Managing Visitors in Wilderness Environments

Parks Canada's Western Workshop

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Summary Proceedings

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&
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Acknowledgments

This workshop was coordinated by a team of individuals from Parks Canada including: Tom Elliot, Yukon District Wilderness Specialist; Peter Clarkson, Jasper National Park; Anna Gajda and Grant Peregoodoff, Gwaii Haanas National Park Reserve/Haidi Heritage Site; Doug Eastcott, Banff National Park; Perry Jacobson, Kootenay National Park; Per Nilsen, Headquarters; Brian MacDonald, Pacific-Yukon Regional Office in addition to Pam Wright from Simon Fraser University. This team approach was utilized to ensure that a wide range of interests and Park issues were addressed and to spread out the work load. Grant, Anna, Peter, Tom, Doug and Pam also served throughout the week as workshop moderators. Funding support was provided by Pacific-Yukon Region and by Headquarters with additional support provided by SFU's Centre for Tourism Policy and Research. In addition, many of the Park's contributed by providing assistance for staff traveling to the workshop and to the coordinators.

While this workshop was designed to focus on visitor management in wilderness environments for Parks Canada, we recognized the need to look to other agencies for ideas and advice as well as to share the results of our explorations. The participation of representatives from: U.S. National Parks (in particular the Alaskan Parks and North Cascades N.P.); B.C. Parks; B.C. Lands; B.C. Forests; the U.S. National Forest Service Aldo Leopold Research Institute; and a number of Canadian universities (Malaspina University/College, University of Northern B.C., University of Waterloo, Simon Fraser University) made this workshop much more successful and enjoyable.

The operational details of the workshop were coordinated by faculty and graduate students specializing in protected areas management in the Centre for Tourism Policy and Research at SFU's School of Resource and Environmental Management. Facility arrangements were coordinated by Alison Davis and Siobhan Jackson and on-site registration by Dawn Kelly. Workshop note takers included: Dawn Kelly, Andrew Day, Rob Gorter, Kathryn Lack, Stewart Dill, Eva Riccius, Janet Dyment, Denise Taschereau, Siobhan Jackson, Alison Davis, and Karen Vagelotas. Summary proceedings were prepared by Alison Davis and Siobhan Jackson. Special thanks to Judy Otton from Banff National Park for coordinating and preparing the workshop result summary included at the end of these proceedings.

Setting the Stage

What is wilderness? How do we transfer one business license to another? How do we monitor ecological and social impacts? Is helicopter flightseeing appropriate in a national park? How do we figure out what we will charge for Park services? To help address these questions, a variety of new tools have been developed over the last 15 years to assist in wilderness and backcountry visitor management. While managers, planners and researchers have been utilizing these tools there has been a general lack of coordination between these initiatives resulting in duplication of research efforts and/or inconsistent approaches in dealing with wilderness management issues. To address these problems, Parks Canada and Simon Fraser University hosted a 5 day workshop in March of 1996 for Parks Canada managers and for cooperating researchers and partners in western Canada. The workshop focused on skill development, networking, information sharing and finding solutions to common issues. The workshop was designed to be practical in nature with a focus on priority wilderness/backcountry management issues including: ecological, social and cultural research and monitoring, appropriate activities assessments, revenue generation, commercial activities management, and shared decision-making with stakeholders.

Workshop Objectives

The objectives of the workshop were to:

- provide training and skill development pertaining to: ecological, social and cultural impact monitoring techniques, appropriate activities assessment, designing willingness-to-pay studies, and dealing with stakeholders in shared decision making processes;
- identify research needs to academic researchers who might be able to conduct the research;
- fine tune existing or potential research proposals using “leading edge” methodologies;
- explore avenues for allocating recreational use opportunities to commercial outfitters and guides in wilderness settings where use opportunities are limited; and
- share experiences with current wilderness management techniques, coordinate efforts, identify research priorities, and become more consistent in the application and implementation of these techniques within all national parks.

Common Threads

The questions that led to the workshop addressed a number of seemingly independent issues: appropriate activities assessments; ecological, social and cultural impact monitoring; revenue generation; commercial business management; use allocation; and public participation. The questions, the issues, and the solutions are not, however, independent. The issues of visitor management in parks, backcountry areas or wilderness — whatever you call it — are complex and inter-related. Understanding and learning how to use some of the visitor management and monitoring tools and techniques can be the first step in helping the park manager address a range of these issues. Central to all of these questions and these techniques is the ability to formulate clear, specific, detailed and measurable objectives at each level of planning and management. Throughout the five day workshop, managers, practitioners and academics associated with Parks Canada and from a number of other organizations discussed the tools and techniques and provided participants with the opportunity to share information and expertise in order to help in planning and managing visitor use in the wilderness environment.

The Wilderness Paradox: Perspectives on Managing Wilderness

In the introductory session, we asked our speakers to set a context for wilderness management from both an ecological and a cultural perspective. Ken Lertzman, a forest ecosystems professor in the School of Resource and Environmental Management and member of the Clayoquot Sound Scientific Panel, provided us with an overview of concepts of ecosystem management that pertain in particular to wilderness management and discussed some key lessons that wilderness managers need to remember. Sandra Zacharias of Deva Heritage Consulting in Vancouver integrated the concept of cultural landscapes with ecological landscapes and discussed the socially-defined and artificial nature of the term "wilderness".

Taking the Ecosystem Perspective

Ken Lertzman, Simon Fraser University

Ecosystem-based management focuses on key issues rather than data and details of wilderness management. It entails: Ecosystem Science + Landscape Ecology + Management.

Ecosystem Management is: management driven by explicit goals, executed by policies and practices, and made adaptable by monitoring and research based on our best understanding of the ecological interactions and processes necessary to sustain ecosystem composition, structure, and function. (Ecological Society of America 1995).

Groups using ecosystem-based management include: Parks Canada; Greater Ecosystem Concept; Agee and Johnson (1988); FEMAT (1993); Grumbine (1994); Scientific Panel for Sustainable Forest Practices in Clayoquot Sound (1995).

Ecosystem-Based Management Outline:

1. Some key lessons from ecosystem dynamics
2. Dominant themes of ecosystem management
3. Three issues related to protected areas
4. Scientific panel for sustainable forest practices in Clayoquot Sound
5. Parting thoughts

la. Key lessons from ecosystem dynamics

- Natural disturbances have had major impacts on ecosystem dynamics at all scales of space and time: natural landscapes are dynamic
- Ecosystems exhibit diverse pathways of change in response to disturbances
- Natural Landscapes are not steady state landscapes

1 b. Key lessons from ecosystem dynamics

- Ecosystem structure is strongly linked to biodiversity at multiple spatial scales
- Matrix and patches/context and content
- Planning at large scales of time and space is critical
- Management makes a difference

2a. Dominant themes of ecosystem management (after Grumbine 1994)

- Ecological Integrity
- Ecological Boundaries
- Hierarchical Context
- Data Collection
- Monitoring
- Adaptive Management
- Interagency Cooperation
- Organizational Change
- Humans Are Embedded In Nature
- Values Count

2b. Ecological integrity as a Goal of Ecosystem Management (after Grumbine 1994)

- Viable populations of native species
- Represent all native ecosystem types in a system of protected area
- Maintain evolutionary and ecological processes
- Manage over periods long enough to maintain evolutionary potential
- Accommodate human use and occupancy within these constraints

2c. Ecosystem approach to reserves

- Reserves at different scales meet different objectives; coordinate tactics across scales
- Some objectives will vary with administrative context and others will not
- Reserves and the more managed matrix must function together to support multiple objectives
- In general: coarse-filter first, fine-filter second
- Focus on maintaining ecological processes or their surrogates as a basis
- for providing habitat for a broad range of species

3. Three Key Issues Related to Protected Areas:

3a. Integration of processes at multiple scales

- Processes act at a broad range of scales
- Top-down vs. bottom-up processes
- Different sources of data with differing resolution at different scales
- Little directly applicable knowledge for larger and longer scales
- Natural disturbance regimes and the landscape mosaic
    - Lots of research, policy, problems, and success over the last few decades
    - But successes mostly at small scales
    - Steady state vs. non-steady state mosaics

- "mosaic of non-steady-state mosaics" (Baker 1989) i.e. Yellowstone and Boundary Water Canoe Area fire regimes

3b. Ecological boundaries and content vs. context

- Transboundary problems with mobile wildlife
- Transboundary problems with invasive exotics
- Content: PA's (protected areas) rarely designated for explicit goals of
- ecological content
- Context: rarely managed to support goals of PA's

3c. Data requirements?

- For decision-making, monitoring and adaptiveness
- Saunders (1994): data quality was best explanatory variable for species in protected areas
- Can you project expected future dynamics based on understanding of
- historical changes?
- Appropriate action in the face of uncertainty?

4. Scientific Panel for Sustainable Forest Practices in Clayoquot Sound

- Multi-disciplinary, 18 members
- Based on science and traditional knowledge
- Broad mandate to rethink forest planning and practices
- Focus on maintaining integrity of rainforest ecosystems in managed watersheds
- Recommended "Sustainable Ecosystem Management"
- Focused on the elements for forest ecosystems to be retained through harvest, not just those removed
- Establish a hierarchical planning framework for management and monitoring
- (regional, sub-regional, watershed, site)

5. Parting Thoughts

- These are dynamic non-steady-state systems: focus on ecosystem trajectories
- Adopt explicit goals for ecosystem trajectories
- Consider the data required to establish goals and to monitor progress
- Plan at large/long scales
- Consider context and content
- Experimental management and planning
- Humans as participants in ecosystem dynamics
- Climate change?

Cultural Resource Management and the Concept of Wilderness

Sandra Zacharias, Deva Heritage Consulting Ltd.

Opening Remarks

This talk presents some results of an exploration I began in 1993 when undertaking cultural heritage research in the area of integrated resource planning and management. In the course of doing these studies and discussing heritage values in relation to recreational and wilderness values with staff in resource related ministries in British Columbia, I had to learn to speak their language, and when I did - I realized that their words could not express the world as I perceived it.

Significant Cultural Heritage Resource Values:

1. BC is a cultural landscape. BC's landscape is an environment managed and modified by several thousand years of traditional aboriginal land and resource management practices. Many of these practices have left physical traces.

2. Cultural resource managers (CRM) and wilderness area managers do not view BC as a cultural landscape, but rather as containing cultural features within a natural environment.

3. Recognition that Aboriginal land management techniques have modified and altered BC's environment over the long-term can lead to new approaches to cultural and environmental research and management. Management approaches accepting the basic assumption that BC is a cultural landscape will have a more informed understanding of limits to acceptable change.

Key Points

- BC is a cultural landscape that has been modified by humans for a longtime. Aboriginal landscape and resource management includes such activities as prescribed burning (N. Turner), herd culling, and using fences to direct migration flow. Resource use is seasonal and species-specific. Specific examples include: the Haida people felling saplings to cushion the felling of a large tree; the Canim Lake band stocking fish in small lakes; the Nisga'a establishing and nurturing shellfish beds, as well as designating hunting and berry harvesting areas to maintain resources.

- Disruption due to non-Aboriginal contact, settlement, and disease, as well as Eurocentric assumptions, resulted in the appearance of no use of the land. European settlers considered this landscape to be void of any human use--pristine, untouched wilderness. Wilderness managers do not recognize cultural landscapes and the influences of human occupation. If recognition does occur, it is generally site-specific (i.e. archaeological site), with boundaries rather than recognizing the complex of cultural features containing broad boundaries with smaller, special-use areas occurring within.

- Parks Canada defines a cultural landscape as any modified geographical area within human meaning attached. This definition covers most of BC. Little recognition for potential broad-scale Aboriginal management has occurred however. Furthermore, the definition of wilderness as 'pristine' and 'untouched' completely negates the presence and use of resources by Aboriginal peoples. To separate Aboriginal peoples from the land through the assumption of wilderness as being apart from humans could be perceived as a racist action: one person's wilderness is another person's home.

- Holistic approach to cultural resource management using concepts of landscape archaeology offers an alternative management approach that starts with the assumption that an entire area may be a cultural relic.

- Within restoration ecology, current techniques need to be re-examined to assess whose model is an area being restored to

Questions to Ponder

- How is the concept of cultural landscape different from ecosystem as a unit with people? It is a question of focus. A cultural landscape approach focuses on the role/effects of people within the ecosystem. Another approach might focus on the role/effects of bears, or of water within the ecosystem, for example.
- Is *wilderness* a place where people have nothing to do with landscape management? The concept still prevails that nothing happened upon the landscape prior to non-Native arrival rather than the land being an abandoned cultural landscape.
- Can the idea of Aboriginal landscape use and management be taught to the general public? In order to educate the public about past land management techniques and increase positive relationships with Aboriginal peoples, this form of public education should take place.
- What are the implications of this for modern protected areas management? This could involve the following: a shift in public perception; recognition and respect for other cultural values; recognition that cultural heritage has contributed to current landscape conditions.

Concluding Remark

Recognition of traditional aboriginal environmental management, and that British Columbia is a cultural landscape need not lessen its beauty. As for the need for frontiers that the dominant society seems to have which has helped create the concept of ***wilderness*** - a recognition that B.C. is a cultural landscape may help us understand that a frontier need not be physical. Frontiers that are mental or emotional can be equally as challenging. Learning to perceive the physical landscape in new ways, and to understand and respect cultural boundaries is part of the process in reconceptualizing B.C. as a cultural landscape.

Applying Science to Managing Wilderness and the Wilderness ExDerience

What is wilderness? What is a wilderness experience? What are indicators of either? In this session we focused on examining indicators of wilderness and the wilderness experience. Wilderness researchers Alan Watson and Dave Cole from the U.S. Forest Service's Aldo Leopold Institute provided an introduction to indicators and monitoring and then discussed social and ecological indicators of the wilderness experience. These two presentations were followed by Paul Lauzon from the Calgary regional office who discussed methods of monitoring levels of use in backcountry settings and the relative advantages and disadvantages of these techniques.

The Monitoring Context

David Cole, Aldo Leopold Institute

Developing Some Common Terminology

Indicator: Clear, specific measurable, i.e. % of vegetation loss on a campsite defined in some way, measured in quadrats etc. *Caution: Often we propose indicators that are not measurable.

Standard: Quantitative statement of a maximally/minimally allowable indicator.

How to Develop a Monitoring Program

1. Understand rationale for monitoring
2. Review what others have done
3. Decide what to monitor
4. Decide how, when, and where to monitor
5. Decide how the data will be used
6. Implement monitoring:
   - document
   - train
   - data management system
7. Use the data
8. Evaluate and refine

Why Monitor At All?

Use some sort of process (LAC, VIM, VERP) to determine if management objectives are being met. If not, it indicates a need for a in change in management. Using objectives is an efficient process because only monitoring the things that need to be monitored. However this is not the only reason for monitoring. It is also worthwhile to monitor things that are less precise e.g., for which we are really unsure of what management objectives are (surveillance monitoring).

For more intangible things e.g., wildlife -- it may be hard to set quantitative objectives but we should still monitor anyway. Perhaps by setting proxies.

Types of Campsite Monitoring Systems (from David Cole's Monitoring Sourcebook, US Forest Service and Aldo Leopold Institute; and Jeff Marion, US National Park Service)

1. Photo point photography

2. Condition class estimates
3. Multiple parameters: rapid survey
4. Multiple parameters: detailed measures

Desirable Characteristics of Parameters to be Monitored

1. Significance
2. Relevance
3. Responsive
4. Efficient (Monitor 1 thing that is a good surrogate for a wide variety of things might be better. Caution: Often suggested surrogates are really just the ones we know the most about and may not necessarily be the best indicators).

Each area is fairly unique, consequently, "standards" and even "indicators" are not necessarily transferable. Therefore, you need to adapt standards and indicators for each site. Standard measurement methods will still be useful for those indicators that are common across sites.

Questions About Current Conditions

What questions do you want monitoring data to be able to answer? For example, with campsite monitoring:

1. Where are campsites located?
2. Which places have too many campsites?
3. Which types of impacts are most severe?
4. Which campsites are problems in terms of:
   - overall condition?
   - individual types of impact?
5. Which places are problems in terms of: [expand scale]
   - overall condition?
   - individual types of impact?

* Spatial distribution of the severity of these impacts suggests a lot about how management might have to vary from place to place.

* By thinking through what questions you wanted to answer it leads you to very different kinds of techniques, including associated indicators and standards.

Questions About Trends in Condition

1. What is the trend for the wilderness or places in:
   - number of campsites?
   - overall campsite condition?
   - individual types of impact?
2. **What is** the trend on individual campsites in:
   - overall campsite condition?
   - individual types of impact?

* Different monitoring techniques do better or worse jobs at answering different types of questions.

Desirable Characteristics of Monitoring Techniques

1. Quantitative
2. Accurate
3. Precise
4. Sensitive
5. Cost-effective

* There is always a trade-off between these above items. Ultimately, we want methods that are both accurate and precise; however, we often have to make trade-offs between these. If we want to monitor trends, accuracy is not as important as precision (assuming that the direction of bias is the same of over time). If our primary objective is not trend but current conditions, then accuracy becomes more important. A few quadrat measuring techniques can predict change fairly precisely, although not necessarily accurately.

When To Monitor?

1. Timing
2. Frequency: How frequently do you have to monitor campsites? Some baseline information is required to assess how quickly things change. Some things to consider with respect to. monitoring frequency include:
   a) High uncertainty about:
      - conditions
      - rates of change
      - management effectiveness
   b) Conditions that are close to standards
   c) Rapid change in external pressures — e.g., where more is going on.

How to Monitor?

1. Census vs. Sample: Dependent on questions trying to answer, i.e. random camping and concern about number of campsites. A sample may be a poor way of understanding; however, if designated campsites, then a sample may be more appropriate.
2. Random Sample vs. Purposive Sample: Do you want to characterize what is happening to all of your sites? If so, then random sample.
3. Stratified Sample: For example, some light vs. heavier use sites with a sample of each.

All of the above decisions are driven by management questions you are trying to answer.

Implementation

Monitoring programs are often designed “in the office” and then given to the folks who are doing it on the ground. Because of this, designed techniques must be adapted to the ground. This requires: ground truthing; field testing some methods; discussing implications of methods and then developing some consistency in the measures so that everyone does them the same.

* It is very important that the process is documented in a living document that notes updates and other changes.

* Training should also occur to make sure that people are interpreting things the same way.

Use the Data

Data management systems are essential to using the data. These must be built-in early, and driven by how the data is going to be used.

Evaluate and Refine

Must think about errors associated with the data and acknowledge these prior to making management decisions. There is a lot of potential to make an erroneous conclusion, therefore, there is a need to assess trade-offs between possible outcomes, for example: Is it worse to conclude that some change occurred when it did not? Or is it worse to conclude that there was no change when in fact there was?

Campsite Monitoring Option: Frissell Condition Class System

1. Ground vegetation flattened but not permanently injured.
2. Ground vegetation worn away but only around centre of activity.
3. Ground vegetation worn away from most of site: humus and litters still mostly intact.
4. Bare mineral soil widespread; tree roots exposed on surface.
5. Soil erosion obvious; trees reduced in vigor or dead.

Advantages:

- one of simplest systems
- more qualitative
- good at providing certain types of information although not as precise
- low in amount of information, moderately precise, cheap
- problems: mixing of apples and oranges etc.
- takes very little time
- tells you about: where campsites are, which places have too many campsites, which are highly impacted but when we do it over time its not sensitive to small changes and hard to measure changes to individual indicators or components.

Detailed Information of Variable Quality

- rapid estimation process
- recognize that not necessarily as precise
- can be aggregated in a false way to come up with an impact index
- lot of information, precision is very low, cost is relatively low - moderate

Precise Measures - i.e. distances of barren core area etc.

- get measurements of same items but increase precision
- lots of information, high precision, but not cheap
- minimum time is 1 hour

* More precise techniques are better for answering questions such as: Which types of impacts are most severe in the wilderness or portion of wilderness, and what is the trend on individual sites?

* If questions to answer are: What types of impacts are most severe on individual sites? and: What is the trend for different types of impacts? Then we must use the most precise technique.

Conclusions

1. **No** inexpensive way to precisely monitor:
   - trends for individual types of impact on individual campsites

2. Least acceptable effort - condition class with estimates and photographs on all campsites

3. Problem with this approach is no estimates for types of impact and no sensitive measures of trend in condition

4. Shortcomings can be alleviated by combining techniques e.g., census of all sites using Frissell approach with samples on some specific sites.

Determining Indicators of the Wilderness Experience

Alan Watson, Aldo Leopold Institute

Why do we need indicators ?

- Without indicators, we have no idea if things are improving or deteriorating
- Indicators act as a communication tool to disseminate research findings to policy makers

Good indicators should be:

- Significant
- Measurable
- Reliable
- Sensitive
- Cost-effective
- Efficient

So what's the Problem ?

1. Lack of knowledge about SIGNIFICANCE. Managers have a hard time figuring out what is truly significant.
2. Defining indicators in SPECIFIC terms
3. Lack of RELIABLE monitoring methods, i.e. how do we measure?

Determining indicator significance:

- Use working groups such as task groups, i.e. Bob Marshall, Selway-Bitteroot, Hells Canyon. A perceived problem with this is that the Federal Advisory Committee limits the role of the public in decision making, and it is therefore difficult to reach consensus.
- Public resnonse to agency proposals, i.e. Frank Church - River of No Return. This entails an interdisciplinary team working public input to create plans. A perceived problem with this is that the public is responsive, however, not creative.
- Visitor Survey, i.e. Cohutta. This method tests a list of potential indicators on the public to understand the indicator's relative significance. A perceived problem is that on-site interviews may differ from off-site interviews.

Current efforts by the Aldo Leopold Institute:

Case Study 1: Juniper Prairie Wilderness

Objective: Attempting to determine visitor experience in this region

Methods: experience sampling during the trip; group interviews at the exit.

Findings: 4 Dimensions of Wilderness Experience (in order of priority)

1. Interaction with nature (i.e. overhanging trees, animal sightings; dependent upon the number of people)
2. Challenge/primitive/way finding (i.e. route finding on swamp; dependent upon the number of people on the river)
3. Interaction with people (affected by sounds and sights of people)
4. Timelessness (time for reflection; congestion at the end).

Moving away from quantitative research, this methodology allowed us to understand this area better than any other previously studied area. Prior to this study, the focus had usually been on crowding and visitor satisfaction.

Case *Study* 2: *Frank Church: River of No Return*

Objective: Again, attempting to determine visitor experience.

Methods: Interdisciplinary scientific team attempting to determine appropriate indicators to determine visitor experience.

Findings:
1. Determined that this is really a river running through wilderness, not really a wilderness river
2. Experience is dependent upon: guides; group leaders; structures; jet boats; planes
3. Indicators found to be:
   - length of river trip
   - length of time at campsite
   - time spent at hot springs
   - amount of privacy
   - opportunity to fish
   - evaluation of behavior or others
   - opportunities to learn about natural or cultural history

Here again, a shift away from the traditional issues of crowding and satisfaction occurs.

Conclusion:
- Selecting indicators is often the most crucial step
- If you decide that monitoring is a requirement, make sure to take the time to figure out what indicators are required to adequately assess a situation
- Get to an agreement regarding what the significant indicators are
- Today, we have only talked about significance, however, remember that there are lots of other factors when deciding upon indicators

Alan's Parting Question: Do indicators change over time?

Managing Visitor Impacts in the Backcountry

Dave Cole, Aldo Leopold Institute

Introduction:

There are a wide variety of impacts caused by impacts. Impacts are increasing and are severe, localized and variable in magnitude.

Lessons:

- Be proactive! Don't let sites get impacted initially.
- Put energy into ensuring old sites are restored and that undamaged sites remain that way
- Need to consider the consequence of where people will go when a site gets closed.

Management Directions:

- Control type of use
- Encourage low-impact behaviours
- Seasonal avoidance during vulnerable stages
- Encourage use of durable skills
- Confine use in popular sites
- Disperse use in remote places (where monitoring will be crucial)

Recreation Ecology Research:

- Focus monitoring by understanding types of impacts
- Identify positive feedback mechanisms
- Identify trends in conditions
- Increase restoration success
- Assess appropriateness of use: concentration vs. dispersal
- Focus on visitor education efforts
- Identify durable vs. sensitive surfaces

Visitor Impact Research Outline:

- Implications of visitor impacts on management decisions
- What visitor impact research can do for you

Questions:

1. What are the ecological effects, types of impact, and magnitude of different recreational activities?
2. How does magnitude change?
3. What factors influence magnitude of impact?

Background:

- Work tested in multiple environments
- Mainly studied dispersed campsites and trail situations
- A little work done on the effects of horses in the backcountry

- In terms of knowing what the effects of recreation are, some obvious factors have been successfully identified. In spite of this, however, more sophisticated research techniques could be used to identify positive feedback loops through such things as impact flowcharts. Such tools could be used to assess trail erosion for example.

Through identifying system attributes that could indicate positive feedback to impacts, management could be:

a) more PROACTIVE vs. REACTIVE

b) identify areas that haven't been heavily impacted

- Some areas must be actively managed to restore a systems health. For example, in some campsites where vegetation and soils have been heavily impacted, simply replanting native vegetation will not suffice due to major soil damage.
- In terms of looking at change over time, once a site has been created, the initial impact is very long lasting. Recovery varies with site and takes a lot longer than the initial impact. Ten years of non-use does not result in very much restoration (Note: different ecosystems will respond differently to effects of closures). Significant vegetation damage occurs from 4-10 nights of camping on a patch. Within this particular study area, extremes are ideal: either nightly impact or else very rare impact of 3-4 nights per year.

Variables to consider:

- type and behaviour of users i.e. campfires vs. stoves
- large vs. small groups
- low-impact travel vs. high-impact
- foot travel vs. hoofed travel (horse vs. llama)

This information is used to develop regulatory programs and educational programs to focus on types of users.

Conclusions ***from*** *studies examining restoration efforts on trampled sites reveal:*

1. Tremendous variation between vegetation types
2. Resistance and resilience are different components of durability
3. Little variation in durability between regions
4. Relationship between durability and elevation
5. Plant morphology explains most variation in response
    - graminoids and matted forbs highly resistant
    - erect forbs not resistant
    - shrubs not resilient

Implications: Redirect trails and campsites from sensitive areas to more durable sites. Plant morphology allows prediction of sensitivity, for example: graminoids and matted forbs are highly resistant, erect forbs are less resistant, and shrubs are even less resistant (Note: resistance and resilience are two different components of durability)

Monitoring Levels of Use in the Backcountry

Paul Lauzon, Strategic Research & Analysis, Parks Canada, Western Regional Office

Human Use Level Monitoring: The Mythical Beast

- How do you count people in the back country? One tool we have is the permit system.
- In a graph showing trends in overnight backcountry use over nine years, the results show that there has not really been an increase in night use in the four mountain parks. With respect to day use; however, we really have no idea about use trends over time.

Why do we need the information?

- To predict crowding
- To predict user conflicts
- Better understand if visitor satisfaction is being achieved
- Estimate physical impacts on sites
- Estimate level of impacts on wildlife
- Forecast revenues and compliance assessment
- Better forecast maintenance and re-capitalization costs and time frames
- Priorities can be set for tactical spending

What information is needed?

- Number of people
- Mode of transport/user type
- Trail segment used
- Direction of travel
- Seasonality of use
- Peak weekly and daily use

What to consider when selecting a monitoring method?

- Validity and reliability
- Efficiency
- Costs: up-front and hidden
- Short-term vs. Long-term strategy
- Nature of the area: obvious access and egress points; widely dispersed use; main artery trails vs. undiscovered gems
- What user group types exist? Large groups, cyclists, horse groups etc.

Approaches to counting visitors (Hollenhorst et al. 1992):

- Self counting (permits/voluntary registration)
- Indirect counting (mechanical)
- Direct counting-human observations, surveys, cameras
- Integrated approach

Parks Canada Mountain District - Traditional Approach:

- Not systematic
- Issue related
- Old technology
- Seen as important, but not researched
- Consulted with university math/stats department

Parks Canada Mountain District - Recent Experiments:

- Trailhead visitor survey and use level counts
- New technology electronic counters
- Passive infrared triggered video camera system: alone / with human observer / with mechanical or electronic counters.
- Integrated approach

Parks Canada Mountain District: Future Monitoring strategy?

- Divide district into key representative components
- Adopt a 5-6 year cycle for monitoring
- Identify areas re: following criteria
- Need for complete integrate approach
- Either visitor or use level monitoring

Pulling It All Together: Visitor Management Strategies and Decision Making

*Understanding **the** fundamentals of the ecological, social and cultural aspects of wilderness and how to conduct research on these components is one of the first steps of wilderness management. The practice of wilderness management, however, requires the decision maker to consider all of these components together when decision-making. In this session, three researchers profiled current research projects with western Canadian National Park that have addressed visitor management issues in backcountry settings in order to provide information for decision makers. For more detail regarding any of these projects contact the researcher or the Park in question.*

Merging Ecological and Social Science Data: The Jasper River Use Study

Pamela Wright, Simon Fraser University

Overview

Managers and others involved in the planning and management of **wildland** river corridors and other protected areas face challenges of growing use, resource deterioration, commercial vs. non-commercial use allocation conflicts, and multi-jurisdictional complexity. Along with these specific challenges, are added societal changes related to increased competition for a dwindling land base, public demand for a more participatory democracy, and increased interest group pressure. Typically, the responses to these challenges have focused on the use of tools or monitoring systems that are either ecologically-based or socially-based. While the "maintenance of ecological integrity" is the paramount responsibility of Parks Canada, providing appropriate recreational opportunities for visitors is also a primary objective of the organization. While public interest and park mandates have evolved to support this more ecological style of management there is increased demand for use and pressure from private interests and partners to provide facilities and services to meet visitor needs. Working from the premise that providing opportunities for visitor experiences is a key means to encouraging public understanding, appreciation and enjoyment of ecological and cultural themes, park and **wildland** managers have provided opportunities for recreation with little knowledge of the true impacts of recreation on the environment. In the Jasper River Use Study we are integrating ecological and social tools in order to address the issue of assessing appropriate recreational activities and recreational impacts on river ecosystems.

The Study Site

Jasper National Park is the largest and most northerly of Canada's four mountain parks. In excess of 2 million people visit Jasper each year with use concentrated on the Icefields Parkway and the Yellowhead Highway. While over 95% of Jasper's total area is managed to provide backcountry opportunities, five of the major rivers in the park are parallel to major roadways and receive the majority of visitor use.

Visitor activities on Jasper's rivers and streams have been popular since the park's inception in 1907. While growth and development has occurred incrementally over the years there has been a sudden increase in a range of aquatic activities including commercial rafting, private boating, fishing and river bank uses including wildlife watching and hiking. Not surprisingly, the upswing in river use has caused a number of negative side effects. In addition to wear at egress and ingress points and other site specific impacts, preliminary data indicates that aquatic activities may be producing serious adverse effects on the riparian community, for example, Harlequin ducks *(Histrionicus histrionicus).* While a specific study of impacts of recreational use on Harlequin's was also conducted, the Jasper River Use Study was

designed to meet the need for more comprehensive planning for management of the rivers and a reexamination of current and potential recreational use.

Purpose

The purpose of this study was to provide park managers with critical information to guide decision making regarding the appropriate type and level of visitor activities, and methods of preventing or mitigating possible impacts associated with those activities. The resulting study focuses on two primary objectives derived directly from the park mission:

1. To determine the extent to which the visitor experience associated with river-related activities contributes to the development of enjoyment, understanding, appreciation and respect for natural ecosystems and cultural heritage; and
2. To identify, in a precautionary way, a system of environmentally sensitive areas within the riparian corridor and to examine in a preliminary fashion the real and potential (direct and cumulative) impacts which are, or may be, affecting the rivers' aquatic or riparian ecosystems.

Methods

To assist in achieving these objectives a three year study (1993— 1996) is being conducted by the School of Resource and Environmental Management at Simon Fraser University (Burnaby, BC) under a grant administered by Jasper National Park. A number of specific research tasks have been conducted including:

- the identification of ecological boundaries for the study area;
- assessment of current levels of use along the five rivers in the study area;
- a preliminary site assessment of primary use sites for environmental impacts;
- a combination of on-site and mail questionnaire surveys of a representative sample of users to the study area;
- development of a GIS database containing ecological and sociological information within the study area; and
- development and sensitivity analysis of a decision-tree to assist in the identification of environmentally sensitive areas.

Study Highlights

Eco-Logic Boundaries

Charged with examining visitor use along the Park's five major roaded rivers, the identification of logical study boundaries from the perspective of recreational use while managing within an ecosystem context posed a challenge. Traditionally, study areas for similar visitor impact studies and many ecologically-oriented studies have not been designed in a way consistent with ecological principles. Instead, the norm has been to set constant buffer widths around linear water features to perform analyses or to set equally artificially defined social/development related boundaries. The result is a study area limited by excessive exclusion and/or inclusions of land into the model. Constant distance buffering often excludes important data by too narrowly defining the buffer distance; conversely, it may include confounding data by too broadly defining the buffer distance. Since the riparian zone is the area of interaction between terrestrial and aquatic environments, it necessarily changes in form with topography. For the River Use Study, we have developed a dynamic buffer system that is based on three easily determined variables (Kyle, 1994). The maximum width of the river in question within the study area is used as a minimum buffer distance. The maximum extent of the flood plain as a distance from the main channel along the river is used as the maximum buffer distance. Slope class is determined from a digital elevation model and classed at 5% intervals; this data is combined with the widths determined above to

identify all areas within the minimum and maximum buffer distances and less than 5% slope. The resulting dynamic buffer is edited to remove non-contiguous islands.

Environmentally Sensitive Sites (ESA)

Riparian ecosystems contain some of the most unique habitats and species within the mountain park area. As such, all areas within the study area should be considered as sensitive areas and use and development within this corridor should occur only after careful investigation of the site specific resources of the area and the larger ecosystem context of the site under consideration for use. An ESA decision tree was developed through the research and was used to frame the analysis of the Jasper RUS sensitive areas. This decision tree and suggested zoning method was designed to be used at both a coarse and fine filter level. We employed a coarse filter application of some components of the decision tree selecting those for which we had available data. The resulting zoning map of environmentally sensitive areas should be used in that manner: as a coarse filter application based on a precautionary approach to resource protection.

Ecosystem rarity and utilization by sensitive species based on a habitat association model were components that were examined throughout the study area. In addition, we selected components from the decision tree framework and from the review of literature that were more site-specific in nature. These components included archaeological sites, river confluences, existing environmentally sensitive sites (Zone 1 and ESSs), wildlife crossings and known sensitive species utilization areas.

Primary Site Disturbance Data

Vegetation and soils provide the foundations for ecosystems. From an ecological perspective, recreational use can cause a number of impacts on these foundations including: the destruction of plant cover; reduction in species diversity; displacement and rearrangement in community structure; reduced productivity; physical, biological and chemical alterations in the soil; highly visible barren and eroded surfaces; and pollution of water resources. These initial impacts can radiate through an ecosystem and result in changes to vegetation communities, ecosystem fragmentation, as well as a variety of impacts on wildlife from changes to habitat structure and composition, to reduction or changes in food, cover or water supply. While historically most have presumed otherwise, there is a substantial body of recent research to support that there is not a direct linear relationship between levels of recreational use and impacts. Impacts vary by ecosystem and by a variety of use factors including timing of use, group size, style of use, use behaviour and intensity. To examine vegetation and soil disturbance we assessed the site core, edge and a control at 44 different use sites in the study area. We measured species change, cover, exotics, soil compaction and exposure, organic litter, root exposure, trash and other variables. Results were compared between and within sites.

Visitor Experiences and Motivations

An explicit objective of the Jasper RUS terms of reference was the identification of park experiences that were in keeping with the development of understanding, appreciation and respect of the Park's ecological and cultural history themes. Visitor's river experiences were characterized by participation in a wide range of river-related activities and for a wide range of reasons. Activities do not determine the motivations of visitors or the benefits visitors receive from those activities. However, specific activities, or forms of activities may attract people seeking certain benefits or be more conducive to achieving certain benefits. Understanding the relationship between visitor activities and visitor motivations was one aspect of examining the nature of park experience.

- The primary motivation for participating in the main activity was (in descending order): related to the natural environment; to adventure; and to education. Those benefits for which visitors reported that they had benefited the longest were: viewing and enjoying natural scenery; learning

more about the natural environment; enjoying a place that is special; experiencing new and different things; and discovering something new.

- A variety of techniques including country of origin, primary activity and benefit/motivation-based groupings (clusters) were used to compare responses to the survey. While each is useful for certain purposes, the benefit-based grouping was most useful in addressing the issue of the relationship between the visitor's experience and the Park mission.
- While these benefit-based groups share interest in many of the same motivations, certain groups have distinct motivators. Participation in specific activities was strongly correlated with motivations/reasons for participating in activities (i.e., tables 31 and 37). Rafters were more likely to participate for adventure or physical exercise motivations; day hikers were more likely to participate for physical exercise, viewing and enjoying the scenery and seeing an environment unchanged by humans; sightseers were more likely to participate for viewing and enjoying the scenery; and wildlife watchers, canoeists and kayakers ('other' group) for a variety of factors including those identified as nature/environment reasons.
- While many visitors decide to participate in their main activity in advance of their park visit (table 13), only six percent indicated that they would not have visited the park if the location to do their main activity was closed (table 13). Those who indicated that they would not have visited the park were more likely to be Canadian, local and participants in canoeing/kayaking and fishing.
- On average there was general support for all possible management actions from permanent closures to limits on the types of activities (table 19). Those least preferred activity management options were permanent closures followed by hardening sites for heavy use.
- On average, visitors somewhat to ***strongly agreed*** that Park management priorities should focus on providing educational opportunities, providing recreational opportunities, and improving existing river recreational facilities (table 20). On average visitors were most likely to disagree that encouraging commercial tourism opportunities should be a management priority.

Conclusions

The Jasper environment contains within it a unique assemblage of riverine and aquatic environments not only within the study area rivers but also in a number of other rivers throughout the Park. Each of these rivers is unique as a result of different combinations of specific soils and geological formations, the flow dynamics and hydrology of the river, and the associated habitats. The visitor's Park visit flows along these river corridors and is largely a river use experience. Directly or indirectly, Park visitors, benefit from the unique and sensitive riparian habitats. While the chance to experience the rivers' unique nature can provide an opportunity to communicate park themes and messages regarding ecological and commemorative integrity either directly through communications messages, or indirectly through the selection of activities that promote these themes, this opportunity is often untapped.

Linear development along the study area rivers particularly from transportation and utilities corridors; recreational facility developments; and to a lesser extent from river recreation use has modified significant elements of these sensitive ecosystems. The impacts associated with this land use is significant and cumulatively these impacts have a significant effect on the health of the riparian environment and consequently on the health of the whole Park. Up to now, recreational use has evolved in a relatively unrestricted fashion. Park zoning, one of the primary tools for managing recreational use and development within Parks, has not been based on the ecological and commemorative resources unique within the riparian environment and has been applied at only a broad scale. Recreational use, particularly linear use, has confounded the impacts associated with site modification and in concert with the other impacts, the riparian ecosystems are already fragmented with significant modification occurring along a number of these rivers and the potential for increased problems substantial.

The Jasper River Use Study final draft report was released on May 13, 1996 with the final document due on July 15, 1996. The recommendations were made within the context of National Park policy and the Jasper Park mission and were based on the ecological fundamentals of rivers identified in the study and the concern about the cumulative effects of activities. A series of recommendations for the management of individual river recreation activities and recommendations were also made stretch by stretch along the rivers. Some of these recommendations include reducing or removing all river use from river stretches identified as environmentally sensitive areas (e.g., the upper Maligne River, the lower Athabasca and the upper Miette) while other recommendations focused on reorienting existing forms of activities both to reduce impacts but also to provide more opportunities for the achievement of mission related benefits. In response to the release of the report, Parks Canada has undertaken a review of the document and has stated that it will make its recommendations along with a schedule for implementation by November 30, 1996.

Addressing the ecological impacts, both direct and indirect, real and potential, while providing a quality visitor experience requires action. A comprehensive river management strategy communicating the concerns, strategies and tasks associated with addressing these issues is needed. Proactive management strategies, involving visitors, stakeholders, residents and Park managers are needed to restore and preserve these unique habitats.

West Coast Trail User and Willingness to Pay Research

Rick Rollins, Malaspina University College

A recent study on the West Coast Trail in Pacific Rim National Park was aimed at examining patterns of use and willingness to pay issues. The initial survey was designed to identify the location and number of West Coast Trail (WCT) users and issues related to crowding. To address problems associated with volume on the WCT, a variety of management responses were explored including: boardwalks, bridges, and cable cars. With respect to the development of these types of facilities the issue is how much infrastructure can Parks provide in a backcountry wilderness area before it is considered overdeveloped? Parks currently communicates to users through the visitor centres at the north and south access points, resulting in little "on-trail" signage. There are further questions of how much management control should be present and visible& the trail itself, to strike a balance between maintaining the wilderness experience and managing for negative impacts of use.

Visitor surveys in 1984 and 1989 generated the following list of concerns:

- crowding
- human waste and litter
- trail conditions
- need for trailhead information
- need for ferry service to the trailhead
- effects of nearby logging

Management responses to these concerns have included the following:

- information centre has been opened at Port Renfrew (south access)
- ferry service from Port Renfrew has been improved
- pit privies have been built at some campsites
- a quota and reservation system has been implemented
- trail maintenance is ongoing

Study Highlights

In the most recent study a mail survey resulted in a 65% response rate, while a self administered questionnaire had a 50% response rate. A total of 768 surveys were completed with a {symbol 177 \f "Symbol" \s12} 3.3% margin of error and a 95% confidence limits. Generally, most visitors were very satisfied with the existing conditions and management of the WCT.

The quota system implemented in 1992 allows 52 people to start each day (26 from each end). This number was derived by dividing existing use levels by the number of days the trail operates. This effectively spreads existing use into the shoulder seasons. When visitors were asked if they thought the quota should be higher, less, or stay the same, 25% said they wanted a lower quota. Forty of the 52 daily starts are allocated through a $25 reservation fee, leaving 12 first-come, first-served starts each day. A $65 user fee has also been implemented, and goes toward trail maintenance, wardens and evacuations. It does not cover the costs of bridge maintenance and outhouse construction.

When asked if fees should be differential between Canadians and non-Canadians, Canadians generally thought they should pay less, while Germans thought there should be no fee differential.

Group Discussion Points

- How are reservation fees and user fees set?
- Is the trail infrastructure consistent with the Zone 2 designation?

A Cumulative Effects Assessment (CEA) of Proposed Projects in Kluane National Park Reserve, Yukon Territorv

George Hegmann, Axys Environmental Consulting

Overview

1. discussion of CEA
2. background to Kluane National Park Reserve
3. description of method
4. discussion of results
5. conclusions

Discussion of CEA

CEA considers:

- projects other than the one under review
- existing and future projects
- the impact of one activity on one VEC (valued ecosystem component), or many impacts on many VECs
- a broader spatial and temporal scope the with EIAs (environmental impact assessment)

Some thoughts before beginning a CEA:

- budget, time and data restrictions mean examination limited to only potentially most important effects
- can't study everything, so select a few indicators on which to focus assessment
- trade-off is greater uncertainty in predictions
- no single, prescriptive CEA approach available

Basic questions to answer:

- what is causing an effect on what?
- where is this most likely and of the highest significance?
- what level of risk is acceptable in the face of limited knowledge?

Kluane National Park and Reserve (KNPR) Background

KNPR is located in the south east comer of the Yukon Territory, about 3 hours west of Whitehorse. It borders Kluane Wildlife Sanctuary and Wrangell St. Elias National Park and Preserve (US) to its north and west, and Tatshenshini-Alsek Wilderness Park (BC) and Tongass National Forest (US) to its south. With Wrangell St. Elias KNPR forms a UNESCO World Heritage Site.

Park resources:

• wildlife	· representative areas
· vegetation	· wildlife habitat
• landforms	

Future changes:

Today

- limited access to the backcountry
- relatively few destination travelers
- most visitors to park remain in frontcountry
- small but steady growth in visitation and regional communities

Near *Future (5 to 10 years)*

- increased road access into park (trails, roads)
- licensing of more commercial activities
- more highway based facilities

Far future (+ 20 years)

- major projects to boost local tourism and resource industries (mining, pipeline)
- increased aircraft use, including helicopter access with landing in green zone

Description of Methodology

Progressive Inquiry and Test Assessment (PITA):

- a series of tests (questions) as part of a line of inquiry that focuses on CEA
- using hypotheses, test the validity of predicted outcomes from the strongest cause-effect relationships identified in the screening

Method Progression Levels:

1. screening	3. hypotheses
2. synergy	4. contribution

Method Progression Tests:

⇒ **Test 1: Screening**
Level 1: screening for environmental components
Level *2:* screening of effects on most important VECs (i.e., wildlife)

⇒ **Test** *2:* **Synergy**
Level *3:* synergies between activity areas (disturbance nodes)

⇒ **Test** *3:* **Hypotheses**
Level 4: for each species, for certain activities and nodes, what is effect?
Level 5: for each activity what is effect on wildlife?
Level *6:* what is combined effect of all activities?

⇒ **Test *4:* Contribution**
Level *7:* contribution of each project on overall cumulative effects

Discussion of Results

Screening:

- what are the most significant activities and what generally are their effects?
- results of earlier screening reports showed that:
  - most proposed projects in park resulted in local and mitigable impacts (i.e., not significant)
  - that if any serious adverse effects were to occur, that they would be on wildlife (not air or water quality, terrain, soil or vegetation)
  - limited data on wildlife populations

Indicators of change:

• grizzly bear	· moose
• dall sheep	• golden eagle
• mountain goat	

Synergies (interactions) can occur between activities if:

- far ranging species come into contact with many nodes (e.g. bear, moose, wolf) and suffer adverse effects
- far ranging human activity crosses over various nodes (e.g. flightseeing, backcountry hiking, rafting, snowmobiling)
- a human activity in one node creates a sensory disturbance (e.g. noise) that can be perceived by the VEC while in another node
- activities also occur at the same times of day

Cause and effect relationships:

Impacts	Effects
• noise and light	• habitat loss
• disturbance of land	• habitat fragmentation
• movement of vehicles and people	· alienation of habitat
• physical barriers	· obstruction to movements
• hunting	• direct mortality
	· removals

Hypotheses line of inquiry:

- effects on viability of local and regional populations
- effects on ecological processes
- effects projected to future activity levels
- combined effect of more activity throughout the region

Analytical tools:

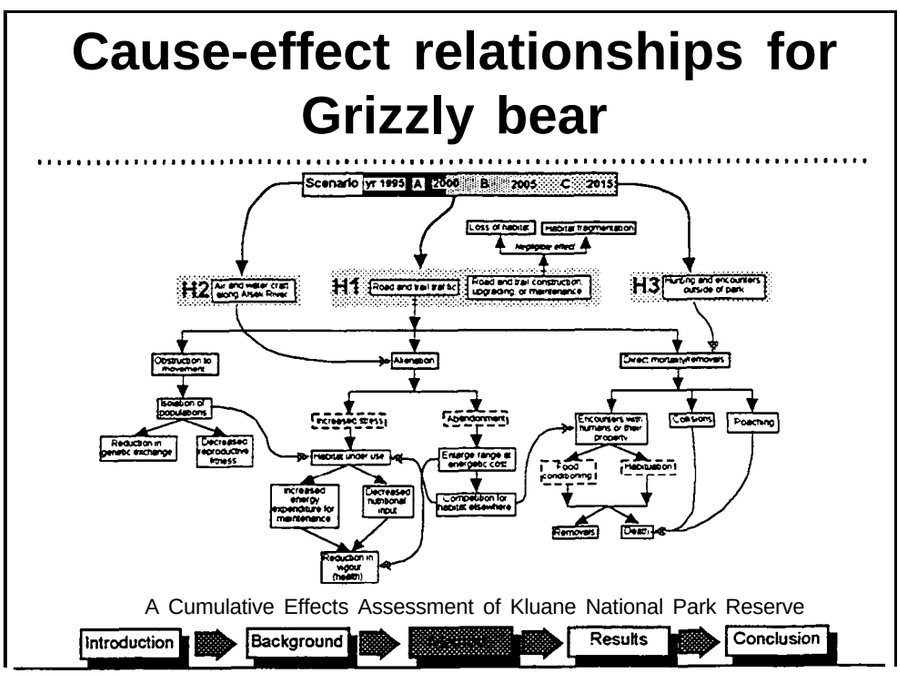
• disturbance nodes	· conservation principles
· zones of influence	· ecological principles
• disturbance factors	· adaptive management
· scenarios	·

Basis of hypotheses assessment:

- literature on wildlife response
- available field survey data
- best professional judgment

Hypotheses format: *Hypotheses X is probably true [is not true] in scenario Y*

- *e.g.* road and trail use in the Dezadeash, Kaskawulsh and Slims River valleys will adversely affect grizzly bear survival in the park
- specific about species, impact, time and location
- expressed as a **probability** (reflects uncertainty)



Conclusions

Most intense areas of activitv:

Inside Park	Outside Park
• rafting and aircraft overflights along the Alsek-Kaskawulsh River valleys	• hunting and highways in Aishihik region
• day use area at Kathleen Lake, boating at Mush Bates and Alder Lake:	· aircraft use and human activity in communities along Alaska Highway
• aircraft landings/takeoffs, overflights, boating, hiking, camping and rafting at Lowell Lake/Goatherd Mountain	• Mining in the Kluane Wildlife Sanctuary (north)
• hiking and camping at Sheep Mountain and Slims River valley	

Most significant (strong) node interactions:

- Townsites Alaska Highway and Aishihik region
- Alsek-Kaskawulsh River valleys (rafting, aircraft overflights and trip support) Alsek Pass and Lowell Lake/Goatherd Mountain
- Hiking trail network Lowell Lake/Goatherd Mountain
- Sheep Mountain Slims River valley (hiking and aircraft overflights)

Most significant projects in park:

- Alsek River rafting management
- Aircraft support at Lowell Lake for rafters and hikers
- Alsek Pass road and day use area
- Boat shuttle to Lowell Lake

Most significant projects and activities outside park:

- hunting
- mining
- highway travelers
- road proliferation
- community growth

Most affected species:

- grizzly bear and mountain goat
- effects on remaining species probably not significant provided that the recommended mitigation measures are applied effectively
- most significant effects: direct mortality, reduction in genetic exchange due to blockage of movement corridors, behavioural changes due to increased visitation leading to habitat alienation

Species specific conclusions:

Species	Activity	Location	Survival affected	Years
Grizzly Bear	road/trail use	Dezadeash, Kaskawulsh, Slims Rivers	✔	5 to 10
Grizzly Bear	air/water craft use	Alsek River valley	✔	5 to 10
Grizzly Bear	hunting and encounters	Outside Park	✔	5 to 10
Dall sheep	road/trail use	Sheep Mountain	✖	
Dall sheep	aircraft use	Sheep Mountain	✖	
Mountain Goat	trail/aircraft use	Goatherd Mountain	✔	5 to 10
Moose	recreation and hunting	Alder Creek, Mush-Bates Lake	✖	
Golden Eagle	hiking/aircraft	Slims River	✖	

Impact specific conclusions:

Activity	Location	Species	Survival affected	Years
aircraft	Green Zone	all	✔	5 to 10
road/trail use	Green Zone	all	✔	5 to 10
river rafting	Alsek River	bear, goat	✔	5 to 10
direct mortality	Region outside park	all	✔	20
all	Park and region	all	✔	20

Greatest contribution to overall effects:

- rafting management
- rafting/hiking support at Lowell Lake
- Alsek Pass road and day use area
- Boat shuttle to Lowell Lake

Mitigation recommendations:

1. visitor, local resident and industry education;
2. commercial operator permitting and adherence to industry guidelines or park policy;
3. aircraft landing restrictions, minimum cruising altitudes, no-fly zones, and flight corridors;
4. rafting party size restrictions and scheduling quotas;
5. backcountry trail registration and quotas;
6. bearproof food containers for hikers;
7. concentration of highway traveler visitors in local controlled areas;
8. garbage disposal controls;
9. use restrictions according to park management zones;
10. controlled (gated) access roads;
11. trail hardening;
12. area and trail closures;
13. adherence to no hunting zones; and
14. poaching patrols.

Wildlife research recommendations:

- Grizzly bear: population and trends, dispersal and immigration, use of movement corridors, degree of habitat alienation and available quality habitat, significance on park bear population of mortalities outside park
- Dall sheep (on Sheep Mountain): verification of habitat carrying capacity estimates and degree of movement between Sheep Mtn. and Donjek (and how influenced from activities in Burwash area), monitoring of nature of sheep response to hikers
- Mountain Goat: more frequent monitoring of Goatherd Mtn. goat population, monitoring of aircraft and trail use
- Moose: effects of hunting inside and outside park on park population
- Golden eagle: more information on status of park population

Human use research recommendation:

- future regional trends in tourism growth and hunting
- backcountry visitor use trends and investigation of possible control measures
- aircraft use patterns (e.g. flightseeing trips and backcountry support)
- implementation of trail use quotas for high use trails and degree of access afforded by roads outside park
- peak use conditions for aircraft and rafts, and monitoring of good camping practices (e.g. food storage) along Alsek River
- continued use of warden surveys and field observations (by wardens and visitors) as problem "flag raisers"

General recommendations:

1. make conservative assumptions
2. follow Parks Canada's guiding principles
3. use risk assessment
4. practice adaptive management approach

Implications to visitor management:

- use results of assessment only to indicate possible trends
- identifies areas and species at greatest risk of unacceptable change (e.g. hotspots)
- identifies projects which may result in greatest adverse change
- suggests lead time before changes become noticeable
- identifies regional activities that impact on the park
- suggests mitigation measures and research needs

Developing a Cultural Monitoring Framework

Monitoring and management in wilderness areas has traditional focused on monitoring social and ecological conditions. A number of research ***frameworks*** *and methods discussed in previous sections have been developed to assist in monitoring activities for these two components of wilderness. In contrast, monitoring the condition of the cultural resource and cultural aspects of wilderness has yet to receive much attention. Grant* ***Peregoodoff from*** *Gwaii Haanas National Park Reserve and* ***Haida*** *Heritage Site and Daryl Fedge, coast archaeologist* ***from*** *the regional* ***office,*** *introduced the concept of cultural monitoring. Following a slide presentation/overview of cultural resources (not reproduced here), Grant outlined the Gwaii Haanas experience and the initial thoughts related to the development of* ***this*** *framework. Workshop participants then discussed the issue of cultural monitoring with Daryl and Grant. Exerpts of this* ***draft*** *framework are presented here but for an updated version readers should contact the authors.*

The Gwaii Haanas Experience

Grant Peregoodoff and Anna Gadja, Gwaii Haanas National Park Reserve/Haida Heritage Site

Gwaii Haanas Agreement

Gwaii Haanas is co-managed by Council of Haida Nation and Government of Canada (Parks Canada).

Monitoring and Managing Impacts in Gwaii Haanas

Campsite monitoring and management has social, ecological, and cultural components. The social components were studied in al995 visitor survey. The ecological components are being developed. The cultural aspect uses a framework to develop 3 components: Archaeological research; traditional knowledge and use; and industrial cultural resources.

Gwaii Haanas Campsite Cultural Resource Monitoring Framework

Cultural Resource Management Policy

A cultural resource is a human work, or a place that gives evidence of human activity or has spiritual or cultural meaning, and that has been determined to be of historic value. Cultural Resource Management means that we are stewards of that part of the environment that encompasses places and their associated features relating to the human environment.

Parks Canada's Cultural Resource Management Policy is based on five components:

Value: Cultural resources have historic value. What historic values exist at the campsite locations and are they being impacted?

Public Benefit: Public benefit within the context of national park legislation and policy is derived by protecting and presenting cultural resources for the appreciation and understanding of present and future generations. A monitoring program will permit for an enhanced understanding of the condition of cultural resources in Gwaii Haanas. It will also determine if activities occurring at campsite locations threaten cultural resources.

Understanding: Knowledge and understanding are the basis for care and presentation of cultural resources. A monitoring program will allow for a greater understanding of potential impacts.

Respect: Cultural resources are to be managed with continuous care and with respect for their historic character. A cultural resource monitoring program will help to ensure that the resource is respected and available for future understanding, appreciation and study.

Integrity: The information gathered from archaeology, traditional use/knowledge and historic industrial activity for cultural resource monitoring at campsites in Gwaii Haanas will enhance the accuracy in which the human history of Gwaii Haanas is commemorated.

CRM Techniques

Objectives:

1. To provide information on the present condition of cultural resources at campsite locations.

2. To provide information for management purposes in a standardized format that can be used to document changing conditions of cultural resources at campsite locations over time.

CRM Techniques

Cultural resources at Gwaii Haanas campsite locations will be monitored by:

1. Evaluating cultural resource indicators using a standardized check sheet and methodology for all campsites (a preliminary draft for discussion is attached). Indicators address concerns for underground and above ground physical cultural resources. Indicators to monitor non-physical cultural resources will be developed in partnership with Haida elders and cultural specialists during meetings on traditional use/knowledge. Some examples of these indicators for Gwaii Haanas are:
- Bare ground exposure
- Damage to culturally modified trees
- Disturbance to burials
- Unauthorized collecting
- Unknowing disturbance to e.g., rock from features such as fish traps or canoe runs
- Vandalism
- Trampling that compacts and breaks up archaeological remains e.g., middens.

2. Conduct photographic monitoring from a relocatable datum pin at each campsite.

3. Integrate the monitoring data into the Gwaii Haanas GIS system.

Data Analysis and Follow Up

CRM data will be used to determine the relationship between site sensitivity and site threats to develop management priorities and options for the campsite location. Examples of possible management options are: do nothing, continue monitoring, discourage use of the site, close the site, develop communication strategy to protect the resource, signage, temporal restrictions, etc. Other knowledge components that will be integrated to assist in decision making might include:
- Archaeological CRM data from campsite locations
- Traditional use/knowledge of the campsite locations
- Historical industrial site monitoring data for campsite locations
- Ecological monitoring data from campsite locations
- the 1995 Gwaii Haanas Visitor Survey

Discussion of Draft Cultural Monitoring Framework

- How will the public react?
- How will ownership of artifacts be handled?
- Because of demand for, and desirability of, campsites, at some point, there will be a need to determine the importance of specific archaeological siteslmiddens.
- Who will use the framework document? - Haida and Parks
- Can visitors be used to protect/overlook archaeological sites? Because visitors are currently disrupting these cultural site, there is a need to promote education and respect to visitors.

Draft Gwaii Haanas Campsite CRM Form

GWAII HAANAS CAMPSITE CULTURAL RESOURCE MONITORING FORM

Campsite No._ Campsite Name_____ Monitoring Priority low mod high

Description of Campsite Location (attach detailed map with reference points) _____

_____

Evaluated by_____ **Date (day/mo/yr)** / / -

Inventory Parameters

Campsite elevation (above higher high tide)_____

Substrate (bedrock, cobble, gravel, sand, organic - eg. sand veneer over bedrock, organic soil over gravel)

Intertidal _____ Supertidal _____

Shoreline erosion (metres/total metres) Natural_____ Human induced_____

Number of blowdowns in 200 m zone_ Total area exposed soil in square metres_____

Number of tent clearings_ Total area _____

Number of modified tent pads_____ Total area_____

Number of Trails_ Total length_____

Trails with subsoil exposure Total length_

Number of Pot-hunting exposures Total area_____

Other soil exposure (describe) Total area_

Nunber of Fire Pits_____

Number of Tree Stumps (<10 yrs old)_

Archaeological Site Types in Proximity		**Distance from Campsite (in m)**	**Disturbance Factor • Natural**	**Human**
Shell Midden	pocket (<10 sq m).....			
	<1000 sq. m..			
Town (extant features or midden >1000 sq m).				
Fort.....				
House Platform..				
House Depression..				
Structural Remains..				
Canoe Run..				
Stone Fish Trap..				
Wood Fish Weir				
Culturally Modified Tree (no.).				
Intertidal Lithic Site..				
Raised Beach Site..				
Burial	cave/cleft..			
	tree.....			
	midden.....			
	other.....			
Pictograph/Petroglyph.				
Homestead				

Industrial	mining	
	logging	
	other _____	
Traditional	resource use_____	
	spiritual _____	

*For archaeological sites within 400 metres of the campsite area enter present state and future potential of impact to site type - O=none, 1=low, 2=med, 3=high (eg. 'p=l and f=3') and describe the threat(s) in comments

Photo and Video Records

35mm Camera (use 35mm lens where possible)

Photo #	Reference Point	Lens (mm)	Bearing	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

8mm Video Camera

Segment (min:sec)	Reference Point	Lens (mm)*	Bearing - begin/end	Comments
_____ to _____				
_____ to _____				
_____ to _____				
_____ to _____				
_____ to _____				
_____ to _____				
_____ to _____				
_____ to _____				

* wide angle setting for basic recording; date stamp and voiced location first 5 seconds; running commentary with bearing mark for significant attributes and areas of concern

Comments and Recommendations

The Why, Where and When of Determining Appropriate Activities

Recreational activities are encouraged in parks as a means of encouraging public understanding, appreciation and enjoyment of natural and cultural resources. These experiences are seen as a method of fostering protection of areas — the premise is that if people enjoy these areas they will support them. Consequently Parks Canada's Guiding Principles and Operational Principles state that:

- *Opportunities will be provided to visitors that enhance the public understanding, appreciation, enjoyment and protection of the national heritage and which are appropriate to the purpose of each park and historic site.*

- *Essential and basic services are provided while maintaining ecological and commemorative integrity and recognizing the effects of incremental and cumulative impacts*

- *Public opportunities are provided for in ways which contribute to heritage protection and natural identity objectives, and which build public support for, and awareness of, Canadian heritage.*

Allowable Activity — "One which does not contravene the National Park Act and Regulations or Parks Canada and which may also be appropriate to the conditions in a specific heritage area"

Appropriate Activity — is one which:

- *is consistent which these Parks Canada policies and the protection of ecological and/or commemorative integrity of protected heritage areas;*

- *is especially suited to the particular conditions of a specific protected heritage areas; and*

- *provides the means to appreciate, understand and enjoy protected heritage area themes, messages and stories.*

Parks Canada's Appropriate Activity Assessment Framework

Per Nilsen, Head, Appropriate Activities Assessment and Risk Management

The experience of Parks Canada with appropriate activities assessments began in the late 60's and early 70's with a tremendous growth in the number and variety of recreationist using national parks. This use was encouraged with a massive investment in infrastructure. The first comprehensive Parks Canada policy (the Beaver Book) referred in 1964 to "pressure for the development of recreation and entertainment facilities" noting that these were "unsuitable for national parks". The policy also noted that the government "does not intend that national parks attempt to meet every recreation need." The first listed activities including: photography, sightseeing, hiking, swimming, riding, skiing, natural observation, fishing and boating were activities to be encouraged. In 1975, the Policy statement reiterated much of the 1964 statement.

This initial policy discussion highlighted the importance of clearly defining the purpose of the individual park as a basis for defining what types of recreation should be permitted in the park. The 1979 Policy confirmed the principle that not all types of outdoor recreation are appropriate to parks and went on to say that Parks Canada would encourage those that foster understanding, appreciation and enjoyment and which require a minimum of built facilities.

These 1979 changes in policy were made at a time when a few individuals in Parks Canada were tasked with developing and testing an approach to managing visitor activities. This approach, known as Visitor Activity Management Process (VAMP), forced staff to ask basic questions like:

- Who do we serve?
- What do we provide them and under what conditions?
- Why should it be provided?
- Where should things be provided? and
- When should things be provided and how?

In the mid-80's an initial approach to assess the appropriateness of recreation activities on a national basis was developed and tested. Activities that were used during these tests were, trail bicycling, dog sledding and hang-gliding. This initial approach attempted to be comprehensive and used a multi-day workshop approach that involved a cross section of stakeholders. A number of shortfalls became evident during this process including:

- underestimating the complexity of the task;
- the lack of supporting social science information;
- extended involvement in one pilot; and
- the complication of political lobbying and interference.

During the early 1990's consultations on policy revisions highlighted changes in the draft policy that had eliminated key statements regarding the principle that not all types of use were appropriate. This become one of the most frequently cited public criticisms of the proposed policy. As a result, this initiative was launched that had a number of components.

1. One of the 10 Guiding Principle in the new policy dealt with the question of appropriate activities.

2. Policy statements were re-instated in various activity policies.

3. A definition of an appropriate activities was included in the policy.

4. Requirements to assess and define types and ranges of outdoor recreation activities was made at the park level.

5. A set of criteria were defined to assess the appropriateness of the provision of services and facilities.

In essence, the new approach built some of the principles of VAMP planning into the policy and encouraged managers to answer the questions of:

- Who do we serve?
- What do we provide them and under what conditions?
- Why should it be provided?
- Where should things be provided?
- When should things be provided and how should it be provided?

The result is the five step framework (outlined briefly below), an electronic training presentation package on the process, a paper description of the approach in both official languages, the integration of visitor risk management work as a key component of the overall approach and the documentation of practical success stories.

The Approach

The *Proposed Framework for Assessing the Appropriate of Recreation* (Parks Canada document) is intended for field staff and planners and managers in parks. The goal is to develop one of the following management positions:

1. activity supported by heritage area;
2. activity permitted but not supported; or
3. activity prohibited from taking place.

This five step approach is expanded below:

1. set the context;
2. identify issues and opportunities;
3. synthesize and develop management position;
4. describe the setting; and
5. implement and monitor.

Step two is the crux of the process, and can be further broken down into ten components:

1. heritage area management context;
2. visitor experience opportunities;
3. setting opportunity;
4. heritage theme presentation;
5. market;
6. visitor conflict;
7. visitor risk management;
8. heritage area services and facilities;
9. cooperative activities/regional integration; and
10. environmental impact.

These may be considered in a rank order, or they could be considered as appropriate for an individual area. Furthermore, some points may be condensed or expanded as required. These components are also being used in the context of risk management planning.

Step three, synthesis and development of a management position, leads to a breakdown into three activity management categories. These help managers to determine how much weight to attribute to each dimension in the develonment of a plan:

1. Supported activity - one with few' concerns of introduction into a protected area, and generally relates positively to overall management objectives;
2. Activity permitted but not supported - activity which does not place significant demands, however may raise questions about long term appropriateness: and
3. Prohibited Activity - does not match management objectives Of the protected area.

The attributes of a supported activity are:

- respects the mandate of Parks Canada and the heritage area's management objectives;
- maximizes opportunities for appreciation, understanding and enjoyment of the heritage area's resources;
- supports the presentation of natural and cultural resource themes and values of the heritage area;
- is suited to the natural and cultural resource base of the heritage area;
- responds to public needs and expectations;
- provides high quality opportunities for heritage theme presentation;
- can be supported using available services or those which can be added within available resources;
- can be supported with existing facilities or minor modifications to existing facilities;
- can be operated within the context of existing budgets and person year allocations;
- supports high priority visitor activity groups;
- does not compete with existing opportunities outside of the heritage area;
- provides opportunities for cooperative management and community support;
- creates management benefits, e.g., revenue generation; and
- provides opportunities for new clientele(s).

The attributes of a discouraged or prohibited activity are:

- directly inconsistent with one or all of the following: Federal, provincial or municipal laws, National Parks Act, Parks Canada Policies, management directives, the heritage area management plan, ecosystem conservation plan and service plan;
- significant environmental and social impacts are associated with the activity;
- activity offers limited opportunities to appreciate and understand heritage area heritage themes;
- activity does not relate directly to the appreciation, understanding and enjoyment of a heritage area's purpose and objectives, or respect ecosystem or cultural integrity;
- highly specialized activity appealing to limited numbers;
- activity not consistent with the intent or design of existing facilities;
- activity requires more than a minimum of built facilities;
- high cost to develop services and facilities to support the activities;
- will result in negative effects upon or conflict with other heritage area users;
- competes with existing opportunities available outside of the heritage area; and
- has significant visitor risks and/or liability issues.

Alternative Applications

Independent Assessments

- an assessment for a single activity could be more detailed and complete, and would require using the full assessment process
- the emphasis would be on identifying all issues and opportunities and developing a management position
- the basic concern of this type of assessment is to resolve the question of whether the heritage area should permit the activity and if so, to identify the level of support to be provided.

Management Plan Applications

- as a means to confirm or deny the existing level of support provided for the various activities taking place in a heritage area
- the approach would ensure that the various activities and existing level of support is consistent with Parks Canada's mandate and reflects the area's management position towards the activity
- the assessment process could also be used to identify major service issues (excess or shortfalls).

There are direct strategies for managing outdoor recreation areas, including enforcement, increased surveillance, zoning, rationing use and restricting activities. Similarly there are indirect strategies for managing outdoor recreation areas, including physical alterations, education and economic constraints.

For further information on this topic contact Per Nilsen[1]. Information is available for training material, the framework for application (ideas about what to consider in an assessment), and documenting research.

Status of Appropriate Activity Assessments in Canada and the US

Angus Simpson, Jasper National Park

Protected areas in North America are experiencing growing pressure from visitors and commercial operators to provide increased opportunities for recreation activities. Many of these activities are new, or modified forms of traditional uses. With this increasing use comes the inevitable social and ecological impacts associated with recreation. As a result, managers are faced with the difficulty of managing for visitor use while maintaining the integrity of protected area ecosystems. Challenged with this responsibility, managers must minimize ecological impacts, provide enjoyable visitor experiences and opportunities for developing appreciation and respect for protected area ecosystems. To this end protected areas agencies are beginning to develop more formalized frameworks to assess the appropriateness of recreation activities in protected areas. Existing frameworks currently in use can be found in Table 1.

Table 1. Comparison of selected attributes of protected areas management models

	Protected Areas Management Models						
Attributes	VIM	VAMP	LAC	ROS	VERP	POLAR	AAA
Ecological Impacts	X		X	x	X	X	X
Social Impacts	X		X	X	X	X	X
Site Specific focus	X						x
Broad-based Planning Tool		X	X	X	X	X	X
Transactive Planning			X				
Rational-comprehensive	X	X		X	X	X	X
Public Participation							
Advisory Role	X						
Consultative Role		X		X	X	X	X
Decision Making			X	x			x
Long-term Monitoring	X		X		X	X	X
Short Term Focus		X					
Uses Informal Knowledge			X			X	X
Use Traditional/Local Knowledge			X			X	X

X = Major component of the model

x = Minor component of the model

[1] Per Nilsen, Natural Resources Branch, National Parks, 4th Floor 25 Eddy St., Hull, Quebec. K1A 0M5

A variety of different management tools have been used by various agencies to determine and manage activities. Policy and management provisions related to appropriate activities are often found in legislation, in management planning process, in public participation methods, in activity specific regulations and through the use of zoning. Few agencies, with the exception of Parks Canada, have developed a formal framework for conducting appropriate activities assessments. Most adopt an ***ad hoc*** approach, while others have no mandate to consider the issues. Similarities and differences between management approaches taken by selected protected areas management agencies are presented in table 2.

Table 2. Various Agency Approaches to Activities Determination

Attributes	B.C. Parks	B.C. Forests	Parks Canada	Canadian Heritage Rivers
Legislation	- *Parks* Act (1979) - Park Act Regulations - Environment and Lands Act - Mineral Tenure Act (Section 19) - Waste Management Act - Three Classes of Parks: A, B, and C - Nature Conservancy Areas - Recreation Areas	- Forest Act - Wilderness designation amendment to the Forest Act (1987) - Forest Act Regulations - Commercial Backcountry Recreation Policy (Pending) - Mineral Tenure Act	- National Parks Act (1988) - Provincial and federal statutes in a non-gazetted park. - Guiding Principles and Operating Policies - Selected Provincial Statutes for Liquor and Traffic enforcement - Wild Animal and Plant Protection Act - Canadian Environmental Protection Act - Canada Shipping Act	- Cooperative program between Federal, Provincial and Territorial Governments - National Parks Act (1988) - Navigable Waters Act - Other Federal Statutes - Applicable Provincial Statutes
Management planning	- LAC and VIM hybrids - Master Plans are not required by legislation	- Management plans are required for all Forest Service lands - LAC approach is being used	-Management planning is guided by VAMP, EARP and management directives and bulletins. - Recent processes have attempted to hybridize LAC and VIM. - Management plans required within five years of park designation and reviewed every five years thereafter	- Over all management of CHRS is the responsibility of CHRS Board under the Minister responsible for Parks Canada - Management Plans are prepared by the nominating agency as part of the designation process and submitted within three years of nomination - Individual rivers are managed entirely by the nominating agency
Public Participation	- No formal mechanism exists for public participation - Traditional approach was through open houses. - New initiatives in the future will adopt a more participatory process using a round table format similar to CORE	- No formal mechanism exists for public participation. In the Past it has been confined to workshops and open houses - With the recent adoption of a LAC planning framework, more opportunities for public participation will be forthcoming	- The level of public participation varies considerably within Parks Canada - Minister is obliged by Section 5.14 provide opportunities for public participation - The publics role in actual decision making is constrained by legislation	- Public participation is required at the nominating stage - Further public input is determined by the management regime of the responsible agency - First Nations involvement is required for northern rivers
Regulation, Zoning	- Five zones ranging from intense recreation to wilderness conservation - Quota systems in place for some parks - PUP and RUP required for commercial activities and research, removal of resources or hunting - Regulations enforced by Park Officer generally on his/her discretion	- Zoning system is based upon the ROS opportunity classes. - Only the primitive and semi-primitive non-motorized zones are used in the wilderness areas - Enforcement of regulations is generally through voluntary compliance due to low levels of use - Some restrictions on hunting, grazing	- Five zones ranging from Facilities management zone to special preservation - Regulating use is tied to the zoning system and governed by the National Parks Act Regulations - Regulations cover all aspects of park use and management	- Zoning and regulations are determined by the responsible agency
Appropriate Activities Determination	- No formal mechanism in the past. Generally *ad hoc* - The recent development of a Recreation Matrix promises to create a more consistent structured approach - The matrix will be tested in Tsylo's planning process	- No formal process exist. - Relies heavily on the zoning system to differentiate use types - User conflicts and resource impacts are minimal due low levels of use - Future use of LAC will create a more formalized process	- Framework for Assessing the Appropriateness of Recreation Activities in Protected Areas. - This is a comprehensive structured framework for assessing new and emerging recreation activities - Currently in the testing stages in Waterton Lake NP, Fathom Five Marine NP and Bar U Ranch National Historic Site	- Any assessments of appropriate activities is carried out by the responsible agency - The comprehensiveness of this process is a function of the agencies priorities and level the need for an assessment - Parks Canada has the most structured framework but it has not been tested on a CHR to date

Attributes	NWT Economic Development and Tourism	U.S. National Parks Service	U.S. Forest Service	U.S. Bureau of Land Management
Legislation	- Tourism and Parks Act - This act however has no protection mandate - Dept. of Employment Culture and Education and Dept. Renewable Resources as follows: Archeology Act for protection of cultural heritage; Wildlife Act for protection of wildlife - Rivers in National Parks are governed by National Parks Act	- National Park Service Act (1916) - Wilderness Act (1964) - Outdoor Recreation Act (1963) - National Wild and Scenic Rivers Act (1968) - National Trails System Act (1968) - National Parks and Recreation Act (1978) - General Authorities Act (1978)	- Wilderness Act (1964) - Multiple-Use-Sustained-Yield Act (1960) - Rangeland Renewable Resource Planning Act (1974) - National Forest Management Act (1976) - Federal Advisory Committee Act - Wild and Scenic Rivers Act (1968)	- Wilderness Ad (1964) - Federal Land Policy and Management Act (1976)
Management Planning	- Joint management plans between Federal territorial and municipal governments for rivers outside National Parks and Reserves - National Park planning process for rivers in National Parks	- General Management Plans - Implementation Plans - VERP - Specific plans exist for managing Backcountry, Rivers, and concessions etc.	- Goal Achievement Framework - LAC based planning - The Renewable Resources Assessment Program (National Planning) - Regional Plans (Regional Planning) - The Forest Land and Resource Management Plan (Forest Plan)	- Resource Management Plans - Activity Plans - Moving towards a LAC based approach to planning for wilderness areas
Public Participation	- Very little public participation in protected areas planning - Most public participation is focused on community economic development issues - For management of heritage rivers there is First Nations participation	- The Environmental Policy Act requires that opportunities for multiagency and public participation be available - VERP also solicits input from the public at specific stages in the process	- Wide spread adoption of the LAC planning framework. Task force consensus style decision making involving full public and stakeholder participation	- Public involvement is essential - Most decision making is at the district level and allows for easy public input - The adoption of LAC will introduce a more task force oriented process similar to that used by the USFS
Regulation, zoning	- Zoning is determined by the responsible agency i.e. National Parks - NWT does not zone its heritage rivers - Regulations are few except in the National Parks - Commercial outfitters require licenses - Quotas are established on the Nahanni and Soper rivers	- Six zones were developed by the ORRRC for use in National Parks - Also the Wilderness Act provides for wilderness designation in the park - Regulations are guided by NPS policy - Commercial operators require permits and must adhere to operating schedules	- Zoning is based upon the ROS model, with adaptations that allow finer gradations in the opportunity classes. - Quotas on heavily used rivers. - Regulations on campsite reservations, garbage and waste disposal - Zoning is tied to ROS however attempts are being made to implement finer overlapping zoning system in some areas	- Zoning is not consistent throughout BLM lands - ROS type zoning is commonly used or adapted - Regulations are determined at the local office level - Commercial operators require permits - Quotas are established on many rivers
Appropriate Activities Determination	- No formal process for assessing recreation activities. - Nahanni may use appropriate activities framework if necessary - Zoning determines use levels at present	- Appropriateness is based upon legislation and policy direction - Decisions are often made at the park level on the discretion of the park Superintendent -VERP will be more structured for AAA	- No formal process - Tied to opportunity classes of ROS - Often the results of Task forces reflect the *status quo* - Selection of appropriate activities occurs in the preliminary scoping exercises	- No formal Framework - Some assessments have been carried out on a site specific basis such as on wild and scenic rivers - Assessments are tied to management plans

1. The Managerial Approach: Using the Parks Canada Framework

Per Nilsen, Head, Appropriate Activities Assessment and Risk Management

The following were presented as examples of appropriate activity assessment in different management situations.

Fathom Five Park

This area is popular as a diving spot in an area now known as Bruce Peninsula National Park. The issue of appropriate activities arose when the park was transferred from provincial to federal jurisdiction. This prompted the development of a new management plan as per National Park criteria.

The result, within the plan, was the classification of activities according to their appropriateness within the "new" national park. These listed activities were divided into three categories: activity permitted, activity permitted but not supported, and prohibited activity. Guidelines were also developed for the management of each activity, and stated explicitly within the management plan. Public consultation was a component of this process.

Bar U Ranch National Historic Site

This site was not previously a park or a public use facility of any type. Management planning was initiated from scratch in this new historic site. A list of proposed activities were developed for the site, specific to the historic character of the site. These activities were further refined into a listing of appropriate activities in keeping with the mandate of a historic site. Public consultation was welcomed throughout this process.

Waterton Lakes National Park

In this example a new, emerging activity in an existing national park was assessed for appropriateness. An adjacent protected area, Glacier National Park, does not allow the use of personal watercraft within its boundaries. As Waterton and Glacier share a body of water Water-ton management decisions have the potential to directly impact upon their neighbour. In particular, the issues of noise, "trespass" and appropriateness were raised in this assessment.

The park managers used the 10 step approach outlined in the previous section. This resulted in three main conclusions:

- visitor risk and environmental management likely but mitigable; and
- benefits sought by visitors and facilities required were not on line with park objectives and the cost to other park users.

As a result of these conclusions by the park staff, personal watercraft were not permitted in Waterton National Park. The decision was made quickly prior to the new summer season. Subsequently, the lack of initial public consultation resulted in an outcry. A park advisory committee was involved and a mediator employed to remedy the situation between the park and the local public. After a more rigorous review of the activity, the same decision was made concurring with the park superintendent's initial assessment.

2. The Round Table Approach

Angus Simpson, Maligne Valley Collaborative Process

This collaborative process operates under several layers of policy and decision making. The planning path looks like this:

1. National Park Act
2. Parks Canada policy
3. Jasper National Park management plan
4. Maligne Valley Collaborative Process

The Maligne Valley Collaborative Process (MVCP) is a scaled, local community process which began in 1994. Their task was to participated in the process of determining appropriate activities along this corridor. There were six sectors at the table: commercial recreation, independent recreationists, local environmentalists, regional and national environmental interests, the local chamber of commerce, and Parks Canada. The

The group followed a step by step procedure: Step 1 involved developing a vision which extended 50 years hence. This strategy essentially elicited a “wish list” from each sector, and resulted in entrenching positions. The disparate wants of the groups could not all be accommodated. Visions tended to be developed separately, rather than looking for the commonality in their respective interests. The emergent outcome was a list of “points of agreement” rather than a complete vision.

The second step undertaken by the MVCP focused on specific activities, such as fishing, highway sightseeing and skiing. This was a good move as the group realized they could formulate common objectives and achieve success

Unfortunately the facilitator opted out at this time, not knowing where the group may be able to proceed from this point. A mediator stepped in to work with the group. They are now assessing activities, facilities, and the transfer of responsibility from Parks to others within the park (for maintenance etc.).

Critically speaking the inability of the group to formulate a vision now prevents the group from referring back from the detailed work to know if they are on track with a collective vision.

Group Discussion points:

- Is there mistrust of Parks Canada? Yes, largely due to an inadequate avenue for input from stakeholders in previous decision processes.
- Is it possible that the “general public” have a broad trust in Parks Canada, while stakeholders may be distrusting based on a particular viewpoint. Caution should be exercised to ensure stakeholders do not push decisions away from the best interest of the park.
- There seems to be a hierarchy of acceptability of activities. Some activities are allowed, yet still considered “bad”.
- Is there a conflict between national interests for parks and local interests for use and recreation? Is this a social vs. personal goals conflict?

3. Mixing the Scientific Panel with the Round Table Approach

Judy Otton, Banff Park Planner

Banff National Park hosts a wide range of activities, including bird watching to road races to winter underwater golf! The most popular summer activities are sightseeing, viewing wildlife, photography, shopping, resting/relaxing. The most popular winter activities are sightseeing, rest/relax, shopping, viewing wildlife, photo, downhill skiing.

Parks Canada tends to get caught in the middle of all the user groups. The Minister set up a Task Force in 1994 where people could get together and make long term recommendations for the park. One of the issues the Task Force is dealing with is the assessment of appropriate activities in the park.

The Task Force is comprised of various interest sectors. Parks Canada is just one of many, including commercial outdoor recreation, commercial visitor services, culture, infrastructure and transportation, tourism and marketing, federal and municipal government, First Nations (2), social/health/education, national environment, local environment, and park users. Technical experts are used to provide input to the table. Each sector has a constituency behind them to report to and receive direction from.

The product so far of the Task Force is to produce a vision and direction for the Valley. Three issues were specifically raised: appropriate use, quality of life, and ecological integrity. Each group approaches the appropriate activity criteria with different weights, depending on their bias and agenda. A three stage Appropriate Use framework was used:

> stage 1 - objective assessment, applied by decision maker with expressly prohibited activities (people want transparency, consistency in parks decisions and continuity between staff). Parks Canada want to include in this stage a statement that permitted activities must match the spirit and intent of park policy.
>
> stage 2 - sorting by zone, in what zones could an activity be considered?
>
> stage 3 - subjective assessment, apply criteria, such as the Parks Canada framework

The Task Force developed a set of Appropriate Use Criteria:

- impact on the environment;
- effects on culture and heritage;
- quality of experience;
- economic effects;
- public safety;
- equity and access (given costs of some activities);
- social effects / quality of life (for visitors and residents);
- education and awareness;
- level of use: frequency, timing, quantity; and
- physical setting.

These are guidelines, and are not to be considered rigorous or prioritized. Furthermore, Parks Canada want to insert a criterion reflecting the degree to which an activity contributes to the spirit and intent of park policy.

Decisions will be made based on the following Guiding Principles for Appropriate ***Use Decisions:***

- responsible and accountable;
- open and participatory;
- predictable, consistent and fair;
- proactive, adaptive and precautionary;
- responsive and equitable;
- based on sound science;
- coordinated and cooperative;
- competent; and
- common sense and integrity.

Some uncertainty exists about the status of the Task Force once it is dissolved. There is concern that there will be no further opportunity for feedback from the Task Force.

Outstanding Issues

- The onus is on an activity proponent to receive approval for a new activity or increased intensity.
- review of plans
- appeal mechanism (public recourse on parks decisions)
- "basic" and "essential" (what does this mean? different meaning in different areas and for different groups)
- existing uses (should assessment of existing uses occur?)
- relationship to Canadian Environmental Assessment Act - can activities be assessed on principle prior to CEAA as a screening?
- zoning changes (public input into zoning decisions)
- monitoring -Parks Canada want the ability to monitor to assess whether decisions were appropriate (and presumably reverse inappropriate decisions).

Group Discussion points:

- Is "spirit and intent" covered in the ten criteria, or does it need to be explicit? Want it to be explicit as a reference point for decision making.
- Does mistrust arise from the vagueness of the "spirit and intent" inclusion? Public want input into the interpretation of park policies. e.g. what does enjoyment mean, what does social equity mean?
- Through the consensus process, visions and mandates get watered down, leaving perhaps too much interpretation at later dates.
- Existing activities are unlikely to be addressed through this framework. Cumulative effects are considered in the legislative framework, but more to address new projects rather than to make decisions on existing projects.

4. Letting the Users Decide: Chilkoot Trail National Historic Site

Tom Elliot, Parks Canada

Background - the 1988 Management Plan directed the prohibition of snowmobiling from the Chilkoot Trail National Historic Site (CTNHS). However, Parks Canada was in the process of acquiring control of the area in a transfer, and therefore did not have the legal authority to make such a closure. They asked instead for voluntary compliance with their decision. This initial decision was made with public input, yet the snowmobilers claim they were not consulted (consultation took place during the summer months, so it is possible the snowmobilers were not organized at this time of year).

Road access into the areas increased at this time, increasing snowmobile use in the area. Round two of public participation was initiated due to the increasing participation of snowmobilers as a recreation group in the region. Snowmobilers lobbied very effectively through a letter writing campaign, even getting the local MP to lobby in favour of snowmobilers to the federal Minister of Environment.

The Minister changed reversed the 1988 decision, deciding now to monitor impacts until next management plan review. In hindsight, some of the problems surrounding public consultation could have been mitigated as follows:

- specifically invite stakeholder groups (not just general public) to meetings;
- draft interim measures and try out zoning options;

The area is still operating with voluntary compliance of the closure to snowmobilers, although this is largely not complied with. The social and environmental impacts have generally been observed at a small scale only.

In 199314 the park was formally established making management control options legally available. In the subsequent management plan public review, the snowmobiler vs. skier issue dominated the topics. A parallel cultural resource management process was conducted.

Essentially the issue boils down to two user groups who are there for different values. It is not really an issue of environmental and cultural impacts. Parks Canada use the words “not appropriate” rather than “not allowable”. This leaves things open for groups to argue the appropriateness of their activity. In this particular area, most activities are recreation based and not based on the cultural and heritage purposes of the park.

The park will now be using a mediated process to try to reach a decision. The main criteria being used are the protection of cultural values and quality visitor experiences. There is a values distinction between being a National Historic Site and National Parks

Group Discussion points:

- Activities that are not relying on park resources are “allowable” but not supported.
- Quality of the visitor experiences - activities can be a means to an end. How can we focus on the outcomes as experiences and the necessary elements of this experience.
- What role does policy and planning play in mediating disputes, or avoiding a lengthy process? Is there existing policy which may apply (e.g. with respect to mechanized, high tech activities)? Increased public involvement may become the new way of life for doing park management.
- It would be more fair to the business community if we do not lead them to believe that some activities may be appropriate when in fact we know that a detailed process will not allow the activity to occur (e.g. personal watercraft).

Related Frameworks/Issues for Visitor Activity Management

In addition to the appropriate activities management frameworks and trials discussed above, workshop attendees had a chance to learn a number of related new initiatives. Per Nilsen presented updates on the risk control spectrum and a range of visitor management techniques. At a related session on the final day of the workshop, Dan Vedova (Pacific Rim National Park) gave an update of the Search and Rescue (SAR) cost recover initiatives. As the SAR initiative is evolving quickly contact your regional Parks office or Dan directly for information or updates.

New Initiatives in Visitor Activity Management

Per Nilsen, Head, Appropriate Activities Assessment and Risk Management

The Risk Control Spectrum (RCS) relates to several other processes: ELCS; Natural Resource Management; VAMP; ROS; LAC; VMS; VIM; VERP.

The basic VAMP concept has a mandate and objectives of balancing natural and cultural resources and features versus public needs and expectations. The process touches on appropriate facilities, scale, design and harmony.

One current issue is that much of park infrastructure is beyond its lifecycle. New policy direction dictates that outdated infrastructures should be replaced or removed. In doing so, Parks need to recognize that client groups have likely changed, and the old infrastructure may no longer meet the needs of today's users. Parks must assess current demands in the context of appropriate activity, limited resources, field staff availability and accountability in park planning.

A simple tool may be useful in fulfilling the above tasks: Recreation Opportunity Matrix. A draft matrix emerged from a recent workshop referring to a Spectrum of Appropriate National Park Opportunities. In addition to the matrix there is a written description of what facilities and recreation activities are appropriate to certain zones. The draft and the written description together form a self-guided tool to what type of facilities are appropriate to particular zones. A handbook assists users of this method.

Group Discussion Points

- One comment was directed at incorporating the issue of ecosystem management (e.g. fragile environments) and park planning into appropriate activity assessment.
- A comment suggested that using zoning is logical, but to also use the experience that exists within park staff in each zone. More information is probably needed, however there is a risk of too much information looking prescriptive rather than suggestive.
- A comment specific to zoning suggested that Zone 2 could also allow semi primitive but not non motorized activities.

Pilot Application of the Recreation Opportunity Spectrum and Visitor Risk Management Methodologies

The pilot use of the ROS methodology was applied to Yoho National Park and Pukaskwa National Park, in conjunction with the University of Lakehead. The project took the existing ROS and adapted it to the Parks Canada situation. Physical, social and managerial maps were overlaid to develop an understanding of activities. Other GIS based information included the erosion of wilderness area at access points, and other activities surrounding the park. Risk Control Spectrum

Visitor Risk Management (VRM) sits between Visitor Management and Risk Management. VFW was developed from the strengths of VM and RM to manage safety issues within parks. A draft version of VRM methodology is being circulated in visitor training. To date there has been an enthusiastic response to the draft.

Group Discussion Points

- Looking at the draft, an attached definitions list would be helpful. (i.e. What is passive recreation?)

Approaches to Managing Commercial Use

There are many ways to manage commercial backcountry use, each with its own opportunities and constraints. A series of case studies presented by land managers below provides insight into a variety of techniques and circumstances.

BC Lands, Commercial Backcountry Policy

Charles Porter

Commercial Backcounty Recreation (CBR) Policy - What Is It?

A new land-use policy announced by government that allows for the issuance of tenures by BC Lands for all forms of CBR on Crown land.

What Is CBR?

Outdoor recreation activities undertaken on a fee-for-service basis, with a focus on experiences associated with natural environments in rural or remote areas. For example: helicopter skiing, wildlife viewing, ski-touring, hut-to-hut hiking and white-water rafting.

CBR policy is important to: i) Protect sensitive environments; ii) Avoid conflicts between users; and iii) Ensure pubic access.

Management of Crown Land in British Columbia

- Management of Crown land is reserved to the provinces under the Canadian constitution.
- Crown land comprises approximately 93% of British Columbia's land base
- BC's Crown land base has not changed substantially since about 1930. Crown land is often re-claimed from other uses. In fact, in the Kootenay Region, the Crown land base grew by 95 hectares in 1995.
- The lead agency for the administration of Crown land is BC Lands (Lands Regional Operations Dept., Ministry of Environment, Lands and Parks).
- Crown land is managed in an "open system" of integrated resource management. Other important players are Ministry of Forests; Energy, Mines and Petroleum Resources; the Ministry of Agriculture, Fisheries and Food; and the Agricultural Land Commission.

How was CBR Policy Developed?

- involved all relevant stakeholders and government agencies.
- a consensus-based approach over a 4-year period. Policy was built on 8 key messages received from the stakeholders.
- Stakeholders involved ranged from industry associations and operators (COTA, Heli- and Cat-skiers, Canada West Ski Areas, Guide-Outfitters, Guest Ranchers) and outdoor groups (BC Wildlife Federation, BC Snowmobile Federation, Outdoor Recreation Council) to environmental groups (Sierra Club, EKES).
- finally approved by government in July of 1994

- discussions with stakeholders from July/94 to February195 to finalize policy and implementation details.

Where Are We Now?

- February/95 - government lifted May/91 moratorium on CBR applications
- 8 BC Lands Regional offices now implementing policy
- review now initiated to deal with industry concerns
- will be a one-year review of policy
- will be a pricing (rental) review in 1998, to be finalized in 1999.

*Key **Messages** **from** Public Review*

- a clear structure and process for public input is required
- there is a need for increased policy and land-use planning
- protect public access
- protect the environment; desire to have things remain as they are
- preferences are for local operators over outside operators. Message: use Crown land to benefit the local community
- financial revenues should not take priority

What Does Policy Involve?

A 4-Stage Review Process is involved:

1. preliminary proposal referred, advertised and inspected
2. preliminary land-use decision
3. final management plan prepared and tenure issued

tong-term management and monitoring

- An Opportunity to Obtain Tenure for CBR Operations
- Licenses of Occupation - up to 5 years at a time; for extensive areas or where minimal improvements to be constructed.
- Leases - for up to 15 years; for small sites where significant improvements will be constructed, or sites that are absolutely critical to an operation.
- Sales - Crown land will not be sold for CBR purposes.
- Crown will obtain rental for use of Crown land for CBR
  - extensive uses will pay on a per-client-day basis
  - intensive uses will pay on basis of % of land value set by BC Assessment Authority
  - annual tenure management fee - kept in Regional offices to be used for management and monitoring

Management Plans - A Few Thoughts:

- key document that outlines how tenure holder commits to operating CBR business on Crown land
- describes area involved in operation, nature and scope of business, identifies land and resource issues and operator's commitment to addressing them
- aside from basic requirements, the level of complexity of a plan is dependent on the type of operation, and nature of issues in area - each one will be different

- important for credibility of operator and BC Lands with respect to. other agencies and the public
- quality of management plan may relate directly to our ability to enforce where problems occur

*We **are finding** that:*

- there is reluctance and resistance from operators, particularly those who have not been exposed to this before
- we need to explain to them the benefits of management plans and tenure
- each plan may need 2 or more drafts before we can accept and begin to process
- individual discussions with operators seem to work best

Enforcement - A few thoughts:

- ensure that appropriated permits from other agencies are in place i.e. licenses to cut, health permits, water licenses etc.
- anticipate key issues in setting up documents and management plans, having operators commit to specific courses of action.
- as much as possible, ensure that those who raise issue are satisfied with operator's commitment
- the bigger the issue, the more detail that should be in documents and/or management plan re: operator's responsibility and commitment
- approach should be consistent with regional and provincial policy

Commercial Operator Assessment

Marcy Saprowich, BC Parks

Working With Commercial Operators

Are our policies for working with commercial operators as up-to-date as our other policies dealing with new fiscal realities and with ecosystem management?

The context: Commercial operators are generally small scale businesses which are generally **guiding**-based activities and typically dispersed.

*Why **Look** at Commercial vs. Non-Commercial Recreation Separately?*

- Typically over-shadowed by large-scale developments
- Major shifts in policy
- Some differences in benefits received (social and economic) and issues
- Typically larger groups, areas not as accessible to private users, often with people with different levels of experience, preparation, etc.
- Policies need to be: Compatible, Enforceable, Defensible, and in keeping with our other goals.
- Policies are important, but not particularly important if we are not doing them on the ground, for example, enforcing them.

Regulating Commercial Use

Typically, commercial use is regulated by a Business License or a License of Occupation (where land is involved)

Problems:

- Less legal status than other agreements: these are not actually negotiated contracts--they are simply issued, and therefore, difficulties occur attempting to enforcing these permit tools.
- Enforcement options are typically simply revoking the permit. This is a satisfactory incentive, but only if I, as operator, am going to be assessed based on the stipulations or conditions. Typically we have not re-evaluated these stipulations. Also, we have not sufficiently used this mechanism to enforce any environmental or social standards.
- Since licensing is a regulatory tool, they are not particularly conducive to generating revenue.

Options:

A. Business Licenses: with more effective stipulations.
B. Concession Agreements: increased legal binding with more options for using contracts to enforce higher standards, includes provisions for revenue generation. US NPS (National Parks Service) use these in an incredibly detailed fashion.
C. Middle Ground Solution: perhaps would be a License of Occupation which would allow us to stipulate terms and conditions in places that require land occupation; it would also allow us to gain cooperation for maintenance.

Managing to Meet Ecological Objectives

It is extremely difficult to separate-out commercial impacts from “public” impacts. We need to strategically research this in order to separate-out some of these impacts. In so doing, this would probably lead us to establishing indicators and criteria that would set standards for businesses.

- Currently, BC Parks is not doing that much in the above regard. We do not have criteria in place, nor do we do much in the way of monitoring.
- If managed properly, commercial operators should be less of a management concern since they are easier to regulate in an organized form, rather than a dispersed form.

Revenue Generation

Companies seem to be relatively understanding of the need to contribute to Park revenues. Some things that would be desired include the following:

- Explore alternative options for fee collection.
- Explore and describe what the purpose of fee collection is, and where the revenue is going. A preference exists for fees to be returned in a manner that will directly benefit the commercial operator and their clients.
- Assess fees on the basis of different activities rather than across-the-board. If not at an activity level, perhaps at the company/outfitter level. The latter, however, raises legitimate “fairness” issues.
- Commercial operators want to know how much they are going to pay, they don’t want to be intrusive onto their operators. Information provided should be simple and easy to calculate. There appears to be support for annual % of revenues.
- Commercial operators do not want to be unfairly targeted. They want to see equity in fee payment between commercial and private fees.
- Commercial operators are concerned that Parks are not operating efficiently themselves.

Conclusion

- Unresolved issues relate to:
  - What role Park managers play in determining educational messages

- Stakeholder involvement
- There is an apparent trend for commercial operators to provide more legitimate Park experiences than Parks is willing, or able, to provide.
- The main factor appears to be that commercial operators desire input into how generated revenue is going to be spent.

Nakimu Caves

Dave Kaegi, Backcountry Manager, Mount Revelstoke and Glacier National Parks

Background

Nakimu Caves are the only zone 1 classified areas in Glacier National Park. The caves became popular at the turn of the century and with over 5 km of passages, they are now recognized as forming one of the largest cave systems in North America. Up to 1,000 people visited the caves annually; however, due to the cave's locale in Cougar Valley being prime grizzly habitat, public access became restricted to about 60 people/year. Pressure form commercial interests to re-open public access has occurred.

Responding to public demand, a new visitor management and access policy strategy was developed for Nakimu Caves. The system is based around the central premise of ensuring the ecological and commemorative integrity of the caves and Cougar Valley is maintained. Visitor use is restricted and regulated in a manner to minimize disturbance to bears and ensure cave resources are protected.

Nakimu Visitor Management Policy

- First priority is the protection of ecological and cultural integrity of Nakimu Caves and Cougar Valley.
- Provide for increased public opportunities to visitors
- Develop policy and programs that determines use fairly and efficiently
- Program must recover costs

Nakimu Caves Program

- determined protection and monitoring requirements

- determined appropriate use levels above requirements

- looked at others Parks use allocations and determined a methodology for allocation of use

- determined participants

Program Details:

- *weekly* bear monitoring patrols
  - electronic cave counters
  - sand traps
  - infrared camera--this proved to be a good monitoring tool; however, lack of baseline data is a handicap
- DNA analyses from bear hair and scat samples proved to be very useful

- A visitor management system based on a lottery in which interested parties apply for an access date to the caves. Group sizes are restricted (6-12 persons) as is the day/time of access (Saturdays only between sun rise and sun set).
- A user fee was established in accordance with national cost recovery directives to offset direct costs of a monitoring program and administration of the lottery system.

Management Issues

- Liability: Currently no standards are in place to determine who is qualified to cave guide. Because Parks does not want to get involved in determining these qualifications, discussions took place with the caving community to attempt to determine appropriate qualifications.
- liability is also an issue regarding natural and other hazards within the caves
- User Fees: Have implications for other activities. Because fees are imposed for cave visitations, should fees also be set for such activities as ski touring?
- Cost Accountability: Personal benefit vs. public benefit. How much of bear monitoring can be attributed to caving? How much is monitoring a public benefit? There appears to be no answer to this

Management Recommendations for 1996/97

- Based on observed and hypothesized bear activity in the Cougar Valley and the monitoring of the cave resources, it is recommended that the Nakimu Caves visitor management and access policy be continued for another year
- Maintain same group size limits
- Allow flexibility as to either Saturdays or Sundays as designated entry day
- Cancel the requirement to not enter the Cougar Valley until one hour after sun rise and be out of the valley one hour after sun set
- Improve pre-trip safety and awareness material
- Re-do the cave map so more readable
- Ask colleges and caving clubs for assistance in the removal of the remaining wooden structures within the caves
- Continue with allocation lottery and the 50/50 split between commercially guided and privately guided groups. Every other weekend will be designated for one type of group
- The first lottery date available will be June 22/23 and the last date October 12/13

Balancing Commercial Values and Wilderness Opportunities

Glen Campbell, BC Parks

Background

- Most access to Mount Assiniboine comes from Alberta
- The most popular destination is the park's core area
  - concentration on its visual amenities as well as campgrounds and cabins
- Within Mt. Assiniboine there is a lodge which is a heritage building
  - BC Parks oversees every aspect of the lodge's operation
  - Lodge access is by helicopter--a catered backcountry experience
  - No additional development is allowed to occur in the park

- There currently exists variation in levels of service: campsites, cabins and the lodge

Management Issues and Problems

- Management problems are occurring with the lodge
- Concessionaires compete for management responsibilities
- Quality of services provided is reflected upon the amount of the contract warded
- Lodge keepers have to take everything in and out
- How much does lodge depend on surrounding landscape, outdoors, wildlife? Currently, lodge operators are more concerned about the lodge than the surrounding landscape, outdoors and wildlife.
- Building maintenance - Who should do the work? Who should pay? Parks owns the building and rent money is paid to them by operators. This revenue, in turn, is placed back into funding building maintenance.
- Currently there is pressure for expansion of sewage and water outlets - Is this really necessary and who should fund this?
- Rescue and evacuation - should this be lodge visitor's personal expense?

All of these issues need to be addressed and negotiated. Oftentimes, this occurs after the issues arise. Currently, there are about 12 new commercial operator applications submitted to Parks annually.

Summary and Panel Discussion

- Need to ensure that regulations/permits/agreements of commercial operators are enforceable and that they can be monitored
- Need to recognize local and regional realities
- Need to develop a more consistent instrument for permitting agreements

Recreational Use Allocation in Wilderness

Allocating recreational use between commercial and private recreationists and within either of those groups is a difficult task that is increasingly being faced by Canadian National Park managers. Kluane National Park, Gwaii Haanas, and Pacific Rim are just a few of the parks in the west that are using allocation as a management method. Each method of allocation varies and has associated advantages and disadvantages. In this session, Suzanne Cable a USDA Forest Service employee and a graduate student specializing in recreational use allocation in wilderness gave a very comprehensive presentation on allocation alternatives. As only exerpts of Ms. Cable's work can be presented here, we suggest that the interested reader obtain a copy of the full graduate thesis available later this year.

Recreational Use Allocation in Wilderness: Lessons from the Bob Marshall Wilderness Complex

Suzanne Cable, USDA Forest Service

In 1972, an informal ban of operators (outfitter's) permits was instituted in the Bob Marshall Wilderness Complex (BMWC)[2]. In 1986 the ban was formalized. The question remains however, how do you determine what amount of recreational use should be allocated between groups?

Project Overview:

1. Define program: how to allocate use between outfitted and non-outfitted public? Further distinction between institutional and non-institutional outfitters.
2. How to address the problem?
3. Evaluate alternatives to identify the best option.
4. Discussion of consequences of the best ranked alternatives.
5. Identify recommendations.
6. Identify the need for further research.

Recreational Use Allocation

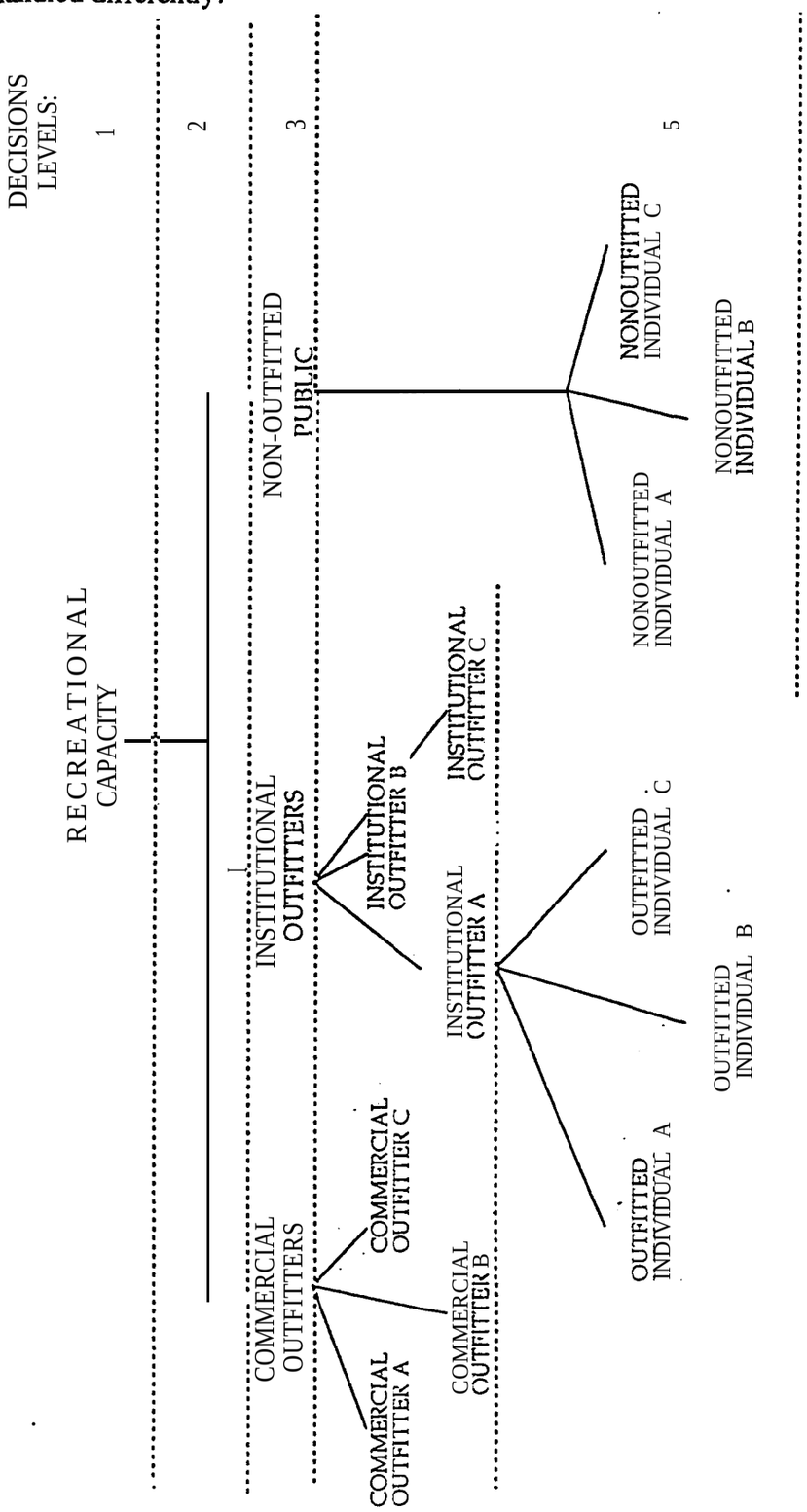
I. Terminology and Definitions:

- Alternative Allocation Approaches: decision rules for conducting the allocation of recreational use opportunities between sectors.
- Rationing: the process of assigning limited opportunities between individual users within a specific sector.
- Carrying Capacity: assessment of the maximum desirable recreational use level for an area; determines the quantity of opportunities available for allocation.
- Commercial Outfitters: all commercial operations involving services for accommodating guests, transporting persons and providing equipment, supplies and materials.

[2] *This research, An Evaluation of Alternative Approaches for Recreational Use Allocation in the Bob Marshall Wilderness Complex (BMWC),* is about 1 1/2 *years* along.

Institutional outfitters: (i.e. Sierra Club, Boy Scouts, universities). They have caused a lot of problems for the forest service. These groups aren't commercially operated and therefore are handled differently.

FIGURE 1: ALLOCATION PROCESS



DECISION 1: DETERMINATION OF RECREATIONAL CAPACITY
DECISION 2: IDENTIFICATION OF GROUPS AND DEFINITION OF MEMBERS
DECISION 3: ALLOCATION BETWEEN GROUPS
DECISION 4: RATIONING BETWEEN INDIVIDUAL OUTFITTERS
DECISION 5: RATIONING BETWEEN NONOUTFITTED INDIVIDUALS

S. Cable

II. Introduction

The issues revolve around about 50 outfitters in the BMWC, all on horseback, and mainly for hunting adventures. There are no backpacking outfitters operating in the area. Allocation can be a selective process and doesn't need to be all or nothing. Some of the questions which have arisen over time are:

- how will administrative use be impacted and monitored? This question has since died.
- how will comparative outcomes of each experience be dealt with at the management level?
- equity: those users who contribute more to the system get more out of the system . Can you always achieve all levels of perceived fairness at one time?

The agency may choose the outfitter groups. Outfitters selection criteria was based on first come first serve. System is now assessed on a case by case basis as some groups are unable to get in i.e. NOLS, Outward Bound.

Currently, the forest service does not have a needs assessment process. The Limits of Acceptable Change process has occurred, but hasn't acknowledged the moratorium on use.

Group Quiz

What methods have **you** folks uses in different locations?

1. Gwaii **Haanas** National Park Reserve: Historical use and value-based shares.
2. **Bowron** Lakes Provincial Park: established a use limit which has resulted in a complaints approach. Temporal distribution has been achieved through morning and afternoon start allocations.
3. Jasper National Park: first come first serve, basically a free for all. A moratorium has been imposed on horse outfitters (80% commercial grazing; public 29%). The river system had a closure as well, and was then opened up. Estimating about 29% allowance to commercial guide backpackers and biker outfits.
4. Tatshenshini Provincial Park: more historical use for commercial. Temporal selection: one raft take out a day. Commercial outfitters split **50/50**. There is a mandated legislative quota to First Nations outfitters of 25%. This may be contracted out at the moment.
5. **Banff** National Park: bulk of allocations are available for pre-planned trips, yet leave some spots available for spontaneous trips. Ultimately with horses it depends on grazing capacity on the trail.
6. Kootenay: allocation of campsite quotas. Pre booking is available 21 days in advance. River use is new in commercial sense, only 2 outfitters so far. Use is limited to one commercial departure per day.
7. Cascades: no caps on commercial use. Limits on use in the backcountry by limited supply of facilities (campsites). Commercial outfitters are allowed to reserve ahead for use of these facilities.
8. Chilkoot Trail: No limits now, limit on group size though on the US side

BC Parks is also considering issues of residency with respect to use quotas.

Group Discussion Points

- At some point, don't we have to incorporate the notion of adaptive management?

Yes, adaptive management allows the flexibility to assess and monitor.

- How did you reach the decision that none of these methods are great?

None of the methods can relieve shortcomings. Can it be done? Perhaps. The speaker wanted to find the perfect process, but discovered that this was ugly. Problems arise in interpreting fairness, equity etc. However, allocation and fairness is an oxymoron in itself.

- Would some of these approaches be more effective if considered at a smaller scale? If there are limited time and human resources, how can this be addressed?

These are generally applicability in other, smaller locations. Managers can sift through these and come out with a custom solution.

- Who developed the evaluation criteria? Is bias already within the perceived goals through communicating with the stakeholders?

The evaluation criteria were the goals in this case. The managers chose them based on other case studies. Also, a news release was put out and about 250 responses from the public were filtered through. Because public input was not a formal procedure, they had the flexibility to formulate the criteria.

- Public need for outfitting services, how was this assessed? R: went through each of the processes to screen whether assessing the public need was taken into consideration. Doing an actual need assessment would be a very complicated process, which is the next step. What the heck is a needs assessment?

Revenue Generation

Along with the many other initiatives protected area's are facing is the continued reduction of financial support for park's from traditional sources and the increased reliance on alternative funding mechanisms. One of these alternative finding mechanisms is user fees. Jack Knetsch, an environmental and recreational economist from Simon Fraser University provided a humorous and insightful primer for workshop participants on issues related to the valuation of recreational resources. This presentation was followed the next day by a presentation from Ron McCarville from the University of Waterloo. In a presentation format best described as "stand-up comedy", Dr. McCarville discussed the implications of revenue generation initiatives on people management within protected areas and advised Park managers on how to best communicate these complex issues to the public.

Valuation of Recreational Resources

Jack Knetsch, Simon Fraser University

The primary issues in valuing recreational resources are: what do people consider fair and why? How do we relate this to charging for activities?

Valuation Issues

We spend a lot of money in Parks talking about valuation issues. Unfortunately, a lot of our stuff isn't credible.

Should profits in parks really be considered economic benefits? The objection to these figures is that these economic "benefits" are really just a transfer. More activity in one place is transferred to other places.

What are we learning from the research? We are learning what to do with the money, and developing the right policies. These relate to what is fair. A lot of policies align with common sense, but there are a few surprises arising from the research.

The question is how do people value gain relative to losses? In economic terms, value is how much someone is willing to pay for something, and how much value someone would be willing to accept to give up something? Empirically, these measures are supposed to be the same. However, people don't value gains and losses equally: what we are willing to pay for something is less that what were willing to give it away for.

Summary of Tests

Example - how much are you willing to pay to maintain a marshland area? The results say $247 versus accepting $1044 to give up the same area. This suggests that wen people have something, they value it much more than when they don't have it.

National Parks tend to be justified not so much by how much we are willing to pay, but more in a preservation aspect. A question asking how much would we have to pay if we didn't preserve a park greatly understates the value of the park. We ought to be asking how much we would be willing to accept to give it up in terms of losses. This would result in a higher valuation of National Parks.

The question raised is this: when do you use one measure and when do you use another? It matters where the reference point is. This research has several applications. For example, if you have an injury,

do you reduce the harm, or create better compensation? Or, for needy individuals, do you give food/housing vouchers, or money? You could give less money than vouchers, because the money can be spent on anything. Do you clean up the environment, or if try to mitigate the harm? Mitigating the harm may in fact be more useful, according to the "Kink" graph. Treasury boards have a bias to avoid dedicated funds, since it may not be the most important place to put funds.

Mock Test: Environmental Issue

Given a harmed stream what do you do: spend money on clean-up that will have minor effects, or put money into general coffers. Only 15% of the people stated that the general fund was a good idea. When the alternative to clean-up was to put the money into parks and recreation instead of general coffers, only 27% agreed to this option. The bottom line is that when we have created a harm, fix the harm.

a) we like dedicated funds (e.g. clean up the river)

b) we don't like substitution (e.g. money into parks or general coffers)

c) people want parks revenue from fees dedicated back into that park.

What Does the Public Think is Fair?

A survey asked how to allocate excess football tickets: price, lottery or queue? Economists would say that price is the most efficient, lottery second, with queue last. However, the public responded differently: queues 70%, lottery 25% and lastly price 5%. Why would people think of this as being fair? People have perceptions of fairness. A strong pattern is observed of what is judged fair or unfair, acceptable or unacceptable. The results are astoundingly consistent

Fairness and acceptability are often judged using different weighting of gains and losses. People can't gain from someone's loss for example. Experiments suggest that a cut in wages is a loss, whereas a cut in bonuses is a foregone gain. Similarly, people feel it is less unfair to end a discount than to raise prices.

Fee increases can be justified if the costs increase. If fees are tied to cost recovery people accept the fee. Furthermore, if the item has no value, cost recovery based fees can be charged. For example, if something costs then you can charge for it, even if it detracts from enjoyment (i.e. bagpipes). Another example is that wages can not be cut if a company is making money, whereas wage cuts may be accepted if a company is losing money.

So, there are rules with what people perceive to be acceptable behaviour. Also, horizontal equity is very important: like people have to be treated alike and rules have to be the same. Public policy is often concerned with vertical equity (rich/poor). In the context of charging fees, horizontal equity is more significant than vertical equity - people have to be treated alike. If there is different treatment, there must be recognized and acceptable reasons for it.

Group Discussion Points

Q: What about school groups as an excepted group for fees? R: Jack believes that schools should be recognized as a distinct group, as well as recognizing senior's discounts. However, other community groups, such as Boy Scouts and Girl Guides, move into a gray zone of exception. We may be seeing an erosion of what treatment differentials are acceptable.

Q: How would Canadian and non-Canadian visitors fall in terms of horizontal and vertical equity issues? R: In studies, people strive to bring situation to parity. Do increased travel costs (of non-

Canadians) compensate for tax costs? Different people are gaining in this situation: government vs. airlines and travel agencies.

Q: A study at Garibaldi Provincial Park looked at whether people favoured airplane access into alpine areas for the physically challenged. R: Rather than asking them if in favour or not, take it further and ask why. In parks we are concerned both about users and non-users. Serious values about how people perceive areas, even if they are not users. Very important for National Parks.

Q: This valuation technique appears as a bit of a sales trick. R: This is true in one sense, although, it also gets at people's values. Another aspect: commercial operators are gaining enormous benefit from publicly owned parks. Once you give licenses etc. away, it's enormously difficult to retrieve them.

Q: It is surprising that people are willing to pay for backcountry use, yet are not willing to pay additionally to things like Medicare. R: I don't know the reason for this discrepancy, but it must be stressed: before giving away the rent (services), be very careful in what you're doing.

Q. What about people's time preferences? R: Discount Rates: something that happens 10 years from now is worth less now. In BC, the discount rate used is 8%. Now Economists are learning that there is no single discount rate: people have short and long term discount rates. i.e. $100 today; $104 in one month, most chose the current option; but $104 in 14 months, or $105 in 15 months, people choose the latter option. Things that take a long time are discounted at very low rates. Now we have a problem about which rate to apply to what.

Contingent Valuation: how much would people be willing to pay for something. A survey determines that residents are willing to pay $10 per bird for protecting them from oil spills. There is no other way to value the birds economically. These studies are very costly to conduct and do they yield true economic values? Perhaps not. Studies offering hypothetical and actual actions to pay find different results. Studies can be very leading if they are anchored. Another problem is that people are very discriminatory in terms of what they are getting: there is a capping limit e.g. save fish for $50, save buildings for $50, save both for $50. When the issues are separated, people would place the same amount of money for each category, so these studies don't say much about how much people are willing to pay for each individual service, only in relation to each other.

The US government divided results in two to avoid hypothetical end embedding issues. There is no basis for doing this. With issues like the Exxon Valdez oil spill, a loss, asking questions about willingness to pay creates a double negative.

If contingent valuation was supposed to be good what do we use if it shows little use? There are alternative ways of dealing with this. We need to know more about people's preferences.

Q: User surveys looking at willingness to pay on a cost recovery basis show people are $20-30. Why is this figure so low? R: You have bias problems, but are asking in the park versus at home. There is also a perception that Parks should be covered by taxes. Invariably, comments received suggest Parks should lower their costs. Linking costs to specific use issues result in higher acceptability. It has to be a use-related issue.

Ron McCarville, University of Waterloo

Some general findings regarding fee increases in parks are as follows: rangers and ticket takers need tools to deal with potential backlash resulting from fee increases, park staff need to avoid feeling negative toward visitors, relatively few people complain (3 per 100), and important components for the visitor are site and personal facilities.

Three tests can be applied to pricing and fees: fairness, value and choices.

I. Customers expect fairness in the pricing

While customers expect fairness in pricing, they will often argue that any price is unfair. It is the public who benefit from this scheme, rather than the individual user. The public need to realize that use of park facilities is a private good, not a right of the taxpayer. Pricing shifts the cost from the tax payer to the user.

Factors influencing consumer perception of fairness is based on both past experience and competitor prices. In other words, the power of the status quo leads the public to believe that what they paid last time is a fair price for this time. Because of this fact, it is the repeat users that will be most upset with price changes because they know how much they have paid historically. Therefore, public acceptance of price increases is higher if the fee increases are small and regular.

If prices are based on the cost-of-provision (cost recovery), the resulting structure is a win-win situation; essentially a zero sum solution. Alternatively, parks can demonstrate that they expect the public to pay a portion of the cost of services. For example, if the cost to parks is 20$ for a visit - ask the visitor for $10.

2. *Consumers seek value*

Where value is equal to perceived benefit, moderated by perceived cost. There is a need to increase perceived benefit as cost increases. People focus on the benefits, what they are getting for their money. One strategy is in marketing, for example a name can say it all (e.g. lake vs. reservoir).

To further increase the perceived benefits of parks, it may be useful to rework written material and brochures, making them more promotional by emphasizing the benefits of a park visit. Make the connection between any payment and direct benefits clear. Play up the important role of staff and management within the park, letting the public know how great the employees work is.

To reduce the perceived cost, stress the convenience of paying, and reduce the uncertainty of the pricing mechanisms. Transparency here can go a long way to acceptance.

3. Consumers seek choices

Provide the visitors with a range of choices connected to fees and services. For example, use different fee and accommodation options.

People may still resist a fee structure, and there are strategies available to park staff to deal with this.

Conquering Resistance

Park employees should:

- smile and be likable;
- be open to the concerns of the public;
- try to illustrate the win-win feature of the fee and service structure; and
- be good communicators, listen actively, maintain eye contact; and
- be aware of cross cultural communication issues. Staff need to learn the norms of other cultures of they are a large user group in the park.

Overcome your errors

- acknowledge any errors;
- correct it immediately;
- be empathetic;
- use symbolic atonement; and
- follow up if possible.

Group Discussion Points

- How appropriate are follow up services within the fee structure? For example first aid and liability.
- How do consumers seek choices? Do some consumers like an overall package deal, or a base rate with add ons for firewood and other services? Fine line between providing a maximum amount of choice and the visitor feeling nickel and dimmed at every comer. Potentially, parks could develop user centres for each activity/service, providing options and flexibility.
- Need to look at downselling, starting at a high price then moving down from there.
- Locals may feel a sense of entitlement to the local park resources. There may be a lot of backlash from locals if user fees are imposed on those who live near or in a park. Park managers may still use a lot of the same tools regarding benefits and choices, and locals can choose from a very basic level of services to an increased level of service.

Shared Decision Making on the Ground: What Works and What Doesn't

Shared decision making, consultation, consensus, negotiation, bargaining.... These are some of the new terms and concepts that resource managers are discussing when it comes to developing new and better forms and method of public participation. This workshop was designed to assist participants in learning from a number of these initiatives. Following a brief introduction about the concept, three panelists gave an overview and summarized some lessons learned from the processes they were involved in. This was followed by a group discussion of when and where shared decision making approaches are appropriate in park management activities.

A Shared Decision Making Primer

Pamela Wright, Simon Fraser University

Introduction

i) The old style of decision making and consultation in Parks Canada can be titled DEAD (Decide, Educate, Announce and Defend) decision making.

- It is the approach traditionally used within country as a whole, and is the result of broad discretionary authority of ministries themselves
- It is characterized by infrequent consultation -- or meaningless consultation, and one-way communication.

ii) Why society is moving towards SDM (Shared Decision Making)- what forces are in play?

- recognition of broader range of values out there than we have recognized in past
- growing expression of those values in the form of disputes -- often intractable
- public involvement/checks and balances with government
- public dissatisfaction from black box decision making
- concern that special interests groups have power to influence government at expense of other publics
- range of ADR (Alternative Dispute Resolution) processes in land use issues in country -- people getting experience with them and demanding them
- dissatisfaction with current ways of resolving disputes (no standing, long, expensive....) and desire to be proactive about preventing disputes

Bottom line is that stakeholders are no longer willing to settle for consultation in many situations — demanding genuinely cooperative decision-making if not control over decision making.

iii) What forces are suggesting Parks Canada should/is changing?

- past record with consultation
- increasing need to work with stakeholders cooperatively and within co-management framework
- it is standard operating style of some of our partners (e.g., some First Nations)
- need to work "beyond" our boundaries with ecosystem partners in contexts where we don't have authority to work -- must do so cooperatively

- need to enjoin communities, visitors etc. to work with us to achieve goals of Parks Canada and the recognition that we can't regulate these goals into achievement even if we wanted to -- especially true with declining budgets

iv) SDM and Wilderness Management

- growing range of use of SDM/stakeholder processes with respect to a) park establishment, b) park co-management and c) with respect to LAC-type stuff.
- in backcountry/wilderness settings when we're talking about visitor management -- a) getting at nebulous concepts and must involve people and b) often setting social standards
- trying to understand and plan for a somewhat vague idea "wilderness" -- must talk to people
- one of goals/ideas of wilderness management is to use the lightest

v) Some brief definitions: Shared decision making processes go by a variety of names/not always used clearly -- lets just work now with a few brief definitions/concepts (we will revisit in afternoon):

Consensus - Refers to a situation in which all parties agree to a decision.

Negotiations - Some form of explicit bargaining between at least two parties.

Mediation - Negotiation facilitated by a 3rd party neutral, non-binding, assists parties in meeting face to face, in a voluntary setting.

Facilitation - Typically 3rd party neutral but their responsibility is process -- wherever group wants you to go.

Principled Negotiations - Specific style of negotiations that is based on negotiating about interests (the fundamental values, concerns, hopes, desires and fears people have) versus negotiating about positions (no helicopters allowed, no logging...)

Shared Decision Making - Encompasses principled negotiation, mediation and consensus-building strategies. Explicit recognition that all stakeholder values are legitimate. In most of situations, the SDM name is a bit of a misnomer: typically its shared decision making with respect to a recommendation made by individual/organization with statutory authority to implement so in fact not a final decision. Not always case e.g., First Nations co-management/ can be real delegation of decision making authority.

Questions to Ask Yourself in a Needs Assessment

- Is this a dispute or a conflict? Which approach might work better knowing that?
- Do the parties want to resolve the dispute?
- Who must participate in the resolution?
- Is there a need for intensive relationship building before substantive issues are tackled (e.g., is the climate conducive to negotiation?)
- Are there sufficient incentives for the parties to negotiate?
- Is the context for the process appropriate? Can I live with this context?
- Will the participants include those with authority to implement a decision?
- Can power imbalances be addressed?
- Is there some urgency to settle
- What are your interests? What are their interests?
- Are you and your organization willing to discuss the issues?
- Why do you want to end the dispute?
- has the conflict reached the point where the issues have been defined and joined and you know who the parties at interest are?
- Do all parties have a legitimate reason to bargain in good faith?
- Do you have the support of your organization to explore possible mediation? Do they understand the implications of such an effort?
- What standing will the outcome have? (advisory, legal standing etc.) Will they recognize our decisions? Who will implement them?
- What is the history of the dispute?
- Are time and resources (including training) available for this?
- Is there adequate information and technical support necessary to proceed?
- Are there barriers to stakeholder participation?
- How much effort do you want to put into this? Do you have the time, money, expertise?
- Is there enough good faith to get involved?
- Who else is involved?
- Are there common interests around the table?
- What role will we have in designing the process?
- How will you keep your organization/sector up-to-date and on side?
- What training do we need to participate?
- Do we need a 3rd party to assist us? What role should they place?
    - Is the 3rd party neutral and fair?
    - Do they have any personal stake or involvement in the issues?
    - Has the 3rd party demonstrated that they have expertise in dealing with complex disputes?
    - Do you have a role in selecting and firing the 3rd party?
    - Does the 3rd party understand and accept as legitimate your concerns and positions — without agreeing with them?
    - Is the 3rd party sufficiently familiar with the issues and the context to be helpful?

Shared Decision Making from the Management Planning Perspective

Wayne Bourque, Parks Planner, Yukon Territories

BC has an established track record in SDM processes. There are three basic components to SDM: consensus, mediation, and principled negotiation. This process moves away from the traditional method of interest based negotiation. The process values all stakeholder inputs as legitimate.

Typically SDM is an advisory process where recommendations are passed on to the person or organization with decision making power.

The criteria for participation in a SDM process look something like this:

- direct involvement of stakeholders;
- voluntary;
- involve 2 way communications;
- some level of empowerment; and
- a commitment to work towards a win win solution.

Shared decision making (SDM) is important to management planning to protect ecological integrity. There are various levels at which the public can be included in decision making in parks. Furthermore, it is a legislated requirement to include the public in the decision making process. Management planning, therefore, is a significant opportunity to practice SDM. Guidelines to management planning supports decision making, although it is whether this requires consensus by a larger group or not. In reality, groups are not always able to reach consensus, therefore it can still be a goal but is not necessary.

Management planning is not static, rather it is an ongoing process. The new parks business plans are making changes to management planning. The link between business plans and management plans is through implementation. Ecological and commemorative integrity should be a goal of all parks plans. SDM will increase the shared values of parks for the general public.

Stakeholders need to be aware of their role in the decision making process. In particular regarding the legal mandate to work within the management planning framework for the jurisdiction. Just as public participation is legislated, so are other elements of creating a management plan.

SDM can happen at two levels:

1. General Public; and
2. Those with vested interest (stakeholders).

It is important not to forget the general public during a SDM process. It is necessary to maintain general public support for the park system, not just support from the louder minority often embodied in stakeholder groups. It is equally important to include staff as a stakeholder in these processes.

When to** use **SDM?

There are some non negotiables in park management planning. These include mandates, and intent or purpose statements. However, when it comes to values and activities, there is a need to include the public. For example, the general definition of wilderness should remain broad so that local definitions can evolve. In the Nahanni area there is a strong wilderness mandate because stakeholders valued wilderness at a high level.

In developing the guidelines for defining such things as wilderness there is a need for stakeholder input, and the utilization of local knowledge. As budgets shrink, stakeholder information is crucial. Stakeholders may have the ability to identify gaps that parks staff are unable to fill at a given time.

There is a need to identify social and natural indicators of success of a management plan. SDM is important in the monitoring process and in the identification of indicators. A business plan forces a yearly evaluation of the park, and could include ongoing public input at this level.

Group Discussion Points

- The expense and time of SDM are real constraints. However, the long term cost savings need to be realized, and the risk of litigation is much more costly to park operations.
- Is there a system for rating the success or failure of SDM processes? How a community reacts when the final report is presented can be telling.
- Many want to see the public forum continues to function even after the official role in management planning ends. There is an option for parks to develop an ongoing advisory body.
- It is important that the parks constituency is on line with the planning process by keeping people informed.
- There may be a certain amount of risk undertaking a SDM process as it breaks the "old ways" of doing business. For example, there is no room for back room deals, and there is a need to ensure the SDM process is the premier process. If the participants do not feel empowered then they will be less inclined to participate in good faith.
- Is it wise to operate with a loose definition of wilderness? Is there a risk of the wilderness ideal being watered down in the process of defining it by a group? The US experience has a tight definition and has resulted in much litigation. Canada is a different climate however, but we can learn from our neighbours.

Maligne Valley Round Table

Angus Simpson, Secretariat, Maligne Valley Collaborative Process

The Maligne Valley Collaborative Process (MVCP) is a scaled down version of the Task Force. The process had stalled, but was restarted in December. Problems included information not getting to members quickly, leading to frustration and eventually the restructuring of the process. The group felt that they needed a secretariat and support, in addition to a mediator (not a facilitator). A secretariat was hired and has been working on documenting a policy framework so the group will know where they sit on each issue and decision.

To date the group has come up with points of agreement, but not a collective vision. Now the MVCP needs to come up with an implementation strategy for the points of agreement using tangible mechanisms. There is a lot of optimism regarding the new process. The group is operating with a very tight timeline and have therefore developed a decision making framework to deal with bigger issues.[3]

[3] Additional information on the Maligne Valley Process can be found in Angus' panel presentation on appropriate activity determination.

Banff-Bow Valley Study

Jeff Green, Banff-Bow Valley Task Force

Why was a task force used at this time? The region is facing increasing development and use pressures and an increasing population. There is escalating rhetoric, a lot of tension, and uncertainty regarding the cumulative environmental effects of development in the park.

The task force was there to obtain two main targets. The creation of a state of the environment report, and the development of a sustainable use management scheme for the park.

The mechanisms for achieving public input are as follows:

- written submissions;
- deputations;
- communications (the usual); and
- work shops.

The characteristics of the Round Table are as follows:

- negotiate ground rules;
- establish a definition of consensus;
- ensure representation of all sectors;
- the table is assisted by a mediator not by a chair;
- sectors have a sense of ownership over the process;
- volunteer based - members generally want their interests heard, and this is often the only forum, although it participation may be a hardship for some more than others; and
- need for a strong policy base to start from.

In hindsight, the public should have decided who the interest groups were, rather than the task force choosing them due to time restrictions. There was some difficulty in getting people to the table. The local First Nations are not at the table, however they have shown up at two meetings. Concurrent land claims with Siksika prevent their current participation. The table had a chair for ‘culture’, which comprised of the local mountain culture of the area. The tourist sector was problematic and eventually they pulled out. A technical working group supported the table.

The task force developed vision principles and goals. This included a process for identifying issues and solutions. Some of the issues that emerged include: ecological integrity, appropriate use, community health, and visitor and resident requirements.

Public involvement on final report

Immediate Benefits of this approach:

- traditional adversaries around the same table and listening to each other;
- transparency of intent and agenda of Task Force;
- move from organizational structure to public involvement and interest based negotiation;
- public accountability for decisions; and
- identification of knowledge gaps.

Ongoing Benefits and Lessons Learned:

- narrow the scope of issues addressed;
- identify a range of possible alternative solutions to problems; and
- build positive, lasting working relationships which may mitigate future problems.

In summary, there are several conditions for a successful interest based negotiation process:

- power relationships need to be balanced at the table;
- key players can be self selecting;
- representatives of each sector need to go back to their constituencies;
- set reasonable deadlines;
- debate has to be free; and
- adequate resources for organizational and administrative processes.

Pulling It All Together: Workshop Summary and Results

This five day workshop provided participants with a chance to discuss, explore and examine a number of issues regarding visitor management in wilderness and protected areas settings. Initiated by a group discussion on the final afternoon of the workshop, the workshop coordinators, led by Judy Otton from Banff National Park pulled together the highlights and findings of the workshop. To help guide future management a summary of the key action items resulting from the workshop are presented below.

Manaaement Goals and Objectives

Clearly defined** park management goals and objectives **are required.

A clear statement of wilderness management goals and objectives is fundamental to future decision making. Their absence or ambiguity in the past has resulted in conflicting and divergent decisions within and among parks. Management goals and objectives should be developed with public involvement and should be included in park management plans. They should include concise and measurable statements of ecological integrity and commemorative intent, as well as statements of wilderness character. Goals and objectives provide the essential basis for monitoring programs (i.e. we have to know what we are aiming for in order to develop the appropriate indicators, standards and measures that tell us if we are getting there or not) and for assessing appropriate activities.

Action: Superintendents, park planners and backcountry managers

Research and Monitoring

*We **need to better communicate results of wilderness research and monitoring among backcountry managers and with others.***

Learning from others is cost-effective and ensures more consistency between parks and with our neighbours. Communicating research needs, study design, methodology, problems and results is integral to our success as an agency. It ensures a better product by taking advantage of our collective expertise and experiences. An internal communication strategy (e.g. terms of reference may include the requirement for a short report on research/monitoring findings) must be built into every project. Potential avenues for information sharing include: Research Links (including a special edition dedicated to backcountry issues); National Parks Occasional Paper Series; additional workshops involving a broader range of participants and focussed on specific research and monitoring topics; and a backcountry/wildemess email user group.

Action: Backcountry managers, staff biologists, park planners

There is a crucial and on-going role for social science in wilderness management.

Wilderness management primarily involves managing people, their influence on the natural environment and on each other. We must become more skilled at understanding public perceptions, expectations, motivations and benefits. A stronger emphasis is required on social science research, including the development of a network of in-house expertise, academics and

researchers. Staff are asked to share the names of suitable resource people.
Action: All staff; submit to backcountry managers who will develop shared network.

Compatibility of databases is essential so information can be shared more easily.
Compatible and comparable databases are critical to the success of ecosystem management. They are cost-effective and support analysis at different scales. Common databases encourage consistency within our agency and better regional integration. Compatibility must be a high priority in future study design.
Action: Backcountry managers, GIS specialists, researchers.

Cumulative effects assessment should play a key role in guiding management decisions, including identifying future research needs.
We must take into account the cumulative realities of human influence on wilderness. We have been ineffective in managing cumulative effects in the past, primarily due to difficulties in quantifying and qualifying them. Those difficulties have not disappeared; however, more sophisticated tools have emerged to meet the challenge. In particular, we need to institutionalize the guiding principles of precautionary and adaptive management. While cumulative effects assessment is not an exact science, it can be used to ensure management decisions err on the side of our mandate to maintain ecological integrity. Concerns about cumulative effects should play a major role in determining park research needs
Action: All managers

Appropriate Use

There is a need to better understand the social and ecological implications when assessing whether new activities are appropriate.
Activities can have an individual or cumulative impact on the experience of other visitors "the "social" environment") as well as on the biophysical environment. Social science needs to play a much greater role in this increasingly significant aspect of backcountry management.
Action: Recreational use coordinators and backcountry managers

The burden of proof for new activity assessment should shift to the proponent. The proponent of an activity should bear the responsibility of convincing Parks Canada that their proposal is appropriate from an ecological, social, public safety and economic perspective.
Parks Canada, at considerable cost, currently conducts these assessments, including the research required to address knowledge deficiencies. Most other land management agencies have abandoned this practice and instead require the proponent to bear all costs of the assessment, including the cost of any necessary research (e.g. cumulative effects assessment). There may, however, be times when Parks Canada will be the proponent of a new activity and would then bear the responsibility for assessment costs.
Action: Parks Canada senior management

National leadership on appropriate activity assessment should continue.

The proposed national framework for assessing appropriate activities provides a sound basis for assessments at the park level, but the criteria and application can be tailored to each individual situation. Case studies should be documented and shared nationally. Headquarters should also play a major role in ensuring there is a level of national consistency with respect to the thoroughness of new activity assessments across the country, and in considering the national implications of approving a new activity. Conversely, if an activity is approved at one site it should be made clear that this activity may not necessarily be deemed allowable or appropriate elsewhere.

Action: Per Nilsen, Natural Resources Branch, National Parks, HQ

Zoning

It is time to re-evaluate the application of the national park zoning system to many of our parks in light of our enhanced ecological and socio-economic knowledge base.

The national park zoning system provides the foundation for most backcountry management activities. Our knowledge of ecological and social parameters and relationships has grown significantly since the zoning system was applied to many of our parks. As a result, the way zoning has been applied is, in many instances, hindering our ability to adequately maintain ecological integrity and provide high quality visor experiences. The current zoning system does not necessarily reflect the ecological realities of an area and its ability to accommodate human use. As a result, decisions on what kinds of use, when, where, and how much often do not reflect the ecosystem's capability to support those activities. The resulting problems are costly and increasing. They include: human/wildlife conflicts; visitor conflicts; high maintenance costs: public safety hazards; reduced visitor satisfaction; costly research and mitigation efforts, etc. We should position ourselves to re-consider park zoning as the opportunity arises through park management plan reviews. GIS is an essential tool for this purpose.

Action: Superintendents, park planners, staff scientists, backcountry managers

The current zoning system is not refined enough to deal with the range of wilderness opportunities provided in western and northern parks.

The Backcountry Opportunity Spectrum used by several parks was developed in response to this deficiency but causes some confusion due to "layered" zoning systems. It would be better to have a national zoning system that addresses the parks' needs.

Action: National Parks Systems Planning; Legislation and Policy Branch; Director General, National Parks

Clear management objectives and values need to be establishedfor each zone, with public involvement.

Objectives should be established for ecological integrity, wilderness character, visitor activities and levels of service. Managers can then proceed to match the range of opportunities which would be appropriate for the setting and the objectives. This would provide Parks Canada with a more transparent and consistent national approach to land management. The more definitive and concise the zoning and objectives are, the lower the ambiguity and the less likely managers will find themselves having to assess subjectively the appropriateness of new activities.

Action: Superintendents, park planners, backcountry managers

Managing Commercial Use

Parks Canada Jteeds a more consistent and effective approach to administering backcoun fry commercial operators.

A broad range of approaches is being used, from business licences to leases to licences of occupation to concession agreements. Based on the experiences of other land management agencies and Parks Canada managers from different parks, some administrative approaches seem to work better than others for a given situation. As we depend more on these operators for revenue generation and service delivery, and require them to meet more rigorous environmental standards, we will iequire a more sophisticated and consistent approach to their administration. A working group will be formed to address this issue. Coordinating with other related initiatives (e.g. cost recovery for realty services, approaches used for frontcountry operations) is essential.
Action: Backcountry managers

Consultation with commercial stakeholders should be an integral part of backcountry man agemen t decisions.

Management decisions can have a significant effect on backcounty operators. Often, small adjustments would make a big difference to their financial viability. It is incumbent on the backcountry manager to consult with these stakeholders on management decisions that will affect them.
Action: Backcountry managers

Shared Decision Making

Documentation and communication of shared decision making processes and practices is required so managers can learn from others' experiences. Guidelines for applying shared decision making are required from senior Parks Canada management.

Shared decision making was seen to be a valuable means of gaining support for wilderness management in our parks. This is a relatively new approach for us, and we need to learn from our collective experiences. At the same time, senior management direction is required regarding the extent to which shared decision making should be applied to park management activities. We require clear direction on what is open for discussion with stakeholders and what should be considered a "given". In what situations is shared decision making appropriate and when is it not?
Action: Backcountry managers, park planners and other staff involved in similar processes; senior Parks Canada management.

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