

**9th CMMN-RCSM National Meeting /
9^e Rencontre nationale du RCSM-CMMN**

31 October - 3 November 2013, Bird Studies Canada, Port Rowan, ON
Hosted by Long Point Bird Observatory and Bird Studies Canada

MEETING SUMMARY

Prepared by Audrey Heagy, Marcel Gahbauer, Marie-Anne Hudson and Stu Mackenzie

December 2013



Réseau canadien
de surveillance
des migrations



Canadian Migration
Monitoring Network

L'information transmise par le Réseau canadien de surveillance des migrations s'adressent à tous les observatoires membres. Toutefois, pour des raisons pratiques ce message vous a été transmis uniquement en anglais et nous vous prions de nous en excuser. Si cela entraînait un problème de compréhension, nous vous invitons à communiquer avec nous et il nous fera plaisir de vous donner les informations nécessaires en français.

2013 CMMN-RCSM National Meeting Summary

Prepared by Audrey Heagy, Marcel Gahbauer, Marie-Anne Hudson, and Stu Mackenzie
November 2013

1. INTRODUCTION

The ninth national meeting of the Canadian Migration Monitoring Network – Réseau canadien de surveillance des migrations (CMMN-RCSM) was held in Port Rowan Ontario from 31 October to 3 November, 2013. The meeting was hosted by the Long Point Bird Observatory, which is the founding program of Bird Studies Canada (BSC). The meeting organizing committee consisted of Stu Mackenzie (local host) and Audrey Heagy (BSC), along with the co-chairs of the CMMN Steering Committee, Marie-Anne Hudson and Marcel Gahbauer.

A total of 48 people attended all or part of the meeting. Twenty-two migration monitoring stations were represented at the meeting: 19 Canadian stations, two stations located in the United States Great Lakes region, and one station in Veracruz, Mexico. Bird Studies Canada and the Canadian Wildlife Service were well-represented. Several university researchers and migration monitoring experts also participated in the meeting. A list of meeting participants, along with their affiliation(s) and contact information, is provided in Appendix 1.

The format of the meeting was similar to previous years and included a report from the Steering Committee, brief updates from the partner organizations and member stations, workshops on CMMN development, and a variety of scientific and technical presentations on subjects ranging from individual station research projects to national and international collaborative projects. A copy of the meeting final agenda is included as Appendix 2.

Copies of most of the presentations (indicated by * in notes, see also Appendix 2) are available on the CMMN-RCSM NatureCounts website at: <http://www.birdscanada.org/birdmon/cmmn/resources.jsp>.

Note: *You need to be registered as a participant in the CMMN NatureCounts project to view these presentations. To register, create a User Profile with your login and password. New registrations are usually approved within 48 hours.*

Copies of the presentations and other meeting-related information are available on request from ahagy@birdscanada.org.

2. STEERING COMMITTEE REPORT*

Marcel Gahbauer and Marie-Anne Hudson, the Steering Committee Co-chairs, presented highlights from the report on Steering Committee activities over the past two years that had been circulated prior to meeting (Appendix 3). Notable accomplishments include:

- Tommy Thompson Park Bird Research Station has been upgraded to full member status and other membership applications and upgrades are under review.
- Enhanced network communications due to increased use of the CMMN listserve, improvements to existing tools (website, NatureCounts), and development of new tools (CMMN Facebook page).
- Increased profile due to publication of CMMN articles and posters.

- Growing demand for CMMN data: 140 requests through NatureCounts portal for data from 15 different stations since October 2012.
- New DET data entry software available.

Discussion

- *Various communication tools have different purposes and intended audiences as follows:*
 - **NatureCounts website:** data portal for stations and for outside researchers interested in exploring CMMN data and submitting data requests.
 - **NatureCounts Resources page:** PDF files of interest to CMMN members and associates.
 - **Bird Studies Canada website:** description of who we are and what we do for external audience, along with links to websites of member stations and associates.
 - **CMMN listserv:** Yahoo group for internal discussion among individuals associated with CMMN stations and/or interested in migration monitoring.
 - **CMMN on Facebook:** broadcasting events and other news to extended network.
 - **CMMN on Twitter:** anything posted to Facebook pages goes to CMMN Twitter feed and shows up in Twitter box on the CMMN page and on the BSC home page.
- *Has there been thought given to having a standalone CMMN website not “hidden” within the BSC website?*
 - Yes, the Steering Committee spent a full meeting on communications and discussed this possibility. SC decided that most people use Google to find stuff on the web and a search on “CMMN” or “migration monitoring” gets to CMMN pages on BSC or NatureCounts directly. Also issue of who would manage an external webpage.
 - Content of BSC CMMN pages was updated in 2013 to correspond closely to the current CMMN-RCSM strategic plan and other documents developed by the Steering Committee.

Action: Stations are encouraged to check out the CMMN-RCSM webpages, use the available communication tools, and provide feedback to the Steering Committee.

3. ENVIRONMENT CANADA REPORT*

Marie-Anne Hudson, presented a report on Environment Canada activities, including slides prepared by Lesley Howes from the Canadian Bird Banding Office.

The Bird Banding Office slides included information on:

- The responsibilities of all bird banders;
- New best practices initiatives such as a draft NABC nest box banding guide, draft NABC guidelines on photographing birds at banding operations, and an updated bird list with recommended band sizes;
- Permitting requirements;
- Banding Permit Assessment process;
- Year End Reporting requirements; and
- Appropriate holds for handling shorebirds and other species with specific requirements.

Banders should contact the Bird Banding Office if they have any questions, BBO_CWS@ec.gc.ca

Other Environment Canada news:

- NatureInstruct website www.natureinstruct.org currently includes two modules:
 - *Dendroica: An aid to identifying American birds*
 - *Piranga: A bird-bander's aid to identifying, ageing and sexing North American Birds*
- New *AviChorus* module with audio point counts is coming soon.
- Updated *Status of Birds in Canada* website, <http://www.ec.gc.ca/soc-sbc>. The 2011 version includes accounts for all species of birds that regularly breed in Canada except waterfowl based on the best available data up to 2009. Working on getting CMMN data incorporated in future updates.
- New publication quantifying human-related causes of avian mortality in Canada, <http://www.ace-eco.org/issues/view.php?sf=4>.
- Recent interest in use of broadcast acoustic luring during migration monitoring.

Discussion

Bird Banding Office update:

- Need to work together to elevate banding standards.
- Draft NABC documents (nest box banding, photography guidelines) are available from Lesley Howes.
- Banders are responsible for determining if they require provincial/territorial banding permits, as well as additional permits for sampling, research in protected areas, etc. Not having necessary permits can cause major problems.
- *What is the expected turnaround time on banding permits?*
 - BBO is generally very responsive but can take longer if application is incomplete or if further information is needed. Official service standards will be coming in but the turnaround time will not be faster than the current practice.
 - Testimonials are very important, and are particularly useful if they include additional details based on your experience with the candidate.
- *What to do if you capture a bird with geolocator?*
 - Leave it on unless otherwise instructed by the researcher.

Piranga and photo resources for banders:

- More photos needed for *Piranga*.
- McGill Bird Observatory photo library (<http://www.migrationresearch.org/mbo/id/>) is an excellent resource that contains additional information not included on *Piranga*.

Use of acoustic lures:

- CMMN protocols are mostly based on passive capture.
- Some protocols include targeted audio luring to increase captures for particular species during migration (e.g., NSW0, see also skylark migration project in France <http://socpvs.org/journals/index.php/wbp/article/view/10.2461-wbp.2007.3.11/83>).
- BBO doesn't currently require an authorization for audio luring.
- Should report audio luring as method of capture with banding data.

4. BIRD STUDIES CANADA REPORT

Jon McCracken presented a verbal report on BSC's CMMN-related activities over the past two years.

Staffing

- Various BSC staff involved in various aspects of the CMMN
 - Steering Committee representatives: Jon McCracken, Stu Mackenzie, Audrey Heagy.
 - Data archiving and database management: Tara Crewe (on leave for PhD research), Catherine Jardine filling in for Tara, Denis Lepage lead for NatureCounts website and data tools.
 - Data analysis: Tara Crewe on short contract.
 - BSC runs LPBO station (Stu Mackenzie Station Manager), and also Thunder Cape BO (John Woodcock Station Manager) in cooperation with Thunder Bay Field Naturalists.
 - Secretariat services provided by Audrey Heagy.

Data archiving

- Daily Estimated Total (DET) data are archived by BSC.

Data accessibility

- CMMN DET data are accessible on NatureCounts (Canadian portal for Avian Knowledge Network), subject to terms of data sharing agreement. Stations are encouraged to agree to Level 3 data access (or higher) to make data more visible to researchers and still retain complete control over data. Data requests are sent to station contact person for approval.

Data entry program

- Denis Lepage developed a new CMMN DET data entry program based on Excel. Initial release in spring 2013 was well received. New version will be available before spring 2014. Funding provided by Environment Canada.
- Important that data come to BSC in standardized format.

Population trends and reliability flagging system

- Trends for stations with 10+ years of data have been updated to 2011. Trend graphs were distributed to stations but have not been posted on website. Recent analyses include a lot of additional species.
- Jon (with input from the Steering Committee as well as David Hussell and Ricky Dunn) did some work on a data flagging system to classify the reliability of the trend information for each species. Decided that this was not the right approach so need to come up with something else. For now, will post trends for smaller set of landbirds where trends are considered more reliable and not post trends for other species (e.g., waterfowl, irruptive species, or resident species).
- Tara's PhD research (see her technical presentation) should be completed by next year.
- COSEWIC is using CMMN trends to assist with status assessments for several species (e.g., Wood Thrush).
- Feather isotope project results will provide catchment areas that will facilitate use of CMMN trend information.

CMMN website

- CMMN webpages on BSC site were refreshed. Available in English and French.

Baillie Birdathon and CMMN

- Increasing participation since switch to 75%:25% revenue sharing with CMMN member stations. Most stations are now raising more money, with seven stations raising more than \$5000/year.
- CMMN stations have raised a total of \$837,000 since 1998, of which more than \$500,000 has gone towards station operations.
- In 2013, Prince Edward Point BO won the KOWA scope. Previous winners of the CMMN prize: Beaverhill BO, Tommy Thompson Park BRS, McGill BO, and Vaseux Lake BO.

Discussion

- Trend information to 2006 is currently available on NatureCounts. Can select time period of interest.
- Haven't yet done sensitivity analysis for species with local sample size.
- Change in analytical methods used for CMMN data is similar to recent change in Breeding Bird Survey (BBS) analytical methods.
- Major question is whether can combine data from different sites and use CMMN data for assessing species status at regional or national level as that is Environment Canada information need (especially for species not well-covered by BBS, e.g. Blackpoll Warbler).

5. STATION REPORTS*

Brief station reports following a standard template were provided by the 19 Full Member stations, the one Provisional Member, and four Associates. Copies of these presentations are available on the NatureCounts website.

There are many differences among CMMN stations in terms of staffing, budgets, operating windows, and protocols. Most stations identified funding as an ongoing challenge and many also mentioned habitat change as a concern. The cold weather in spring 2013 affected operations at several stations. Several western stations reported Palm Warbler and Blue Jay among their noteworthy bird records.

6. INTERNATIONAL STATION REPORTS AND PROJECT UPDATES*

Ted Cheskey presented a summary of international projects being undertaken by CMMN member stations. Participants from the United States and Mexico presented short reports on the Braddock Bay and Black Swamp bird observatories located on the US side of the lower Great Lakes, and on the PEMEX bird observatory at Minatitlán in Veracruz, Mexico.

Other presentations in this session included: a brief introduction to the new Midwest Landbird Migration Network in the USA (<http://midwestbirdmonitoring.ning.com/group/mwmigrationnetwork>); a short update on progress and projects of the North American Banding Council (NABC, www.nabanding.net); and a presentation on efforts by the Landbird Monitoring Network of the Americas (LaMNA, www.klamathbird.org/lamna) to archive banding datasets.

7. TECHNICAL PRESENTATIONS

The agenda also included ten excellent technical presentations on a diverse array of topics. These talks generated a lot of interest and discussion, which fed into the workshop sessions. See agenda for full listing of presentation.

Copies of eight of these presentations (including an abridged version of the keynote presentation on Broad Scale Migration Ecology Research by Woodworth and Taylor) are posted on the NatureCounts Resources page. Information on the Canadian Snow Bunting Network coordinated by Dr. Oliver Love is available at <http://web2.uwindsor.ca/biology/olove/CSBN.html>. A webinar and PDF on Dr. Chris Guglielmo's work on the migration physiology of birds and bats is available at http://nctc.fws.gov/CSP/Resources/conservation_science_web_series/information_page/christopher_guglielmo.html.

8. WORKSHOP ON CMMN ACTION PLAN AND PRIORITIES

Marcel Gahbauer and Marie-Anne Hudson led this workshop. The purpose of this session was to have an open discussion about:

- what has been accomplished over the past two years;
- areas of the CMMN-RCSM strategic plan we are not making progress;
- factors that are holding back progress in these areas;
- current priorities; and
- suggestions as to how to change the way we as a network, and as parts of a network, do things.

Discussion

- Stations are collecting good data that are getting sent to BSC, archived, and made accessible to researchers.
- BSC is analyzing the data regularly, although updated trends have not yet been posted to the website.
- There is still a need to improve analytical methods and increase value of the trend data (e.g., by linking it to catchment areas). Projects focused on trend analyses, and delineation of catchment basins are in progress.
- We haven't yet fully or effectively used the migration monitoring data that have been collected in terms of influencing conservation planning.
- Many stations are involved in a lot of "side projects", as well as community engagement and fund-raising efforts.
- Lack of framework for implementation of the CMMN-RCSM Strategic Plan and Action Plan is a significant problem. Necessary work to advance the Strategic Plan can't be done by the Steering Committee. Need to consider restructuring or change responsibilities within the network to fix this problem.

Calgary Bird Banding Society proposal*

Doug Collister presented a proposal that the Calgary Bird Banding Society had sent to the Steering Committee on 30 October 2013, just prior to this meeting. CBBS was frustrated by lack of progress, though at the time they weren't fully aware of what progress had been made. They were concerned that structural problems were holding things back and made the following suggestions:

- Expand and/or rebalance the Steering Committee by increasing representation from the member stations and reduce BSC and CWS representation (or change to observer status).
- Focus Steering Committee efforts on three highest priorities:
 - funding;
 - custom trend analysis; and
 - promotion of trend analyses for conservation purposes.
- Establish CMMN as an independent charitable organization to facilitate fund-raising.

Discussion

Steering Committee composition

- Reducing BSC and CWS staff on the Steering Committee is not a good idea as they can spend some work time on CMMN business whereas station representatives are all volunteers. Proposed changes to Steering Committee structure could reduce the capacity of the Steering Committee.
- In practice, the Steering Committee uses consensus approach so the “power balance” is not a real issue.
- Many stations don’t have extra capacity to help with network capacity problems, but some do.

CMMN structure and fund-raising

- Not clear whether becoming an independent charitable entity is necessary for fund-raising provided that donations to BSC can be designated to be used for CMMN program.
- Competition for funds is universal issue.
- There would be additional governance and administrative burden as an independent charity.
- Need for greater clarity as to how CMMN structured – e.g., is it a program of BSC, is it a joint venture, is it more than that?
- Interest in seeing if BSC can hold funds for the CMMN and can include CMMN in materials they are distributing to donors.
- Structure of the network is ok (although not working well due to lack of capacity?).

CMMN marketing

- Need to do a better job of marketing the CMMN, which is difficult when it is seen as a program of BSC and because the member stations need to market their own brand.

CMMN products

- Need to determine the most effective use of CMMN data (population trends or other questions?).
- CWS is currently providing in excess of \$100,000 to CMMN annually and needs to justify doing this in terms of products other than population trends for individual stations.
- Steering Committee has role in:
 - Making it clear what good things the CMMN does; and
 - Making sure trends on the website are good, understandable (easy to digest), have appropriate flagging system, are current, and are easy to find. This is an important product for funders.
- Will take a while to figure out the trend analyses – what can be done in the meantime?

CMMN funding

- Funding is needed for
 - Station operations;
 - Marketing;
 - Trend analyses; and
 - Secretariat/coordination services.
- Resources needed to run the CMMN were identified at the 2005 national meeting.
- Can't expect others to raise funds for the stations (being part of the CMMN helps stations with fund-raising).
- More money needed for staff at BSC to run the CMMN.
- Interest in knowing where the Environment Canada funding is going.
- Steering Committee has no control of money, can't hold money or accept donations.
- Interest in seeing if BSC could accept donations for a CMMN endowment or reserve fund.
- What can be done with existing resources?

Communications

- Agreement that the Steering Committee minutes are boring. Need for more frequent communications but as newsletter versus minutes.
- Maybe stations could take turns producing a CMMN newsletter to effectively share information? Have member stations sit in on a Steering Committee meeting approximately once every 4 years and prepare summary for distribution.
- Stations communications need improvement. Steering Committee provided template for station summary but only a few stations picked up on it. Alternate approaches are welcome – the template was intended to facilitate discussion, but is not a requirement; the main priority is to share results.
- Stations can use the CMMN listserv to post seasonal highlights but this tool is under-utilized.
- Interest in compiling an annual summary of CMMN banding and ET data to compare seasonal patterns. As will be comparing stations with very different protocols, need to standardize results relative to effort.
- Consistently good participation in the national meetings indicates CMMN is valued by the stations and individuals involved. Several people are paying their own way to get to meetings.
- Steering Committee should consider other forums for participation such as webinars (less expensive, less time involved) to maintain energy across the network and between face-to-face meetings. These could be station updates (up to ten updates in 1 hour session), e.g., at end of each season. Could focus on topics such as data entry software, educational programming, or technical questions.

Action: Steering Committee to facilitate the preparation of a DET/banding summary for posting to NatureCounts and BSC web page each year as a means to attract researchers (e.g., top 10 species or something along those lines).

9. WORKSHOP ON THE IMPORTANCE OF COLLABORATIVE RESEARCH

Jon McCracken led this workshop on the need for open communication and collaborating at various scales. He identified four elements needed for all collaborative projects:

1. A project question that is best addressed by multiple participants.

2. A well-designed framework.
3. A project lead who will take the project from start to finish.
4. Adequate resources (\$\$, people, equipment).

The feather isotope project was the largest CMMN collaborative project to date.

Jon put forward the following ideas for potential CMMN collaborative projects:

Automated telemetry project

The infrastructure for conducting large-scale automated telemetry projects will be in place within a few years (see presentation on Broad Scale Migration Ecology Research by Woodworth and Taylor). CMMN could be major player in this work. Need to think big including big \$\$.

Species at risk

There are funding resources available for work on species at risk. Jon is aware of a number of projects that CMMN could tap into:

- Jon McCracken (BSC) working with Ted Cheskey (Nature Canada) and others on Canada Warbler research needs at hemispheric level.
- Kevin Fraser is putting geolocators on Canada Warbler and Olive-sided Flycatchers.
- Alaskans are interested in large scale project on Olive-sided Flycatchers include geolocators and feathers sampling for mercury and other contaminants. Small samples from across species range would be valuable.
- Bobolink research using geolocators and looking at contaminants in feathers.

Banding Data

Landbird Monitoring Network of the Americas (LaMNA) is set up for purpose of archiving banding data. LaMNA has developed tools for maximizing value of the banding data.

Breeding Season Banding

Many stations are participating in the Monitoring Avian Productivity and Survivorship (MAPS) collaborative project. MAPS data are getting used more and more.

Collaborative Training Opportunities:

Many stations have been involved in bander and migration monitoring training for university students. Also, international training projects such as LPBO's Latin American training program. Opportunity to enhance the training experience by sending trainees to other stations to see variation in protocols, different training methods, meet more people, and increase networking opportunities.

Discussion

- CMMN is seen elsewhere as a huge resource.
- Good east-to-west coverage across Canada that is a valuable resource for researchers.
- Chris Guglielmo is building a new stable isotope lab dedicated to birds at Western University. Twenty-year goal for that project is to link up a migration atlas for all of Canada's birds that shows where they breed, migrate, and winter. Will be looking to CMMN to help provide feather samples.

- Mercury contamination is a current conservation issue. Could develop a project to collect feathers and blood samples from a few species across the network in fall and spring to see where in annual cycle the birds are picking up mercury.
- Could fill holes in past collaborative projects (not all stations were able to provide samples for bar-coding and isotope projects). Large bank of feather samples available from long-distance migrants (only about 10% of 22,000 samples have been analysed). No samples of short-distance migrants were collected for the isotope project.
- Need to get the word out about capacity of the network to look at irruptive species.
- Finding a project lead is often the stumbling block.

What is best way for CMMN to let researchers know this resource is available?

- Have display/table (with representative) at AOU and SCO meetings.
- Set up a Science Advisory Council or other group of high profile scientists to develop a big project involving CMMN stations.

How can Mexican stations (and other international stations) be part of the network?

- International stations could collect samples for collaborative projects.
- Look at partnering with a Canadian station?

Communications

- Use listserv to request data for small projects.
- Use listserv to disseminate breaking news on migration patterns, annual fluctuations to birders and/or science community.

Sustainability

- Use International Migratory Bird Day (IMBD) as a tool to engage your local community and celebrate birds. Ted Cheskey reported that Nature Canada will be making 'Canadianized' IMBD resources available.

Smaller-scale collaborative projects

- McGill Bird Observatory has compiled a list of small projects, e.g., list of species identified as data deficient in Pyle banding guide. Undergraduate students tackle projects from this list. Results in some publications. Other stations could use this approach too. There is the potential for stations to collaborate for some topics.

Making data more accessible

- Benefits to making data available publically and freely, e.g., eBird and Breeding Bird Survey data are free and are getting widely used. Ability to show funders how data are used is an easier way to get funds than trying to sell data.
- Need to be able to justify why stations are capturing and banding birds by showing how data are being used.
- Also, more motivation to do something with data yourself if data are public.
- CMMN DET data can be accessed through NatureCounts but stations need to approve release promptly. A week may be too long for some researchers.
- BSC needs to promote NatureCounts more widely.

Develop in-house capacity for collaborative research

- Look at Long Point Waterfowl as a model for CMMN development. Focus on hiring a research scientist at BSC to develop research projects and secure grants for network projects. Outside researchers will always have other interests and priorities so shouldn't rely on them for developing the CMMN.

10. WORKSHOP ON INCREASING INSTITUTIONAL CAPACITY

Ann Nightingale led this workshop that focused on how to move CMMN goals forward through innovative funding at various levels.

Collaborative funding

- While all stations said they would happily accept funds from CMMN if offered, there was general agreement that national fund-raising efforts should be directed at funding for joint resources (e.g., research scientist) rather than operational funding for the stations. Stations would see more benefit from \$50,000 spent on post-doctoral researcher than on splitting that amount among the stations.
- Corporate funding is an attractive idea but need to identify a logical match where can show benefit to the corporation.
- Having a package of academics, volunteers and NGO's all working together on a collective goal might be attractive to some big organization.
- National corporation might be interested in sponsoring an intern at every station?

Station funding

- Make use of tools such as Facebook to effectively market your station to your local audiences.
- Share local fund-raising ideas with other stations as you aren't competing for these funds.

Contingency fund for stations

- Interest in establishing a contingency fund to help individual stations out over short-term where temporary shortfall in funding. However, this would be hard to sell to a funder. Would need to have clear rules in place as to when it could be used, who decides, etc.
- Have been examples when stations have had shortfalls and got by with volunteers filling in for paid banders, and/or had help from other stations.

Endowment fund for CMMN

- Interest in establishing a CMMN endowment fund that would generate a secure stream of funds for regular network operations.
- Would individual stations contribute to this as % of their budget or based on membership or other measure of ability?

CMMN and Birdathon

- Some stations might be willing to put aside some of their Birdathon funds for CMMN endowment and/or increasing CMMN capacity at BSC (particularly if matched by BSC or other funders).
- Some stations are dependent on Birdathon for their operations.

Steering Committee support for member stations

- Steering Committee role is not to raise funds for member stations but to facilitate fundraising and provide guidance on writing bigger grants.
- Letter of support can be big help.

Action: Steering Committee to prepare standard letter of support for stations to use when fundraising. Have it ready to customize for individual stations for particular funders.

Action: Steering Committee to facilitate the preparation of a database of funding ideas collected from across the network.

Funding priorities and strategies

- Building capacity - aim for something that will have longer-term potential versus short-term impact.
- What is holding back funding a network scientist (or coordinator/scientist combined)?
- Establish an endowment fund asap (at BSC?), even if not much money in it initially.
- Several stations now have small endowment funds. LPBO's endowment (~\$2 million) generates about a third of its annual operating budget.
- Develop funding package for media and sponsors.
- Prepare planned giving brochure highlighting the CMMN and distribute to estate planning lawyers.
- Research international examples of effective organizations such as Swiss Ornithological Institute.

11. MEETING WRAP UP

Bird Studies Canada views on CMMN fund-raising

Jon provided the following summary of BSC's thinking on CMMN fund-raising:

- One or more population biologists and/or research scientists is a high priority.
- BSC doesn't expect stations to kick in \$\$ (won't refuse it ☺).
- Hope to have Tara back full-time.
- BSC is eligible for industrial NSERC status so can bring on grad students for questions with industrial application.
- If any station wants to hire a CMMN data analyst, BSC would support in principle (not able to provide financial support for an external position).
- If BSC can identify a funder for increasing research capacity, then will be requesting a letter of support from each station.

David Hussell views regarding CMMN trend analyses

Prior to the meeting, David Hussell had expressed his ongoing dissatisfaction with how CMMN trends were being reported. He thinks that the Steering Committee should be responsible for ensuring that the best available methods are used to determine trends (as in the Strategic Plan) and that the committee should seek expert advice as needed. He distributed copies of a resolution he had prepared (Appendix 4). He asked that the Steering Committee consider this resolution but did not ask for participants at the meeting vote on it. David agreed that if the Steering Committee endorses a particularly methodology he will accept it. The Steering Committee chairs accepted the resolution as information for review.

Summary of Workshops

- Role of Steering Committee was clarified as to providing guidance to stations, letters of support, and helping with funding applications. Steering Committee is not responsible for raising funds for stations.
- Need to improve information sharing among all network partners.
- Still haven't fully discussed priorities.
- Still have disconnect between goals and how to get there but some progress on moving things ahead.
- There is some enthusiasm for hiring a CMMN analyst/researcher.
- Active role for Steering Committee to market CMMN data to researchers.

CMMN Publications

- Encourage stations to add tag line about being a member of the CMMN in their publications.
- Encourage stations to share their publications through the list serve.
- Discussed feasibility of numbering all CMMN publications but decided it would be too difficult to keep track.
- Working to get list of CMMN related publications on the website.

Action: Stations to send Marie-Anne details of peer-reviewed publications so they get included in the CMMN publications list.

CMMN and Researchers

- Market the CMMN network as an infrastructure for doing research.
- Foster climate at each station that is receptive to doing good research (volunteers and banders need to understand and be respectful of needs and concerns of researchers and visiting public).
- Consider organizing a webinar for presenting results when CMMN-related work is published.

Meeting Assessment

- Good mix of workshop and technical presentations.
- International participation was beneficial.
- Later timing for this 2013 meeting didn't make much difference to participation.

Stations Representatives on CMMN-RCSM Steering Committee for 2013-2015

- Patti Campsall, Ted Murphy-Kelly, Ted Cheskey and Ann Nightingale.
- BSC and CWS representatives to be determined.

Next CMMN National Meeting 2015

- Atlantic Bird Observatory has offered to host the next CMMN National Meeting in Wolfville, Nova Scotia in 2015.

List of Appendices

Appendix 1: List of Participants

Appendix 2: Final Agenda (cross-referenced to Meeting Summary and presentation files)

Appendix 3: Steering Committee Report 2011-13

Appendix 4: Resolution prepared by David Hussell

Appendix 1: Participants in the CMMN-RCSM National Meeting 2013

Name	Email	Affiliation
Alan Smith	alanrandi@sasktel.net	Last Mountain BO, SK
Amelie Roberto-Charron	arobertocharron@gmail.com	Beaverhill BO, AB
Andrea Patterson	andrea.j.patterson@gmail.com	Braddock Bay BO, NY, USA
Andrew Sawyer	andrew_kawx@hotmail.com	Bruce Peninsula BO, ON
Ann Nightingale	motmot@shaw.ca	Rocky Point BO, BC
Audrey Heagy	aheagy@birdscanada.org	Bird Studies Canada, ON
Avery Bartels	averybartels@hotmail.com	Teslin Lake BO, BC
Bill Read	info@billreadsbooks.com	Haldimand (Ruthven) BO, ON
Brad Woodworth	bwoodwor@uoguelph.ca	University of Guelph, ON
Brian Pomfret	bpomfret@bfree.on.ca	Rocky Point BO, BC
Bruno Drolet	bruno.drolet@ec.gc.ca	Environment Canada, Quebec Region
Charles Francis	charles.francis@ec.gc.ca	Environment Canada, NWRC, ON
Chris Guglielmo	cguglie2@uwo.ca	Western University, ON
Colin Jones	colin.jones@ontario.ca	Ministry of Natural Resources, ON
David Bradley	dododave@gmail.com	BSC & University of Guelph, ON
David Hussell	david.hussell@ontario.ca	CMMN technical advisor, ON
David Okines	davidokines@aol.com	Prince Edward Point BO, ON
Doug Collister	collistr@gmail.com	Calgary BBS (Inglewood Bird Sanctuary & Cypress Hills), AB
Erica Dunn	ericahdunn@gmail.com	CMMN technical advisor, ON
Georgita Ruiz	georgitarm@yahoo.com.mx	PEMEX BO, Veracruz, MX
Graeme Gibson	graeme.gibson@pibo.ca	Pelee Island BO, ON
Greg Mitchell	gregwilliammitchell@gmail.com	Western University, ON
Jason Lymburner	dodgepolara_1965@hotmail.com	Haldimand (Rock Point) BO, ON
Jenna McDermott	jmcdermo@uoguelph.ca	Haldimand (Rock Point) BO, ON
Jeremy Hussell		observer, ON
Jim Smith	benavis@sympatico.ca	Haldimand (Rock Point) BO, ON
Jody Allair	jallair@birdscanada.org	Bird Studies Canada, ON
John Woodcock	johnwoodcock@hotmail.com	Thunder Cape BO, ON
Jon McCracken	jon@birdscanada.org	Bird Studies Canada, ON
Josée Rousseau	jsr@klamathbird.org	Landbird Monitoring Network of the Americas, USA
Jude Girard	jude.girard@gmail.com	Innis Point BO, ON
Lance Laviolette	corvuscorax@sympatico.ca	Brier Island BRS, NS
Liza Barney	lbarney@birdscanada.org	Bird Studies Canada, ON
Manuel Grosselet	birdinnet@yahoo.com.mx	PEMEX BO, Veracruz, MX
Marcel Gahbauer	marcel@migrationresearch.org	McGill BO & Calgary BBS
Mare-Anne Hudson	marie-anne.hudson@ec.gc.ca	Environment Canada, NWRC, ON
Mark Shieldcastle	markshieldcastle@bsbo.org	Black Swamp BO, OH, USA
Mike Cadman	mike.cadman@ec.gc.ca	Environment Canada, Ontario Region
Oliver Love	olove@uwindsor.ca	U of Windsor, ON & Canadian Snow Bunting Network
Pascal Coté	pascal.cote.oot@gmail.com	OO Tadoussac, QC
Patti Campsall	executive.director@borealbirdcentre.ca	Lesser Slave Lake BO, AB
Richard Krukin	bic@islbo.org	Lesser Slave Lake BO, AB
Rinchen Boardman	rinchenboardman@gmail.com	observer, ON
Simon Duval	duvalsimon@hotmail.com	McGill BO, QC
Stu Mackenzie	smackenzie@birdscanada.org	Long Point BO, ON
Tara Crewe	tlcrewe@gmail.com	Western University & BSC, ON
Ted Cheskey	tcheskey@naturecanada.ca	Bruce Peninsula BO & Nature Canada, ON
Ted Murphy-Kelly	tedmurphykelly@northwestel.net	Society of Yukon BOs - Albert Creek & Teslin Lake BOs, YK

Abbreviations: BO=Bird Observatory; BRS = Bird Research Station; BBS-Bird Banding Society; NWRC - National Wildlife Research Centre

9th CMMN-RCSM National Meeting, 31 October-3 November 2013

Hosted by Long Point Bird Observatory

Meeting was at Bird Studies Canada HQ, 115 Front Rd, Port Rowan, ON except the Thursday evening Open House and Saturday morning station tour at Long Point Bird Observatory, Old Cut Station, 15 Old Cut Boulevard, Long Point. Group accommodations were at the Turkey Point Research and Education Centre, 546 Turkey Point Road, St. Williams, ON

FINAL AGENDA

Thursday October 31st

19:00 Long Point Bird Observatory Open House @ Old Cut Field Station (no owling due to heavy rain)

Friday November 1st

	Notes	PDF#
8:00 Registration		
8:30 Welcome, Orientation and Introductions - Stu MacKenzie & George Finney	1.	
9:00 CMMN-RCSM Steering Committee Report - Marcel Gahbauer & Marie-Anne Hudson	2	2
Environment Canada Update - Marie-Anne Hudson	3	3
Bird Studies Canada Update - Jon McCracken	4.	
10:00 BREAK		
10:30 Station Reports (~24 stations @ 5 minutes per station, oldest to newest)	5.	
Long Point BO - Stu Mackenzie		5-01
Brier Island - Lance Laviolette		5-02
Thunder Cape BO - John Woodcock		5-03
Beaverhill BO - Amelie Roberto-Charron		5-04
Delta Marsh BO - prepared by Paula Grief		5-05
Last Mountain Lake BO - Al Smith		5-06
Lesser Slave Lake BO - Patti Campsall		5-07
Calgary BBS - Doug Collister		5-08
Prince Edward Point BO - David Okines		5-09
OO Tadoussac - Pascal Coté		5-10
Mackenzie Nature Observatory -prepared by Vi Lambie		5-11
Atlantic BO - Brad Woodward		5-12
Innis Point BO - Jude Girard		5-13
Rocky Point BO - Ann Nightingale		5-14
Haldimand BO - Rock Point - Jim Smith		5-15
Bruce Peninsula BO - Andrew Sawyer		5-16
Vaseux Lake - prepared by Dick Cannings		5-17
Pelee Island BO - Graeme Gibson		5-18
Tommy Thompson Park BRS - prepared by Karen McDonald		5-19
McGill BO - Simon Duval		5-20
Yukon BO - Albert Creek - Ted Murphy-Kelly		5-21
Yukon BO - Teslin Lake - Ted Murphy-Kelly		5-22
Tatlayoko Lake BO - Avery Bartels		5-23
Cypress Hills - Doug Collister		5-24
12:00 LUNCH		
13:00 More Station Reports (see above)		

13:30	International Station Reports and Project Updates	6	
	CMMN International Committee update - Ted Cheskey		6-1
	Black Swamp Bird Observatory, Ohio, USA - Mark Shieldcastle		6-2
	Braddock Bay Bird Observatory, New York, USA - Andrea Patterson		6-3
	North American Banding Council update - Andrea Patterson		6-4
	PEMEX Bird Observatory, Minatitlan, Veracruz, Mexico - Manuel Grosselet		6-5
	Saving Yesterday for Tomorrow with LaMNA - Josée Rousseau (KBO) and C.J. Ralph(USFS)		6-6
14:30	BREAK		
14:45	Technical Presentations	7	
	Bird Studies Canada's Bird Education Program - Jody Allair & Liza Barney, BSC		7-01
	Estimating population change using migration count data - Tara Crewe, Western U.		7-02
15:30	UNSCHEDULED BREAK		
16:00	WORKSHOP: CMMN Action Plan and Priorities Review. - led by Marcel Gahbauer and Marie-Anne Hudson	8	
17:15	<i>HAPPY HOUR</i>		
17:30	DINNER		
19:00	Broad Scale Migration Ecology Research - Brad Woodworth (University of Guelph) and Phil Taylor, Acadia University	7	7-03~
20:00	<i>More Socializing & Owling</i>		

Saturday November 2nd

8:00	Tour of Long Point Bird Observatory <i>leave station by 10:00 (20 min drive)</i>		
10:00	Break		
10:30	Technical Presentations	7	
	Home range size and habitat selection of Canada warblers in the western boreal forest - Richard Krikun, LSLBO		7-04
	Determining Peak Periods of Landbird Migration in Canada using Data from the CMMN/RCSM - Bruno Drolet & Jon McCracken)		7-05
	Monitoring migrants with microphones and radar - Dr. Charles Francis, CWS		7-06
11:00	WORKSHOP: The Importance of Collaborative Research. Jon McCracken will lead this workshop on the need for open communication and working together at various scales – station, regional, network-wide. Brainstorming in groups to identify top ideas for increasing collaborative research at station, region, and network levels.	9	
12:15	LUNCH		
13:00	GROUP PHOTO		
13:15	Technical Presentations: Examples of Collaborative Projects	7	
	Tree Swallow Research at Long Point - Dr. David Bradley, Bird Studies Canada and U. Of Guelph		7-07
	Canadian Snow Bunting Network - Dr. Oliver Love, U. Of Windsor		n/a
	Migratory Dragonfly Partnership: Learning more about the mysteries of a lesser know migration - Colin Jones, OMNR		7-09

14:00	WORKSHOP: Increasing Institutional Capacity: Ann Nightingale will lead this workshop which will bring the previous two workshops into focus by addressing how to move research goals forward through innovative funding at various levels. Break out groups will brainstorm to ID potential funding sources (and how to divvy up money if/when it happens)	10	
15:00	BREAK		
15:30	Meeting Summary and Outcomes: <i>Agreeing on Priorities and Next Steps</i> <i>Next Meeting</i>	11	
16:30	<i>FREE TIME/HAPPY HOUR</i>		
17:30	DINNER		
19:00	The physiological ecology of flight and refueling in migratory birds and bats -- Dr. Chris Guglielmo, Advanced Facility for Avian Research, Western University	7	7-10~
20:00	<i>More Socializing & Owling</i>		

Sunday November 3

FIELD TRIPS (OPTIONAL) *details to be sorted out on Saturday morning*

- trip to Tip (12 maximum) weather permitting CANCELLED
- local birding trip
- North American Banding Council passerine certification written test

Post Meeting Activity, November 4-5

North American Banding Council passerine certification practical session

CMMN-RCSM Steering Committee Report – November 2013

Two years have passed since the last full meeting of CMMN-RCSM at Naramata, British Columbia in October 2011. During that period, the Steering Committee has held 12 teleconferences (2011 - Dec 16; 2012 - Feb 10, Apr 5, May 16, Jul 27, Oct 9, Dec 3; 2013 – Jan 18, Mar 15, May 6, Jul 17, Sep 17), and has worked on a variety of initiatives to advance the priorities identified for CMMN-RCSM. This report provides a brief summary of the progress made during this term; further details on any topic are available upon request.

Steering Committee composition:

The Steering Committee comprises Environment Canada's Canadian Wildlife Service (CWS) representatives (Alaine Camfield, Bruno Drolet, Marie-Anne Hudson), Bird Studies Canada (BSC) representatives (Audrey Heagy, Stu Mackenzie, Jon McCracken), and member station representatives (Yousif Attia, Ted Cheskey, Marcel Gahbauer, Ann Nightingale). Yousif was appointed to the committee in September 2012 to fill the vacancy left by Bill Taylor, who stepped down that summer. The co-chairs for 2011-2013 were Marcel Gahbauer and Marie-Anne Hudson; Marcel will be retiring from the Steering Committee after the November 2013 meeting as his two consecutive terms as a member station representative have been completed. In response to the August 2013 call for nominations, five candidates were put forward to fill the four member station positions for 2013-2015. The member station representatives elected were Patti Campsall, Ted Cheskey, Ted Murphy-Kelly, and Ann Nightingale. Co-chairs for the next term will be determined by the Steering Committee during the first teleconference following the biennial meeting.

Strategic Plan:

Early in 2012, the Steering Committee proposed updates to the mission and vision statements, as part of the new 2012-2015 Strategic Plan, which summarizes the structure of CMMN-RCSM and outlines the goals compiled at the Naramata meeting. The plan was also translated into French, and both versions were circulated to all member stations for review and approval. The related Action Plan has also been reviewed, with the Steering Committee concluding that the scope of expectations is beyond what CMMN-RCSM is currently capable of achieving. As such, a focus of the 2013 national meeting will be to determine which actions merit the highest priority, and whether alternative sources of funding can be pursued to ensure that other items also get attention.

Steering Committee Terms of Reference:

The Terms of Reference were updated to more clearly outline the expectations and responsibilities of the Steering Committee as a whole, and of members of the committee individually. Old items pertaining to the establishment of the original Steering Committee were also removed as part of the review. The revised Terms of Reference were circulated to member stations in early September 2013.

Membership:

Tommy Thompson Park Bird Research Station in Toronto was upgraded to a full member in January 2013. Tatlayoko Lake Bird Observatory was sent details on becoming a full member in 2012 and submitted its application in early 2013, which is currently under review. Greenlaw Mountain Hawk Watch in New Brunswick has also submitted an application for full membership that is currently under review by the membership sub-committee (Jon and Yousif). Delta Marsh Bird Observatory has found a new site after losing its traditional location to flooding, but has not yet resumed operation (unable to find a qualified bander for spring 2013). The

Cypress Hills Interprovincial Park station (affiliated with the Calgary Bird Banding Society) has applied for provisional membership.

The information package sent out to prospective member stations was updated to include the station checklist and the Dunn and Hussell recommendations on standardization, in addition to the standard application form and MOU. Approved members will be provided with a package outlining access to member resources including the Strategic Plan, Baillie Birdathon, NatureCounts, the CMMN-RCSM listserv, and other relevant websites including the CMMN-RCSM home page and CMMN-RCSM Facebook group.

Communications:

All participants in the Naramata meeting were added to the cmmnlist e-mail group, as were others who requested access throughout the year; there are now 87 members. The listserv has been used for more discussion the past couple of years, with 124 messages posted in 2012 and 98 through the end of September 2013, compared to 28 in 2011 and 15 in 2010; hopefully the trend toward increasing communication will continue.

The minutes of the Steering Committee teleconferences have been circulated regularly (always following approval of the previous meeting's minutes by committee members). Other items that have been distributed via e-mail include Erica Dunn's document on standardizing migration counts, the season summary report templates, and the station self-evaluation checklist. An interim Steering Committee report covering the first year following the Naramata meeting was circulated to all member stations on December 5, 2012.

The focus of the Steering Committee's July 2012 meeting was to address web content for CMMN-RCSM, including NatureCounts and parts of the BSC website. The committee concluded that a public overview of CMMN-RCSM should be available through the BSC website (requiring an update that will provide an easier overview of all member stations and provide direct links to their individual sites for current details), while network resources will be posted at NatureCounts (with plans to improve folder structure for easier navigation). This work has continued to date, with most updates now complete. Of particular note, the CMMN-RCSM home page on the BSC website was revised to provide direct links to the sites of member stations, and there are now bilingual versions of new "About Us" and "Communications" pages – the updated home page is at <http://www.bsc-eoc.org/volunteer/cmmn/>.

Also online, Ann Nightingale and Marie-Anne Hudson set up a group site for CMMN-RCSM on Facebook in January 2013 (<https://www.facebook.com/CMMNRCSM>); as of October 2013 there are 112 people following the page. However, discussion has been limited to date, and members are encouraged to use this venue to exchange information.

DET software:

CWS provided funding to BSC for Denis Lepage to create a new Excel form for entering DET data. Following a trial period during which the software was available for testing by all member stations, an updated version (in both French and English) is slated for release following the fall 2013 season. Members are strongly encouraged to migrate to this new data entry method to help the network in its efforts to standardize as much as possible across stations.

Station management:

Eight member stations completed and submitted the self-evaluation checklist in 2012. All member stations are encouraged to do so annually to ensure consistency with protocols (especially when personnel differ from year to year), and to document any changes that may be occurring and cannot be avoided. The checklist is available at NatureCounts; completed forms are being compiled by Ann (motmot@shaw.ca).

Data usage:

There are 49 people registered for CMMN resources on NatureCounts. Jon communicated with all member stations that were at Level 2 data access on NatureCounts, encouraging them to change to Level 3 to enable data availability to be discovered by potential researchers, while keeping control with the member stations. Folder structure improvements were implemented on the NatureCounts resources page a year ago. Since October 2012, over 140 requests have been made (some counted more than once because they involved multiple stations), with 15 stations sharing data with outside researchers.

Trend analysis:

A technical committee led by Jon McCracken is working to review the process for flagging reliability of station-specific trends. A couple of cycles of review have flagged a number of issues and a more simplified approach should soon be ready for broad discussion. Denis Lepage has improved the CMMN-RCSM graphs on NatureCounts. Trends through 2011 have been provided to member stations and will soon be made available on NatureCounts. Tara Crewe is currently working on a contract to evaluate the potential for the production of regional (and perhaps cross-country) trend models by pooling data from multiple stations.

Isotope project:

The report discussed at the Naramata meeting had at that time been looked at by the Technical Review Committee; their review highlighted some areas that warranted reanalysis. The depiction of catchment areas has been revised to take into account more realistic geographic divides for migrants, and to apply a consistent approach to the presentation of results throughout the report. Some further edits to the text remain to be completed, after which the report will be circulated. This is expected by end of 2013.

Determining peak periods:

Daily count data from 20 monitoring stations were used to construct peak migration periods of landbirds, separated into various guilds. This work is led by EC-CWS (Bruno Drolet) with BSC (Tara Crewe, Denis Lepage and Jon McCracken). EC wishes to enhance its web pages by adding technical information on key migration zones and calendars, with the intent to help address bird kills that occur at vertical structures. Defining active migration periods is an important aspect to help implementing mitigation measures and therefore decrease the risk of bird collisions. Preliminary results were provided to EC and will be presented at the 2013 CMMN-RCSM meeting; the project is still ongoing.

Publications:

A two-page article (*The Canadian Migration Monitoring Network – taking the pulse of Canada’s migratory birds*) was featured in the June 2012 issue of *Picoides*, the bulletin of the Society of Canadian Ornithologists / Société des Ornithologistes du Canada. Similar summaries were also published in the Ontario Bird Banding Association newsletter, and BSC’s BirdWatch Canada. A brief follow-up article summarizing highlights of the fall 2012 season at member stations across Canada was included in the November 2012 issue of *Picoides*. Also, a

poster (*CMMN-RCSM: Advancing migratory bird research across Canada*) was presented at the North American Ornithological Conference in Vancouver in August, which was attended by over 1400 participants.

International working group:

A small working group (Ted, Marcel, Stu) has held preliminary discussions to identify key objectives for integrating international initiatives with CMMN-RCSM, which include identifying opportunities for member stations and individuals to contribute to migration monitoring elsewhere, especially Mexico, Central America, South America, and the Caribbean. In late November 2012, Marcel visited several potential sites in southern Mexico (with Doug Collister, on behalf of the Calgary Bird Banding Society). As a result of this, CBBS conducted a month-long spring migration monitoring program in Minatitlan, Mexico from mid-April to mid-May 2013 in collaboration with Manuel Grosselet and the Pemex Bird Observatory. Plans are underway to explore further partnerships for 2014 and beyond. Other international partnerships to date include a developing link between Rock Point Bird Banding Station and researchers in Venezuela, and a project in Colombia that received support from Environment Canada in the form of mist nets. Also, LPBO and BSC continue to operate the Latin American Training Program with support from Environment Canada which annually trains 1-3 individuals from the West Indies, Central and South America.

2013 CMMN-RCSM national meeting:

There was some discussion about the financial and environmental costs of having everyone travel to the biennial meeting, and a suggestion that video conferencing might be an alternative to explore. However, the majority of feedback from member stations was in favour of continuing the traditional in-person meetings. Long Point Bird Observatory was selected to host the 2013 national meeting, November 1-4. The later date means that for the first time, the meeting will be held past the end of the fall monitoring season for almost all stations – yet at the same time, there will still be some migration ongoing at Long Point. This acknowledges a request from some member stations who have been unable to attend past meetings, and we look forward to their participation this time.

A poll was circulated asking for preferences regarding optional sessions that could be associated with the meeting (migration monitoring workshop, bander training workshop, field techniques workshop, NABC certification). Responses were fairly evenly split, and it was decided to proceed with offering a NABC certification session following the meeting (November 3-5).

Feedback from all member stations will be welcome to help guide plans for the next meeting.

Feedback and suggestions are always welcome – please send any comments to Audrey Heagy (aheagy@bsc-eoc.org) for distribution to the Steering Committee.

Appendix 4: Resolution prepared by David Hussell, November 2013

Note: This resolution was presented for consideration at the 2013 meeting but was not voted on.

Resolution for General Meeting of the Canadian Migration Monitoring Network, at Port Rowan, Ontario, 1-2 November 2013.

The stated goals of CMMN-RCSM include generating “**high quality research and monitoring information on population trends**” and “**to develop and use the best possible analytical procedures for estimating population trends**” (*CMMN-RCSM Strategic Plan 2012-2013*).

The participants in the meeting affirm the importance of those goals and recommend the following to ensure their implementation:

- (1) The Steering Committee continue to encourage, promote and facilitate use of CMMN migrant counts and banding data for research purposes and for development of new or improved methods for assessing population change in migrant populations.
- (2) The Steering Committee place a high priority on conducting a review of current BSC/CMMN methods for estimating annual indices of abundance and trends in populations of migrants, drawing upon the expertise of an external panel of reviewers recruited by the committee.
- (3) The Steering Committee set up a process for expert review of future proposals for changes to the methods for estimating migration indices and trends; and that no change be adopted for routine CMMN population monitoring until it has gone through that process and been formally approved by the Steering Committee.
- (4) That all CMMN generated indices and trends that are made available to the public and to CMMN stations be accompanied by a complete description of the methods used to obtain them or by reference to peer-reviewed publications that describe those methods.