Northeastern Weed Science Society

Noxious and Invasive Vegetation Management Short Course

LECTURE TOPICS (1/2 hour to 40 min)

Introduction to the Problem: An introduction focusing on 33 of the most problematic terrestrial species and / or 29 of the most problematic aquatic species in the Northeastern United States.

Ecology of the Invasion: Lecture will highlight the adaptive mechanisms that enable invasive vegetation to thrive under different conditions, such as the relationship between invasive vegetation and their environments and the interaction of human activities and natural areas colonized by invasive plants.

On the Horizon: Lecture will highlight noxious and invasive vegetation not yet established or of limited distribution in the Northeastern United States.

The Decision Making Process for Implementing Management: Students will learn how to evaluate their situation in terms of risk assessment, and inventory and monitoring, in order to choose the correct management approach to an invasive vegetation problem.

Herbicides in the Environment: Lecture and demonstration on factors that effect herbicide movement in the soil and water, herbicide persistence in the environment, how herbicides dissipate and degrade, the decision making process, and how applicators can reduce environmental risk.

Control Options: Lecture will highlight Manager's Tool Kit for mechanical, chemical and biological control and updates on new or proven methods of non-cropland weed control and management.

Weed Tour: Opportunity to visit and see first hand a federal or state noxious weed eradication program site (where available).

WORKSHOP TOPICS (1/2 hour to 40 min)

Inventory and Mapping: Instructors will demonstrate the proper use of traditional and technological based mapping, founded on the question – "What is it you are trying to accomplish?" Data collection and methodology for accurate record keeping will be included in this session.

Herbicide Mode of Action: The herbicide mode of action session will teach students about how herbicides kill or injure susceptible plants based on their mode and mechanism of action. This will include a review of the key herbicide families based on mode of action such as the plant growth regulators, photosynthetic inhibitors, amino acid synthesis inhibitors and other important groups. Included in this session will be a discussion and demonstration of herbicide injury symptomology associated with each class and the importance of managing herbicide resistance.

Herbicide Absorption/Translocation: Students will learn how herbicides are absorbed by plants and plant parts and how herbicides move within the plants.

Herbicide Formulations and Adjuvants: This session will demonstrate the different types of herbicide formulations and their uses. This will include active ingredient vs. inert material, suspensions, water soluble formulations, emulsifiable concentrates, wettable powders, dry flowables, and granular formulations. A discussion about herbicide labels, compatibility, and using adjuvants will also be included.

Tools and Methods Used in Weed Control: Instructors will demonstrate non-chemical methods (cultural and biological) and chemical methods available today for managing invasive vegetation.

Species Specific Management Scenarios: Instructors will review and discuss the best management approach to solving species-specific or situational-specific management scenarios. Multiple opportunities (Fireside chats, Weed Talks, Lectures) will be provided.

HANDS-ON CLINIC TOPICS (2 hours)

Weed Identification/Weed Walks: Instructors will teach students how to identify terrestrial species and/or aquatic species using live plant and herbarium specimens. Students will also have the opportunity to see some of these species in their natural habitat during the "Weed Walks".

Novice Applicator: Demonstration and individual training on the basic use of hand tools, sprayer equipment and mixing and, sprayer calibration, basic math, and inventory and mapping. Designed for students and managers new to vegetation management.

Advanced Applicator: In depth discussion of the latest in applied management. Designed for licensed applicators desiring more detailed information on the latest technology, chemistries and methodology for species-specific management.