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Program and Abstracts

The Annual Winter Meeting of the
Southern New England Chapter of the Soil and Water Conservation Society

STRATEGIES FOR MANAGING INVASIVE PLANTS

Co-Sponsored by:
Connecticut Invasive Plant Working Group
Connecticut Department of Environmental Protection
USDA, Natural Resources Conservation Service – CT
University of Connecticut



The Colony Banquet Rooms
Vernon, Connecticut
Thursday, February 15, 2001

For more invasive plant information from NRCS, visit www.ct.nrcs.usda.gov/plants.html

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Abstracts

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A Threat to the Connecticut River Estuary: The Aquatic Invasive Plant Water Chestnut is Removed From a Tidal Cove and a Tributary (poster)

Abstract.

The Connecticut Department of Environmental Protection (DEP) and numerous project partners worked together to restore aquatic habitat in the Hockanum River and Keeney Cove (tidal Connecticut River) through the removal of two recently discovered populations of a non-native invasive plant, water chestnut (*Trapa natans*). During the summer of 1999, less than one acre of water chestnut was found in Keeney Cove, a tidal freshwater embayment along the Connecticut River in Glastonbury. A second and much larger population, estimated at seven acres, was subsequently discovered in the non-tidal section of the Hockanum River, a tributary to the Connecticut River. These plant populations pose a serious threat to the downstream fresh and oligohaline areas of the tidal Connecticut River, which have been designated “Wetlands of International Importance” and an American Natural Heritage River. A particular threat to fisheries resources is the replacement of native submerged aquatic vegetation beds (SAV) by water chestnut in the numerous coves that occur in this river segment. DEP staff hand-pulled the small population in Keeney Cove in 1999, but the larger population in the Hockanum River was discovered in late summer, after the plants had already dropped their seeds. A contractor was hired to harvest the water chestnut plants during summer 2000 at the Hockanum River using an aquatic weed harvester, and staff and volunteers hand-pulled plants in shallow waters at both sites. The Keeney Cove population showed a noticeable decrease in the number of plants after one year of removal efforts. It will likely take five to ten years to eliminate the larger population in the Hockanum River.

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The Silvio O. Conte National Fish and Wildlife Refuge Invasive Plant Control Initiative (display)

Abstract.

The Silvio O. Conte National Fish and Wildlife Refuge provides the leadership for the Invasive Plant Control Initiative of the Connecticut River and Long Island Sound watersheds. The Initiative is a cooperative effort between the Refuge and numerous partners to develop and coordinate an ecosystem-wide strategy for monitoring and controlling invasive plants in the watershed. Coordinators of the Initiative developed a Strategic Plan, which addresses aquatic, wetland, and upland invasive plants and outlines the status of the issue and what needs to be done within the next five years. It supports high priority control efforts, especially for new “toe-holds” or where invasive plants are threatening rare plant populations. It was the impetus for the establishment of a regional invasive plant partnership, the New England Invasive Plant Group, which is currently coordinated by the Initiative staff person. The Strategic Plan also calls for the development of an early detection and rapid response system which would include inventory projects and an atlas to document the distribution of problem plants. It also promotes research, information-sharing between partners and outreach and education to the public and various interest groups. Funding for the Initiative has been provided by the National Fish and Wildlife Foundation until April 2001.

PAUL CAPOTOSTO, Wetlands Restoration Biologist, CT DEP Wetlands Habitat and Mosquito Management (WHAMM) Program, 391 Route 32, N. Franklin, CT 06254; 860-642-7630

Control of Phragmites in Connecticut (poster and panel member)

Abstract.

The state of CT DEP has been controlling *Phragmites* in CT since 1993. The Wetlands Restoration Steering Committee that oversees all of the projects from the Wetlands Habitat and Mosquito Management (WHAMM) Program has reviewed all projects that involved *Phragmites* control. The WHAMM Program has controlled *Phragmites* in coastal zones and freshwater zones throughout CT. We have used several methods that include mulching, herbiciding and mulching, and increasing tidal water. We have learned from our experience and know that *Phragmites* control will take at least 3 years to manage. The State of CT DEP has specialized pieces of equipment that can be used on these marshes without sinking and leaving tracks. Once a marsh has been restored, some maintenance has to be maintained for success.

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Biological Control of Purple Loosestrife (oral)

Abstract.

Invasions of non-native plant species into minimally managed habitats may cause a significant decline in biological diversity and reduce the quality of these important ecosystems. Biological control is recommended as a sustainable, cost-effective management strategy to reduce populations of purple loosestrife, *Lythrum salicaria* L. (Lythraceae) and other invasive plants. The goal of biological control is to reduce, not eliminate purple loosestrife so that it becomes part of a diverse community of wetland vegetation. The objective of the program in Connecticut, in conjunction with national program goals, is to establish a sustainable method of managing this invasive species that may result in long-term protection of valuable wetland habitats and the restoration of native biological diversity. Long-term monitoring will continue in Connecticut for three to five years following introductions to assess the degree of control achieved by the biological control agents on purple loosestrife. Establishing new release sites will increase the presence of the biological control agents throughout Connecticut.

Galerucella californiensis L. and *Galerucella pusilla* Duftschmidt (Coleoptera: Chrysomelidae) are two leaf-feeding beetles from Europe that were approved by the U.S. Department of Agriculture (USDA) in 1992 as purple loosestrife biological control agents. The beetles are host-specific, feeding primarily on purple loosestrife and not on native wetland plants. These beneficial insects feed on leaves, stems and terminal buds of purple loosestrife. Purple loosestrife biological control efforts began in Connecticut in 1996 with the introduction of *Galerucella californiensis* and *G. pusilla* beetles into several wetland sites.

Program efforts in Connecticut continue to expand each year. More than 136,000 purple loosestrife biological control agents were released in 22 locations throughout the state between 1996 and 2000. This total included 45,000 *Galerucella* beetles that were produced locally at the University of Connecticut during 1999 and 2000 in preliminary field rearing trials. The field-reared beetles were released into new biological control study sites or at established sites as a supplement to initial introductions from previous years.

Feeding damage to purple loosestrife leaves and shoot tips by *Galerucella* larvae and adults was assessed during site monitoring visits. Up to 100% feeding damage on purple loosestrife occurred in all quadrats by mid-May 1999 at the Storrs, CT site. By the end of June, the biological control agents defoliated all purple loosestrife plants. Sustained feeding injury by *Galerucella* larvae and adults resulted in a 50% reduction in plant heights from 1997 to 1999. Severe feeding injury to purple loosestrife meristematic tissue, including leaf and flower buds, caused significant reductions in flower production in 1998 and 1999. No flowers were observed on any purple loosestrife plants in the quadrats during July 1999 site monitoring.

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Connecticut Invasive Plant Working Group (display)

Abstract.

The Connecticut Invasive Plant Working Group (CIPWG), organized in 1997, is a consortium of individuals, organizations and agencies concerned with invasive plant issues. Invasive non-native plants are changing the landscape of Connecticut and the New England region, displacing native plants and reducing biological diversity. CIPWG is an ad hoc organization. Our general meetings occur twice each year in March and November. The next CIPWG meeting will be held on Thursday, March 22, 2001 at the University of Connecticut, Storrs.

The Connecticut Invasive Plant Working Group website at www.eeb.uconn.edu/invasives provides public access to information concerning invasive plants. A list of Connecticut invasive plant species and the criteria used to define them can be found on the web site. Other information available on the web site includes a photo gallery of invasive plants, fact sheets with plant descriptions and control options, and upcoming meetings and events.

Two new color posters on invasive non-native plants and a list of invasive plant species in Connecticut were developed by the Connecticut Invasive Plant Working Group and are now available for distribution.

CHRISTOPHER MATTRICK, New England Wildflower Society, 180 Hemenway Road, Framingham, MA 01701-2699; mattrick@newfs.org

Issues to consider in the management of Invasive Plants (oral)

Abstract.

The control and management of invasive plant species is a topic that has received a great deal of public and professional attention. This attention has led to increasing pressure on state and federal agencies, local municipalities, and conservation organizations to undertake projects to eradicate invasive plant species. Unfortunately, decisions to control invasive species in natural habitats are often made without a thorough and thoughtful consideration of the potential consequences, both positive and negative. The successes and failures of past projects can lead to more informed management strategies for future projects. These consequences not only effect the success of your project, but also have an impact on volunteers, your organization or agency, and the local community.

Pick your battles! There are acres of invasive species infesting our natural landscapes; all infestations are not equal in their threat to the environment. Try controlling one acre of *Phragmites australis*, before you agree to tackle 100 acres. Financial and human resources are strained and limited. Are the human resources available to not only conduct your project, but to carry out the years of follow up monitoring and management that will be necessary? Do your homework. Has anyone ever tried this before? Approach each project with a critical eye and scientific mind. What could go wrong? Are their unseen benefits to the project? Is the goal of the project achievable? So often control is undertaken because the presence of these species is driving someone nuts! Unfortunately control for control's sake is not always a good reason to undertake a project.

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Invasive Plant Management (display)

Abstract.

Early intervention is important in any attempt to control an invasive plant population. Manual or mechanical removal of invasive plants is possible when a population is still relatively small or when adequate labor is available. For large-scale infestations and for well-established, deep-rooted invasives, application of a chemical herbicide (either to foliage or to cut stumps) may be necessary to achieve control. This display will include information on different management strategies with emphasis on the herbicidal and environmental properties of glyphosate and triclopyr, active ingredients in products readily available to homeowners and other landowners. Two items on display will be "The New England Guide to Chemical Control of Problem Weeds and Brush around Homes and on Non-Cropland" and "An Invasive Plant Management Guide" prepared by the Connecticut Invasive Plant Working Group.

PETER M. PICONE, Wildlife Biologist, DEP Wildlife Division, Burlington, CT 06013

Choosing Alternatives to Invasive Plants for Wildlife Habitat Enhancement (oral)

Abstract.

As Connecticut's landscape continues to be developed and fragmented, the selection and planting of native plants that provide food, cover and shelter throughout the seasons of the year helps diversify and enhance wildlife habitat. The presenter will discuss the advantages of planting selected native plants as alternatives to non-native invasives. Native plants that provide habitat values and seasonal values are emphasized. Slide presentation includes of a variety of native trees, shrubs and wildflowers.

SARAH REICHARD, University of Washington, Ecosystem Sciences Division, Box 354115, Seattle, WA 98195; reichard@u.washington.edu.

Early Detection Of Invasive Plants (oral)

Abstract.

Invasive species detected and evaluated in the early stages of the invasions have the greatest potential for control and eradication. Invasions may be divided into three phases: introduction, establishment, and impact on native species and environments. Some plant species may be accidentally introduced through seed or commodity contamination or other

purposes. However, because of a thriving and productive horticulture industry and the use of plants for medicinal and other purposes, it is likely that a significant portion of the world's plants may be intentionally introduced. Establishment outside of cultivation is likely driven by the biology of a species. According to population biology theory, traits which increase the number of births and traits which decrease the number of deaths will allow a rapid increase in population size. Large populations are easier to detect, but usually much more difficult to control. Traits leading to increased birth include a short juvenile period, a lack of seed germination requirements, and large numbers of seeds produced. Traits that may decrease the death of individuals include regeneration from fragmented plant parts (such as following a disturbance) and traits relating to stress-tolerance, such as the ability to photosynthesize in stem tissues after leaf loss. These traits may be combined using various algorithms to gain the power to predict and potentially prevent establishment. Impact, however, is an interaction of the attributes of a plant and the biotic and abiotic components of an ecosystem and is much more difficult to predict.

BILL WILLIAMS, Director – Audubon Society of Greenwich; E-mail: swilliamsjr@mindspring.com

Mile-a-Minute Weed: A New Invader in Southern New England (oral)

Abstract.

Mile-a-Minute weed is an invasive vine, native to the Far East, that became established in Pennsylvania in the 1940's and is now in seven surrounding states. It is generally found in sunny, moist locations, and its fruit is dispersed primarily by birds. Mile-a-Minute grows rapidly, up to 20-25 feet a year, and it shades out other vegetation with a thick mat of foliage.

A small patch of Mile-a-Minute was first identified in a Greenwich, CT sanctuary in 1997, and by last year it had spread to cover a 2-3 acre meadow and some adjacent open areas in the surrounding forest. Control measures taken to date include hand pulling and mowing, and for 2001 the selective use of herbicides is also being evaluated.

Now that Mile-a-Minute has reached Connecticut, it is important for local land stewards and others to identify this invasive and take early and repeated control action to prevent its spread.

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also with Norwalk River Watershed Association, Ridgefield Conservation Commission

Japanese Barberry -- Easy Come, Easy Go: Invasive Teaching Tool (poster and panel member)

Abstract:

Japanese barberry is one of the most pervasive invasive plants – growing almost everywhere in varied soil and light conditions – but it is also one of the easiest to recognize and remove using large groups of untrained volunteers. Consequently it is a great introduction to the public on both the need for the management of invasives and the fact that individuals can make a real difference on this issue to the natural world around them.

Physical removal – by long-handled shovel or Weed Wrench – is the proven method of eradication. Areas that can be cleared in a 3-hour session by 6-8-person groups should be delineated by natural features or tape tags. Spring projects should favor higher ground for better footing and fewer insects. Fall projects can attack the wetter areas with young people or those with physical limitations collecting berries in zip-lock bags. Target areas along streams or trails to minimize future seed dispersal by water or birds. Assign stalwart workers to the largest plants to eliminate the greatest seed producers.

Dug roots should be exposed to the air to die. Shaking dirt from the roots back into the digging hole, stamping the disturbed ground, and recovering the disturbed area with leaves or other surface debris will lessen further infestation by invasives and result in a natural-looking terrain that provides the workers with a great feeling of satisfaction and the urge to do more.