

North American Invasive Species Management Association (NAISMA) Online Invasive Species Management Training Program

Welcome to NAISMA's Online Invasive Species Management Training Program. This program is designed to provide the education needed for professionals and students who are managing or learning to manage invasive species. Courses provide the most current invasive species identification, control, and management techniques and comply with local and federal regulations.

- There are 5 courses to choose from.
- Completion of ISM 110 or successful test-out is required to take upper level courses.
- Courses can be taken one or two at a time.
- The average time required for each course is approximately 1-2 hours per week.
- Upon completion of the five courses, students will receive a **Certificate of Invasive Species Management** from NAISMA.

Efforts to control invasive species are often piecemeal and under-funded. Compounding the problem is a lack of trained field specialists to lead/assist with control and management efforts. People seeking invasive species management positions usually have training in biology, forestry, agronomy, or related fields – but generally no training or field experience in controlling invasive species.

In response to this need, NAISMA is offering a unique college-level online professional development program to train Invasive Species Field Specialists. The program provides a comprehensive introduction to all aspects of ISM (Invasive Species Management) – including Strategies and methods for Prevention, Early Detection and Rapid Response, and Control.

Invasive (ISM) Management Training Program Developers, Directors, and Instructors:

Dr. Randy Westbrook (U.S. Federal Invasive Species Prevention Specialist – 1979-2012)
and Rebecca Westbrook (Environmental Science and Biology Instructor – Southeastern Community College, Whiteville, NC – 1989-2015).

Program Information: <https://www.naisma.org/ism-course>

Online Registration: <https://naisma.org/product/naisma-online-invasive-species-management-training-program-registration/>

Curriculum & Course Outlines

The following details the curriculum and content of each course in the online program.

ISM 110 – Introduction to Invasive Species (3 Credit Hours) (\$300)

Ecology and Biology of Invasive Species, Economic Impacts, Survey of Major Invasive Species Taxa (Plants, Aquatic Nuisance Species, Insects and Diseases, Injurious Wildlife, General Management Approaches), Sociological Aspects, Ethical Consideration.

- Unit 1. Nature and Scope of the Invasive Species Problem.
- Unit 2. Characteristics of Invasive Species.
- Unit 3. Overview of Invasive Plants.
- Unit 4. Overview of Invasive Insects and Diseases.
- Unit 5. Overview of Aquatic Nuisance Species.
- Unit 6. Overview of Injurious Wildlife.
- Unit 7. Ecological Impacts of Invasive Species.
- Unit 8. Economic and Public Health Impacts of ISM.
- Unit 9. The Process of Biological Invasions.
- Unit 10. Intentional Introductions.
- Unit 11. Unintentional Introductions.
- Unit 12. Pathways and Vectors – Trade, Tourism, and Transport.
- Unit 13. Other Factors Enhancing the Spread of ISM.
- Unit 14. Methods for Predicting Invasiveness of Introduced Species.

ISM 210 – Overview of ISM Management Strategies (3 Credit Hours) (\$300)

Foreign Pest Prevention, Port of Entry Exclusion, Early Detection, Survey, Containment and Eradication, Control Methods (Chemical, Cultural, Mechanical, Biological), Interagency Committees and Partnerships, Weed Management Areas, Invasive Plant Task Force, Outreach and Education.

- Unit 1. Production of Pest Free Commodities in Exporting Countries.
- Unit 2. Preclearance – Inspection/Certification of Selected Commodities at Ports of Export.
- Unit 3. Border Clearance – Commodity Inspection and Treatment at Ports of Entry.
- Unit 4. Official Control of Regulated Pests within a Country.
- Unit 5. Early Detection and Rapid Response – The Second Line of Defense against Biological Invasions – Practical Application and Limitations.
- Unit 6. Overview of the Proposed U.S. National EDRR System for Invasive Plants.
- Unit 7. Survey and Detection – On the Ground Survey.
- Unit 8. Survey and Detection – Detection, Delimiting, and Appraisal Survey – Remote Sensing.
- Unit 9. Survey and Detection – Guidelines and Field Data Collection Standards.

Unit 10. Weed Containment and Eradication.

Unit 11. Population Suppression and Control – Principles and Practices.

Unit 12. ISM Mgt. Strategies - Single Agency Led Programs and Projects.

Unit 13. Interagency Coordination - State and Provincial Councils.

Unit 14. On-the-Ground Management – Cooperative Weed Management Areas and Invasive Plant Task Forces.

ISM 211 – Overview of Federal, State, and Local ISM Management Programs (3 Credit Hours) (\$300)

- *Federal/State Animal and Plant Regulatory Programs (USDA APHIS, State Departments of Agriculture, etc.);*
- *Federal/State/Local ISM Management Programs (USDA Forest Service, National Park Service, California Department of Food and Agriculture, etc.);*
- *Interagency Programs and Projects.*

I. Course Introduction and Overview.

II. Federal and State Animal and Plant Management Programs.

Unit 1. Federal/State Noxious Weed Programs - The USDA/Carolinas Witchweed Eradication Program – Biology and Control Methods.

Unit 2. Federal/State Noxious Weed Programs - The USDA/Carolinas Witchweed Eradication Program – Science Support, Current Status, and Outlook.

Unit 3. Federal/State Noxious Weed Programs – Management of Japanese Dodder in SC, TX, and CA.

Unit 4. State Noxious Weed Programs – The California Department of Food and Agriculture - Noxious Weed Prevention and Control Program.

Unit 5. Federal/State Plant Pest and Disease Programs – Gypsy Moth (*Lymantria dispar*).

Unit 6. USDA APHIS Wildlife Services – Injurious Wildlife Management Programs – The Beaver Management Assistance Program in North Carolina.

III. Federal and State Land Management Programs.

Unit 7. U.S. Forest Service – ISM Management Program.

Unit 8. U.S. Fish and Wildlife Service – National Wildlife Refuge System.

Unit 9. U.S. National Park Service – Exotic Plant Mgt. Teams.

Unit 10. U.S. Bureau of Land Management – Invasive Plant Management Program.

Unit 11. Transportation Corridors – Federal Highway Administration and State Departments of Transportation.

IV. County Weed and Pest Programs.

Unit 12. Clearwater County, Alberta, Weed Management Program.

V. Interagency Programs and Projects.

Unit 13. Cooperative Weed Management Areas – The South Fork Weed Management Area in Park County, Wyoming.

Unit 14. Invasive Plant Task Forces – The Beach Vitex Task Force.

ISM 220 – Invasive Plant Survey Methods (4 Credit Hours) (With Field Lab Component) (\$400)

Detection, Delimiting, and Appraisal Survey Methods, Data Synthesis and Archival.

- Unit 1. Basic Fundamentals of Invasive Plant Survey and Inventory.
- Unit 2. Basic Fundamentals of Invasive Plant Survey Data Management.
- Unit 3. Global Positioning System – Introduction and History.
- Unit 4. USDA-Carolinas Witchweed Eradication Program – Detection, Delimiting, and Appraisal Survey.
- Unit 5. Wild Taro Survey by SCC at Lake Waccamaw State Park.
- Unit 6. Overview of the Invasive Plant Atlas of New England Volunteer Data Collection Program.
- Unit 7. Utah State University Survey Methods for EDRR on Public Lands.
- Unit 8. Digital Aerial Sketch-Mapping for Early Detection of Large, Remote Infestations.
- Unit 9. Nevada Tiered Survey Methods for Disturbed Areas, Areas at Risk, and Ground Truthing of Previously Sampled Areas.
- Unit 10. Stratified Random Sampling along Roads and Trails.
- Unit 11. Adaptive Sampling for Rare, Problematic Species.
- Unit 12. Remote Sensing for Detection of Invasive Plants.
- Unit 13. Coarse-Scale Mapping at a Section, Quadrangle, County, or State Level.
- Unit 14. Montana Noxious Weed Survey and Mapping System.

ISM 221 – Invasive Plant Control Methods (3 Credit Hours) (\$300)

Prevention, Containment, Eradication and Control Methods, Equipment Operation and Safety, Care and Maintenance.

- Unit 1. Invasive Plant Mgt. in Natural Areas – Balancing Chemical, Mechanical, Cultural, and Bio-Control Methods.
- Unit 2. Herbicide Properties, Formulations, and Behavior.
- Unit 3. Overview of Commonly Used Herbicides.
- Unit 4. Herbicide Selection and Use.
- Unit 5. Herbicide Application Equipment.
- Unit 6. Other Selective Herbicide Application Methods.
- Unit 7. Manual Control Methods and Equipment.
- Unit 8. Mechanical Control Methods and Equipment.
- Unit 9. Cultural Control Methods and Equipment.
- Unit 10. Biological Control Methods.