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Columbia Mountains Institute of Applied Ecology

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1 Message from the President

This year, well attended, timely events have led to another modest surplus for the organization. This coincides with increased traffic on our website and facebook page of largely new visitors, most of whom are female (see graphs below). The majority of our workshop participants were from British Columbia and working in the private sector.

Our meetings this year started off in the East Kootenays in Cranbrook, with our *Urban Wildlife: Challenges and Management* conference in April. An interesting mix of municipal, regional, and district managers, biologists, and activists showed up to discuss this important topic. Thanks to all of our conference partners for making this a success!

A month later we hosted our *Annual Researchers' Meeting* and our AGM in Nelson. This was a well-attended event with a variety of interesting talks, ranging from regional forest pathology issues, screech owl habitat conservation, grassland reclamation, and more.

Our statistical course offerings for 2012 included a specialized spatial capture–recapture population density estimation course taught by Dr. Murray Efford from New Zealand, and two courses from Dr. Carl Schwarz: ordinary regression, and a distance sampling course. Derek Marcoux taught a fully-subscribed *Soils Refresher* course (co-hosted with Selkirk College). Dave Polster lectured on *Natural Processes for the Restoration of Drastically Disturbed Sites* and we thank Dave for his generous contribution of time on this project. This workshop occurred just before our successful conference in Cranbrook that addressed the subject of *Resource Roads in British Columbia: Environmental challenges at the site level*. Thanks to Columbia Basin Trust and DWB Consulting Services Ltd. for helping sponsor this event.

As always, I would like give a big thank-you to our Executive Director Jackie Morris and our other Directors, who worked tirelessly the behind the scenes on these events. The success of the Columbia Mountains Institute in achieving its goals depends on the energy of these individuals. Finally, I encourage you to read further in this document, and to join us at our future events.

Dr. Brendan Wilson
President
Columbia Mountains Institute

2 *Operations of the Columbia Mountains Institute*

2.1 About Columbia Mountains Institute of Applied Ecology

The purpose of the Columbia Mountains Institute of Applied Ecology is to improve ecological management by increasing and sharing knowledge about the ecosystems of the Columbia Mountains and nearby regions.

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 conference summaries for all of our past events.

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 2012, by 12 Directors). An Executive Director supports the Board on a contractual basis. 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 and bank interest.

2.2 Board of Directors for 2012

In addition to the Annual General Meeting, the Board of Directors met seven times in 2012, 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://www.cmiae.org/About/biog-notes.php>

Executive

Brendan Wilson, President
Marc-André Beaucher, Vice-President
Kevin Bollefer, Treasurer

Directors

Patrick Daigle	Kari Stuart-Smith
Jenny Feick	Tara Szkorupa
Irene Manley	Mary von der Porten
Mike Miller	Gregg Walker
Adrienne Shaw	

2.3 Membership of CMI

The Columbia Mountains Institute finished up the year with 73 individual members, and 33 corporate members. Our members' email updates go out to 305 individual email addresses. The information is circulated further within the corporate memberships.

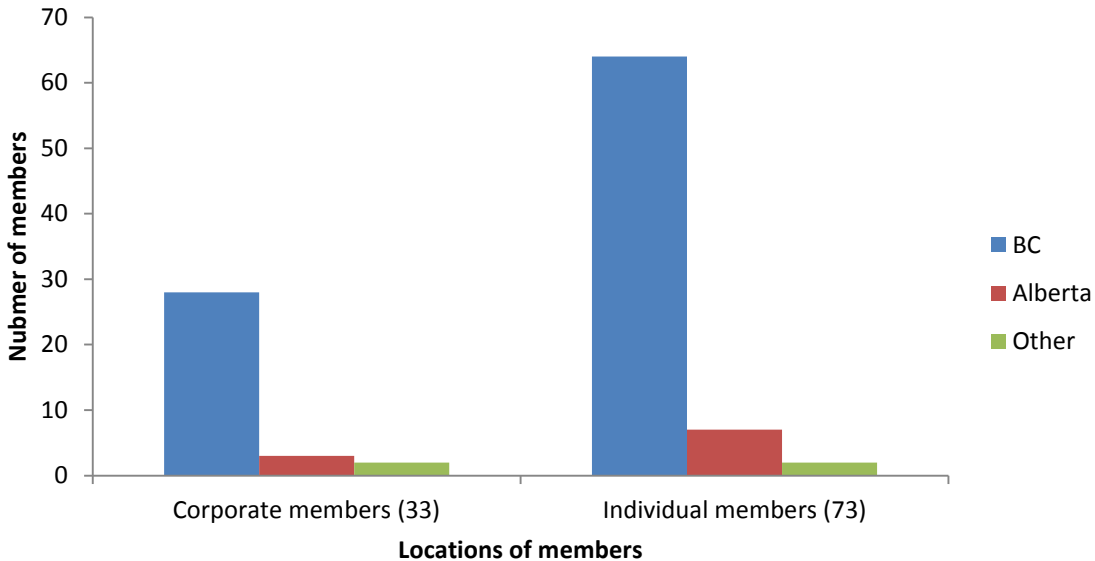
Late in 2012, the Directors determined that the corporate membership of our academic institutions would include students of those institutions. As of January 2013, 33 students have signed up as members.

CMI corporate members for 2012

BC Hydro, Columbia Generation (<http://www.bchydro.com>)
BC Ministry of Forests, Lands, and Natural Resource Operations, Kootenay Fish and Wildlife Branch (<http://www.env.gov.bc.ca/fw>)
Canadian Columbia River Inter-Tribal Fisheries Commission
City of Revelstoke (<http://www.cityofrevelstoke.com/>)
College of the Rockies (<http://www.cotr.bc.ca>)
Conservation Northwest, Washington (<http://www.conservationnw.org>)
Cooper, Beaudesne and Associates Ltd. (<http://cooperbeaudesne.com>)
Creston Valley Wildlife Management Authority (<http://www.crestonwildlife.ca>)
Dillon Consulting Limited (<http://www.dillon.ca>)
Downie Timber (<http://www.downietimber.com>)
DWB Consulting Services Ltd. (<http://www.dwbforestry.com>)
FORREX, Forum for Research and Extension in Natural Resources (<http://www.forrex.org>)
Golder Associates: Edmonton office (<http://www.golder.com>)
Golder Associates: BC Interior offices (<http://www.golder.com>)
Kootenay Association for Science and Technology (<http://www.kast.com>)
Keefe Ecological Services (<http://www.keefereco.com/>)
Lotic Environmental (<http://lotic.co>)
Minto Manor Bed and Breakfast (<http://www.mintomanor.com>)
Okanagan College (<http://www.okanagan.bc.ca>)
Parks Canada, Ecosystem Services, Calgary office (<http://www.pc.gc.ca>)
Parks Canada, Mount Revelstoke and Glacier National Parks (<http://www.pc.gc.ca>)
Parks Canada, Yukon Field Unit (<http://www.pc.gc.ca>)
Parks Canada, Waterton Lakes National Park (<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/>)
Silvatech Consulting Ltd. (<http://www.silvatech.ca>)
Summit Environmental Consultants Ltd. (<http://www.summit-environmental.com>)
Tipi Mountain Native Plants (<http://www.tipimountain.com>)
University of British Columbia (Okanagan) (<http://www.ubc.ca/okanagan>)

University of Victoria (<http://www.uvic.ca/>)
 Vast Resource Solutions (<http://vastresource.com/>)
 Wildsight (<http://www.wildsight.ca>)

Where do CMI members live?



2.4 Supporters of CMI for 2012

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://www.cmiae.org/Events/past-events.php>)

These agencies kindly provided financial support for an event in 2012:

- Columbia Basin Trust
- DWB Consulting Services, Prince George
- Interior Reforestation
- Polster Environmental Services
- Regional District of Central Kootenay
- Regional District of East Kootenay
- Selkirk College
- Stantec

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

2.5 Administration of CMI

The society continues to contract to Jackie Morris for the purposes of running the affairs of the society and coordinating all aspects of our events. Jackie was supported by Kathryn Tompkins, bookkeeper, and the services of other businesses as required.

3 Activities of the Columbia Mountains Institute

3.1 Continuing education

Conferences and courses in 2012

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 nine events were held in 2012. 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 in a very targeted way. We promote almost entirely by email to: members (sent to over 300 individuals), our event announcement distribution list (620 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.

CMI now reaches over 1000 ecologists in BC and Alberta.

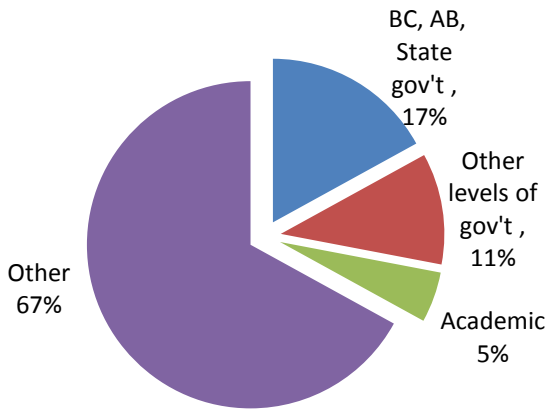
317 people attended a CMI event in 2012.

- 104 people attended a course
- 213 people attended a conference, workshop or meeting.

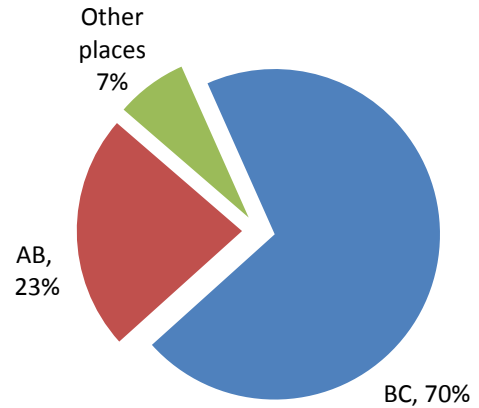
Some people attended more than one event.

Tables on the following page show where people are from, and their affiliations, for our courses and conferences in 2012.

Information about CMI course participants in 2012

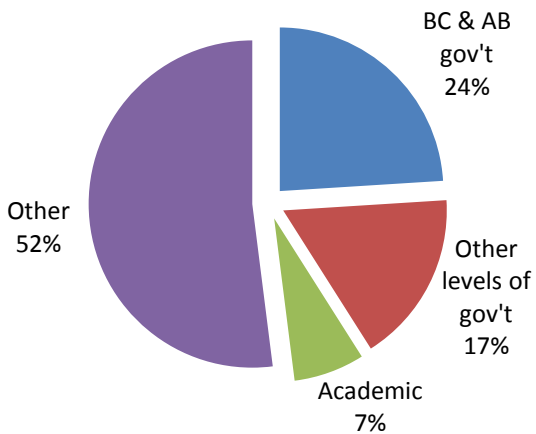


Affiliation of course participants in 2012
(104 people)

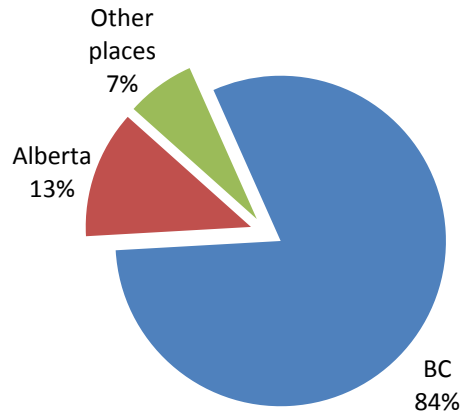


Where course participants came from in 2012 (104 people)

Information about CMI workshop participants in 2012



Affiliation of conference participants in 2012
(213 people)



Where conference participants came from in 2012 (213 people)

List of conferences and courses held in 2012

Information about all of these events can be found in the [Past Events](#) section of the CMI website.

Urban Wildlife: Challenges and Management

April 18-19, 2012

Rocky Mountain Prestige Inn, Cranbrook BC

110 people attended this conference

Wildlife numbers are increasing within many British Columbia municipalities, leading to more interactions with humans and our infrastructure. Interactions can lead to property damage, public safety issues, public health concerns, impacts on biodiversity, and death or suffering of wildlife. Deer, elk, coyotes, moose, geese, raccoons, bears, and other animals can become more than a nuisance, putting themselves and humans at risk. Through a combination of presentations, posters, and a demonstration, this conference will address management of wildlife - and people - related to problem wildlife in urban settings. The conference summary is available [on our website](#).

CMI Annual Researchers' Meeting & Annual General Meeting

May 1, 2012, afternoon

Lakeside Prestige Resort, Nelson BC

29 people attended our half-day meeting

Every year CMI members get together to provide updates on their projects (research, field trials, new initiatives in southeastern British Columbia) and catch up on each other's news. It's an informal atmosphere and non-CMI members and post-secondary students are welcome to attend.

Capture–recapture for Spatial Data course

May 29-31, 2012,

Prestige Lakeside Resort, Nelson BC

Course was fully subscribed with 16 people.

This course was taught by Dr. Murray Efford of Otago University, New Zealand. Participants brought their own laptop pre-loaded with software (R, the R package 'secr', and Density).

Animal populations are often studied by trapping individuals, marked or otherwise distinguishable, at discrete points in space or by searching an area for sign. The statistical analysis of such data to estimate population density or size is more robust and effective if it accounts for the spatial distribution of sampling. There has been rapid growth of relevant methods and software in the last few years, but these have yet to appear in standard texts. Spatially explicit capture–recapture (SECR) analyses are used widely for bear populations

sampled with hair snags and for large cats caught on automatic cameras. The methods extend to grid trapping of small mammals, mist-netting of birds, DNA from feces, and sounds recorded on microphone arrays.

This 3-day short course introduced the core concepts of SECR, the free Windows software 'Density' and the R package 'secr'. There was some time set aside to discuss participants' data. Specific topics covered included:

- spatial data types
- detection functions
- the use of habitat masks
- modelling of trap response and spatial, temporal or individual covariates
- interpreting output and troubleshooting
- study design
- density surfaces
- open-population analysis.

Soils Refresher Course

May 31 & June 1, 2012

Selkirk College, Castlegar BC

This course was fully subscribed with 18 people.

This course was co-hosted by Columbia Mountains Institute of Applied Ecology and Selkirk College. It was taught by Derek Marcoux of Selkirk College in Castlegar. The participants were biologists, foresters and other resource professionals interested in reviewing basic concepts of soils and soil management. Topics covered included: a review of basic mineral and rock characteristics that contribute to soil forming processes and classification of soils in Canada; a review of field estimation of soil textures; and classification of forest, grassland, and wetland soils. Participants spent the first day mostly in the classroom and lab reviewing basic soils concepts and practicing field texturing. On the second day, participants went on an all-day field trip from Castlegar to Grand Forks to review the soil properties in forest, riparian, wetland, and grassland environments.

Natural Processes for the Restoration of Drastically Disturbed Sites - course

November 6, 2012

Cranbrook BC

31 people attended this course.

This course was taught by David Polster of Polster Environmental Services.

Natural processes have been "reclaiming" natural disturbances since the beginnings of time. This one-day workshop explored how these natural processes can be applied to the reclamation of roads, borrow pits, and other sites that humans have disturbed. Traditional reclamation programs fail to generate the ecological goods and services that were lost

during the disturbance of the site. Providing erosion control is a key element in the development of effective restoration programs. We will look at the processes of erosion and how natural systems solve erosion problems. Similarly, many disturbed sites lack nutrients for plant growth or the capacity to cycle the nutrients that are available. We will explore the natural processes that provide nutrients and nutrient cycling capacity to ecosystems and how these can be re-established on disturbed sites. In many cases the systems and processes that naturally reclaim disturbed sites can be established on anthropogenic disturbances easily and at a lower cost than using traditional reclamation techniques.

Resource Roads in British Columbia: Environmental challenges at the site level

November 7-8, 2012

Cranbrook BC

80 people attended this workshop.

Within British Columbia, paved and unpaved road length increased by 82% between 1988 and 2005. In 2000, there were over 420,000 road-stream crossings in BC; over the subsequent five years, road-stream crossings increased by about 13,000 per year (BC Ministry of Environment 2007). Estimates of unpaved roads vary from 400,000 to 550,000 km across the province (BC Forest Practice Board 2005). Many more backcountry roads have been built since. The environmental effects of backcountry roads are diverse, and include impacts on aquatic and terrestrial wildlife and habitat, soils, and water. At this event we addressed both the site-level environmental impacts of backcountry roads and management responses.

At this 1.5 day workshop on November 7–8, 2012 held in Cranbrook, BC, participants heard 18 speakers, and viewed 7 posters and displays. The conference summary for this event is available [on our web site](#).

Ordinary and logistic regression course

November 20-22, 2012

Revelstoke, British Columbia

12 people attended this course.

Regression analysis is one of the most commonly used statistical methods in ecology. Analyses range from the very simple (a single response vs a single predictor) to the very complex (hundreds of predictors). In this course we will review the use of regression methods using modern statistical software. As well, regression methods have been extended to try and predict categorical responses (e.g. predicting live vs dead using logistic regression) and predicting counts (e.g. stem counts in forest surveys as a function of covariates). The course included an introduction to generalized linear modelling using these more advanced methods.

This three day course was taught Dr. Carl Schwarz, Department of Statistics and Actuarial Science, at Simon Fraser University.

Design and analysis of distance sampling studies course

November 27-29, 2012

Revelstoke, British Columbia

15 people attended this course.

The course concentrated primarily on line and point transect sampling. The concepts of distance sampling were explained and the assumptions of the methods discussed. Although the basic theory was covered, the focus of the course was on practical application of the methods.

The course began with an introduction to wildlife population assessment methods, and a demonstration of how line and point transect methods are generalizations of sample count methods (strip counts and point counts respectively). The underlying theory and assumptions of both line and point transect sampling were covered, and the relative merits of the two approaches in different circumstances discussed. More complex issues were then addressed. Special methods are required when animals occur in groups or "clusters". For example, size bias can occur - large clusters have a higher probability of detection than small clusters, so that population size is overestimated. Methods for adjusting for this bias were given. Another issue is stratification, which is used to improve the precision of estimates when animal abundance, detection probability or clustering varies over time or space. Good survey design is an essential ingredient of a successful survey so design issues and field methods were covered in detail. Some specialized applications of distance sampling such as cue counting, trapping webs, and indirect counts (e.g., dung or nests) were addressed.

This three day course was taught by Dr. Carl Schwarz, Department of Statistics and Actuarial Science, at Simon Fraser University.

3.2 Supporting applied ecological research

CMI Members' Updates

Nine CMI Members' Updates were sent in 2012, plus 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 300 individual email addresses, and were circulated further within the corporate memberships. Updates for the 2012 year will be archived on the website in early 2013.

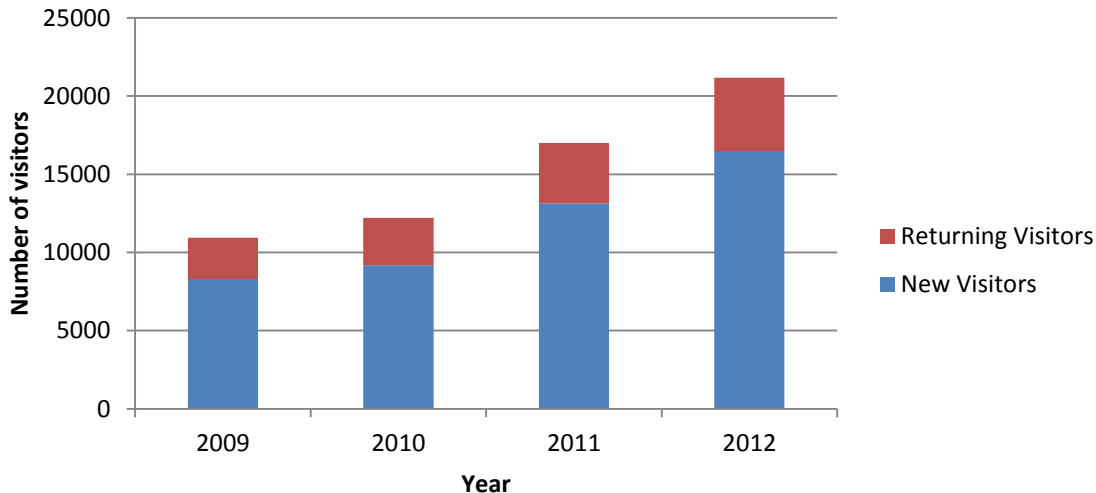
CMI web site (www.cmiae.org)

Our Google Analytics program tells us that in 2012 our web site received 21,171 visits.

- 76% of the people visiting our site were unique visitors.
- 24% were returning visitors.

The following chart shows that over the last four years our website visitation has been growing, and that the proportion of returning to new visitors is consistent.

Proportion of new and returning visits to CMI website



- The most visited page on the site was the Events page, with 6239 visits in 2012.
- The second most visited page was the Home page, with 4368 visits.

These numbers suggest that many people enter our site after reading an announcement

containing a link leading directly to that page.

The third most visited page is in the National Park Feature Articles section, about grizzly bears. If you enter “grizzly bear information” in a Google search, this web page shows up fourth on the list of results. However the information on this page is out of date and it should be removed from our site.

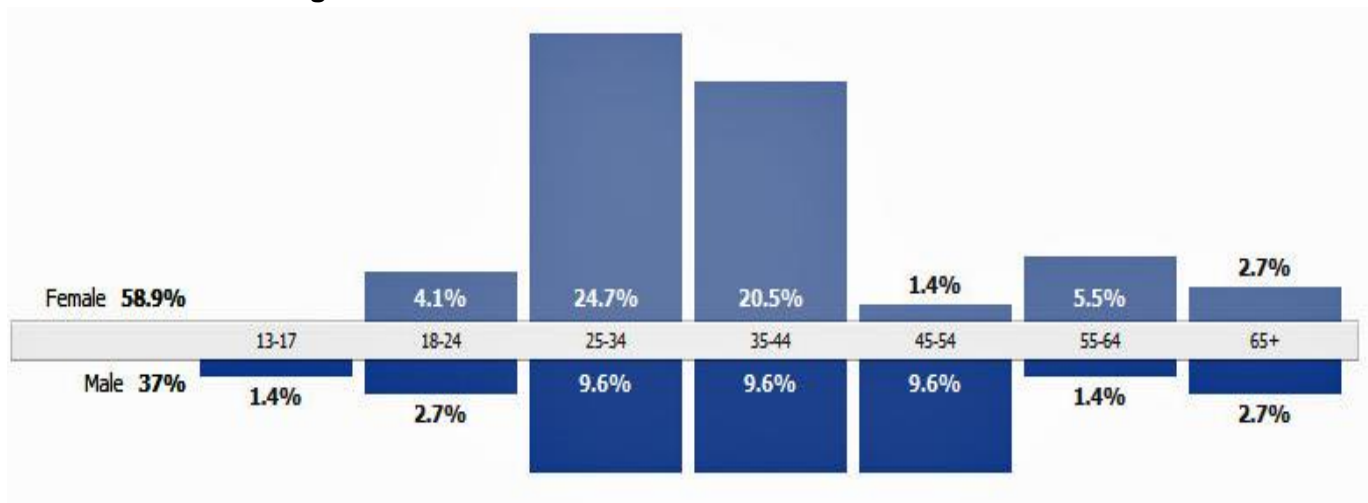
The most popular PDF downloads in 2012 were for our conference summaries. These summaries are a legacy of our events, and make the information from the event available to a much wider group than the participants. As of January 2013, the following number of downloads had occurred:

- summary from the *Urban Wildlife* event (150 downloads);
- summary from the *Resource Road* event (123 downloads); and
- compiled abstracts from the *Annual Researchers’ Meeting* (52 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. The number of people that “like” the page grew to 108 people by the end of 2012.

Gender and age of our 108 CMI Facebook followers in December 2012



The page had only a few comments posted in response to the information Jackie posted from CMI. Most of the CMI posts were event announcements or items picked from the Members’ Updates emails. In 2013 we need to find ways to make the page more interactive.

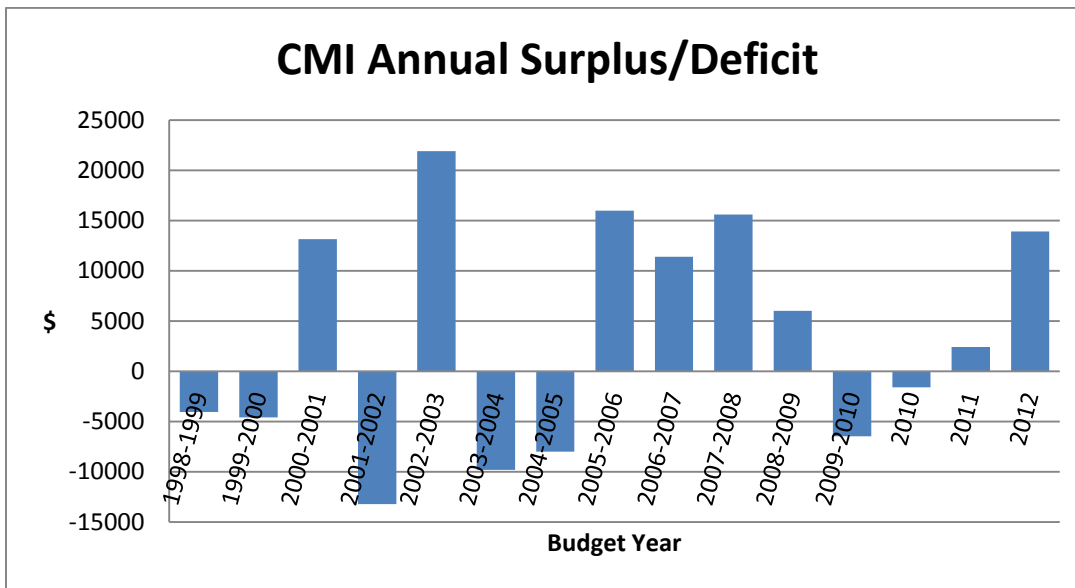
3.3 Collaboration

This year Parks Canada and CMI developed 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, Kootenay Association for Science and Technology, 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, 2012 reported a net gain of \$13,906.04. 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.



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.

Looking ahead we will be transitioning back to the PST and GST this year. For those individuals who pay for these courses out of their pocket, this will reduce the costs of our events by 7% but for those that are GST registered, there will be no change.

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, DWB Consulting Services, Interior Reforestation, Polster Environmental Services, Regional District of Central Kootenay, Regional District of East Kootenay, Selkirk College, and Stantec. With the financial and in-kind support of these organizations, the cost of courses and conferences are 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. If there are any ideas out there for additional courses or conferences, please let Jackie or our Board members know.

Kevin Bollefer
Treasurer
Columbia Mountains Institute

Columbia Mountains Institute of Applied Ecology

**Comparative Statement of Operations
for fiscal year ended December 31, 2012**

	December 2012	December 2011
Revenues		
Completed Workshops, Courses and Projects*	25,637.22	21,899.04
Grants and Contributions for general use	5,000.00	5,000.00
Membership Fees	6,545.89	4,737.70
Miscellaneous Income and Bank Interest	1,312.52	1,419.24
Gain or (Loss) on Sale of Assets		100.00
Total Revenues	38,495.63	33,155.98
Expenses		
Accounting and Bookkeeping	1,230.00	1,050.00
Amortization	846.12	779.46
Contract Fees	15,694.53	18,560.04
Donations	-	-
Insurance	(27.00)	3,265.00
Licenses and Dues	25.00	30.00
Miscellaneous	33.02	(25.15)
Office Equipment, Furnishings and Software	200.00	574.73
Office Supplies	672.08	609.36
PayPal Charges Admin	65.00	104.28
Printing and Photocopying	131.64	2.16
Postage and Courier	62.52	43.22
Rent	2,737.00	2,602.80
Services	219.00	-
Staff Training	-	-
Telecommunications (Phone, Fax and Internet)	1,638.70	1,336.80
Travel	-	-
Website	1,023.93	1,441.82
Workers' Compensation	38.05	46.05
Total Expenses	24,589.59	30,420.57
Excess of Revenue over Expenses	13,906.04	2,735.41

* The "Completed Workshops, Courses and Projects" entry is the net retained earnings for all of the year's events. We track each event as a separate project (income is registration fees and grants, expenses are the Executive Director's time, instructors' fees, venue rental, catering, credit card fees, etc.) and pool the final results in this category.

Columbia Mountains Institute of Applied Ecology

**Comparative Balance Sheet
for period ending December 31, 2012**

	December 2012	December 2011
Assets		
Current Assets		
Bank - Revelstoke Credit Union - Chequing	29,614.16	16,493.54
Bank - Revelstoke Credit Union - Term Deposit - 20-May-2011	-	22,000.00
Bank - Revelstoke Credit Union - Term Deposit - 30-Jan-2014	11,113.47	10,660.50
Bank - Revelstoke Credit Union - Term Deposit – 25-Nov-2015	25,000.00	
Bank - Revelstoke Credit Union - Member Rewards	-	-
Bank - Revelstoke Credit Union - Shares	49.65	49.16
Accounts Receivable	3,000.00	1,032.00
Prepaid Expenses		-
Work In Progress	1,254.71	7,338.98
Total Current Assets	70,031.99	57,574.18
Capital Assets		
Computer Equipment	2,218.00	2,218.00
Accumulated Amortization - Computer Equipment	(705.88)	(261.16)
Data Projector	1,915.82	1,915.82
Accumulated Amortization - Data Projector	(1,103.85)	(702.45)
Total Capital Assets	2,324.09	3,170.21
Total Assets	72,356.08	60,744.39
 Liabilities And Surplus		
Current Liabilities		
Visa Payable	-	-
Accounts Payable	(652.68)	181.67
Prepaid Memberships	40.00	50.00
Deferred Revenue	-	1,450.00
Total Current Liabilities	(612.68)	1,681.67
Surplus		
Surplus - Beginning of the Year	59,062.72	56,327.31
Surplus (Deficit) - For the Current Year	13,906.04	2,735.41
Total Surplus	72,968.76	59,062.72
Total Liabilities And Surplus	72,356.08	60,744.39