frame contains a walking-beam axle with brakes, hydraulic power pack, battery, and trailer tongue.

Trailer Equipment:

- Hydraulic lift trailer with roll-off.
- Overall trailer weight 210 pounds.
- Trailer brakes with locking parking brake.
- Turning radius - 96 inches.
- Winch - 2,500 pound capacity; electric.
- Overall trailer dimensions: 48-inch overall width, 96-inch overall length, 36-inch tongue length, 12-inch ground clearance.



The trailer can carry these pieces of equipment:
Tank/sprayer.
Rock crusher.
Wood chipper.
Dump bed for rock, mulch, seed, logs, and bridge and building materials.
General hauler, flatbed.
Tool trailer.

It can be used for winching, for pulling large objects onto the trailer for removal from remote sites.

The trailer can drop a piece of equipment at a specific site for use at that site. This is important because the trailer is not tied up all day and can be used for other things.

8 Revised Forest Service Guidelines for OHV Travel-Management Signs

Proposed by: Rich Farrington, Region 5
Project Leader: Mary Ann Davies, MTDC

This publication describes the use of the *Sign and Poster Guidelines for the Forest Service (EM 7100-15)* to establish consistent signs for OHV use in national forests and grasslands. Please see <http://fsweb.mtdc.wo.fs.fed.us/pubs/htmlpubs/htm06232317/index.htm>.



Signs can be confusing when they are not consistent.

Signs that follow the revised guidelines for OHV travel management are consistent, making them easier to understand.



PROJECT SUMMARIES

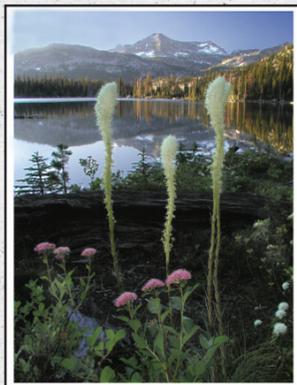
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Wilderness Rangers: Keeping it Wild DVD

Proposed by: Sandy Ratliff, Region 5

Project leaders: Mary Ann Davies and Lisa Outka-Perkins, MTDC

Every field season ranger district wilderness staffs must educate new or returning wilderness rangers on the basic work of backcountry management (removing noncompliant campfire rings, maintaining trailhead information boards and trail signage, personal safety awareness, and many other tasks). There is a need for a basic, visual wilderness ranger training aid that district wilderness managers can use when orienting backcountry rangers.



This 40-minute DVD was ready for duplication September 2006.

11

Field Testing of Decontamination of Human Waste by Mycofumigation

Proposed by: Brian Phillips; Phillips Environmental Products, Inc

Project Leader: Brenda Land, SDTDC

Pit toilets are still used in some back-country locations. This project will evaluate an additive's ability to degrade the human waste faster, and extend the useful life of the pit. If this product is successful, it would delay the frequency of digging new pits.



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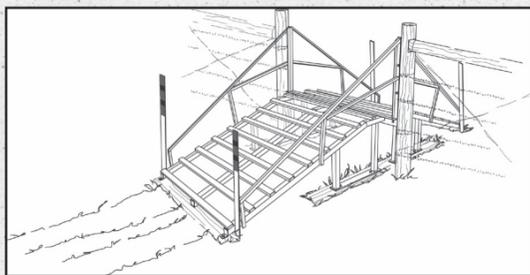
Improved Trail Cattle Guard

Proposed by: Craig Cope, Region 2, Bighorn NF, Powder River RD

Project Leader: Brian Vachowski and Deb Mucci, MTDC

The Southwest Montana ATV Trail Cattle Guard (MTDC-1049) has been developed to replace an earlier design, the Deerlodge Trail Cattle Guard (MTDC-951-2). The Deerlodge Trail Cattle Guard proved to be too short (only 34 inches on each side of a wire fence) to prevent livestock from trying to jump over it. Also, cattle got their legs caught in the 4-inch gap between the rails and could not free themselves.

Link to the publication: http://fsweb.mtmc.wo.fs.fed.us/php/library_card.php?num=0623%202313



15

Restoration of OHV-Impacted Landscapes

Proposed by: National Recreation Program T&D Steering Committee

Project Leader: Ellen Eubanks, SDTDC

The new travel management rule requires that all OHV use be on designated routes. Nonsystem OHV trails and some system trails need to be removed and the landscapes restored. This guide will present a number of methods for removing these trails and restoring the native landscape, and hopefully the ecological function of the land. Tom Biebighauser is writing a chapter specifically on wetland ecology and restoration.



10

The Accessibility Guidebook for Outdoor Recreation and Trails

Proposed by: Janet Zeller, WO

Project Leader: Kathie Snodgrass, MTDC, Janet Zeller, WO, Ruth Doyle, R3, Santa Fe NF

The Accessibility Guidebook for Outdoor Recreation and Trails explains how to integrate accessibility into planning, design, construction, and maintenance of outdoor recreation facilities and trails while maintaining the natural setting. It provides detailed information about accessibility requirements in an easy-to-use format, with photos, illustrations, design tips, hotlinks, and sidebars. Forest Service personnel, partners, contractors, and Federal and State agencies working in cooperation with the Forest Service will find this guide provides invaluable assistance for applying the Forest Service Outdoor Recreation Accessibility Guidelines and Forest Service Trail Accessibility Guidelines to recreation and trails construction and maintenance projects. The Guidebook is available online at http://www.fs.fed.us/recreation/programs/accessibility/htmlpubs/htm06232801/lib_card.htm. It is not available in hard copy at this time.

The Accessibility Guidebook for Outdoor Recreation and Trails was written by Janet Zeller, Accessibility Program Manager, Forest Service, Ruth Doyle, Landscape Architect, Santa Fe National Forest, and Kathleen Snodgrass, Project Leader, MTDC, with the help of dozens of people in the recreation and trails community both inside and outside the Forest Service. This project would not have been possible without their assistance and the financial support of the Federal Highways Administration's Recreation Trails program.



12

Noise Control in the Forest

Ongoing field support

Project Leader: Dexter Meadows

The Technology and Development program has equipment and expertise to measure noise levels. To request a noise study or sound measurement, contact the San Dimas Technology and Development Center.

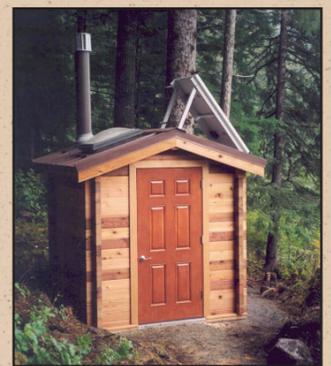
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Remote Toilet Design

Proposed by: Matt Phillips, R10, Tongass NF, Juneau RD/Admiralty National Monument

Project Leader: Marty Willbee, SDTDC

Pit toilets at remote cabin sites have only a 1- to 5-year life span; new technology is needed to resolve sanitation and associated management issues. This project will propose technology that is fully accessible, require only annual maintenance, remain at a fixed location, eliminate exposure to waste and/or hazardous materials, and be used easily by the public. This project is still in the monitoring stage and more information should be available by next year.



16

Crosscut Saw DVD

Proposed by: John Favro, Region 1

Project Leader: Bob Beckley, MTDC

Forest Service employees and volunteers regularly use crosscut saws and axes while working in the field. In designated wilderness areas, these tools are essential for clearing and maintaining trails. With the advent of the chain saw, many field crews no longer have a background in crosscut-saw techniques.

To preserve this traditional skill, MTDC was asked to prepare a DVD to show the safe and proper use of the crosscut saw. The Crosscut Sawyer: 2007 DVD will be a companion to the Chain Saw and Crosscut Saw Training Program. This 20-minute DVD focuses on safe limbing, brushing, bucking, and felling techniques. It is scheduled to be available in the spring of 2007.



17

A Guide to Fiber-Reinforced Polymer Trail Bridges

Proposed by: Andy Trent, MTDC
Project Leader: James "Scott" Groenier, MTDC

The publication discusses the benefits and problems encountered with the use of lightweight, low-maintenance, easily constructed fiber-reinforced polymer (FRP) trail bridges in remote areas where the weight of conventional bridge-building materials such as steel, concrete, or timber make their use impractical. Beginning in 1997, the U.S. Department of Transportation, Federal Highway Administration, Recreational Trails Program and the MTDC funded the design, testing, and construction of two trail bridges made of FRP composite members. This report discusses the background of FRP composites, how they are manufactured, and the applicability of FRP products to trail bridges, along with their benefits and shortcomings. Case histories of five FRP bridges in national forests and discussions of their performance are included, as is information about the installation and testing of two FRP bridges, along with guidance on design, installation, maintenance, and inspection. The qualifications required for persons who design FRP bridges for the Forest Service are outlined. A list of current suppliers of FRP trail bridges is included.



19

Accessible Gate Latch

Proposed by: Janet Zeller, WO
Project Leader: James "Scott" Groenier, MTDC

This project is an offshoot of the accessible gate project. MTDC worked with Lloyd Beaver of the Hamilton Hinge Company to modify the company's ring latch so that it would be accessible. The new gate latch meets the Federal accessibility requirements. The latch allows people with disabilities to open a gate with less than 5 pounds of force using one hand, without twisting the wrist or pinching or grasping the controls.



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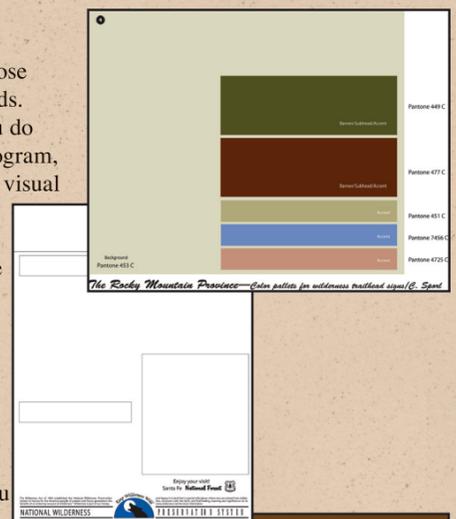
Cost-Effective and Durable Signs and Posters for Wilderness Trailhead Bulletin Boards

Proposed by: Mel Bolling, Carson NF, Camino Real RD
Project Leader: Ellen Eubanks, SDTDC

A committee has created a way for all forests to produce handsome information and wilderness trailhead signs using a template that has a uniform look, yet vary in color and content according to need. The sign template is based on one developed in Region 2 by Dick Ostergaard's former design group. The sign template is available on the Arthur Carhart National Wilderness Training Center Web site, <http://carhart.wilderness.net/> and the San Dimas Technology and Development Web site. The site is a catalog from which to choose a predetermined design, colors, and content to create consistency in wilderness signs.

The template features three possible layouts, including one for small trailheads, and the footer with the howling wolf. There are also icons and captions to choose from. These go under the supplied headings of Regulations, Safety, and Leave No Trace. Each forest can create its own map showing the trailhead and vicinity, major roads, streams, and trails, but not necessarily the entire wilderness area.

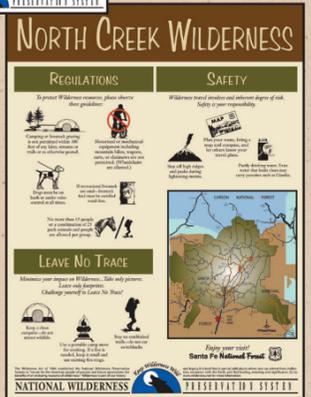
In Adobe Illustrator, you can choose a template based on your site needs. (Instructions are provided.) If you do not have the Adobe Illustrator program, your forest landscape architect or visual information specialist probably will. If not, you can work with a local sign maker who will be able to manipulate the template and information to create the sign.



The suggested colors are based on the Built Environment Image Guide for each province within a particular region. You can decide how large the sign will be and you can choose one to three subheads.

The text under each heading is chosen from a long list of captions and icons (some icons go with multiple paragraphs). Sign-board products and stanchion designs will be listed as well. The package includes:

- Site title banner and three subheadings.
- Suggested colors for the banner, subhead, and accents.
- Suggested fonts, icons, and text.



20

Improved MTDC Trail Rake for ATVs

Proposed by: Brian Vachowski, MTDC
Project Leader: Brian Vachowski, MTDC

This report describes an improved trail rake that can be pulled by an ATV to maintain trails. Among the rake's key features are:

- A tine assembly that can be shifted 11 inches to either side and raised from 3 inches below grade to 11 inches above grade.
- Joystick controls mounted on the handlebar.

When the rake's tine assembly is shifted to the side and rotated, the rake can pull soil from berms alongside the trail without requiring the operator to drive off the trail. The parts for the prototype trail rake cost \$2,900. The rake takes about 15 days to fabricate. Drawings (MTDC-1036) are available from MTDC. The link to the publication is: http://fswb.mtdc.wo.fs.fed.us/php/library_card.php?p_num=0623%202320.



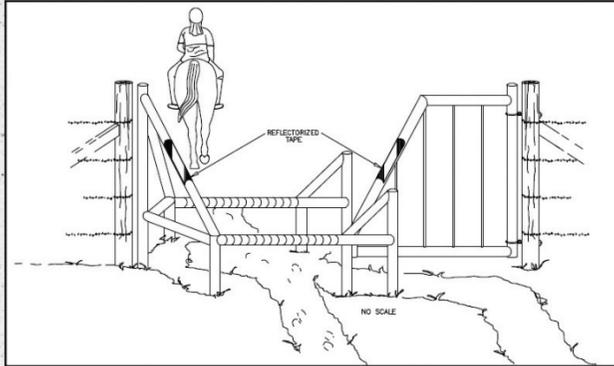
PROJECT SUMMARIES

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Accessible Gates

Proposed by: Larry Blocker, R1
Project Leader: James "Scott" Groenier, MTDC

This publication discusses available gate designs from around the world that allow wheelchair access, but restrict ATVs, motorcycles, and mountain bikes. Additionally, MTDC designed a gate that would allow wheelchair and horse access, but keep out ATVs and motorcycles. Typical drawings are shown for timber kissing gates, chicanes, a horse-friendly barrier, and gates.



23

Alternative Roofing Materials

Proposed by: Timothy Light, R1, Flathead NF
Project Leader: Marty Willbee, SDTDC

Most forest units in Region 1 have one or more historic Forest Service or recreation structures located in fire-prone environment that are roofed with cedar shingles. Forest heritage and facilities personnel are expending increasing amounts of time trying to identify alternative roofing materials to replace cedar shingles, which are historically appropriate, cost effective, easy to install, and functional in the wildland fire environment.

The focus of this project will be to locate and identify all look-like cedar roofing material available in today's market and evaluate each for cost, visual qualities, fire resistance, and compare against treated and untreated cedar shingles. The final product, a guide that discusses roofing types and their comparative pros and cons, is due in FY 2007.



25

Virtual Interpreter

Proposed by: Sandra Frost, R10, Tongass NF
Project Leader: Ellen Eubanks, SDTDC

The Forest Service supplies interpreters on the Alaska State Ferry system, but not enough interpreters are available to cover all voyages. The virtual interpreter will provide information when there is no interpreter available by using global positioning (GPS) points to trigger a preprogrammed video. SDTDC programmer, Marc Todd, has written and tested the software. The interpretive staff on the Tongass NF has not been able to test the system.

We have decided to broaden this project's application by adapting the software to run on PDAs and cell phones. This will make the project applicable to scenic byways and rivers and interpretive trails. It is hoped that the public will be able to use their own devices for playing programs.

22

Trail Data Recorder – Wheel-Based, INFRA Software Interface

Proposed by: Gary Paull, Mt Baker-Snoqualmie NF
Project Leader: Ellen Eubanks, SDTDC

This project would match a data recorder (tablet) electronically to a wheel for measuring distance along a trail and provide a software program to allow easy transferring of data to INFRA.

SDTDC worked on the wheel portion of the project. The idea was to create a trail wheel that would send the distance count automatically to whatever electronic device the wheel was attached to. A prototype wheel using a proximity sensor, to count wheel revolutions, feeding information into a NuMetrics Nitestar NS-60 Distance Measuring Instrument, was created. There were problems in the field with the wiring lengths, weather, and there being wires at all. The wheel was found to be bulky and hard to handle on certain trail types. We will continue to work on other ideas to make this work.

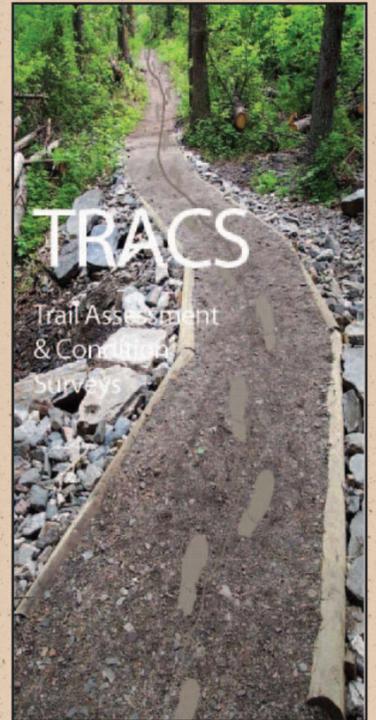
24

TRACS Field Guide

Proposed by: Jonathan Kempff, P.E., Gallatin NF
Project Leader: Ellen Eubanks, SDTDC

This project is to develop a TRACS field guide (TFG) that shows every trail feature (e.g., boardwalks, fords, and so forth). Information includes color photographs clearly showing the feature from key angles, dimensioned drawings, material types, and alternative features, if available.

The TFG also would include a section with photos describing trail classifications. This guide will be printed and will eventually be available in an electronic format as well. Publication date is late FY 2007.



26

Liquid Sprayer for Dust Control on Trails

Proposed by: Jim Duckett, R9, Allegheny NF
Project Leader: Ellen Eubanks, SDTDC

Trails Unlimited, a SDTDC partner, has had a sprayer built to its specifications. It has been tested and works well. This sprayer was designed to meet the demands of remote trail work including carrying water and/or dust abatement materials in a compact unit. The sprayer is transported on the trail with an ATV trailer. The sprayer sprays several different viscosities, including water. The sprayer can draft water from a local water source, and it can mix dry materials into slurry, using a jet-agitation process in the tank. Liquids from the tank are applied through either a rear-mounted sprayer-bar or by manual hose application operated by an additional person. The sprayer can be used for applying herbicides, dust palliatives, soil stabilizers, and hydroseed mixes.

The spray mechanism can be switched on and off from an ATV. A Tech Tip with drawings and sources of supply will be published in FY 2007.



27

Preservative-Treated Wood and Alternative Products in the Forest Service

Proposed by: R. Brian Kermeen, Stanislaus NF
Project Leader: James "Scott" Groenier, MTDC

This is an update to the publication Selection and Use of Preservative Treated Wood in Forest Service Recreational Structures (9523 1203- SDTDC). The publication now includes two new tables that provide quick reference: 1) a summary of properties of the most common preservatives and 2) advantages and disadvantages of different alternatives to treated wood. The publication provides an overview of wood preservatives, treatment processes used with wood preservatives, alternatives to treated wood, studies that have determined how much preservative leaches into the environment and its effects, and guidelines for the use of preservatives and treated wood.



**US Forest Service
Recreation, Heritage, and Wilderness Resources Programs**

How to Submit a Project Proposal

The National Technology and Development Program, with Centers located in San Dimas, California, and Missoula, Montana, is assigned projects of national significance that solve problems and produce products for the field. Any employee of the Forest Service or the Bureau of Land Management can submit project proposals.

A steering committee, composed of one representative from each Forest Service Region and one representative from the Bureau of Land Management, meets annually to review and prioritize new project proposals.

To submit a proposal for consideration by the steering committee, complete the information below and send by e-mail to dmeadows@fs.fed.us, or submit electronically at this site: <http://fsweb.sdtc.wo.fs.fed.us/proposal/online.shtml>, or mail to one of the following addresses:

**USDA - Forest Service
Missoula Technology and
Development Center**
Attn: Gary Hoshide
Program Leader, Recreation
5785 Highway 10 West
Missoula, MT 59808-9361
Phone: (406) 329-3900
Fax: (406) 329-3719

**USDA - Forest Service
San Dimas Technology and
Development Center**
Attn: Dexter Meadows
Program Leader, Recreation
444 E. Bonita Avenue
San Dimas, CA 91773-3198
Phone: (909) 599-1267
Fax: (909) 592-2309

If you have any questions about submitting a proposal, contact one of the T&D Center's Program Leaders for Recreation or your regional representative for assistance. For contacts, see back page for steering committee members and program leaders.

Project Name/Title:

Date:

Submitted by:

Unit:

Address:

Phone:

E-mail:

Overall problem/objective statement:

(Describe the problem, how the work is currently being done, and why improvement is needed.)

Proposed technology and development work:

(Describe your concept of the end product: for example, design new equipment, a video production, a handbook, training, etc.)

Potential benefits:

(Describe how this project will reduce costs, save time, improve safety, increase efficiency, or improve resource management.)

RECREATION

TECHNOLOGY & DEVELOPMENT:
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TECHNOLOGY &
DEVELOPMENT
PROGRAM



United States Department of Agriculture
Forest Service

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<p>Vacant District Recreation Staff Region 9</p>	<p>Kaye Olpin District Recreation Staff Region 2/Black Hills NF/North- ern Hills RD (605) 642-4622 kolpin@fs.fed.us</p>

T&D Project and Program Contacts

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The mention of trade names or commercial products does not constitute endorsement or recommendation for use by the Federal Government.

<http://fsweb.sdtc.wo.fs.fed.us>, <http://fsweb.mtdc.wo.fs.fed.us>

Familiar Faces & Places

Jeff Applegate is the OHV Manager/Resource Specialist on the Mendocino National Forest and was the OHV manager for many years on its Grindstone Ranger District. On the district, Jeff and his crew nipped user-made trails in the bud by using scarification, straw mulch, raking, seeding, no-dig wooden barriers, and no-dig metal fences to eliminate these trails and restore landscapes. Signs that explain restoration are also visible. Clean, well organized sites and exceptional signing send a positive message to visitors who respond with respect for the forest. District personnel and visitors have a good relationship. For the OHV trail restoration project, Jeff has provided trail and landscape restoration information and photographs.



Glenn Coleman, is the Calcasieu Ranger District Recreation Officer on the Kisatchie National Forest. His philosophy is be responsive to users' needs and desires in recreation, while maintaining beautiful day-use areas, ATV trails, and protecting the natural resources. Using an integrated approach, he uses fire to conduct prescribed burns for burning off the understory in recreation areas, wildlife to build woodpecker habitats, and has a good relationship with neighboring Fort Polk.

Ron Gartland is the Restoration Resource Specialist for the California Desert District of the Bureau of Land Management. Ron and his crew of Student Conservation Association interns work each year to eradicate user-made trails using vertical mulch, pits, check dams, and other techniques. Ron generously gave us a detailed tour to assist with the OHV trail restoration project, and is supplying how-to photos.



Four National T&D Recreation Steering Committee members recently retired from the committee - visionaries all.



Bob Burger
R8, Regional Budget Officer, was a charter member on the National Recreation Steering Committee from 1988 to 1991. In 1995, he graciously agreed to rejoin the Committee as regional recreation staff representative. There is no substitute for dedication and someone who can see things in the long view. His breadth of knowledge about recreation was much appreciated.

Richard Newton
R3; District Recreation Officer, served on the National Recreation Steering Committee from April 2002 through 2006. He brought new insight along with a strong commitment. He recently accepted the position of district ranger for the Dubois Ranger District, Caribou-Targhee National Forest, R4. Congratulations Richard!



Dave "The Mayor" Worshek
R9, District Recreation Officer on the Laurentian Ranger District, Superior National Forest, served three terms on the National Recreation Steering Committee from 1997 through 2006. His steady guidance and his willingness to share his on-the-ground knowledge greatly helped the committee choose worthwhile projects.

Rich Platt
R5, served on the National Recreation Steering Committee from 1998 to 2007. Rich is very enthusiastic, knowledgeable, practical, and brought new ideas to the committee. He was the Resource Officer on the Pacific Ranger District, Eldorado National Forest, and retired in January 2007. Congratulations Rich!

