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Columbia Mountains Institute of Applied Ecology

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1 Message from the President

Welcome to reading about CMI's past fabulous year! In this report you will learn about the kinds of events and people that make being connected to CMI an important part of your applied ecological toolkit. In Revelstoke this spring, Carl Schwarz's statistics refresher yet again kicked off our learning events, followed by a well-attended aquatic conference, held at Selkirk College in Castlegar. This conference called "Regulated Rivers: Environment, Ecology and Management" provided excellent information on a wide variety of topics, and great networking opportunities with attendees from BC, Alberta, and the US. Catherine Reidy Leirmann's key note address also had a broad reach, as she described landscape level effects of dams on flow regimes, changes species abundance, and the management implications.

The AGM was also held at the College, and after this morning meeting, members experienced two interesting field trips northwest of town, tour the Hugh Keenleyside dam, and examining the drawn down landscapes above the dam, near Syringa Provincial Park. These trips were a great follow up to the conference, and a special thanks to Wendy Horan with Columbia Power Corporation for supporting the conference and taking members on the dam tour.

The fall was rounded well by Carl returning to Revelstoke to show members how to use Bayesian methods to answer management questions. These methods are especially useful when working with messy ecological data. I took Carl's course years ago, and found it valuable to push my thinking about how look at solving a problem in a different way.

Our final event for the year was an expert meeting on provincial strategies to study mountain caribou population dynamics and enable their conservation. This meeting was valuable, as it brought together local researchers, government managers, and academic experts to help critique and stress the project. Our own past treasurer, Kevin Bollefer, and Revelstoke based biologist, Dr Robert Serrouya, have been players in this work.

It is also important that I address the important contributions to the organization that directors and executive directors make. So, a big thank you for your commitment to making CMI work. This coming year, Adrienne Shaw, Patrick Daigle, and Jenny Feick are moving on to other responsibilities and I, and other members wish them well. Also want to acknowledge the excellent work that Sylvia Wood has done over the past year again. Filling Hailey's shoes was a tough assignment, but Sylvia managed this well, and is staying on with CMI to help coordinate events. And finally a welcome back to Hailey Ross, as our Executive Director.

Dr. Brendan Wilson,

President, Columbia Mountains Institute

2 Operations of the Columbia Mountains Institute

2.1 About Columbia Mountains Institute of Applied Ecology

CMI's vision is of outstanding natural resource management through building and sharing knowledge about the ecology of the Columbia Mountains and its associated ecosystems.

We're known for hosting balanced, science-driven conferences and specialized courses that present the newest information and methodologies. We are a regional group that connects people working in the various fields of applied ecology – natural resource practitioners, managers, researchers, educators, academics, stewardship groups, and others with an interest in the ecology of southeastern British Columbia. Our website offers many resources, including summaries for all of our past conferences.

CMI was incorporated as a society in 1996, and is based in Revelstoke, British Columbia. The society is directed by a maximum of fifteen Board members (in 2015, by 12 Directors). An Executive Director and Project Coordinator support the Board. CMI retains the services of a bookkeeper, and of website consultants as needed. Funding for the operation of our society comes from memberships and retained earnings from our projects (events), and other income such as the Contribution Agreement with Parks Canada, grants from the Columbia Basin Trust, event sponsorships from private donors, and bank interest.

2.2 Board of Directors for 2015

In addition to the Annual General Meeting, the Board of Directors met eight times in 2015, to make decisions about future events, finances, policies, and hear reports from our sub-committees. Most Directors attend our meetings via a conference call.

For information about each Director, please visit our website at:

<http://cmiae.org/about/directors-administration/>

Executive

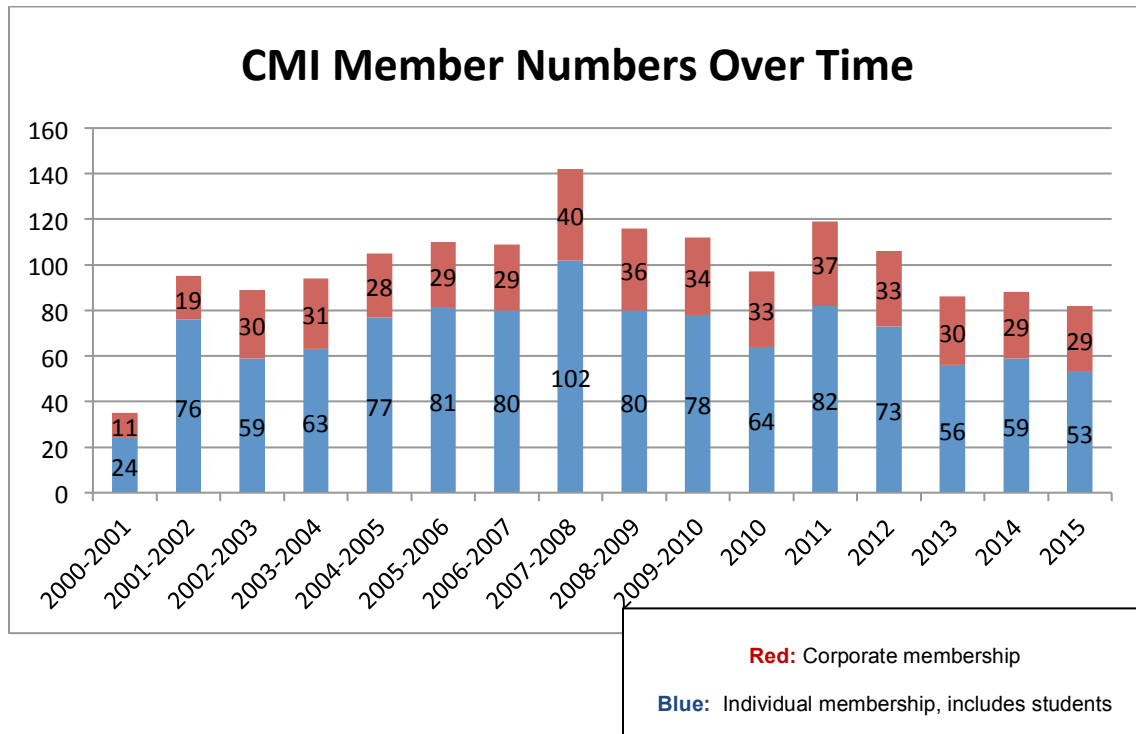
Brendan Wilson, President
Carrie Nadeau, Vice-President
Harry van Oort, Treasurer

Directors

Marc-André Beaucher	Robyn Irvine
Kevin Bollefer	Heather Lamson
Sarah Boyle	Mike Miller
Patrick Daigle	Adrienne Shaw
Jenny Feick	

2.3 Membership of CMI

The Columbia Mountains Institute finished up the year with 53 individual members, and 29 corporate members. Our members' email updates go out to 263 individual email addresses. The information is circulated further within the corporate memberships. CMI also maintains a list of about 800 individuals who have signed up to receive our email announcements about upcoming events and important activities. We consider these people to be a part of our network.

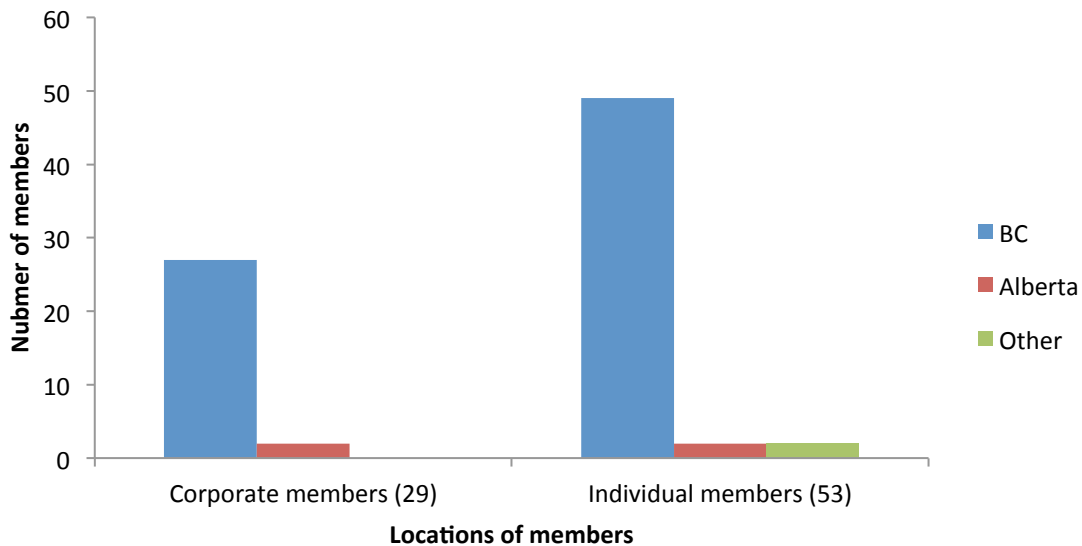


CMI corporate members for 2015

AMEC Foster Wheeler (<http://www.amecfw.com/>)
BC Hydro, Columbia Generation (<http://www.bchydro.com>)
Bulkley Valley Research Centre (<http://bvcentre.ca/>)
Canadian Columbia River Inter-Tribal Fisheries Commission
<http://fnbc.info/org/canadian-columbia-river-inter-tribal-fisheries-commission>)
CE Analytic (<http://www.ceanalytic.com/home.html>)
City of Revelstoke (<http://www.cityofrevelstoke.com/>)
Columbia Basin Trust (<http://cbt.org/>)
College of Applied Biology (<https://www.cab-bc.org/>)
Conservation Northwest, Washington (<http://www.conservationnw.org>)
Cooper, Beauchesne and Associates Ltd. (<http://cooperbeauchesne.com>)
Creston Valley Wildlife Management Authority (<http://www.crestonwildlife.ca>)
Downie Timber (<http://www.downietimber.com>)

DWB Consulting Services Ltd. (<http://www.dwbforestry.com>)
 Ecoscape Environmental Consultants (<https://www.cab-bc.org/>)
 Golder Associates: Edmonton office (<http://www.golder.com>)
 Golder Associates: BC Interior offices (<http://www.golder.com>)
 Keefer Ecological Services (<http://www.keefereco.com/>)
 Lotic Environmental (<http://lotic.co>)
 LGL Limited Environmental Research Associates (<http://www.lgl.com/en/>)
 Masse Environmental (<http://masseenvironmental.com/Home.aspx>)
 Parks Canada, Ecosystem Services, Calgary office (<http://www.pc.gc.ca>)
 Parks Canada, Mount Revelstoke and Glacier National Parks (<http://www.pc.gc.ca>)
 Polster Environmental Services Ltd., Duncan BC
 Revelstoke Community Forest Corporation (<http://www.rcfc.bc.ca>)
 Selkirk College, School of Environment and Geomatics (<http://selkirk.ca/>)
 Summit Environmental Consultants Ltd. (<http://www.summit-environmental.com>)
 University of Victoria (<http://www.uvic.ca/>)
 Urban Systems (<http://www.urbansystems.ca/contact/>)
 Wildsight (<http://www.wildsight.ca>)

Where do CMI members live?



2.4 Supporters of CMI for 2015

CMI benefits from the large number of volunteer hours contributed to CMI by our Board of Directors, and by the members of the organizing committees for our various events. These people keep us connected to ecological issues in southeastern BC. CMI continues to be effective because of their willingness to contribute time and expertise.



Parks Canada Parcs Canada

This year we negotiated a Contribution Agreement with Mount Revelstoke and Glacier National Parks. We received \$5,000.00 in support of our work to maintain a network of

ecologists working to improve ecological integrity in this region. CMI is grateful for Parks Canada's ongoing financial and in-kind assistance.

The Columbia Mountains Institute of Applied Ecology gratefully acknowledges the financial and in-kind support of agencies that partnered with us to make this year's events and our projects a success. The generosity of these agencies is recognized in the information about each past conference at CMI's website (<http://cmiae.org/events/past/>)

These agencies kindly provided financial support for an event in 2015:

- Columbia Basin Trust
- Selkirk College, Castlegar
- LGL Limited Environmental Research Associates
- Cooper Beauchesne and Associates
- Golder Associates
- BC Ministry of Forests, Lands and Natural Resource Operations

We also acknowledge the contributions of the presenters and volunteers associated with each of our events.

2.5 Administration of CMI

In November 2015, The CMI Executive Director, Hailey Ross, returned from maternity leave. Sylvia Wood who was the interim Executive Director for the previous year, continued on part-time to finish off some projects and has continued in her role as Project Coordinator.

2.6 Strategic Direction

In 2015, CMI worked towards the goals and objectives as laid out in the [Strategic Plan \(2014-2017\)](#). An assessment of how well CMI has done in achieving it's goals will take at a strategic planning session in May 2016.

3 *Activities of the Columbia Mountains Institute*

3.1 Continuing education

Conferences and courses in 2015

A major goal of CMI is to identify current ecological issues and knowledge gaps, then host workshops or courses to address these issues. The following events were held in 2015. More details about each event, a list of event partners and supporters, and event summaries are available on CMI website in the [“Events”](#) section. Conference and course evaluation forms were collected and, for the conference, summarized in the conference summary document.

Our event announcements are distributed to a targeted set of recipients. We promote almost entirely by email to: members (sent to over 200 individuals), our event announcement distribution list (over 800 people), professional associations, various other organizations and individuals as suggested by the topic of each event, and Facebook. Other agencies regularly include our information in their own notices and newsletters.

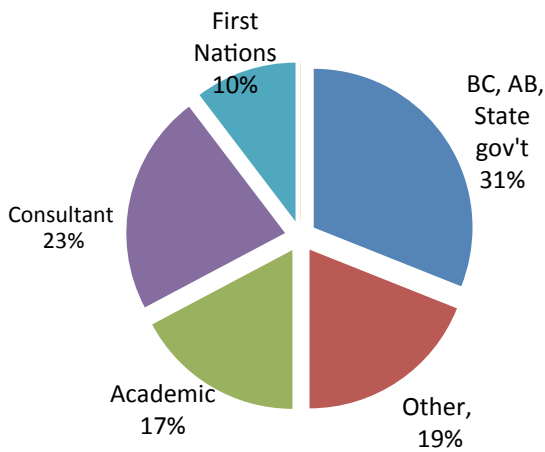
CMI announcements and news are sent to a network of over 1000 people working in the field of ecology in BC and Alberta.

163 people attended CMI events in 2015. (Some people attended more than one event.)

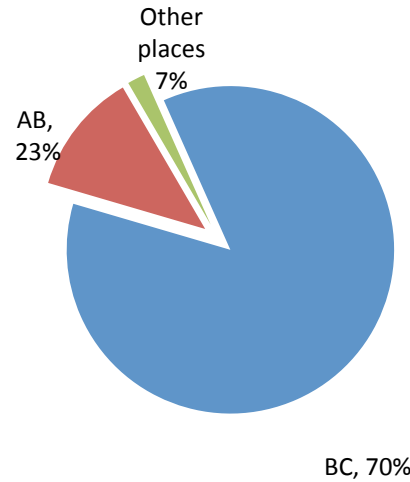
- 58 people attended a course or a meeting
- 104 people attended a conference

For our courses and conferences in 2015, the tables on the following page show where participants are from, and their affiliations.

Information about CMI course and meeting participants in 2015

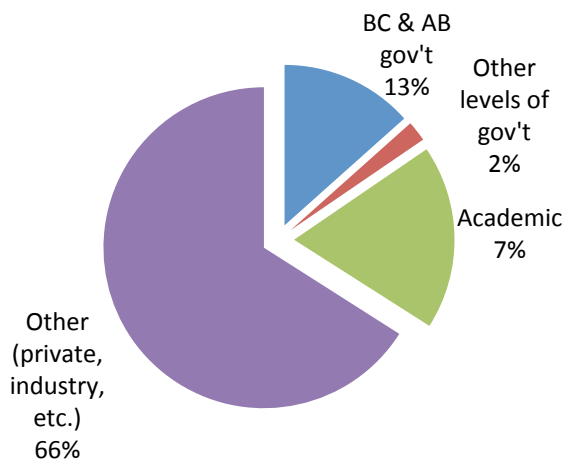


Affiliation of course and meeting participants in 2015 (58 people)

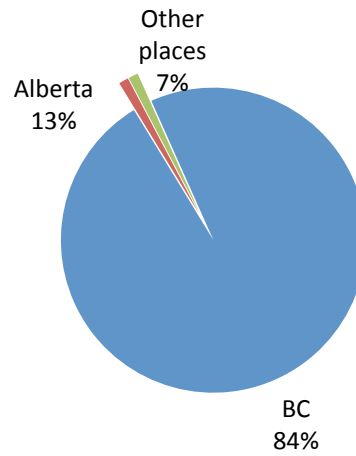


Where course and meeting participants came from in 2015 (58 people)

Information about CMI conference participants in 2015



Affiliation of conference participants in 2015 (104 people)



Where conference participants came from in 2015 (104 people)

List of conferences and courses held in 2015

Summary List of Events in 2015:

- Statistics Refresher for Biologist in 'R' Software, course
- Regulated Rivers: Environment, Ecology and Management, conference
- CMI Annual General Meeting and Researchers Forum
- An Introduction to Bayesian Methods for Ecologists
- External Review of Caribou Management in in the Columbia Mountains and Northeastern BC

Information about all of these events can be found in the [Past Events](#) section of the CMI website, and a description of each event is found below.

Statistics Refresher for Biologists in 'R' Software

April 21-23, 2015

Regent Hotel, Revelstoke BC

This course had 12 attendees

This course was taught by Dr. Carl Schwarz from Simon Fraser University.

Course Description:

Many scientific studies are full of statistical jargon, tables of averages and other statistics, and results of statistical tests which purport to prove a certain hypothesis. The purpose of this course is to review some of the basic sampling and experiment designs used by ecologists and to understand exactly what can and cannot be extracted from a set of data. With the advent of modern statistical packages, the analysis of data is fairly easy, but it is far too easy to get nonsense results. This course will also review common pitfalls in the analysis of data

Regulated Rivers: Environment, Ecology and Management Conference

May 6-7, 2015

Selkirk College, Castlegar

104 people attended this event

Our keynote speaker, Dr. Catherine Reidy Leirmann spoke about the “global effects of dams.”

Conference description:

Regulated waterways provide important services such as flood regulation, power generation with low greenhouse gas emissions, and energy storage. Nevertheless, the damming and regulation of rivers incurs ecological costs via the operation of reservoirs and alteration of downstream flows, combined with the often permanent loss of valley bottom habitat.

Regulation can affect both upstream (reservoir) and downstream environments. A recent increase in smaller hydro-electric projects (e.g. run-of-river projects) has led to a flourish in the study of their unique impacts. Over half of the world's large rivers are regulated, including the Columbia River and its tributaries. Despite inevitable footprint impacts, considerable ecological function may remain in these systems, supporting a diversity of plants, fish, and wildlife. Within the Columbia Basin, a wealth of research has recently emerged to increase our understanding of ecosystem processes within regulated river environments, with the potential to aid in mitigating footprint and operational impacts to plants, fish, and wildlife.

CMI Annual General Meeting and Researchers' Forum

May 8, 2015

Selkirk College, Castlegar BC

13 people attended this conference

This year the Researchers' Forum took the form of field trips following the Regulated Rivers conference as we decided to remove field trips from the conference itself.

Field trip #1: Tour of Arrow Lakes Generating Station

Arrow Lakes Generating Station (ALH) is a 185 MW facility co-owned by Columbia Power Corporation and Columbia Basin Trust. The facility was completed in 2002, contains two Kaplan turbines, and cost \$270 million to construct. This tour took people through the generating station for a close up look into how a typical hydro facility operates today. After touring the facility, the group went over to the ALH reclamation area to look at some of the ongoing restoration efforts and lessons learned to date. Thanks to Wendy Horan with Columbia Power Corporation for sharing her knowledge with us.

Field trip #2: Finding Never-never land: a trip to the Arrow Lakes drawdown zone

The extensive floodplain of Lower Arrow Lake Reservoir, near Deer Park, was visited and the group explored the unusual shoreline environment created by a 20 m (60 ft) annual operational drawdown (fluctuation in water level). The extreme water level fluctuations, combined with inundation periods up to 8 months long, produce harsh growing conditions that relatively few plant species can tolerate. Some species, however, do manage to establish there and, even, to thrive. Mike Miller discussed the ongoing efforts to monitor vegetation changes in the drawdown zones of Arrow and Kinbasket Lakes, as well as some of the challenges associated with trying to revegetate these zones through active planting.

An Introduction to Bayesian Methods for Ecologists

October 27-29, 2015

The Regent Hotel, Revelstoke, BC

This course had 9 participants

Course was taught by Dr. Carl Schwarz from Simon Fraser University.

Course Description:

Bayesian methods supplement the standard analysis methods such as regression, ANOVA, and generalized linear models. They are helpful in two general situations. First, when information from a number of studies is to be merged together. Second, there are certain problems that are “hard” to do using standard methods. For example, dealing with censored data in regression, or random effects in logistic regression. This course presented an overview of the use of Bayesian methods in ecology.

External Review of Caribou Population Management in the Columbia Mountains and Northeastern BC

November 24-25, 2015

The Revelstoke Community Centre, Revelstoke BC

37 people attended the workshop (they were invited)

In collaboration with the Province of British Columbia, CMI hosted a meeting to support an external review of population-based caribou management in the Columbia Mountains and Northeastern BC. The overall purpose of the meeting was to critically assess the effectiveness of population-based management levers for supporting recovery of Southern mountain caribou. The main population-based levers employed in the past 5 years have been maternal penning, augmentation/translocations, prey reductions, and most recently, predator control. These tools have had varying degrees of success. No comprehensive review comparing the merits of these approaches has been undertaken, despite enormous economic and political cost of some of these approaches.

This meeting has informed the external review paper. The external review was prepared by two academics from outside the province (Dr. Evelyn Merrill and Dr. Stan Boutin, both from the University of Alberta). The review is now posted on the CMI website.

3.2 Supporting applied ecological research

CMI Members' Updates

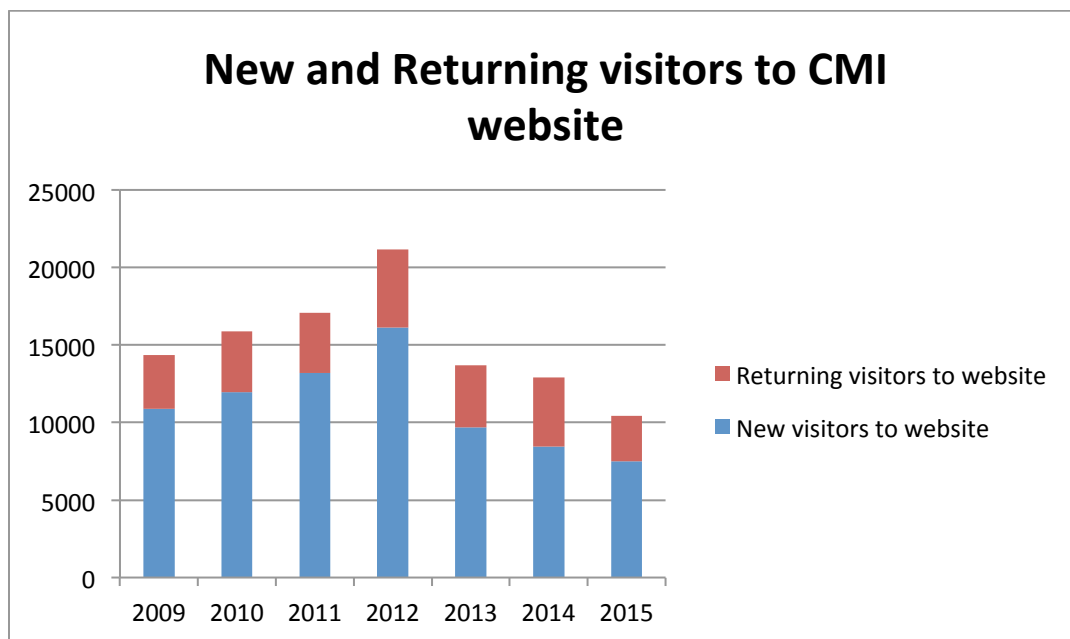
Nine CMI Members' Updates (email bulletins) were sent in 2015, as well as assorted announcements for events and a few interim messages with information that did not make it into the Updates. CMI's email bulletins include CMI news and information about funding sources, resources in print and on other websites, job postings, workshops, and assorted other information of interest to ecologists working in southeastern British Columbia. Updates went to over 200 individual email addresses, and were circulated further within the corporate memberships.

CMI web site (www.cmiae.org)

Our Google Analytics program tells us that in 2015 our web site received 10,418 visits. 72% of the people visiting our site were unique visitors.

- 28% were returning visitors.

The following chart shows that traffic to our website has been steadily decreasing since 2012. This may be something that requires attention or perhaps it is just a short term trend that will change in 2016 with more events taking place. It is interesting to note that the time period of January 1, 2016 - April 27th, 2016 had 7,597 visits.



- The most visited page on the site was the CMI Home page with 4,270 visits in 2015.
- The second most visited page was the Regulated Rivers event page, with 2,041 visits.

The most popular PDF downloads in 2015 were for our conference summaries. These summaries are a legacy of our events, and make the information from the event available to a much wider group than the participants. As of December 31, 2015, the following number of downloads had occurred:

- summary from the *Regulated Rivers* conference: (110 downloads);
- summary from the *Resource Roads 2014* conference (76 downloads); and
- summary of the *Human Dimensions 2014* conference (87 downloads).

Facebook

In May 2011 CMI opened a Facebook page with the aim of reaching more people with our announcements, and enabling discussion about ecological issues. In addition to event announcements, one item from each CMI Members' Update was chosen for posting, as well as any material which the executive director thought might be of interest to members of the CMI facebook page. The total number of page "likes" received in 2015 was 412

Available data on CMI Facebook followers as of December 31, 2015:

:

- As of December 31, 2015 this page has 412 "likes"
- 57% of the people who "like" the CMI facebook page are women, 38% are men.
- 31% are between the ages of 25-34, and 29% are between the ages of 35-44.
- 158 people are from Canada, 28 people are from the US, 5 are from Australia, and 24 are from other countries around the world

The facebook page does not sustain very much conversation and sharing of information apart from what the CMI executive director posted on the page. It is a good way to share pictures of events and postings of updates such as when a new download is available on the CMI website.

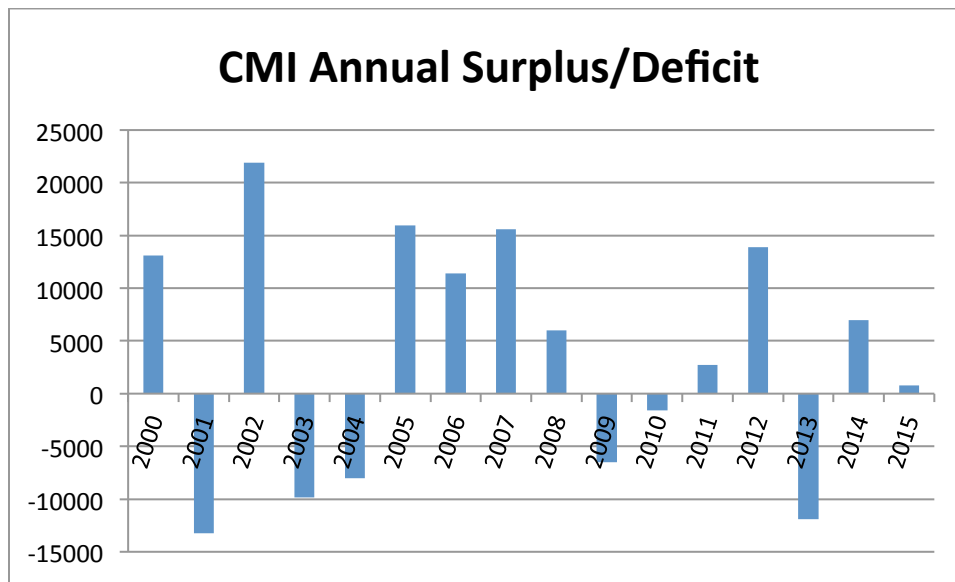
3.3 Collaboration

In 2015, Parks Canada and CMI once again signed a one year Contribution Agreement. Funds from this agreement were used to support CMI's general operating costs. The two agencies share a common goal of improving environmental management in this region.

CMI exchanges information with professional associations, East Kootenay Conservation Program, Y2Y Network, Columbia Basin Trust, the Bulkley Valley Society, Kootenay Association for Science and Technology, Columbia Basin Environmental Education Network, Kootenay Conservation Program and many other agencies and mailing lists. Information from these groups is often passed on to CMI members in our monthly Members' Updates.

4 Preface to Financial Statement

The un-audited financial statements for the fiscal year ending December 31, 2015 reported a small surplus of \$2,360.69. The chart below shows how our net earnings have fluctuated from year to year. This is because our main revenue stream, which is net income or loss from our events, varies according to the number and type of events held each year. In 2015, CMI organized fewer events than is average, but those that did take place generated a small profit for CMI.



* In the years previous to 2014 Annual Surplus/Deficit was calculated with only administrative costs (including closed projects only). We have since changed this to include open projects as well.

The balance sheet on the last page of this annual report shows that we have built up our savings since CMI began in 1996. These savings are for keeping the society going if we have a year with low income, for replacing our assets, and for shielding us from risks, such as having to cancel an event at the last minute but still having to pay expenses for the event. All in all, CMI remains in a good financial position to continue with what we do.

Columbia Mountains Institute would like to thank all of our financial sponsors for this year's events. This list includes: Mount Revelstoke and Glacier National Parks, Columbia Basin Trust, Selkirk College, LGL Limited Environmental Research Associates, Cooper Beuchesne and Associates, Golder Associates and the BC Ministry of Forests, Lands and Natural Resource Operations. With the financial and in-kind support of these organizations, the cost of courses and conferences for participants is kept as low as possible.

Our members and our volunteer Board of Directors continue to keep us in touch with current ecological issues and skill development needs. This is what keeps our events relevant and well-attended. Ideas for additional courses or conferences are welcome; please let Hailey, Sylvia or our Board members know.

Harry van Oort, CMI Treasurer

**Statement of Operations for the Columbia Mountains Institute for the Period ending
December 31, 2015**

Statement of Operations 2015

	<u>December 2014</u>	<u>December 2015</u>
REVENUE		
PROJECT REVENUE		
Funding and Donations	22,390.99	17,750.00
Registration Fees	68,957.48	35,222.73
Sub Total	91,348.47	52,972.73
ADMINISTRATIVE REVENUE		
Completed Events and Projects	21,240.76	8,453.46
Grants and Contributions	5,020.00	5,500.00
Membership Fees	5,868.42	5,089.99
Miscellaneous Income and Interest	559.20	801.80
Sub Total	32,688.38	19,845.25
TOTAL REVENUE	124,036.85	72,817.98
EXPENSE		
PROJECT COSTS		
Admin Cost Transfers	21,240.76	8,453.46
Advertising	119.59	261.88
Catering / Food	14,188.23	9,957.61
Wages - Exec. Director	6,676.25	22,316.21
Contract Fees - Others	11,217.50	7,000.00
Miscellaneous Expenses	60.24	129.77
PayPal Charges Projects	1,051.92	669.74
Phone	82.46	323.25
Photocopying	385.75	111.90
Postage	45.70	0.00
Rent Conference Venues	2,341.97	1,206.69
Speaker Fees	2,444.36	804.80
Supplies	27.94	457.55
Travel	9,435.49	4,964.57
Incomplete Projects	5,399.29	-2,169.85
Sub Total	74,717.45	54,487.58

Table Continued Next Page

	<u>December 2014</u>	<u>December 2015</u>
ADMINISTRATIVE EXPENSES		
Bookkeeping	1,770.00	1,950.00
Amortization	846.12	453.89
Bank Charges	119.50	7.50
Contract Fees	5,355.00	0.00
Insurance	1,908.00	1,932.00
Licences and Dues	25.00	25.00
Meals and Catering	80.00	0.00
Miscellaneous	18.93	0.00
Office Equip, Furnishing & Software	0.00	24.27
Office Supplies	262.18	210.14
PayPal Charges Admin	69.63	256.45
Photocopying	17.69	3.49
Postage	92.50	0.00
Rent	2,724.18	2,739.84
Services	200.00	0.00
Staff Training	50.00	0.00
Telephone and Internet	2,267.47	1,981.15
Website	265.00	345.00
Workers' Compensation	38.43	0.00
Wages	24,506.66	5,711.22
CPP Expense	1,068.72	1,146.47
EI Expense	645.01	713.63
WCB Expense	0.00	24.51
Sub Total	42,330.02	17,524.56
TOTAL EXPENSE	117,047.47	72,012.14
NET INCOME	6,989.38	805.84

Balance Sheets 2015

	<u>December 2014</u>	<u>December 2015</u>
ASSET		
CURRENT ASSETS		
Money to be Deposited	7,014.19	1,513.35
Bank - Revelstoke Credit Union - Chequing	17,952.90	22,143.47
Bank - Revelstoke Credit Union - Term Deposit - 20 May 2011	20,000.00	0.00
Bank - Revelstoke Credit Union - Term Deposit - 25 Nov 2015	25,629.78	0.00
Bank - Revelstoke Credit Union - Term Deposit - Oct 2015	0.00	20,400.00
Bank - Revelstoke Credit Union - Term Deposit - Nov 20 2016	0.00	25,949.27
Bank - Revelstoke Credit Union - Term Deposit - Shares	50.65	51.16
Sub Total	70,647.52	70,057.25
NON CASH CURRENT ASSETS		
Accounts Receivable	2,500.00	1,546.00
Open Projects Expenses Paid	2,571.84	16,500.78
Sub Total	5,071.84	18,046.78
CAPITAL ASSETS		
Laptop Computer	815.00	815.00
Accumulated Amortization - Laptop Computer	-519.84	-684.00
Desktop Computer (Purchased March 2011)	1,403.00	1,403.00
Accumulated Amortization - Desktop Computer	-1,075.48	-1,356.04
Digital Projector	1,915.82	1,915.82
Accumulated Amortization - Data Projector	-1,906.65	-1,915.82
Sub Total	631.85	177.96
TOTAL ASSET	76,351.21	88,281.99
LIABILITIES AND EQUITY		
CURRENT LIABILITIES		
Visa Payable	10.58	-807.58
Accounts Payable	1,217.41	1,516.66
Prepaid Memberships	145.00	160.00
Open Projects Funds Received	7,000.00	18,759.09
GST / HST Collected	433.00	220.50
GST / HST Paid on Purchases	-443.42	-510.30
Vacation Payable	0.00	149.14
Sub Total	8,362.57	19,487.51
EQUITY		
Equity - Beginning of the Year	60,999.26	67,988.64
Equity - Current Year	6,989.38	805.84
Sub Total	67,988.64	68,794.48
TOTAL LIABILITIES AND EQUITY	76,351.21	88,281.99