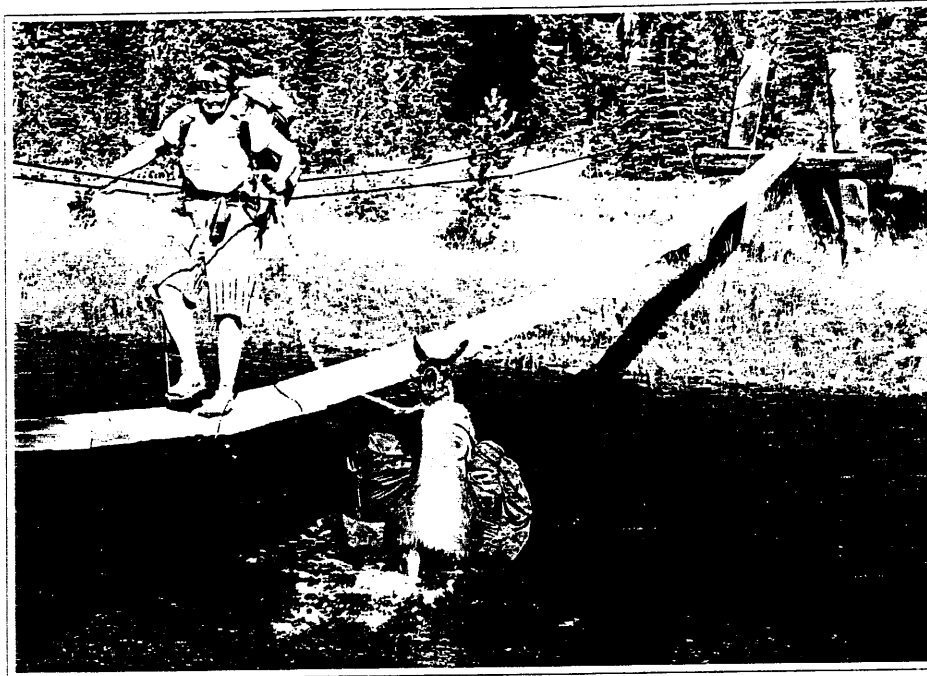


## *What Do Other Wilderness Visitors Think?*



by Dale J. Blahna and Kari S. Archibald

### The Llama Debate

The use of llamas as recreational packstock has increased dramatically in many western wilderness areas during the last ten years. A 1990 survey conducted in two California wildernesses by the U.S. Forest Service's Intermountain Research Station found that about one-quarter of the hikers and one-third of the horseback riders encountered llama groups during their visits. While llama use is somewhat localized, it is expanding dramatically as the number of commercial and private packers increases.

This new mode of backcountry travel has sparked a debate that is both scientific and emotional. Opponents believe that llamas cause unacceptable social and physical impacts, including increased trail erosion, vegetation impacts, and the introduction of exotic plant species (in llama feces and fur) and wildlife diseases. In addition to the potential for trail congestion, some people feel that the use of

llamas is inappropriate because they are neither traditional nor indigenous to North American backcountry. Some horseback riders object because horses become edgy and may bolt at the sight of llamas.

Llama supporters argue that the physical impacts are actually *advantages*. They point out that:

- ✱ Llamas have much less impact on soil and vegetation than do traditional packstock, and substituting llamas for horses or mules (for backcountry trail and riparian work, for example) would actually reduce backcountry impacts.
- ✱ There is no evidence of problems related to the introduction of exotic plants or disease in the wild, and some existing research actually disputes these claims.
- ✱ Visitors usually react positively to seeing llamas in the backcountry, and that while wilderness use may increase, llama packing allows greater access

*Above: Crossing the Bechler River at Three Rivers campsite, Bechler Canyon, Yellowstone National Park. Photos courtesy Dale Blahna.*

for traditionally under-represented groups such as women, children, handicapped persons, and older visitors. (See "Further Readings" for more on the pros and cons of llama packing.)

Because little research had been done on backcountry llama impacts until recently, management actions have been inconsistent and sometimes reactionary, which tends to fuel the debate. For example, while Yellowstone National Park allows private and commercial llama packers (some rangers have even used llamas for maintenance work), Arches and Canyonlands national parks banned all use of llamas in 1994 because of the possible risk of transmitting Johnes disease to bighorn sheep. The International

Llama Association and several independent scientists countered this claim, but the parks upheld the ban in 1995 with no further explanation or evidence of physical or social impacts. (See NPS 1995 Briefing Statement and ILA 1996 Fact/Issue Summary Sheet for more information on this debate.)

### Surveying Opinions in the Yellowstone Region

To document the number of hikers and horseback riders who saw llamas in the backcountry and their perceptions of llama-related problems, we used trailhead and mail surveys to collect information about the attitudes of wilderness visitors in the Yellowstone region in 1993 and 1994. We focussed on two areas that receive relatively heavy llama use and present an interesting contrast: the Targhee National Forest's Jedediah Smith Wilderness, which is on the western range of the Teton mountains, just south of Yellowstone and west of Grand Teton National Park, and Bechler Meadows in the southwest corner of Yellowstone. The Jedediah Smith Wilderness is used primarily by local, rural residents, while the Bechler Meadows is a more heavily used recreational backcountry destination. Only 18 percent of the Bechler visitors travel with packstock, compared to nearly half of the Jedediah Smith visitors.

We contacted visitors at trailheads as they were leaving the backcountry and asked them to participate in a mail survey. Surveys were sent to 454 visitors, and the final results are based on 337 useable responses (Bechler:  $n = 182$ , Jedediah Smith:  $n = 155$ ), representing a 74 percent response rate.

Because there were only nine llama packers in the trailhead survey, we did not use their responses to come to any definitive conclusions about llama packers' characteristics or attitudes. Instead, we conducted a separate, non-random survey of the clients of 14 commercial llama packers in Wyoming, Idaho, Montana, Oregon, and Washington. We received 326 useable surveys from a sample of 354 people, and compared these results to the trailhead surveys of hikers and horseback riders in Bechler Meadows and the Jedediah Smith Wilderness. While

COMPARING LLAMA CLIENTS TO HIKERS AND HORSEBACK RIDERS			
Characteristic	Trailhead Survey		
	Hikers ( $n = 209$ )	Horseback ( $n = 113$ )	Llama Clients ( $n = 326$ )
Mean age	37	45	47
Female	34%	32%	62%
Minor disability (e.g., knee or back injury, asthma)	13%	16%	18%
Major disability (e.g., heart condition or back surgery)	1%	2%	2%

it is possible that the characteristics of the growing number of people who are traveling with their *own* llamas differ from those of clients of llama packers, we have no data to indicate how significant their numbers may be.

### Characteristics of Llama Packers

The llama-packing clients in our study were similar to wilderness visitors in general: they were uniformly Caucasian and tended to be from middle- and upper-middle class backgrounds. In most socioeconomic characteristics, the llama clients were more similar to hikers than to horseback riders. Compared to the Bechler and Jedediah Smith visitors, the llama clients were even more likely to be highly educated, have white-collar occupations, earn more than \$50,000 per year, and live in an urban area. However, the llama clients also had some characteristics in common with horseback riders: they were older than the hikers and slightly more likely to have physical disabilities that may hinder their use of the backcountry.

The main difference between the llama clients and the hikers and horseback riders was that two-thirds of the llama clients were women. Most of the llama clients have had wilderness experience—more as hikers than horseback riders—but less overall backcountry experience in the last five years than did the visitors in the Bechler and Jedediah Smith study.

These data tend to support the belief that a more diverse group of visitors is attracted to llama packing, or at least

*commercial* llama packing, especially women and older visitors. But they are not new to the backcountry. Llama packing may help provide access for those who have a small amount of experience or are less able to tackle the backcountry on their own. Thus, it appears that llama packing may increase backcountry visitation somewhat, but not dramatically, and it will not attract large numbers of nontraditional users. This conclusion could change if llama *owners* are significantly different from this sample, if special user groups begin to embrace llama packing as a means of backcountry access, or if the expense of owning or packing with llamas decreases in the future.

### Trailhead Responses

**Encounters.** Very few of the 337 respondents to the trailhead survey had had experience with llamas at the time. Only 9 were travelling with llamas during that trip, and only 15 had been on a llama packing trip in the last five years. Nearly one-third (99) of the respondents, however, had met llamas on the current trip, including 29 percent of the Bechler visitors and 32 percent of the Jedediah Smith visitors. As in the California surveys mentioned above (which used the same question format), horseback riders (22 percent) were more likely than hikers (17 percent) to have seen llama packing groups.

**Problems.** The perception of llama-related problems was very low for hikers and horseback riders in both study areas.

## VISITOR PERCEPTIONS OF BACKCOUNTRY PROBLEMS

Problem	Overall Mean (Scale: 1 = no problem to 5 = big problem)	Ranking of Problem (1-18 scale)	
		Bechler	Jedediah Smith
Horse manure on trail or in camp	2.01	1	5 (tie)
Horse/mule trail impacts	1.94	2	5 (tie)
Too many people at certain locations	1.73	5	4
Litter	1.65	7 (tie)	2
Meeting horses on trail	1.64	3	10 (tie)
Too many horses on trail	1.61	4	14
Human vegetation damage	1.52	6	8
Too many large groups	1.48	7 (tie)	9
Cattle grazing damage	1.42	15	3
Sheep grazing damage	1.44	18	1
Too many hikers on trail	1.44	9	12 (tie)
Not enough firewood	1.41	10	12 (tie)
Human waste disposal	1.39	11	7
Meeting llamas on trail	1.32	14	10 (tie)
Too many llamas on trail	1.28	13	15
Low flying aircraft	1.25	12	16
Llama trail impacts	1.19	16	17
Llama manure on trail or in camp	1.17	17	18

From a list of 18 potential backcountry problems, llama-related issues were ranked 14th ("meeting llamas on the trail"), 15th ("too many llamas on trail"), 17th ("llama trail impacts"), and 18th ("llama manure on the trail or in the campsite") These did not differ significantly between the two study areas. While none of the 18 items were considered to be very serious problems, horse and mule impacts were listed as four of the top ranked problems by Bechler visitors and by hikers who ranked "horse manure" and "horse and mule trail impacts" as the top two problems by a relatively large margin. For example, hikers rated horse manure 2.53 and horse trail impacts 2.49 on a five-point impact scale.

**Conflict.** Two types of questions adapted from past studies of wilderness behavior were used to investigate the possible conflicts between traditional visitors and llama packers: To what extent did meeting horses/hikers/llamas interfere with your trip? And, did you like or dislike meeting hikers/horses/llamas? Data were reported only for visitors who actually encountered each type of group.

Hikers rated encounters with llamas more negatively than encounters with

other hikers but more positively than encounters with horses: 20 percent of the hikers said they disliked meeting llamas (24 percent for horses) and 36 percent said llamas interfered with their trip (51 percent for horseback riders). Horseback riders, on the other hand, rated contacts with other horseback riders most positively, followed by encounters with hikers, and then llama packers: 28 percent said they disliked meeting llamas and 43 percent said llamas interfered with their trip. So while the horseback riders objected more than the hikers to meeting llamas in the backcountry, their attitude toward meeting llamas is similar to that of hikers meeting horses.

**Acceptability.** Social acceptability is a complex topic. Using a five-point Likert scale, we asked respondents the extent to which they agreed or disagreed with 15 statements designed to assess five aspects of llama packing: 1) physical impacts, 2) social conflict, 3) philosophical appropriateness, 4) managerial equity, and 5) safety. These dimensions were derived from the *Limits of Acceptable Change* wilderness planning process used by the Forest Service and the National Park Service for managing "nontradi-

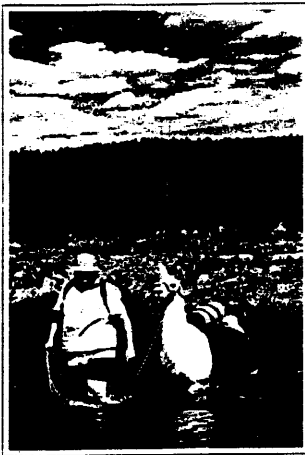
tional" uses in the parks.

Hikers and horseback riders in both study areas gave the most support to the managerial equity items ("Use regulations should be the same for llamas and horses" and "Limits for llamas should be the same as for horses"). Safety problems ("Safety problems exist when llamas meet horses on the trail" and "Llamas should be led off the trail when meeting horses") received the next highest level of agreement overall, especially for horseback riders. They ranked the two safety items as the highest of the 15 by a wide margin. Both hikers and horseback riders were more likely to agree on the statement "Llamas cause little impact on the resources" than with statements on negative physical impacts (llamas may introduce disease and exotic plants or compete with wildlife). Hikers were more likely than horseback riders to feel that llamas were "appropriate" in the backcountry, while horseback riders were more likely than hikers to agree that llamas cause social conflict in the backcountry.

### Implications for Wilderness Management

While these data will not end the llama packing debate, they do provide insights into the visitor perspectives. Traditional wilderness visitors do not view llamas as a major intrusion or problem in the backcountry. Hikers who encountered horses and llamas indicated that the physical and social impacts of horses are more problematic than those of llamas. Horseback riders had some serious concerns about the social aspects of meeting llamas in the backcountry, but they were even less troubled than hikers about the physical impacts.

The horseback riders' concerns appear to result from potential safety problems and, to a lesser extent, questions about the appropriateness of llamas in the backcountry. Hikers had neither of these concerns, and appeared to consider llamas as acceptable in the backcountry as horses. Thus, it could be a mistake to zone the backcountry to restrict all packstock to certain areas, which could exacerbate the potential for conflict if horses and llamas are forced into closer proximity. If



A hiker making good use of the pack llama "Willie" during a river crossing at Bechler Ford in August of 1991.

zoning is needed, it might make more sense to zone one area for horse use and another for hiking and llama packing.

Another important finding of the study was the extent to which both hikers and horseback riders agreed that wilderness regulations should treat llamas and horses the same. Wilderness managers should not assume that a new or "nontraditional" activity like llama packing will be unacceptable to current visitors. To prohibit llama packing because of perceived social or physical impacts without solid evidence would be unfair, especially since most of the potential for social conflict in these two study areas (and probably most backcountry areas) is between horseback riders and hikers. Specific sources of conflict can be identified and addressed. Furthermore, general physical impacts should not be used to justify restricting llama use because one could argue equally well that the impacts of horseback riding are perceived by visitors to be greater than those of llamas. (This perception is supported by recent research conducted at the University of Montana by Tom DeLuca and William Patterson IV.)

In the absence of evidence of negative physical or social impacts, it seems that managers should give llamas and horses equal access and use an educational approach to reduce potential conflicts and physical impacts from both modes of travel. To minimize conflict, horseback riders should be informed when llamas are in the backcountry. Llama packers should be made aware of potential safety problems and appropriate behavior when meeting horses—such as leading llamas off the trail and keeping them still until the horses pass.

#### FURTHER READING

##### *For information on the general pros and cons of backcountry llama packing:*

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- USDA Forest Service, Pacific Northwest Regional Office. 1992. Llama use policy background data: Questions and answers related to llamas. Discussion paper, USDA Forest Service Region 6 Office, Portland, Oreg.

##### *For research results on the social effects of llamas:*

- Blahna, D.J., K.S. Smith, and J.A. Anderson. 1995. Backcountry llama packing: Visitor perceptions of acceptability and conflict. *Leisure Sciences* 17:185-204.
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##### *For research results and discussions of the biophysical effects of llamas:*

- International Llama Association. 1996. Fact/issue summary sheet on the Southeast Utah Group llama ban. Prepared by the ILA Packing Committee, Denver, Colo.
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The infrastructure for an educational approach already exists at the Bechler trailheads. Rangers meet with all overnight visitor groups at the trailhead to give an interpretive talk on recreational impacts, wilderness philosophy, and safety issues. At more remote locations, signs and pamphlets are being used by agencies to encourage minimum impact travel methods. Llama safety, conflict, and impact information should be added to this information where appropriate.

And finally, the most proactive way to minimize the potential for horse-llama conflicts is to familiarize horses with llamas. Once horses become familiar with llamas, they are less likely to get nervous when they see llamas in the backcountry. Resource managers should work cooperatively with local llama and horse owners to offer workshops on horse and llama safety and conflict issues in areas that receive horse and llama use.

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