



Evaluation Data Report

Synthesizing Predictive Modeling of Forest Insect Dynamics Across Spatial and Temporal Scales Working Group Meeting Two: October 18-21, 2010

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Modeling Forest Insects Working Group Evaluation Data Report

Background

NIMBioS Working Groups are chosen to focus on major scientific questions at the interface between biology and mathematics. NIMBioS is particularly interested in questions that integrate diverse fields, require synthesis at multiple scales, and/or make use of or require development of new mathematical/computational approaches. NIMBioS Working Groups are relatively small (10-12 participants, with a maximum of 15), focus on a well-defined topic, and have well-defined goals and metrics of success. Working Groups will typically meet 2-3 times over a two-year period, with each meeting lasting 3-5 days; however, the number of participants, number of meetings, and duration of each meeting is flexible, depending on the needs and goals of the group.

In many parts of the world forests are experiencing an unprecedented onslaught of outbreaks by destructive forest insects, e.g. massive pine beetle outbreaks and continuing large scale range expansions of Gypsy moth in North America and Europe. There is a long history of quantitative modeling of forest pests aimed at increasing our ability to predict outbreaks. This working group brings together an inter-disciplinary group of researchers with expertise in quantitative approaches for studying forest insect pest populations, global climate change scenarios, forest fire dynamics, and evolutionary dynamics of antagonistic ecological interactions. The aim of the working group is to synthesize cutting edge predictive modeling approaches using several case studies for which data on historical outbreaks are available.

During the first meeting, key research needs to improve understanding of the dynamics and management of forest insect pests, particularly in light of anthropomorphic environmental changes such as climate change and habitat fragmentation, were identified. Sub-groups were formed to address one or several inter-related questions, including the role of environmental factors and spatial structure in driving forest insect dynamics, the role of ecological interactions resulting in or arising from insect outbreaks, and how to optimally predict and control outbreaks. Results from each subgroup's work will be published in peer-reviewed publications. The discussions during the first meeting and the ideas that emerged have provided a solid foundation for the future work of the group.

No summary is available from the second meeting of the Working Group.

Evaluation Design

Evaluation Questions

The evaluation of the meeting was both formative and summative in nature, in that the data collected from participants was intended to both gain feedback from participants about the quality of the current meeting and also to inform future meetings. The evaluation framework was

guided by Kirkpatrick's Four Levels of Evaluation model for training and learning programs (Kirkpatrick, 1994¹). Several questions constituted the foundation for the evaluation:

1. Were participants satisfied with the Working Group overall?
2. How do participants feel about the format of the meetings?
3. How do participants feel about the content of the meetings?
4. Do participants feel they have a good understanding about the work being done by other subgroups within the group?
5. Do participants feel they gained a better understanding of the how the work of the various subgroups will tie together to reach the Working Group's goals?
6. How do participants communicate between meetings?
7. Do participants feel they have a good idea of what their continuing contribution will be within the group?

Evaluation Procedures

The final instrument was hosted online via the University of Tennessee's online survey host mrlInterview. Links to the survey were sent to nine Working Group participants on October 21, 2010. Reminder emails were sent to non-responding participants on October 28 and November 2, 2010. By November 9, 2010, seven participants had given their feedback, for a response rate of 78%.

¹ From Kirkpatrick, D.L. (1994). *Evaluating Training Programs: The Four Levels*. San Francisco, CA: Berrett-Koehler.

Evaluation Data

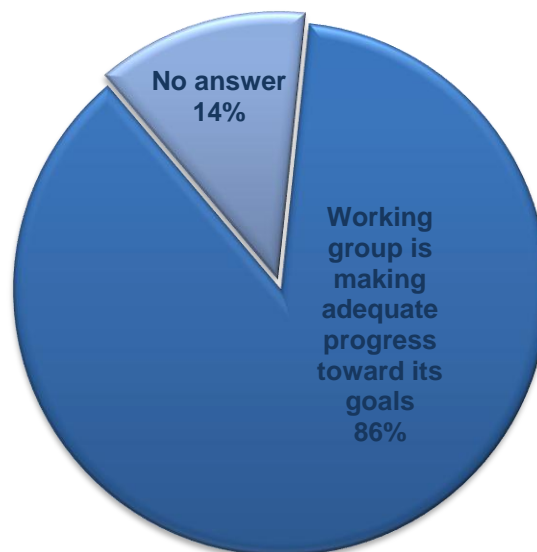
Respondent Satisfaction

Table 1. Respondent satisfaction with content and format of the working group

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I feel the Working Group was very productive.	57%	43%	-	-	-
The Working Group met my expectations.	57%	43%	-	-	-
The presenters were very knowledgeable about their topics.	86%	14%	-	-	-
The presentations were useful.	86%	14%	-	-	-
The group discussions were useful.	86%	14%	-	-	-

Views of Group Progress

Figure 1. Respondent views of group progress



Respondent comments about progress toward goals:

“I was actually surprised at how far along projects progressed.”

“Some subgroups are further along than others, perhaps due to the nature of the problems being investigated.”

“The working groups have been fantastic. The opportunities they provide are amazing.”

“Ideas generated in the first meeting were developed into solid plans for research and manuscripts.”

Understanding of Group Function

Table 2. Respondent understanding of group function

<i>As a result of participating in this meeting, I have a better understanding of:</i>	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The work being accomplished by the other subgroups within the Working Group	71%	29%	-	-	-
How the work of the various subgroups will tie together for the working group's publication(s) and/or product(s)	43%	-	57%	-	-

Comments about the Most Useful Aspects of the Meeting

“There was a very good mix of meeting in subgroups, meeting as a whole, and meeting in ad hoc groups as projects progressed.”

“The large group meetings were important for identifying issues or new directions that had not been thought of by the smaller groups. It also gave people the opportunity to participate in as many groups as they wanted. The small group meetings were vital for ironing out the details of the approaches we were going to use and addressing technical questions. I think the really great thing about how this working group has been run is that although there are many subprojects I still very much part of the larger group too. This is important we have remained as one working group and not fractured, this enables some really good feedback between small groups and exchange or new perspectives.”

“Discussions with small groups were most productive.”

“Discussions with the whole group provided me with a feel for what the other subgroups were doing, and how the subgroups I am involved in relate to these. Our small group discussions were most critical however for working out important conceptual and technical details.”

“Discussions with small groups - relatively unstructured time with intensely focused participants.”

“Opportunity to discuss ideas/main concepts with other researchers and getting their feedback.”

Understanding about Expectations

Figure 2. Respondent understanding of what is expected of them before the next meeting



Comments about understanding what is expected of working group members:

“The organizers were great about outlining what needs to be done, giving us a good timetable.”

“The working group has been excellent ensuring we have well planned objectives. We also discussed ways of helping communication in the times between working groups, which is also very important.”

Comments about the Impact of the Working Group on Respondents’ Research Agendas

“It has not influenced my agenda so much as speeding up the agenda I already had.”

“The directions some of the projects have taken have actually ended up being closer to my personal research agenda than I had expected which is great and enables me to participate in more projects. The working group has also led to a wider collaboration between a couple of the members of the working group and a researcher from outside of the group. This work will compliment one of the working group projects.”

“It has added several new lines of collaboration for me.”

"It has provided me with ideas for experimental design of future studies to help tease out unknown aspects of biology that we are modeling."

"Two of my dissertation chapters will be working group projects."

"I will be able to apply/expand on my statistical research because of these meetings. I have, potentially, started a few interesting collaborations because of these workgroups."

Communication

Figure 3. Wiggiio use

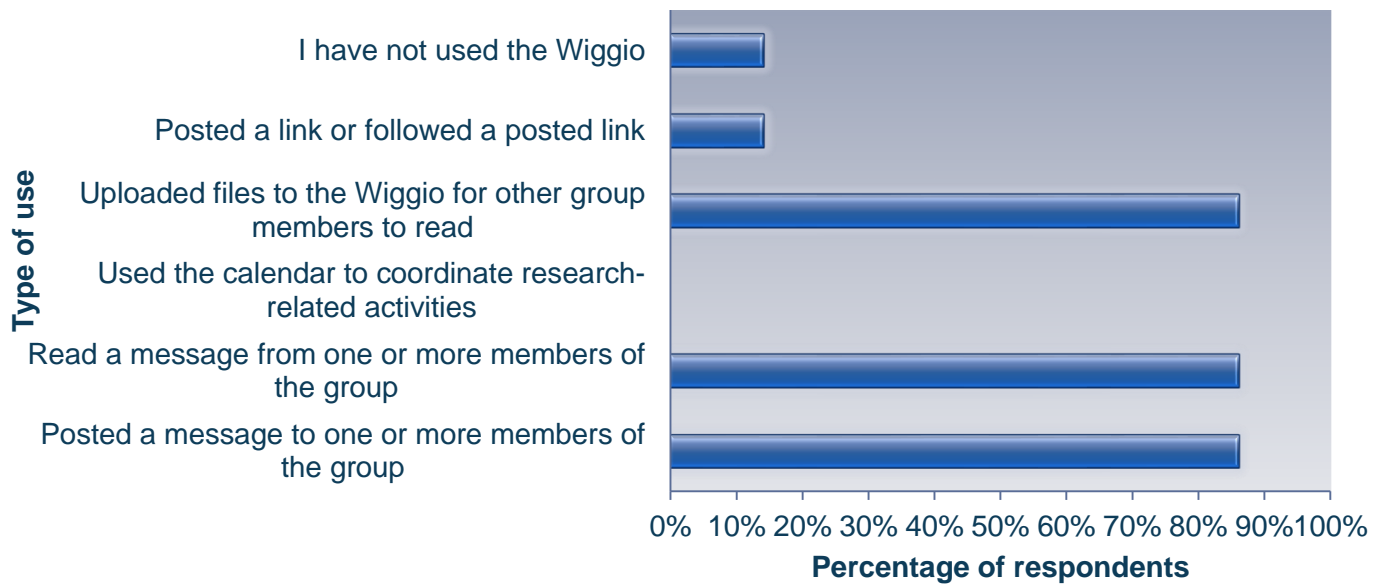
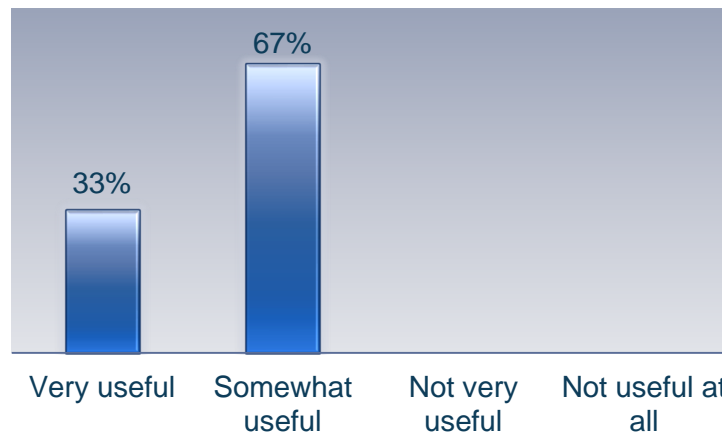


Figure 4. Usefulness of the Wiggiio for communicating with group members



Comments about the Wiggio:

"It's really helpful having all the discussion and notes etc in one place. This is particularly helpful for tracking discussions and keeping up to date with what the working group as a whole is doing"

"It does not handle large files (e.g. pdf's of relevant literature) well."

Suggestions for improving communication between meetings:

"This is a tough question to answer. The organizers have been great and keeping communication going between meetings is hard and depends on schedules. Skype has worked to some degree and a few of the groups have had members visit one another during the interim period and this usually leads to the biggest steps forward."

"Nothing particular. It was quite good."

Suggestions for Future Meetings

"It would have been nice to have one afternoon to escape and relax a little."

"Nothing. This really has been an amazing experience for me. I am so grateful to be given the opportunity to be part of this."

"We discussed the potential for scheduling the next meeting such that a member could only be present for their subgroup(s) discussions."

"More exercise - please let us have access to the university swimming pool and gym."

"Nothing in particular."

Additional Comments about Working Group

"It has been great."

"Excellent. Thanks."

"I have benefited from meeting new researchers in the field."

"It has been an excellent experience."

Appendix

List of Participants

Participants

Last name	First name	Institution
Bentz	Barbara	United States Department of Agriculture Forest Service
Bewick	Sharon	University of Tennessee Knoxville
Cobbold	Christina	University of Glasgow
Cooke	Barry	Natural Resources Canada
Dwyer	Gregory	University of Chicago
Godsoe	William	University of Tennessee Knoxville
Haynes	Kyle	University of Virginia
Hughes	Joe	University of Tennessee Knoxville
James	Patrick	University of Alberta
*Lewis	Mark	University of Alberta
*Liebhold	Andrew	United States Forest Service
*Pineda-Krch	Mario	Centre for Mathematical Biology, University of Alberta

* **Organizer**