

SSI Team meeting 11/9/09

Present: Jeremy Wilson, Rob Lilieholm, Cathy Elliot, Mario Teisl, Andy Reeve, Teresa Johnson, David Hiebeler, David Hart, Linda Silka, Mark Anderson, Chris Cronan, Darren Ranco, Susan Gardner, Jessica Leahy, Laura Lindenfeld, Aram Calhoun, Jean MacRae, Jasmine Saros, Mac Hunter, Nate Stormer, Ruth Hallsworth, Erin Spencer, Carol Hamel, John Peckenham (By video tape: Charlie Colgan, Dave Owen, Jack Kartez)

Welcome, Updates, and request for participation

David Hart-

- The SSI Advisory Board, which is chaired by Bob Kates, will hold their first meeting at UMaine (exactly location to be determined) on Tuesday, December 15th. From ~ 10:30 am – noon, the board will break into sub-groups and wants to meet with one or more representatives of SSI teams funded for Year 1 research projects. They may also want to meet with some of our stakeholders during this time. It seems likely that the Advisory Board will make recommendations regarding both the mix of problems on which we are focused and the extent to which our approach can generate improved solutions.
- The second SSI social will be held at 4:30pm on Wednesday, November 18th (Bear's Den, Memorial Union)
- The process of completing the SSI strategic plan is progressing. The NSF EPSCoR staff have suggested that we rely heavily on the proposal we submitted last fall as the foundation for our strategic plan. We also plan to incorporate feedback that we received from the SSI team at the August 2009 retreat and the NSF Strategic Planning meeting that was held on Sept. 22 & 23. David and Laura are working with Vicki and her staff to develop the draft plan. We also anticipate updating the plan on an annual basis.
- Our NSF EPSCoR award includes an innovative program for Sustainability Solutions Partners, in which other Maine colleges and universities can apply for grants for sustainability science research and education projects. Two projects have recently been funded and can now be viewed online (http://www.umaine.edu/sustainabilitysolutions/sustainability_science/ssp.htm). There will be future opportunities for SSI and SSP faculty and students to share information about their projects and learn from each other.
- Two SSI faculty searches are now underway (<http://www.umaine.edu/sustainabilitysolutions/people/openings.htm>) and the third will hopefully begin soon.

Update on graduate student recruitment process and Year 2 budget

David Hart and Mac Hunter gave an update on some intersecting challenges and opportunities related to the process of recruiting graduate students and the transition from the Yr. 1 SSI budget to the Yr. 2 budget.

David Hart: Many Year 1 SSI research projects have already been funded as part of the Round 1 proposal review process, and funding decisions will be made later this month regarding Year 1, Round 2 proposals. Year 2 begins in July, 2010 and represents a new budget cycle. So we need to be thinking about how the portfolio of Yr. 2 research projects are likely to evolve or differ from those in Yr. 1. We also need to consider how the process of recruiting predoctoral fellows can best support our dual goals of attracting outstanding students and ensuring that these students help advance the goals of different SSI research projects.

Ideally, we would solicit and review proposals for Yr. 2 research projects before making any decisions regarding the admission of predoctoral fellows for Fall, 2010. Because of time constraints, however, we will likely need to make decisions about student admission before it is completely clear how research projects in Yr. 2 will differ from those in Yr. 1. Moreover, a substantial portion of the SSI funding for Yr. 2 SSI budget is already allocated to supporting predoctoral fellows, three new faculty, and postdoctoral fellows. Thus, even if we had enough time to solicit and review proposals for Yr. 2 research projects before making decisions about admitting graduate students, this process might be unwarranted given how much less SSI funding is available to support research projects in Yr. 2 than Yr. 1.

So we need to do some brainstorming about alternative strategies for designing the student admission process. One possibility is to create a committee of SSI faculty (including faculty involved in projects that have been funded for Yr. 1) that interacts with the Student Recruitment Committee co-chaired by Mac Hunter and Aram Calhoun to devise a system for determining the number of students to be admitted, how students are allocated to specific research projects, etc. We're also arranged for representatives of the Student Recruitment Committee to meet with the Stewardship Council on Wednesday (Nov. 11) to continue this brainstorming process.

Mac Hunter: The Student Recruitment Committee would like to get input from SSI members on what types of students we should be trying to recruit. One option is to focus on students that are a good match to the specific research needs of an SSI research project. Another option is to focus on students that are academically strong but aren't necessarily a perfect match for the research needs of a specific project. It is possible that we'll have some students in each category, but our limited funding makes it important to learn more about the potential student needs of SSI research teams and faculty.

To address this issue, the recruitment committee plans to poll the SSI team for opinions and feedback by the end of the week. The poll will be designed to obtain the following kinds of information:

1. How many graduate fellows does your team want ideally?
2. What is the minimum number of graduate fellows needed by your project to achieve success?

David proposed several questions that would benefit from group discussion:

1. What mechanisms should we use to create the portfolio of research projects for Yr. 2.?
2. What process are we going to use to decide how many students to admit and whether and how to allocate them among two different types of models for these students (admittance to SSI based on academic merit vs. skill set relative to a specific project). Who should be involved in making these decisions?
3. How much money (beyond funding for new students, new faculty, and postdoctoral fellows) are we going to need for SSI research in Year 2?

Laura: We don't know exact figures, but the total amount of funding available for Yr. 2 research projects (not counting funding for new students, new faculty, and postdoctoral fellows) may only be ~ \$100-200K. If this is the case, then it might not make sense to use the kind of RFP (i.e., Request for Proposal) process that we've used in Yr. 1. Today we can address the question: What's a responsible process for allocating students in year two. To better answer these issues, it's important to understand that SSI has currently only budgeted 16 student slots open for next year, but it may be more or less. There will be ~20-25 students total over the five-year period. Right now, there are 8 funded research teams. and 6 proposals (2 scoping/planning and 4 at the intermediate integration level) that have been submitted for consideration in the Round 2 funding cycle.

Mario Teisl: Why do we need to determine student allocation now? Why not bring students in and determine allocation once they're here?

Tables met and discussed and then reported back. Comments below:

David Hiebeler: There may be high value in having unallocated students, as they may help integrate the teams more. The student need statements (sent to Mac) should include a statement about budget reduction impact. How would your project be affected if you don't receive a graduate student. Alternatively, could a Masters student be enough to help your project achieve success?

Mark Anderson: There are two different kinds of matches between students and the project, one is a match around SSI concepts at the core of the project that may push people in directions that they wouldn't otherwise go. The other is focused on matches to a specific project. Maybe we can do both.

Dave Owen: Because there is uncertainty about what projects will look like two or three years down the line, this uncertainty favors students with versatility and talent. There are some skill sets that are useful across several projects and students with these broader skills could facilitate across-project collaboration.

Nate Stormer: Even though SSI's scope is very large the available funding only allows us to do so much. One potential problem is that the RFP process creates the proliferation of proposals that threaten the ability to achieve integration across all of SSI. On the other hand, the process of recruiting and training graduate students can help focus our efforts on higher levels of integration (which is what we want to do anyway), thereby turning a weakness into a strength. Thus, our funding constraint may force us to get creative about becoming interdisciplinary researchers faster than we might have planned, but we may not have a choice.

Aram Calhoun: We could allocate students by affiliation with SSI: some percent to core faculty who have been involved since the start, a percent to new faculty/ new projects and a percent for educational gems that aren't currently affiliated with a team. But these students would need to be connected with SSI projects.

Jessica Leahy: Are there going to be positions allocated to new faculty hires?

David Hart confirmed that new faculty positions often include support for graduate students, and such support would likely need to come from the SSI budget. Some departments do allocate students to new faculty hires.

Rob Lilieholm: What is the role of the postdoctoral fellows? Are SSI faculty going to be able to draw on their time?

Andy Reeve: Is it even worthwhile to have an RFP for year two? We could use available research money to fund graduate student proposals and new faculty project proposals.

Mario Teisl: How do you deal with the students brought in without a specific project? These students would be funded but wouldn't necessarily have any specific roles or expectations in terms of their SSI-related work. What is the motivation for that student to do what SSI wants them to do, in terms of integrating, etc? Will this be frustrating for the student or have other unanticipated consequences?

Laura Lindenfeld: SSI team should discuss this further at next meeting on Nov. 23. SSI Faculty should write down ideas and send email to Ruth. The Stewardship Council can meet and consolidate ideas for the next meeting.

Mac Hunter: If we are going to discuss this again next meeting a lot of preparation should be done so everyone's ideas are consolidated and we're evaluating the tradeoffs of alternative models.

Susan Gardner: Could we address these issues by focusing on our end goals. When these students are finished what have they done, what do they look like? If we keep these end goals in mind, we can then work backwards.

Mario Teisl: Can other departments help match RA and TA support that would augment SSI's funding?

The discussion concluded with a decision to evaluate written responses from SSI faculty and determine which models have been recommended. At the next meeting, these models will be presented for discussion. We will devote at least one hour of the Nov. 23 meeting to working through these to develop a concept for pre-doc fellowships.

10:40am – 10:55am Team presentation: Aram Calhoun et al

Protecting Natural Resources at the Community Scale: Using population persistence of vernal pool fauna as a model system to study urbanization, climate change and forest management

This project examines amphibian population persistence in human dominated landscapes such as in working forest settings and residential development settings. The goal of this study is to build upon the multifaceted issues surrounding vernal pools and their management in Maine. The foundation of this project is the 2007 passage of legislation regulating “significant vernal pools”. This project will address four research themes: 1) **Amphibian Ecological Research** represents the primary work that still needs to be done at landscape and habitat-specific scales. They will continue ongoing work to examine how different land uses affect species movement through landscapes. 2) **Collaborative Management Research** explores how best to manage resources on private lands. They will build on an existing community-based conservation effort mapping vernal pools in 13 towns throughout Maine. They will expand this work by examining factors that facilitate or impeded the conservation of natural resources on private lands. 3) **Economics of Conservation Research** explores the economics of conservation on private lands. They will address questions such as the cost of conservation and the cost of open space using a matching grant from the Maine State Planning Office. They will specifically look at restrictions on development opportunities, property value and natural resource interactions, and innovative solutions. 4. **Community Engagement Research** will focus on ways in which the lessons learned in this project can potentially be applied to new sustainability problems, geographic locations, and stakeholder contexts.

11:05am-11:20am Team presentation: Dave Owen et al

Sustaining and Restoring Urban Stream Resources in Maine

This project addresses the management, protection, and, potentially, restoration of urban streams in Maine. Water quality in urbanizing areas

tends to decrease, particularly in small urban streams. The degradation thresholds are surprisingly low, with degraded streams common not just in urban cores but also in more suburban and even exurban/rural areas. While scientists have understood these trends for years, legal responses to the problem have been quite uneven, and in many areas degradation proceeds with little check. Recent regulatory innovations suggest the possibility of a different and much more stringent set of protections, but this change also begs questions. These new protections are likely to be strongest where urbanization is greatest. In some ways, that makes sense; the most urbanized watersheds also generally contain the greatest number of people, and those people might enjoy a restored watershed. But these watersheds also are likely to be the most difficult to restore, while watersheds at the urban fringe, which enjoy lower levels of protection, could be much more easily protected.

This project pursues the overall goal of assessing and, if possible, improving the management of urban streams. We plan to examine existing data sets from Maine DEP to look for patterns and identify mechanisms of degradation, with the hope of discerning whether particular patterns of development are more compatible with preservation of water quality. We also will identify model watersheds, including highly stressed as well as less stressed streams, and will use those watersheds to research the values people place on urban streams. Finally, we will develop data management platforms that better enable community members and other stakeholders to access watershed information. The overall project goal is to help watershed managers and regulators develop improved systems for integrating water quality protection into urbanization management.

11:20am-11:35am

Team presentation: Jeremy Wilson et al

Spatial forest planning to meet multiple natural resource goals: Developing geospatial tools to forecast management outcomes across a diverse landscape of ownership types and stakeholder interests

This project is focused on spatial forest planning with a specific focus on the potential reappearance of the spruce budworm. The last spruce budworm outbreak occurred during the 1970s and 80s. Though it is a native species, outbreaks can be devastating. The goal of this project is to look at forest management impact relative to spruce budworm outbreaks on a large scale. Specifically, the project will create decision-making tools to support managers. Using satellite imagery, they will expand on a large-scale analysis of forest change through time using remote sensing. They also hope to address public attitudes with regard to spruce budworm outbreaks and examine how management approaches reflect these attitudes.