

United States Department of Agriculture

**Forest Service** 

Pacific Southwest Research Station

RWU-4902 Technical Report

March 2005

## A Review and Analysis of Five OHV Communication Programs

Dale J. Blahna, Douglas K. Reiter, James D. Absher, & Angie Cannon



Photo courtesy of Jim Absher

# A REVIEW AND ANALYSIS OF FIVE OHV COMMUNICATION PROGRAMS

Dale J. Blahna, Douglas K. Reiter Utah State University

> James D. Absher USDA Forest Service

Angie Cannon
Utah State University

**Pacific Southwest Research Station Wildland Recreation and Urban Cultures** 

(RWU-4902)

4955 Canyon Crest Drive Riverside, CA 92507

**March 2005** 

## A REVIEW AND ANALYSIS OF FIVE OHV COMMUNICATION PROGRAMS

Dale J. Blahna, Douglas K. Reiter, James D. Absher, & Angie Cannon

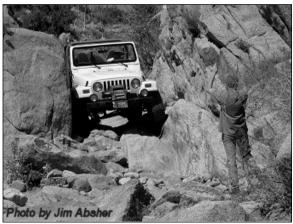
## **Executive Summary**

This study looked at five off-highway vehicle (OHV) communication and education programs:

- 1) "Tread Lightly!" by the national non-profit organization Tread Lightly! Inc;
- 2) "On the Right Trail" by USDA Forest Service, Montana Trail Vehicle Riders Association and National OHV Conservation Council;
- 3) "Protect Your Privilege" by USDA Forest Service, Bureau of Land Management, and Utah State Parks;
- 4) "The Adventure Trail" from the National OHV Conservation Council; and
- 5) "Sensible, Courteous Off-Road Enthusiasts" by the Pennsylvania Off Highway Vehicle Association.

These five programs provide diverse and well-received educational programs and messages designed to affect OHV drivers' environmental ethics behaviors. The primary messages relate to staying on the trail, environmental impacts, safety, etiquette, and driver image. The most critical OHV communication and education needs identified included programs targeting high school aged drivers, nonmotorized







user groups that have a stake in OHV use and road policies, and greater use of OHV clubs, manufacturers, and personalities. Better use of the web, training-the-trainer methods, and two-way communication are also suggested improvements.

Participatory methods were identified as needing further development. Some programs should be specifically designed to target adolescents and young adults. Another suggestion was to expand education messages to include a greater variety of site or region specific issues, with program templates designed so that managers can select and tailor messages to their needs.

Finally, although it seems these programs are very well received and worthwhile, there has been very little formative evaluation conducted, and virtually no formal research on the actual use and impacts of these programs with different target audiences (summative evaluation). This lack of program evaluation makes it difficult to state conclusively that these programs have achieved lasting behavioral change or contributed in a known way to agency objectives.







All photos in this executive summary are courtesy of Tread Lightly!® except as noted.

For more information or copies of this report please contact Dr. James Absher at jabsher@fs.fed.us or (951) 680-1559.

#### **ACKNOWLEDGEMENTS**

We'd like to thank Forest Service staff, especially Kristen Nelson, for their assistance with the design and implementation of this study, and to Jerry Ingersoll for his helpful review and comments. Also, we would like to recognize the staff from the various programs we studied for their cooperation and willingness to share their experiences and plans for the future. Individuals who provided valuable personal input include Dianne Olsen from Tread Lightly!; Dick Schwecke from On the Right Trail; Robin Fehlau with Protect Your Privilege; Russ Ehnes with The Adventure Trail; and Dennis Mann from Sensible, Courteous Off-Road Enthusiasts. We would also like to thank the Institute for Outdoor Recreation and Tourism at Utah State University and the Utah Agricultural Experiment Station (Project #726) for their support. Finally, we would like to thank Deanne McCollum at the PSW Station for her help in reviewing, editing and producing this report.

## TABLE OF CONTENTS

Introduction	1
Tread Lightly!	2
On the Right Trail	4
Protect Your Privilege	5
The Adventure Trail	6
Sensible, Courteous Off-Road Enthusiasts	8
Program Review and Synthesis Matrices	10
Future Educational Program and Research Needs	20
Summary	22
Study Limitations	22
Literature Cited	23
Appendix A: Summary Table for all five OHV communication and education programs	25

### LIST OF TABLES

Table 1.	Direct and Indirect Audiences	11
Table 2.	Direct and Indirect Target Audiences by Age Group	11
Table 3.	Stakeholder Groups	13
Table 4.	Key Behavior Messages	14
Table 5.	Age Group Target Audiences – Direct Intervention Strategies/Methods	16
Table 6.	Evaluation Methods and Needs (Based on Program Contacts)	18

#### INTRODUCTION

Unmanaged recreation, specifically OHV cross-country travel, is a priority concern for the Forest Service. Recently studies have shown that OHV use has grown substantially (Cordell et al. 2004). Last year, the USDA Forest Service Chief called unmanaged recreation, including OHV use, one of the top four threats to forest health (Harlan 2003). A proposed travel management rule that is expected to be formally approved in 2005 will require that all national forests designate specific motorized travel routes (USDA Forest Service 2004). A similar regulation is already in force for the BLM (USDI Bureau of Land Management 2001). Even OHV advocates see the need for trail systems that are "manageable, sustainable, and enforceable" (Israelsen 2004:A2).

OHV managers and users are concerned about the resource impacts and social conflicts that can occur (Chavez and Knap, 2004). A better understanding of the role of information and education programs in ameliorating these impacts is needed in order to maintain OHV opportunities without harming the resources or the experiences of users or others (Marynowski and Jacobson 1999). Public information campaigns are used to help manage OHV use. However, there have been few, if any, studies of user's information needs or evaluations of message delivery success through assessments of behavioral change. Short term knowledge gain has been demonstrated for non-OHV interpretive programs (Morgan et al. 1997; James and Absher 2002). In these studies knowledge about bears, personal safety and tree ecology was shown to improve after exposure to the topics through campground talks. In a similar study Montana State University conducted a phone survey assessing the public's knowledge of noxious weeds (Montana's Statewide Noxious Weed Awareness and Education Task Force, 2003). After public service announcements had been broadcast for several months, a follow-up survey showed that respondents' awareness of noxious weeds was virtually doubled. The points of improvement were the same points emphasized in the broadcasts. And such evaluations do not have to be large scale or expensive. Another study demonstrated the efficacy of a small scale evaluation of a particular natural resource messaging program (Absher et al., 1997). That said, studies of the long term behavioral effects of natural resource message campaigns, and any with particular application to OHV issues, have not been reported.

Over the past 20 years, public and non-governmental education programs have provided messages to OHV riders. These programs are aimed primarily at increasing responsible riding behavior and respect for the resources and other user groups. This study provides an initial review and comparative analysis of five OHV communication and education programs: 1) "Tread Lightly!" by the national non-profit organization Tread Lightly! Inc.; 2) "On the Right Trail" by USDA Forest Service, Montana Trail Vehicle Riders Association and National OHV Conservation Council; 3) "Protect Your Privilege" USDA Forest Service, Bureau of Land Management, and Utah State Parks; 4) "The Adventure Trail" National OHV Conservation Council; and 5) Sensible, Courteous Off-Road Enthusiasts (SCORE) by the Pennsylvania Off Highway Vehicle Association. Analysis criteria include: intervention methods and types of messages; key behavior(s) and audience(s) targeted; stakeholder involvement in developing and delivering messages; criteria used to evaluate success; and documentation of success or failure. A synthesis of the five programs will summarize and evaluate the programs, and we will make recommendations for future program and research needs to increase the effectiveness of the OHV messages and education efforts.

#### Gathering Background Information

The OHV education programs actually consist of many different communication and education strategies or "interventions." The first thing we did was search internet web pages and review informational materials for each program. We collected information on OHV communication strategies, program objectives and descriptions, and message development. This information was sorted and organized into categories based on the following analysis criteria: direct and indirect target audiences, key behaviors the messages address, stakeholders and stakeholder involvement, intervention methods and messages, and evaluation methods and documentation. This information was organized into summary matrices for each of the five programs.

Next, a table of criteria completeness was developed to assess additional information needs. Telephone interview questions specific to each program were then developed. The questions emphasized missing or weak information and verified accuracy of data derived from the initial assessment. Key representatives from each program were interviewed; they were informed of the purpose of the study, how we obtained their names, and how the information would be used. In general, the following questions and topics guided the interviews:

- *Describe the program's mission and objectives.*
- *Describe the program's target audiences.*
- *Identify the audiences that are reached indirectly.*
- *Define key behaviors the program's intervention messages specifically address.*
- Three key behaviors OHV organizations tend to focus on include respect for other trail users, personal safety, and environmental ethic. Does the program place greater emphasis on any one behavior?
- Identify the program's stakeholders. Specify the kind of involvement stakeholders have in the program.
- Describe the intervention methods used to promote the program's message. What specific messages do the intervention methods present?
- Describe the methods used to evaluate your program's effectiveness. Is there any documentation of the evaluation?
- Additional comments.

Program-specific interview forms were used to record responses. Each interview lasted about 30 minutes. The following section summarizes the results of the telephone interviews and provides a general review of each program based on the education-related criteria mentioned above. (See Appendix A for detailed results.) This section is followed by a comparative analysis of all five programs, and finally recommendations for future program development and research needs.

#### Tread Lightly! (TL)

The U.S. Forest Service organized the Tread Lightly (TL) program in 1985 to help address concerns with impacts resulting from increasing outdoor recreation use. In order to maximize the program's effectiveness, management responsibilities were transferred to a nonprofit organization in 1990. TL's stated mission is "to empower generations to enjoy the outdoors responsibly through education and restoration." Three organizational objectives have been identified for 2005: "to know what we have – evaluate our tools, programs, and services;

diversify and stabilize our resources, including charitable donations; and generate positive national attention through public relations and strategically generate media coverage to reach a minimum of 25 million people by the end of 2005."

Direct and indirect target audiences: Target audiences include motorized vehicle recreationists, media agencies, government agencies (Forest Service, NPS, BLM, Bureau of Reclamation, Army Corps of Engineers), OHV manufacturers, hunting and other outdoor recreation educators. Their ultimate, end target audience is the individual who is actually out recreating. To reach this individual, Tread Lightly goes directly to their stakeholders and federal land managers. The audiences vary depending on the program.

*Intervention methods and messages:* Methods Tread Lightly uses to convey their key messages include:

- Tread Trainer (OHV responsibility training program train people to train other people.)
- Restoration for Recreation (OHV clubs and organizations apply for grants to restore and improve recreation areas.)
- Public Service Announcements (broadcast, radio, print)
- Banner ads
- Teaching materials (Junior High Environmental curriculum, Elementary activities, ETHIC: Educational Tools for Hunters)
- Recreation tips brochures
- Advertising guidelines
- Guidebooks (Four-wheeling, Mountain biking, ATV riding, Trail biking, PWC, Snowmobiling, Leaving a Good Impression)
- Clothing, coloring books, decals, educational posters and videos, maps, litter bags, pencils, water bottles, lighters, vehicle accessories, pins.

TL's key messages include: travel and recreate with minimum impact; respect the environment and the rights of others; plan and prepare before you go; allow for future use of the outdoors – leave it better than you found it; stay on designated trails; be courteous; and leave a good impression.

*Key behaviors intervention messages address:* Highest priority is respect for the environment. Second priority is respecting other trail users. Personal safety is not even a priority since TL feels that other organizations address that behavior well.

Stakeholders and stakeholder involvement: Current project partners include Cabellas Inc., Federal Highway Administration, Ford Motor Company, and HUMMER. Other "members" include individuals, retailers, outfitters, dealers, clubs, corporations, and media outlets. They have Memorandums of Understanding with the FS, BLM, Army Corps of Engineers, NPS, and Bureau of Reclamation. TL views all stakeholders equally. Industry and corporate stakeholders benefit from TL efforts because by educating OHV recreationists to respect the environment, TL also encourages a reduction in OHV recreation area closures, thereby influencing the continued use of OHVs, thereby influencing sales of OHV equipment. Monetary donations are a large part of stakeholder involvement. TL strives to meet stakeholder needs. They do "needs assessments" for different programs by sending out survey instruments to stakeholders asking about their needs. TL develops all their programs based on requests from perceived needs of the stakeholders. However, in order to maintain quality control the development of the programs

themselves never leaves TL's hands. So, stakeholders are involved to a point, but ultimately, TL develops the programs and messages on their own.

Evaluation methods and documentation: Every program has post evaluation summaries (e.g., Tread Trainer Post Evaluation Summary). TL also has a short questionnaire for program volunteers to fill out after six months of volunteer work to evaluate the success of the project. Besides a recent government survey project (assessed government works' knowledge of TL), they have conducted a similar survey of OHV dealers. The Isaac Walton League evaluated TL advertising 2-3 years ago (however, TL feels it was a biased review). The Forest Service is currently reviewing some of TL's educational literature. TL has also been evaluated by GM for the HUMMER Helps Program, but the results are pending. One of TL's program strategies in 2005 is to evaluate their education materials. TL feels there is a large need for future evaluation projects. They would want a third party, unbiased evaluation but say they do not have the necessary funds. They also feel it would be difficult to evaluate changes in OHV recreation behavior on a national scale which is the level TL works on.

#### On the Right Trail (OTRT)

An interagency partnership was developed with the USDA Forest Service, Bureau of Land Management, Montana Department of Fish, Wildlife, and Parks (MDFWP), National Off-Highway Vehicle Conservation Council (NOHVCC), and Montana Trail Vehicle Riders Association. One of the projects sponsored by this group is On the Right Trail (OTRT). The program's mission is to educate OHV enthusiasts about OHV use and instill a strong land and trail ethic for riding such that the future community of OHV riders is safe, courteous, responsible, and considerate of other trail users and the land. The stated objectives are: to create an interactive curriculum about Off-highway Vehicles for 5<sup>th</sup> through 8<sup>th</sup> grade students; to emphasize safety, trail etiquette, natural resources protection, and land ethics; and to provide an OHV guide for natural resource professionals, teachers, and youth leaders (e.g., 4H and scouting organizations).

Direct and indirect target audiences: Their direct target audience is all OHV riders particularly youths in the 5<sup>th</sup> through 8<sup>th</sup> grades. Other targeted groups are horsemen and hikers. OTRT tries to instill a better understanding of OHV riders among these groups because they are likely to encounter motorized recreationists on the trail. OTRT strives to make them more aware and understanding of the legitimacy of OHV recreation. Natural resource professionals as well as hunting/safety instructors are another direct target audience since they are the ones using the teaching aids. Indirect audiences include the children's parents, teachers, and youth leaders. OTRT targets natural resource professionals who then target the teachers and youth leaders. Teachers have been somewhat reluctant in using the OHV educational tools without a natural resources professional there to do the presentation.

Intervention methods and messages: The interactive curriculum geared towards the 5<sup>th</sup> to 8<sup>th</sup> graders consist of six modules that run for 30-50 minutes each. An activity trunk accompanies the curriculum with props such as video and cassette recordings, safety equipment, and other props to reinforce the message of each module. Although the modules are geared specifically for Montana, they can be adapted for other areas (e.g., they have been revised for Utah). The Adventure Trail artwork and messages (see below) have been integrated into the OTRT Curriculum. Modules can be used independently or combined depending on the audience and

time available for presentations. The modules' themes are: "Sound Off – What Do You Know About OHVs; Safety – Every Ride, Every Time, Think Safety'; Planning Ahead – Trail Safety and Travel Plans; Trail Etiquette – You're On the Trail; Land Ethics – Protect the Land You Ride On; and OHV Dilemmas."

Other intervention methods include brochures, public service announcements on radio and TV across the state of Montana (the PSAs address weed prevention, staying on the trail, and closing gates and seem to be very effective), and a twelve minute video showing the same message in the brochures and youth curriculum. The video is used in presentations to small groups and clubs as well as booths in sporting goods trade shows that targets those walking by. They have also developed three posters (staying on the trail, riding responsibly, and hunting/OHVs), which are put up all over town (e.g., FS district offices, restaurants, etc.), and there are two more posters in the works. They have a high quality trade show booth and have been traveling to about four shows per year for the past five years. This affords them the opportunity to talk with folks one-on-one. Most of the people who stop and talk are horsemen and hikers. On the Right Trail tries to promote multiple-use, not just OHV use.

*Key behaviors intervention messages address:* The key behaviors addressed by OTRT are: stay on the trail; trail etiquette; obey the rules; be respectful of others you encounter; and view wildlife from a distance. Personal OHV safety is a minor part, but they do emphasize preparedness and trip planning.

Stakeholders and stakeholder involvement: The primary promoter of OTRT is Montana Department of Fish, Wildlife, and Parks. The people who develop the programs are from different agencies including NOHVCC, Forest Service, and the MDFWP. The stakeholders are mainly involved in supporting the messages. There is a review committee made up of stakeholders to assess the messages and a state education committee to review the messages. All stakeholders give suggestions on how to make the messages and curriculum better. OTRT is funded entirely by state money from gas tax and national recreation trails funds. Stakeholders promote what the OTRT committee develops.

Evaluation methods and documentation: There has not been, nor are there any future plans to conduct, an evaluation of OTRT. The feeling is that this is a new program, and the influence of OTRT may not manifest itself for several years.

#### **Protect Your Privilege (PYP)**

In 2001, the BLM and Utah Department of Natural Resources, along with representatives from the Forest Service and other Utah state agencies, unveiled a new OHV awareness campaign "Protect Your Privilege, Stay On The Trail" in Richfield, Utah. PYP is an advertising slogan and campaign. It is not an organization nor has it produced curricula or other media. The reasoning behind the campaign is that riding on public lands is a privilege, not a right. And because it is a privilege, it can be taken away if riders don't do everything they possibly can to protect it. The objective of PYP is to get people to stay on existing trails and roads instead of pioneering new ones. The campaign was instigated by the Natural Resource Coordinating Committee (NRCC) in Utah, which has representatives from Federal and State land management agencies.

*Direct and indirect target audiences:* Direct target audiences are off-highway ATV and motorcycle riders. There is no identified indirect audience.

*Intervention methods and messages:* PYP uses stickers and posters to get their message across. The message is simply "Protect Your Privilege, Stay On The Trail." About three years ago, they did local broadcasts (PSAs) every Sunday for 10 weeks providing rider information and user ethics messages. The new public relations campaign PSA is entitled "Live by the Rules." Many current and planned OHV management projects carry the PYP message or are associated with PYP. For example, the Utah Division of Parks and Recreation sponsors rider education programs and includes the Protect Your Privilege message in their presentations. And the NRCC put on an OHV workshop for federal agency managers that included the PYP message in their presentation. PYP stickers have been added to trail signs, which sends a consistent message along routes to stay on the trail. PYP sponsors do not have future plans for the program, but the NRCC also started the Right to Ride campaign. They developed business cards with the phrase "Do you know where to go?", with a web address where riders can find out more about OHV riding areas and regulations. The NRCC wants to have a joint agency website with all OHV information for Utah on it. They just obtained the "On the Right Trail" curriculum (see above), so they now have trunks available for teachers and other educators. They are striving to branch out and target more youth.

Key behaviors intervention messages address: Staying on designated trails is the only key behavior PYP addresses. Staying on designated trails directly shows respect for the environment and, in a less direct way, it reduces conflicts with nonmotorized trail users. Seeing bad behavior or evidence of bad behavior creates opposition among other trail users to OHV recreation. Personal safety is not a program focus.

Stakeholders and stakeholder involvement: Stakeholders include the BLM, Utah State and Institutional Trust Lands Adminstration, Utah Division of Parks and Recreation, Utah Division of Wildlife Resources, and the Motor Sports Dealer Association. The Motor Sports Dealer Association donated money to produce PYP trail stickers. All the other stakeholders help spread the PYP message by putting the logo, stickers, and posters on brochures, maps, trailhead information panels, and trail markers for their management areas and publications.

Evaluation methods and documentation: No program evaluation has been done and none is planned.

#### The Adventure Trail (TAT)

The National Off-Highway Vehicle Conservation Council (NOHVCC) is concerned that if off-highway recreationists as a group are seen as rowdy, littering, loud, rude trail wreckers, then trail access gets closed. However, if the perception of ATV, dirt bike and four-wheel drive enthusiasts is that of friendly and courteous folks who respect other trail users and the land they ride on, then OHVers will be welcome to share the trails. NOHVCC developed The Adventure Trail (TAT) to educate future ATV, dirt bike, and four-wheel enthusiasts at a young age, before they could develop bad riding habits. NOHVCC wanted to devise an interactive "adventure trail" that children could walk through while learning OHV safety and ethics messages and having fun. They wanted an exhibit that would appeal to young people, could handle large numbers of kids, would require minimum staff, and would be easy to set up, transfer and store. They also wanted

to make more efficient use of the NOHVCC semitrailer truck, which was traveling to many events and shows throughout the country at the time (2001).

Direct and indirect target audiences: Kids are the primary audience and TAT messages and artwork appeal to a wide range of ages. Older kids (middle school, early high school) seem to react better to the TAT experience than younger kids. Parents are a secondary audience because they may learn a few things themselves as they take their kids through the exhibit. In fact, sometimes parents appear to be more interested in the exhibit than their kids. Compared to On The Right Tail (see above), TAT is national and just targets youth, where OTRT is specific to Montana and targets a broader audience. All kinds of different environments are shown on TAT panel illustrations. They also show diversity in age, gender, and race. TAT can have more impact on a national level since it can be moved and implemented virtually anywhere.

Intervention methods and messages: The interactive tour is showcased in a semitrailer that spends the summer on the road. It consists of ten panels and messages that wrap around the interior of the trailer. TAT shows up at dozens of NOHVCC events every year. Along with the interactive tour are safety and skills training sessions, and a quiz given at the end of the tour. There are two quizzes geared toward different age groups. If the kids pass the quiz, they receive a NOHVCC temporary tattoo or personal photo display on their wrist or shirt. After taking the quiz at the end of the trail, the kids receive a plastic sack holding Tread Lightly! coloring books, pencils, tattoos, and other materials. One unique aspect of this program is that the panels show consequences and impacts of bad behavior. The artist has taken a "bar-sinister" approach to convey "bold but nice" warnings about consequences of inappropriate behavior. TAT owns all the rights to the artwork and they have set guidelines that require the text of the messages to always be on the illustrations. The posters are free as long as they are used for educational purposes, and there is a large demand for them. Future plans include developing a mascot; developing an activity book with the 10 panel illustrations and related activities like word finds and crossword puzzles; and creating an interactive CD with games, coloring pages, and "click and drag" types of kid's activities. They also plan to develop a set of smaller posters, and to make the larger poster available to anyone who requests one. Currently, TAT is one semitrailer, but several similar but smaller Adventure Trails are being planned.

Key behaviors intervention messages address: There are three behavioral topics TAT messages address: riding safely, trail etiquette, and environmental ethics. The ten panel illustrations inside the truck have the following themes addressing those messages: ride the appropriate size ATV (safety); respect others, be courteous (trail etiquette); yield to hikers, horsemen, and mountain bikes (trail etiquette); don't chase animals (environmental ethics); one rider per ATV (safety); use proper riding gear (safety); stay on trails (environmental ethics); avoid streams and wet areas (environmental ethics); keep motorcycle and ATV sounds to a minimum (trail etiquette); and enjoy the outdoors responsibly (all three topics). They try to address all three topics equally but put a greater emphasis on environmental ethics messages.

Stakeholders and stakeholder involvement: Primary stakeholders include the BLM, Forest Service, NOHVCC, Federal Highway Administration (FHA), Motorcycle Industry Council (MIC), and Specialty Vehicle Institute of America (SVIA). They are currently looking for more partners and corporate sponsors. NOHVCC oversees the entire project, and one of our contacts said that the BLM intends to build replicas of TAT. The Adventure Trail provides free posters of the panels and messages for educational uses to help spread the messages. FHA provides financial assistance through grants, and TAT has a memorandum of understanding with the

Forest Service. MIC and SVIA review TAT artwork and contribute money to NOHVCC which also helps TAT.

Evaluation methods and documentation: They do not get contact information from visitors so it is hard to track people after they leave. The quiz that the kids take at the end of the trail is designed for personal feedback to see what they have learned, not as an evaluation tool. Overall, the reaction to TAT seems to be positive. For example, it was well received by environmentalists, OHV enthusiasts, hikers, and horsemen (at least there were no negative comments) at a national OHV symposium held in 2004. The TAT person we spoke with said that future evaluation research has not been planned because the program is new and changes are still being made.

#### Sensible, Courteous Off-Road Enthusiasts (SCORE)

SCORE was originally developed by the Pennsylvania Off-Highway Vehicle Association (PAOHV). It is an education and training organization for off-highway recreationists and advocates. It emphasizes enhancing trail use and enjoyment through increased environmental awareness and trail safety. SCORE demonstrates measures to protect wildlife and habitat in riding areas, and the need for responsible off-highway enthusiasts to respect the environment and other users of Pennsylvania woodlands. SCORE's objectives are to create a more environmentally sensitive and safe off-road user, and to demonstrate the necessity of following state and local laws when riding OHVs. The primary emphasis has been the development and use of a virtual library on CD. The CD's contents are categorized by the program objectives. Their goal is to get this information out to as many user groups as possible. In summing up what SCORE is all about, the director said:

Off-road users have a bad image. SCORE was developed to make them more aware of what people thought of them and give them information on how to correct that image. SCORE points out what they're doing wrong and how to correct it, ultimately developing more favorable trail users. Stuff just happened as the organization grew; (we) started training fire crews (and) search and rescue teams – it's just gone in all sorts of unexpected directions. SCORE's main goal is to take the OHV trail user and make him a more responsible trail user. This can happen through the use of SCORE's CD. The CD outlines all OHV laws and rules, thereby having the potential to obliterate OHV ignorance. And you can hold all that information and power in the palm of your hand!

Direct and indirect target audiences: SCORE mostly targets OHV clubs but they don't limit themselves to those groups. The information on the CD would benefit any trail user. Anyone who contacts the Pennsylvania Off Highway Vehicle Association can schedule a training session and obtain the CD. The SCORE director recognizes they have a visibility problem; few people are aware of the services offered. Anyone who has been trained by PAOHV has the capability to train others. Everything they need for conducting a training presentation is on the CD.

*Intervention methods and messages:* SCORE has several ways of spreading the messages described above. For example, they conduct presentations, they pass out the CD to all those that attend their presentations, and they include the CD with each PAOHV membership along with a SCORE brochure and a letter. For corporate memberships, SCORE sends a brochure holder, 100 brochures, a CD, and a letter. They have begun putting SCORE brochures in district forestry

offices. Recently, presentations have been given to search and rescue teams, fire crews, and ski patrols. These groups use ATVs as tools and they also benefit from the personal safety part of the SCORE message.

Key behaviors intervention messages address: Key behaviors SCORE addresses are: respect the environment; respect other trail users; respect laws, signage, and private property; and be safe by maintaining equipment, wearing the right gear, and riding in control. In terms of respecting the environment, SCORE messages specifically focus on erosion prevention, wildlife and habitat impacts, and water issues. SCORE training presentations address different behaviors depending on the group's goals and needs. No two presentations are the same; some may be family-oriented, others racing-oriented, etc. All of the key behavior objectives are addressed, but the emphasis may be on one over another. For instance, if the topic of erosion seems to be confusing to the audience, the presenter will spend more time discussing erosion. A major, all-inclusive point is rider etiquette. Safety and environmental ethics are sub-issues of rider etiquette. SCORE emphasizes responsibility and how OHV users should carry themselves. Since the program began, presenters have noticed that OHV riders lack knowledge about maintaining their equipment.

Stakeholders and stakeholder involvement: The SCORE program is operated by PAOHV, and funded by a recreational trails grant from the Pennsylvania Department of Conservation and Natural Resources (PDCNR). The NOHVCC provides hard copies of documents referred to or digitized on the CD. While PAOHV develops the messages and operates the program, they feel that PDCNR could do more to help increase information and awareness about the program.

Evaluation methods and documentation: In 2004, SCORE won the Best in Education award from the Recreational Trails Program of the Federal Highway Administration. Self-evaluations of the program are limited and informal. The director likes the idea of doing post-evaluation summaries after each presentation, and he said they are planning on trying that out.



Photo courtesy of Institute for Outdoor Recreation and Tourism

#### PROGRAM REVIEW AND SYNTHESIS MATRICES

In this section we review and compare the five OHV communication programs based on: intervention methods and types of messages; key behavior(s) and audience(s) targeted; stakeholder involvement in developing or delivering the message; methods used to evaluate success; and documentation of success or failure. Summary tables were designed to organize the results related to these topics. In each section we review the effectiveness of the education effort. Appendix A contains the full set of results for all five programs.

#### Direct and Indirect Target Audiences

The primary target audience for all the OHV education programs are off-highway motorized vehicle recreationists. None of these programs distinguished their messages based on specific types of motorized users, although Protect your Privilege, which simply uses one very broad message, did list "ATV and motorcycle riders" as a direct target audience.

School aged children, especially the younger age groups, are the largest specific target audience, and their parents are even listed as "indirect" audiences for two programs (Table 1). The organizational contacts for these two programs told us that they believe the OHV messages will indirectly filter down from the kids to the parents, either through exposure to the educational materials or by word-of-mouth. A comparison of target audiences based on age groups (Table 2) suggests that the elementary and middle school ages, as well as adults, are fairly well targeted, although we do not know what per cent of OHV drivers in the targeted age groups are actually contacted by the various programs.

While getting messages to young children is a critical aspect of educational effectiveness, it is also important to continue to provide messages to all age groups. In the programs reviewed for this study, this is clearly missing for high school aged teens. High school aged drivers may be an especially important target audience because they are still learning how to drive and it is the age where peer group pressures and status enhancement are particularly important influences on behavior. This also suggests that, in addition to the one-way communication messages used by these programs (brochures, curricula, and the like), more participatory methods may be needed to reach this very important age group—teens may be more likely to respond to peer group role models than adult authority figures.

**Table 1: Direct and Indirect Audiences** 

		Audiences <sup>1</sup>											
Organization/ Program	Media Agencies	Government Agencies	Manufacturers Hunting and other Instructors		Children/Youth	Youths' Parents	Youth Leaders and Educators	Hikers and Horsemen	OHV Clubs	Anyone Interested			
Tread Lightly	<b>A</b>	•	<b>A</b>	•	<b>Δ</b> Δ		•		•				
On the Right Trail		•		•	<b>Δ</b> Δ	Δ	Δ Δ	•					
Protect Your Privilege <sup>2</sup>													
Adventure Trail					<b>A</b>	Δ							
SCORE	_								<b>A</b>				

**<sup>▲</sup>**= Direct Audience

Table 2: Direct and Indirect Target Audiences by Age Group

Organization/Program	Communication		Audienc	ees	
(Geographic Audience)	Type	Elementary Age	Middle School	High School	Adults
Tread Lightly!	Direct	<b>A</b>	<b>A</b>		<b>A</b>
(National)	Indirect	<b>A</b>	<b>A</b>		<b>A</b>
On the Right Trail	Direct	<b>A</b>	<b>A</b>		<b>A</b>
(National)	Indirect	<b>A</b>	<b>A</b>		<b>A</b>
Protect Your Privilege <sup>1</sup>	Direct	<b>A</b>	<b>A</b>	<b>A</b>	<b>A</b>
(Utah)	Indirect				
Adventure Trail	Direct	<b>A</b>	<b>A</b>	<b>A</b>	
(National)	Indirect				<b>A</b>
SCORE	Direct				<b>A</b>
(Primarily Pennsylvania)	Indirect				<b>A</b>

<sup>▲</sup> Indicates programs intended audience

Most of the remaining target audiences are subgroups of enthusiasts (OHV Clubs, hunters, etc.), equipment suppliers, or resource managers (Table 1). SCORE primarily directs its efforts to OHV clubs although they make their CD available to any interested party. As shown on Table 1, On the Right Trail directly and indirectly trains youth leaders and educators. By this we mean natural resource managers are direct audiences of the program and they disseminate the

 $<sup>\</sup>Delta$  = Indirect Audience

<sup>&</sup>lt;sup>1</sup> All organizations target OHV recreation participants through direct and indirect methods

<sup>&</sup>lt;sup>2</sup> Trail markers and logos on maps designed to reach people using the trail

<sup>&</sup>lt;sup>1</sup> Trail markers and logos on maps designed to reach people using the trail

messages to other youth leaders and educators. The only organization that seems to directly reach out to nonmotorized trail users is On the Right Trail. One of their goals is to persuade horsemen and hikers that OHV riders are careful and responsible trail users. Two other groups have "all trail users" listed as target audiences, and while these may include nonmotorized users, it was unclear, based on our interviews or the educational materials we reviewed. As with the different age groups, there is no way to tell what per cent of audiences in any of these categories are actually exposed to the educational messages.

#### Stakeholder Involvement

Regarding active program collaborators, Tread Lightly! works directly with vehicle manufacturers, OHV clubs, educators and youth leaders to develop and deliver messages (Table 3). Tread Lightly! is the only one of the five programs that works with manufacturers, and the only *national* program that works with OHV clubs. All programs or organizations work with state outdoor resource management or transportation agencies. Four of the five have direct ties with federal land management agencies such as the BLM and U.S. Forest Service.

In our opinion, more collaboration with OHV clubs and manufacturers is needed for four reasons: 1) they have a vested interest in protecting the environment (i.e., to keep riding areas open); 2) they can help fund OHV education efforts, 3) they can help design messages that may be more likely to relate well to the people who enjoy motorized activities, and 4) they may help improve message legitimacy. A "Right Rider" brochure produced by the Motorcycle Industry Council provides an example of the last two. It shows images of motorcyclists and four-wheelers dressed in the latest safety gear along with safety, etiquette, and low impact messages and quotes from motorcycle racing champions espousing the need for quiet, respectful, low impact trail riding. One quote is from Travis Pastrana, a national motocross champion in 2000 and 2001: "Trail riding is not Supercross . . . it's not the X-games . . . so be smart; keep the noise down and help keep our riding areas open." And a quote by five-time national champion Scott Summers reads: "When I'm not racing, I enjoy trail riding with my dad and friends. We understand the importance of riding bikes that are quiet, following the rules and staying on designated trails. We try to make a good impression as motorcyclists so we can keep our favorite riding spots accessible for the future." This brochure also shows how motor sports clubs and organizations can use famous personalities to reach their constituents.

**Table 3: Stakeholder Groups** 

	Audience <sup>1</sup>										
Organization/Program (Geographic Audience)	Manufacturers	Federal Agencies	Nonmotorized Trail Users	OHV Clubs	Educators/ Youth Leaders						
Tread Lightly! (National)	<b>A</b>	<b>A</b>		<b>A</b>	<b>A</b>						
On the Right Trail (National)		<b>A</b>	<b>A</b>		<b>A</b>						
Protect Your Privilege <sup>2</sup> ( <i>Utah</i> )		<b>A</b>									
Adventure Trail (National)		<b>A</b>									
SCORE (Primarily Pennsylvania)				<b>A</b>							

<sup>▲</sup> Indicates programs intended audience

While there is little research on the topic in the natural resource literature, the value of using famous personalities or characters has been shown by general media research to effectively influence behavior, at least in the short term (Kotler et al., 2002). Thus, messages coming from motorized vehicle personalities may have a greater impact on OHV riders than messages from agency sources. While Tread Lightly! and On the Right Trail are using some peer group approaches in their programs, more collaboration with OHV clubs, leaders, and personalities, may be valuable.

#### Program Messages

The review of the five organizations' target behavior messages found that four major themes are emphasized: environmental ethics, etiquette, safety, and motorized user image. Table 4 summarizes some of the specific messages under those themes by program. For environmental ethics, staying on the trail is perhaps the broadest and most important general message for reducing impacts. It is also the most common message, and in fact, it is the only message Protect Your Privilege uses. By emphasizing this single behavior, OHV riders also show respect for the environment while indirectly enhancing their image among nonmotorized trail users. Even though the PYP contact indicated that personal safety is not a focus, the consequences of riding on designated trails may minimize accidents.

<sup>&</sup>lt;sup>1</sup>All organizations target State Recreation and Transportation Agencies

<sup>&</sup>lt;sup>2</sup> Trail markers and logos on maps designed to reach people using the trail

**Table 4: Key Behavior Messages** 

	General Messages							
Organization/Program	Environmental Ethics	Etiquette	Safety	Motorized User Image				
Tread Lightly!	-Avoid wet trails -Use stream crossings -Avoid meadows and marshy areas -Minimum impact camping -Stay on trail -Avoid sensitive wildlife habitat -Pack it in, pack it out	-Stay on trail -Leave gates as you found them -Respect private land -Keep the noise and dust down -Yield the right of way to bikes, horses, and hikers	-Preparation -Travel w/ group -Don't drink and driveNot a racecourse -Use common sense -No "tailgating" -Wear proper gear and know your vehicle.	-Be courteous and helpful -Don't be a trail hog.				
On the Right Trail	-Noxious weed control -Stay on trail -Obey all trail and road restrictions -Avoid wet or muddy trails -View wildlife from a distance -Use stream crossings -Avoid riparian areas	-Ride quietly -Leave gates as you found them -Be courteous and friendly to hikers, horses, and bikers -Yield to uphill traffic	-Plan and prepare -Use a map -Stay in control -OHV is not a toy -Never ride alone -Let someone know where you are going	-Your actions speak for all OHV riders -Leave a good impression with everyone you meet on the trail				
Protect Your Privilege <sup>1</sup>	-Stay on the Trail!	Stay on the Trail!	n/a	Stay on the Trail!				
Adventure Trail	-Be kind to big and little crittersAlways stay on the trail -Cross rivers and wetlands only where you're supposed to	-Share the trail with others -When you meet others on the trail, pull over, stop engine, take off helmet -Keep OHV quiet	-Dress safely -Ride appropriate size ATV -One ATV=one rider	-Good riding manners				
SCORE	-Respect the environment	-Respect other trail users -Respect laws, signage, and private property	-Maintain the right equipment -Wear the right gear -Ride in control	-Be courteous towards other trail users.				

Wildlife and wetland impact messages are emphasized by four of the five organizations. Minimum impact camping and meadow impact messages seem to be important for public land management, but are only provided in Tread Lightly! messages. Likewise, On The Right Trail is the only program that emphasizes obeying all rule restrictions (although this is probably assumed by several other programs) and pre- and post-trip behaviors that control the spread of noxious weeds. The spread of weeds by mud and dirt attached to motor vehicles is a particular problem in the arid and semi-arid grasslands of the Intermountain West, and managers have expressed frustration with the difficulty of getting OHV drivers to comply with requirements for washing

vehicles after a ride. It not only requires a behavior change by riders, but managers at the BLM's Little Sahara National Recreation Area in Utah have suggested it may be a status symbol to have a dirty vehicle at the end of a hard ride, which would make this type of behavior change even more difficult to achieve (Ferris Clegg, personal communication.).

A recent study of California Federal and State land managers' perceptions of OHV issues (Chavez and Knap in press) also suggests several additional educational messages are needed but are not currently provided by the programs we reviewed. These include: inexperienced riders in difficult terrain; destruction or defacing of historic resources; and alcohol abuse.

It should be noted, however, that in order for a message to lead to a desired behavior change, messages need to be kept relatively specific and simple, and clearly explain the reasons for the behavior change, so a "laundry list" approach to educational messages may not be effective. Instead, we suggest that the OHV education organizations consider developing messages in the abstract, and design templates for providing those messages, so that managers can pick and choose the most important messages tailored to their resources, target audiences, or local issues. For educational curricula, for example, this would be similar to environmental education approaches taken by Project Learning Tree, Project Wild, and others, where large sets of curricula contain different lesson plans for many issues, and educators or managers select the most important messages and media strategies to meet their needs. A similar approach can be taken with brochures, leaflets, PSAs, and other communication media.

#### Communication Media and Delivery Methods

As shown in Table 5, the five programs use a variety of media and strategies to present their messages, including television and radio PSAs, traditional brochures, hands-on instruction, internet web sites, and exhibits. Tread Lightly! uses the largest variety of methods and is the standard for many of the other approaches listed, such as the use of websites, promotional items, training presentations, and curricula. Other programs should probably start by reviewing Tread Lightly! educational materials, and replicate or build on these design elements and messages to the extent possible.

Table 5: Age Group Target Audiences - Direct Intervention Strategies/Methods

Table 3. Age Group Target Audier		Organization																		
		Tread Lightly			On the Right Trail			Protect Your Privilege			t	Adventure Trail				SCORE			Е	
Strategies/Methods	Elementary	Middle School	High School	Adult	Elementary	Middle School	High School	Adult	Elementary	Middle School	High School	Adult	Elementary	Middle School	High School	Adult	Elementary	Middle School	High School	Adult
Public Service Announcements		•	•	•				•												
Brochures				•				•												•
Carsonite signs									•	•	•	•								
Logo (placed on maps, guides, brochures, etc.)				•				•				•								Ì
CD				•																•
Website				•																
Miscellaneous promotional items*	•	•	•	•									•	•						
Training presentations				•																•
Educational curriculum	•	•			•	•														
Display set-up at shows/events	•	•		•				•					•	•	•					
Posters	•	•			•	•	•	•					•	•						i

<sup>\*</sup>Includes stickers, pencils, tattoos, shirts, hats, bumper stickers, coloring books, etc.

While there are a number of different communication methods used, there are also obvious weaknesses in the program offerings. There are no curricula for high school students, Tread Lightly! is the only program with an education-oriented web site, and given the effectiveness of "training-the-trainer" approaches to education, the number of training presentations probably need to be expanded. There is also a critical future need to test the rate of contact and the effectiveness of these methods for different target audiences.

Participatory methods also need to be developed. All the programs reviewed for this study focus heavily on one-way communication and education approaches. While groups and organizations have collaborated to design messages, develop communication media, and fund educational initiatives, there are other ways that the programs can use participatory methods to help educate OHV drivers. For example, many Forest Service and BLM management areas have worked with volunteers on trail design and rehabilitation projects, which can also have educational benefits. On the Dixie National Forest (Cedar City RD), shifting from a top-down to a collaborative approach to motorized travel planning resulted in increased support of OHV drivers for road closures and other regulations. The collaborative approach even resulted in self-policing of OHV drivers, joint funding opportunities for trail rehabilitation and maintenance, and vastly improved agency image (Carter, personal communication).

Volunteer activities and collaborative planning processes are not just public relations or money saving activities. The communication and education value of participatory activities is often underrated. These activities can result in a deeper understanding of the reasons for OHV policies and management activities, and be more likely to be internalized by participants and lead to real

behavior change compared to agency run, one-way communication methods. Forest Service and BLM officials have called for more active collaboration with stakeholder groups (see for example the April 2000 report of the Forest Service's National Collaborative Stewardship Team). Although there are successful examples of such partnerships, more guidelines are needed for partnering with sister agencies and nonprofits on these types of activities. Thus, nonfederal OHV education programs could play a key role by partnering with resource agencies to conduct volunteer, collaborative planning, and related OHV communication activities.

There are also some innovative strategies "buried" in the list in Table 5, such as the use of the Adventure Trail semitrailer to travel to shows and events, and SCORE's comprehensive CD of OHV issues and research. These can be used by a variety of organizations to help meet specific educational needs

#### Innovative Methods

Several of the programs we reviewed are using creative ways of reaching their target audiences while using established educational and interpretive methods listed in Table 5. For instance, The Adventure Trail exhibit is housed in a semi trailer enabling it to be moved to different locations without much of the time and effort it takes to repeatedly break down and set up the exhibits. This means that the educational materials and messages can travel more efficiently to where audiences congregate such as trade shows, community celebrations, schools, and popular OHV use areas. In addition, a faux riding course can be set up in a parking lot where students have the opportunity to practice good riding decisions presented in the trailer exhibit (e.g., a virtual stream crossing), and reinforce the behavioral messages. A resource management agency's OHV safety training session may provide a good venue for The Adventure Trail semi trailer.

Another innovative method is the CD with the bibliographic data provided by SCORE. In addition to the OHV behavior objectives described above, this massive data base organizes hundreds of references and papers into topical categories such as economic impacts of new OHV trail construction and good trail engineering techniques. At the beginning of the CD is an example of how an OHV organization was able to use information on the CD to advocate its position on a policy issue that affects its members. As SCORE matures and becomes more widely available, other examples of its utility will be added, such as case studies of collaboration, organizing volunteers for proper trail maintenance, and outreach programs for enlisting the physically disabled into the ranks of motorized trail riders. While the CD is currently being marketed to OHV clubs, it is also made available at no cost to any who request it. There could be many additional applications of the information, such as for environmentally sound trail design strategies for agencies, communities, and environmental or OHV advocacy groups. Examples of its use are continuously updated by SCORE leaders.

A third noteworthy aspect of these programs is the images presented in the posters used by On the Right Trail and The Adventure Trail. The designers and artists, being motorized trail users themselves, have effectively portrayed consequences and sanctions resulting from good and bad OHV trail riding habits. For instance, an un-helmeted ATV rider trespassing in a cow pasture is being chased off the land by an enraged bull while a helmeted rider on the trail passively watches. The message on the poster is "Trespassing is a serious offense. No Bull!" Another poster shows a couple of OHV riders on the trail pausing to observe wildlife without interrupting the animals' activities. The images engage the viewer by being humorous (the papa bear is using a fishing pole and wearing a fedora) while still presenting an important message.

#### Program Evaluations

There has been very little evaluation of the use and effectiveness of the programs reviewed in this study (Table 6). There are no general use counts or lists of contacts, program requests, or users, or at least none that have been reported or published in a form that could be sent to us for review. The evaluations that have been conducted, have been informal and qualitative, such as post program summaries or self evaluations, with little or no methodological rigor or evaluation objectives or criteria. None looked at behavior or attitude change, and only Tread Lightly! and Adventure Trail have attempted to touch on cognitive learning (knowledge quizzes for managers and kids), but without pre-testing or experimental controls. The representatives of Tread Lightly! and SCORE consider program evaluation a critical future need.

**Table 6: Evaluation Methods and Needs (Based on Program Contacts)** 

Organization	Methods and Needs						
Tread Lightly!	<ul> <li>Post evaluation summaries for each program</li> <li>Survey assessing government workers' knowledge of TL!</li> <li>Dealer evaluations</li> <li>Isaac Walton League report regarding effective advertising</li> <li>Future: Evaluate education materials by end of 2005.</li> <li>Looking for funding for a 3<sup>rd</sup> party unbiased evaluation See it as a huge need.</li> </ul>						
On the Right Trail	<ul> <li>Local weed telephone survey, conducted in three different years, revealed greater knowledge about the spreading of weeds in the years that OTRT PSA's were broadcast. (The survey was <i>not</i> conducted as an evaluation of the ORT program.)</li> <li>Feel that the program is still too young for an evaluation process. May be needed in the future.</li> </ul>						
Protect Your Privilege	None						
Adventure Trail	<ul> <li>The quiz given to the kids.</li> <li>People's reactions are "overwhelmingly positive."</li> <li>* The program is just brand new – still too young for an evaluation process.</li> </ul>						
SCORE	<ul> <li>Informal self-evaluations.</li> <li>* Future: Post-evaluation summaries for each presentation.</li> </ul>						

<sup>•</sup> Past or present evaluation methods.

The primary reasons given for not evaluating the programs include lack of funding and the fact that several of the programs are relatively new and still in the developmental stage. These arguments are at odds with widely accepted principles to conduct formative evaluations early in program development and to collect the baseline data that are critical for future, summative evaluations (c.f., Jurin et al. 2000). Collecting data *after* program implementation makes it difficult to conclude attitude or behavior changes are real and the result of the educational

<sup>\*</sup> Future plans for evaluation.

program. Although we contend that rigorous program evaluation is important for long term program adjustments, and for accountability and justifying program budgets, we recognize the practical knowledge that is brought to bear in setting up and running these programs without such evaluative efforts. Perhaps more of their logic needs to be documented in such a way that the presumptions, goals and predicted outcomes are more explicitly stated. The evaluation of the effectiveness of communication may be especially important for enlisting greater support and participation of manufacturers, OHV clubs, resource management agencies, and nonmotorized trail user groups, four of the most important stakeholder and target groups.



Photo courtesy of Fishlake NF

#### FUTURE EDUCATIONAL PROGRAM AND RESEARCH NEEDS

Based on this review, the most critical OHV communication and education needs include programs targeting high school aged drivers, nonmotorized user groups that have a stake in OHV use and road policies, and greater use of OHV clubs, manufacturers, and well known personalities in communicating educational messages. Computer web sites are a new form of education and communication that so far, only Tread Lightly! is using as an educational tool; more work needs to be done in this area. And given the potential for success of specific group or stakeholder oriented training programs, "training-the-trainer" educational approaches should also be expanded.

We also found that there is a very heavy emphasis on one-way communication methods, such as school curricula, exhibits, signs, and brochures. Two-way communication methods need to be expanded. Interaction can be built into training programs, but participatory methods, such as partnering with resource agencies to develop and conduct volunteer and collaborative planning activities, should also be considered an important element of OHV driver communication and education programs. These efforts should be evaluated for their educational value, as well as conflict management and budgetary benefits. These efforts can also be designed to specifically target adolescents and young adults.

Education messages need to be expanded or tailored to include more site or region specific issues, such as invasive species dispersal, impacts on historic sites, and guides for inexperienced riders in difficult terrain. General messages that need more attention are alcohol abuse, minimum impact camping, and meadow impacts. But rather than increasing the message content of existing media and strategies, we suggest that OHV education programs design educational messages in the abstract, and then design templates for providing specific messages, so that managers can pick and choose the most important messages tailored to their local resources, needs, or problems.

Gathering existing OHV research studies, symposium proceedings, journal papers, news articles, and management plans into a single source location (for instance, the SCORE CD) can be valuable for land managers, educators, and OHV organizations. One of the challenges to creating a complete library or clearinghouse is efficient and effective access. For instance, impact messages regarding plant disturbances and recovery due to off-trail riding are different in eastern hardwood forests and western high desert scrublands. User-friendly templates utilizing computer generated keyword qualifiers to retrieve electronic files and references will assist interested parties in assembling pertinent information tailored to their unique concerns.

This study also identified the need for better program use and evaluation documentation. Both formative and process evaluation research is needed (Jurin et al. 2000). Formative research takes place during the planning and development stages of a program, and it includes activities such as needs assessment, audience preferences, and systematic development of goals and objectives. Process evaluations review program outcomes and impacts. Program impacts include everything from simple numbers and types of audience contacts to changes in audience knowledge, beliefs, and behaviors.

At the most basic level, there is a need for better record keeping, such as user contacts and counts, and simple user evaluation forms, even at the early stages of program development. This information can be used to compare different programs, help guide program changes, and serve as baseline data for future impact studies. Impact or process evaluation methods are more difficult and include a wide variety of methods ranging from surveys and focus groups to quasi-experimental and panel studies that can measure the source, amount, and duration of attitude or behavior changes. Specific approaches to impact studies will depend on program elements and objectives. For example, simple use numbers with a follow up evaluation survey may be adequate to test the use and impact of SCORE's OHV CD. Image and brand analysis surveys and focus groups could help evaluate the use and recognizability of the Tread Lightly!, On the Right Trail, and Protect Your Privilege logos and other Tread Lightly! promotional items. Knowledge and behavior surveys and observational methods would be needed to test the effectiveness of brochures, displays, school curricula, and training programs. While impact analysis seems to be considered an important but unmet need by several program leaders we contacted, the need for formative research and baseline data does not.



Photo courtesy of Bryan Carter, Dixie NF

#### **SUMMARY**

The five programs we reviewed provide diverse and well-received educational programs and media designed to influence OHV drivers' environmental ethics and behaviors. The primary messages relate to staying on the trail, environmental impacts, safety, etiquette, and driver image. The most critical OHV communication and education needs include programs targeting high school aged drivers, nonmotorized user groups that have a stake in OHV use and road policies, and greater use of OHV clubs, manufacturers, and personalities. Better use of the web, trainingthe-trainer methods, and two-way communication are also needed. Participatory communication and education methods need to be developed and evaluated as education strategies, and some should be specifically designed to target adolescents and young adults. Education messages need to be expanded to include a greater variety of site or region specific issues, with program templates designed to allow managers to select and tailor messages to their needs. And finally, there has been very little formative evaluation research conducted, and virtually no formal research on the actual use and impacts of these programs with different target audiences. In the end, this lack of program evaluation alone makes it difficult to conclude with any scientific certainty that the programs have achieved any lasting behavioral change or contributed to agency objectives.

#### STUDY LIMITATIONS

This study is based only on the review and evaluation of five OHV education programs. There are many other individual educational efforts and study needs that have not been addressed by this study. In addition to testing educational effectiveness, future research can also expand the number and types of programs that are reviewed, and expand the approach of this study to include case studies of participatory OHV planning and decision making efforts, and even educational interventions used to address other resource problems that may have implications for OHV education and management (e.g., motor boating or depreciative behavior).

#### LITERATURE CITED

Absher J.D., P.L. Winter and K. James. 1997. Delivering environmental education and interpretive messages in urban proximate field settings: "Lessons" from Southern California. *Trends* 34(4): 30–37.

Carter, B.. Personal communication with the Dixie National Forest OHV Coordinator, November 30, 2004.

Chavez D.J. and N.E. Knap. 2004. Issues and Actions for Off-highway Vehicle Management: National Forests in California. Unpublished report. Riverside, CA: USDA Forest Service. Pacific Southwest Research Station.

Cordell, H.K. 2004. *Outdoor Recreation for 21<sup>st</sup> Century America*. State College, PA: Venture Publishing.

Clegg, F. Personal communication with the recreation staff lead for the Bureau of Land Management, Little Sahara National Recreation Area. December 18, 2000.

Harlan, W. 2003. Bosworth details top threats to forest lands. *Rapid City Journal*, Rapid City SD.

Israelsen, B. 2004. Feds ponder how to curb rogue OHVs. Salt Lake City Tribune, Jan. 4, p. A1.

James K. and J.D.Absher. 2002. Effectiveness of visitor information programs in Giant Sequoia National Monument. Unpublished report. Riverside, CA: Pacific Southwest Research Station, Forest Service, U. S. Department of Agriculture. 54 p.

Jurin, R.R., K.J. Danter, and D.E. Roush Jr. 2000. *Environmental Communication: Skills and Principles for Natural Resource Managers, Scientists, and Engineers*. Boston, MA: Person Custom Publishing.

Kotler, P., N. Roberto, and N. Lee. 2002. *Social Marketing: Improving the Quality of Life*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage Publications.

Marynowski S.B. and S.K. Jacobson. 1999. Ecosystem management education for public lands. *Wildlife Society Bulletin* 27(1): 134-145.

Montana's Statewide Noxious Weed Awareness and Education Task Force. 2003. Evaluation of education efforts on noxious weeds 1994-2002. Carla Hoopes, Project Coordinator, Bozeman, MT: Montana State University.

Morgan J.M., J.D.Absher, B. Loudon and D. Sutherland. 1997. The relative effectiveness of interpretive programs directed by youth and adult naturalists in a National Forest. *Journal of Interpretation Research* 2(1): 13–26.

USDA. Forest Service. 2004. Travel management: Designated routes and areas for motor vehicle use. (Proposed amendments to 36 CFR Parts 212, 251, 261, and 295). *Federal Register* 69(135): 42381-42395.

USDA Forest Service. 2000. Collaborative stewardship within the Forest Service: Findings and recommendations from the National Collaborative Stewardship Team. (Accessed at <a href="https://www.fs.fed.us/newcentury/collaborative-stewardship.htm">www.fs.fed.us/newcentury/collaborative-stewardship.htm</a>)

USDI Bureau of Land Management. 2001. National Strategy for Motorized Off-highway Vehicle Use on Public Lands. Washington, DC: USDI, Bureau of Land Management.



Photo courtesy of Fishlake NF

## **APPENDIX A:**

 $\label{thm:communication} \textbf{Summary Table for all five OHV communication and education programs}$ 

**Tread Lightly** 

Descriptors	Features
Lead Organizations	Tread Lightly!, Inc.
Mission/Objectives	<ul> <li>"To empower generations to enjoy the outdoors responsibly through education and restoration."</li> <li>Objectives for 2005</li> <li>To know what we have – evaluate our tools, programs, and services</li> <li>Diversify and stabilize resources</li> <li>Generate positive national attention through PR and strategically generate media coverage to reach a minimum of 25 million.</li> </ul>
Target Audiences – Direct	<ul> <li>Motorized vehicle recreationists</li> <li>Media agencies</li> <li>Government agencies/Federal and State Land Managers (FS, NPS, BLM, Bureau of Reclamation, Army Corps of Engineers)</li> <li>OHV and PWC manufacturers</li> <li>Hunting and other outdoor recreation educators</li> <li>Stakeholders</li> </ul>
Target Audiences – Indirect	<ul> <li>Motorized vehicle recreationists</li> </ul>
Key Behaviors	<ul> <li>Travel and recreate with minimum impact.</li> <li>Respect the environment (TL's highest priority) and the rights of others.</li> <li>Plan and prepare before you go.</li> <li>Allow for future use of the outdoors leave it better than you found it.</li> <li>Stay on designated trails.</li> <li>Be courteous.</li> <li>Leave a good impression.</li> </ul>
Stakeholders	Current Project Partners:  Cabela's Inc.  Federal Highway Administration  Ford Motor Company Fund  HUMMER Division, General Motors
Members  Stakeholder involvement	<ul> <li>Individual</li> <li>Retailer</li> <li>Outfitter</li> <li>Dealer</li> <li>Clubs</li> <li>Corporation</li> <li>Media</li> <li>Government</li> <li>Alliance</li> <li>Monetary donations</li> <li>Do needs assessments for different programs.</li> <li>Request program developments and project implementations.</li> <li>(Stakeholders involved to a point – the development of programs never leaves TL hands in order to maintain quality control.)</li> </ul>
Partners	Project partners are listed as stakeholders
Intervention Methods	<ul> <li>Tread Trainer</li> <li>Restoration for Recreation</li> <li>Public Service Announcements (broadcast, radio, print)</li> <li>Banner Ads</li> <li>Teaching Materials (Junior High Environmental curriculum, Elementary activities, ETHIC: Educational Tools for Hunters)</li> <li>Recreation Tips brochures</li> <li>Advertising guidelines</li> <li>Guidebooks (Four-wheeling, Mountain Biking, ATV Riding, Trail Biking,</li> </ul>

PWC, Snowmobiling, Leaving a Good Impression)

- Clothing, coloring books, decals, educational posters and videos, maps, litter bags, pencils, water bottles, lighters, vehicle accessories, pins
- Enjoy the outdoors responsibly.
- Stay on designated trails.
- Leave a good impression.
- Be courteous.
- It's up to you to become an ambassador for your sport and the great outdoors. Tread Lightly! Pledge:
- Travel and Recreate with minimum impact.
- Respect the environment and the rights of others.
- Educate yourself; plan and prepare before you go.
- Allow for future use of the outdoors; leave it better than you found it.
- Discover the rewards of responsible recreation.

This info. is just from what little I know:

- Tread Trainer Post Evaluation Summaries
- 6 months program evaluation for volunteers.
- Methods to Evaluate Success Government
- Government and dealer surveys.
  - Recent Government Survey Project (assessed govt. workers' knowledge of TL!)
  - 2005 goal of having education materials evaluated by third party.
  - Biased review regarding effective advertising (Isaac Walton League)

Evaluation summary results compiled into tables, Govt. Survey results on Excel spreadsheet

**Evaluation Documentation** 

**Intervention Messages** 

## On The Right Trail

Descriptors	Features
Lead Organizations	Interagency partnership with the FS, BLM, Montana Fish, Wildlife, and Parks, NOHVCC, and the Montana Trail Vehicle Riders Association.
	Mission:
W (01	<ul> <li>Educate OHV enthusiasts about OHV use.</li> <li>Instill a strong land and trail ethic for riding, such that the future community of OHV riders is safe, courteous, responsible, and considerate of other trail users and the land.</li> </ul>
Mission/Objectives	<ul> <li>Objectives:</li> <li>To create an interactive curriculum about Off-highway vehicles for 5<sup>th</sup> through 8<sup>th</sup> grade students.</li> <li>To emphasize safety, trail etiquette, natural resources protection, and land ethics.</li> </ul>
	<ul> <li>To provide an OHV guide for natural resource professionals, teachers, and youth leaders (e.g. 4-H and scouting organizations).</li> <li>OHV enthusiasts</li> <li>5<sup>th</sup> through 8<sup>th</sup> grade students</li> </ul>
Target Audiences – Direct	<ul><li>NR professionals</li><li>Youth leaders (a little bit)</li></ul>
Tour of Audience - Ludinos	<ul> <li>Hikers and horsemen</li> <li>Hunting/safety instructors</li> <li>OHV enthusiasts</li> <li>5<sup>th</sup> through 8<sup>th</sup> grade students</li> </ul>
Target Audiences – Indirect	<ul> <li>The educated children's parents</li> <li>OHV safety (not a big part of it)</li> <li>Trail etiquette</li> <li>Natural resources protection</li> </ul>
Key Behaviors	<ul> <li>Land ethics</li> <li>Stay on the Trail!</li> <li>Be respectful of others you encounter</li> <li>View wildlife from a distance.</li> </ul>
Stakeholders	Sponsors:  Montana Department of Fish, Wildlife and Parks  USDA Forest Service  BLM  Partners:  National Off-Highway Vehicle Conservation Council (NOHVCC)  Montana Trail Vehicle Riders Association
Stakeholder involvement	<ul> <li>Monetary donations and grants</li> <li>Support the messages.</li> <li>State education committee reviews the messages.</li> <li>Program funded by state money (gas tax funds, national recreation trails funds.)</li> <li>Provide training to other agency representatives and user groups</li> <li>Recruit and train presenters</li> </ul>
Partners	Listed under stakeholders
Intervention Methods	<ul> <li>Interactive curriculum geared towards 5<sup>th</sup> - 8<sup>th</sup> grade students:</li> <li>6 modules - 30 to 50 minutes each.</li> <li>Activity trunk with props such as video and cassette recordings, safety equipment, etc. to reinforce the message of each module.</li> <li>Brochures</li> <li>PSA's on radio and TV in Montana</li> <li>Posters</li> </ul>
Intervention Messages	<ul> <li>Sound off – What Do You Know About OHVs?</li> <li>Safety – Every Ride, Every Time, Think Safety</li> <li>Planning Ahead – Trail Safety and Travel Plans</li> <li>Trail Etiquette – Your On the Trail!</li> </ul>

- Land Ethics Protect the Land You Ride On
- OHV Dilemmas
- Weed prevention wash vehicleStay on the Trail!
- Know and obey rules.

Methods to Evaluate Success

Noxious weed telephone survey, assessing what locals know about weeds, was conducted in Montana across three years. When On the Right Trail PSA's about weeds were broadcast, the telephone survey showed a huge increase in public knowledge about noxious weeds.

**Evaluation Documentation** 

Study report.

## **Protect Your Privilege**

Descriptors	Features
Lead Organization	Utah Natural Resource Coordinating Council/ UT State Parks and Recreation
Mission/Objectives	<ul> <li>Protect Your Privilege, Stay on the Trail!</li> <li>Riding on public lands is a privilege, not a right. And because it is a privilege, it can be taken away if riders don't do everything they possibly can to protect it.</li> <li>Increase public use of trails.</li> <li>Bring attention to the need for more managed trail use.</li> <li>(This program is more like an advertising campaign, not an actual organization.)</li> </ul>
Target Audiences – Direct	ATV and motorcycle riders.
Target Audiences – Indirect	No.
Key Behavior	<ul> <li>Stay on designated trails.</li> </ul>
•	<ul> <li>Bureau of Land Management</li> <li>UT State Parks</li> <li>UT Trust Lands.</li> <li>UT Division of Wildlife Resources.</li> </ul>
Stakeholders	<ul> <li>Motor Sports Dealer Association.</li> </ul>
	<ul> <li>Utah Department of Natural Resources</li> <li>Forest Service</li> <li>Other state agencies</li> <li>Using the "Protect Your Privilege" logo on trail markers, in brochures, on maps,</li> </ul>
Stakeholder involvement	etc. The Motor Sports Dealer Association donated money for one run of PYP
	stickers.
Partners	Listed under stakeholders.
Internantian Mathada	<ul> <li>Logo stickers and posters</li> <li>Local broadcasts presented every Sunday for 10 weeks providing riding information and user ethics messages (three years ago).</li> <li>Interagency "Protect Your Privilege, Stay on the Trail" green arrow stickers posted along routes labeled as "Back Country Trails." These stickers should be used where feasible.</li> <li>Interagency projects in progress:</li> </ul>
Intervention Methods	<ul> <li>Development and continued monitoring of popular riding areas and trails.</li> <li>Trail improvement (In some areas – not part of PYP).</li> <li>Rider education (State Parks incorporate the PYP message into their programs).</li> <li>OHV training workshop for managers.</li> <li>Improvement of trail signs (the addition of the PYP sticker sends a consistent message).</li> <li>Interagency website with all OHV information and rules on it.</li> </ul>
Intervention Messages Methods to Evaluate Success Evaluation Documentation	PROTECT YOUR PRIVILEGE, STAY ON THE TRAIL! None None

### The Adventure Trail

Descriptors	Features
	NOHVCC Youth and Education teams
Lead Organizations	
Mission/Objectives	In addition to riding opportunities, the education of youth riders is high on the NOHVCC priority list. They strive to reach large numbers of kids at OHV events. The kids will see images that will instill responsible ideas of OHV recreation in their head. Such ideas center around trail etiquette, safety, and environmental ethics.
Target Audiences – Direct	<ul><li>Kids (elementary through early high school)</li></ul>
Target Audiences – Indirect	<ul> <li>Parents who take their kids through it.</li> </ul>
Key Behaviors	<ul> <li>Ride appropriate ATV size</li> <li>Respect others, be courteous</li> <li>Yield to hikers, horsemen, and mountain bikers</li> <li>Don't chase animals</li> <li>One rider on one ATV</li> <li>Use proper riding gear</li> <li>Stay on trails</li> <li>Avoid streams and wet areas</li> <li>Keep sound down</li> </ul>
Stakeholders	<ul> <li>Enjoy the outdoors responsibly</li> <li>BLM</li> <li>NOHVCC</li> <li>Forest Service</li> <li>Federal Highway Administration</li> <li>Motorcycle Industry Council</li> <li>Specialty Vehicle Institute of America</li> <li>Help spread the message</li> </ul>
Stakeholder involvement	<ul> <li>Oversee project</li> <li>Monetary donations</li> <li>Review artwork and messages.</li> </ul>
Partners	Listed under stakeholders.
Intervention Methods	<ul> <li>Interactive tour showcased in an impressive, Peterbuilt semi that spends the summer on the road. It consists of ten panels and messages that wrap around the interior of the semi truck. The Adventure Trail shows up at dozens of NOHVCC events every year.         <ul> <li>Quiz given at the end of the tour</li> <li>If the kids passed, then they received a NOHVCC temporary tattoo or personal photo displayed on wrist/shirt. They also receive TL! Pencils and coloring books.</li> </ul> </li> <li>Ideas for the future: Get the Adventure Trail message out using electronic media and opportunities like McDonald's place mats (just brainstorming). This will help them reach far beyond the typical audience. Develop small scale reproductions of the adventure trail for other organizations to use at their events. Hand out Adventure Trail activity books for kids at several events. In the future they would like to have corporate sponsors.</li> <li>Goals for 2005:         <ul> <li>Make posters available for everyone</li> <li>Mascot development</li> <li>Smaller posters that have all the messages on it</li> <li>Develop activity book with the 10 illustrations and games in it (word finds and crossword puzzles, etc.)</li> <li>Interactive CD-ROM for kids (games, coloring pages, mascot click and drag type of game)</li> </ul> </li> </ul>
Intervention Messages	<ul> <li>Ride appropriate ATV size</li> <li>Respect others, be courteous</li> <li>Yield to hikers, horsemen, and mountain bikers</li> </ul>

• Yield to hikers, horsemen, and mountain bikers

- Don't chase animals
- One rider on one ATV
- Use proper riding gear
- Stay on trails
- Avoid streams and wet areas
- Keep sound down
- Enjoy the outdoors responsibly
- The quiz given at the end of the tour shows what the kids learned.
- Visible reactions are overwhelmingly positive.

They feel that the program is still too new for any serious evaluation.

Methods to Evaluate Success

**Evaluation Documentation** 

Sensible, Courteous Off-Road Enthusiasts (SCORE)

Sensible, Courteous Off-Road Enthusiasts (SCORE)	
Descriptors	Features
Lead Organizations	Pennsylvania OHV Association
Mission/Objectives	<ul> <li>Promote safety and environmental stewardship when participating in OHV recreation.</li> </ul>
	<ul> <li>Promote courteous behavior toward other trails users.</li> </ul>
	<ul> <li>Encourage safe riding measures.</li> </ul>
	<ul> <li>Demonstrate the necessity of following state and local laws when riding OHVs.</li> <li>"The purpose of SCORE is to create a more environmentally sensitive and safe OHV user. We want to get information out to the user groups through our virtual library on CD-ROM." –Dennis Mann</li> <li>OHV clubs</li> </ul>
	All trail users
Target Audiences – Direct	<ul> <li>Anyone who contacts PAOHV for a training session</li> </ul>
	<ul> <li>OHV-recreation participants</li> </ul>
Target Audiences – Indirect	Those who are trained directly and have the CD-ROM can go out and train others.  • Respect the environment (specifically erosion prevention, wildlife, water).
Key Behaviors  Stakeholders  Stakeholder involvement	<ul> <li>Respect other trail users.</li> <li>Respect laws, signage, and private property.</li> </ul>
	<ul> <li>Respect laws, signage, and private property.</li> <li>Be safe by maintaining the equipment, wearing the right gear, and riding in</li> </ul>
	control.
	Rider etiquette
	<ul> <li>Pennsylvania Department of Conservation and Natural Resources</li> </ul>
	■ Pennsylvania OHV Association
	<ul><li>NOHVCC</li></ul>
	<ul><li>PAOHV runs the whole program and develops the messages.</li></ul>
	<ul> <li>Developed the program through a Recreational Trails Grant.</li> </ul>
	<ul> <li>NOHVCC provided tons of hard documents to put on the CD-ROM.</li> </ul>
_	<ul> <li>DCNR supposedly spreads the message.</li> </ul>
Partners	Listed under stakeholders.
Intervention Methods	<ul> <li>Virtual Library on CD-ROM containing everything you need to know about responsible OHV recreation. Entire program centered around this CD.</li> <li>Send brochure, CD, and a letter to all PAOHV members</li> <li>Send brochure holder, 100 brochures, CD, and a letter to PAOHV corporate</li> </ul>
	members.
	<ul> <li>Put SCORE brochures in all district forestry offices.</li> </ul>
	<ul> <li>Training sessions for search and rescue teams, fire crews, ski patrols, etc. (Since the ATV is a tool for them, they are given more of a safety message.)</li> </ul>
Intervention Messages	<ul> <li>Provide free SCORE training presentations for individuals, groups, and clubs.</li> </ul>
	Respect the environment (specifically erosion prevention, wildlife, water).
	Respect other trail users.
	<ul> <li>Respect laws, signage, and private property.</li> <li>Description of the agriculture in the right good and riding in</li> </ul>
	<ul> <li>Be safe by maintaining the equipment, wearing the right gear, and riding in control.</li> </ul>
	Received national award
Methods to Evaluate Success	Presenter does self-evaluation after each training session.
inclined to Evaluate Success	Plans to start doing post-evaluation summaries after training sessions.
Evaluation Documentation	No
	- · ·