

**The Economic Benefits of
Bow Valley Ecosystem Research**

Prepared for:

Canmore Economic Development Authority

Prepared by:

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Executive Summary

Prior to this report, very little was known about the economic impacts of Bow Valley ecosystem research. This report is the first to look at the amount spent on such research, the sources of funding (local, provincial, national and international), numbers employed and types of employment available through this research, information on researchers' accommodation, researchers' location of work and the length of research projects.

This report also identifies minimum amounts spent on salaries, and on local supplies and services. In order to better attract and keep researchers, this document also identifies what attracted researchers to the Bow Valley region and what these researchers recommended be done to make this region more attractive to other researchers. The following is a summary of the highlights of the report.

- More than \$2.24 million was spent on Bow Valley ecosystem research projects in 2000. Already, over \$1.95 million is planned for 2001. This will increase throughout the year as new project funding is approved. Not included in these amounts are the hundreds of thousands of dollars contributed per year by agencies for ecosystem research and research management through full-time staff and operating budgets.
- Since 1994, more than \$10 million has been allocated to Bow Valley Research. This is an underestimation as the questionnaire went out only to researchers that were currently working on projects in the Bow Valley.
- In 2000, funding support identified to source included \$598,230 (27%) from local sources, \$523,010 (23%) from provincial sources, just over \$1 million (47%) from national sources, and \$79,600 (4%) from international sources.
- Bow Valley ecosystem research in 2000 provided at least 146 jobs. These included 26 full-time positions, 33 part-time positions, 37 seasonal full-time positions and 50 seasonal part-time positions.
- Although not all researchers were aware of their workers' living arrangements, those who were reported the following: 21 owned accommodation in Canmore; 26 rented accommodation in Canmore; 7 owned in Banff; 24 rented in Banff; 13 lived in Castle Camp in Banff National Park; 9 rented in Kananaskis; 4 lived in Lake Louise; 3 in Dead Man's Flats; 3 in Calgary; 4 in Edmonton and 3 lived outside of Alberta.
- Researchers reported that over \$224,700 was spent on project supplies and services in Canmore in 2000.
- The average length of research project is 4.6 years. Nineteen of the 48 projects included five or more years of research.
- The region's unique human/wildlife/conservation issues were the most common reason researchers were attracted to the Canmore area. The next most common

response was the close proximity to Banff National Park. Other responses included the high number of other projects that were underway in the area; fulfilling requirements/commitments; being from the region already, and having accommodation available to project participants.

- Researchers suggested that to make research in this area more attractive the top priorities were lower rents and/or a research institute that included housing and facilities; improved research funding; coordination between groups; and more appreciation of the value of the research to the community.

1.0 INTRODUCTION

For generations, ecosystem research has taken place in the Bow Valley region. Ecosystem research includes studies of various parts of the ecosystem including wildlife (i.e. animals and plants) and the surrounding physical environment (i.e. air, water, soil).

There has been much anecdotal evidence of the economic benefits of local ecosystem research -employment, accommodation, supplies and services, etc.- but until this report, empirical data was lacking. This report also provides data on what attracted currently established researchers to locate here and what could be done to make research in this area more attractive.

By knowing the requirements of researchers, and what the Bow Valley has to offer to researchers, we are better able to promote, increase and improve ecosystem research in the Bow Valley. This will not only allow for the economic benefits of cash brought into the community that would not enter through other means, but will also promote improved decision making through a more solid research information base.

2.0 METHODS

2.1 Identifying Research Projects and Principal Contacts

In order to identify project contacts, notices were sent out to 108 researchers in the Bow Valley to request that they fill in a short registration form that identified their project's principal researcher. Many of the research projects in this area are multi-agency and/or overlap other projects. This initial step helped avoid duplication of financial data as it located a single contact person per project.

To help ensure that projects were not missed in our report, contact was then made with Parks Canada – Banff National Park, Alberta Environment, the Town of Canmore, the M.D. of Bighorn, and the Town of Banff for suggestions and/or lists of Bow Valley ecosystem projects currently underway.

To further help ensure that projects were not missed, each questionnaire included a request for other projects and contacts known to that principal researcher. Any new contacts were immediately sent a questionnaire.

2.2 Questionnaires

Questionnaires were developed that would target information required to fulfill the project's objectives. Draft questionnaires were reviewed by the Executive Director of Canmore Economic Development Authority and by two researchers to determine if they were appropriate and would provide the information needed. Minor modifications were made to improve the questionnaires.

The questionnaires were sent out to all known principal contacts (See Appendix I for questionnaire). Principal researchers were contacted as many times as was necessary to ensure their response.

Extensive efforts have been made to ensure as many ongoing research projects as possible were included in this survey. Due to the nature of research it was not possible to ensure that every researcher working in this region was included in this study. This is especially true of individual researchers who are not affiliated with any local organizations. However, it is likely that any projects not known to the Biosphere Institute of the Bow Valley, participating researchers, or the various contact agencies would be few and small.

3.0 RESULTS

Information on a total of 48 research projects on Bow Valley ecosystem issues is included in this report. The questionnaire focused on the year 2000, but questionnaire responses include research information from 1994 to 2001. Of the 48 projects included in this report, 43 have a year 2000 component.

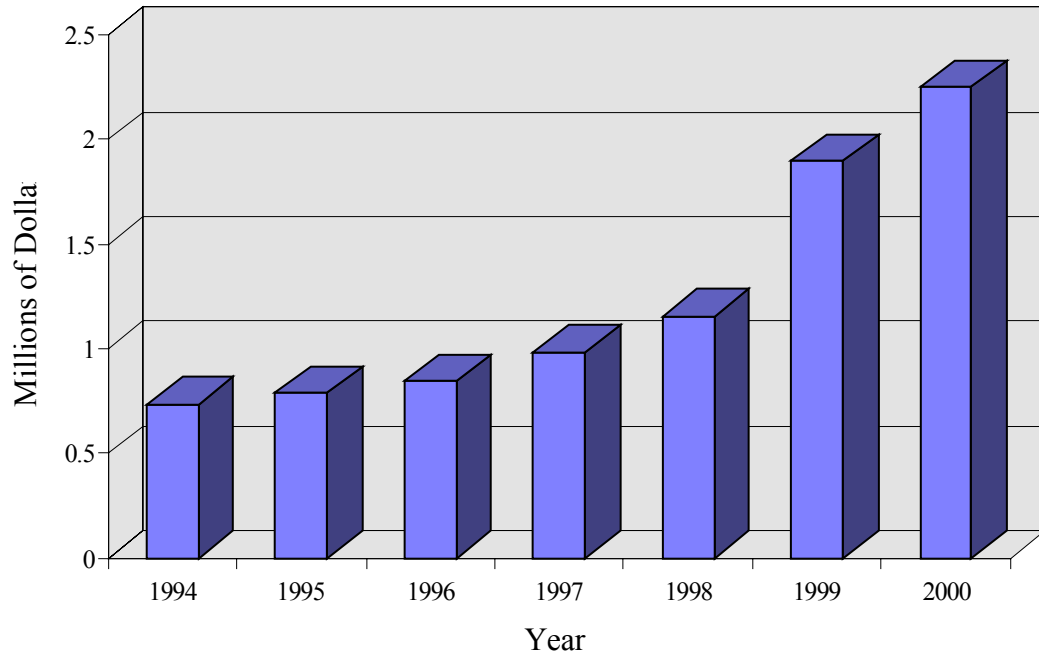
More than \$2.24 million was spent on Bow Valley ecosystem research in 2000 (Figure 1). Already, almost that much (over \$1.95 million) is planned for 2001. This will increase throughout the year as new project funding is approved.

Since 1994, more than \$10 million has been allocated to Bow Valley Research. This is an underestimation as the questionnaire went out only to researchers that were currently working on projects in the Bow Valley. Information on projects that were completed between 1994 and 1999 is difficult to obtain and was not the focus of this report.

Researchers were asked to report on the amount of project funding that came from local, provincial, national and international sources. Of more than \$2.2 million that was reported in 2000 (Figure 2), \$598,230 (27%) was from local sources, while the other \$1.65 million (73%) was not. This included \$523,010 (23%) from provincial sources and

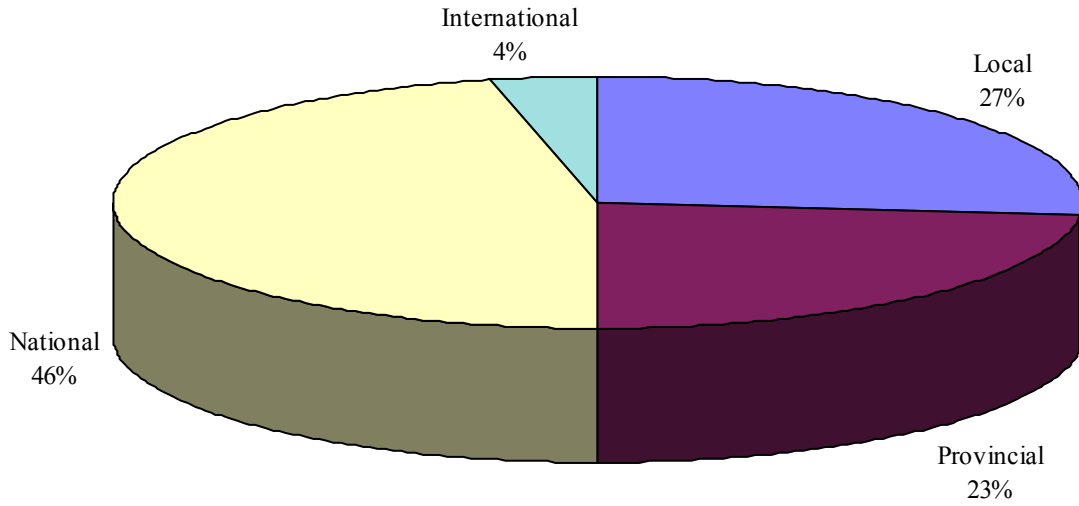
just over \$1 million (46%) from national sources, and \$79,600 (4%) from international sources. These figures were relatively consistent between years (Figure 3) and the total

Figure 1: Minimum Funding Spent on Research

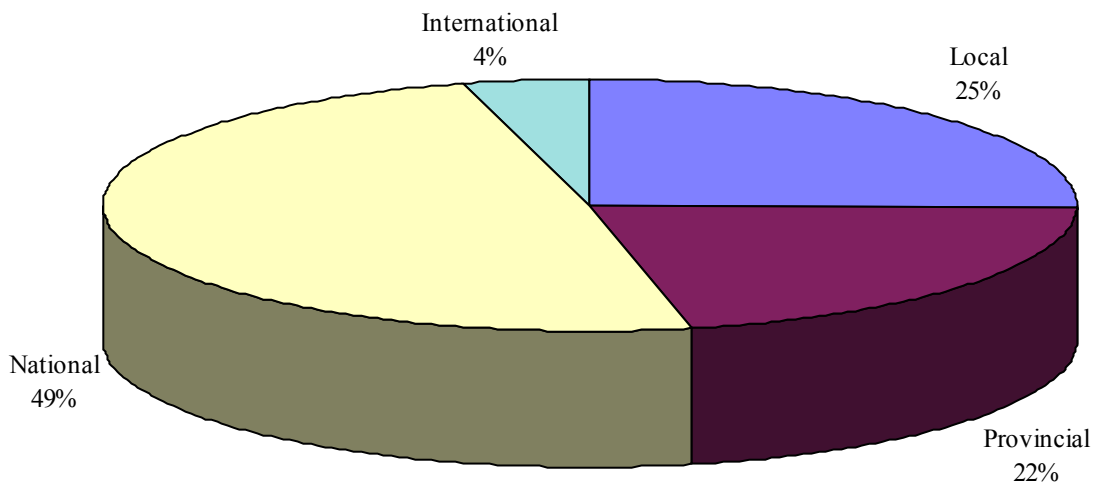


*1994-1999 dollars are under-reported (see text)

**Figure 2: Sources of Funding For Research in 2000
(includes government and non-government sources)**



**Figure 3: 1998-2001 Sources of Funding For Research
(includes government and non-government sources)**



1998-2001 sources of funding were 25% local, 22% provincial, 49% federal and 4% international.

In terms of employment, Bow Valley ecosystem research in 2000 provided at least 146 jobs. These included 26 full-time positions, 33 part-time positions, 37 seasonal full-time positions and 50 seasonal part-time positions (Figure 4). More than \$1.24 million was spent directly on project salaries in the year 2000. In addition to these project positions and salaries, agencies make substantial contributions to ecosystem research and research management through full-time staff and operating budgets. This can be substantial, for instance this amount is estimated to be in excess of \$300,000 per year for Parks Canada (Banff National Park) and \$150,000 for the government of Alberta.

Although not all researchers were aware of their workers' living arrangements, those who were reported the following (Figure 5): 21 owned accommodation in Canmore; 26 rented accommodation in Canmore; 7 owned in Banff; 24 rented in Banff; 13 lived in Castle Camp in Banff National Park; 9 rented in Kananaskis; 4 lived in Lake Louise; 3 lived in Dead Man's Flats; 3 lived in Calgary; 4 lived in Edmonton and 3 lived outside of Alberta.

Researchers' location of work included 42 working in the Canmore area; 50 working in Banff; 9 in Kananaskis; 26 throughout the Bow Valley; 6 throughout the Central Rockies; 5 in Edmonton; 2 in other Alberta locations and 7 outside of Alberta.

Researchers reported that over \$224,700 was spent on project supplies and services in Canmore in 2000. Of the 48 studies included in this report, the average length is 4.6 years. Nineteen of the 48 projects included five or more years of research (Figure 6).

Researchers were asked what attracted them to the Canmore area. The most common response was the region's unique human/wildlife/conservation issues. The next most common response was the close proximity to Banff National Park. Other responses included the high number of other projects that were underway in the area; fulfilling requirements/commitments; being from the region already, and having accommodation available to project participants.

Researchers were also asked what could be done to make research in this area more attractive. In this category, the top priorities were lower rents and/or a research institute that included housing and facilities; improved research funding; coordination between groups; and more appreciation of the value of the research to the community.

4.0 DISCUSSION

In 2000 more than 2.24 million was spent on Bow Valley ecosystem research and it is likely that the figure for 2001 will be close to that amount. This is with little promotion of the area as a research location. The potential to increase this amount through contact

with research institutions provincially, nationally and internationally is enormous. Two avenues should be pursued. One is to promote the area to researchers and research

**Figure 4: Numbers Employed and Types of Employment
in Bow Valley Ecosystem Research in 2000**

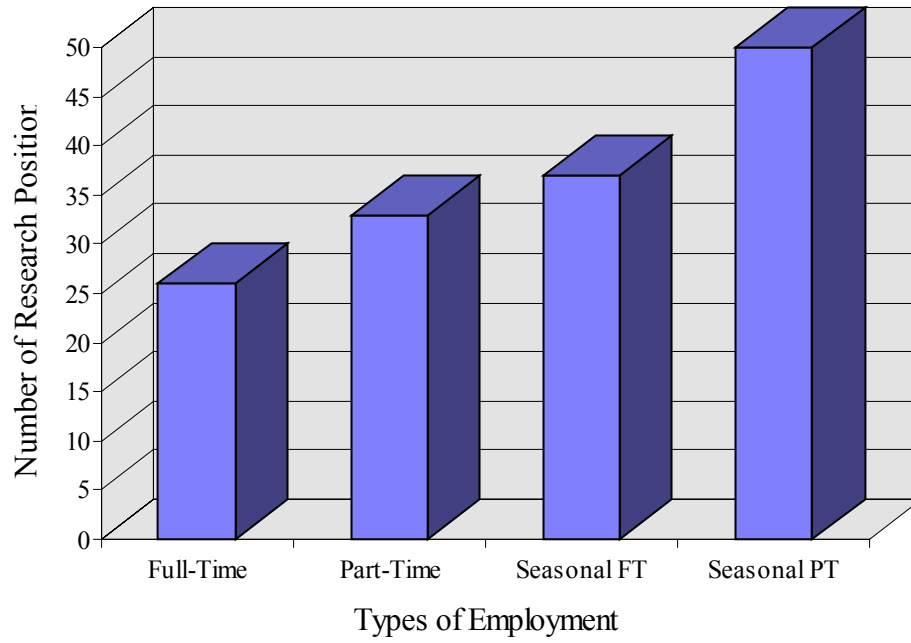


Figure 5: Researcher Accommodation in 2000

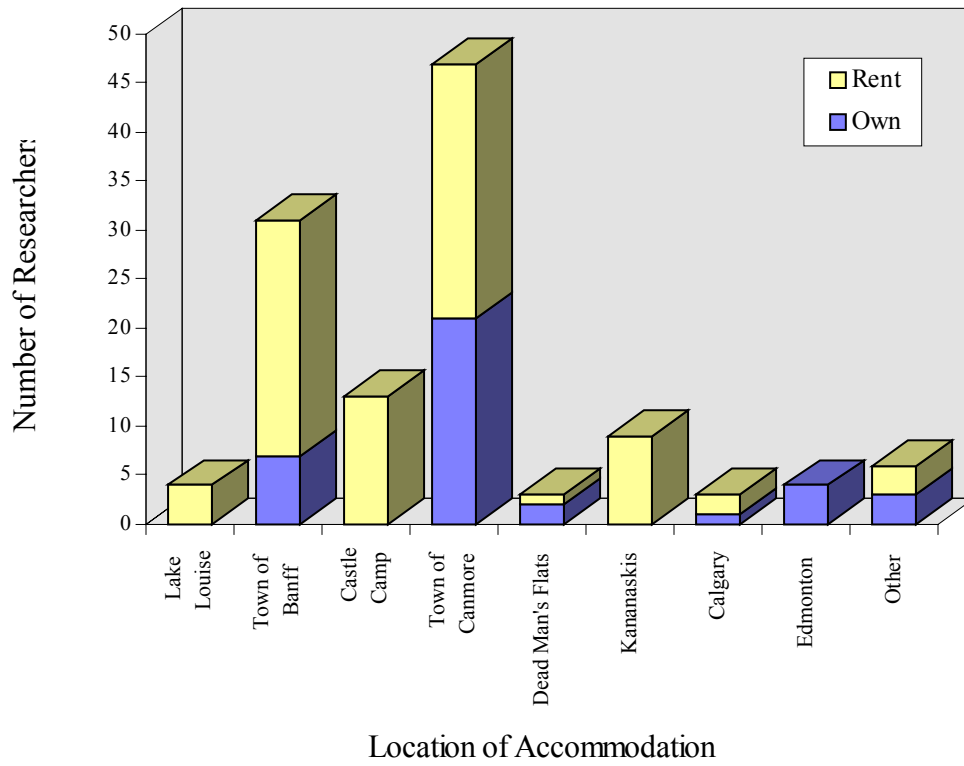
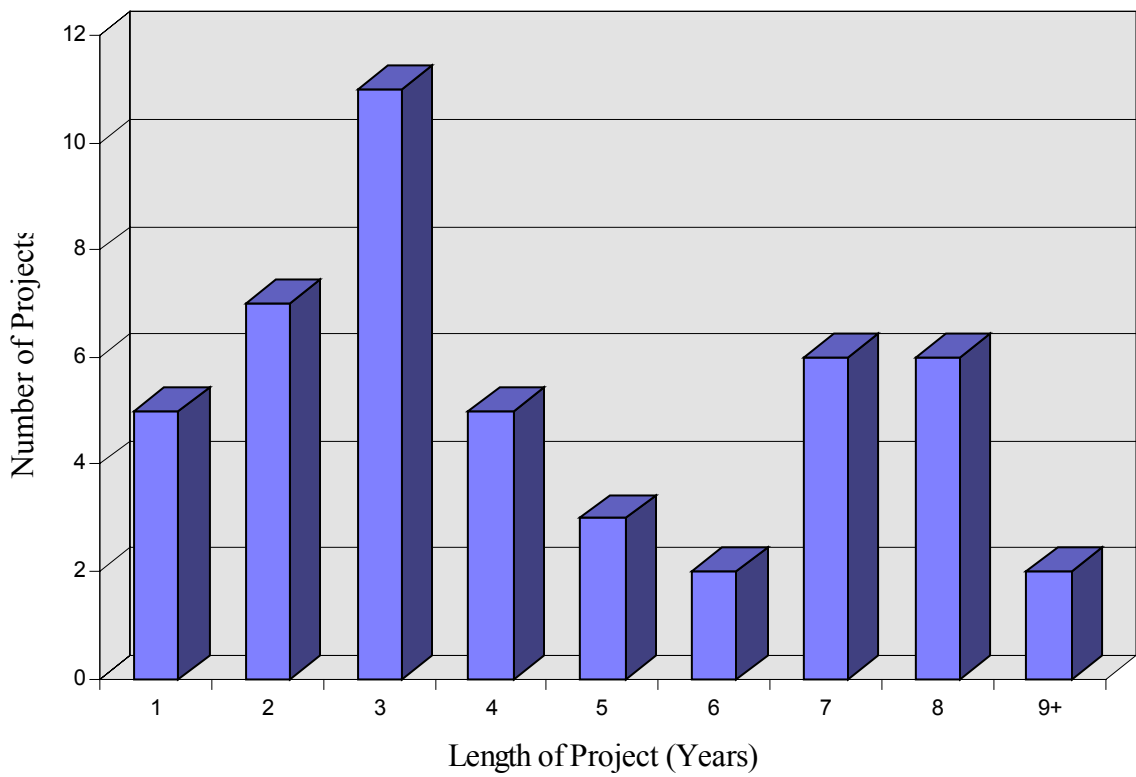


Figure 6: Length of Research Projects



institutions in order to get more researchers to establish here. Both short and long-term research should be included; however, senior researchers that establish a long-term interest in this area and supervise multiple junior researchers would be ideal. Such researchers include professors from various universities that potentially could be involved in regional research for 20 or more years. This allows for continuity of research, establishment of community bonds, and improved networking between researchers.

The second avenue is to assist local researchers to access external funding. Ecosystem research tends to bring dollars into the community that would otherwise not be here, instead of competing for local dollars. Only about 25% of ecosystem research funds come from local sources, the rest comes from provincial, national and international sources. This is in spite of the low level of promotion of the region to external sources. With increased promotion, the percent of provincial, national and international funding should increase. It can also be increased by further assisting local researchers to access funds from external sources (i.e. letters of support from the community for grant applications, assistance in locating funding sources, local in-kind services that can be matched by funding agencies).

Bow Valley ecosystem research provides an opportunity to diversify economic opportunities in the community. The Canmore/Banff region is particularly dependent on the tourism industry. Although some ecosystem research is seasonal, there is much that takes place year round. This continuity of research during the tourist low seasons and also from year to year is beneficial to the local economy. Increased research would, of course, also benefit the community through increased understanding of the surrounding ecosystem.

Bow Valley ecosystem research provides jobs in the community. Including full-time, part-time and seasonal positions, there were at least 146 jobs in 2000. Beyond the numbers though, is something that is also important to the community. These positions offer a change from the tourist industry based employment that is largely available. These research positions are often filled by people with post-secondary education who might not otherwise stay in the region if they did not find such fulfilling work. That many of these researchers are not transient, especially in Canmore, is seen by the fact that almost half of the researchers living in Canmore are homeowners. More than 40% of research projects surveyed included five or more years of Bow Valley ecosystem research. This suggests that once research is initiated in the area, researchers tend to stay here for extended periods.

It is often assumed that most ecosystem researchers work in Banff National Park, however 29% described their research location as Canmore (compared to 34% as Banff) and another 22% described a greater research region that includes Canmore (Bow Valley or Central Rockies). Although a small number of researchers live and work on these issues well outside the Bow Valley region, it must also be taken into account that researchers working on ecosystem issues outside of the Bow Valley but living and working in Canmore are not represented in this survey.

This area is attractive to researchers for a number of reasons. The foremost are the region's unique human/wildlife/conservation issues; the close proximity to Banff National Park; and the high number of other projects that were underway in the area. A region is often more attractive to researchers if a network of researchers is already established. These are some of the attractants, but there are consistent suggestions on what could be done to make this area more attractive. Like many other employees in this area a pressing problem is affordable accommodation. Suggestions include lower rents and/or a research institute that included housing and facilities. An investigation into potential solutions to the researcher housing problems might find solutions to alleviate this problem. Possibilities include a billeting system for researchers, reduced accommodation rates to local researchers (especially in the low tourist seasons, possibly in staff housing during this period), and a research institute that included housing and facilities.

Other ways of making this area more attractive to researchers include improved funding as discussed previously, coordination between groups; and more appreciation of the value of the research to the community. Several organizations, including the Biosphere Institute and BCEAG are working on coordination between Bow Valley groups. This type of coordination improves the quality of research and helps network the research community and results in improved research efficiencies. Several researchers commented on the need to increase understanding and appreciation of the value of the research to the community. This is directly related to researchers' personal satisfaction with their employment and is especially important in keeping researchers here once they have established in the region. Public/researcher interaction programs could be developed to improve public appreciation of the value of research to the community. These programs could make the public more informed and possibly involved through volunteer opportunities. Information, such as that provided in this report could also help educate the public about the wide-range of benefits to having a region with an active ecosystem research community.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The potential for growth in Bow Valley ecosystem research is enormous. With little regional promotion to researchers, they have discovered this region through a variety of haphazard avenues. Even with this limitation, over \$2.24 million was spent on Bow Valley ecosystem research in 2000. This amount is likely to be equaled or surpassed in 2001.

Advantages of research

- It brings money into the community. Approximately 75% of the research funding money is not local and therefore would not likely otherwise be spent in the region.
- It provides for a more balanced community structure by providing jobs that often require post-secondary education and/or involve a high level of personal satisfaction.
- It provides employment outside of the tourism high season.
- Its outcome helps improve knowledge, which can result in improved ecological integrity.

Recommendations

- ⇒ Actively promote this region worldwide as a prime research location
 - expand recent promotional initiatives

- ⇒ Instigate efforts to make this region more attractive to researchers, including
 - investigate potential solutions to the researcher housing problems
 - undertake a feasibility study into the possibility of a regional research facility
 - increase coordination between groups
 - develop public/researcher interaction programs to improve public appreciation of the value of research to the community

- ⇒ Actively assist local researchers to attract funding
 - encourage provision of letters of support from the community for grant applications
 - provide assistance in locating funding sources
 - encourage provision of local funding that can be matched by external agencies
 - encourage donations of local in-kind services that can be matched by funding agencies

- ⇒ Monitor the economic impacts of Bow Valley ecosystem research on a regular basis, to determine if initiatives are successful

This report provides documentation that Bow Valley ecosystem research has injected millions of dollars into the local economy. By knowing the economic impact of ecosystem research on the Bow Valley, this community is better positioned to include this in the economic development strategies. By understanding the needs of the research community, it can increase the attractiveness of this region to researchers. This will serve to help keep local researchers in the region. It can also be used to promote the Bow Valley as a research location, encouraging provincial, national and international researchers to invest in research projects in the Bow Valley.

Appendix I: Questionnaire

Research Questionnaire

Contact:

Principle:

1. What is the title of your research project?
2. What organization(s) is the project affiliated with?
3. What is the duration of the project in the Canmore area?

4. What is the total budget of your research project in

1994	
1995	
1996	
1997	
1998	
1999	
2000	
2001	
Total	

5. What is the total budget for the duration of the project? (not including past 2001)

6. What funding sources is your research budget derived from (local, provincial, national, international)? Please use percentages or dollar values.

	local	provincial	national	international
1998				
1999				
2000				
2001				

7. Please list any in kind services obtained towards your research.

	local	provincial	national	international
1998				
1999				
2000				
2001				

8. What portion of your budget is spent on staff?

9. How many individuals does your research employ (FT/PT)?

Full-time				
Part-time				
Seasonal Full-time				
Seasonal Part time				

10. Please complete the following for each staff person.

	Own accom.	Rent accom.	Location of accom.	Location of work
Individual 1				
Individual 2				
Individual 3				
Individual 4				
Individual 5				
Individual 6				
Individual 7				
Individual 8				
Individual 9				
Individual 10				
Individual 11				
Individual 12				

11. What portion of your budget is spent on supplies and/or services in Canmore?

12. Have you organized or attended research based conferences, symposiums or work shops in the Canmore area? Which ones?

13. Please list any partnerships benefiting from your research both within and outside of the Bow Valley?

14. What attracted your research to the Canmore area?

15. What could be done to make research in this area more attractive?

16. Can you suggest other research projects and contacts for this study?

CONFIDENTIALITY COMMITMENT

The Biosphere Institute of the Bow Valley will use your individual data in a completely confidential fashion. It will not be made available to anyone outside our organization. It will not be made available to our client, Canmore Economic Development Authority.

The aggregated data is the only data that will be produced publicly. This will show the direct, aggregated expenditures on research collectively in Canmore.