



Newsletter of LANDBIRD MIGRATION MONITORING NETWORK OF THE AMERICAS

<http://www.klamathbird.org/lammna/>

November/December 2006

New Frontiers in Bird-Banding Data Base Management: Report of LaMMNA Meeting in Albuquerque, New Mexico

We met in conjunction with the Western Bird Banding Association Annual Meeting held last September in Albuquerque, New Mexico.

Attendees were:

Redwood Sciences Laboratory: C. J. Ralph; *Independant Bander:* Wade Leitner;
Klamath Bird Observatory: Keith Larson, John Alexander; *San Francisco Bay Bird
Observatory:* Roy Churchill, Gina Barton; and *Bird Banding Laboratory:* Danny Bystrak.

Purpose and Overview:

To explore the present capabilities of participants to provide services to banders and to accumulate data into the Avian Knowledge Network via LaMMNA.

- *Cooperators:* Bird Studies Canada, Cornell's Laboratory of Ornithology, a number of bird observatories, and others.
- *Goal:* to make your banding data compatible with other stations.
- *First step:* integrating data to a common format, or schema.
- *Full privacy* assured, if you want it.
- *Next steps:* making "Visualizations" of your data (see below for a fuller discussion on visualizations).

Priorities for accepting data and support from LaMMNA:

- Constant effort netting, that is, nets operated on a regular schedule, e.g., daily, weekly, or monthly
- Historical or current data
- One or more seasons and one or more years
- Full data taken, including effort, measurements, physiological metrics, etc.

Current Programs for Analysis and Data Entry:

Wade Leitner presented information on his program in Visual C that takes in his banding data in the field and, through a series of analyses, presents visualizations of the data. This allows data entering 'on the fly' by integrating various aspects of MAPSPROG and Band Manager into Access. He has been able to easily provide reports for his station's cooperators. He goes to Visual C for the source code.

Keith Larson showed his SAS programs that perform error checking and data validation, in addition to programs that computer stopover duration, body condition indices, population trends, and separating transients from residents. He showed how his data sets were left intact while creating temporary SAS data files with errors delineated, validation results, or analysis output. Finally, he demonstrated how he creates metadata dynamically within his programs in order to document all work.

Danny Bystrak showed how the new 'Bandit' program is working. Bandit is the new data management program for banders to manage and submit their banding data and will replace Band Manager.

Visualizations: Various ways of looking at the data were displayed and discussed, such as:

- Over time, e.g., by month or year any data below
- By local stations, or by regional compilation, any of the data below
- Subdivisions of any of the data below by age and/or sex
 1. Capture rates (abundance of birds moving or staying)
 2. By health (e.g. fat, wing vs. weight, etc.)
 3. Breeding status (e.g. brood patch, condition)
 4. Skull ossification rates
 5. Molt types and strategies

Avian Influenza Project Update

Fall sampling is nearing the end for the Avian Influenza Research Project at many network stations, while others have wrapped up their seasons. This fall, we had over 60 organizations sampling at 150 stations, including 20 MAPS organizations that are extending their banding into fall.

We thank all who participated this year in this unprecedented cooperative effort. We estimate that around 15,000 birds were sampled for influenza viruses this year at LaMMNA and MAPS stations combined. Also, some stations are continuing to sample this winter. Samples that have been returned to UCLA are now being analyzed in conjunction with Los Alamos National Laboratories. We will let you know the results as we get them.

Plans are moving ahead for the spring season and we hope to have as many or more participate in the upcoming year. We look forward to a smoother operation for the upcoming year, with many of the logistical problems worked out. The response was greater than anticipated – which was wonderful! – and even though supplies were limited this season, we spread them out to all who asked for them. We hope to be able to accommodate everyone with more supplies in the future. Thanks again to all the participants for their patience.

Avian Knowledge Network Banding Database

As we reported in earlier newsletters, LaMMNA is working with Cornell Laboratory of Ornithology, PRBO Conservation Sciences, and others to create an internet-accessible database for banding data. The database structure is in place (see <http://www.klamathbird.org/lammna>). Computer experts at Cornell have a sample database and are currently reviewing the data model.

Our ultimate goal is to allow banders to archive and then access their data over the internet with a variety of tools, such as visualizations of numbers of birds, species lists, birds by location, maps, and others. We will be creating these web tools over the next year.

LaMMNA's New Banding Coordinator

LaMMNA will be hiring a Post-doc Banding Coordinator this winter. The coordinator position will be a full-time database manager, GIS specialist, and analyst.

Our objectives with this new position are to increase the services we provide to the banders with a set of the best possible tools and applications, either online or stand-alone. The tools will allow banders to enter data in the lab and the field, check validity of species and attributes, and facilitate quick data displays and visualizations.

Qualifications would include at least many of the following (in approximate order of importance):

- Master bander or experience analyzing banding data;
- Advanced degree in ecology or related field;
- Web savvy, with experience in running web sites, and where to find tools;
- Familiarity with open source platforms;
- Knowledge of the value of capture-recapture data;
- Be able to communicate usefulness of tools;
- A networker and collaborator; and
- Has used scientific programming in engineering, statistics, or math.

Anyone interested in more information is encouraged to contact C. J. Ralph, 707-825-2992 or cjr2@humboldt.edu. The position description is posted at <http://www.prbo.org/aknbandcoordinator/>.

Open-source Software and LaMMNA

One of the tools we are working on for the network is ways to visualize and analyze their data using “**open-source software**.” Open-source software is a collection of programs made available under a suitable agreement (e.g. a copyright license) that permits users to study, change, and improve the software. For further details about the intent of open-source licenses, check out <http://www.opensource.org/docs/definition.php>. In addition, look at <http://www.creativecommons.org>.

Key features of open-source models include:

- Users are encouraged to collaborate and contribute expertise through redistribution of the code in modified or unmodified form. Users are encouraged to submit additions to the software, code fixes for the software, bug reports, documentation etc. Having more co-developers increases the rate at which the software evolves.
- Early release of the first version of the software should be as early as possible to increase chances of finding co-developers and potential bugs early.

- Multiple versions of the software allows the coexistence of a stable release with newer, buggier versions.
- Modular software allows for parallel development and frequent integration of new code. This avoids the problem of fixing a massive collection of bugs near the end of the development cycle.
- A means for decision making, whether informal or (preferably somewhat) formal, that makes strategic decisions depending on changing user requirements and other factors.

Open source coding has been successfully implemented on a large and growing number of projects including the GNU project, OpenOffice.org, LaTeX, and others. There are already several examples of bug-tracking software, bulletin boards, database servers and GIS software. A common feature of successful Open Source Software projects is the participation of a collection of invested contributors. In the case of LaMMNA, this means collaborators who can get greater utility from their data than from the code used to analyze it (otherwise they'd just develop the code and sell it). Thus, in order for the project to gain traction we can begin by:

- Emulating existing Open-source Software projects,
- Assembling the technical resources to serve as initial contributors,
- Settling on a small subset of common services (bug trackers, languages, operating systems, database servers, bulletin boards), and
- Identifying highly desirable code functions that can be used to establishing a users community.

Increasing Membership of Latin American Cooperators in LaMMNA

During the IV North American Ornithological Conference in Veracruz, LaMMNA organizers met with leaders of banding programs throughout the Americas, including Chile, Mexico, Columbia, Costa Rica, and others. Enthusiasm was expressed for pursuing new members from Latin America. One of the topics of interest included developing a common computer data base of banding data that could be accessed over the web. It could be used for web-reporting and tracking of Latin American bands through a Pan American Banding Organization yet to be developed.

LaMMNA Name Change???

LaMMNA's horizons may be expanding, requiring a minor name change. Currently, the main focus of LaMMNA is on monitoring Neotropical migrants during their migration, though we also include organizations that conduct research in other seasons and on other species. However, various people at Veracruz showed a great deal of interest in including all landbirds for all seasons. We will be giving serious consideration to making it a year-round network, that is, making it the Landbird Monitoring Network of the Americas (LaMNA).

Interested in membership or learning more about LaMMNA? See our web page at <http://www.klamathbird.org/lammna/> for details and a membership application form.