**WHIET Business Meeting Notes, Athens, GA 2/6 to 2/9/2018**

## Welcome address by Dean Dale Greene (Warnell School of Forestry and Natural Resources, University of Georgia) was followed by opening address by Dean Fred Servello (College of Natural Sciences, Forestry, and Agriculture, University of Maine) for the USDA-NIFA Multistate Project NE1601 Eastern White Pine Health and Responses to Environmental Changes. According to Dean Servello:

* + Few of the USDA-NIFA projects are focused on Natural Resources
  + The group is likely to be successful because it is focused and there is room for pairing efforts
  + Representation from both Academia and State & Federal Agencies is also beneficial
  + Two areas that are typically difficult for these groups are:
    1. Signing up to become a group member
    2. Meeting reporting timelines: (i) meeting results, and (ii) activities and accomplishments
* The group has already succeeded in publishing current research efforts in the special issue of Forest Ecology and Management
* The management Guidelines for eastern white pine health is also another successful product. Reminder: add USDA NIFA logo to products
* The advantages of groups meeting in person are the collaborations that arise
* Dr. Bill Livingston passed out handouts summarizing past and current efforts of USDA NIFA group including webpage/group sharing site and manuscript of White Pine Health Management Guidelines. The WHIET Meeting is structured so that:
  + on Wednesday 2/7 day is dedicated to synthesizing current knowledge
  + Thursday field trip to affected sites in Blue Hills
  + Future of the group will be discussed
* Dr. Kamal Gandhi provided an overview of forestry in GA and the Warnell School of Forestry. In the South, eastern white pine is not as important economically as it is in New England but it is ecologically important especially in riparian habitats where eastern hemlock is lost due to HWA. Kamal summarized the groups’ accomplishments, vision, and workshop objectives.
* Group successes thus far:

1. FEM special issue
2. WHIET meeting
3. Discussions: hypotheses and objectives
4. Outreach

* Objectives for the WHIET meeting:

1. Create teams to work on various issues affecting white pine health
2. Standardize sampling protocols
3. Discuss NSF and USDA NIFA funding opportunities

* The program advisory board, local organizing committee and funding agencies were acknowledged
* Sixteen States and Provinces and 20 State and Federal Agencies were represented at the meeting
* The business meeting ended with the approval of officers for the next year: Bill Livingston as chair, Kamal Gandhi as chair-elect, and Isabel Munck as secretary

**Notes from Roundtable Discussion**

**White Pine Health Workshop**

**Friday, February 9, 2018**

We want to keep the momentum of the conference going, to impact the field and establish us as a working group, to see leadership coming out of the group to push it to the next level.

**Vision Statement**: To improve our understanding of EWP health issues leading to long-term sustainable management for economic and ecological purposes.

**Funding Sources**

* NSF post doc and USDA post doc – may come with salary, travel, and supplies.
* Graduate fellowships – faculty use grad researchers but only 4 or 5 per year. Recruiting is a concern.
* AUW (American Association of University Women) provide funding for MS and maybe PhD.
* Minority Fellowships
* Each institution has some grants for graduate students
* State partners / state land – have in-kind support with collecting data, help finding locations, and logistical support.
* USDA – FS (APHIS, AFRI) – EM (STDP): can help with surveys, impact assessment, and chemical trials.
* Forest service is supposed to coordinate regionally, they will help. The evaluation monitoring fund is a source of funding, but the RFP changed recently so there is no longer direct cost assistance. The percentage can be negotiated.
* Universities -- example: NC State has different percentages for wet and dry labs. The dry lab is lower and more negotiable because other than vehicles, dry lab doesn’t use as many university resources. Faculty members can appeal to university administration for more money for research and ask for help. The match can be negotiated. Faculty have to work with internal administration, it goes through the chain, but everybody wants to see faculty succeed. Universities have agreements with agencies as to what the rate will be. NC State has equal matching with federal agencies.
* Challenges are the “indirects”, which are high. Perhaps they can be negotiated.
* Within a university, talk to colleagues. We all have the same challenges.
* The voice of faculty may be heard better since faculty is outside the government system.
* Private companies – in Georgia, private companies are focused on loblolly and long leaf.
* Co-ops – There are pros and cons to co-ops. They are a lot of work, and the group must meet the needs of the parent company, and the parent company tends to be very product driven.
  + It is difficult to put together a privately funded co-op. One exists for loblolly and it is very successful in North Carolina, Georgia, and Florida.
  + A white pine co-op might be incorporated into a co-op with the USDA. Grants might be available.
  + The challenge in southern Appalachia is that EWP is seen as a trash tree and groups are glad to be rid of it.
* NGOs – Hemlock is the poster child for NGOs and private group involvement. For example, Trout Unlimited got involved with hemlocks, and now that EWP is replacing hemlock, maybe other groups will get involved. The groups could study the impact of water quality due to loss of EWP. There aren’t any private groups involved with EWP.
* Public groups – the public can be engaged with warnings of the impact of the loss of EWP. Wildlife groups can be engaged from the habitat aspect.
* Culturally based groups – example: Native American groups provided funding for red bay research.
* In the South, try the Christmas tree industry and promote management. Lack of management is a threat to sustainability of EWP, and management needs public support.
* Environmental groups may not be on board, because they prefer hardwood.
* Foresters are also stakeholders. Example: In NC, tipping for ropes and holiday greenery is an industry that makes money in the short term from EWP while having a different long-term goal.
* State/National forests – the state forests must work with federal agencies in determining long-term plans. They are on a 15 year plan that is reviewed every 5 years, but regions may differ. We may have entry into National Forest Service plans by working with state forests toward goal of restoration.
* Experimental forests may be a source of collaboration – climate change can be an angle to use in the planning stage.
* USGS’s Powell Center and NCEAS (National Center for Ecological Analysis & Synthesis) may be funding sources
* FIA and state offices
* Add tree physiologists and silviculturists
* Citizen groups such as the Appalachian Trail group may take samples for us

**Collaborations**

* State folks – Kamal will compile a list of potential state co-ops and circulate to the working group. This can include asking them if it is ok to contact them in the future for help with samples.
* Publicity – can include press releases, social media, and website links.
* Bill Livingston’s field manual is an attempt to aggregate data in a central repository. Are there other repository sites to aggregate data?

**Projects**

* Promote EWP industry in the South
* Evaluate EWP effects on headwaters
* Climate change, resilience, and sustainability of EWP.
* We need traps for the pine bast scale. Phenology will be important. We have to figure out when to put out traps and at what latitudes. Pheromone traps catch only males but we can do research on males. We don’t know the ratio of male to female because of the limitation of pheromone traps.
* Evolution of fungal and insect systems
* Biological / chemical ecology life cycle for EWP fungal pathogens and pine bast scale. (how and what do we monitor?)

**Gaps in Knowledge / Key Questions**

* Regeneration
* Successional
* Regional difference in threats
* Wet and dry labs can help determine: What do we have? Where is it? What is risk to host?
  + What = tree, range, genetics, scale, stem and foliar fungi
  + What is the mechanism for adaptation and evolution?
  + Possible depositories:
    - Tree scale: Tima / Heidi / Huggett / Kamal
    - Canker fungi: Monique
    - Needle fungi: Jeff
    - WPBR – Ribes – resistance
    - Tissue collection, foliar tissue: NSF Jetton, museums
* Is this a trend across different tree species? Example: new outbreaks of Ips avulses and WPND. Can we tackle this as a power working group? NCES is a funding agency for this.
  + Are we seeing an emergence of native species that are more aggressive pathogens and insects?
* What is the disturbance to the system?
* What is the next threat? We need a baseline.
* Endophyte and pathogens.
* More inoculation trials, sp., environmental variables
* Long-term monitoring of mortality to determine trajectory. We need more monitoring plots, need to know what size timber will be affected. Funding is difficult. Can procedures be standardized?
* Train FIA crews and the district biologist on what to look for. In Virginia, the FIA crew is a mix of seasonal and fulltime; they are state employees. Not the same everywhere. Some are federal employees, some are contract employees. In the South, the states have taken over. The key is to identify FIA analysts, but they are reluctant to add to things that they have to do and collect. Can we talk to Bill at FIA about our group and provide our services, and give ideas of how FIA could incorporate looking for symptoms without adding work?
  + In the South, the FIA is on a 7 year system. We need more plots but our group could monitor the plots instead of asking FIA to do it. We need experimental plots rather than federal lands for experiments. We should allow 5 years for this.
* LTRs: they have monitoring data. Can we tap into them?
* Causality versus observation: what are the mechanisms? How do we monitor fungi and scale? Traps?

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|  | **Currently involved** | **Risk** | **Future** |
| Scale  Citrus canker  Drought | All areas | Lack of management  Climate | More damage |
| WPND | Northeast | Climate  Lack of management | All areas |
| WPBR | Lake States | Ribes  Climate | All areas |

* Lack of forest management is contributor to the future risk to EWP.

**Approach**

* Field: permanent plots
* Experimental forests
* State and NGO lands
* Management treatment
* Monitoring of stresses, tree growth, soils
* Depository
* Standardized procedures
* Use social media so public can understand importance of EWP
* The table above seems to lend itself to USDA funding. This requires centralized data collection.
* How to apply for funding (grants, fellowships, etc.): small grants for specific areas of study or larger grants for more areas of study? How do these areas of study fit together? What if only a few of these areas are funded? What is the best strategy for getting funded – umbrella all areas or just pieces? Do we want one big grant to cover all areas? The answer is we don’t know. We could take the lead from our funding source, and proceed in the way they want.
* One application could be for the areas of regeneration, succession, regional differences, training FIA crews, long-term monitoring.
* Another application and/or separate group could be for WPND, emergence of more aggressive pathogens/insects, study of future and distribution of system.
* Another application and/or separate group could study the ecological impacts on headwaters when hemlocks near streams die, climate change, and what are the implications for what forests will look like in the future.
  + Another potential area to study is Wisconsin, preservation or restoration.
* It would be nice to have a central repository for tree samples (tissue and needle) linked with data collection, as well as soil. NSF grants are available for bio-collection. We need a sampling strategy for long-term repository and need to standardize collection.
* Two or three of us should have a conference call with NSF. We should coordinate before the call and develop a plan.

**Current Hypothesis**

* Management is a key factor. If we don’t manage, we will have big problems. We can test that and should put together a paper on management. All pines and conifers need to be managed.
* In the south, our national forests are suffering because of a lack of resources to manage. SPB outbreaks originate and fester in national forests. But where do management resources come from? There is only so much money available.

**Strategy**

* The strategy for next time is a conference call with Barry about USDA funding and integration into one big proposal or separate grant proposals. We should do this within the next month, and then do the same thing for NSF.
* A steering committee of four of us will develop an integrated approach, but each aspect of potential funding can be addressed separately.
* We could link health issues to management for conifers. This could be a separate area from other potential subjects for funding. We need folks who specialize in other areas, such as Rima and Caterina, soil, silviculture, to fill in gaps in knowledge. Brett Huggett has knowledge in this area.
* What is an effective way of communicating with the group? A central repository for messages, such as Google Group, is a good idea. Information can be dumped onto the google drives.
* The big issues will take about a year to put together grant proposals because so much documentation is involved. The smaller issues may go more quickly.
* We will be more competitive in our proposals if we collect preliminary data. We can set up plots, identify things that have been done that were common and critical. We can get letters of support from someone in a forest research station (but experimental forests are set up for the long term, so that is not helpful).
* June 2019 we could meet in Massachusetts and we can get these things done before that meeting. At the meeting we can do a dry run, or have a discussion. We will establish ourselves as a working group on EWP. Perhaps branding in the form of a logo or acronym or t-shirts?
* In 2010, all state agencies made a forest action plan. All grants have to explain how they tie into this action plan. There was a suggestion that Rob Trickel will collate all info already existing on EWP. Minor tweaks were done to the plan in 2015, and it will be revisited soon. Perhaps we can incorporate issues with EWP in the newest tweak to explain how this project relates to the action plan.
  + In the South, Rob was on a task force and wrote a position paper. Now they are going to come up with what the issues are and write a position paper that will be passed on to the feds.
* We can gain entry into the Southern Group of State Foresters through Rob. Rob will pass onto the larger group what are needs are. Rob is on a committee of 13 states that meets 4 times per year. These issues can be elevated to national groups through Rob’s subcommittee.
* We can form subcommittees since issues differ among states.
* The Appalachia Trail Conference includes citizen group that could tie into what we’re doing. They have a network to get out info on threats to the trail. They would do marketing and outreach about EWP troubles. There is a wide range of elevations on the trail and 540 separate plots. This is a good partnership to work on. The citizen groups could help with collecting samples.
* Forest Watch is an educational program with similar things to offer. Eyes on the Forest is a program that reports forest health issues. Citizen groups such as these can collect samples and report observations.

**Next Steps**

* Several conference calls. In the next 4 months we should gather virtually to discuss the notes from today. What aspect of the projects would you be interested in? Let’s talk virtually in April.
* Isabel and Monique are attending a meeting in NY in May. The focus is on needle damage and includes sampling about 50 plots. Isabel will coordinate the sampling, and by April she should know what and how to sample.
* Two sets of communication plans: 1. What is our strategy for proposals? 2. Decide as a group how to organize ourselves, how to do sampling, what we should be collecting.
* By April we should have sample protocols ready and on google drives. We will then arrange a time for a conference call to discuss sampling.