



U.S. Forest Service
Redwood Sciences Laboratory



Bureau of Land
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Cornell Laboratory of
Ornithology

Newsletter of
LANDBIRD MONITORING NETWORK OF THE AMERICAS

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

May 2008

**LaMNA Meeting at the Partners in Flight 4th International Conference
McAllen, Texas, February 15, 2008**

Present: C. John Ralph (Humboldt Bay Bird Observatory, USFS Redwood Sciences Laboratory), Linda Long (USFS Redwood Sciences Laboratory, note taker), Mike Bishop (Alma College), Jill Russell (Avian Research and Education Institute), Dave Russell (Avian Research and Education Institute, Miami University of Ohio), Richard Joos (University of Toronto), Susan Wethington (Hummingbird Monitoring Network).

Banding Data Schema Progress Report

The Avian Knowledge Network (AKN) banding data schema, that will be used for bringing banding data from throughout the Western Hemisphere has been completed. This data schema and data uploading tools are undergoing the final testing using data from the Redwood Sciences Laboratory, Klamath Bird Observatory and other cooperators. A data dictionary library (which details the database structures and variable codings) is complete for some data sources, such as MAPS, PRBO Conservation Sciences, Powdermill Avian Research Center, and others. Drs. CJ Ralph and Leo Salas have been working AKN partners including Cornell, Bird Studies Canada, PRBO conservation Science and Klamath Bird Observatory to develop and our new LaMNA data basing tools.

Soon we will be able to accept banding data from network members. All database formats will be accepted, including Excel spreadsheets, Access databases, output files from Bandit, and others. Not only will LaMNA be archiving common variables collected at banding stations, our database will accommodate special values, such as measurements for *Empidonax* and hummingbirds, as needed by the user.

We will soon be encouraging banding stations to submit their data to LaMNA. Once the banding schema is up on the web, we will send out a notice to LaMNA cooperators, and start individually contacting banders for data.

LaMNA Governance

There was a brief discussion of how the Network is governed. At present, governance is based on the Partners in Flight model: whoever comes to the meetings is welcome to be heard and vote on decisions.

Update from UCLA Center for Tropical Research on Avian Influenza Virus Research Project

Excerpt from letter sent to AIV Research Participants from UCLA

Some of you have inquired about the slow progress in processing cloacal swab samples. Avian influenza virus (AIV) research in passerines is largely uncharted territory. We would like to provide you information on what is going on in the lab and assure you that we are using the very latest technologies to screen samples.

The current dogma in AIV research is that waterfowl are the primary reservoir for the virus; however, several lines of evidence suggest that migratory passerines are also a reservoir for AIV. This is the reason that this research is so important! Since the majority of the AIV field research focuses on waterfowl surveillance, the majority of laboratory research for AIV detection (culture and genetic screens) is based on a waterfowl model. This is inherently problematic for our studies because of the physiological and genetic differences between waterfowl and passerines. The gold standard practice for detecting AIV in waterfowl may not be very effective for a migratory passerine-adapted strain of AIV; it is, in fact, only 75% effective for waterfowl-adapted strains of AIV. Improved methods are needed across the board. Few research programs have investigated flu in passerines and far fewer have had success with passerine samples in the lab. As a result, few passerine-adapted AIV genomes have been detected and/or sequenced.

This is relevant to our genetic screening methods because we need to know the genome sequence of the strains of virus found in passerines in order to get a reliable genetic test. Our genetic methods work only when there are short segments of the viral genome that are consistent between strains and mutate infrequently. The majority of known sequences of AIV come from waterfowl and it is difficult to create robust genetic screening methods for passerines from these sequences. This is further complicated by the fact that AIV mutates almost every time it replicates, making it hard to pin down genetically. In spite of these challenges, we are working with some of the best scientists in the world to solve these problems. Together with scientists from the Los Alamos National Laboratory (LANL), we have developed methods that will allow us to genetically detect 50% more strains of AIV than are detected by methods currently used as the gold standard for waterfowl samples.

Another major challenge we faced is that there are major differences in the amount of AIV that is shed from the GI tract of a large waterfowl species versus a small passerine species. The genetic tests designed for research, based on a waterfowl model, are not typically sensitive enough to detect very low copy numbers of AIV in a passerine sample. In our laboratory, we have developed a detection method that is ten times more sensitive than the standard method; in addition, we can directly sequence the DNA from this test, which is not the case with the other method, further improving the quality of our test results. We have taken a number of important steps towards implementing a more effective AIV genetic screening program for passerine cloacal samples and are happy to talk more genetics with anyone that is interested.

During the past year we have screened several hundred samples from passerines and found that approximately 4% are AIV positive. We are now working on subtype sequencing for the entire genome of these positive samples. We have learned a great deal from this past year's work and have been able to set up more efficient systems. In addition, we have hired a new staff member who will be devoted to testing all of the presence and absence screens for all of the cloacal samples. For more information about the AIV project please visit:

http://www.ioe.ucla.edu/ctr/research/AvPath/avian_influenza_main.html

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