Final Report to NE IPM Center

Program: Partnership
Project Title: Northeast School IPM Working Group: Building Coalitions and Improving Resource Accessibility
Project Type: IPM Working Groups
Project Director: Kathy Murray, Maine Department of Agriculture, Food and Rural Resources
Co-PDs: Lynn Braband, Cornell University
Start Date: 01 April 2011
End Date: 31 March 2012
Funding: $20,000
Funds leveraged as a result of this project: $32,950

Summary
1) Cooperate with the IPM Institute of North America to establish new school IPM coalitions in three states to reduce environmental asthma risks.
2) Continue collaborations with partnering organizations and schools to establish IPM demonstrations in Vermont and Rhode Island and establish a school IPM coalition in Connecticut.
3) Strengthen the capacity of the NESIWG to accomplish its mission and goals.
4) Improve accessibility of school and childcare IPM resources.
5) Develop a strategic plan to address identified priorities for school IPM

The Northeast School IPM Working Group (NESIWG) consists of members representing a wide array of organizations, agencies, and institutions from twelve northeastern states. It serves to facilitate information sharing and collaboration to assist schools throughout the region adopt IPM practices that safeguard the health of students and teachers while protecting people and properties from pest-caused risks. In this project, the NESIWG collaborated regionally to support the establishment of IPM coalitions and/or demonstrations in Connecticut, Vermont, Maine, New York and Massachusetts to support adoption of IPM by schools. These coalitions serve as a foundation for promoting the effectiveness of IPM to schools throughout the region. We have leveraged additional funds to support our school IPM coalitions and develop and share K-12 teaching tools with educators throughout the Northeast.

The NESIWG also facilitated sharing of information, ideas and technical resources across state lines and among organizations and agencies to provide broad-based support for compliance with state regulations and to improve health and safety in schools throughout the northeast. This has been accomplished through face-to-face meetings, establishment of a listserv, and regular conference calls.

The NESIWG has also partnered with the National School IPM Working Group and three other regional working groups to collaborate and support demonstration and coalition-building activities in other sites around the country.

Problem, Background, and Justification
Pests and pesticides can pose a significant risk to people, property and the environment. A number of well-documented studies have demonstrated the strong link between uncontrolled pest
populations and risks to human health. Likewise, pesticide use and exposure can also pose risks to both humans and the environment. Some pesticides contain carcinogens, endocrine disruptors, and asthma triggers.

Children are especially sensitive to pesticide exposure risks because they are smaller, their organ systems are still developing and their behaviors such as playing on the floor and ground and a tendency to put objects in their mouths. The health risks of children’s exposure to pesticides in schools are measurable and preventable.

IPM offers the best means of ensuring that schools are safe, healthy, and productive places to work and learn. Studies have shown that IPM practices significantly reduce pesticide exposure risk and improve health. A study of schools showed that IPM practicing schools had little pesticide residues whereas conventionally treated schools had residues on baseboards and walls. IPM also improves food and fire safety, improves security and reduces energy costs.

Schools are much in need of support to assist them in adopting IPM practices. In fact, a number of states in our region including Maine, Massachusetts, Pennsylvania, Rhode Island, Connecticut, New Jersey, Maryland and West Virginia, require schools to adopt IPM policies or practices. However, with scarce resources allocated to provide tools and training many schools are not in compliance. A recent survey of New England schools illustrated this gap and indicated the need for assistance and education to support compliance in states requiring IPM and to safeguard children’s health in all states.

School IPM was specifically identified in 3 of the 14 priority needs identified at the 2005 Northeast Community and Urban IPM Conference (http://www.nepmc.org/priority/2005_urban_conf.htm), particularly the need for quantifying costs and benefits of school IPM, which was ranked third. Even states in our region with active school IPM programs (Maine, New York, Pennsylvania) often struggle for resources, and many sectors, particularly private schools, completely lack school IPM programs, resources or awareness. Other states, even those that require schools to adopt IPM, provide little, if any funding to support compliance. The result has been fragmented school IPM programs with limited effectiveness, often short-term activity and little interaction across state lines.

Recent activity at the national level and in each of the four IPM Center regions, presents an excellent opportunity to build, renew, and coordinate school IPM activity nationwide. The National School IPM Pest Management Strategic Plan (PMSP) establishes the goal of achieving high-level IPM in all the nation’s schools by 2015 and identifies needs and a plan for accomplishing that goal. The NESIWG project activities outlined in this report were designed to address some of the needs outlined in the National IPM Roadmap and the National School IPM PMSP.

Objectives
1) Cooperate with the IPM Institute of North America to establish new school IPM coalitions in three states to reduce environmental asthma risks.
2) Continue collaborations with partnering organizations and schools to establish IPM demonstrations in Vermont and Rhode Island and establish a school IPM coalition in
Connecticut.
3) Strengthen the capacity of the NESIWG to accomplish its mission and goals.
4) Improve accessibility of school and childcare IPM resources.
5) Develop a strategic plan to address identified priorities for school IPM.

**Approach and Procedures**
Collaborating with school districts and other local stakeholders, NESIWG continued the development of school IPM pilot projects in New Hampshire and Rhode Island and the statewide coalition in Pennsylvania. We initiated new demonstration and coalition projects in Vermont and Connecticut. Drawing upon these and related efforts, the WG organized a “tool kit” for the development of school IPM pilot demonstrations.

We continued to establish ties between NESIWG and key collaborators in each of the 12 northeastern states and the District of Columbia. We met at least bimonthly by conference call to share information, update one another on progress, and conduct the business of the WG. We met in person at annual meetings in Pittsburgh, PA (2010) and Chester, CT (2011). We also worked with the NEIPM Center to upgrade our webpage on the Center’s website. A sub-committee within the WG was assigned the responsibility for membership recruitment. We maintained contact and collaborations with other national and regional school IPM Working Groups and networks. The WG group also received a separate Northeast Partnership grant to develop and disseminate K-12 IPM teaching tools throughout the region.

The NESIWG refined and ranked a set of priority needs and actions for implementing school IPM in the Northeast. These priorities are posted on the NE IPM Center website for reference by researchers, educators, and other stakeholders throughout the region.

**Progress**
Names, affiliations, and contact information for NESIWG members are in Appendix A. Priorities were updated in 2011 by soliciting input from stakeholders (via NESIWG membership), revising, and voting to rank priority needs for implementation, research, and extension/outreach. The results are on the Northeastern IPM Center’s website and are shown in Appendix B.

Progress made on other our projects includes:
New IPM coalitions and demonstrations were established in four states (NY, MA, VT, ME), (not three states as originally proposed) in partnership with the IPM Institute of North America. These projects, led by NESIWG members Kathy Murray (ME), Lynn Braband (NY), Carol Westinghouse (VT), and Lynn Rose (MA) focus on 1) surveys and on-site visits to identify pest and pest-related environmental health issues and to assess IPM adoption, 2) engagement of school health staff, and 3) on-site training for school staff. A new demonstration project in the Hartford (VT) School District, initiated in 2010, was completed in 2011. An on-site assessment was done, recommendations were made, a tool-kit of resources was developed and distributed to VT school IPM coalition participants, and follow-up work, including in-service trainings were completed. Hartford, VT High School hosted the 2011 Vermont School Custodian and Maintenance Association conference featuring two workshops on IPM by NESIWG member Carol Westinghouse and UVM turf specialists. NESIWG member, Peggy Siligato, continued to
provide support as needed for the NESIWG school IPM demonstration at Chariho Regional Schools (RI) begun in 2009. In CT, NESIWG members Donna Ellis, Candace Bartholomew, and Diane Jorsey established a state-wide coalition focused on providing training and tools for CT schools impacted by a state-mandated school grounds pesticide ban. In 2011, this coalition organized a school turf workshop attended by over 100 participants. Work was initiated on the development of a new school turf quality assessment tool. In addition, PA-based NESIWG members (Lyn Garling, Amber Brunskill, Ed Rajotte) continue to provide support for the Pittsburg area school IPM coalition established by NESIWG in 2009.

K-12 Curriculum Demonstration Project (the following are highlights from this 3-year project which will be reported more fully in a separate final report). NESIWG established school classroom IPM education demonstrations in three states (Maine, Connecticut, Pennsylvania) and worked with participating teachers to utilize lessons and assess student learning. We created a website (www.maine.gov/agriculture/pesticides/school-ipm-curriculum/index.htm) to provide classroom educators with easy access to hundreds of IPM lessons and resources. We had table displays to outreach to teachers at environmental education, science education and agricultural education conferences. We trained educators in the use of IPM lessons through workshops at education conferences and college education courses. Other deliverables included aligning the Connecticut IPM Curriculum with new CT academic standards as well as Maine, New England and National Standards. We developed assessment tools to measure student learning and to get teacher feedback. We developed five greenhouse IPM lessons and assessments for middle and high school level classrooms and HS technical education programs. We partnered with University of Maryland and Maryland Department of Agriculture specialists to develop and disseminate a greenhouse IPM curriculum and school greenhouse manual for educators throughout the northeast. We surveyed over 300 teachers, created a listserv and held monthly conference calls to facilitate timely exchange of K-12 IPM education ideas and information across the region. We convened a panel of educators and education specialists to develop an IPM ‘Literacy Plan’ outlining needs and opportunities for promoting and supporting K-12 IPM education and organized a workshop on youth IPM education at the International IPM Symposium held in March 2012 and expanded the listserv to include educators from across the U.S.

To build support for school IPM throughout the northeast, the NESIWG has sought out opportunities to develop partnerships and build upon existing resources to promote and support school IPM adoption. This has been done through the use of webpages, newsletter articles, booths and presentations at conferences. We expanded membership (see current membership list, Appendix A) and actively sought collaboration with school IPM leads with each of the three regional EPA offices in the northeast. Members also organized, participated in and gave presentations at a number of state-wide and local conferences, workshops and webinars. On a national level, NESIWG members contributed to and interacted with the Agriculture in the Classroom program, US EPA, Association of School Business Officials, Facility Masters training company, and the School Dude® software company. Finally, the NESIWG serves as a multiplier to share technical information and other resources among different organizations within the region and between other regional and national school IPM working groups. Through monthly conference calls and a listserv, the NESIWG has been instrumental in disseminating information about opportunities for training, available resources, pending legislation and other
critical and timely information. In March 2012, we presented a poster describing our work at the International IPM Symposium in Memphis, TN.

To improve accessibility of school and childcare IPM implementation, training, and classroom resources we identified and collected more than 50 school and childcare IPM fact sheets, websites, curricula, guidelines, training manuals and other resources and partnered with the NE IPM Center staff to populate the Center’s searchable resource database with these resources.

We drafted the NE School IPM Strategic Plan (Appendix C). Borrowing elements from the national school IPM strategic plan (School IPM 2015: A Strategic Plan for Integrated Pest Management in Schools in the United States, T. Green and D. Gouge, eds.), which had been developed, revised and reviewed widely by experts, organizations, and school IPM practitioners we developed a strategic plan for our region. The NE strategic plan was reviewed by our members and stakeholders before the final version was published on our NE IPM Center Working Group webpage. This plan is intended to serve as guidance for school IPM research, education, outreach and implementation in the northeast region.

**Outcomes**

NESIWG has leveraged $32,950 of additional funds from three other related grants. This does not include salaries, fringe and overhead costs associated with hundreds of hours of time contributed by NESIWG members and leaders to NESIWG’s projects and activities.

NESIWG expanded our network members and collaborators who share resources, educational materials, announcements, and technical expertise throughout the northeast via monthly conference calls and a listserv also established by the group. Focused activity in Maine, New York, Massachusetts, Vermont, Connecticut, and Pennsylvania have expanded upon NESIWG activities to promote school IPM within their states and across the region.

The group convened a face-to-face meeting in Chester, CT in October 2011 to review project progress, develop a plan of work for 2012, share information and resources among members and build new partnerships with school environmental health and environmental education programs. This meeting included a visit to a local school to meet with staff and discuss their IPM program.

The NESIWG participated in regular conference calls with leaders of three other regional school IPM working groups to review and plan work and share information, resources and announcements related to school IPM across the U.S.

The group worked with the NE IPM Center to update NESIWG’s webpage on the NEIPM Center’s website [www.neipmc.org/work_school.cfm](http://www.neipmc.org/work_school.cfm) and to make more school and childcare IPM resources widely available through the Center’s searchable database. NESIWG created teacher-friendly webpages that serve as a central clearing house for free, easily accessible lessons and other resources for classroom use. We promote these materials and the website through teacher workshops, listservs, table displays and more. By October 2011 more than 3200 students in 118 classrooms at 55 schools had completed at least one IPM lesson. Additionally, we trained more than 180 teachers in ME, MD and CT and introduced IPM to more than 16,000 students and 1,700 teachers at other educational events. We established a national listserv of educators.
and IPM specialists to promote and facilitate exchange of resources and ideas related to educating youth and teachers about IPM.

Educational materials were made available to NESIWG members who serve as multipliers to make these resources widely available throughout the region. Materials developed or distributed as part of this project will be posted on the NE IPM Center website for ready access and distribution. The Connecticut IPM Curriculum was aligned with the new CT academic standards as well as Maine, New England, and national standards. The NESIWG also developed five greenhouse IPM lessons and assessments for middle and high school level classrooms and high school technical education programs.

Impacts
The logic model associated with the NESIWG 2011 plan of work is in Appendix D.

Safeguarding human health and the environment:
The NESIWG supported the establishment teams of partners (Extension staff, state agency staff, local pest management providers, and school staff) in Connecticut and Vermont. The Connecticut team developed new resources and provided IPM training to school staff and turf care providers throughout the state to safeguard children’s health while also meeting new state-mandated restrictions on pesticide use on school grounds. The Vermont team developed and widely disseminated a tool-kit of school IPM resources and field-tested it at a guided demonstration at a school district in Vermont, a state with little previous support for school IPM. That team, trained and connected to a larger network of school IPM support organizations and individuals can now serve as multipliers of IPM, as they did when they provided state-wide IPM training for school custodians and maintenance staff in 2011. Continued focused outreach by NESIWG and its membership brought renewed attention to IPM as a critical component of environmental and children’s health. NESIWG member, Veronika Carella, standing with EPA Administrator Lisa Jackson, highlighted the need for, and the positive health impacts of school IPM at a press conference held April 11, 2011 at Montgomery, MD public schools. IPM has been shown to reduce risks of pests and pesticides, improve indoor air quality and safeguard the health of children and school staff. Also in 2011, NESIWG members working out of EPA Region 3 offices have provided on-site support for IPM adoption in Philadelphia and the District of Columbia. As a result of this project schools throughout 11 northeastern states and the District of Columbia are represented through NESIWGs network of partners and have improved access to training and resources for reducing potential exposure of people and the environment to high-risk pesticides and pests. In addition, more than 20,000 K-12 students and almost 2,000 teachers have learned about IPM as a result or NESIWGs K-12 IPM curriculum demonstration project.

Economic benefits:
Although economic outcomes are not directly measured in this project, it is likely that schools that adopt IPM as a result of this project, may realize economic benefits as a result of 1) saving energy costs by sealing the building envelop to keep pests out of buildings, 2) eliminating unnecessary pesticide applications, and 3) reducing staff absences due to improved indoor air quality. NESIWG collaborated with the IPM Institute of N.A.to develop and disseminate a publication highlighting the economic benefits of school IPM. This publication, The Business Case for School IPM (Chambers et al. 2011 published at:
www.ipminstitute.org/school_ipm_2015/resources.htm#Outreach) cites cases from actual school districts (including Montgomery County, MD school district, in our region) showing annual cost savings from IPM adoption ranging from $1,000 to $32,000 and estimated savings of hundreds of thousands of dollars per district in increased student and teacher attendance and teacher retention due to improved indoor air quality.

**Implementation of IPM:**
Potential impact of NESIWG, through our network of partners and stakeholders is improved IPM implementation in schools serving approximately 9 million children enrolled in grades K through 12 in the northeast [Student Enrollment in the US, US Census Bureau Report 2011 (2008 data)]. A Pittsburg area school IPM listserv established by the NESIWG in 2009, now serves 25 people, representing nine school districts serving 46,080 students. NESIWGs listserv directly reaches 62 people in 20 states.

**Appendices**
Appendix A: NESIWG membership
Appendix B: Priority Needs for Research, Implementation, Extension and Education.
Appendix C: NE School IPM Strategic Plan
Appendix D: Logic model