Using Information as a Management Tool

Professor Ed Krumpe

Theoretical Premises

• To be effective, Wilderness interpretation must be tailored to the needs and tendencies of a non-captive audience.
• Theories of behavior and motivation should guide the development of our persuasive communication strategies.
• Information should address specific target audiences.
• Wilderness education serves many roles in sustainable Wilderness stewardship.

Foster awareness, knowledge & appreciation

1. Foster awareness, knowledge & appreciation

• History & philosophy of Wilderness
• On-site and vicarious benefits
• Natural history of the area
• Appreciation of wildness & naturalness
• Commitment to conservation & a land ethic
• Better informed citizens

2. To develop skills & promote behaviors

• LNT & other “Light on the land” skills
• Low impact camping, sanitation
• Stock handling
• Navigation & travel, first aid
• Following rules
• Pack it In, Pack it Out . . .
3. Enhance Users’ Wilderness Experience

- Trip planning information
- Maps, guidebooks, brochures
- Explain regulations
- Travel to and from
- Alternative destinations & opportunities

4. Enhance Agency/Public Relations

- On-site information -- useful & relevant
- Off-site information -- interesting & useful
- Public meetings & 2-way communication
- An involved public

Using Information as a Management Tool

Two Approaches to Management

**Direct**
- Physical Alterations
  - Harden campsites
- Regulations
  - Assign routes
  - Limit visitation
  - Permits
  - Reservations

**Indirect**
- Manipulate Site
  - Bridges & trails
  - Sanitary facilities
  - Develop access
- Fees
- Eligibility requirements
- Information & Education

Traditional Approach Using Problem-targeted Message

- Describe the problem.
- Tell what the impacts are.
- Explain the reason for the regulation.
- “People will do the right thing!”
Typical Problem-targeted Message

- **Prevent damage to trees!**
- Trees can be stressed or killed by tying stock to them:
  - Stock ropes tied to trees will wear away the bark.
  - Tethered stock paw & compact the soil.
  - Tree roots are exposed & damaged.

Theory of Reasoned Action & Theory of Planned Behavior

<table>
<thead>
<tr>
<th>Behavioral Beliefs</th>
<th>Subjective Norm</th>
<th>Perceived Control</th>
<th>Behavioral Intention</th>
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<tbody>
<tr>
<td>Attitudes toward the Behavior</td>
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<tr>
<td>Behavioral Intention</td>
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<tr>
<td>Behavior</td>
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Always Aim Messages at Beliefs

- Address their beliefs about the consequences of their actions:
  - “Cutting switchbacks causes erosion.”
- Address their beliefs about what other people think about them cutting switchbacks:
  - “My friends hate muddy, eroded trails.”
- Address their beliefs that they have control over cutting switchbacks:
  - “It is easy for me to stay on the trail if I want to!”

Applying the Theory

Identify the problem

Identify the behaviors causing the problem (actions and inactions)

Identify the target audience

Identify the audience’s beliefs about:
- the consequences of the behavior
- what important others think
- what they believe they are capable of doing

3 Approaches to Belief-Targeted Messages

- Construct a belief that doesn’t exist.
  - “Cutting switchbacks causes erosion.”
  - “Steep downhill hiking causes injury to muscles & joints.”
- Change a wrong belief.
  - “It doesn’t really matter if I cut switchbacks.”
- Downplay one belief and highlight more important ones.
  - “Staying on the trail is actually easier on my legs & prevents eroded trails.”

Salient Beliefs & Targeted Messages

- Identify the beliefs of people who do the right thing.
- Identify the beliefs of those who do the wrong thing.
- Create messages that down-play reasons to do the wrong behavior.
Problem-targeted vs Belief-targeted Messages in the Sawtooth Wilderness

- A field experiment to influence backpackers and horse packers

USDA Forest Service
University of Idaho

Problem - targeted messages

USFS
Belief - targeted messages

Wilderness is the last great place to keep things
wild & natural...

Wilderness is the last great place to keep things
wild & natural...

There’s no excuse for the Sawtooth Wilderness to be anything less!
A cooperative project at the University of Idaho

Do you really need a campfire?

Consider the impacts campfires cause:
- Gathering firewood depletes the area of essential nutrients from decaying wood.
- Large areas are trampled when you gather wood.
- Throughout the camping season there’s an unsightly accumulation of charcoal and debris.
- Building new fire rings cause a proliferation of fire scars and blackened rocks.

Using stock?

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Shopping for just a few minutes?

Please use a camping stove.

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Problem - targeted messages

U of I
Belief - targeted messages

4 Great Reasons
Don’t light a campfire...

4 Great Reasons
Why you must have a campfire...

You’re camping buddies may want to have a big fire… but let them know they will have just as much atmosphere with a small fire & it’s easier on the environment, especially if you use dead wood that you can break with your hands.

Do you really need to build a new fire ring? Doing so will leave your permanent mark on this Wilderness. Please use an existing ring & build a small fire.

Your camping buddies may want to have a big fire... but let them know they will have just as much atmosphere with a small fire & it’s easier on the environment, especially if you use dead wood that you can break with your hands.
Prevent damage to trees!
Trees can be stressed or killed by tying stock to them.
• Stock ropes tied to trees will wear away the bark.
• Tethered stock will paw & compact the soil.
• Tree roots are exposed & damaged.

Use stocktie areas or highlines.
• Tie stock well away from water & wet areas to protect fragile lakeshores & stream banks.

Stopping for just a few minutes?
• Tie to 8 inch diameter or larger trees only.

If you choose to build a fire . . .
• Collect small downed and dead pieces of wood & use an existing fire ring.
• Could you use a stove and enjoy the night sky instead?

If you don’t like cleaning dirty blackened pots, try a camping stove. They’re light weight, they cook fast and clean up is a lot easier. Besides, a stove weighs less than a hand axe!
A camping stove will give you more time to enjoy what you came to the Wilderness for.

Pack pelletized feed . . .
• Hay and straw make a mess and introduce weeds.
• Grazing opportunities are very limited in high mountain meadows.
Using Information to Disperse Backcountry Campers

- An experiment in Yellowstone to influence backpackers to take less-used trails.

BACKCOUNTRY TRAIL SELECTOR

- Information packet to redistribute users to the less-used backcountry trails in Yellowstone National Park.
- Information displayed as a dichotomous key to help people in their decision making process.
- A field experiment with treatment and control groups and post-test survey.

BACKCOUNTRY TRAIL SELECTOR

- Random sample of treatment days
- People randomly assigned to treatment or control
- Applied at all backcountry permit stations
- Trip route collected from permit data
- Follow-up mail questionnaire

BTS Results

<table>
<thead>
<tr>
<th>Group</th>
<th>Busy Trails</th>
<th>Took BTS Trail</th>
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<tbody>
<tr>
<td>Treatment</td>
<td>62.6%</td>
<td>37.4%</td>
</tr>
<tr>
<td>Control</td>
<td>86.3%</td>
<td>13.7%</td>
</tr>
<tr>
<td>BTS influenced 23% to take less used trails.</td>
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<td>83% would use BTS to plan next trip</td>
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<td>39% showed it to someone else planning a Yellowstone backcountry trip</td>
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When do Yellowstone backpackers select a trail?

- 38% decided on same day as their trip.
- 41% decided 1 day to 2 weeks before.
- Only 4% decided 2 weeks to 1 month before.
- 50%+ talked to a ranger first (1-3 days).
- BTS people had less experience in Yellowstone.
- 42% said BTS most influential source of info

And… visitors brought BTS to Yellowstone for next 5 years!

Conclusions about Using Information as a Management Tool

- Information is a useful management tool.
- Information is no “silver bullet!”
- Information should target beliefs pertinent or “salient” to the users.
- Information should be timely and useful.
- Don’t make assumptions about effectiveness-- Evaluate behaviors, beliefs, and users!
“Educate for the future because future generations will be our judge.”

Thank You!
Any Questions?

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