



Southern Interior
Forest Extension
& Research Partnership

**INFORMATION MANAGEMENT:
TECHNIQUES AND OPPORTUNITIES
A Workshop Summary**

File Report 99-7

This document may be referenced as:

Innes, T., D. Gayton and T. Baker. 1999. Information Management: Techniques and Opportunities--A Workshop Summary. Southern Interior Forest Extension & Research Partnership. File Report 99-7. 41 p.
<<http://www.siferp.org/info/fr/fr99-7.pdf>>



Table of Contents

1	EXECUTIVE SUMMARY	3
2	BACKGROUND.....	4
2.1	PURPOSE	4
2.2	DESIGN.....	4
2.3	PARTICIPANTS	5
3	WORKSHOP DELIVERY	6
3.1	PARTICIPANT EXPECTATIONS	6
3.2	GUEST SPEAKERS.....	6
3.3	BREAKOUT 1	7
3.4	BREAKOUT 2	9
4	CONCLUSIONS AND OPPORTUNITIES	11
5	NEXT STEPS.....	11
6	ACTIONS BY THE PARTNERSHIP	12
	GLOSSARY OF USEFUL TERMS.....	13
	APPENDIX 1-- BREAKOUT RESULTS	15
	APPENDIX 2-- WORKSHOP EVALUATION.....	21

1 Executive Summary

A need was identified by a number of agencies at an information session hosted by the Columbia Mountains Institute in April 1999. This workshop addresses that need by providing participants an opportunity to:

- Identify current and planned methods of distributing electronic natural resource information.
- Discuss strategies for ensuring effective sharing of information, including the identification of opportunities for collaborative, interagency projects or linkages.
- Identify future directions for the Partnership and/or other organizations in the effective and innovative use of information technology.

Through a series of seminar and breakout sessions the workshop walked participants through the six steps of good information management:

- | | |
|--|---|
| 1. Defining a business mandate | 4. Defining a strategy and architecture |
| 2. Identifying information that supports the mandate | 5. Identify roles and responsibilities |
| 3. Identifying a target audience for the information | 6. Implementation and monitoring |

A number of guest speakers provided information on data-sharing opportunities, a commercial information management tool and their experiences in launching information management programs.

The workshop included a wide variety of participants from different technical and non-technical backgrounds. The keys to the success of this workshop were the participants. A number of the participants acted as speakers and leaders in the breakout sessions. Many provided helpful comments on the draft versions of this report. The workshop and this report are the result of a collaborative effort by many individuals:

Ed Froese	ACT Cinemage	Kathy Hopkins	Ministry of Forests-Victoria
Jane Miller	Arrow IFPA	Mike Curran	MOF-Nelson *
Barry Bartlett	Columbia Basin Fish and Wildlife Compensation Fund *	Larry Price	MOF-Nelson *
Patty Bossort	Columbia Basin Trust	Rod Thompson	Parks Canada
Tom Phillips	Ktunaxa/Kinbasket Tribal Council	John Woods	Parks Canada, Columbia Mountain Institute *
Keith Clement	Ktunaxa/Kinbasket Tribal Council	Tony Baker	Pentire Consulting, Ltd.
Michael Keefer	Ktunaxa/Kinbasket Tribal Council	Carl Mashon	Shuswap Nation Tribal Council *
Chris Scarff	Ministry of Forests-Nelson *	Trina Innes	SIFERP
Kathleen McGuinness	Ministry of Forests-Nelson *	Don Gayton	SIFERP

* Partnering organization of the Southern Interior Forest Extension & Research Partnership



Participants shared information on their business objectives, knowledge assets, target audiences and the information needed from other organizations. They also identified preferred tools and approaches for sharing information. These included traditional methods (paper), interactive methods (online focus groups) and technological solutions (British Columbia Journal of Ecosystems and Management, web sites, web rings, and searchable databases).

Participants identified the need for regional coordination of information management efforts. They asked that information management activities focus on gathering metadata (information about data) and linking people to knowledge. They confirmed they would like a one-stop-shop for natural resource information.

To address the identified issues, the Partnership proposes to take a regional leadership role in information management for the southern interior. The first step includes the creation of an alliance with the Columbia Basin Trust, the Columbia Mountains Institute and Forest Renewal BC to capture unpublished FRBC research information for the southern interior and other natural resource information for the Columbia Basin.

2 Background

2.1 Purpose

This workshop originated from an extension request identified by agencies at an information session hosted by the Columbia Mountains Institute in April 1999. At this meeting a number of participants spoke about their plans for web-based information databases. A substantial amount of overlap and common interest was identified. Based on that interest and a need to improve understanding of the principles of information management, the Partnership designed a workshop entitled, Information Management Techniques and Opportunities.

This workshop provided participants an opportunity to:

1. Identify current and planned methods of distributing computer-based natural resource information.
2. Discuss strategies for ensuring effective sharing of information, including the identification of opportunities for collaborative, interagency projects or linkages.
3. Identify future directions for the Partnership and/or other organizations in the effective and innovative use of information technology.

2.2 Design

The workshop was divided into three parts; a seminar, presentations by guest speakers and two breakout sessions. The seminar walked participants through six steps of good information management identified by the Partnership:

1. Define business mandate
2. Identify information required to support mandate
3. Define your target audience (who needs your information and in what form?)
4. Define strategy and architecture
5. Identify roles
6. Implement and monitor

Guest speakers provided information on data-sharing opportunities, a commercial information management tool and launching an information management program.

Breakout #1 focused on identifying business objectives, clarifying supportive information sources and identifying target audiences.

Breakout #2 defined preferred tools and approaches for sharing information. Participants were afforded opportunities to ask questions and share ideas and approaches relating to the following questions:

Breakout 1--Business Objectives and Information

- What are your organization's objectives?
- What are your knowledge assets?
- What information do you want to share? And why?
- Who needs your info?
- Why do they need the information?
- Who manages your data?
- How is your data accessed, controlled or shared?
- What information from other organizations do you need to support your business processes?

Breakout 2--Tools and Opportunities

- How do you want to share your information?
- What are your main categories of information?
- What web-based tools will work for you?
- Do you have ideas/opportunities to work collaboratively?
- Is there a need for regional leadership on some programs?

Written summaries of participant responses to many of the questions are provided in Appendix 1.

2.3 Participants

The workshop included professionals with various technical and non-technical backgrounds representing 10 different organizations or divisions of organizations (federal government, First Nations, provincial government, non-government and industry) and various professional backgrounds. A number of the participants also acted as speakers and leaders in the breakout sessions.



Ed Froese	ACT Cinemage	Mike Curran	Ministry of Forests-Nelson *
Jane Miller	Arrow IFPA	Larry Price	Ministry of Forests-Nelson *
Barry Bartlett	Columbia Basin Fish and Wildlife Compensation Fund *	Kathy Hopkins	Ministry of Forests-Victoria
Patty Bossort	Columbia Basin Trust	Rod Thompson	Parks Canada
Tom Phillips	Ktunaxa/Kinbasket Tribal Council	John Woods	Parks Canada, Columbia Mountain Institute *
Keith Clement	Ktunaxa/Kinbasket Tribal Council	Tony Baker	Pentire Consulting, Ltd.
Michael Keefer	Ktunaxa/Kinbasket Tribal Council	Carl Mashon	Shuswap Nation Tribal Council *
Chris Scarff	Ministry of Forests-Nelson *	Trina Innes	SIFERP
Kathleen McGuinness	Ministry of Forests-Nelson *	Don Gayton	SIFERP

* Partnering organization of the Southern Interior Forest Extension & Research Partnership

3 Workshop Delivery

3.1 Participant Expectations

Participants had varied expectations from the workshop, but all could be categorized as wanting to learn more about information management and activities in other organizations, and to share information about their own organizations.

Learning

- Learn what others are doing
- Learn how to package information for sharing
- Obtain ideas for sharing information
- Obtain more information on information management
- Obtain ideas on how to deliver digital maps to the community
- Obtain ideas re: archiving
- Learn how to increase their audience
- Learn how to manage information better

Sharing

- Build links with other organizations
- Start to share information with others
- Gain information about the Ministry of Environment's GIS Online Access Tool
- Identify potential problems or conflicts
- Identify a process to manage data and metadata
- Identify ways to increase accessibility to information
- Learn how to improve our ability to search for information

An overview of the main issues, experiences and opportunities identified by guest speakers and breakouts are outlined in the following sections. References and clarification of Partnership activities has been added.

3.2 Guest Speakers

Edgar Froese--Act Cinemage

- Presented a commercial, web-based document delivery tool.



- Demonstrated extension database developed for the Northern Forest Research and Extension Partnership.

Barry Bartlett--Columbia Basin Fish and Wildlife Compensation Fund

- CBFWCF is in the process of launching a web site for sharing their information.
- Noted that the key to solving problems related to information is not technology, but improving communications. We need to help people understand our organizations business and let them know what information is available.

Rod Thompson--Parks Canada

- Leading the development of an information-sharing culture in Alberta.
- Suggests starting with simple information-sharing tools (e.g., list server¹) to get things going. Start with information data exchanges and work towards a formal arrangement.
- The key is to start sharing--techniques and approaches for improvement will emerge

John Woods--Columbia Mountains Institute

- Presented information on the Columbia Basin Documentation Center (CBDC). A draft of their proposal is available in Appendix 2.
- The proposal will capture information generated within the Basin and other literature relating to the Basin done by other organizations (e.g., master's thesis done at Ontario university)
- Suggests inventories should start with the current literature and work backwards.
- As regional information web sites may not be permanent he recommends that more permanent mirror sites be explored as a means of providing long-term stability (e.g., Royal Roads University).

Patty Bossort --Columbia Basin Trust

- CBT would like to make their web site the "first door," "one-stop shopping" site for the Basin.
- They do not want to house or operate an information web site.
- CBT sees the Columbia Basin Documentation Center (as proposed by John Woods) as a separate site but linked to the CBT site.

3.3 Breakout 1

Participants were asked to focus on their organization or business unit and define their business objectives. Clarification of business objectives is an important first step in good information management. The information generated, gathered or shared should support business goals. They also identified the type of information they produce and their target audience for sharing information. Tables 1-7 summarizing many of the participant responses are available in Appendix 1.

Organizational business objectives

Business objectives for organizations varied depending on the nature of the organization. Some organizations are guided by legislated objectives (e.g. Arrow IFPA or the MOF). Most organizations presented business objectives related to the sharing of internally produced information with other organizations.

Some organizations create information and others use information. Others are taking on new business objectives in response to local client needs. Some organizations that don't produce information (e.g., Columbia Basin Trust) are planning on taking on the role of providing an improved source of natural resource information.

Organizational knowledge assets

The nature and quantity of information varied between organizations. However, key knowledge assets related to the tacit knowledge of staff, researchers and employees, and others related to information products (reports, maps, and files).

ORGANIZATION	KNOWLEDGE ASSETS
Act Cinemage	<ul style="list-style-type: none"> • In-house expertise of programmers
Arrow IFPA	<ul style="list-style-type: none"> • Licensee members (reports and technical expertise) • Agency partners (GIS, reports, research information and expertise) • Academia (research results, expertise) • Other (historical records, public anecdotal information) • Information is in multiple locations • Want to share results of own projects, operational trials and results of data/info collection (i.e., directory of reports). • Developing GIS data hug, web site, access database, extension notes
Columbia Basin Fish & Wildlife Compensation Fund	<ul style="list-style-type: none"> • >300 completed fish and wildlife projects in Columbia Basin and Nelson Forest Region. Most available in hard copy only. • Valuable baseline data • 8 bios and GIS, lots of maps for Nelson/Revelstoke/Invermere • 216 partners, 3 offices, photos
Columbia Basin Trust	<ul style="list-style-type: none"> • No in-house assets • Through current funding initiatives a growing inventory of products and reports
Columbia Mountains Institute	<ul style="list-style-type: none"> • Researchers handbook, memberships (~80), web site (www.cmiae.org), funding source directory • No original data just data from members
Ktunaxa/Kinbasket & Shuswap Tribal Councils	<ul style="list-style-type: none"> • Elders, staff, databases, archives, citizens, government data
Ministry of Forests-Nelson & Victoria	<ul style="list-style-type: none"> • Staff, publications, reports, training, web sites, library, > 50 offices
Parks Canada	<ul style="list-style-type: none"> • Info at park/sites, service centers, headquarters and inside individuals heads
SIFERP	<ul style="list-style-type: none"> • Research summaries, problem-solving workshop reports, niche libraries, staff expertise, partners information products, web site, client database, FRBC research products inventory (in progress), research syntheses

An information management strategy must take into account the form, distribution, and sensitivity of various knowledge assets. It must also identify a distribution system that advertises the availability of information and improves client access to that information.

Information needed from other organizations

Participants identified a number of key types of information products for which they would like improved access:

- Spatial information
- Research activities, updates and results; information that tracks projects; tools for identifying related programs.
- Researcher contacts
- Field data
- Information on forest and stand level models
- Educational material (for general public)
- Data gaps and priorities for research
- Data sharing protocols that will allow improved information sharing
- Information useful for supporting decision making
- FRDA reports
- Cultural, historical and ecological info (metadata)
- Archival photographs of landscapes would be valuable

Through inter-agency communication there will be an improved understanding of what is available, improved links to hard-to-access information and an increase in our ability to reach a variety of target audiences. Information is needed to improve the effectiveness of each individual organization. It is also needed to ensure that efforts are not duplicated.

All of the participants were asked to identify their target audience for information produced or shared by their organization. Many identified industry, other agencies, and key decision-makers as their primary target audiences. A number of others identified the general public as a target audience. It is important that organizations choose a specific target audience. An organization that wishes to provide useful information to the public needs to consider that the public is not well-versed in the terminology or concepts presented in a lot of natural resource publications. The material they use to reach their target audience may need to be reexamined.

3.4 Breakout 2

This session focused on identifying tools and information management opportunities. Two groups, one with a spatial focus and the other a non-spatial focus were assigned the same series of questions. Interestingly, the results for both groups were very similar.

Preferred methods for sharing information

Favoured tools for information sharing included traditional mediums. Paper was listed by both groups as a primary method of sharing information both now and into the future. Paper should be used to augment electronic media and it should also be used to share information with "public" who may not have access to email or internet technology.

Participants identified a need for more opportunities to interact with people responsible for information management in other organizations. They also identified a large number of technological solutions to information sharing.

Interactive

- One-on-one client consultation
- Community or organizational meetings (such as this workshop)
- Online-chat, online messaging, ICQ
- Workshops, training, field trips, school trips

Technology

- Email, list servers and intranets
- Internet, ftp, web sites, and searchable databases
- File transfer
- British Columbia Journal of Ecosystems and Management (printable)
- Real time camera
- Online focus groups

Security issues were identified as areas of potential concern that will need to be addressed for specific types of information.

Participants also noted that it was important that any tool for information-sharing have some degree of permanence. Partnering with local libraries (e.g., 3-4 across the southern interior) might provide improved access and cataloging of resource information. Print on demand over the internet will also be very valuable.

Preferred web-based tools

Participants were asked to identify web-based tools that will support information sharing. The methods preferred varied depending on the availability of financial resources. Tools included:

- Expanded web pages
- Search tools, indexed sites and searchable database (web sites, metadata, bibliographies, grey literature)
- Online British Columbia Journal of Ecosystems and Management
- List-serve, web forums, web rings, net meeting, real time interaction (ICQ or net meeting)
- One-stop shopping
- Print on demand (immediate printing of full-text articles from the internet)
- Geographic search engines (regional) and clickable maps
- Use of freeware
- CD ROM mailings
- Regular meetings
- Secure intranet with dial-up access

Most popular in discussions was the need to have indexed, searchable sites. Participants agreed that focusing on metadata (telling people what is available, and where to access it) should be the first step in any strategy. Tools must have good data structure and categories. Data must be of high quality (peer-reviewed).

4 Conclusions and Opportunities

The seminar, guest speakers and breakouts represented an exceptional collection of thoughts, experiences and approaches. A number of common themes were identified:

- Participants all believe in the value of research, monitoring and documentation as a basis for ecosystem management, and recognize that data must be stored, maintained and updated over the long term before it becomes useful as a basis for resource management decisions.
- Two separate information streams were identified--the social/cultural/historical being one stream, and the ecological/biophysical/resource management stream being the other. Both streams need to be considered.
- We are all keenly aware of the redundancy and inefficiency created by our lack of awareness of previous research.
- We are all committed to involving and empowering the public by providing them with historical, cultural and natural resource information.
- Participants demonstrated that their organizations have information to share
- Limited ability or tools to implement information-sharing programs because most organizations are short-staffed, with minimal budgets.
- We all wish to preserve our institutional identities in any information sharing exercise.

Key factors also separate organizations:

- Varying needs for internal data security as some organizations want limited public access and others require a certain level of confidentiality
- Some organizations are heavily committed to spatial information (and all the training and hardware that entails), whereas others focus mainly on reports, summaries and other alphanumeric information

The workshop also identified a number of web-based tools that could be implemented immediately to improve information sharing--most importantly the inventory of information and distribution of metadata summaries relating to this information.

This workshop reinforced that people think of themselves as belonging to a specific region--in this case the Kootenays--and that they want more information about their region. The results of the workshop point to the need for a team dedicated to information management in the region. An evaluation summary of the workshop is available in Appendix 2.

5 Next Steps

A number of other organizations invited to this workshop were not in attendance: Selkirk College, College of the Rockies, Slocan Forest Products, Crestbrook Industries, Living Landscapes, Conservation Data Center, Ministry of Environment, Lands and Parks, and

Invermere Enhanced Forest Management Program Pilot. These are key players in the Columbia Basin that should be incorporated into future information-sharing activities.

Based on the lessons learned in this workshop the following issues must be addressed:

- Coordination of regional approaches to information management.
- Development of an online tool that allows all users to be able to search, browse and retrieve research material and other natural resource information (Natural Resources Information Network).
- Introduction and promotion of information-sharing tools (e.g., Journal of Ecosystems & Management, list servers, online forums and web rings).

6 Actions by the Partnership

In response to the above issues, the Partnership will:

1. Convene and facilitate an information management group. Including primary agencies in the southern interior and Columbia Basin, this working group will assist in creating an effective Natural Resources Information Network by:
 - Developing an overarching information management strategy.
 - Providing advice in the development of a web-based information-sharing tool.
 - Leading the development of data-sharing relationships and encourage the collection and posting of natural resource information covering the Columbia Basin.

The working group will consider input from this workshop, such as:

- Tool should be provided in a non-commercial setting.
 - Initial efforts should focus on the construction of a metadata database.
 - Inventories should reside on a regional or sub-regional web site that allows detailed searching.
 - Map screens highlighting regions, allowing for reports relating to that region to be displayed should be considered.
 - Focus initial inventories on non-spatial information.
 - Need to investigate existing college and library services.
2. Convene two-day meeting of the working group to:
 - State individual corporate needs and aspirations regarding information management
 - Share our visions of searchable information-sharing tool
 - Develop terms of reference
 - Develop a strategy for involving information source organizations.

- Develop a budget, funding plan and timetable
3. Draft and circulate a vision paper for a Natural Resources Information Network.
 4. Develop an information-sharing tool--using advice from the working group--that will form the basis of the Natural Resources Information Network.
 5. Pilot the Natural Resources Information Network using FRBC research information and provide support for the collection and uploading of natural resources information in the Columbia Basin.
 6. Promote and encourage the use of the Journal of Ecosystems and Management for sharing natural resource information and information management initiatives (e.g., this workshop).
 7. Introduce and promote interactive tools for discussing research results and asking questions of researchers.
 8. Provide information on existing focus groups, list servers and web rings on our web site.
 9. Make the Partnership's web board (and list server) available for online focus groups and discussions to encourage information-sharing. Charter members of the list-server will include the participants of this workshop. Charter members will be asked to help define the purpose of the list server, recruit new members and promote its use.
 10. A description of this service will be made available on the Partnership's web site.
 11. Promote a web-ring for ecosystems and management to agencies that have established web pages.

Glossary of Useful Terms

automatic mailing list A mailing list maintained by a computer program, usually one named LISTSERV or Majordomo.

bulletin-board system An electronic message system that enables you to read and post messages.

client A computer that uses the services of another computer. If you dial in to another system, your computer becomes a client of the system you dial into.

domain name server A computer on the Internet that translates between Internet domain names, such as www.siferp.org and Internet numerical addresses, such as 123.456.78.0.

URL Uniform Resource Locator, a way of naming network resources and originally for linking pages together in the World Wide Web.

gateway A computer that connects one network with another when the two networks use different protocols.

HTML Hypertext markup language, used in writing pages for the World Wide Web. It lets the text include codes that define fonts, layout, embedded graphics, and hypertext links.

HTTP HyperText Transport Protocol The protocol for moving hypertext files across the Internet. A HTTP client program on one end and an HTTP server program on the other end is required. HTTP is the most important protocol used in the World Wide Web.

hypertext A system of writing and displaying text that enables the text to be linked in multiple ways, to be available at several levels of detail, and to contain links to related documents. Hypermedia can also contain pictures, sounds, video - you name it. The World Wide Web uses hypertext.

internet relay chat (IRC) A system that enables people to talk to each other in real time (rather than after a delay, as with e-mail messages).

list server A program that automatically manages mailing lists. See also **LISTSERV**.

mirror An FTP server that provides copies of the same files as another server. Some FTP servers are so popular that other servers have been set up to mirror them and spread the FTP load on to more than one site.

search engine Software used to find information on the World Wide Web.

security A means of allowing access to sites, or accounts. It includes the use of passwords to protect your account.

web server An Internet host computer. This computer stores web pages and responds to requests to access and view them. Web servers talk to web browsers using a language called HTTP.

APPENDIX 1-- BREAKOUT RESULTS

BREAKOUT 1--BUSINESS OBJECTIVES, INFORMATION AND AUDIENCE

Table 1. Organizational business objectives.

ORGANIZATION	BUSINESS OBJECTIVES
Act Cinemage	<ul style="list-style-type: none"> • To be a leading for-profit distributor of content on the internet
Arrow IFPA	<ul style="list-style-type: none"> • Legislated objectives • Conduct innovative forest practices • Improve forest management and ecosystem management • Maintenance of allowable cut
Columbia Basin Fish & Wildlife Compensation Fund	<ul style="list-style-type: none"> • BCE/CBH partnership to deliver programs to conserve/enhance fish and wildlife populations impacted by the BCH dam-related activities in the Columbia Basin • To raise awareness, understanding and involvement of key audiences in the CBFWCF projects and activities
Columbia Basin Trust	<ul style="list-style-type: none"> • To ensure that all published and unpublished information (data) is widely and easily accessible throughout the Basin. • To assist in the preservation, protection and enhancement of the environment of the region.
Columbia Mountains Institute	<ul style="list-style-type: none"> • Facilitate cooperative research and use of research data and training related to research data
Ktunaxa/Kinbasket & Shuswap Tribal Councils	<ul style="list-style-type: none"> • Preservation of knowledge • Land and resource development awareness to improve referral response • To make informed decisions in the treaty process
Ministry of Forests-Nelson & Victoria	<ul style="list-style-type: none"> • Non-GIS: Provide non-spatial data to support/enhance management of timber, range and recreation resources while adequately maintaining / conserving others.
Parks Canada	<ul style="list-style-type: none"> • Policy direction is to develop and share data with other levels of government and non-government organizations in support of ecological and commemorative integrity • Ecology and commemorative integrity of our national parks and historic sites
SIFERP	<ul style="list-style-type: none"> • To promote and support the development and delivery of scientific, indigenous and experiential natural resource management knowledge and decision-support to the maintain and enhance the longer-term health of British Columbia's Southern Interior forest and range ecosystems • To facilitate collaborative extension, technology development and research ventures between partnering organizations.



Table 2. Organizational knowledge assets and information to be shared.

ORGANIZATION	KNOWLEDGE ASSETS
Act Cinemage	<ul style="list-style-type: none"> • In-house expertise of programmers
Arrow IFPA	<ul style="list-style-type: none"> • Licensee members (reports and technical expertise) • Agency partners (GIS, reports, research information and expertise) • Academia (research results, expertise) • Other (historical records, public anecdotal information) • Information is in multiple locations • Want to share results of own projects, operational trials and results of data/info collection (i.e., directory of reports). • Developing GIS data hug, web site, access database, extension notes
Columbia Basin Fish & Wildlife Compensation Fund	<ul style="list-style-type: none"> • >300 completed fish and wildlife projects in Columbia Basin and Nelson Forest Region. Most available in hard copy only. • Valuable baseline data • 8 bios and GIS, lots of maps for Nelson/Revelstoke/Invermere • 216 partners, 3 offices, photos
Columbia Basin Trust	<ul style="list-style-type: none"> • No in-house assets • Through current funding initiatives a growing inventory of products and reports
Columbia Mountains Institute	<ul style="list-style-type: none"> • Researchers handbook, memberships (~80), web site (www.cmiae.org), funding source directory • No original data just data from members
Ktunaxa/Kinbasket & Shuswap Tribal Councils	<ul style="list-style-type: none"> • Elders, staff, databases, archives, citizens, government data
Ministry of Forests-Nelson & Victoria	<ul style="list-style-type: none"> • Staff, publications, reports, training, web sites, library, > 50 offices
Parks Canada	<ul style="list-style-type: none"> • Info at park/sites, service centers, headquarters and inside individuals heads
SIFERP	<ul style="list-style-type: none"> • Research summaries, problem-solving workshop reports, niche libraries, staff expertise, partners information products, web site, client database, FRBC research products inventory (in progress), research syntheses

Table 3. Information needed from other organizations

ORGANIZATION	INFORMATION WANTED
Act Cinemage	<ul style="list-style-type: none"> • Collaborative research and development • Shared pilot collections • Joint market and awareness programs
Arrow IFPA	<ul style="list-style-type: none"> • Need data. GIS information, research results, field data • Models: stand level, forest level
Columbia Basin Fish & Wildlife Compensation Fund	<ul style="list-style-type: none"> • Reports, project updates, project applications, land acquisitions
Columbia Basin Trust	<ul style="list-style-type: none"> • Info to support analysis and decision making for resource and environmental management at all levels • Identification of research, inventory, and assessment priorities • Planning of environmental restoration projects • Information to support environment-related education (formal and public) • Tracking of current, related programs and activities of Basin and government agencies to facilitate collaboration
Columbia Mountains Institute	<ul style="list-style-type: none"> • Research activities and results • Researcher contacts • Current and past projects, data gaps, and priorities
Ktunaxa/Kinbasket & Shuswap Tribal Councils	<ul style="list-style-type: none"> • Oral histories • Access to databases
Ministry of Forests-Nelson & Victoria	<ul style="list-style-type: none"> • Collaborative related research • Formative info for systems compatibility and ease of use • Natural resource data from other agencies and groups (e.g., habitat, weather, traditional use, fish streams). • Data and standard protocols from licensees and tenure holders
Parks Canada	<ul style="list-style-type: none"> • MOU's, use restrictions • Info from all other ecosystems and commemorative partners to support broad management

Table 4. Reasons for needing information from other organizations

ORGANIZATION	REASONS FOR NEEDING INFO
Act Cinemage	<ul style="list-style-type: none"> • Consumers, personal interest • Part of business process • Sales/purchases
Arrow IFPA	<ul style="list-style-type: none"> • To support business goals
Columbia Basin Fish & Wildlife Compensation Fund	<ul style="list-style-type: none"> • To support research and delivery of fish and wildlife projects • Improve quality and availability of information • Improve productivity • Improve communications with key audiences
Columbia Basin Trust	<ul style="list-style-type: none"> • To support improvements to quality of public involvement, build capacity in residents • To support other agencies or business in their planning decisions • To support in-house expertise and to help guide sectoral committees as they plan and decide on program areas to fund • To help the public gain knowledge about the Basin for better management of the environment
Columbia Mountains Institute	<ul style="list-style-type: none"> • Avoiding duplications • Build on strengths • Save time and money
Ktunaxa/Kinbasket & Shuswap Tribal Councils	<ul style="list-style-type: none"> • To make informed decisions in the BC treaty process • To assist in identifying resource development conflicts
Ministry of Forests-Nelson & Victoria	<ul style="list-style-type: none"> • To make better informed decisions by creating more informed managers and public
Parks Canada	<ul style="list-style-type: none"> • Improves conservation • Improves links to hard to access information
SIFERP	<ul style="list-style-type: none"> • To support extension activities that lead towards informed management decisions

Table 5. Target audience for information produced by organization.

Audience	Arrow IFPA	CBFWCF	CBT	CMI	First Nations	MOF	Parks Canada	SIFERP
Decision-makers	✓			✓				✓
External organizations	✓							✓
MOF			✓		✓	✓		✓
Other government agencies		✓	✓		✓	✓		✓
First Nations		✓	✓		✓	✓		✓
Non-government agencies			✓		✓	✓		✓
Industry	✓		✓		✓	✓		✓
Public	✓		✓	✓	✓	✓		✓
In-house staff			✓					✓
Land-Use planners	✓							✓
Chief Forester	✓							✓
Research community				✓			✓	✓
International governments and agencies					✓		✓	✓
Conservation groups		✓						✓
Environmental groups		✓						✓
Outdoor groups		✓						✓
Elected Officials		✓						✓
Media		✓						✓
Project partners		✓					✓	✓

BREAKOUT 2-- TOOLS AND OPPORTUNITIES

Table 6. How organizations want to share information

<ul style="list-style-type: none"> • Paper (now and into the future) • Online journal/printable • Virtual network-intranet • One-one-one • Community meeting • Workshops, training • Field trips, school trips • Online-chat, online messaging, ICQ • List server • Focus groups online • Augment and enhance other media, empower rural research 	<ul style="list-style-type: none"> • Public info where there is no email • Internet • Site monitoring and security concerns were raised • Over coffee (opportunities to meet) • Internet, web site • File transfer • Searchable databases • Email • Real-time camera
--	---

Table 7. Preferred web-based information management tools.

<ul style="list-style-type: none"> • Web page-expand • Intranet with dial-up access • Computers in communities for TU survey info (access and security software) • Searchable database (web sites, metadata, searchable bibliography) • Geographic search engines (regional) • Internet (interesting formats) • Software allowing real-time interaction (e.g., ICQ) • Metadata search engine (for what's available online and for grey literature) • New dictionary • One-stop shopping • Major indexing 	<ul style="list-style-type: none"> • Methods depends on money available • Clickable maps • Web-ring • Data services • Freeware • Net meeting • List-serve • Web forums • Search tools • CD ROM mailings • Journal of Ecosystems and Management • Regular meetings • Make FRDA reports we-available • Cultural, historical and ecological info (metadata)
---	--

APPENDIX 2-- WORKSHOP EVALUATION

	Very Poor	Poor	Average	Good	Very Good
1. How would you rate the organization of the session (i.e., use of time, organization of handouts, etc.?)			2	5	4
2. How would you rate the presentation of material? Facilitator: Trina Innes			1	6	4
3. How would you rate the presentation of material? Facilitator: Tony Baker			1	6	4
4. How closely did the workshop meet your expectations?			1	6	3
5. Please rate the usefulness to you of the information presented in terms of improving your ability to carry out operational activities in your organization.			1	5	4
6. Please rate the usefulness of the breakout sessions. Indicate your ideas for improving breakouts in Question 10.			2	5	4
7. How adequate were the workshop facilities?			1	5	5
8. Overall, how would you rate this workshop?			1	6	4
				About Right	Fast
9. How was the rate of presentation?				10	3

10. Please indicate other organizations or individuals that you feel would benefit from this type of workshop.

- Victoria MOF and other agency staff
- Northern Partnership
- Skeena Bulkey Partnership
- Government agencies
- Ministry of Environment
- Ministry of Agriculture Fisheries and Food
- Academia
- Provincial government or equivalent

11. How do you feel this workshop could be improved?

Content

- Hard to flip through the handout to find out where the speaker was. Should have closely followed same format.
- There was a lot of information to cover and it would be great to have more time and more information on the technology and how to use it. However, most people can't get away for more than a day so the format is as good as it can get.
- Extra handouts were many-distill into main handout and a few optional
- Structural connections with other information databases
- Some more basic information on information management systems, technologies, formats and glossary
- More organizations represented
- Lot of overlap in answers to breakout session 1. Could do some of that with "brainstorming". Bit more on the tools options always good.

Delivery and Facilitation

- Facility with more do-dads (e.g., individual lights that turn off)
- Follow handouts better
- Give package to latecomers
- More internet access and demonstrate some existing sites, links and technologies

Breakouts

- Hard to flip through the handout to find out where the speaker was. Should have closely followed same format.
- Some of the questions were a bit too general or repetitive otherwise good.
- Time constraints meant discussions had to be curtailed
- Simplify overhead handouts to help focus
- Have a facilitator to keep them on track.

Other

- Better meeting room, one with a phone and better lighting
- Thanks for a great workshop!
- Overall and excellent forum!
- Seemed to gear everyone to using SIFERP as leader in information sharing
- I was surprised at how internet oriented it was. We also plan workshops, extension notes, etc.
- Glossary of terms would be great